AG DR 1-1:

Refer to the Application generally.

a. Provide an organizational chart of Water Service Kentucky, and designate whether each position is based in Kentucky or elsewhere.

b. Provide an organizational chart of Water Service Corporation ("WSC"), and designate whether each position is based in Kentucky or elsewhere, and what the allocation factor to Water Service Kentucky is for each position.

c. Provide an organizational chart of Corix Corporate Support Services, and designate whether each position is based in Kentucky or elsewhere, and what the allocation factor to Water Service Kentucky is for each position.

d. Provide an organizational chart of Corix Regulated Utilities (US) Inc. ("CRU"), and designate whether each position is based in Kentucky or elsewhere, and what the allocation factor to Water Service Kentucky is for each position.

e. Provide an organizational chart of Corix Infrastructure, Inc. ("CII") and designate whether each position is based in Kentucky or elsewhere, and what the allocation factor to Water Service Kentucky is for each position.

f. Provide an organizational chart of the overall Corix Group of Companies, and the applicable allocation factor to Water Service Kentucky, if any.

g. Provide an organizational chart that includes all of the parent companies/holding companies/affiliated companies that are associated with Water Service Kentucky.

<u>Response</u>: Please see below. All positions in each chart note the location below the employee's name (e.g., WSC Chicago refers to WSC's Chicago, Illinois office). Department allocation factors are shown in Excel file PSC DR 1-49 Exhibit 29 - Schedule C - 2023 CAM Forecast 2022-2025 – CONFIDENTIAL.xlsx, Allocation $ tab.

a. Please see AG DR 1-1 a - WSCK Org Chart. Colby Wilson reports to Seth Whitney.

b. Please see response to part C below. WSC employees are part of Corporate Support Services and encompasses those employees who reside in the US versus Canada.

c. Please see the following attachments:

(1) AG DR 1-1 Org Chart Part 1 CEO and EVP COO

(2) AG DR 1-1 Org Chart Part 2 EVP Corp Devmt and CFO

(3) AG DR 1-1 Org Chart Part 3 EVP Support Services

(4) AG DR 1-1 Org Chart Part 4 EVP Risk Mgmt

d. No positions are associated with CRU.

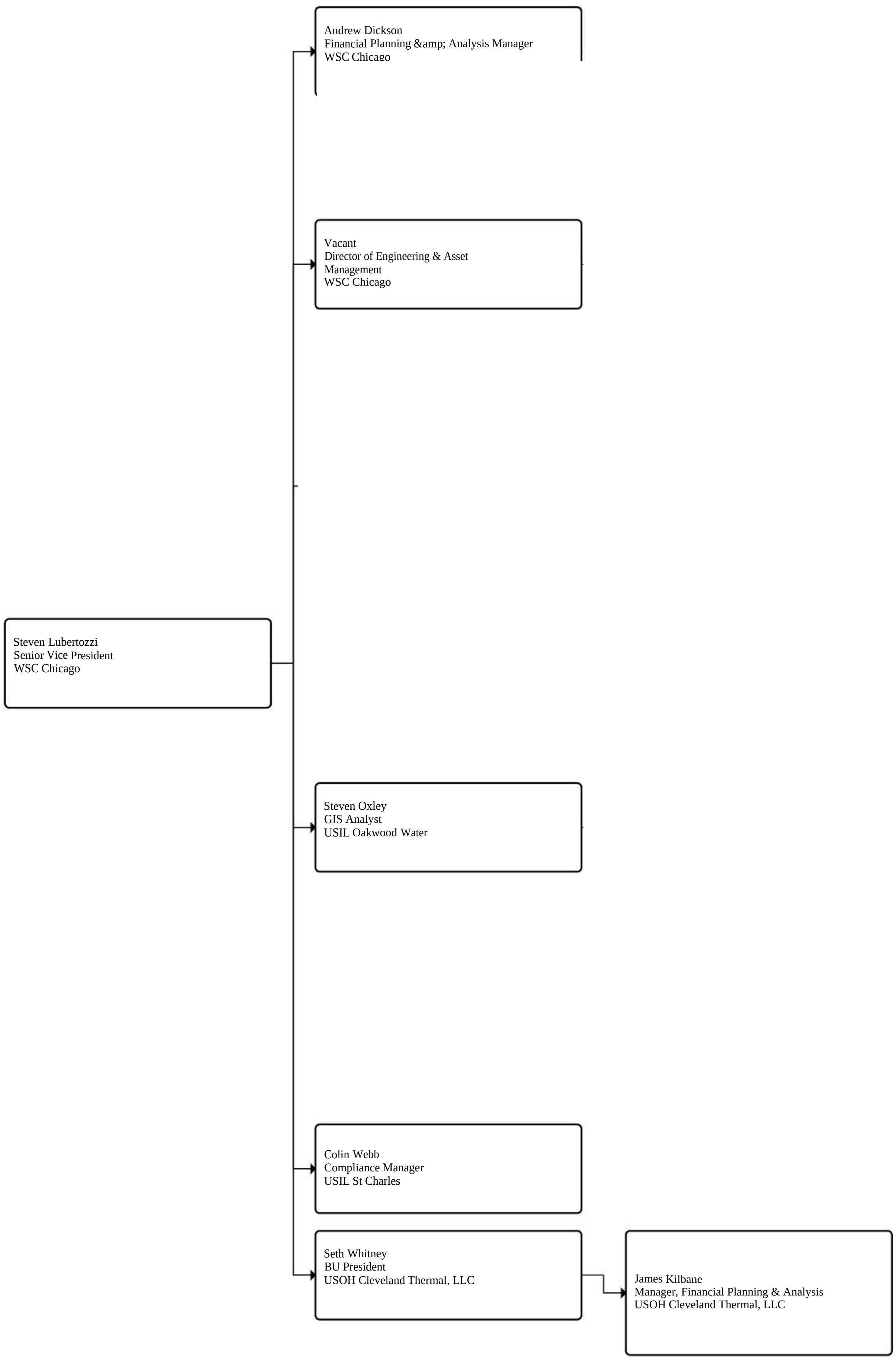
e. Please see response to Item C above.

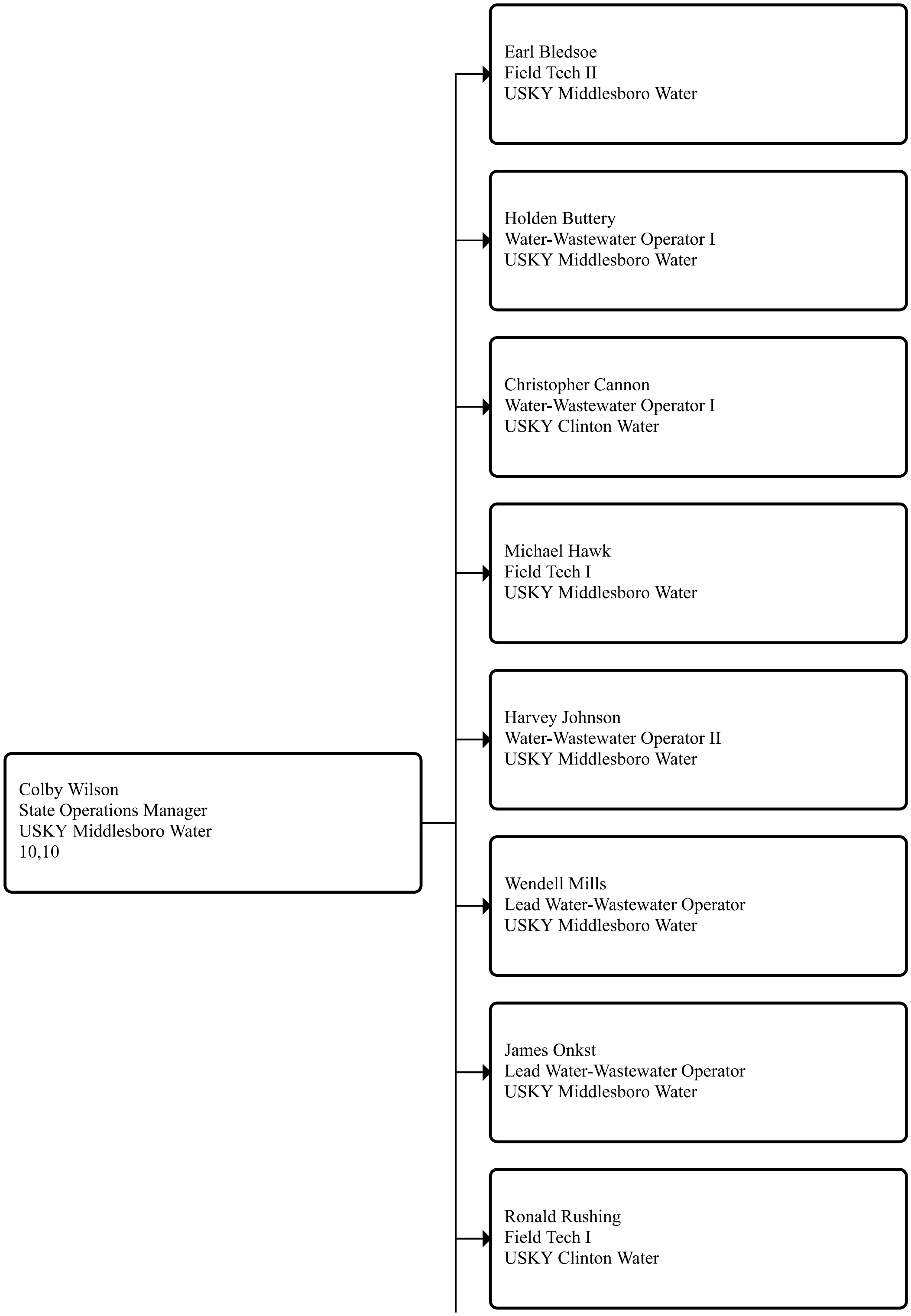
f. Please see attachment AG DR 1-1 CONFIDENTIAL.pdf. For allocation factors, please see response to AG DR 1-2.

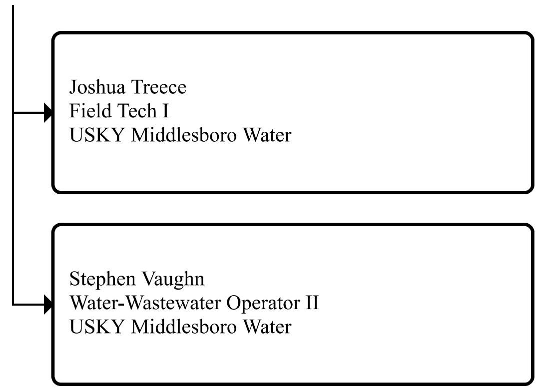
g. Please see response to Part F above.

Witness: James Kilbane/Shawn Elicegui

7/27/22, 12:26 PM




Earl Bledsoe
Field Tech II
USKY Middlesboro Water
Holden Buttery
Water-Wastewater Operator I
USKY Middlesboro Water
Christopher Cannon
Water-Wastewater Operator I
USKY Clinton Water
Michael Hawk
Field Tech I
USKY Middlesboro Water
Harvey Johnson
Water-Wastewater Operator II
USKY Middlesboro Water
Colby Wilson
State Operations Manager
USKY Middlesboro Water
10,10
Wendell Mills
Lead Water-Wastewater Operator
USKY Middlesboro Water
James Onkst
Lead Water-Wastewater Operator
USKY Middlesboro Water
Ronald Rushing
Field Tech I
USKY Clinton Water


Joshua Treece
Field Tech I
USKY Middlesboro Water
Stephen Vaughn
Water-Wastewater Operator II
USKY Middlesboro Water

Mario Alonso
EVP, Corporate Development
Water Service Corporation
WSC Chicago
5,31

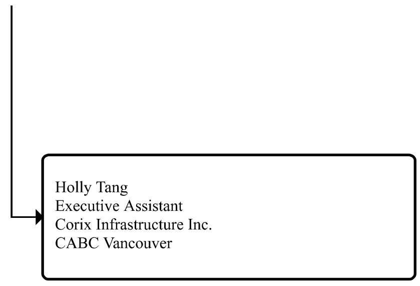
- James Andrejko
  Vice President & Principal Accounting Of...
  Water Service Corporation
  WSC Chicago
  4,14
- Philip Der
  Vice President, Tax and Special Projects
  Corix Infrastructure Inc.
  CABC Vancouver
  2,5
- Simon Hoang
  Senior Manager, Treasury Operations
  Corix Infrastructure Inc.
  CABC Vancouver
  1,1
- Fan Jiang
  Director, Corporate Development
  Corix Infrastructure Inc.
  CABC Vancouver
  1,1
- Maxwell Wang
  Vice President, Corporate Financial Repo...
  Corix Infrastructure Inc.
  CABC Langley
  3,5

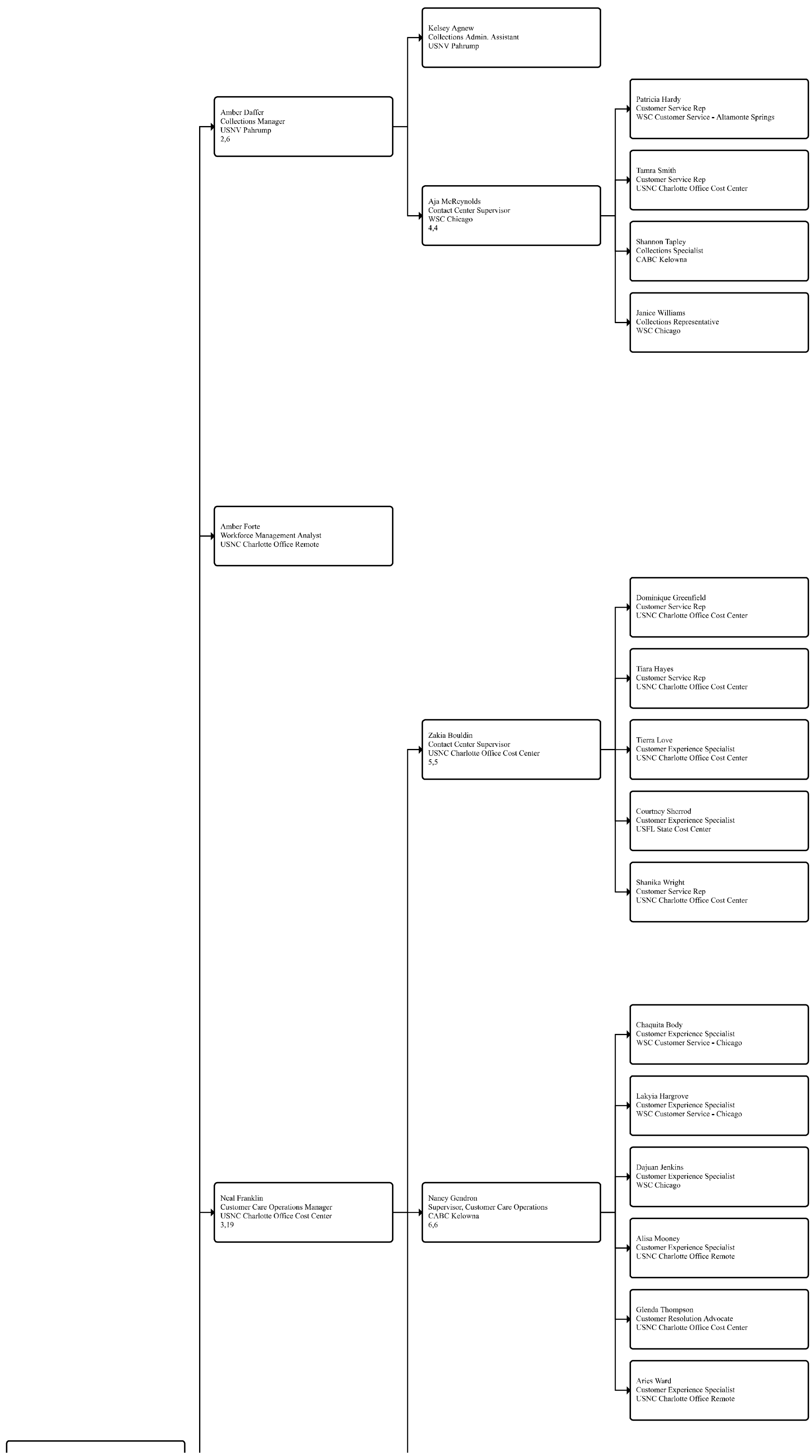
James Devine
EVP, Support Services
Water Service Corporation
WSC Chicago
7,96

- Marc Harmon
  Director of Administration
  Water Service Corporation
  USAK Utility Services of Alaska Administ...
  3,8
- Nathan Meyers
  Vice President, People & Culture
  Water Service Corporation
  WSC Chicago
  11,15
- Jordon Novak
  Vice President, Support Operations
  Water Service Corporation
  WSC Chicago
  7,20
- Thomas Oakley
  Public Relations Director
  Water Service Corporation
  WSC Chicago
  5,5
- David Parker
  VP, Business Transformation
  Water Service Corporation
  WSC Chicago
  3,3
- Karen Sasic
  Vice President, Billing Operations
  Water Service Corporation
  USFL State Cost Center
  3,11
- Carol Vorster
  Vice President & CIO
  Water Service Corporation
  WSC Chicago
  5,27

- Allan McGavin
  Paralegal
  Corix Infrastructure Inc.
  CABC Vancouver
- Kendra Rose
  Director Of HSE

- Lisa Sparrow
President & CEO
Corix Infrastructure Inc.
CABC Vancouver
6,861
  - Shawn Elicegui
EVP, Risk Management
Water Service Corporation
USNV Reno
6,18
    - Water Service Corporation
WSC Chicago
6,8
    - Gina M Russolillo
Paralegal I - Commercial Contract Specia...
Corix Infrastructure Inc.
CABC Vancouver
    - Sophia Sacco
Paralegal
Corix Infrastructure Inc.
CABC Vancouver
    - Allen Wilt
VP & General Counsel
Water Service Corporation
USNV Reno
4,4
    - Kathleen Wong
Director, Audit Services
Corix Infrastructure Inc.
CABC Vancouver
  - Catherine Heigel
EVP & COO, Regulated Utilities
Water Service Corporation
USSC Greenville
8,708
    - Matthew Chandler
Contact Center Administrator
Water Service Corporation
USFL Weathersfield W
5,48
    - Dante Destefano
Director, Regulatory Affairs
Water Service Corporation
USNC Charlotte Office Cost Center
    - Robert Hunter
Director, FP&A - Regulated
Water Service Corporation
WSC Chicago
  - Donald Sudduth
EVP & Chief Growth Officer
Water Service Corporation
USLA UIL Covington
1,2
    - Franca Petrucci
Director, Business Growth & Financial Pl...
Corix Infrastructure Inc.
CABC Kamloops
1,1


Holly Tang
Executive Assistant
Corix Infrastructure Inc.
CABC Vancouver


Kelsey Agnew
Collections Admin. Assistant
USNV Pahrump
Amber Daffer
Collections Manager
USNV Pahrump
2,6
Patricia Hardy
Customer Service Rep
WSC Customer Service - Altamonte Springs
Tamra Smith
Customer Service Rep
USNC Charlotte Office Cost Center
Aja McReynolds
Contact Center Supervisor
WSC Chicago
4,4
Shannon Tapley
Collections Specialist
CABC Kelowna
Janice Williams
Collections Representative
WSC Chicago
Amber Forte
Workforce Management Analyst
USNC Charlotte Office Remote
Dominique Greenfield
Customer Service Rep
USNC Charlotte Office Cost Center
Tiara Hayes
Customer Service Rep
USNC Charlotte Office Cost Center
Zakia Bouldin
Contact Center Supervisor
USNC Charlotte Office Cost Center
5,5
Tierra Love
Customer Experience Specialist
USNC Charlotte Office Cost Center
Courtney Sherrod
Customer Experience Specialist
USFL State Cost Center
Shanika Wright
Customer Service Rep
USNC Charlotte Office Cost Center
Chaquita Body
Customer Experience Specialist
WSC Customer Service - Chicago
Lakyia Hargrove
Customer Experience Specialist
WSC Customer Service - Chicago
Dajuan Jenkins
Customer Experience Specialist
WSC Chicago
Neal Franklin
Customer Care Operations Manager
USNC Charlotte Office Cost Center
3,19
Nancy Gendron
Supervisor, Customer Care Operations
CABC Kelowna
6,6
Alisa Mooney
Customer Experience Specialist
USNC Charlotte Office Remote
Glenda Thompson
Customer Resolution Advocate
USNC Charlotte Office Cost Center
Aries Ward
Customer Experience Specialist
USNC Charlotte Office Remote

Matthew Chandler
Contact Center Administrator
USFL Weathersfield W
5,48

Jennifer Akers
Customer Service Rep
USFL Weathersfield W

Carl Crutchfield
Customer Service Rep
USFL Weathersfield W

Kaitlynn Gilbert
Customer Service Rep
WSC Chicago
5,5

Roslyn Lide-Miller
Customer Service Rep
USNC Charlotte Office Cost Center

Tina Richardson
Customer Service Rep
USNC Charlotte Office Cost Center

Shanika Simmons
Customer Experience Specialist
USNC Charlotte Office Cost Center

Vincent Hicks
Customer Service Administrative Assistan...
USFL Weathersfield W

Isabel Ceballos
Customer Resolution Advocate
USFL Weathersfield W

Ebony Diggs
Customer Experience Specialist
WSC Customer Service - Chicago

Sheila Edwards
Collections Representative
WSC Customer Service - Chicago

Steven Crowder
Contact Center Supervisor
WSC Chicago
7,7

Lorie Mayeski
Customer Resolution Advocate
USFL Weathersfield W

Sandra Soto Long
Customer Resolution Advocate
USNC Charlotte Office Cost Center

Yvette Starr
Customer Experience Specialist
WSC Chicago

Bianca Washington
Customer Experience Specialist
WSC Customer Service - Chicago

Patricia Askia
Customer Service Rep
WSC Chicago

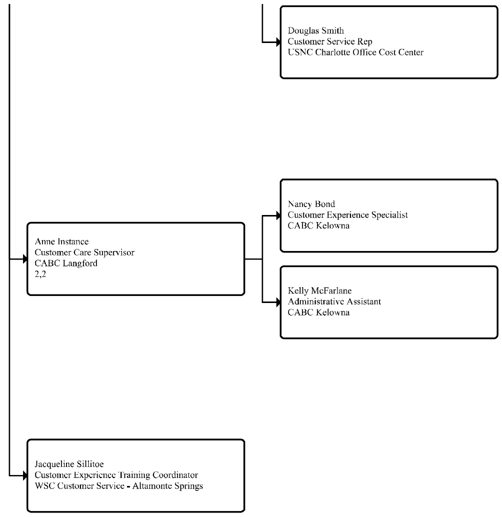
Yoleydis Gonzalez
Customer Service Rep
USFL Weathersfield W

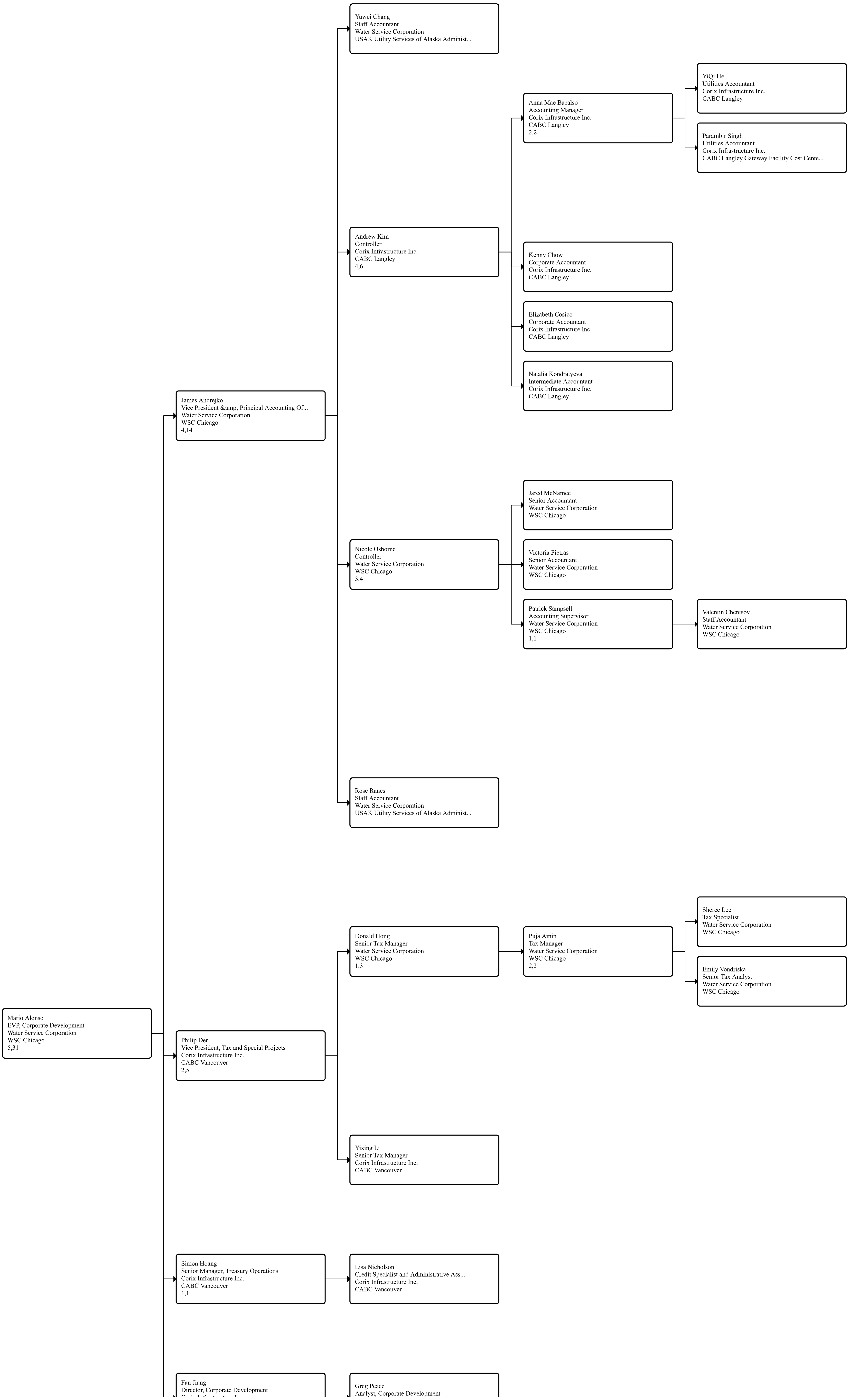
Ferrellyn Trovinger
Customer Care Operations Manager
USFL Weathersfield W
4,18

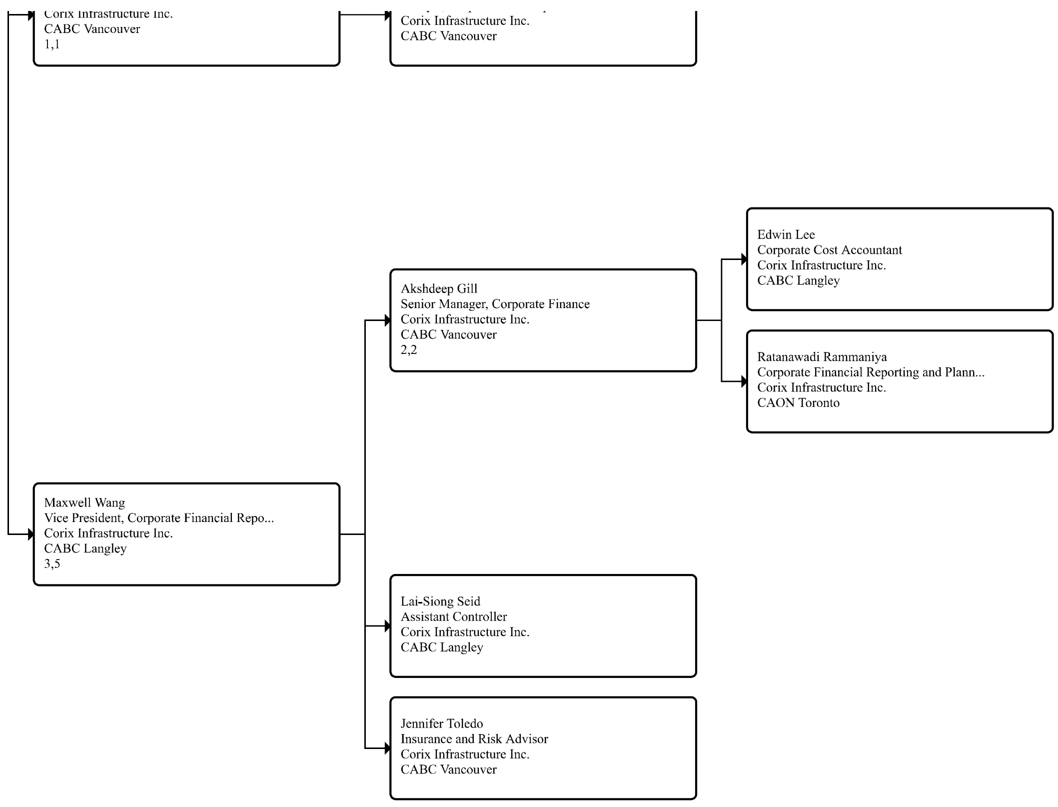
Ewan Dehnert
Contact Center Supervisor
USFL Weathersfield W
5,5

Kelly Hagan
Customer Service Rep
USFL Weathersfield W

Jerry Lazarre
Customer Service Rep
USFL Weathersfield W


Douglas Smith
Customer Service Rep
USNC Charlotte Office Cost Center
Anne Instance
Customer Care Supervisor
CABC Langford
2,2
Nancy Bond
Customer Experience Specialist
CABC Kelowna
Kelly McFarlane
Administrative Assistant
CABC Kelowna
Jacqueline Sillitoe
Customer Experience Training Coordinator
WSC Customer Service - Altamonte Springs

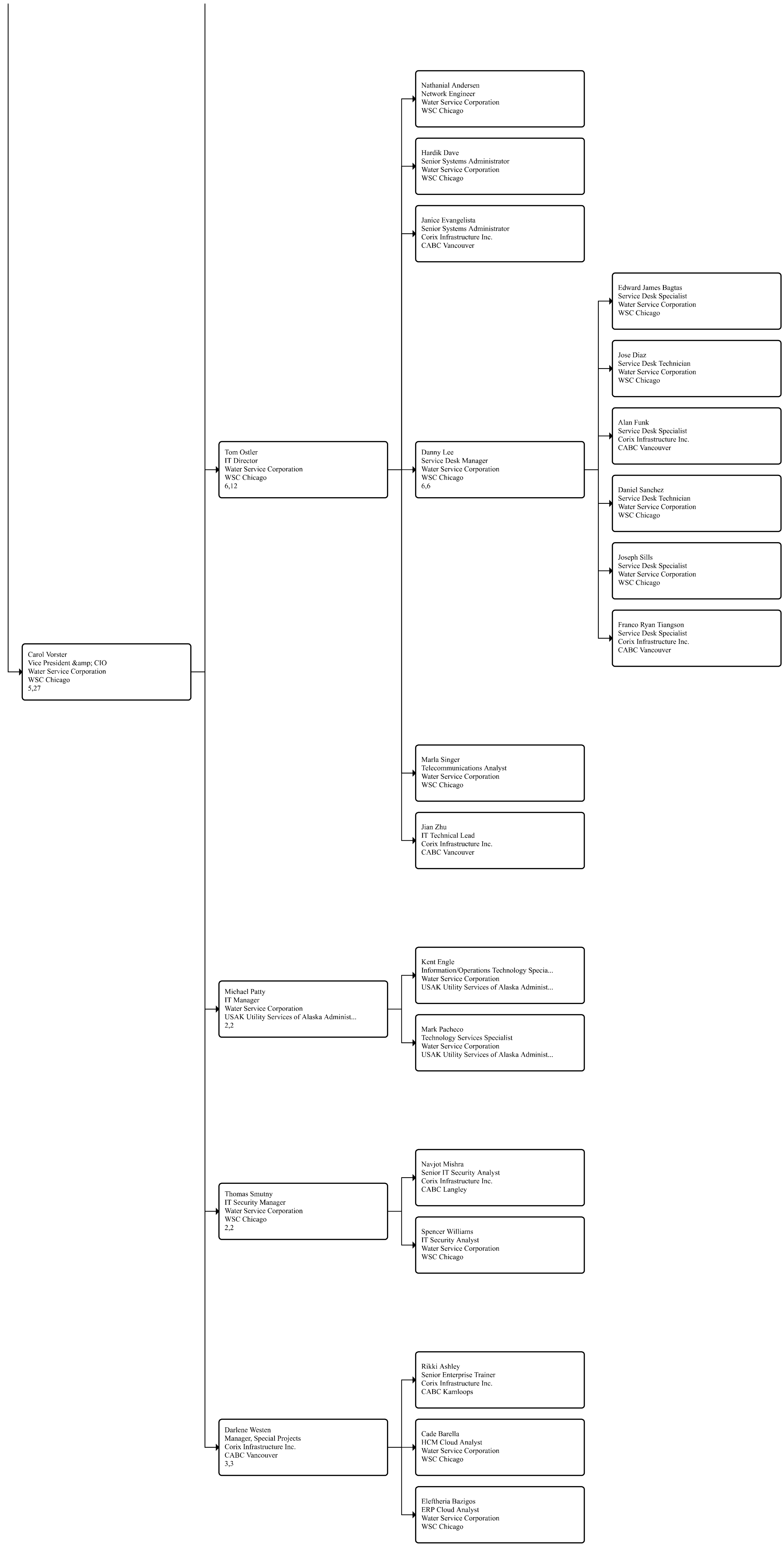

Mario Alonso
EVP, Corporate Development
Water Service Corporation
WSC Chicago
5,31
James Andrejko
Vice President & Principal Accounting Of...
Water Service Corporation
WSC Chicago
4,14
Yuwei Chang
Staff Accountant
Water Service Corporation
USAK Utility Services of Alaska Administ...
Andrew Kim
Controller
Corix Infrastructure Inc.
CABC Langley
4,6
Anna Mae Bacalso
Accounting Manager
Corix Infrastructure Inc.
CABC Langley
2,2
YiQi He
Utilities Accountant
Corix Infrastructure Inc.
CABC Langley
Parambir Singh
Utilities Accountant
Corix Infrastructure Inc.
CABC Langley Gateway Facility Cost Cente...
Kenny Chow
Corporate Accountant
Corix Infrastructure Inc.
CABC Langley
Elizabeth Cosico
Corporate Accountant
Corix Infrastructure Inc.
CABC Langley
Natalia Kondratyeva
Intermediate Accountant
Corix Infrastructure Inc.
CABC Langley
Nicole Osborne
Controller
Water Service Corporation
WSC Chicago
3,4
Jared McNamee
Senior Accountant
Water Service Corporation
WSC Chicago
Victoria Pietras
Senior Accountant
Water Service Corporation
WSC Chicago
Patrick Sampsell
Accounting Supervisor
Water Service Corporation
WSC Chicago
1,1
Valentin Chentsov
Staff Accountant
Water Service Corporation
WSC Chicago
Rose Ranes
Staff Accountant
Water Service Corporation
USAK Utility Services of Alaska Administ...
Philip Der
Vice President, Tax and Special Projects
Corix Infrastructure Inc.
CABC Vancouver
2,5
Donald Hong
Senior Tax Manager
Water Service Corporation
WSC Chicago
1,3
Puja Amin
Tax Manager
Water Service Corporation
WSC Chicago
2,2
Sheree Lee
Tax Specialist
Water Service Corporation
WSC Chicago
Emily Vondriska
Senior Tax Analyst
Water Service Corporation
WSC Chicago
Yixing Li
Senior Tax Manager
Corix Infrastructure Inc.
CABC Vancouver
Simon Hoang
Senior Manager, Treasury Operations
Corix Infrastructure Inc.
CABC Vancouver
1,1
Lisa Nicholson
Credit Specialist and Administrative Ass...
Corix Infrastructure Inc.
CABC Vancouver
Fan Jiang
Director, Corporate Development
Greg Peace
Analyst, Corporate Development

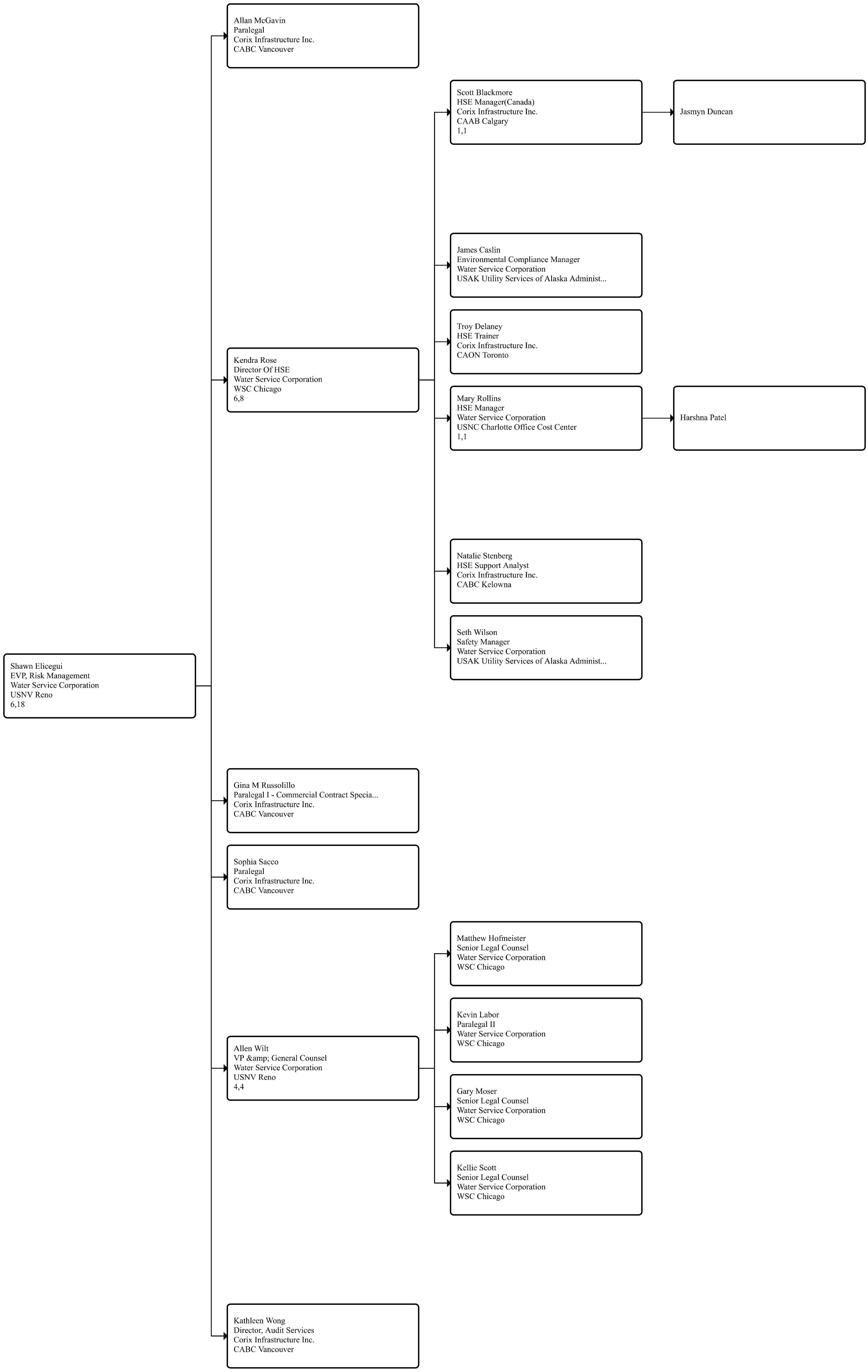

Corix Infrastructure Inc.
CABC Vancouver
1,1
Corix Infrastructure Inc.
CABC Vancouver
Edwin Lee
Corporate Cost Accountant
Corix Infrastructure Inc.
CABC Langley
Akshdeep Gill
Senior Manager, Corporate Finance
Corix Infrastructure Inc.
CABC Vancouver
2,2
Ratanawadi Rammaniya
Corporate Financial Reporting and Plann...
Corix Infrastructure Inc.
CAON Toronto
Maxwell Wang
Vice President, Corporate Financial Repo...
Corix Infrastructure Inc.
CABC Langley
3,5
Lai-Siong Seid
Assistant Controller
Corix Infrastructure Inc.
CABC Langley
Jennifer Toledo
Insurance and Risk Advisor
Corix Infrastructure Inc.
CABC Vancouver

- Marc Harmon, Director of Administration, Water Service Corporation, USAK Utility Services of Alaska Administ..., 3,8
  - Sylvia Brees, Executive Assistant, Water Service Corporation, USAK Utility Services of Alaska Administ...
  - Letitia Brown, Customer Care Manager, Utility Services of Alaska, Inc., USAK Utility Services of Alaska Administ..., 5,5
    - Sarah Hubbard, Collections Specialist, Utility Services of Alaska, Inc., USAK Utility Services of Alaska Administ...
    - Lynn Johnston, Executive Assistant, Utility Services of Alaska, Inc., USAK Utility Services of Alaska Administ...
    - Cindy Lester, New Service Coordinator, Utility Services of Alaska, Inc., USAK Utility Services of Alaska Administ...
    - Eli Merrill, Customer Experience Specialist, Utility Services of Alaska, Inc., USAK Utility Services of Alaska Administ...
    - Diva Velez, Customer Experience Specialist, Utility Services of Alaska, Inc., USAK Utility Services of Alaska Administ...
  - Matthew Wilken, Compliance Manager, Utility Services of Alaska, Inc., USAK Utility Services of Alaska Administ...
- Nathan Meyers, Vice President, People & Culture, Water Service Corporation, WSC Chicago, 11,15
  - Kayla Annerino, Support Generalist, Water Service Corporation, WSC Chicago
  - Ebony Benson, Talent Acquisition & Candidate Experienc..., Water Service Corporation, WSC Chicago
  - Jason Gearhart, HR Business Partner, Water Service Corporation, WSC Chicago
  - Ranike Lacey, Payroll Analyst, Water Service Corporation, WSC Human Resources Cost Center, 1,1
    - TaKarra Camille Roan, Payroll Specialist, Water Service Corporation, WSC Chicago
  - Brent Larsen, Director, Compensation and Benefits, Corix Infrastructure Inc., CABC Vancouver, 1,1
    - Flora Feng, Total Rewards Analyst, Corix Infrastructure Inc., CABC Vancouver
  - Jennifer Ortega, Support Generalist, Water Service Corporation, WSC Chicago
  - Rij Sarmiento, HR Business Partner, Corix Infrastructure Inc., CABC Vancouver
  - Brandon Uzzell, HCM Pay Cloud Analyst, Water Service Corporation, USAK Utility Services of Alaska Administ..., 1,1
    - Ali Lokhandwala, Payroll Accountant, Corix Infrastructure Inc., CABC Vancouver
  - Laura Villegas, HR Administrator, Water Service Corporation, WSC Chicago
  - Dana Wassmann, HR Business Partner, Water Service Corporation, USAK Utility Services of Alaska Administ...
  - Josephine Watts, HR Business Partner, Water Service Corporation, WSC Chicago, 1,1
    - Sofia Thompson, Intern, Water Service Corporation, WSC Chicago

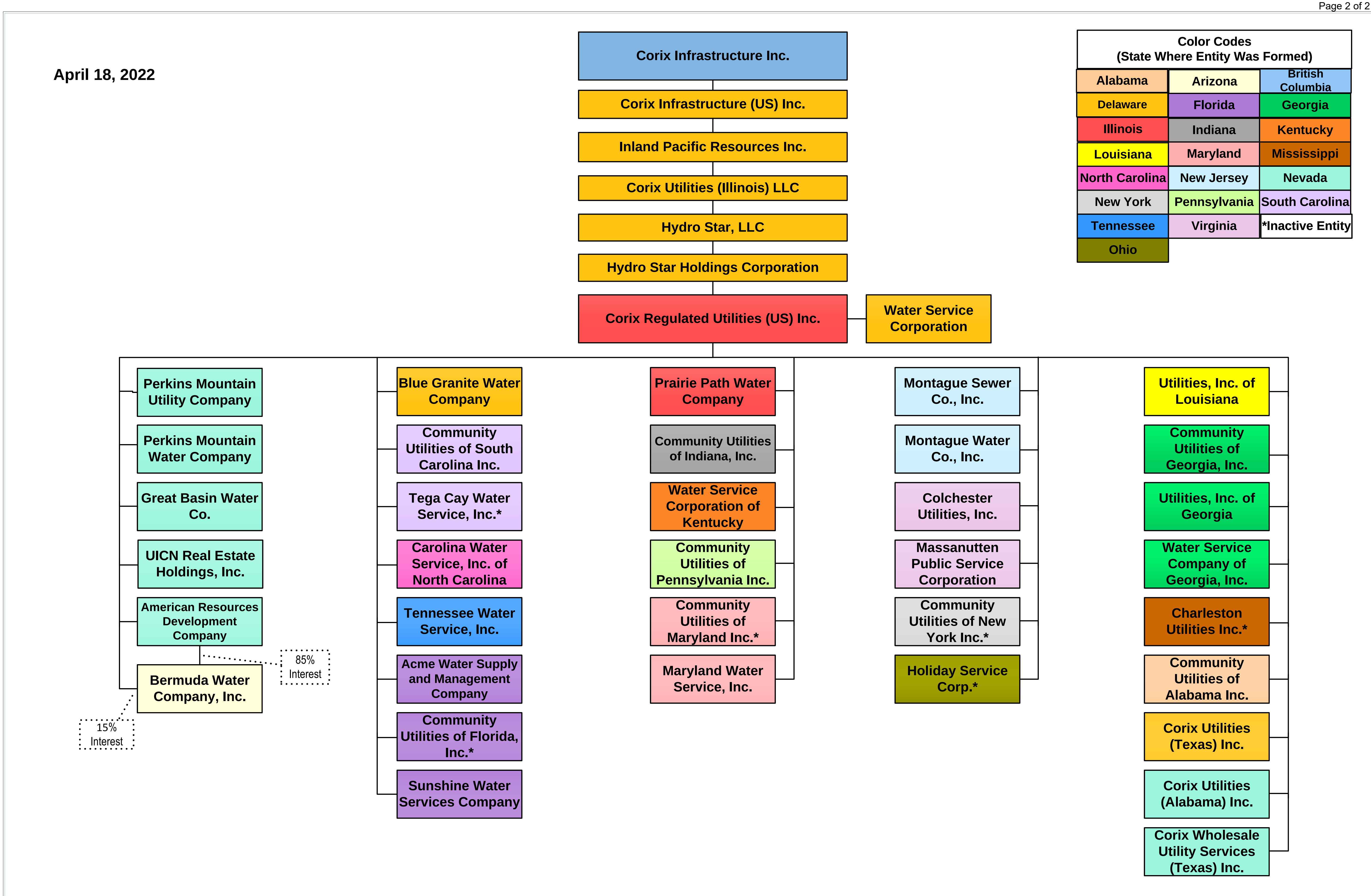
- James Devine, EVP, Support Services, Water Service Corporation, WSC Chicago, 7,96
  - Jordon Novak, Vice President, Support Operations, Water Service Corporation, WSC Chicago, 7,20
    - Valerie Arnold, Purchasing Manager, Water Service Corporation, USSC Greenville, 2,2
      - Vanessa Franklin, Purchasing Coordinator, Water Service Corporation, USNC Charlotte Office Cost Center
      - Virginia Rippy, Purchasing Coordinator, Water Service Corporation, USSC Friars Gate
    - Serena Boyd, Purchasing Card Administrator, Water Service Corporation, WSC Chicago
    - Antoinette Federico, AP Supervisor, Water Service Corporation, WSC Chicago, 5,5
      - Diane Arnoux, AP Clerk, Water Service Corporation, WSC Chicago
      - Adam Feathergill, Payroll and Administrative Services Spec..., Water Service Corporation, WSC Chicago
      - Natalie Hunter, AP Clerk, Water Service Corporation, WSC Chicago
      - Shaurice McKinney, AP Clerk, Water Service Corporation, WSC Chicago
      - Patrycja Wojnicka, AP Clerk, Water Service Corporation, WSC Chicago
    - Stephen Offenborn, Support Service Manager, Water Service Corporation, USAK Utility Services of Alaska Administ..., 4,4
      - Brett Ferris, Purchasing and Office Assistant, Water Service Corporation, USAK Utility Services of Alaska Administ...
      - Linda Finkbeiner, Custodian, Utility Services of Alaska, Inc., USAK Utility Services of Alaska Administ...
      - Georginah Kariuki, Accounts Payable Associate, Water Service Corporation, USAK Utility Services of Alaska Administ...
      - Rebecca Mahlen, Purchasing Agent, Water Service Corporation, USAK Utility Services of Alaska Administ...
    - Tanvi Patel, Accounts Payable Supervisor, Corix Infrastructure Inc., CABC Langley, 2,2
      - Olga Krestsova, Accounts Payable Clerk, Corix Infrastructure Inc., CABC Langley
      - Jocelyn Malabuyoc, Accounts Payable Clerk, Corix Infrastructure Inc., CABC Langley
    - Nancy Paule, Receptionist, Water Service Corporation, WSC Chicago
    - LaWanda Valrie, Fleet Administrator, Water Service Corporation, WSC Chicago
  - Carolyn Abel Grad, Senior Proposal Specialist, Corix Infrastructure Inc., CABC Langley

- Thomas Oakley, Public Relations Director, Water Service Corporation, WSC Chicago, 5,5
  - Elizabeth Kotz, Marketing & Communications Integrator, Water Service Corporation, WSC Chicago
  - Jo-Ann Latta, Senior Proposal Specialist, Corix Infrastructure Inc., CABC Vancouver
  - Colin Miley, Director of Internal Communications, Corix Infrastructure Inc., CABC Langley
  - Eric Wilson, Communication & Public Relations Manager, Corix Infrastructure Inc., CABC Vancouver
- David Parker, VP, Business Transformation, Water Service Corporation, WSC Chicago, 3,3
  - Reese Hannon, Business Strategy & Planning Manager, Water Service Corporation, USSC Greenville
  - Matthew O'Hara, Project Manager - Support Services Trans..., Water Service Corporation, WSC Chicago
  - Jeffrey White, Project Manager - Support Services Trans..., Water Service Corporation, WSC Chicago
- Karen Sasic, Vice President, Billing Operations, Water Service Corporation, USFL State Cost Center, 3,11
  - Ann Raponi, Meter-to-Cash Supervisor, Water Service Corporation, USFL State Cost Center, 5,5
    - Kimberly Bennett, Sr. Meter-to-Cash Specialist, Water Service Corporation, USFL State Cost Center
    - Nikky-Rae DeCoteau, Billing Specialist, Corix Infrastructure Inc., CABC Kelowna
    - Shelia Meacham, Meter-to-Cash Specialist, Water Service Corporation, USFL State Cost Center
    - Lisa Silva, Meter-to-Cash Specialist, Water Service Corporation, USNC Charlotte Office Cost Center
    - Donna Stuike, Billing Specialist, Corix Infrastructure Inc., CABC Kelowna
  - Agnes Sverida, Billing Audit & Compliance Specialist, Water Service Corporation, USLA UIL Mandeville, 2,2
    - Helen Fulmer, Billing Services Specialist, Water Service Corporation, USFL State Cost Center
    - Lori Lynn Jones, Sr. Billing Services Specialist, Water Service Corporation, USFL State Cost Center
  - Jiayang Wang, Revenue and Reporting Supervisor, Corix Infrastructure Inc., CABC Langley, 1,1
    - April Clark, Accounts Receivable Processing Specialis..., Water Service Corporation, USFL State Cost Center
  - Erik Bjerkelund, Manager, Application Services, Corix Infrastructure Inc., CABC Vancouver, 2,3
    - Douglas Huang, Operational Systems Supervisor, Corix Infrastructure Inc., CABC Vancouver, 1,1
      - Colin Anderson, Operational System Analyst, Corix Infrastructure Inc., CABC Vancouver
    - Edmund Lim, Reporting and Data Analyst, Water Service Corporation, WSC Chicago


Nathanial Andersen
Network Engineer
Water Service Corporation
WSC Chicago
Hardik Dave
Senior Systems Administrator
Water Service Corporation
WSC Chicago
Janice Evangelista
Senior Systems Administrator
Corix Infrastructure Inc.
CABC Vancouver
Edward James Bagtas
Service Desk Specialist
Water Service Corporation
WSC Chicago
Jose Diaz
Service Desk Technician
Water Service Corporation
WSC Chicago
Alan Funk
Service Desk Specialist
Corix Infrastructure Inc.
CABC Vancouver
Tom Ostler
IT Director
Water Service Corporation
WSC Chicago
6,12
Danny Lee
Service Desk Manager
Water Service Corporation
WSC Chicago
6,6
Daniel Sanchez
Service Desk Technician
Water Service Corporation
WSC Chicago
Joseph Sills
Service Desk Specialist
Water Service Corporation
WSC Chicago
Franco Ryan Tiangson
Service Desk Specialist
Corix Infrastructure Inc.
CABC Vancouver
Carol Vorster
Vice President & CIO
Water Service Corporation
WSC Chicago
5,27
Marla Singer
Telecommunications Analyst
Water Service Corporation
WSC Chicago
Jian Zhu
IT Technical Lead
Corix Infrastructure Inc.
CABC Vancouver
Kent Engle
Information/Operations Technology Specia...
Water Service Corporation
USAK Utility Services of Alaska Administ...
Michael Patty
IT Manager
Water Service Corporation
USAK Utility Services of Alaska Administ...
2,2
Mark Pacheco
Technology Services Specialist
Water Service Corporation
USAK Utility Services of Alaska Administ...
Navjot Mishra
Senior IT Security Analyst
Corix Infrastructure Inc.
CABC Langley
Thomas Smutny
IT Security Manager
Water Service Corporation
WSC Chicago
2,2
Spencer Williams
IT Security Analyst
Water Service Corporation
WSC Chicago
Rikki Ashley
Senior Enterprise Trainer
Corix Infrastructure Inc.
CABC Kamloops
Darlene Westen
Manager, Special Projects
Corix Infrastructure Inc.
CABC Vancouver
3,3
Cade Barella
HCM Cloud Analyst
Water Service Corporation
WSC Chicago
Eleftheria Bazigos
ERP Cloud Analyst
Water Service Corporation
WSC Chicago


Shawn Elicegui
EVP, Risk Management
Water Service Corporation
USNV Reno
6,18
Allan McGavin
Paralegal
Corix Infrastructure Inc.
CABC Vancouver
Kendra Rose
Director Of HSE
Water Service Corporation
WSC Chicago
6,8
Scott Blackmore
HSE Manager(Canada)
Corix Infrastructure Inc.
CAAB Calgary
1,1
Jasmyn Duncan
James Caslin
Environmental Compliance Manager
Water Service Corporation
USAK Utility Services of Alaska Administ...
Troy Delaney
HSE Trainer
Corix Infrastructure Inc.
CAON Toronto
Mary Rollins
HSE Manager
Water Service Corporation
USNC Charlotte Office Cost Center
1,1
Harshna Patel
Natalie Stenberg
HSE Support Analyst
Corix Infrastructure Inc.
CABC Kelowna
Seth Wilson
Safety Manager
Water Service Corporation
USAK Utility Services of Alaska Administ...
Gina M Russolillo
Paralegal I - Commercial Contract Specia...
Corix Infrastructure Inc.
CABC Vancouver
Sophia Sacco
Paralegal
Corix Infrastructure Inc.
CABC Vancouver
Allen Wilt
VP & General Counsel
Water Service Corporation
USNV Reno
4,4
Matthew Hofmeister
Senior Legal Counsel
Water Service Corporation
WSC Chicago
Kevin Labor
Paralegal II
Water Service Corporation
WSC Chicago
Gary Moser
Senior Legal Counsel
Water Service Corporation
WSC Chicago
Kellie Scott
Senior Legal Counsel
Water Service Corporation
WSC Chicago
Kathleen Wong
Director, Audit Services
Corix Infrastructure Inc.
CABC Vancouver

[redacted]


April 18, 2022
Corix Infrastructure Inc.
Corix Infrastructure (US) Inc.
Inland Pacific Resources Inc.
Corix Utilities (Illinois) LLC
Hydro Star, LLC
Hydro Star Holdings Corporation
Corix Regulated Utilities (US) Inc.
Water Service Corporation
Color Codes
(State Where Entity Was Formed)
Alabama
Arizona
British Columbia
Delaware
Florida
Georgia
Illinois
Indiana
Kentucky
Louisiana
Maryland
Mississippi
North Carolina
New Jersey
Nevada
New York
Pennsylvania
South Carolina
Tennessee
Virginia
*Inactive Entity
Ohio
Perkins Mountain Utility Company
Perkins Mountain Water Company
Great Basin Water Co.
UICN Real Estate Holdings, Inc.
American Resources Development Company
85% Interest
Bermuda Water Company, Inc.
15% Interest
Blue Granite Water Company
Community Utilities of South Carolina Inc.
Tega Cay Water Service, Inc.*
Carolina Water Service, Inc. of North Carolina
Tennessee Water Service, Inc.
Acme Water Supply and Management Company
Community Utilities of Florida, Inc.*
Sunshine Water Services Company
Prairie Path Water Company
Community Utilities of Indiana, Inc.
Water Service Corporation of Kentucky
Community Utilities of Pennsylvania Inc.
Community Utilities of Maryland Inc.*
Maryland Water Service, Inc.
Montague Sewer Co., Inc.
Montague Water Co., Inc.
Colchester Utilities, Inc.
Massanutten Public Service Corporation
Community Utilities of New York Inc.*
Holiday Service Corp.*
Utilities, Inc. of Louisiana
Community Utilities of Georgia, Inc.
Utilities, Inc. of Georgia
Water Service Company of Georgia, Inc.
Charleston Utilities Inc.*
Community Utilities of Alabama Inc.
Corix Utilities (Texas) Inc.
Corix Utilities (Alabama) Inc.
Corix Wholesale Utility Services (Texas) Inc.

AG DR 1-2:

Refer to the Application generally. Provide a list of all entities that direct charge or allocate costs to Water Service Kentucky, and include the total amount of costs that are direct charged and/or allocated to the Company in the test year.

Response: WSC allocates indirect costs WSC and CII incur through guidelines established in the Cost Allocation Manual ("CAM"). Please see Excel file PSC DR 1-49 Exhibit 29 - Schedule C - 2023 CAM Forecast 2022-2025 – CONFIDENTIAL.xlsx for costs charged and allocated in the Forecast Period. In addition, WSC direct charges Benefits costs, as detailed in Exhibit 29.14 (except Workers Compensation Insurance). Finally, Insurance Expense, as shown in Exhibit 29.16 (including Workers Compensation Insurance from Exhibit 29.14), is allocated based on allocation factors detailed in Excel file PSC DR 1-50 - Business Insurance.xlsx.

Witness: James Kilbane

AG DR 1-3:

Refer to the Application generally. Provide the following information for Water Service Kentucky employees, as well as all employees' whose costs are allocated to Water Service Kentucky.

a. Provide the position title and salary for each salaried employee for the years 2017 – 2022.

b. Provide the average raise that the salaried employees received for the years 2017 – 2022. Ensure to explain whether the annual raise is directly connected to a performance review.

c. Provide the average bonus that each salaried employee received for the years 2017 - 2022.

d. Provide all awards given to the salaried employees for the years 2017 – 2022.

e. Provide all vehicle allowances given to the salaried employees for the years 2017 – 2022.

f. Provide all incentive compensation given to the salaried employees for the years 2017 – 2022.

g. Provide the average raise, if any, which will be given to salaried employees for 2023.

h. Provide the position title and wages for each non-salaried employee for the years 2017 – 2022.

i. Provide the average raise provided to the non-salaried employees for the years 2017 – 2022. Ensure to explain whether the annual raise is directly connected to a performance review.

j. Provide the average bonus provided to the non-salaried employees for the years 2017 – 2022.

k. Provide all awards given to the non-salaried employees for the years 2017 – 2022.

l. Provide all vehicle allowances given to the non-salaried employees for the years 2017 – 2022.

m. Provide all incentive compensation given to the non-salaried employees for the years 2017 – 2022.

n. Provide the average raise, if any, which will be given to non-salaried employees for 2023.

o. Provide a detailed explanation of the insurance benefits provided to the Company's employees, including but not limited to health, dental, vision, life insurance, etc. Ensure to include all premiums paid by the Company's employees, premiums paid by the Company or parent company on the employees' behalf, as well as all copays, deductibles, and maximum out of pocket amounts.

p. Provide a detailed explanation of the retirement benefits provided to the Company's employees, including but not limited to, whether there is a defined benefit plan, 401(k) matching, etc.

Response:

In response to Items A – D and F – I, please refer to the response to PSC DR 2-9.

Items J – M are not applicable to WSCK.

e. Please see attached Excel file AG DR 1-003 Auto Allowance CONFIDENTIAL.xlsx

n. The average increase estimated for 2023 for non-salaried employees is 11.2%. Please note that all forecasted increases for 2023 above an estimated 3% merit increase are due to the market pay adjustment implemented concurrently.

o. Please see responses to PSC DR 1-40, PSC DR 1-41, and PSC DR 1-42.

p. Please see response to PSC DR 1-43.

Witness: James Kilbane

AG DR 1-4:

Explain in detail whether any expenses have been removed from the proposed rates for ratemaking purposes. Provide a detailed list of the removed expenses, and explain why Water Service Kentucky removed each expense from the rate case.

Response: Please see Excel file PSC DR 1-49 Exhibits 27, 28, 29 and Subparts - Rev Reqt 2022 WSCKY as filed. In the Office Utilities tab and the Miscellaneous & Travel tab, the following accounts were removed as the PSC has consistently deemed them unrecoverable from customers:

- 587100 Holiday Events / Picnics
- 587200 Meals and Entertainment
- 592000 Airfare
- 594000 Travel – Meals and Entertainment
- 595000 Travel – Meals and Entertainment - 50% Tax Deductible
- 599900 Other Travel

Witness: James Kilbane

AG DR 1-5:

Refer to the Application generally.

a. Identify the type of payments that Water Service Kentucky accepts without assessing a fee.

b. Identify the type of payments that Water Service Kentucky accepts only with a fee assessment.

Response: Please see the Company's website link below for customer payments that incur a processing fee. The Company or its third-party processors do not assess fees on other forms of payment.

https://www.myutility.us/wscky/customer-service/payment-options

Witness: James Kilbane

AG DR 1-6:

Refer to the Application generally. Provide a list that specifies all proposed pro forma adjustments, the amount of each pro forma adjustment, along with a description of each adjustment.

Response: Please see Excel file AG DR 1-6 Adjustments.xlsx for a summary of Forecast Period adjustments and references to support workpapers where necessary. A full discussion and description of the Forecast Period adjustments can be found in the Direct Testimony of James Kilbane.

Witness: James Kilbane

AG DR 1-7:

Refer to the Application generally. Explain whether any vacant position costs are included in the proposed revenue requirement. If so, provide the job title, salary/wage, necessity of the position, date the job was created and vacated, explanation as to why the position is currently vacant, and an estimated date as to when the position will be filled.

Response: As of May 31, 2022, Salaries Expense included two open positions. The first position is the Director of Engineering and Asset Management, salary $133,750, which is necessary to oversee capital projects. The position was created in 2017 under a different title and has been open since November 2021, the position is currently posted and available. The other position is a Kentucky Operations Apprentice, entry-level position. The position was created in 2018 and has been open since May 2021 when its former occupant was promoted to Water-Wastewater Operator I. The elevation of the prior Operations Apprentice to Operator demonstrates the benefit of having the apprentice position to draw new talent to the industry. Estimated date when position to be filled, the position is currently posted and available. Both positions are expected to be filled by September 30, 2022.

Witness: James Kilbane

AG DR 1-8:

Refer to the Application generally. Provide a detailed description of Water Service Kentucky's relationship with the cities of Middlesboro and Clinton. Ensure to include whether Water Service Kentucky has a physical office in either city for customers to call for assistance, come in to pay their bill, etc.

Response: WSCK owns and operates the water systems in both Clinton and Middlesboro. In Clinton, WSCK maintains two full-time employment positions and a permanent shop and office. Customers can drop off payments at it's the office in Clinton. In Middlesboro, WSCK has 11 full-time positions and a permanent shop and offices located at the water plant. In addition to operating the water system in Middlesboro, WSCK also processes the sewer and trash billing for Middlesboro. Through this arrangement, customers can make water, sewer, and trash payments at the Middlesboro City Hall. WSCK, through the support of WSC, has a customer service team and a billing/collections team that customers can contact regarding any water service issues and payment processing. The Company also initiated the MyUtilityConnect app for electronic devices, which allows customers to make payments, request service turn ons/offs, set up the AutoPay feature, view service alerts and notifications, and more.

Witness: Seth Whitney

AG DR 1-9:

Refer to the Application generally. Explain in detail whether Water Service Kentucky provides annual reports of any kind to Middlesboro and Clinton. Explain why or why not.

Response: WSCK provides both Middlesboro and Clinton monthly usage reports. In Middlesboro, WSCK conducts the billing for wastewater and garbage for the City. The City of Clinton uses WSCK data to conduct its wastewater billing.

Witness: James Kilbane

AG DR 1-10:

Refer to the Application, page 2, paragraph 4, in which Water Service Kentucky states that it provides water service to approximately 6,147 customers, or 7,047 equivalent residential customers.

a. Explain in detail the difference between the equivalent residential customers and the actual number of customers.

b. Provide the number of actual customers that Water Service Kentucky provided service to for the years 2017 – present date.

c. Provide the number of equivalent residential customers that Water Service Kentucky provided water service to for the years 2017 - present date.

d. Identify the number of actual customers that Water Service Kentucky provides service to in Middlesboro and Clinton, broken down by each city.

e. Identify the number of actual customers that Water Service Kentucky provides service to in Bell County, outside of the Middlesboro city limits.

f. Identify the number of actual customers that Water Service Kentucky provides service to in Hickman County, outside of the Clinton city limits.

g. Explain in detail if Water Service Kentucky plans to acquire any water or wastewater facilities in Kentucky in the next five years.

Response:

a. The Company uses the term "customers" or "customer count" to signify the number of billable customer accounts. "Equivalent residential customers" denotes a conversion of customer connections based on the AWWA ratios of meter size flow rates to a standard 5/8" meter.

b. Please refer to Exhibit 29 Schedule A, page 6 of 6, where an average of the beginning and end of year customer counts has been provided, and the year-end customer counts have been provided.

c. Please refer to the table below:

Year	ERCS
2017	7,107
2018	7,100
2019	7,095
2020	7,030
2021	7,031
2022-June	7,030

d. There are 572 active water service customers in Clinton and 5,526 active water service customers in Middlesboro. Additionally, there are 8 active private fire connections (6 accounts) and 74 active private fire connections (33 accounts) in Clinton and Middlesboro, respectively. There are 27 active municipal hydrants (1 account) and 267 active municipal hydrants (1 account) in Clinton and Middlesboro, respectively. These are as of June 30, 2022.

e. WSCK services 983 customers outside the Middlesboro City boundaries as of July 21, 2022.

f. WSCK services 47 customers outside the Clinton City boundaries as of July 21, 2022.

g. While WSCK does not have current plans to purchase any other water or wastewater facilities in Kentucky, it is receptive to considering viable acquisition opportunities in Kentucky as they arise.

Witness: Seth Whitney/James Kilbane

AG DR 1-11:

Refer to the Application, page 2, paragraph 5. Water Service Kentucky states that it is requesting an increase in rates because its existing rates for water service do not afford it the opportunity to recover its reasonable operating costs or to earn a just and reasonable rate of return on the investments made.

a. Confirm that Water Service Kentucky was provided a rate increase in Case No. 2020-00160, on December 22, 2020.

b. Confirm that Water Service Kentucky was provided a rate increase in Case No. 2018-00208, on February 11, 2019.

c. Explain in detail the investments that Water Service Kentucky has made since Case No. 2020-00160.

d. Specify how Water Service Kentucky defines a "reasonable rate of return on investments."

Response:

a. WSCK received a rate increase in Case No. 2020-00160.

b. WSCK received a rate increase in Case No. 2018-00208.

c. Please refer to responses to Items 20 and 79 of this response.

d. Please see Application Exhibit 9.5 for Mr. D'Ascendis's discussion of the *Hope* and *Bluefield* Supreme Court rulings, particularly pages 5 and 6.

Witness: Seth Whitney/Dylan D'Ascendis

AG DR 1-12:

Refer to the Application, page 14, paragraph 20. Water Service Kentucky asserts that the initial round of Advanced Metering Infrastructure ("AMI") is set to begin in January 2023. Confirm that the Company will not roll out AMI unless the Commission issues an Order explicitly approving of the same. If not, provide a detailed response

Response: WSCK will not install AMI meters without Commission approval. As part of WSCK's current meter replacement program, WSCK is installing manual-read Neptune meters that will allow AMI technology to be retrofitted in the event of Commission approval.

Witness: Colby Wilson

AG DR 1-13:

Refer to the Application, page 15, paragraphs 21 – 24.

a. Water Service Kentucky states that AMI will compress the meter replacement cycle. Explain how this is beneficial to the customers, if at all.

b. Explain in detail how AMI will benefit customer service.

c. Identify the "troubled locations, less accessible areas, and more dangerous areas" that the Company plans to initially install AMI.

d. Explain in detail what product flexibility Neptune AMI provides the Company.

e. Water Service Kentucky states that "Corix was also able to negotiate a discount on nationwide pricing, providing value and annual price certainty."

i. Explain which "Corix" entity is being referred to in this statement.

ii. Specify the discount that Corix was able to negotiate with Neptune AMI.

f. Provide a breakdown of the proposed total estimated capital cost for the AMI project of $1,696,462.

Response:

a. WSCK's compression of the meter replacement will provide benefits to customers more quickly through an expedited availability of this technology to all customers and an acceleration of other future technological advancements in metering.

b. Please refer to Mr. Wilson's direct testimony found in the Application. AMI will provide more detailed information about customer usage patterns to WSCK customer service to identify leaks or needs for additional water volume. Additionally, greater accuracy and completion in reads may reduce customer service calls and ultimately reduce the volume of service orders needed to address customer concerns.

c. Locations where WSCK will install AMI will be those: behind potentially locked gates or gates to which WSCK does not have keys, in driveways that vehicles frequently block, in yards with aggressive animals, and at locations where customers inadvertently built decks or flower beds over meter boxes.

d. Neptune provides its customers with extensive training and maintenance of all its products. It also offers a wide variety of products for an in-house AMI system including meters, antennas, repeaters, and towers. Neptune has significant experience implementing AMI across the United States that will provide useful knowledge as WSCK implements the use of this technology.

e.

(i) The statement refers to CII, the parent company of CRU and, therefore, WSCK.

(ii) Corix negotiated the following discounts to Neptune's pricing:

Neptune Meter Interface Units (MIUs) and Endpoints: Fifteen percent (-15%)

Neptune reading equipment, Neptune software including, but not limited to, Neptune 360, and data plans (whether resold by Neptune from a third party or not): Ten percent (-10%).

f. Please see Excel file PSC STAFF_DR_1-49 Exhibit 41 - AMI cost impacts REDACTED.xlsx, Quote and details tab.

Witness: Colby Wilson/James Kilbane

AG DR 1-14:

Refer to the Application, Exhibit 3.

a. Explain why the Company is proposing to increase the residential monthly customer service charge from $13.27 to $17.53, or a 32.1% increase.

b. Explain why each customer who resides in the Ambleside subdivision in Middlesboro, Kentucky has to pay a private fire surcharge, which is currently $3.86 per customer, and is proposed to increase to $5.10 per customer.

Response:

a. WSCK proposed an across-the-board increase for all rate classifications that will result tin a 32.1% increase. In the absence of a cost-of-service study, the PSC has previously held that an across-the-board increase is an "appropriate and equitable method of cost allocation." *See Citipower, LLC*, Case No. 2020-00342, 2021 WL 1720943, at *1 (Apr. 27, 2021).

b. In Case No. 2018-00208, the Commission ordered that WSCK charge each Ambleside customer a separate surcharge. The proposed increase to $5.10 reflects a proportionate across-the-board increase of 32.1% to the current tariff rate.

Witness: James Kilbane; Legal

AG DR 1-15:

Refer to the Application, Exhibit 17. Water Service Kentucky specifies that it has 19 employees.

a. Provide a breakdown of each employee's position description, a general discussion of the job duties and responsibilities, and the geographical location for each position.

b. Refer to Water Service Kentucky's 2021 annual report, page 12 of 74, and explain why it states that the Company only has 12 full-time employees instead of 19 employees.

c. Refer to Water Service Kentucky's 2021 annual report, page 13 of 74, and confirm that of the eight contacts including officers and managers listed for the Company, 100% of them have a business address outside of Kentucky.

d. Refer to Water Service Kentucky's 2021 annual report, page 11 of 74, and explain whether it was an error to list the counties that the Company provides water service to as Bell, Clinton, and Hickman.

Response:

a. For employee positions and job descriptions, please see Application Exhibit 9.6 Wage and Benefit Study. For job locations please see Excel file PSC_DR_1-49 Exhibits 18-32-29 – Schedule B S&W Payroll Taxes-Benefits.xlsx. The Regional and Business Unit positions listed in those documents may be filled by an employee located in any of the states in which the Regional and Business Unit operate, or remotely as applicable.

b. The annual report references the 12 full-time employees working in Kentucky. At the time of filing, one position was vacant. The other six positions allocated were excluded because WSCK provided information only relating to full-time, direct Kentucky employees.

c. WSCK confirms this assertion.

d. It was an error to include Clinton County in the annual report.

Witness: James Kilbane

AG DR 1-16:

Refer to the Application, Exhibit 31. Provide a general description for each outside expense that is listed, and indicate whether each expense is included or excluded in the proposed rates.

Response: There are two vendors related to outside services in Application Exhibit 31 that are included in proposed rates: the City of Clinton and the CSC annual invoice. The City of Clinton charges WSCK a $2.00 payment processing fee for each invoice it processes. The CSC annual invoice is for statutory representation.

Witness: James Kilbane

AG DR 1-17:

Refer to the Application, Exhibit 32.

a. Provide an explanation for the increase in base wages in the base period from $756,228 to $821,306 in the forecast period.

b. Provide an explanation for the increase in overtime wages in the base period from $40,857 to $44,675 in the forecast period.

c. Provide an explanation for the increase in holiday wages in the base period from $52,385 to $58,714 in the forecast period.

d. Provide an explanation for the increase in deferred compensation in the base period from $10,756 to $11,163 in the forecast period.

e. Provide an explanation for the increase in 401K Non-Elective Contribution in the base period from $22,171 to $27,957 in the forecast period.

f. Provide an explanation for the increase in 401K Match in the base period from $20,554 to $37,276 in the forecast period.

g. Provide an explanation for the increase in Health Insurance, Net in the base period from $155,805 to $188,595 in the forecast period.

h. Provide an explanation for the increase in Other Employee Benefits (Vision) in the base period from $1,282 to $1,879 in the forecast period.

i. Provide an explanation for the increase in FICA in the base period from $64,037 to $69,712 in the forecast period.

j. Provide an explanation for the $3,617 amount located in the Base Wages row, and under the Senior VP Base period and Forecast period column.

k. Provide an explanation for the $52,197 amount located in the Base Wages row, and under the President Base Period column.

l. Provide an explanation for the $43,763 amount located in the Base Wages row, and under the President Forecast Period column.

Response

For Items A – J, please refer to Excel file PSC_DR_1-49 Exhibits 18-32-29 Schedule B -S&W Payroll Taxes-Benefits REDACTED.xlsx for all wage calculations and increases. It is well established that payroll and health care costs increase every year, and the file includes the forecasted percentages of increases.

k. $52,197 is the current president of WSCK's allocated base salary to WSCK as of 4/1/2022.

l. The Company does not recognize this number and assumes it is a typo. Instead, the number $53,763 represents the current president base salary allocated to WSCK as of April 1, 2023.

Witness: James Kilbane

AG DR 1-18:

Refer to the Direct Testimony of Seth Whitney ("Whitney Testimony"), page 1.

a. Explain how Mr. Whitney is both President of Water Service Kentucky and Cleveland Thermal.

b. Provide a general description of Cleveland Thermal, and explain whether Cleveland Thermal is an affiliate of Water Service Kentucky.

c. Provide the percentage of time that Mr. Whitney is physically at his Middlesboro, Kentucky office versus his office in Cleveland, Ohio.

d. Explain in detail whether Mr. Whitney resides in Kentucky or Ohio.

e. Explain whether the prior President of Water Service Kentucky was also the President of Cleveland Thermal.

f. Explain how Mr. Whitney's salary and benefits are allocated between Water Service Kentucky and Cleveland Thermal.

Response:

a. Mr. Whitney is a President who is responsible for and performs similar activities to support both Cleveland Thermal and WSCK (i.e., the Ohio/Kentucky Business Unit). The combined workload required for these entities can be performed by one employee in a President position.

b. Cleveland Thermal is a district energy company that serves the downtown area of Cleveland, OH. Cleveland Thermal is owned by CII, the parent of CRU, which is the parent of WSCK. Both CRU and Cleveland Thermal are subsidiaries of CIUS, which is a subsidiary of CII.

c. Mr. Whitney's primary office is in Ohio, and he visits the Kentucky systems as needed.

d. Mr. Whitney resides in Ohio.

e. The prior president of WSCK was not the President of Cleveland Thermal. However, the prior president of WSCK was concurrently president of other entities owned by CRU.

f. Please see response to AG DR 1-28 part E.

Witness: Seth Whitney

AG DR 1-19:

Refer to the Whitney Testimony, page 2, in which Mr. Whitney states that Water Service Kentucky provides water service to approximately 6,160 water customers. Reconcile this statement with the Application, page 2, paragraph 4, stating that Water Service Kentucky provides water service to approximately 6,147 customers.

Response: Both figures were approximate at the time of testimony and application drafting. Please reference AG DR 1-10 for an actual customer count.

Witness: Seth Whitney

AG DR 1-20:

Refer to the Whitney Testimony, page 3.

a. Mr. Whitney states that since the last rate case, the Company will have made approximately $2.2 million in capital investment in Kentucky that is not yet reflected in rates. Provide a breakdown of the approximate $2.2 million including a general description of each specific project, necessity of the project, and monetary amount for each specific project.

b. Mr. Whitney states that "under present rates and with good management" Water Service Kentucky is not able to cover its operating costs and earn a reasonable return on its investments. Explain in detail what steps management has taken since the Company's last rate increase on December 22, 2020, to control costs and rein in expenses.

Response:

a. See table in question AG DR 1-79 for a cost breakdown of the approximately $2.2 million capital investment in Kentucky. Below is a general description of each project and an explanation of each project's necessity.

- Queensbury Heights Waterline – A shift in the ground damaged the waterline. As a result, the investment was necessary to replace the waterline with a material that could withstand ground shifts and other environmental conditions.160' Main Replacement – A hill slide and subsequent road washout damaged this portion of waterline. One hundred sixty feet of the waterline were replaced after repairing the surrounding ground.
- Clinton Tank Rehab – For reference, see page 6 of Wilson Direct Testimony.
- Backhoes - The lease for needed backhoes expired, and the Company subsequently purchased the equipment.

- Vehicles - See page 8 of Wilson Direct Testimony for further information on the Company's vehicles.
- AMI Phase 1 – Please see page 9 of Wilson Direct Testimony.
- Main Replacement – Refer to page 8 of Wilson Direct Testimony

b. WSCK manages all its costs on a monthly basis through reviews with FP&A, WSCK, and management. Discussions during reviews focus on adhering to budgeting plans, explaining variance from forecasted costs, and realizing opportunities for cost reduction. WSCK also prioritizes managing unaccounted-for water and identifying and addressing related water issues, keeping expenses down. For further detail, please refer to Wilson Direct Testimony.

Witness: Seth Whitney

AG DR 1-21:

Refer to the Whitney Testimony, pages 4 – 7.

a. Mr. Whitney asserts that Water Service Kentucky is a wholly-owned subsidiary of CRU, and that CRU owns water and sewer utilities in 17 other states. Provide a detailed list of all of the water and sewer utilities that CRU owns broken down by state.

b. Mr. Whitney states that WSC is also a wholly-owned subsidiary of CRU, and provides necessary services to Water Service Kentucky pursuant to a contract.

i. Provide a list of services that WSC provides to Water Service Kentucky Include a description as to why each service could not be handled internally by Water Service Kentucky more cost effectively.

ii. Explain whether Water Service Kentucky has recently analyzed the cost to either hire in-house operations or third-party vendors versus the costs allocated from WSC and Corix Corporate Support Services for comparable services.

c. Mr. Whitney asserts that as president of Water Service Kentucky and Cleveland Thermal, he reports to Steve Lubertozzi, who is Senior Vice President of CRU's North Region. Mr. Whitney further states that Mr. Lubertozzi reports to the Chief Operating Officer of CII, Catherine Heigel. Explain why CRU is reporting to CII.

d. Mr. Whitney states that the costs of WSC is shared among Water Service Kentucky and the other operating companies. Provide the names of the entities that share in WSC's costs, and the allocation factor that is assigned to each entity.

e. Mr. Whitney contends that there are measures employed to control the costs of the support services that Water Service Kentucky receives from the Corix companies.

i. Explain in detail the measures that are employed.

ii. Explain in detail whether Water Service Kentucky has ever refused to pay for an allocation from WSC or the Corix group of companies. If so, provide a detailed list of all allocations that Water Service Kentucky has refused to pay, and explain why each item was not paid.

Response:

a. Please see below for the water and sewer utilities that CRU owns by state:

State	Affiliate
Alabama	Community Utilities of Alabama
Alabama	Utilities of Alabama, Inc.
Arizona	Bermuda Water Company
Florida	Sunshine Water Services
Florida	ACME Water Supply & Management Co.
Georgia	Utilities Inc. of Georgia
Georgia	Water Service Corporation of Georgia
Illinois	Prairie Path Water Company
Indiana	Community Utilities of Indiana
Kentucky	Water Service Corporation of Kentucky
Louisiana	Utilities Inc. Of Louisiana
Maryland	Maryland Water Service
Nevada	Great Basin Water Company
New Jersey	Montague Water Company
New Jersey	Montague Sewer Company
North Carolina	Carolina Water Service, Inc. of NC
Pennsylvania	Community Utilities of Pennsylvania
South Carolina	Blue Granite Water Company
Tennessee	Tennessee Water Service
Texas	Corix Texas
Virginia	Massanutten Public Service Corporation
Virginia	Colchester Public Service Corporation

b.

(i) For an in-depth review of the services that WSC provides to CRU, please refer to Patrick Baryenbruch's testimony and related report submitted with the Application. Mr. Baryenbruch's analysis centers on the reasonableness of allocated costs for centralized support systems. In his analysis, Mr. Baryenbruch presents a detailed list and description of the services that WSC provides to CRU US utilities, which includes those provided to WSCK. See Exhibit PLB-2 (Exhibit 3, pages 6-7) to his direct testimony.

The Corporate Support Services organization logically provides these services because it would create economies of scale that would benefit CRU US Utilities. The 14 detailed services require a diverse set of expertise (e.g., accounting, information technology, human resources, etc.). WSCK would potentially be forced to hire 14 new employees to perform these services, which would cost customers far in excess of that spent for Corporate Support Services to provide these services. The use of economies of scale is common practice in the utilities industry specifically relating to centralized support services by affiliates of regulated utilities.

(ii) Corix Regulated Utilities (US) Inc. retained Mr. Baryenbruch to analyze the extent to which the Corporate Support Services are necessary for the operations of its operating subsidiaries, including WSCK. CRU US also retained Mr. Baryenbruch to assess the reasonableness of the cost allocations associated with the Corporate Support Services. As more fully stated above, Mr. Baryenbruch's report demonstrates, the services are necessary for the continued provisioning of utility services to customers of WSCK and the associated cost allocations are reasonable.

Mr. Baryenbruch also compared WSCK's costs to those of other Kentucky water companies; these costs are primarily administrative. Among other things, Mr. Baryenbruch's cost comparison showed that the costs per customer for services Corporate Support Services provides is below the average of the services provided to the other companies in the Kentucky water company comparison group. Based on this evidence, he concluded that WSCK's expenses, including Corporate Support Services charges from WSC, for the years of 2020 through 2023 are reasonable compared to other utilities.

c. CII is the parent company of CRU. As COO of CII, Ms. Heigel is a member of the executive leadership team responsible for operations for both CII and CRU.

d. Please see Excel file PSC STAFF_DR_1-49 Exhibit 29 - Schedule C - 2023 CAM Forecast 2022-2025 – CONFIDENTIAL.xlsx, Allocation $ tab for the entities that are allocated costs from CII and WSC. In addition, the entities noted in response to Item A above are allocated WSC balance sheet items, as reflected in Application Exhibit 26 for WSCK.

e. Please see Mr. Elicegui's Direct Testimony, Q&A 35 and 36. WSCK has not identified costs that required refusal of allocation.

Witness: Seth Whitney/Shawn Elicegui

AG DR 1-22:

Refer to the Whitney Testimony, page 8.

a. Mr. Whitney states that according to a wage and salary study, there will be increases in base salary, on-call/call-out pay, expanded employee recognition and award platforms, and an allowance for paid time-off to volunteer in the community.

i. Explain in detail the planned increases in base salary.

ii. Explain in detail the planned increases in on-call/call-out pay.

iii. Explain in detail the expanded employee recognition and award platforms.

iv. Explain in detail the allowance for paid time-off to volunteer in the community.

Response:

(i) To provide safe and reliable service, WSCK retains and attract top talent. WSCK must maintain competitive wages and benefits in the markets where it operates. The plan to achieve this goal is outlined below. See response to PSC DR 1-36.

(ii) The chart below details what changes have been made for on-call/call-out pay.

Situation	Previous	Current
On-Call Pay / Day	$15/day	1 Hour at OT Rate / day
Pay for working Call-Out on Weekday	Paid at normal hourly rate if employee has worked 40 hours or less in the week; Paid at OT rate for hours worked over 40	All hours worked on call-out paid at OT Rate
Pay for working Call-Out on Weekend	Paid at normal hourly rate if employee has worked 40 hours or less in the week; Paid at OT rate for hours worked over 40	All hours worked on call-out paid at Double-time rate
Minimum Pay for Call Out (hours)	No Minimum; Employee is only paid for the hours they work	Minimum 2 hours, regardless of hours worked; Paid at OT rate Mon – Fri, Paid Double-Time Sat - Sun

(iii) The new employee recognition and award program harmonizes the company Intranet and recognition platform for all employees. Now, in one central platform for all employees, both managers and peers can recognize one another for things like anniversaries, birthdays, and service awards either publicly or privately between individuals. This encourages managers to recognize and celebrate members of their team, which is an integral component of retaining and motivating employees.

(iv) WSCK provides employees one day a year to volunteer in the community for a cause of their choice.

Witness: Seth Whitney

AG DR 1-23:

Refer to the Whitney Testimony, pages 9 – 10.

a. Mr. Whitney states that Water Service Kentucky's purpose is to help people enjoy a better life and to help communities thrive. Mr. Whitney further states that the Company's vision is to be the preferred utility delivering solutions the customers want. Explain in detail whether Water Service Kentucky believes it is helping its customers and communities by filing for three large rate increases since 2018.

b. Explain how Water Service Kentucky plans to improve stakeholder awareness and collaboration.

c. Explain how Water Service Kentucky plans to pursue growth.

d. Explain how Water Service Kentucky intends to manage business costs.

e. Mr. Whitney characterizes the Company's performance as "excellent" in maintaining high quality water, reducing water quality issues, maintaining high customer satisfaction, completing field activities on time, and community participation.

i. Provide all studies and/or analyses that Mr. Whitney is relying upon when assessing the Company's performance as "excellent" in the above-referenced categories.

ii. Provide further detail as to why the Company's performance is "excellent" in each of the above-referenced categories.

f. Mr. Whitney characterizes the Company's performance as "good, showing improvement" in driver safety, improving the Company's on-time and accurate meter reads, and increased customer participation in new online platforms and options.

i. Provide all studies and/or analyses that Mr. Whitney is relying upon when assessing the Company's performance as "good, showing improvement" in the above-referenced categories.

ii. Provide further detail as to why the Company's performance is "good, showing improvement" in each of the above-referenced categories.

Response:

a. Please see response to AG DR 1-27 b.

b. WSCK will improve stakeholder awareness and collaboration by continuing to communicate and engage with its team members, customers, and communities and provide relevant and timely billing, service, and operational information.

c. WSCK will leverage its relationships in Kentucky to identify potential growth opportunities to capitalize on WSCK's presence in Kentucky to continue focusing on deploying affordable capital and controlling expenses.

d. WSCK manages all its costs through monthly reviews with FP&A, WSCK, and management assessing budgeting, variance, and cost reduction measures. Annual budgets undergo multiple reviews by the business unit, corporate entities, and executives and Board members. The reviews expect any cost incurred to be necessary, prudent, and reasonable.

e. Mr. Whitney made these statements based on his knowledge of the WSCK system and operations, including various statistics. For example, see the attached water quality reports AG DR 1-023 e. See also, NPS survey results, attached to PSC DR 2-06.

f. Mr. Whitney made these statements based on his knowledge of the WSCK system and operations, including various statistics. For example, see response to PSC DR 2-19 plus WSCK's plan to convert to AMI metering. See also, attached driving statistics, attached hereto as Attachment AG DR 1-023 f - Drivers Score Summary Report.

Witness: Seth Whitney

Clinton Water System

PWS ID: **KY0530077**

Water Service Corporation of Kentucky

Annual Water Quality Report 2021

Message from Seth Whitney, President

Dear Water Service Corporation of Kentucky Customers,

I am pleased to present your Annual Water Quality Report for 2021. Transparency, health, and safety are key priorities in our company's efforts to provide a high-quality, reliable water supply. Included in this report are details about where your water comes from, what it contains, and how it compares to regulatory standards.

We are proud to share this report which is based on water quality testing through December 2021. We continually strive to supply water that meets and/or exceeds all federal and state water quality regulations.

Our team is comprised of proud members of the community who are dedicated to providing safe, reliable and cost-effective service to you. This commitment includes acting with integrity, protecting the environment, and enhancing the local community.

Maintaining a safe and reliable water supply is hard work. Our devoted local team of water quality experts are working in the community every day, ensuring that our customers are our top priority, and providing the highest quality drinking water and service – now and well into the future.

Best regards,

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

COVID-19 Response

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Water Service Corporation of Kentucky, should remove or inactivate the virus that causes COVID-19 as they do for other pathogens.

Based on current evidence, the risk to water supplies remains low. Customers can continue using and drinking tap water as usual.

The EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. Disinfecting or other sanitary wipes, including those labeled as "flushable" and other non-toilet paper items, should NOT be flushed in toilet. For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Our sources of water are two wells located in the City of Clinton. They are considered to be ground water sources which draw water from an aquifer. An aquifer is a geological formation that contains water.

Source Water Assessment (SWA)

The Safe Drinking Water Act Amendments of 1996 requires every system to prepare a source water assessment that addresses the system's susceptibility to potential sources of contamination.

For Groundwater sources, the source water assessment is contained in the Wellhead Protection Plan. Water Service Corporation of Kentucky (WSCKY)-Clinton withdraws water from two wells drilled nearly 300 feet deep into the Sparta Sand formation of the Claiborne Group.

A Wellhead Protection plan has been developed to protect the community's water source. This plan has been approved by the Kentucky Division of Water. The protection area covers approximately 177 acres located completely within the jurisdictional boundaries of the City of Clinton. Potential sources of contamination are from fuel storage and the railroad. The City provides sanitary sewer to the entire community thus reducing the potential for non-point source pollution. Water quality results reveal that the drinking water supply is of very good quality only requiring aeration and chlorination for treatment. There is no indication that the aquifer is impacted at the present time by the existing land use activities. A total of six potential sources of contamination are located within the wellhead protection area.

The susceptibility analysis suggests the aquifer's vulnerability to contamination to be at a medium risk. A copy of the wellhead protection plan can be viewed at the Purchase Area Development District office. Contact Mr. Colby Wilison at 1-844-310-5556 for additional information.

We are pleased to report that our drinking water meets all federal and state requirements.

Visit us online at www.WSCKY.com to view the Water Quality Reports. Also visit our website for water conservation tips and other educational material.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

A. ***Microbial contaminants,*** *such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
B. ***Inorganic contaminants****, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
C. ***Pesticides and herbicides,*** *which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
D. ***Organic chemical contaminants****, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
E. ***Radioactive contaminants,*** *which can be naturally occurring or be the result of oil and gas production and mining activities.*

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno -compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

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If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. WSCKY is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items. For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

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Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.

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Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Analysis or test results indicate the constituent is not detectable at minimum reporting limit.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Nephelometric Turbidity Units (NTU)	A measure of water clarity. Turbidity in excess of 5 NTU is just noticeable to the average person.
Treatment Technique (TT)	A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
Running Annual Average (RAA)	Calculated running annual average of all contaminant levels detected.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense.

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2021.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

If You Have Questions Or Want To Get Involved

Since WSCKY is privately owned, there are no scheduled board meetings. This report is available to individual customers. For questions about the quality of our drinking water, or to obtain a copy of this report, contact **Mr. Colby Wilson at 1-844-310-5556.**

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect ***at*** https://connect.myutility.us/connect/

Water Quality Test Results

Contaminants (units)	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
Disinfectants and Disinfection By-Products							
Chlorine (ppm)	2021	1.42	0.53 - 1.42	MRDLG = 4	MRDL = 4	N	Water additive used to control microbes.
Total Trihalomethanes (TTHM) (ppb)	2021	5	3 - 5	No goal for the total	80	N	By-product of drinking water disinfection.
Inorganic Contaminants							
Barium (ppm)	2020	0.049	0.049 - 0.049	2	2	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride (ppm)	2020	0.75	0.75 – 0.75	4	4.0	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate [measured as Nitrogen] (ppm)	2021	1.32	1.32 – 1.32	10	10	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Radioactive Contaminants							
Combined Radium 226/228 (pCi/L)	2016	1.5	1.5	0	5	N	Erosion of natural deposits.

Lead & Copper Contaminants - Regulated at the Customers' Tap

Contaminant (units)	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Violation	Likely Source of Contamination
Copper (ppm)	2019	1.3	1.3	0.497	0	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead (ppb)	2019	0	15	5	0	N	Corrosion of household plumbing systems; Erosion of natural deposits.

Secondary Contaminants

Contaminants (units)	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
*Copper Free (ppm)	2021	0.013	0.013–0.013	N/A	1	N	Erosion of natural deposits, Leaching from wood preservatives
**Fluoride (ppm)	2021	0.83	0.83–0.83	N/A	2	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories

**The copper sample was collected at the water plant and was not collected as part of the Lead and Copper rule.*
***The fluoride sample collected was a part of routine operational checks and was not collected as part of the Inorganic sampling rule.*

EPA requires us to inform you of the information presented in the table above. Additionally, some of the most often requested test results of our water supply are in the table below:

Other Water Quality Information:

Water Quality Parameter	Average Result in 2020
Sodium	13.0 ppm (an 8 ounce serving is free by FDA guidelines)

PFAS Testing

Water Service Corporation of Kentucky continues efforts to conduct statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion.

For the latest PFAS results, visit our website at ***www.WSCKY.com*** and click Water Quality Reports. For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.

Water Service Corporation of Kentucky is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

Middlesboro Water System

PWS ID: **KY0070282**

Water Service Corporation of Kentucky℠

Annual Water Quality Report 2021

Message from Seth Whitney, President

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I am pleased to present your Annual Water Quality Report for 2021. Transparency, health, and safety are key priorities in our company's efforts to provide a high-quality, reliable water supply. Included in this report are details about where your water comes from, what it contains, and how it compares to regulatory standards.

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Best regards,

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

COVID-19 Response

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Water Service Corporation of Kentucky, should remove or inactivate the virus that causes COVID-19 as they do for other pathogens.

Based on current evidence, the risk to water supplies remains low. Customers can continue using and drinking tap water as usual.

The EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. Disinfecting or other sanitary wipes, including those labeled as "flushable" and other non-toilet paper items, should NOT be flushed in toilet. For more information, visit the CDC at https://www.cdc.gov/coronavirus/2019-ncov/php/water.html and EPA at https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater.

Source of Drinking Water

Our source of water comes from Fern Lake, a surface water body located in southern Bell County, Kentucky and northern Claiborne County, Tennessee. While the lake receives much of its water from runoff of rainwater, it is partially spring fed. Currently, the land in the drainage basin is undeveloped with the exception of the fishing camp located at the northeast end of the lake. Because of the forested, undeveloped setting, the lake is a highly protected source of water.

Source Water Assessment

The Safe Drinking Water Act Amendments of 1996 requires every system to prepare a source water assessment that addresses the system's susceptibility to potential sources of contamination. Activities and land uses upstream of WSCK's source of water can pose potential risk to your drinking water. Under certain circumstances contaminants could be released that would pose challenges to water treatment or even get into your drinking water. These activities and how they are conducted, are of interest to the entire community. Activities upstream of your water supply intake are of special concern because they provide little response time for the water system operators.

An analysis of the susceptibility of the WSCKY's water supply to contamination indicates that this susceptibility is high. The largest potential contaminant threat immediately upstream of the intake is land coverage. The predominant land cover is forest; this land cover could be subject to logging which may result in soil erosion if Best Management Practices (BMPs) are not carefully applied. The Management Recommendations for land coverage are: (1) Monitor to ensure compliance with Forestry Conservation Act; and (2) Require BMP (Best Management Practices) implementation per the Forest Landowners Handbook.

The Source Water Assessment has been completed and is available for inspection at the Water Service Corporation office. Contact Mr. Colby Wilson at 1-844-310-5556 for additional information.

The Process of Delivering Your Water

After pumping the water from Fern Lake, we treat it with processes that remove any objectionable tastes or odors. The water is then disinfected through a chlorination process to ensure the water is microbiologically safe (free from bacteria, viruses, and protozoan parasites). These processes primarily achieve filtration and disinfection of the water to remove any harmful chemicals, bacteria and other microorganisms that might be in the water. It is important to note that all drinking water contains some naturally occurring contaminants that are not harmful to our health. In fact, some minerals provide low levels of nutritional value and actually improve the taste of drinking water. After the drinking water has been thoroughly treated at the water treatment facility, we deliver it to homes and businesses through an underground network of pipes.

Individual homes use service lines to tap into larger, underground water main lines. The water is then passed through a water meter—either inside or outside the home—so that the amount of water the household uses can be accurately calculated. The water then flows throughout the home so whenever you turn on your faucet for a drink, you're assured clean, safe water for your entire family.

EPA Wants You To Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

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Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense

We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2021.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Since WSCKY is privately owned, there are no scheduled board meetings. This report is available to individual customers. For questions about the quality of our drinking water, or to obtain a copy of this report, contact Mr. Colby Wilson at 1-844-310-5556.

Visit us online at www.WSCKY.com to view the Water Quality Reports. Also visit our website for water conservation tips and other educational material.

To access your utility account anytime, anywhere, please register for our customer portal & download
MyUtilityConnect ***at*** https://connect.myutility.us/connect/

Water Quality Test Results

Contaminant (units)	Sample Date	Report Level	Range of Detects	MCLG	MCL	MCL Violation	Typical Sources of Contaminants	Likely Source of Contamination
Microbiological Contaminants								
Total Organic Carbon TOC (ppm)	2021	1.00	1.00 - 1.24	N/A	TT	N	Naturally present in the environment.	Water additive used to control microbes.
TOC is measured as ppm, but reported as a ratio. Treatment Technique (TT) is based on the lowest running annual average of the monthly ratios of the % TOC removal achieved to the % of TOC removal required. A minimum ratio of 1.00 is required to meet TT.								
Turbidity (NTU)	2021	*0.059 Highest	0.021-0.059	N/A	**TT-95%	N	Soil and stormwater runoff.	By-product of drinking water disinfection.
**Highest annual measurement was 0.059 in which 100% of monthly sampling was <0.3 NTU.* ***TT – 95% of all monthly samples must be <0.3 NTU and never more than 1 NTU.* Reason for measuring Turbidity: Turbidity is a measure of the cloudiness of the water. It is a good indicator of the effectiveness of the filter system.								

Disinfectants ***(Based on a Running Annual Average (RAA))***

Contaminant (units)	Sample Date	Your Water (RAA)	Range of Detects	MCLG	MCL	MCL Violation	Typical Sources of Contaminants
Chlorine (ppm)	2021	1.19	1.19 - 1.56	MRDLG =4	MRDL =4	N	Water additive used to control microbes.

Stage 2 Disinfectants Byproducts ***(Based on a Locational Running Annual Average LRAA)***

Contaminant (units)	Sample Date	Your Water (LRAA)	Range of Detects	MCLG	MCL	MCL Violation	Typical Sources of Contaminants
Haloacetic Acids - HAAs (ppb)	2021	26	7 - 39	N/A	60	N	By-product of drinking water disinfection.
Trihalomethanes - THMs (ppb)	2021	49	25.5 - 74	N/A	80	N	By-product of drinking water disinfection.

Inorganic Contaminants

Contaminant (units)	Sample Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
Barium (ppm)	2021	0.01	0.01 - 0.01	2	2	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride (ppm)	2021	0.85	0.85 - 0.85	4	4.0	N	Erosion of natural deposits; water additive which promotes strong teeth.

Lead and Copper - Regulated at the Customers' Tap

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	Report Level 90th percentile	# Sites over AL	Violation	Likely Source of Contamination
Copper (ppm)	2020	1.3	1.3	0.359	0	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.

Synthetic Organic Contaminants

Contaminant (units)	Date Sampled	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
Di (2-ethylhexyl) adipate (ppb)	2020	1	0 - 1	400	400	N	Discharge from chemical factories.

Microbiological Contaminants

Contaminant	Collection Date	Total Coliform MCL	Highest No. of Positive	Fecal Coliform or E. Coli MCL	Total No. of Positive E. Coli or Fecal Coliform Samples	Violation	Likely Source of Contamination
Total Coliform Bacteria	2021	1 positive monthly sample	0	TT	0	N	Naturally present in the environment.

Other Water Quality Information: EPA requires us to inform you of the information presented in the table above. Additionally, some of the most often requested test results of our water supply are in the table below:

Water Quality Parameter	Average Result in 2021
Hardness	8 ppm as calcium carbonate
Alkalinity	7.5 ppm as calcium carbonate
pH	7.24 standard units
Dissolved Solids	<40 ppm
Sodium	<10 ppm (an 8-ounce serving is free by FDA guidelines)
Sulfate	5.43 ppm
Iron	<0.01 ppm
Manganese	<0.01 ppm

PFAS Testing

Water Service Corporation of Kentucky continues efforts to conduct statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion.

For the latest PFAS results, visit our website at ***www.WSCKY.com*** and click Water Quality Reports. For more information visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos. Water Service Corporation of Kentucky is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

Violations

In 2021, WSCKY performed all required monitoring for contaminants and did not exceed any allowable levels of these contaminants. In addition, we received **no violations** from the Department of Environmental Protection and was in compliance with applicable testing and reporting requirements.

To access your utility account anytime, anywhere, please register for our customer portal & download MyUtilityConnect ***at*** https://connect.myutility.us/connect/

WSCK Combined Driver Statistics

	Braking Score	HB #	HCB #	Speeding Score	Speed #	PSL #	Acceleration Score	SA #	Safety Score
2021 Q3	89	42	0	91	0	2	90	17	90
2021 Q4	89	32	1	91	0	1	90	12	90
2022 Q1	90	5	0	91	0	1	89	8	90
2022 Q2	90	4	3	91	0	0	91	1	90

HB#	Hard Breaking
HCB#	Hard Core Breaking
PSL#	Posted Speed Limit
SA#	Sudden Acceleration

AG DR 1-24:

Refer to the Whitney Testimony, pages 10 - 11. Mr. Whitney asserts that the proposed AMI meter rollout will improve meter-reading accuracy, facilitate the prompt identification of leaks, eliminate the need for manual meter reads and reduce truck rolls, and allow for redeployment of staff to more important tasks."

a. Explain how the proposed AMI meter rollout would improve meter-reading accuracy.

b. Explain how the AMI meter rollout would facilitate the prompt identification of leaks.

c. Explain how Water Service Kentucky envisions redeploying staff to more important tasks. Ensure to include in the discussion examples of the "more important tasks."

Response:

a. An AMI meter system would improve meter-reading through automation, which removes human error from measuring meter readings. The system would also allow for continuous reading, helping immediately identify anomalies without a lag between employee readings. Further, new equipment will be calibrated for enhanced accuracy that older, existing meters cannot provide.

b. AMI meters can continually operate and can immediately recognize an unexplained increase in water usage. This will prevent a delay in discovery of the leak and allow prompt service to customers.

c. Staff will be redeployed according to the plan described in pages 12 to 13 of Wilson's Direct Testimony, which addresses the opportunities made available by staff redeployment to continue to improve system reliability and customer service.

Witness: Seth Whitney/Colby Wilson

AG DR 1-25:

Refer to the Whitney Testimony, page 11.

a. Mr. Whitney states that in order to enhance the customers' engagement and connection with the Company, Water Service Kentucky updated the company logo. Explain how updating the company logo enhances the customer's engagement and connection to Water Service Kentucky.

b. Mr. Whitney asserts that the Company maintains a relationship with local city leadership to keep them informed. Explain in detail how Water Service Kentucky maintains a relationship with local city leadership, and the steps that the Company takes to keep them informed.

Response:

a. The updated logo uses the imagery of Kentucky and its local WSCK name, which aligns with the reality that WSCK is a local company with local staff serving its customers. As a result, the updated logo allows WSCK's customers to see that it is their fellow citizens who are managing the local water system.

b. WSCK maintains a relationship with local city leadership most directly through its lead staff, State Operations Manager, and President. A combination of routine and periodic in-person visits, e-mails, phone calls, and monthly reporting is used to maintain an open line of communication between WSCK leadership and community leadership.

Witness: Seth Whitney

AG DR 1-26:

Refer to the Whitney Testimony, page 11. Provide a copy of the Net Promoter Score ("NPS") survey.

Response: See response to PSC DR 2-6 and its exhibit.

Witness: Seth Whitney

AG DR 1-27:

Refer to the Whitney Testimony, page 13.

a. Explain in detail why the Company no longer contractually provides wastewater services for Clinton.

b. Mr. Whitney asserts that Water Service Kentucky wants to appropriately balance reliable service and affordable rates for the customers. Explain in detail how filing for three large rates cases since 2018 will allow for affordable rates.

c. Based upon the most recent United States Census information, the poverty rates for the Company's service area are as follows:

Hickman County – 20.9%

Bell County – 29.8%.2

Confirm that Water Service Kentucky is aware of the extreme poverty that exists in its service territory.

Response:

a. WSCK and the City of Clinton, mutually agreed to terminate the contract effective December 31, 2021, because the wastewater services contract was set to expire on March 3, 2022.

b. WSCK's focus on maintaining reliable utility service requires it to make infrastructure investments, employ qualified employees, and expend other necessary capital to ensure effective provision of utility service. These capital investments and payment of competitive wages increase WSCK's costs of water service, which require rate increases. Ever conscious of the need to provide cost-effective rates, WSCK balances the need for reliability and affordability through careful asset planning, management, and cost control. WSCK is aware of this Census data.

WSCK also notes that it sought a low-income rate for its customers in the last rate case. The Attorney General opposed WSCK's proposed low-income rate.

Witness: Seth Whitney

AG DR 1-28:

Refer to the Direct Testimony of James Kilbane ("Kilbane Testimony"), page 2.

a. Explain how Mr. Kilbane is both the Financial Planning and Analysis Manager of Water Service Kentucky and Cleveland Thermal.

b. Provide the percentage of time that Mr. Kilbane is physically at his Middlesboro, Kentucky office versus his office in Cleveland, Ohio.

c. Explain in detail whether Mr. Kilbane resides in Kentucky or Ohio.

d. Refer to Water Service Kentucky's 2021 annual report, and explain why Mr. Kilbane's email listed is associated with Cleveland Thermal and not Water Service Kentucky.

e. Explain how Mr. Kilbane's salary and benefits are allocated between Water Service Kentucky and Cleveland Thermal.

Response:

a. Mr. Kilbane is an FP&A Manager who is responsible for and performs similar activities to support both Cleveland Thermal and WSCK. The combined workload required for these entities can be performed by one employee in the FP&A Manager position.

b. Mr. Kilbane can adequately perform his duties as Financial Planning and Analysis Manager for WSCK at his Ohio office, and technological advancements utilized to facilitate his work activities have not required him to spend time in Middlesboro.

c. Mr. Kilbane resides in Ohio.

d. Generally, WSCK assigns one email address is used per person to avoid confusion with internal and external contacts.

e. Please see Excel file PSC DR 1-49 Exhibits 18-32-29 - Schedule B - S&W-Payroll Taxes-Benefits REDACTED.xlsx., ERC allocations tab for the calculation of the split between

Cleveland Thermal and WSCK. In summary, the CAM manual framework determines the allocations for Cleveland Thermal/WSCK employees – the Tier 1 allocation uses equally weighted values for gross plant, revenues, and headcount. As Cleveland Thermal does not have ERCs to effectuate the Tier 2 calculation, only Tier 1 is used for this split. The Company used the resulting 77.85%/22.15% ratio to allocate costs for Cleveland Thermal/WSCK splits.

Witness: James Kilbane

AG DR 1-29:

Refer to the Kilbane Testimony, page 8, in which he refers to Equivalent Residential Connections as ERCs. Refer also to the Application, page 2, in which Water Service Kentucky refers to Equivalent Residential Customers as ERCs. Explain whether Equivalent Residential Connections are the same or different from Equivalent Residential Customers.

Response: To the extent that both terms are used in the Company's filing, they are used interchangeably.

Witness: James Kilbane

AG DR 1-30:

Refer to the Kilbane Testimony, page 15, in which he asserts that Water Service Kentucky is requesting the rate case expense to be allowed recovery in the rates, and amortized over 36 months.

a. Provide the total rate case expense that has been accrued thus far. Consider this a continuing request.

b. Provide a breakdown of the total rate case expense that has been accrued thus far by category.

c. Provide copies of invoices supporting the level of incurred rate case costs to date and supply such new invoices as they become available.

d. Provide the estimated total rate case expense.

e. Provide a breakdown of the estimated total rate case expense.

Response:

a. Please see Excel file attachment provided in response to PSC DR 1-12. Subsequent updates will be provided under PSC DR 1-12.

b. Please see attachment referenced in part A above.

c. Please see attachments provided in response to PSC DR 1-12.

d. Please see attachment referenced in part A above.

e. Please see attachment referenced in part A above.

Witness: James Kilbane

AG DR 1-31:

Refer to the Kilbane Testimony, page 15.

a. Explain why Water Service Kentucky has a Railroad Easement fee, and provide a copy of the corresponding agreement regarding the same.

b. Water Service Kentucky added a CPI inflator of 8.5% to the Railroad Easement fees. Provide the date when Water Service Kentucky will know the actual amount that the Railroad Easement fees will increase, if at all.

c. Explain why the Middlesboro workshop fee was increased by a 3% inflation assumption.

Response:

a. WSCK has a railroad easement fee because water lines cross under certain railways. Please see PDF file AG DR 1-31 Railroad Management Group.pdf.

b. The dates of each change of easement are reflected in the attachment included in part A above as exhibit A with the current year as the due date.

c. Please see attached agreement, PDF file AG DR 1-31 Middlesboro Workshop Agmt.PDF.

Witness: James Kilbane

COMMERCIAL LEASE AGREEMENT

This Commercial Lease Agreement ("Lease") is made and effective this 9th day of Apr. 2018, by and between Melissa and Lou Edith Yeary ("Landlord") and Water Service Corporation of Kentucky ("Tenant").

Landlord is the owner of land and improvements commonly known and numbered as (address) 501 N 15th Street Middlesboro, KY and legally described as follows (the "Building"):

Warehouse, fenced in lot to the north of the building, parking lot to the east of the building, and all property to the west.

Landlord makes available for lease a portion of the Building designated as All property and structures listed above.

(the "Leased Premises").

Landlord desires to lease the Leased Premises to Tenant, and Tenant desires to lease the Leased Premises from Landlord for the term, at the rental and upon the covenants, conditions and provisions herein set forth.

THEREFORE, in consideration of the mutual promises herein, contained and other good and valuable consideration, it is agreed:

1. **TERM**

A. Landlord hereby leases the Leased Premise to Tenant, and Tenant hereby leases the same from Landlord, for an "Initial Term" beginning April 9th, 2018 and ending upon the death of Eulas Arthur and Lou Edith Yeary.

Landlord shall use its best efforts to give Tenant possession as nearly as possible at the beginning of the Lease term. If Landlord is unable to timely provide the Lease Premises, rent shall abate for the period of delay. Tenant shall make no other claim against Landlord for any such delay.

B. Tenant or landlord, may exit this lease, with no penalty, by giving a written 90-day notice, at any time.

2. **RENTAL**

A. Tenant shall pay to Landlord, during the initial term rental if $6,000.00 per year, payable in installments of $500.00 per month. At the beginning of each calendar year, rent payments shall increase by 3%. Each installment shall be due in advance on the first day of each calendar month during the lease term to landlord by United States Postal Mail at 201 N 15th St., Middlesboro KY 40965.

B. The rental for any renewal

Notwithstanding the forgoing, Tenant shall not use the Leased Premises for the purposes of storing, manufacturing or selling any explosives, flammables or other inherently dangerous substance, chemical, thing or device.

4. **SUBLEASE AND ASSIGNMENT**

Tenant shall have the right without Landlord's consent, to assign this Lease to a corporation with which Tenant may merge or consolidate, to any subsidiary of Tenant, to any corporation under common control with Tenant, or to a purchaser of substantially all of Tenant's assets. Except as set forth above, Tenant shall not sublease all or any part of the Leased Premises, or assign this Lease in whole or in part without Landlord's consent, such consent not to be unreasonably withheld or delayed.

5. **REPAIRS**

During the Lease term, Tenant shall make, at Tenant's expense, all necessary repairs to the Leased Premises. Repairs shall include such items as routine repairs of floors, walls, ceilings, and other parts of the Leased Premises damaged or worn through normal occupancy, except for major mechanical systems or the roof, subject to the obligation of the parties otherwise set forth in this Lease.

6. **ALTERATIONS AND IMPROVEMENTS**

Tenant, at Tenant's expense, shall have the right following Landlord's consent to remodel, redecorate, and make additions, improvements and replacements of and to all or any part of the Leased Premises from time to time as Tenant may deem desirable, provided the same are made in a workmanlike manner and utilizing good quality materials. Tenant shall have the right to place and install personal property, trade fixtures, equipment and other temporary installations in and upon the Leased Premises, and fasten the same to the premises. All personal property, equipment, machinery, trade fixtures and temporary installations, whether acquired by Tenant at the commencement of the Lease term or placed or installed on the Leased Premises by Tenant thereafter, shall remain Tenant's property free and clear of any claim by Landlord. Tenant shall have the right to remove the same at any time during the term of this Lease provided that all damage to the Leased Premises caused by such removal shall be repaired by Tenant at Tenant's expense.

7. PROPERTY TAXES

Landlord shall pay, prior to delinquency, all general real estate taxes and installments of special assessments coming due during the Lease term on the Leased Premises, and all personal property taxes with respect to Landlord's personal property, if any, on the Leased Premises. Tenant shall be responsible for paying all personal property taxes with respect to Tenant's personal property at the Leased Premises.

8. INSURANCE

A. If the Leased Premises or any other party of the Building is damaged by fire or other casualty resulting from any act or negligence of Tenant or any of Tenant's agents, employees or invitees, rent shall not be diminished or abated while such damages are under repair, and Tenant shall be responsible for the costs of repair not covered by insurance.

B. Landlord shall maintain fire and extended coverage insurance on the Building and the Leased Premises in such amounts as Landlord shall deem appropriate. Tenant shall be responsible, at its expense, for fire and extended coverage insurance on all of its personal property, including removable trade fixtures, located in the Leased Premises.

C. Tenant and Landlord shall, each at its own expense, maintain a policy or policies of comprehensive general liability insurance with respect to the respective activities of each in the Building with the premiums thereon fully paid on or before the due date, issued by and binding upon some insurance company approved by Landlord, such insurance to afford minimum protection of combined single limit coverage of bodily injury, property damage or combination thereof. Landlord shall be listed as an additional insured on Tenant's policy or policies of comprehensive general liability insurance, and Tenant shall provide Landlord with current Certificates of Insurance evidencing Tenant's compliance with this Provision. Tenant shall obtain agreement of Tenant's insurers to notify Landlord that a policy is due to expire at least ten (10) days prior to such expiration. Landlord shall not be required to maintain insurance against thefts within the Leased Premises or the Building.

9. UTILITIES

Tenant shall pay all charges for water, sewer, gas electricity, telephone and other services and utilities used by Tenant on the Leased Premises during the term of this Lease unless otherwise expressly agreed in writing by Landlord. In the event that any utility or service provided to the Leased Premises is not separately metered, Landlord shall pay the amount due and separately invoice Tenant for Tenant's pro rata share of the charges. Tenant shall pay such amounts within fifteen (15) days of the date of invoice. Tenant acknowledges that the Leased Premises are designed to provide standard office use electrical facilities and standard office lighting. Tenant shall not sue any equipment or devices that utilize excessive electrical energy or which may, in Landlord's reasonable opinion, overload the wiring or interfere with electrical services to other tenants.

10. **SIGNS**

Following Landlord's consent, Tenant shall have the right to place on the Leased Premises, at location selected by Tenant, any signs which are permitted by applicable zoning ordinances and private restrictions. Landlord may refuse consent to any proposed signage that is in Landlord's opinion too large, deceptive, unattractive or otherwise inconsistent with or inappropriate to the Leased Premises or use of any other tenant. Landlord shall assist and cooperate with Tenant in obtaining any necessary permission from governmental authorities or adjoining owners and occupants for Tenant to place or construct the foregoing signs. Tenant shall repair all damage to the Leased Premises resulting from the removal of signs installed by Tenant.

11. **ENTRY**

Landlord shall have the right to enter upon the Leased Premises at reasonable hours to inspect the same, provided Landlord shall not thereby unreasonably interfere with Tenant's business on the Leased Premises.

12. **DAMAGE AND DESTRUCTION**

Subject to Paragraph 8 A as stated above, if the Leased Premises or any part thereof or any appurtenance thereto is so damaged by fire, casualty or structural defects that the same cannot be used for Tenant's purposes, then Tenant shall have the right within ninety (90) days following damage to elect by notice to Landlord to terminate this Lease as of the date of such damage. In the event of minor damage to any part of the Leased Premises, and if such damage does not render the Leased Premises unusable for Tenant's purposes, Landlord shall promptly repair such damage at the cost of the Landlord. In making the repairs called for in this Paragraph, Landlord shall not be liable for any delays resulting from strikes, governmental restrictions, inability to obtain necessary materials or labor or other matters which are beyond the reasonable control of Landlord.

Tenant shall be relieved from paying rent and other charges during any portion of the Lease term that the Leased Premises are inoperable or unfit for occupancy, or use, in whole or in part, for Tenant's purposes. Rentals and other charges paid in advance for any such periods shall be credited on the next ensuing payments, if any, but if no further payments are to be made, any such advance payments shall be refunded to Tenant. The provisions of this Paragraph extend not only to the matters aforesaid, but also to any occurrence which is beyond Tenant's reasonable control and which renders the Leased Premises, or any appurtenance thereto, inoperable or unfit for occupancy or use, in whole or in part, for Tenant's purposes.

13. **DEFAULT**

If default shall at any time be made by Tenant in the payment of rent when due to Landlord as herein provided, and if said default shall continue for fifteen (15) days after written notice thereof shall have been given to Tenant by Landlord, or if default shall be made in any of the other covenants or conditions to be kept, observed and performed by Tenant, and such default shall continue for thirty (30) days after notice thereof in writing to Tenant by Landlord without correction thereof then having been commenced and thereafter diligently prosecuted, Landlord may reenter said premises. Landlord shall have, in addition to the remedy above provided, any other right or remedy available to Landlord on account of any Tenant default, either in law or equity. Landlord shall use reasonable efforts to mitigate its damages.

14. **QUIET POSSESSION**

Landlord covenants and warrants that upon performance by Tenant of its obligations hereunder, Landlord will keep and maintain Tenant in exclusive, quiet, peaceable and undisturbed and uninterrupted possession of the Leased Premises during the term of this Lease.

15. **CONDEMNATION**

If any legally, constituted authority condemns the Building or such part thereof which shall make the Leased Premises unsuitable for leasing, this Lease shall cease when the public authority takes possession, and Landlord and Tenant shall account for rental as of that date. Such termination shall be without prejudice to the rights of either party to recover compensation from the condemning authority for any loss or damage caused by the condemnation. Neither party shall have any rights in or to any award made to the other by the condemning authority

16. **NOTICE**

Any notice required or permitted under this Lease shall be deemed sufficiently given or served if sent by United States certified mail, return receipt requested, addressed as follows:

Landlord's address

201 N 15th St

Middlesboro, KY 40965

Tenant's address

102 Water Plant Road - P.O. Box 818

Middlesboro, KY 40965

Landlord and Tenant shall each have the right from time to time to change the place notice is to be given under this paragraph by written notice thereof to the other party.

17. **SUCCESSORS**

The provisions of this Lease shall extend to and be binding upon Landlord and Tenant and their respective legal representatives, successors and assigns.

18. **COMPLIANCE WITH LAW**

Tenant shall comply with all laws, orders, ordinances and other public requirements now or hereafter pertaining to Tenant's use of the Leased Premises. Landlord shall comply with all laws, orders, ordinances and other public requirements now or hereafter affecting the Leased Premises.

19. **FINAL AGREEMENT**

This Agreement terminates and supersedes all prior understandings or agreements on the subject matter hereof. This Agreement may be modified only by a further writing that is duly executed by both parties.

IN WITNESS WEREOF, the parties have executed this Lease as of the day and year listed below.

Landlord

Melissa L. Yeary 4-5-2018

Melissa Yeary Date

Lou Edith Yeary 4-5-2018

Lou Edith Yeary Date

Subscribed and sworn to before me by MELISSA YEARY AND LOU EDITH YEARY
This the 5TH *day of* APRIL, 20 18
Notary Public Signature Garry Nelson Bingham
My Commission Expires 04/29/2020

GARRY N. BINGHAM NOTARY PUBLIC ID NO 555985 MY COMMISSION EXPIRES 04/29/20 STATE AT LARGE, KY.

Tenant – Water Service Corporation of Kentucky Authorized Representatives

4/9/18

Mike Miller – Regional Manager Date

Subscribed and sworn to before me by Mike Miller
This the 9th *day of* April, 20 18
Notary Public Signature Deborah Ring
My Commission Expires Jan. 29, 2022

DEBORAH RING
Official Seal
Notary Public – State of Illinois
My Commission Expires Jan 29, 2022

Railroad Management Company, LLC
Vanessa Walsh
Director -Portfolio Management

October 3, 2017

Steven Vaughn
c/o WATER SERVICE CORP OF KY
PO BOX 818
MIDDLESBORO, KY 40965

RE:

License #	Audit #
NS141237	RHN4001-035
NS141239	RHN4001-033
NS141242	RHN4001-004
NS141244	RHN4001-031
NS141245	RHN4001-024
NS141247	RHN4001-043
NS141250	RHN4001-029
NS141251	RHN4001-006
NS141252	RHN4001-012
NS141254	RHN4001-014
NS141255	RHN4001-001
NS141263	RHN4001-026
NS141267	RHN4001-022
NS141268	RHN4001-041
NS141277	RHN4001-037
NS141278	RHN4001-020
NS141281	RHN4001-016
NS141282	RHN4001-010
NS141296	RHN4001-039

Dear Steven Vaughn

Let this letter agreement serve as confirmation that the countersigned parties, Railroad Management Company IV LLC ("RMC") and Kentucky Water Service Company ("KWS"), have reached an agreement with regard to the annual license fee amounts ("License Fee") as per Exhibit "A."

In lieu of the 2017 originally billed invoices, RMC will accept the discounted amounts described in Exhibit A column "Year 1" ($4,528.33). It is understood that KWS has already paid $5,335.00 for the 2017 year and RMC will credit the amount of $806.67 towards 2018 invoices. KWS shall pay the amounts described in Exhibit A for "Year 2" during 2018 and "Year 3" during 2019. Thereafter the License Fee shall be increased by the Consumer Price Index or a minimum of 3.00%.

All other terms in the original agreements shall remain in full force and effect. Both parties hereto certify they are duly authorized to execute this agreement and agree to keep the terms of this letter agreement strictly confidential.

Agreed and Accepted,

Railroad Management Company IV LLC
By: ~~Howard L Armistead III~~ Cary Newman
Title: Manager
Date: 10/13/17

Agreed and Accepted,

Kentucky Water Service Company
By: Justin Kersey
Title: VP Operations
Date: 10/3/2017

5910 North Central Expressway
Suite 1580
Dallas, Texas 75206
phone 214 750 8028
facsimile 214 750 6844

Railroad Management Company, LLC
Vanessa Walsh
Director -Portfolio Management

EXHIBIT A

No.	Name	Audit No.	Folder No.	DueDate	Year 1	Paid to date	Diff	Year 2	Year 3	Location City	Location County	Location State
NS141245	KENTUCKY WATER SERVICE CO	RHN4001-024	24221	1/10/2017	$ 400.00	$ -	$ (400.00)	$ 824.00	$ 1,273.08	MIDDLESBORO	BELL	KY
NS141252	KENTUCKY WATER SERVICE CO	RHN4001-012	24151	11/1/2017	$ 215.00	$ -	$ (215.00)	$ 365.00	$ 515.00	MIDDLESBORO	BELL	KY
NS141254	KENTUCKY WATER SERVICE CO	RHN4001-014	24165	11/21/2017	$ 258.33	$ -	$ (258.33)	$ 532.17	$ 822.20	MIDDLESBORO	BELL	KY
NS141263	KENTUCKY WATER SERVICE CO	RHN4001-026	24234	1/15/2017	$ 215.00	$ -	$ (215.00)	$ 365.00	$ 515.00	MIDDLESBORO	BELL	KY
NS141267	KENTUCKY WATER SERVICE CO	RHN4001-022	24207	12/22/2016	$ 215.00	$ -	$ (215.00)	$ 365.00	$ 515.00	ARBOR	BELL	KY
NS141268	KENTUCKY WATER SERVICE CO	RHN4001-041	24330	1/13/2017	$ 215.00	$ -	$ (215.00)	$ 365.00	$ 515.00	MIDDLESBORO	BELL	KY
NS141277	KENTUCKY WATER SERVICE CO	RHN4001-037	24302	9/2/2017	$ 215.00	$ 485.00	$ 270.00	$ 365.00	$ 515.00	ARBOR	BELL	KY
NS141278	KENTUCKY WATER SERVICE CO	RHN4001-020	24193	12/14/2016	$ 215.00	$ -	$ (215.00)	$ 365.00	$ 515.00	MIDDLESBORO	BELL	KY
NS141281	KENTUCKY WATER SERVICE CO	RHN4001-016	24179	12/5/2016	$ 215.00	$ -	$ (215.00)	$ 365.00	$ 515.00	MIDDLESBORO	BELL	KY
NS141296	KENTUCKY WATER SERVICE CO	RHN4001-039	24315	11/1/2017	$ 215.00	$ -	$ (215.00)	$ 365.00	$ 515.00	MIDDLESBORO	BELL	KY
NS141237	KENTUCKY WATER SERVICE COMPANY	RHN4001-035	24288	8/1/2017	$ 215.00	$ 485.00	$ 270.00	$ 365.00	$ 515.00	MIDDLESBORO	BELL	KY
NS141239	KENTUCKY WATER SERVICE COMPANY	RHN4001-033	24275	7/22/2017	$ 215.00	$ 485.00	$ 270.00	$ 365.00	$ 515.00	FERN LAKE	BELL	KY
NS141242	KENTUCKY WATER SERVICE COMPANY	RHN4001-004	24109	4/1/2017	$ 215.00	$ 485.00	$ 270.00	$ 365.00	$ 515.00	ARBOR	BELL	KY
NS141244	KENTUCKY WATER SERVICE COMPANY	RHN4001-031	24260	7/20/2017	$ 215.00	$ 485.00	$ 270.00	$ 365.00	$ 515.00	STONY FORK JUNCTION	BELL	KY
NS141247	KENTUCKY WATER SERVICE COMPANY	RHN4001-043	24343	7/1/2017	$ 215.00	$ 485.00	$ 270.00	$ 365.00	$ 515.00	ARBOR	BELL	KY
NS141250	KENTUCKY WATER SERVICE COMPANY	RHN4001-029	24247	8/1/2017	$ 215.00	$ 485.00	$ 270.00	$ 365.00	$ 515.00	ARBOR	BELL	KY
NS141251	KENTUCKY WATER SERVICE COMPANY	RHN4001-006	24123	5/28/2017	$ 215.00	$ 485.00	$ 270.00	$ 365.00	$ 515.00	STONY FORK JUNCTION	BELL	KY
NS141255	KENTUCKY WATER SERVICE COMPANY	RHN4001-001	24095	4/18/2017	$ 215.00	$ 485.00	$ 270.00	$ 365.00	$ 515.00	STONY FORK JUNCTION	BELL	KY
NS141282	KENTUCKY WATER SERVICE COMPANY	RHN4001-010	24137	3/1/2017	$ 430.00	$ 970.00	$ 540.00	$ 730.00	$ 1,030.00	BELT JUNCTION	BELL	KY
					$ 4,528.33	$5,335.00	$ 806.67	$7,926.17	$11,365.28			

5910 North Central Expressway
Suite 1580
Dallas, Texas 75206
phone 214 750 8028
facsimile 214 750 6844

AG DR 1-32:

Refer to the Kilbane Testimony, page 21, in which Mr. Kilbane states that "[w]ith regard to pro-forma depreciation expense on computer assets in this proceeding: Petitioner is seeking approval to reestablish computer asset net book values using the Commission's recommended deprecation rates for this class of asset." Explain this request in detail. In the response, ensure to discuss whether Mr. Kilbane is referring to Project Phoenix computer assets, in which the Commission has repeatedly denied recovery in the past, or any computers that the Commission previously ruled were already fully depreciated.

Response: In the process of calculating the restatement of net plant and depreciation amounts for certain assets, the Company inadvertently included the Project Phoenix costs that the Commission has previously denied. Please see below the calculated revenue requirement components.

	Base Period	**Forecast Period**
Utility Plant In-Service	22,823,917	22,823,917
Accumulated Depreciation	(14,874,494)	(15,635,291)
Net Plant	7,949,423	7,188,626
Rate of Return, pre-tax	9.28%	9.39%
Return on Rate Base	737,706	675,012
Gross up rate - PSC Fee, Bad Debt	1.043079	1.043079
Total Revenue for Return	769,486	704,091
WSCK Portion (2.28%)	**17,544**	**16,053**
Depreciation Expense	1,014,396	1,014,396
Gross up rate - PSC Fee, Bad Debt	1.043079	1.043079
Total Revenue on Depreciation	1,058,096	1,058,096
WSCKY portion (1.608%)	**17,015**	**17,015**
Total Revenue Requirement	**34,559**	**33,068**

Witness: James Kilbane

AG DR 1-33:

Refer to the Application generally. Confirm whether Water Service Kentucky is requesting any costs associated with the J.D. Edwards financial software system or the Oracle customer care and billing system to be included in the revenue requirement in the pending rate case. If so, identify the costs included in the revenue requirement by amount and by type.

Response: Please see response to AG DR 1-32 above for Project Phoenix. Please see below for revenue requirements for enhancements and upgrades to the JDE and CC&B systems.

JDE	**Base Period**	**Forecast Period**
Utility Plant In-Service	933,760	933,760
Accumulated Depreciation	(376,075)	(407,201)
Net Plant	557,685	526,559
Rate of Return, pre-tax	9.28%	9.39%
Return on Rate Base	51,753	49,444
Gross up rate - PSC Fee, Bad Debt	1.043079	1.043079
Total Revenue for Return	53,983	51,574
WSCK Portion (2.28%)	**1,231**	**1,176**
Depreciation Expense	41,500	41,500
Gross up rate - PSC Fee, Bad Debt	1.043079	1.043079
Total Revenue on Depreciation	43,288	43,288
WSCKY portion (1.608%)	**696**	**696**
Total Revenue Requirement	**1,927**	**1,872**

CC&B	**Base Period**	**Forecast Period**
Utility Plant In-Service	1,002,964	1,002,964
Accumulated Depreciation	(108,068)	(141,500)
Net Plant	894,896	861,464
Rate of Return, pre-tax	9.28%	9.39%
Return on Rate Base	83,046	80,891
Gross up rate - PSC Fee, Bad Debt	1.043079	1.043079
Total Revenue for Return	86,624	84,376
WSCK Portion (2.28%)	**1,975**	**1,924**
Depreciation Expense	44,576	44,576
Gross up rate - PSC Fee, Bad Debt	1.043079	1.043079
Total Revenue on Depreciation	46,497	46,497
WSCKY portion (1.608%)	**748**	**748**
Total Revenue Requirement	**2,723**	**2,671**

Witness: James Kilbane

AG DR 1-34:

Refer to the Kilbane Testimony, page 25.

a. Explain why it is necessary for the Fusion project to be given regulatory asset treatment.

b. Provide a breakdown of the $22,803 in incurred costs for the proposed regulatory asset along with the dates that each of the costs were incurred.

Response:

a. Please see response to PSC DR 2-11.

b. Please see attached file, AG DR 1-34 Fusion Reg Asset Detail.xlsx.

Witness: James Kilbane

AG DR 1-35:

Refer to the Kilbane Testimony, page 26.

a. Provide the total monetary amount that Water Service Kentucky has been allocated for the Oracle Fusion Enterprise Resource Planning system.

b. Specify how many years Water Service Kentucky customers will pay for the Oracle Fusion Enterprise Resource Planning system in rates.

Response: Please see Application Exhibit 28 and 28.7 for the Oracle Fusion Asset line item. Please see Excel file PSC DR 1-49 Exhibit 29 - Schedule C - 2023 CAM Forecast 2022-2025 – CONFIDENTIAL, Allocation $ tab, which provides the allocation of the total project cost and amortization period through March 2029. This term covers the initial 5-year agreement and renewal of 5 years that is reasonably certain to be executed.

Witness: James Kilbane

AG DR 1-36:

Refer to the Kilbane Testimony, page 27. Explain how the proposed annualized revenue requirements for 2023 – 2027 equal to the approximately $1.7 million in estimated capital costs for the AMI project.

Response: Please see Excel file PSC DR 1-49 Exhibit 41 - AMI cost impacts REDACTED.xlsx for the detailed calculations supporting the annualized revenue requirements.

Witness: James Kilbane

AG DR 1-37:

Refer to the Direct Testimony of Shawn M. Elicegui ("Elicegui Testimony"), page 5.

a. Mr. Elicegui states that Water Service Kentucky does not have any employees, and appears to indicate the local Kentucky employees are employed by WSC. Explain why Water Service Kentucky does not employ the local Kentucky employees.

b. Mr. Elicegui states there are 13 employees dedicated exclusively to providing service to Water Service Kentucky's customers. Explain whether these 13 employees are the local employees stationed in Kentucky.

c. Mr. Elicegui states there are 6 regional employees who support utility services provided to customers in Kentucky. Provide the job title, job description, percentage of time that each employee works on Water Service Kentucky's projects, and location of each employee.

Response:

a. WSCK has no employees. Water Service Corporation employs all of the operational employees for each Corix Regulated Utilities (US) Inc. subsidiary. Having a single legal employer of all of CRU US's operating companies allows Water Service Corporation to leverage scale by, among other things, providing employees with a comprehensive set of training, safety programs, and technology systems (e.g., Microsoft Office 365 through an enterprise agreement).

b. The 13 employees Mr. Elicegui referenced are full-time, Kentucky-only employees who are stationed in Middlesboro and Clinton.

c. Please see Excel file PSC DR 1-49 Exhibits 18-32-29 Schedule B S&W-Payroll Taxes-Benefits REDACTED.xlsx. The Base Period tab includes the job title, description, location, and allocation percentage. The allocation percentage reflects the approximate amount of time each employee works for WSCK.

Witness:

Seth Whitney/James Kilbane

AG DR 1-38:

Refer to the Elicegui Testimony, pages 7 - 9. Explain in full detail why Corix Corporate Support Services is employed by two different corporations (WSC and CII) instead of by one corporation.

Response: WSC employs all the employees who reside in the United States. Corix Infrastructure Inc. employees all the employees who reside in Canada.

Witness: Shawn Elicegui

AG DR 1-39:

Refer to the Direct Testimony of Patrick L. Baryenbruch ("Baryenbruch Testimony"), page 5.

a. Explain why Corporate Support Services and WSC are billing Water Service Kentucky separately if all overhead functions are supposed to be streamlined and merged.

b. Provide a detailed list and explanation regarding the different services that Corix Corporate Support Services and WSC provide to Water Service Kentucky.

c. Due to WSC providing all of the necessary overhead functions for Water Service Kentucky in the past, explain why the Commission should approve additional costs being allocated to the Company by Corix Corporate Support Services.

Response:

a. Since 2019, Corix's restructuring and realignment has primarily integrated Corporate Support Services that teams from CII and WSC, two distinct legal entities, provide through operating as a single organizational structure. These entities have distinct employees who provide this labor. All associated expenses appear under the categories of Customer Accounts and Administrative and General (A&G) in the annual report Kentucky water companies file. All billings designated to WSC relate to utility operations services such as Supply O&M, Treatment O&M, and Transmission O&M. The distinction between billings for both entities can be seen in the table below from page 3 of Mr. Baryenbruch's report. The table presents employee counts for WSC and Corporate Support Services.

Type of Service	2021 Staffing by Affiliate Entity CII	WSC	Total
Corporate Support Services	51	136	187
Utility Operations		450	450
Total	51	586	637

Note: CII is the abbreviated name of Corix Infrastructure Inc., which is the parent company.

b. See attached Exhibit 6 Responsibility Matrix from Mr. Baryenbruch's report that details a list of functions that a water company requires to provide service to its customers. This 3-page list identifies if the provided service originates from CRU US or Corporate Support Services. CRU US includes those employees who are involved in utility operations functions.

c. To be precise, WSCK presumes "overhead functions" to mean A&G services (i.e., Corporate Support Services). As Mr. Elicegui discusses in his testimony, the Corix restructuring and realignment resulted in a single Corporate Support Services organization, which eliminated the overlap of two distinct layers of management and precludes duplicative charges or services in WSCK's current and future Corporate Support Services. Mr. Baryenbruch further explains in his direct testimony why Corporate Support Services are necessary for Water Service Kentucky to ultimately provide water to its customers. He also presents substantial evidence that these charges are reasonable.

Also, as shown below, projected 2023 Corporate Support Services charges to Water Service Kentucky are only 1.7% higher than its actual 2021 charges.

WSCK	Actual 2021	Budget 2022	Projected 2023	Increase (2021-2023) Amount	Percent
Corp Support Services Charges	$ 662,413	$ 657,056	$ 673,367	$ 10,954	1.7%

All these factors prove that Water Service Kentucky should be allowed to recover the requested amount for Corporate Support Services.

Witness: Pat Baryenbruch/Shawn Elicegui

AG DR 1-40:

Refer to the Direct Testimony of Quentin M. Watkins ("Watkins Testimony"), page 3. Mr. Watkins states that he and the Company identified 19 employee positions that were determined to be relevant for the market salary and benefits study, including 6 positions that are allocated in part to Water Service Kentucky by its parent company Corix, and 13 positions which are directly employed by Water Service Kentucky.

a. Reconcile this statement with Mr. Elicegui's aforementioned statement that Water Service Kentucky does not have any employees. Explain the response in detail.

b. Explain which Corix entity Mr. Watkins in referencing in the above statement.

Response:

a. Please see response to AG DR 1-37 parts A and B.

b. Of the 6 positions allocated in part to WSCK, 4 are WSC employees and the other 2 are CIU employees given the responsibilities for Cleveland Thermal, which fall outside of CRU. WSC is a subsidiary of CRU.

Witness: Quentin Watkins/Shawn Elicegui

AG DR 1-41:

Refer to the Watkins Testimony, page 4.

a. Confirm that according to the Wage and Benefit Study, as of 2023, Water Service Kentucky's projected base compensation will be 3% above market midpoint averages.

b. Mr. Watkins states that the total compensation in 2022 including salary and health and retirement benefits costs are 7% above the market midpoint. Provide the results for the total compensation including salary and health and retirement benefit costs for 2023.

Response:

a. Confirmed. Please see Table VII on page 6 of the Wage and Benefit Study, which lists the market position for each position in-scope for the study and summarizes WSCK's overall market position based on a weighted average of all positions.

b. Mr. Watkins did not conduct a total compensation study for 2023 because 2022 report contains the comparison of WSCK's total compensation, which include health and retirement benefits, whereas the 2023 base salary comparison is company specific. The base salary analysis uses position-by-position review of all 19 WSCK in-scope positions whereas the health and retirement benefit analysis contain inflated base salaries from values from the Bureau of Labor Statistics ("BLS"). Mr. Watkins did not believe it was neither appropriate nor informative to apply a historical value to 2023 given the current high inflationary economic environment. Additionally, BLS values came from a survey sample of all positions at all utilities in the United States that inevitably include an unknowable amount of noise and data from incomparable organizations (e.g., utilities with part-time positions, utilities with a mix of employees who participate in health and retirement programs, and utilities with significantly more administrative positions than WSCK). To understand how WSCK's health and retirement benefits compare to similar utilities, please reference the section of the report which compares WSCK's pay practices to those of other utilities in Kentucky. Tables XV and XVI on pages 11-12 compare the employer and employee costs for Preferred Provider Organization ("PPO") and High Deductible Health Plan ("HDHP") plans respectively. These indicate that WSCK's costs align with peers' costs.

Please see attached Total Compensation Study from 2022, AG DR 1-41 WSCK Market Position – Total Compensation 2022.

Witness: Quentin M. Watkins

AG DR 1-42:

Refer to the Direct Testimony of Colby Wilson ("Wilson Testimony"), page 5.

a. Expound upon the leak detection measures that Water Service Kentucky's operations staff conducts.

b. Explain the process of monitoring storage tank levels through SCADA.

c. Provide Water Service Kentucky's annual water loss percentage for 2017, 2018, 2019, 2020, 2021, and thus far for 2022.

Response:

a. WSCK utilizes multiple leak-detection tools/equipment that its employees keep on-hand throughout the day. This allows WSCK operators to monitor troubled locations throughout the day while checking the normal meter reading routes daily.

b. SCADA is a telematic application that reads the pressure of the water inside the tanks and correlates that pressure to feet of water inside the tanks, collects this data, and stores it in the SCADA system for the operators to monitor. An operator is alerted to any sudden changes in usage though SCADA alarms and phone dialer that contacts all operators after normal operation shifts.

c.

2017- Clinton= 5.9%	2017 WSCK total= 3.4% ----
Middlesboro= 3.2%	
2018- Clinton= 14.9%	2018 WSCK total= 13.9%
Middlesboro= 13.9%	
2019- Clinton= 8.4%	2019 WSCK total=14.0%
Middlesboro= 14.3%	
2020- Clinton=6.72%	2020 WSCK total=18.8%
Middlesboro= 19.6%	
2021- Clinton =13.4%	2021 WSCK total= 15.2%
Middlesboro=15.4%	
2022- Clinton=7.52%	2022 WSCK up to date= 15.3%
Middlesboro= 16.11%	

Witness: Colby Wilson

AG DR 1-43:

Refer to the Wilson Testimony, page 6.

a. Mr. Wilson asserts that the Company has received 23 water quality complaints in the past 17 months related to "discoloration or taste and order concerns." Explain whether Mr. Wilson intended to state "order concerns" or if this is a typographical error, and if so, provide the correct word.

b. Mr. Wilson states that the discoloration complaints may have been due to possible iron leaching from unlined cast-iron water mains. Explain in detail how Water Service Kentucky addressed the discoloration issue.

c. Provide a general description and resolution for each of the 23 water quality complaints.

Response:

a. Mr. Wilson made a typographical error. It should have read Discoloration and **Odor** concerns.

b. For an individual customer who has a water discoloration issue, WSCK removes the meter and directly flushes the customer's line until the problem is resolved. WSCK also employs a bi-annual flushing program to control iron leaching and uses a polyphosphate chemical to sequester leached iron.

c. In 18 of the 23 water quality complaints, WSCK flushed water to clear it by removing the customers' meter or flushing a nearby hydrant. For the remaining 5 instances, WSCK found no problem that required remediation. WSCK has an ongoing, more stringent flushing plan for problematic areas. For one area in Clinton, WSCK installed an automatic flusher to optimize the amount of water used and efficiently enable more frequent flushing.

Witness: Colby Wilson

AG DR 1-44:

Refer to the Wilson Testimony, page 8.

a. Explain in detail why the proposed Clinton Main Replacement is necessary at this time. Ensure to include in the discussion how the project will provide a loop in the system, and improve water quality to this section of the community.

b. Provide the make, model, mileage, and estimated value of the two vehicles that are proposed to be replaced with new vehicles.

c. Explain in detail whether Water Service Kentucky intends to sell the two older vehicles, and if so, how it will apply those funds.

d. Provide the make, model, and mileage of the two vehicles that Water Service Kentucky proposes to purchase.

Response:

a. WSCK selected this section of the Clinton main for replacement because of the persistent need to flush the line daily to maintain adequate service and water quality. The line will loop directly into a 6-inch main sourced from the Grubbs subdivision tank. The proposed tie-in will occur near the site of the installed automatic flusher, which will eliminate the need to daily flush and manually monitor the line.

b. The two vehicles are a 2006 Chevy pickup that will not be replaced but rather will be used as a spare vehicle for employees to use during routine or emergency maintenance of their primary vehicle; and a 2011 Toyota Prius with 121,626 miles, WSCK does not know the value of that vehicle.

c. The operations team has determined that the 2011 Prius is not a practical vehicle to suit the operational needs to support the system, and a Chevy Colorado is a more useful alternative.

The Prius is also fully depreciated. WSCK intends to record any proceeds to the Gain/Loss - Sale of Fixed Assets account.

d. WSCK proposes to purchase 2022 and 2023 Chevy Colorado trucks. These will be brand new vehicle purchases.

Witness: Colby Wilson/James Kilbane

AG DR 1-45:

Refer to the Application generally. Provide the projected lifespan of Water Service Kentucky's current Automated Meter Reading ("AMR") meters and related infrastructure.

Response: The book depreciation life of the meters is 44.444 years. The AMR meters and equipment in Clinton are approximately 12 years old and are at the end of their useful life, which is consistent with the lifespan of the Badger batteries attached to the meters.

Witness: James Kilbane

AG DR 1-46:

Refer to the Application generally.

a. Provide the remaining useful life of the existing AMR infrastructure. If the existing AMR system has not been fully depreciated, explain: (i) how Water Service Kentucky proposes to recover those stranded costs; and (ii) whether the stranded costs were taken into consideration in any cost-benefit analysis the Company may have conducted.

b. If the existing AMR system has not been fully depreciated, provide the plant in service, accumulated depreciation, and net book value of the AMR system as of December 31, 2021, the most current month with actual information and projected as of December 31, 2022, and December 31, 2023.

Response:

a. Please see the attached summary of the Clinton system meter assets as of 6/30/2022, Excel fil AG DR 1-46 Clinton Meter asset record.xlsx.

The Company recommends the remaining book value ($45,946 on June 30, 2022) remain in the utility plant and CIAC accounts and continue depreciation/amortization per the authorized depreciable life. The cost-benefit analysis supplied in response to Staff DR 2-19A did not include the remaining depreciable balance for the AMR assets.

b. Please see the attachment provided in response to part A above.

Witness: James Kilbane

AG DR 1-47:

Explain whether Water Service Kentucky conducted any cost-benefit analyses regarding the proposed AMI system, or any component parts thereof, which is the subject of the Company's CPCN application in the instant docket. If so:

a. Provide a copy of all such analyses;

b. Ensure that the analyses indicate the source of all cost savings that the AMI deployment will provide; and,

c. Explain whether the analyses included potential savings derived from enhanced leak detection capability of an AMI system.

Response:

a. See response to PSC DR 2-19a.

b. See response to PSC DR 2-19a.

c. See response to PSC DR 2-19a.

Witness: Colby Wilson

AG DR 1-48:

Provide all technical specifications of the AMI meters that Water Service Kentucky proposes to procure.

a. Provide all technical specifications of all component parts of the proposed AMI system, including back-haul equipment and communication modules.

Response: Please see Application's Exhibit 40 Plans and Specs for CPCN.

Witness: Colby Wilson

AG DR 1-49:

Provide the expected lifespan of the AMI meters that Water Service Kentucky proposes to procure.

Response: The AMI is assumed to utilize the depreciable life of 44.444 years.

Neptune provides a 20-year warranty, with the first 10 being fully comprehensive and the last 10 being prorated. Based on the warranty period, the expected lifespan is 20 years at minimum.

Witness: James Kilbane

AG DR 1-50:

Explain whether the communications modules for the proposed AMI meters are built-into the meter, or are a separate component.

a. If a separate component, provide the expected lifespan of the module.

b. If the battery for the communications module is a separate component, provide the projected lifespan of the battery for the communications module.

Response: This meter is considered fully integrated into one unit. See response to AG DR 1-49.

Witness: Colby Wilson

AG DR 1-51:

Identify the utility(ies) that provides electric service to Water Service Kentucky's service territory.

Response: Kentucky Utilities is the electricity provider.

Witness: James Kilbane

AG DR 1-52:

Explain the measures Water Service Kentucky took to determine whether any existing communications networks in the Company's service territory have the capabilities of transmitting data between the AMI meters (once deployed) and the Company's offices. In addition, provide the results of any due diligence conducted in this regard.

Response: Neptune conducted a propagation study that determined the best application for WSCK's service areas. Due to terrain issues in the service area, cellular data is not a reliable or secure method for transmitting AMI data and is not a viable option for WSCK. Please see the propagation study attached as PDF file AG DR 1-52 Propagation Study CONFIDENTIAL.pdf.

Witness: Colby Wilson

AG DR 1-53:

Explain whether Water Service Kentucky has considered conducting its Request for Proposals regarding the AMI metering infrastructure on a joint basis with other neighboring water utilities. If not, why not?

Response: While WSCK works closely with its neighboring water and wastewater utilities, both the Middlesboro and Clinton systems are relatively isolated. WSCK had open conversations about meter selection and the reliability of industry products and experience, but a joint project between those systems was not feasible. WSCK will leverage its consolidated purchasing power through Corix to implement AMI through an experienced provider, and WSCK employees will perform all maintenance and installations on the equipment.

Witness: Colby Wilson

AG DR 1-54:

Explain whether Water Service Kentucky conducted any due diligence as to utilizing a new all-AMR meter reading system, together with attendant costs. If not, why not?

a. If Water Service Kentucky conducted any such due diligence, provide all such results.

b. Provide a discussion regarding all other alternatives Water Service Kentucky considered.

Response:

a. WSCK was diligent in its desire to employ the latest technology in the industry.

b. WSCK did not want to deploy antiquated technology in its water systems, and Corix and WSCK have identified that industry best practice is to begin adoption of AMI equipment for water meters. See also the response to AG DR 1-53.

Witness: Colby Wilson

AG DR 1-55:

Provide a discussion regarding the degree to which the proposed new AMI infrastructure will be compatible with Water Service Kentucky's current billing, customer service, and other systems. Include in your discussion the extent to which Water Service Kentucky considered interoperability between its existing systems and the proposed AMI infrastructure, together with the potential for obsolescence.

Response: WSCK uses the Neptune 360 software that collects and stores all meter reads. This program works seamlessly with WSCK's Customer Care and Billing systems. WSCK confirmed with Neptune that this system would be fully compatible with CC&B during the selection process.

Witness: Colby Wilson

AG DR 1-56:

Explain whether any of Water Service Kentucky's meters are located in underground vaults. If so, provide a discussion on the difficulties involved with creating an RF network capable of receiving all transmissions from underground meters.

Response: WSCK's meters are in underground vaults. Minimal difficulties will occur because the antenna for the AMI meters will be located on the vault lid and the collectors will be positioned in pre-determined central locations to gather meter data.

Witness: Colby Wilson

AG DR 1-57:

In the event the Commission grants the CPCN, explain what Water Service Kentucky will do with its current meter reading personnel. Provide also the monetary savings in meter reading expense Water Service Kentucky expects to achieve through the deployment of the AMI metering infrastructure, and explain whether any of those savings will be related in any manner to the current meter reading personnel. Finally, detail any projected meter reading expense savings included in the Company's filing.

Response: WSCK employs field techs who performs various maintenance jobs throughout the system and work all customer-generated work orders. WSCK does not employ specific meter readers. If granted, the CPCN would allow filed techs to spend more time on direct customer issues. Ultimately, this would likely result in savings over time through reduced unaccounted for water, fewer truck rolls for meter reads and re-reads, reduced pumping costs, and reduced chemical costs.

Witness: Colby Wilson

AG DR 1-58:

Explain whether Water Service Kentucky anticipates utilizing any remote shut-off valves after the AMI infrastructure is installed.

Response: WSCK does not anticipate utilizing remote shut-off valves.

Witness: Colby Wilson

AG DR 1-59:

Explain whether Water Service Kentucky anticipates providing to customers any sort of portal or other means to access the customers' usage data.

Response: WSCK will provide customers usage data through the MyUtilityConnect mobile app and on the WSCK website.

Witness: Colby Wilson

AG DR 1-60:

Reference the Wilson Testimony, page 10, wherein he discusses the MyUtilityConnect app to which customers will have access. Explain: (i) how this access will be provided; (ii) over which electronic devices the app will function; and (iii) whether customers will incur any additional costs for using this app, and if so, how much.

Response:

(i) Customers can download the MyUtilityConnect app on a mobile phone or tablet, and they may access it through the MyUtilityConnect.com website and the Company's website.

(ii) The app is accessible through the App Store and Google play platforms.

(iii) Customers will not incur additional costs for using the app.

Witness: Colby Wilson

AG DR 1-61:

Refer to the Application generally. In the event the Commission grants the proposed CPCN, explain whether Water Service Kentucky proposes to maintain its current meter testing program.

Response: WSCK plans to maintain in-house testing of approximately 10% of the meters annually.

Witness: Colby Wilson

AG DR 1-62:

Reference the Wilson Testimony, page 10, lines 15 – 16. Explain the meaning of the sentence, "Manual read meters have begun being installed in the system in 2022 with full retro fit ability."

a. Explain why the Company would use what sounds like an interim type of meter before receiving approval to install the proposed AMI infrastructure.

b. Explain the additional cost that will be incurred in transitioning from the current AMR metering technology to the "manual read meters."

Response:

a. WSCK is standardizing its equipment in its current meter replacement program to Neptune meters. The Neptune meter is a manual read meter, consistent with the current program, capable of having AMI equipment added to it; it is not an interim meter.

b. The only AMR equipment WSCK uses is in the Clinton water system. That equipment is at the end of its useful life and needs to be replaced. If not replaced, a tech must roll a truck to each location to manually read the meters – reducing techs' time to address other system issues, which will result in increased costs. If the equipment is not replaced, WSCK will be required to reassess current staffing levels because of the increased personnel hours to conduct meter reads.

Witness: Colby Wilson

AG DR 1-63:

Refer to the Commission's recent final Orders in Case No. 2021-00190 at 15, and in Case No. 2021-00214 at 18 – 20, regarding the requirements to file lead/lag studies with all non-cash items removed in order to properly determine the level of cash working capital. Provide a lead/lag study with all non-cash items removed.

Response:

Objection. This request for information is unduly burdensome. The cost to incur a lead/lag study, which would be recovered from customers, would outweigh its benefit. In fact, several Commission cases confirm that the 1/8 method utilized by WSCK in its application is reasonable. *See, e.g.*, *Kentucky-American Water Company*, Case No. 2021-00434, 2022 WL 1322876, at *15 (Ky. PSC Staff Report Apr. 25, 2022)("The 1/8 formula approach is an alternate method that has been historically accepted by this Commission, is easy to apply, and will result in a reasonable working capital allowance."); *Kentucky-American Water Co.*, Case No. 2014-00390 (Ky. PSC Staff Report Mar. 31, 2015) (quoting Accounting for Public Utilities (by Robert L. Hahne and Gregory E. Aliff Deloitte & Touche, Revision Release 7, December 1990) at 5-7)("[T]he 45-day or 1/8 formula approach frequently used by the Commission has been widely accepted because 'it was determined to be a reasonable estimate of what a lead-lag study would produce without the related expense of a lead-lag study'"); Delta Natural Gas Co., Case No. 97-066, 1997 WL 34863540 (Ky. PSC Dec. 8, 1997)("The Commission finds that, in the absence of any lead-lag study, the 1/8th formula method should be used to determine the level of cash working capital."); *see also Kentucky Power Co.*, Case No. 2002-00169, 2003 WL 26453635, at *16 (Ky. PSC Mar. 31, 2003); *Kentucky Utilities Co.*, Case No. 2000-00439, 2001 WL 36415874, at *4 (Ky. PSC Apr. 18, 2001); *Union Light, Heat, and Power Co.*, 146

P.U.R.4th 81 (Ky. PSC July 23, 1993); *Louisville Gas and Electric Co*., 119 P.U.R.4th 431 (Ky. PSC Dec. 21, 1990).

Without waiving the foregoing objection, WSCK states as follows:

WSCK has not performed a lead/lag study, nor has it retained a consultant to perform such a study. In utilizing the 1/8 method commonly supported by the Commission, WSCK notes that it did not include depreciation expense—a noncash item—in its calculation.

Witness: Legal; James Kilbane

AG DR 1-64:

Provide a copy of the summary pages for all cash working capital lead/lag studies submitted by or on behalf of Water Service Kentucky affiliates in other rate proceedings in other jurisdictions over the last five years and identify the states and case citations for each.

Response: Please see the attached PDF files:

- AG DR 1-64 Alaska.pdf, related to Regulatory Commission of Alaska docket numbers U-21-070/U-21-071.
- AG DR 1-64 Florida.pdf, related to Florida Public Service Commission docket number 20200139-WS.

Witness: James Kilbane

UTILITY SERVICES OF ALASKA
CASH WORKING CAPITAL REQUIREMENT - LEAD-LAG STUDY
FOR THE TEST YEAR ENDED DECEMBER 31, 2020

Line No.	Description	Water Utilities Revenue Requirement	Sewer Utilities Revenue Requirement	Total Company Revenue Requirement	Average Daily Amount	Revenue Lag Days	Expense Lead Days	Net (Lead)/Lag	Working Capital Requirement	Work Paper Reference
	(A)	(B)	(C)	(D) = (B)+ (C)	(E)=(D)/365	(F)	(G)	(H)=(F)-(G)	(I)=(E)x(H)	(J)
1	**Fuel & General Expenses:**									
2	Fuel and Power	$ 2,020,669	$ 1,588,224	$ 3,608,893	$ 9,887	58.1	41.9	16.2	$ 160,499	B-1
3	Chemicals	648,335	227,733	876,068	2,400	58.1	30.4	27.7	66,559	B-2
4	Waste Disposal	266,157	43,657	309,814	849	58.1	30.5	27.6	23,398	B-3
5										
6	**Operation & Maintenance Expenses:**									
7	Wages, Salaries	1,017,109	2,069,160	3,086,269	8,456	58.1	10.4	47.8	403,785	C-1
8	Benefits & Pensions	1,700,048	2,061,232	3,761,279	10,305	58.1	34.3	23.8	245,329	C-2
9	Corporate Allocations and Service Company Char	3,327,525	3,525,471	6,852,996	18,775	58.1	20.8	37.3	699,677	C-3
10	Other O&M	1,514,844	1,927,128	3,441,973	9,430	58.1	33.8	24.3	229,428	C-4
11										
12	**Taxes Other Than Income Taxes:**									
13	Public Regulation Commission Expense	95,459	117,702	213,161	584	58.1	75.7	(17.6)	(10,272)	D-1
14	Property Taxes	178,001	377,801	555,802	1,523	58.1	86.5	(28.4)	(43,229)	D-2
15	Payroll Taxes	209,405	245,304	454,708	1,246	58.1	12.4	45.8	57,004	D-3
16										
17	**Income Taxes:**									
18	Federal Current	655,867	786,065	1,441,932	3,950	58.1	37.5	20.6	81,423	E-1
19	State Current (Alaska)	375,624	484,175	859,799	2,356	58.1	37.5	20.6	48,551	E-2
20										
21	**Interest on Customer Deposits**	30,828	36,568	67,396	185	58.1	365.0	(306.9)	(56,666)	F
22										
23	**Total Company Working Capital**								$ 1,905,486	

Exhibit DSD-2
Page 1 of 1

Schedule of Working Capital Allowance Calculation | **Florida Public Service Commission**

Company: Utilities, Inc. of Florida
Docket No.: 20200139-WS
Schedule Year Ended: December 31, 2019

Schedule: A-17
Page 1 of 1
Preparer: Deborah D. Swain
Recap Schedule: A-1, A-2

Explanation: Provide the calculation of working capital using the Balance Sheet method. The calculation should not include accounts that are reported in other rate base or cost of capital accounts. Unless otherwise explained, this calculation should include both current and deferred debits and credits. All adjustments to the per book accounts shall be explained.

Line No			Water	Sewer	13-Month Avg
1	**Final Rates**				
2	Current and Accrued Assets:				
3	Cash	A	32,412	41,164	73,576
4	Accounts and Notes Receivable, Less provision for Uncollectible Accounts	A	1,912,140	2,428,400	4,340,540
5	Material and Supplies	B	44,931	58,398	103,329
6	Miscellaneous current and accrued assets	C	10,352	9,501	19,853
7	Unamortized Rate Case Expense (prior) (See adjustment A-3)	C			
8	Miscellaneous Deferred Debits	C	927,026	850,900	1,777,926
9					
10	Less: Current and Accrued Liabilities and Credits				
11	Accounts Payable	C	(725,458)	(665,884)	(1,391,342)
12	Accrued Taxes	C	(407,972)	(374,469)	(782,441)
13	Accrued Interest	C	(41,149)	(37,770)	(78,919)
14	Miscellaneous Current and Accrued Liabilities and Credits	C	(7,469)	(6,856)	(14,325)
15					
16					
17	**Equals working capital (Balance Sheet Approach)**		**$ 1,744,813**	**$ 2,303,384**	**$ 4,048,197**
18					
19	**Note: Schedule reflects test year working capital prior to adjustments listed on A-3**				

AG DR 1-65:

Provide a copy of each incentive compensation plan that was in effect during 2021 and 2022 and describe all modifications projected for the test year, if any.

Response: Please see the attached PDF files:

- AG DR 1-65 2021 LTIP Plan Document CONFIDENTIAL.pdf
- AG DR 1-65 2022 LTIP Plan Document CONFIDENTIAL.pdf
- AG DR 1-65 EIP Plan Document CONFIDENTIAL.pdf

Witness:

James Kilbane

AG DR 1-66:

Provide the amount of incentive compensation expense pursuant to the each incentive compensation plan included in the test year revenue requirement for each target metric used for this plan during the test year. Separately provide the costs incurred directly by the Company and the costs incurred through affiliate charges from each affiliate. In addition, provide these amounts by O&M and/or A&G expense account and/or capital account.

Response: Please see Excel file PSC DR 1-49 Exhibit 18-32-29 - Schedule B - S&W-PR Taxes-Benefits CONFIDENTIAL.xlsx, 2023 test year tab, showing the dollar amount of incentive compensation on the deferred compensation lines under column U, which represents the EIP plan. Also, please see Excel file PSC DR 1-49 Exhibit 29 - Schedule C - 2023 CAM Forecast 2022-2025 – CONFIDENTIAL.xlsx, Excluded Costs Budget2023 tab for LTIP, EIP and other bonuses by department that have been excluded from the revenue request in this filing.

Witness: James Kilbane

AG DR 1-67:

Provide the incentive compensation target metrics for the Company and each other affiliate allocating costs to Water Service Kentucky applicable to the test year, describe how they are calculated and the source of the data used for the calculations, and provide the Company and each affiliate's actual performance against each of these metrics in the test year.

Response: Please see response to AG DR 1-65 and PSC DR 2-9. The Forecast Period metrics are not yet available.

Witness: James Kilbane

AG DR 1-68:

Provide the amount of Supplemental Executive Retirement Plan ("SERP") costs included in the test year O&M expenses. Provide the amounts broken down between Water Service Kentucky directly incurred costs and costs allocated separately from each other affiliate.

Response: The Company has no SERP plan.

Witness: James Kilbane

AG DR 1-69:

Provide a schedule of the amortization expense associated with each regulatory asset for each year 2018 through 2021, 2022 to date, and the test year. Provide the balance of each regulatory asset at the beginning and end of each of those years, the amortization expense recorded in each of those years, and the authorized amortization period. In addition, source the amortization period to the Case No. in which the Commission approved the recovery and the amortization period, if any.

Response: Please see Excel file AG DR 1-69 Reg Assets.xlsx.

Witness: James Kilbane

AG DR 1-70:

Provide a schedule that shows the per books accumulated deferred income tax ("ADIT") by account/subaccount and by temporary difference at the end of each month December 2020 through the most recent month with available data. Provide the amounts on the books of Water Service Kentucky and the amounts that are allocated from WSC and/or other affiliates.

Response: Please see Excel file AG DR 1-70 ADIT Rollforward.xlsx

Witness: James Kilbane

AG DR 1-71:

Provide a schedule that shows the projected ADIT by account/subaccount and by temporary difference at the end of each month for the 13 month test year, December 2022 through December 2023. Provide the amounts projected to be on the books of Water Service Kentucky and the amounts projected to be allocated from WSC and/or other affiliates.

Response: Please see AG DR 1-72 Exhibits 10-20-28 - Schedule A - Rate Base Components Updated 7.28.22, Pro-Forma UPIS AD-ADIT tab. Please see response to AG DR 1-118 for WSC allocated balances.

Witness: James Kilbane

AG DR 1-72:

Refer to the Kilbane Testimony, page 24, regarding the makeup of the ADIT balance forecast for the base and test periods starting with the per books balances as of December 31, 2021. Refer also to the Kilbane Testimony, page 22, regarding the restatement of depreciation expense and net book value using the Commission's authorized depreciation rates. Refer finally to the reflection of ADIT adjustments and resulting balances found in the Application, Exhibit 28, Schedule A, page 3.

a. Indicate whether the Company made a proforma adjustment to increase ADIT based on the restatement of net book value using the Commission's authorized depreciation rates that it performed. If not, explain why not since there would be a higher book versus tax depreciation amount following the restatement. If so, indicate the amount of the adjustment to ADIT for this purpose and describe how it was made, citing to as filed schedules.

b. Refer to the column entitled "2021 Provision Adjustment" related to ADIT accounts 255001 and 255002 in the Application, Exhibit 28, Schedule A, page 3. Describe all aspects of these adjustments and why they were reflected as such in this schedule.

Response:

a. The Company did not restate the ADIT balance based on restatement of depreciation rates. Virtually all asset lives being remeasured are for WSC assets, and WSC allocated ADIT was not included in the filing.

b. Please see attached updated Excel file Exhibits 10-20-28 Schedule A – Rate Base Components Updated 7.28.22. This file corrects the Base Period and Forecast Period ADIT ending balances that had a transposed sign in the value's formula – this does not change the overall amounts as-filed, only the split between federal and state.

The 2021 Provision Adjustments figures reconcile the forecasted balance at Base Period Ending 9/30/22 with the Base Period start, after accounting for the identified book/tax depreciation differences as calculated on the Pro-Forma UPIS-AD-ADIT tab, rows 496-497. The Provision Adjustment accounts for the true up entry completed at year end 2021 and Return to Provision adjustment to account for finalization of the 2020 tax returns. Please see file attached in response to AG DR 1-70.

Witness: James Kilbane

AG DR 1-73:

Refer to the summary of depreciation expense found in the Application, Exhibit 29.19.

a. Provide the workpapers associated with this exhibit in electronic format with all formulas in place used to derive the forecast period amounts by account. If already provided, cite to the file name and worksheet tab location.

b. Explain why there are large increase adjustments to computer equipment accounts 710504 and 710602 if the longer Commission authorized service lives are being utilized to compute expense.

Response:

a. Please see Excel file PSC DR 1-49 Exhibits 10-20-28 - Schedule A - Rate Base Components.xlsx.

b. Please see attached updated Excel file Exhibits 10-20-28 Schedule A – Rate Base Components Updated 7.28.22. This file corrects the depreciation expense calculation for Exhibit 28 Schedule A, which inadvertently multiplied depreciation rates times the UPIS Balance column for the Forecast Period, but now multiplies the depreciation rate times the UPIS net of WSC Allocations.

Witness: James Kilbane

AG DR 1-74:

Refer to the Application, Exhibit 26, showing income statement and balance sheet allocation amounts from affiliates. Explain all reasons why there are no ADIT allocation amounts reflected in the balance sheet allocations from WSC.

Response: As noted in the Excel version of Exhibit 26 (PSC DR 1-49 Exhibit 26 – Allocations), The Long Term Liabilities line includes ADIT allocations from WSC. Please see below for a summary by account.

	2019	2020	2021	Base Period	Forecast Period
255001 Federal ADIT	(3,299)	(3,230)	(3,178)	(3,178)	(3,178)
255002 State ADIT	5,846	5,723	5,631	5,631	5,631

Witness: Dante DeStefano

AG DR 1-75:

Refer to Water Service Kentucky's response to the Commission Staff's First Request for Information ("Commission Staff's First Request"), Item 14, wherein the Company stated it had not recorded any Excess ADIT due to the Tax Cut and Jobs Act. Refer also to the comparative balance sheet information provided in the Application, Exhibit 38, page 3, and the ADIT amounts depicted on line 65. Refer further to the same page in Exhibit 38 and to the Operating Income amount reflected on line 73. The ADIT at the end of 2016 was $1,050,146 and it decreased to only $669,763 at the end of 2017. Operating income was $149,928 during 2016 and increased to $640,419 during 2017.

a. Indicate whether the Company reduced the amount of ADIT at the end of 2017 and recorded the adjustment as an increase to income for 2017. If so, explain why it did so instead of recording a regulatory liability to return Excess ADIT to customers. If not, explain why the Company has not recorded Excess ADIT as a regulatory liability.

b. If the Company made an adjustment to the ADIT balance at the end of 2017 related to the Tax Cut and Jobs Act, provide the accounting entry(ies) that were made at that time to record the adjustment(s).

Response:

a. The company did reduce its ADIT at the end of 2017 and recorded the adjustment to income, as affirmed with the PSC's order in Docket 2018-00208 dated 2/11/2019.

b. Please see Excel file AG DR 1-75 2017 TCJA Entry.xlsx.

Witness: James Kilbane

AG DR 1-76:

Provide a schedule that shows the projected Excess ADIT due to the Tax Cut and Jobs Act by account/subaccount at the end of each month for the 13-month test year, from December 2022 through December 2023. In addition, indicate how the Excess ADIT and amortization thereof is reflected in the test year filing. If not reflected in the test year filing, explain why.

Response: Please see response to AG DR 1-76 above for explanation for no TCJA Excess ADIT in the current case.

Witness: James Kilbane

AG DR 1-77:

Provide a copy of the Water Service Kentucky trial balances by month from December 31, 2019, through December 31, 2021, and for each month available in 2022 for all balance sheet and income statement accounts/subaccounts.

Response: Please see Excel file AG DR 1-77.xlsx

Witness: James Kilbane

AG DR 1-78:

Refer to the Application generally. Confirm whether Water Service Kentucky is requesting any costs associated with Project Phoenix to be included in the revenue requirement in the pending rate case. If so, identify the costs included in the revenue requirement by amount and by type.

Response: Please see response to AG DR 1-32.

Witness: James Kilbane

AG DR 1-79:

Refer to the Whitney Testimony, page 3. Provide a breakdown of the $2.2 million of capital investments projected that are not included in rates in a format similar to Exhibit 10, which provides an identification of all non-recurring investments.

Response: Please see below.

	4/20-12/20	2021	2022	2023	Total
Recurring Construction	156,727	129,304	240,067	262,677	
Queensbury Heights Waterline	25,416				
160' Trans. Main Replacement	21,023				
Clinton Tank Rehab		113,840			
Backhoe for Middlesboro		58,961			
Backhoe for Clinton		58,790			
Vehicle - Work Truck			41,600		
Vehicle - Work Truck				43,264	
AMI meters Phase 1				504,458	
Trans. Main Replacement				546,550	
Total	203,165	360,894	281,667	1,356,949	2,202,676

Witness: James Kilbane

AG DR 1-80:

Refer to the comparative income statement information provided in the Application, Exhibit 33. Describe all known major reasons why operating expenses on line 4 increased by $474,033 ($2,855,773 - $2,381,740), approximately 19.9% from 2020 to 2021.

Response: Bad debt expense was approximately $97,000 in 2020, in 2021 it was approximately $203,000. Salaries increased by approximately $100,000 after a reorganization and accounting of certain personnel and standard merit increases. In 2021, legal expenses exceeded that in 2020 by approximately $20,000 due to higher activity in increasingly complex legal matters. Transportation costs also increased by $15,000 because of higher fuel costs and more vehicle repairs. Captime decreased by $25,000 because of the mix of recurring construction activities. Deferred Maintenance increased by approximately $25,000 in 2021 due to annualization of amortization for tank rehabilitation projects. All other increases are assumed to be caused by inflationary and other market factors.

Witness: James Kilbane

AG DR 1-81:

Refer to the Whitney Testimony, page 13, regarding no longer providing wastewater services for Clinton as of December 31, 2021.

a. Provide the amount of revenue and expenses related to these services for each of the years 2018 through 2021 by account number.

b. Indicate whether there was any reduction in staffing or other operating expenses related to no longer providing such services. If none, explain the response in detail.

c. Explain why such services are no longer contractually provided and describe in more detail the services that had been provided.

d. Provide a copy of the expired contract related to these services.

Response:

a. WSCK did not track all data for the Clinton Wastewater expenses with account numbers. Instead, WSCK tracked those costs by flagging costs specifically identified for that contract. The company has provided a list of these expenses by year with an approximate category of expense and revenue in Excel file AG DR 1-81 Clinton wastewater.xlsx.

b. Please refer to PSC DR 2-7 for details of reduction of expenses related to WSCK no longer providing these services. WSCK staff has not been reduced, but expenses related to outside services have been reduced.

c. As the contract was set to expire on March 3, 2022, WSCK and the City of Clinton mutually agreed to terminate the contract effective December 31, 2021. WSCK had provided operations, maintenance, billing, and collections services to Clinton.

d. Please see attached AG 1-81 d – Clinton Wastewater Operations Contract w 2002 Addendum.pdf.

Witness: James Kilbane and Seth Whitney

ADDENDUM TO WASTEWATER PRIVATIZATION CONTRACT INCLUDING SERVICE AGREEMENT

This ADDENDUM TO WASTEWATER PRIVATIZATION CONTRACT INCLUDING SERVICE AGREEMENT, made and entered into this 26th day of February 2002 by and between the CITY OF CLINTON, KENTRUCKY (the "City"), and AQUA/KWS, Inc., a Kentucky corporation, formerly Aqua Corporation ("Aqua").

WITNESSETH:

WHEREAS, the parties have previously entered into a certain Wastewater Privatization Contract Including Service Agreement dated June 1, 1987 (the "Agreement"), which was amended on February 15, 1991 to extend the term of the Agreement to February 28, 1996, and amended on March 3, 1994 to extend to the term of the Agreement to March 3, 1999, and amended on February 3, 1997 to extend the term of the Agreement to March 3, 2002, and it is now the desire of the parties to amend Article VII, paragraph 1, of the Agreement for the purpose of extending the term of the Agreement to March 3, 2022 and to make other modifications to the Agreement as stated hereafter;

NOW, THEREFORE, in consideration of the premises and of the mutual covenants herein contained and contained in the Agreement, the City and Aqua agree as follows:

1. Article VII, Section 1, Paragraph 1 of the Agreement is hereby supplemented and amended to the effect that the term of the Agreement shall be extended to March 3, 2022;

2. Article VII, Section 1, Paragraph 1 of the Agreement is hereby amended as follows:
   (a) Delete – starting at line 6 "Upon completion of the term......from private operation to municipal operation," ending at line 12.
   (b) Add – "Upon completion of the term of this Agreement (either by expiration of the term or by early termination) AQUA shall be paid it's cost (labor, overhead, and expenses) plus 15% profit in providing for the demobilization of operation and transition of records, personnel and facilities from private operation to municipal operation."

3. Article VII, Section 9 - This is supplemented as follows: "It is agreed by the parties hereto that Aqua shall not advance capital to the City unless requested by the City as the City anticipates being able to acquire any capital necessary".

4. Article VII, Section 9 (d) is deleted in its entirety.

5. Article VII, Section 12 – This section is supplemented as follows: "It is agreed by the parties hereto that prior to charging the City for equipment owned by Aqua and used on the City's behalf, the parties shall agree on a rate of charge."

6. All other provisions of the Agreement are reaffirmed.

IN TESTIMONY WHEREOF, the City and Aqua have caused this Addendum to be executed each by its proper and duly authorized officer as of the year and date first above written.

CITY OF CLINTON, KENTUCKY

By

Title Mayor

AQUA/KWS, INC./ U.S. UTILITIES

By
Bobby Yates, Jr.

Title Manager

By
J. David Whitehouse

Title Ex. Vice President

Mr Roberts - see
* on Page 6

WASTEWATER PRIVATIZATION CONTRACT

INCLUDING SERVICE AGREEMENT

THIS WASTEWATER PRIVATIZATION CONTRACT INCLUDING SERVICE AGREEMENT, made and entered into this 1st day of June, 1987, as authorized by Kentucky Revised Statutes Chapter 107, Section 700, et seq. by and between the CITY OF CLINTON, Hickman County, Kentucky, a municipal corporation (sometimes hereinafter referred to as the "CITY"), and AQUA CORPORATION, a Kentucky corporation, having a registered office in Lexington, Kentucky and its general offices at 354 Waller Avenue, Lexington, Kentucky 40504 (sometimes hereinafter referred to as "AQUA"),

W I T N E S S E T H:

WHEREAS, it is understood and affirmed by the parties to the within agreement that CITY is a Kentucky municipal corporation of the Fifth Class governed under the mayor-city council form of government pursuant to KRS Chapter 83A; that CITY has full power and authority in law to contract as herein provided and enters into this Wastewater Privatization Contract Including Service Agreement pursuant to authorization of an ordinance duly adopted by its City Council and approved by its Mayor at a regular meeting held on the 1st day of June, 1987, published as provided by KRS Chapter 83A and recorded in the official ordinance book and now in full force and effect; that CITY owns and operates its aged municipal wastewater sewage system which has limited physical capability; that said sewer system (the "System") fails to meet the standards of the Environmental Protection Agency (an agency of the United States government commonly referred to as the EPA) and the system is in need of replacements, rehabilitations, reinforcements, and construction to comport with modern day technology for the health and welfare of the public; that funding of the aforementioned project for the improvement of the System (the "Project") is necessary and required and a revenue bond issue (which may be anticipated by the issuance of revenue bond anticipation notes) is the preferred financing mechanism; and

WHEREAS, it is mutually understood and affirmed that CITY does not have personnel possessing the necessary expertise and skill to perform the aforesaid construction or to process and market the required revenue bond issue; that private management of the System would provide desirable expertise and avoid political pressure at any time and thus be in the public interest; that AQUA is recognized as a capable and reliable firm with personnel having wide experience in sewage system design, associated contractual projects, and revenue bond issue procedures and operational management; and

WHEREAS, it is affirmed that under the "Kentucky Privatization Act of 1986", KRS Chapter 107, Section 700, et seq, CITY is authorized (a) to contract for the heretofore generally described construction to its existing sewer system; (b) to contract for the placement of revenue bonds issued under the provisions of KRS 103.200 et seq., or to sell revenue bonds as provided in KRS Chapter 58; and (c) to enter into a service agreement; that a notice of the within Privatization Contract was duly published pursuant to KRS Chapter 424; that a public hearing was held, all in compliance with KRS 107.730; and that an ordinance authorizing the within Privatization Contract has been enacted and duly recorded as aforesaid;

NOW THEREFORE, CITY and AQUA mutually agree to the following covenants:

ARTICLE I - RECONSTRUCTION OF SEWER PLANT

AQUA agrees to repair, rehabilitate, reinforce, replace and construct the existing sewer system of the CITY to the full extent necessary for compliance with EPA standards and to provide such capacity as required to meet the present and now reasonably foreseen future needs as mutually estimated and forecasted; AQUA may employ or contract with other parties for any portion of the necessary construction; provided, however, that AQUA will not be liable in any manner whatsoever in event of the inability of the System to meet the volumetric requirements of the CITY for any specific number of years.

ARTICLE II - CITY TO ISSUE REVENUE BONDS

CITY agrees to issue revenue bonds (which may be anticipated by the issuance of revenue bond anticipation notes) in sufficient principal amount to pay AQUA in full for its construction work and to deliver the revenue bonds to AQUA for placement. It is anticipated that the total bond issue including any bond discount and other costs associated with the issuance will not exceed $1,000,000.00.

(9)

ARTICLE III - SALE OF REVENUE BONDS

AQUA agrees to place or sell CITY'S sewer revenue bonds for financing the reconstruction project by providing the required fiscal agent and as described herein as a part of this Privatization Contract; provided, nevertheless, that such sale or placement of bonds may be postponed by CITY, which shall be permitted to finance the Project upon a temporary basis by the issuance of notes in anticipation of the issuance of revenue bonds, as authorized by statute.

ARTICLE IV - BILLING AND PAYMENT

AQUA shall be paid for completion of the project either by negotiated lump sum contract for the total project improvements prior to construction of the project or, upon completion of the Project by submittal of a standard or customary invoice setting forth the cost of materials used, labor performed, the cost of sublet contracts, supervision, general overheads, negotiated profit, and all other appropriate and customarily charged costs. Upon negotiation of the lump sum contract or acceptance of the aforesaid invoice the CITY (subject to the provisions of Article III hereof) shall deliver to AQUA revenue bonds issued according to law in a principal amount fully sufficient to cover the negotiated lump sum contract or the entire invoice of AQUA and all costs attendant to the bond issue itself.

ARTICLE V - BOND COUNSEL; FISCAL AGENT

A qualified bond counsel and qualified fiscal agent shall be employed in the placement and/or sale of the revenue bonds. The revenue bonds shall be placed at reasonable interest rates under market conditions and circumstances at the time of placement. The cost of bond counsel services and fiscal agent services and their

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respective expenses shall also be paid for from the proceeds of the bond issue which shall be in sufficient principal amount to cover not only the aforementioned AQUA invoice but also to pay for the services of bond counsel and fiscal agent together with their expenses and other costs attendant to the bond issue itself; provided, however, that limitations under federal statutes for payment of such costs from the proceeds of the revenue bonds shall be observed and any excess costs shall be paid as agreed upon between the CITY and AQUA under a separate agreement.

ARTICLE VI - ARBITRATION

In the event of any disagreement between the parties to this contract which cannot be resolved between themselves, the parties may mutually agree to binding arbitration which shall be accomplished by petitioning the Chief Justice of the Supreme Court of Kentucky to designate a panel of three members of the Court of Appeals of Kentucky or three other persons who shall serve as arbitrators. In event the Court does not consent to perform these services, each of the parties shall select one arbitrator and those two arbitrators shall select a third arbitrator, which three persons shall then comprise a final board for binding arbitration. This form of binding arbitration shall apply also to the Service Agreement, a part of the within Wastewater Privatization Contract which is set forth in subsequent Article VII hereof. The cost and expenses of any arbitration, other than the costs and expenses of personnel of the parties themselves, shall be shared equally by the parties hereto.

ARTICLE VII - SERVICE AGREEMENT

In addition to the foregoing agreements, CITY hereby employs AQUA to manage, operate and maintain the System according to the covenants set forth below.

1. Term of Agreement. The term of this Service Agreement shall commence upon completion of the reconstructed and renovated System, and shall continue for five years; provided, however, that the CITY may terminate the Service Agreement (1) at the end of the third year on reasonable notice, and (2) anytime thereafter on reasonable notice. Upon completion of the term of this Agreement (either by expiration of the term or by early termination under the provisions hereof) AQUA shall be paid a transition fee of $95,000.00 . Said fee has been fixed as the agreed estimated amount required to reimburse AQUA for its costs in providing for the demobilization of operation and transition of records, personnel and facilities from private operation to municipal operaton.

2. Ownership of the Project and Sewer System. Ownership of the Project and the System shall at all times be vested in the CITY, including the original sewer system, the reconstruction Project, and all future betterments and additions without limitation.

3. All Receipts to Belong to City. All income and revenues arising out of the ownership and operation of the System shall without limitation belong to the CITY and shall constitute special and segregated municipal funds at all times, subject to the provisions of the ordinance authorizing the revenue bond issue (the "Bond Ordinance"), which shall provide for appropriate operational

disbursements required in the management, operation and maintenance of the system.

4. No Political Influence. CITY agrees that it will not cause or countenance any political influence upon AQUA in its management and operation of the sewer system and AQUA agrees that it will not participate in any political matter appertaining to the CITY or any of its employees. By this provision the parties do not intend to inhibit any person's constitutional right to free speech or the expression of personal views.

5. CITY to Establish all Rates, Rules and Regulations. All rules and regulations relating to rates and charges shall be fixed and established solely by the CITY; provided, however, CITY shall observe and respect all covenants and agreements in the Bond Ordinance, which shall contain a rate covenant requiring the maintenance or establishment of rates designed to produce revenues sufficient to pay the obligations of the System, and all covenants and agreements expressed in the Bond Ordinance and herein.

As provided by KRS 107.730, this Service Agreement, the charges for rates and services, and operation of the System under this Service Agreement shall not be subject to the jurisdication of the Kentucky Public Service Commission or any successor regulatory agency. CITY grants no franchise. CITY relinquishes no jurisdiction over rates, charges and services.

6. Services to be Rendered by AQUA. The services which AQUA agrees to render relate solely to the System and its various functions as described herein and shall consist of (a) management; (b) operation and maintenance of the plant; (c) billing, collecting

and disbursing funds in accordance with the bond ordinance and this contract; (d) setting up and maintaining an adequate and continuing system of accounting; (e) rendering to the CITY financial and operating statements not less frequently than quarterly and an annual audit report prepared by a Certified Public Accountant; (f) rendering to CITY engineering inspection reports and recommendations not less frequently than annually and as circumstances may warrant; (g) procuring and maintaining, in the name and on behalf of CITY, insurance against such hazards and in such amounts as may be necessary and customary in other comparable sewer systems and operations; (h) the selection, training, employment and discharge of any and all personnel which may be necessary or desirable in AQUA's judgment to the performance by AQUA of its functions under this Contract, including the determination of the compensation paid to such personnel.

All employees having access to or being chargeable with responsibility for the handling of funds shall be bonded with good corporate surety in reasonable amounts under the circumstances as fixed or approved by the CITY. The premiums paid for such surety bonds shall constitute a part of the operating expenses of the sewer system.

7. No Free Service; CITY also to Pay. No wastewater sewer service shall be furnished free. Service rendered to the CITY or any of its departments shall be billed and paid for by CITY from its separate funds the same as any other customer in the same rate classification.

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8. Office a Part of Project. CITY may make office space available to AQUA in premises already owned by or available to CITY if the same are adequate and suitably located for that purpose, in which event a fair rental value therefor may be established by the CITY Council and paid for as a part of the expenses of operating the System. If CITY does not have adequate and suitable space for such office, AQUA may make arrangements for the rental of same and the rental thus paid shall constitute a proper expense of operation of the System.

9. Compensation of AQUA; Solely from System Revenues; Subject to Bond Requirements. AQUA shall be authorized to cause to be paid solely from the City's Operation and Maintenance Fund established by the Bond Ordinance the costs of operation and maintenance, which costs shall include compensation payable to AQUA for its services under this Service Contract, and for the use of any working capital which it may advance. Payments shall be made solely from the income of the System and solely from the Operation and Maintenance Fund for which provision has been made in the Bond Ordinance. The Bond Ordinance requires that certain payments from revenues be set aside into the Bond Fund as a first charge and lien upon the revenues. Thereafter payments, reimbursement or compensation shall be in four separate categories as follows:

(a) Payments for customary expenses actually incurred in operating and maintaining the System, including all such items as are "operating expenses" under good and accepted accounting.

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practices. Specifically, but not by way of limitation, the same may include the salary or wages of the person residing in the CITY or vicinity having immediate day-to-day responsibility for all phases of operation and maintenance, the salary or wages of proper service, repair, billing and collecting personnel; the cost of materials and supplies actually consumed from time to time; premiums on surety bonds and policies of hazard insurance; and office rental and office utilities, but specifically excluding any provision for depreciation of property or for the remuneration of the officers of or persons employed directly by AQUA.

Prior to beginning the Project and operation thereof, AQUA shall make such preparatory action as may be necessary, including the setting up of an accounting system, making arrangements for office facilities, the selection and training of personnel, etc., so that operation of the Project may be commenced in an orderly manner. AQUA shall prepare all proper data relating to construction disbursements, in order that same may be entered upon the books and records of the sewer system. It is understood, however, that payment for the reconstruction of the Project is finally the responsibility of the CITY thru a revenue bond issue, supra.

Payments within this category (a) shall be paid from and to the extent funds are from time to time available from the operation and maintenance fund; and if balances from time to time in the operation and maintenance fund shall be insufficient to pay the same when due, AQUA agrees that it will, nevertheless, advance the same

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from its own capital funds which it shall provide for that purpose, to the end that wastewater operations shall be maintained continuously. All sums so advanced by AQUA from its own capital funds shall be entered in detail upon the books and records of the System, so that the amount thereof and the time or times of each advance may be determined accurately therefrom and reimbursement from subsequent System funds may be accurately made.

(b) AQUA shall be reimbursed for payments made by it on behalf of CITY for other proper general expenses, including the expenses of AQUA's officers or employees for work actually performed on behalf of CITY, but in no case shall such reimbursement exceed actual costs for expenses eligible for payment from the Operation and Maintenance Fund, and in no case shall such reimbursements exceed in the aggregate the sum of One Thousand Dollars ($1000.00) per month.

Reimbursement within this category (b) shall be paid from time to time from the operation and maintenance fund, but only after expenses of the nature described in category (a) have been paid in full, or after provision for the payment thereof when due has been properly made. If and to the extent monies in the operation and maintenance fund shall be insufficient to pay AQUA's reimbursement under this category (b) the same may be accrued upon the books and records and shall constitute proper items for payment from said operation and maintenance fund when, as, and if monies for that purpose become available therein.

(c) Until the date of termination of this Contract compensation to AQUA for its management services, for the use of such working capital as it may advance from time to time under category (a), for the risk assumed by AQUA in making such advances, and for agreeing to deferment, if and to the extent necessary, of compensation to its corporate and professional personnel under category (b), and to make possible the payment of reasonable general compensation, shall be determined annually and shall be (1) the fixed sum of $15,000.00, plus the CPI inflation rate since the date of this Privatization Contract and (2) an amount equal to three percent (3%) of the gross revenues of the System, which amount shall not exceed an amount equal to fifty percent (50%) of any surplus in the operation and maintenance fund which is declared by the bond ordinance to be available to the CITY "for any lawful purpose"; provided, however, that the total amount payable to AQUA under (1) and (2) hereof shall not exceed twice the amount established in (1) hereof. The foregoing amount shall be accumulative under this category (c) and may be accrued upon the books and records only if and to the extent funds are not available therefor after said prior requirements have been fully met, as shown by the annual audit. Furthermore, as partial compensation for advanced capital, AQUA shall be allowed to accrue on the books and records an interest charge of six percent (6%) annually on such working capital advanced. Upon termination of this Agreement the foregoing amounts, to the extent not yet paid shall be due and owing.

CITY further covenants and agrees that, prior to complete retirement of all bonds and without regard for increased cost in wages or other expenses under category (a), the rates and charges for sewer service will be adjusted from time to time if and to the extent required to provide to AQUA, as a minimum, the reimbursement described in categories (a) and (b) and (c).

(d) In the event of early retirement of all of CITY's System revenue bonds, AQUA shall receive as its compensation for the duration of the contract term thereafter a sum equal to fifty percent (50%) of the excess of gross income and revenues over and above operation and maintenance expenses, as defined in (a) and (b) above, provided however, that the above compensation shall not be greater than two and one half (2.5) times the fixed compensation component as formulated in Article VII Section 9. CITY covenants and agrees with AQUA that after any such early retirement of said bonds and until expiration of the term of this contract, CITY will not reduce its rates and charges for sewer service below the scale of rates and charges necessary to produce revenues to meet the requirements as herein defined, including the application of the 2.5 factor aforementioned. This subsection shall not be operable or controlling during any period during which the Service Agreement is in effect if any tax-exempt bonds or bond anticipation notes are outstanding.

10. <u>AQUA Not an Obligor or Guarantor With Respect to CITY's Bonds</u>. It is understood and agreed that AQUA's obligations

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hereunder are to provide to CITY the management and operational services herein contemplated, and AQUA is not itself obligated to discharge the CITY's System Revenue Bonds, nor does it guarantee the payment thereof or interest thereon. AQUA shall at all times be accountable and responsible to the CITY and to the holders of said bonds for the faithful and proper receiving, segregation, disbursing and accounting of and for the project revenues, and shall answer for negligence, fraud, or other misconduct of AQUA and its officers, agents, servants, and employees in that connection; but if, when and to the extent AQUA may from time to time make proper segregation, depositing, or setting aside of monies into the bond fund in accordance with the provisions of the bond ordinance and into the custody of the financial institution properly designated by the City to receive the same, AQUA shall be deemed to have discharged its duty in that respect and shall not be responsible for any subsequent misfortune, or for any subsequent misapplication or disappearance thereof.

11. <u>AQUA Does Not Contract to Provide Legal Services to City; AQUA's Attorney Only For Its Own Legal Affairs</u>. References herein to employment by AQUA of an attorney at law are understood to mean such employment as AQUA may desire with respect to its own legal affairs; and AQUA does not hereby agree to provide any legal services to the CITY. Nevertheless AQUA and CITY agree that their cooperation and the cooperation of their attorneys, each in its own interests, is desirable, especially with regard to any litigation

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which may affect the rights and interests of both; and it is agreed that such cooperation will be provided in good faith at all times.

If CITY shall be made a party to any litigation concerning the sewer system, its ownership, service, rates, rules, regulations, improvements, additions, or extensions, it shall promptly give full notice thereof to AQUA, and AQUA agrees that it will give similar notice to the CITY under similar circumstances.

12. CITY Consents that AQUA May Enter into Similar Undertakings. The CITY is aware that AQUA is a going concern engaged in various services for various water systems and sewage systems and that AQUA may enter into contracts for the rendering of services to other cities similar to those rendered CITY in connection with sewer or other utility operations; and the CITY hereby gives its consent that AQUA enter into any such undertakings.

AQUA agrees that it will maintain its accounting hereunder separate and distinct from its business or accounting in any other connection; and will never cause or permit any commingling of the CITY's project, or any part thereof, or any income and revenues arising therefrom, with any other properties or revenues.

Notwithstanding the foregoing, it is understood that if AQUA shall be employed by any other city, or cities, for the performance of the same or similar services, AQUA or its affiliates may find it possible to effect savings to all concerned by purchasing in its own name, and retaining title to, machinery, equipment, materials or supplies which may be of common usefulness

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when needed, or in quantities which would be uneconomical or unwise to purchase for any single operation. If AQUA shall see fit, it may invest its own independent capital funds in such manner, but shall not charge to its operations on behalf of CITY under this contract, any portion thereof, unless and until actually used, allocated, or installed in connection with or as a part of its operation of the project hereunder. It is understood and agreed that such charging or allocation may consist of the fair rental value of any commonly useful machinery or equipment of AQUA for such period as the same may actually be used or made available in its operations under this contract.

ARTICLE VIII - NON-SEVERABILITY OF CONTRACT EXCEPT BY MUTUAL CONSENT

If any essential or substantial portion of the foregoing Wastewater Privatization Contract Including Service Agreement is adjudicated to be void then the entire undertaking shall be moot unless CITY and AQUA mutually agree to proceed under any or all of the remaining provisions; however, in any event AQUA shall be reimbursed for all costs and expenses actually incurred by it for work undertaken but not to include any expenses which AQUA may have incurred in negotiations prior to the execution of the within contract.

IN TESTIMONY WHEREOF, the CITY and AQUA have caused this contract to be executed each by its proper and duly authorized

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officials all in the Commonwealth of Kentucky as of the year and day first above written.

CITY OF CLINTON

BY: ______________________
MAYOR

ATTEST:

____
CITY CLERK

AQUA CORPORATION

BY: ______________________

ATTEST:

____
SECRETARY

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AG DR 1-82:

Refer to the projected Income Statement information provided in the Application, Exhibit 29. Provide a similar schedule which shows the same level of detail for each of the calendar years 2017 through 2021, for the base year, and for the test year.

Response: Please see Excel file AG DR 1-82 and 84 IS and DS.xlsx.

Witness: James Kilbane

AG DR 1-83:

Refer to the TIER 1 and TIER 2 allocations of affiliate costs for the base year and forecast test year provided in the Application, Exhibit 29, Schedule C.

a. Provide the affiliate charges to Water Service Kentucky by account during 2020, 2021, and for each month in 2022 with available information separated into direct charges, direct assignments, and via each individual allocation factor. Provide in electronic format with all formulas intact.

b. Provide the data used by WSC and Corix to calculate the percentage allocations to each affiliate for each allocation method applicable to charges to Water Service Kentucky during 2020, 2021, 2022 to date, and the test year. Provide in electronic format with all formulas intact.

c. Provide the computations used by WSC and Corix to calculate the percentage allocations to each affiliate for each allocation method in electronic format with all formulas intact applicable to charges for 2020, 2021, 2022 to date, and the test year. Provide in electronic format with all formulas intact.

d. Starting with the beginning of 2020 and projected through the end of 2023, indicate all affiliates that have been or expected to be added or removed from the allocation process. Identify the affiliates and effective dates of these changes.

Response:

a. Please see Excel file PSC DR 1-49 Exhibit 26 – Allocations.xlsx for the 2020, 2021, and thru March 2022 cost allocations. WSC allocations use the ERC data provided in response to Part B. Corix allocations use the Tier 1 data and ERC (Tier 2) data provided in response to part B.

b. &. c. Tier 1: For the Forecast Period, please see Excel file PSC DR 1-49 Exhibit 29 - Schedule C - 2023 CAM Forecast 2022-2025 – CONFIDENTIAL.xlsx, Allocation % Tab for the allocation factor data for Tier 1 and resulting percentage allocations (CRU is labeled RU-L48 in column F). For 2020, please see Excel file AG DR 1-83 2020 Corix CAM CONFIDENTIAL.xlsx. For 2021, please see Excel file AG DR 1-83 2021 Corix CAM CONFIDENTIAL.xlsx. For 2022 to present, please see Excel file AG DR 1-83 Q2 2022 Corix CAM CONFIDENTIAL.xlsx.

Tier 2: Please see Excel file AG DR-1-83 ERCs for Tier 2 allocations.xlsx for data and WSCK calculated percentage allocations for CRU.

d. In the CAM allocation files noted in response to part B, please see the additions and removals of entities for allocations are as follows:

- 2020: No changes from 2019 noted.
- 2021: Remove Oklahoma University and remove Tribus notional allocation, add Oakridge Energy notional allocation.
- 2022: Remove CWSI and Corix Energy Inc.
- 2023: Add Tobiano.

Witness: James Kilbane

AG DR 1-84:

Refer to the detailed account descriptions and data included in the Application, Exhibits 29.7 (Maintenance and Repair), 29.8 (Maintenance Testing), 29.9 (Chemicals) 29.10 (Transportation), 29.11 (Outside Services), 29.12 (Office Supplies and Other Expense), 29.14 (Pension and Other Benefits), 29.16 (Insurance Expense), 29.17 (Office Utilities), 29.18 (Miscellaneous Expense), and 29.22 (Taxes other than Income). Provide similar schedules for each which depict the same level of detail for each of the calendar years 2017 through 2021, for the base year, and for the test year.

Response: Please see Excel file AG DR 1-82 and 84 IS and DS.

Witness: James Kilbane

AG DR 1-85:

Refer to the Kilbane Testimony, page 8, regarding historical Equivalent Residential Connections ("ERCs") and usage per ERCs from 2013 through 2022 used to project ERCs and usage during the test year. Provide the historic amounts referenced and the calculations of the (0.46%) decline trend for ERCs and the (0.30%) decline trend for usage per ERC in electronic format with all formulas intact.

Response: Please refer to "PSC DR 1-49 Exhibit 29 – Schedule A – Revenue Build – AS FILED REVISED REDACTED.xlsb", tabs "Customer Decline" and "Usage Decline".

Witness: James Kilbane

AG DR 1-86:

Refer to the Kilbane Testimony, page 9, regarding the average percentage for uncollectible accounts of 3.93% and to the Application, Exhibit 29.2. Refer also to the bad debt reserve data included in Water Service Kentucky's Excel attachment response to Commission Staff's First Request, Item 13, entitled "PSC_DR_1-13_-Bad_Debt_Expenses" and to the calculation of the three year average of 3.93% included in the Excel attachment response to the Commission Staff's First Request, Item 50 entitled "PSC_DR_1-50_-Bad_Debt_Expense_Calc."

a. Describe what is meant by Line 2 Base Period Uncollectible Accounts of $127,833.97 in the Application, Exhibit 29.2. In other words, indicate whether that is the amount of accounts written off or the provision for expense during the base period or whether it represents something else.

b. Explain why the current year provision amounts in column D for each year in the bad debt reserve summary ("PSC_DR_1-13_-Bad_Debt_Expenses") do not match the bad debt expense amounts found in the attachment to Commission's Staff First Request, Item 50 entitled "PSC_DR_1-50_-Bad_Debt_Expense_Calc." for each year recorded in accounts 61571 – Bad Debt Expense, 627100 – Bad Debt Expense, and 627300 – Uncollectible Accounts Accrual.

c. Refer to the attachment to Commission's Staff First Request, Item 50 entitled "PSC_DR_1-50_-Bad_Debt_Expense_Calc." and further to the annual data included in account 627300 – Uncollectible Accounts Accrual. Explain why an amount of $202,414 is included in this account in 2021, but there were no amounts included for this account in 2019 and 2020. In addition, explain what the amounts in this account represent.

d. Refer to the attachment to the Commission Staff's First Request, Item 50 entitled "PSC_DR_1-50_-Bad_Debt_Expense_Calc." Provide the same data by revenue and expense account for 2017 and 2018, including the average bad debt expense calculation for those years.

e. Provide the percentage of uncollectible accounts for each individual year 2017 through 2021 and to date in 2022. In addition, provide these percentage calculations in electronic format with all formulas intact.

f. If the calculated 3.93% exceeds calculated bad debt expense amounts prior to the pandemic, explain why the Company projects such a high percentage of uncollectible accounts.

Response:

a. It represents the bad debt expense incurred, which is the provision for expense.

b. The company recognizes the bad debt expense provided to the staff DR 1-13 response is incorrect and is revising. Please see Excel file AG DR 1-87 Bad Debt History.xlsx, which includes the revised table that was provided in SDR 1-13.

c. 2021 was the first full year of Oracle Fusion which has a different chart of accounts. The amounts in the uncollectible account's accrual are changes to reserve account, it is synonymous with bad debt expense.

d. The Company used a different chart of accounts in 2017 and 2018, so the accounts will not match directly. Please see the response for AG DR 1-87.

e. Please see response to AG DR 1-87.

f. WSCK was still recognizing the effects of the pandemic as of the filing date in bad debt expense. The Company does not know if bad debt will return to pre-pandemic levels.

Witness: James Kilbane

AG DR 1-87:

Provide a schedule showing the beginning balance of the uncollectible accounts reserve, bad debt expense, bad debt recoveries (recapture), and ending balance uncollectible accounts reserve for each calendar year 2017 through 2021 and for each month during 2022 with available information.

Response: Please see Excel file AG DR 1-87 Bad Debt History.xlsx.

Witness: James Kilbane

AG DR 1-88:

Refer to the Application, Exhibit 29.1, which shows service revenues and uncollectible accounts for the actual and estimated portions of the base year. Explain all known reasons why the uncollectible accounts expense is only 2.16% ($35,906.31/$1,662,014.76) for the actual first six months of the base year and increases significantly to 5.78% ($91,927.66/$1,592,451.24) for the projected second six months of the base year, especially when actual revenues during the first six months are greater than those for the projected second six months.

Response: The Base Period forecast for bad debt expense is calculated over a whole year regardless of the activity in the preceding six months as an inherent lag in the A/R aging process in comparison with the timing of the original revenue recognition. Therefore, portions of a trailing 12 month/annual view may fail to accurately represent the state of uncollectibles.

Witness: James Kilbane

AG DR 1-89:

Refer to the Excel attachment entitled "PSC_DR_1-49_Exhibit_35_-_Schedule_A_-_Cost_of_Capital_Summary_v2' provided in response to the Commission Staff's First Request, Item 49.

a. Provide the basis of the interest rate associated with the $80 million revolver and describe whether it is variable or fixed.

b. Provide the current month interest rate for the $80 million revolver.

c. Describe the Company's plan to reduce the revolver balance to zero as of the end of the base year and immediately issue two $50 million debt issuances with projected coupon interest rates of 4.05% and 4.30%.

d. Provide the basis for the differing projected coupon interest rates of 4.05% and 4.30% for the two $50 million debt issuances projected during the same month. Include in the description how the Company projects the interest rate will be determined.

Response:

a. The revolver interest rate is variable, resetting periodically per the revolver's loan agreement. The interest rate of 1.7% was the most recent actual rate, as of March 31, 2022, at the time of filing. Please see attached file AG-1-89-CRUUS Revolver Interest 3.31.22.pdf, which reflects the interest rate update in March 2022 (highlighted).

b. The interest rate as of June 30, 2022, is 2.3875%.

c. As shown in the referenced file, Hist-Forecast tab, the balance was projected to reach $56 million by September 2022. CRU has historically used notes issuances to first pay off the accumulated drawdowns of the revolver as it approaches its borrowing limit.

d. The issuance at 4.05% comes with a 10-year term, and the 4.30% issuance comes with a 15-year term. CRU obtained these interest rate estimates based on discussions with its lender, TD Bank, in April 2022. Interest rates for any future note issuances, revolver drawdowns, or other debt incurred would be dependent and heavily influenced by the term to maturity, market conditions, and any covenants attached to the debt.

Please note that the original capital structure assumptions in the current filing, such as debt issuance timing or interest rates, may change based on activity that becomes known after the filing date.

Witness: Dante DeStefano

Holly Tang

From: Harry.Diep@tdsecurities.com
Sent: Tuesday, March 29, 2022 5:54 AM
To: Holly Tang
Subject: Deal Level Loan Repricing Rate Setting Notice

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and verify that the content is safe.

Message Originated From: Harry.Diep@tdsecurities.com

Toronto Dominion Bank
Corporate Lending Services
222 Bay Street, E&Y Tower 15th Floor
Toronto, Ontario M5K 1A2

Date: 29-Mar-2022
TO: CORIX REGULATED UTILITIES (US) INC.
ATTN: Holly Tang
Re: Toronto Dominion Bank:CORIX REGULATED 23OCT15 USD80MM(SYN)
***** Rate Setting *****

Description: USD Loan Repricing for the Deal CORIX REGULATED 23OCT15 USD80MM(SYN).

Effective: 31-Mar-2022

Borrower CORIX REGULATED UTILITIES (US) INC. in Facility USD80MM 5YR REVOLVER has the following loans repricing:

Description	Current Global Amount	Reprice Date
Libor Option Loan	16,000,000.00	31-Mar-2022

Borrower CORIX REGULATED UTILITIES (US) INC. in Facility USD80MM 5YR REVOLVER will make the following interest payments:

Description	Global Amount
Libor Option	19,977.78

Accrual Line Item(s) are as follows:

Rate Basis: Actual/360

Start	End	Days	CCY	Balance	Rate	Amount
28-Feb-2022	30-Mar-2022	31	USD	16,000,000.00	1.450000%	19,977.78

Borrower CORIX REGULATED UTILITIES (US) INC. in Facility USD80MM 5YR REVOLVER will have the following new loans:

Pricing Option	Global Amount	Next Reprice Date
Libor Option	16,000,000.00	29-Apr-2022

Continuation Date: 26-Apr-2022

Borrower CORIX REGULATED UTILITIES (US) INC. in Facility USD80MM 5YR REVOLVER rates have been set as follows:

Pricing Option	Global Amount	All In Rate	Next Reprice Date
Libor Option	16,000,000.00	1.700000%	29-Apr-2022

Base Rate: 0.500000%
Spread: 1.200000%
Projected Interest: 21,911.11
Projected Interest Due Date: 29-Apr-2022

Please remit funds USD 19,977.78 on the effective date as follows:

For: CORIX REGULATED UTILITIES (US) INC.
To:
Bankamerica International
ABA

026009593

Attn:
Houston Agency
Account Number
6550653000
Bank To Bank Info:
Reference: CORIX REGULATED 23OCT15 USD80MM(SYN), For ongoing servicing questions, please contact:

HARRY DIEP
Telephone #: 416-983-5144
Fax #: 416-982-5535

AG DR 1-90:

Refer to the Application, Exhibit 29.1, which shows service revenues for the actual and estimated portions of the base year and for the forecast year.

a. Explain all reasons why revenues are projected to decrease by approximately $70K during the last six months of the base year compared to the first six months, even though the summer months are included in those last six months of the base year.

b. Explain all reasons why revenues are projected to decrease in the base year and test year by approximately $152K and $144K, respectively, compared to the actual revenues reflected in 2021.

c. Indicate the effective date of the base rate increase associated with Case No. 2020-00160.

d. Indicate the annual effect in revenues of the rate increase authorized as part of Case No. 2020-00160 based on both 2021 actual water sales, base year sales, and test year forecast water sales.

Response:

Objection. This question is overly broad, as it is impossible to identify "all reasons" why revenues are projected to decrease because revenues are partially dependent on individual customer usage habits.

Without waiving the aforementioned objection, WSCK states as follows:

a. WSCK has built its Base Period forecast on a full, 12-month basis. However, actuals through the first 6 months are based on WSCK's actual accounting data. WSCK's accounting data for service revenues includes postings for things like accruals in addition to what is functionally regular service revenue. The difference attributable to the above in the 6 months of actuals is $49,077, from its actual service revenues of $1,612,937 (Please refer to AG DR 1-90 Service Revenue Under Old Rates.xlsx, tab AG DR 1-90 BY first 6). WSCK represented its forecasted 6 months for the Base Period as the difference between its full year service revenue forecast and the actuals for the first 6 months on WSCK's books, resulting in those values represented in column B of Exhibit 29.1. WSCK's forecast of service revenues for the remaining 6 months of the base year is $1,641,529 - $49,077 higher than the amount identified in column B of Exhibit 29.1, and $28,591 higher than WSCK's actuals in the first 6 months of the base year (please refer to AG DR 1-90 Service Revenue Under Old Rates.xlsx, tab AG DR 1-90 BY FCST 6). WSCK's forecasted usage in this period is based on the 15-month average Tier 1 and Tier 2 usage per bill referenced by Mr. Kilbane, multiplied by the active customer count as of the end of March 2022. To be explicit; there is not a $70,000 decrease from the first 6 months to the forecasted 6 months, but rather a $28,591 increase. WSCK's full Base Period forecasted service revenues are fully detailed in PSC DR 1-49 Exhibit 29 – Schedule A – Revenue Build – AS FILED REVISED REDACTED.xlsx.

b. It appears that the comparison being made is between the $3,406,420 in WSCK's 2021 annual report, page W-9, and WSCK's $3,254,466 from Exhibit 29. There are a multitude of reasons that contribute to this variance. First, WSCK's comparable service revenue number for transactions in 2021 is $3,236,236.91 (see PSC DR 1-49 Exhibit 29 – Schedule A – Revenue Build – AS FILED REVISED REDACTED.xlsx, tab entitled 'Water Data', for the source information of this assertion). Thus, WSCK has forecasted for an increase of $18,229 from its 2021 level of service revenue, not a decrease. The difference between the $3,236,236.91 and the $3,406,420 that has been used to identify these variances is attributable to: $137,505 in management service revenues that will no longer be collected, $39,671 in accrued revenue (not reflected in pro-forma Base Period or Forecast Period revenues), and $7,698 in Other Revenues. Also included in this $3,406,420 are an offsetting $14,583 in various bill adjustments.

For the test year ending 12/31/2023, WSCK makes three adjustments to its Base Period:

1) WSCK produces an annual bill count based on the 03/31/2022 customer counts, thus normalizing at the current number of customers (details of this normalization are provided in "PSC DR 1-49 Exhibit 29 – Schedule A – Revenue Build – AS FILED REVISED REDACTED.xlsx", tab 'Bill Units Summary');
2) WSCK has forecasted for 0.46% customer decline (i.e., reduction to the bill count) for its non-fire related bills (details of this customer decline estimation are provided in "PSC DR 1-49 Exhibit 29 – Schedule A – Revenue Build – AS FILED REVISED REDACTED.xlsx", tab entitled 'Customer Decline'); and,
3) WSCK has forecasted for 0.30% consumption decline (i.e., reduction to the usage per bill) for its metered customers (details of this consumption decline estimation are provided in "PSC DR 1-49 Exhibit 29 – Schedule A – Revenue Build – AS FILED REVISED REDACTED.xlsx", tab entitled 'Usage Decline').

In total, WSCK is forecasting an increase, not a decrease, of $7,425 in its Forecast Period from its Base Period, which can be attributed to the normalization of bill counts net of the impact of consumption and customer decline. Thus, for neither its Base Period nor its Test Period is WSCK forecasting a decrease from 2021 service revenues.

c. Rates from 2020-00160 were placed into effect on 12/08/2020.

d. Rates from WSCK's last case, 2020-00160, would have produced $2,797,581 in service revenue in 2021, or $438,656 less than the $3,236,237 WSCK actually experienced (Please refer to AG DR 1-90 Service Revenue under Old Rates.xlsx, tab AG DR 1-90 2021 Prev. Rate).

Under rates from 2020-00160, WSCK's current Base Period would produce service revenues of $2,806,611, or $429,626 less (please refer to AG DR 1-90 Service Revenue under Old Rates.xlsx, tab AG DR 1-90 BY Prev. Rate). WSCK's Forecast Period would produce service revenues of $2,813,912, or $422,325 less (please refer to AG DR 1-90 Service Revenue under Old Rates.xlsx, tab AG DR 1-90 TY Rate).

Witness: James Kilbane

AG DR 1-91:

Refer to the Application, Exhibit 29.1, which shows service revenues for the actual and estimated portions of the base year and forecast year. Provide a schedule which shows the monthly service revenues and net water volume sales amounts recorded by month for 2019, 2020, 2021, and for each month in 2022 with available information. Consider this an ongoing request for supplemental data as it becomes available throughout the remainder of this case.

Response: Please refer to Attachment AG DR 1-91 Revenue Statistics.xlsx.

Witness: James Kilbane

AG DR 1-92:

Refer to the Kilbane Testimony, page 8, regarding the base year customer usage forecast based on the average for the last 15 months (January 2021 through March 2022). Provide all inputs and the calculation in electronic format with all formulas intact.

Response: Please refer to PSC DR 1-49 Exhibit 29 – Schedule A – Revenue Build – AS FILED REVISED REDACTED.xlsx, worksheet entitled "Bill Units Summary".

Witness: James Kilbane.

AG DR 1-93:

Refer to the Application, Exhibit 29, Schedule A, page 6 of 6, which shows historical and projected revenue statistics.

a. Provide in the same format the monthly actual and projected data for each month in the as-filed base year. Provide in electronic format with all formulas in place.

b. Provide in the same format the monthly actual data for each month April 2022 through the most recent month with available data. Provide in electronic format with all formulas in place.

c. Explain all known reasons why the sum of the water sales for all classes in thousands of gallons is much lower in 2021 as compared to each of the other years, 2017-2020, with historical information provided.

Response:

a. Please refer to AG 1-91 Revenue Statistics.xlsx, attached in response to AG DR 1-91.

b. Please refer to AG 1-91 Revenue Statistics.xlsx, attached in response to AG DR 1-91.

c. Please refer to AG 1-91 Revenue Statistics.xlsx, attached in response to AG DR 1-91.

When direct billing data is used to identify usage per year, the following volumes result:

Year	Volume (Kgals)
2017	408,712,999
2018	437,210,883
2019	392,133,106
2020	381,338,398
2021	382,611,482

WSCK disagrees with the assertion that water sales in 2021 are much lower than those in 2017-2020. As demonstrated in the table above and in "AG 1-91 Revenue Statistics.xlsx", 2020's usage was below that of 2021. Further, throughout 2017-2020, a clear decline in usage occurred and likely contributed to a below average usage rate in 2021.

Witness: James Kilbane

AG DR 1-94:

Refer to the Application, Exhibit 29.7, which shows among other things the maintenance & repair expenses by account for the actual and estimated portions of the base year. Refer to the amounts for the following accounts for the actual first six months of the base year and for the projected second six months of the base year. For each listed account, explain all known reasons why the expense amount is so much greater in the projected last six months of the base year than in the first six months of the base year that included actual amounts.

	Account	Base Year Actuals First Six Months	Base Year Projected 2nd Six Months	Increase Amount
a.	512002	$2,608.18	$8,762.82	$6,154.64
b.	512003	$695.40	$3,355.60	$2,660.20
c.	512014	$978.65	$5,115.35	$4,136.70
d.	512022	$0	$7,950.00	$7,950.00
e.	512900	$10,467.58	$22,821.07	$12,353.49
f.	513900	$4,573.63	$8,860.11	$4,286.48

Response:

For all Base Period expenses shown, the projected Base Period total is based on a normalized annual expense level, regardless of actual activity reflected, as these expenses do not necessarily incur evenly over a given 12-month period.

a. Annual forecast based on 2021 actual spending

b. Annual forecast based on average of 2020 and 2021 actual spending

c. Annual forecast based on average of 2020 and 2021 actual spending

d. This is a City of Clinton wastewater expense and the total of $7,950 should be removed from the revenue requirement, it will not be incurred in 2022 or going forward.

e. Annual forecast based on average 2020 and 2021 actual spending. $3,296 should be removed from the revenue requirement due to being related to Clinton Wastewater expenses that will not be incurred in the base period nor the future test year.

f. Annual forecast based on average 2020 and 2021 actual spending. $295 should be removed from the revenue requirement due to being related to Clinton Wastewater expenses that will not be incurred in the Base Period nor the Forecast Period.

Witness: James Kilbane

AG DR 1-95:

If not already addressed in the response to subpart d. of the previous question, describe in detail the "Other Contracted Workers" in account 512022 amounting to $7,950.00 in expense projected in the base year and the test year and indicate whether this is a new expense and explain why it is added.

Response: This has been identified as a City of Clinton wastewater expense and should be removed from the revenue requirement; it will not be incurred in 2022 or going forward

Witness:

James Kilbane

AG DR 1-96:

Refer to the Application, Exhibit 29.9 which shows among other things the chemical expenses by account for the actual and estimated portions of the base year. Refer to the amounts for the following accounts for the actual first six months of the base year and for the projected second six months of the base year. For each listed account, explain all known reasons why the expense amount is so much greater in the projected last six months of the base year than in the first six months of the base year that included actual amounts.

	Account	Base Year Actuals First Six Months	Base Year Projected 2nd Six Months	Increase Amount
a.	514001	$15,468.51	$23,469.00	$8,000.49
b.	514900	$24,382.36	$37,537.64	$13,155.28

Response: Many of the chemicals WSCK uses come in bulk annually or semi-annually, so the timing of the actual incurred cost does not align with the usage. Excel file PSC DR 1-50 Chemicals Simplified.xlsx reveals the projected annual usage cost for calculations A and B above.

Witness: James Kilbane

AG DR 1-97:

Refer to the Application, Exhibit 29.14, which shows among other things the pensions and other benefits expenses by account for the actual and estimated portions of the base year and for the test year.

a. Explain all reasons why the 401K Profit Sharing expense in account 531001 is projected to increase by approximately 26.1% ($5,786.34 increase/$22,170.94) from the base year to the test year.

b. Explain all reasons why the 401K Match expense in account 531002 is projected to increase by approximately 81.4% ($16,722.81 increase/$20,553.57) from the base year to the test year.

c. Explain all reasons why Employee Insurance Deductions expense in account 532005 is projected to be $0 in the test year, when the amount projected for the base year equals ($48,778.12), which is the equivalent of an increase in expenses of $48,778.12 in the test year.

d. Confirm that the Company does not participate in any defined pension and/or OPEB benefit plans. If not confirmed, explain since there are no specific accounts listed for those purposes.

Response:

a & b. The Base Period used to forecast the projected increase in 401K Profit Sharing and Match expenses includes 6 months actuals, which exclude the merit increase that occurred April 1, 2022, and the merit and wage adjustment increases that will be effective April 1, 2023. It also includes the difference caused by an employee not taking advantage of the full 401k match. Also, the Base Period actuals include various open positions during the first 6 months. Please see Excel file PSC DR 1-49 Exhibits 18-32-29 - Schedule B - S&W-Payroll Taxes-Benefits REDACTED for the formulas related to the Forecast Period.

c. The employee insurance deduction represents the amounts withheld from employee paychecks for health benefits, effectively an offset of the gross employer costs in account 532006. The Forecast Period was presented as the net employer cost, therefore only a net value was shown in account 532006.

d. The Company does not participate in defined benefit plans.

Witness: James Kilbane

AG DR 1-98:

Refer to the Application, Exhibit 29.15 which shows among other things the rent expenses by account for the actual and estimated portions of the base year. Refer to the amounts for the following account for the actual first six months of the base year and for the projected second six months of the base year. For the listed account, explain all known reasons why the expense amount is so much greater in the projected last six months of the base year than in the first six months of the base year that included actual amounts.

Account	Base Year Actuals First Six Months	Base Year Projected 2nd Six Months	Increase Amount
571100	$4,333.34	$14,445.00	$10,111.66

Response: Many of the payments for the annual lease renewals for railroad easements had not been processed nor received by March 31, 2022. The projected rent expense and calculation is shown in Excel file PSC DR 1-50 Rents.xlsx

Witness: James Kilbane

AG DR 1-99:

Refer to the Application, Exhibit 29.16, which shows among other things the insurance expenses by account for the actual and estimated portions of the base year. Refer to the amounts for the following account for the actual first six months of the base year and for the projected second six months of the base year. For the listed account, explain all known reasons why the expense amount is so much greater in the projected last six months of the base year than in the first six months of the base year that included actual amounts.

Account	Base Year Actuals First Six Months	Base Year Projected 2nd Six Months	Increase Amount
560400	$0	$14,152.18	$14,152.18

Response: The account shown is where the Company records insurance claims that are below WSCK's insurance deductible or issues that WSCK's insurer will not cover. The projected is based on historical averages; though the Company has not incurred insurance expenses in the first 6 months, the activity in the account is often inconsistent as it is dependent on insurance claims activity.

Witness: James Kilbane

AG DR 1-100:

Refer to the Application, Exhibit 29.18, which shows among other things the miscellaneous expenses by account for the actual and estimated portions of the base year. Refer to the proforma adjustment in the test year for account 629900 “Other Misc Expense” which adds $7,975 to test year expense.

a. Confirm that this is the amount added to the test year expense associated with the AMI project.

b. Explain all the components of this new expense and why each component is added to the revenue requirement.

Response:

a. $7,975 is the amount added to the test year expense.

b. Other Misc Expense is the annual expense for the AMI infrastructure annual training offered and subscriptions required to utilize the AMI equipment. Please see Excel file PSC DR 1-49 Exhibit 41 - AMI cost impacts REDACTED.xlsx, Quote and Details tab.

Witness: James Kilbane

AG DR 1-101:

Refer to the Application, Exhibit 29.22, which shows among other things the taxes other than income expenses by account for the actual and estimated portions of the base year. Refer to the amounts for the following accounts for the actual first six months of the base year and for the projected second six months of the base year. For the listed account, explain all known reasons why the expense amount is so much greater in the projected last six months of the base year than in the first six months of the base year that included actual amounts.

Account	Base Year Actuals First Six Months	Base Year Projected 2nd Six Months	Increase Amount
641100	$25,025.27	$39,011.42	$13,986.15

Response: The second 6 months assume full employment, no vacancies, and merit increases that went into effect on April 1, 2022. The prior 6 months included 3 vacancies that occurred within that period.

Witness: James Kilbane

AG DR 1-102:

Refer to the Application, Exhibit 41, which shows the annual revenue requirements for the AMI program utilizing December 31 balances for each year 2023 through 2027.

a. In similar format for one year, provide the revenue requirement for the AMI project for the test year based on the 13-month average rate base costs and related expense accounts included in the Company's filing. Provide in electronic format with all formulas intact.

b. Indicate the depreciation rate used to project depreciation expense for the AMI project investment and describe how it was determined. If there was a calculation of the rate, provide in electronic format with all formulas in place.

Response:

a. Please see attached Excel file AG DR 1-102 Exhibit 41 - AMI cost impacts REDACTED - Forecast Period.xlsx.

b. The Company used the currently authorized depreciation rate for the Meters asset account of 2.25%.

Witness: James Kilbane

AG DR 1-103:

Provide a list of the Company's vehicles which include year, make, and model. In addition, indicate on the list the two vehicles that the Company intends to replace in 2022 and 2023, and provide the plant in service amount and accumulated depreciation amount related to those vehicles as of the end of December 2021.

Response: Please see Excel file AG DR 1-072 - Exhibits 10-20-28 - Schedule A - Rate Base Components Updated 7.28.22.xlsx, Vehicles-Computers tab for the vehicle details requested. The two vehicles that have been replaced or will be replaced – are the 2008 Chevy Silverado in 2021 and 2011 Toyota Prius in 2023 are highlighted in yellow.

Witness: James Kilbane

AG DR 1-104:

Refer to the Application, Exhibit 41, which shows the annual revenue requirements for the AMI program utilizing December 31 balances for each year 2023 through 2027. In similar format for one year, provide the revenue requirement for the Transmission Main Replacement project for the test year based on the 13 month average rate base costs and related expense accounts included in the Company's filing. Provide in electronic format with all formulas intact.

Response: Please see attached Excel file AG DR 1-102 Exhibit 41 - AMI cost impacts REDACTED - Forecast Period.xlsx, AG DR 1-104 tab.

Witness: James Kilbane

AG DR 1-105:

Refer to the Kilbane Testimony, page 11, regarding the depiction of “Captime” for the base and projected periods.

a. Provide the calculation of the Base Period “Captime” amounts in electronic format with all formulas intact and describe the components of the calculation.

b. Provide the total capital dollars and the “Captime” amounts recorded for each year 2017 through 2021 and to date during 2022.

c. Provide the estimated “Captime” during the test year separately for the Clinton Water Main project, the AMI meter project, and all others. In addition, provide the calculation of the estimates for each in electronic format with all formulas intact.

d. Do the “Captime” amounts include a provision for payroll taxes? If so, describe. If not, explain why not.

Response:

a. The Captime in the Base Period is the 2022 Budgeted Captime based on the average of 2020 actuals and 2021 forecasted as of June 2021

b. Please see Excel file AG DR 1-105 Captime.xlsx.

c. For AMI cost please see PSC DR 1-49 -Exhibit 41 AMI Cost impact REDACTED.xlsx, for Main replacement please see Excel file AG DR 1-105 Captime.xlsx.

d. Captime rates include base wages as well as benefits, payroll taxes, insurance, and transportation.

Witness: James Kilbane

AG DR 1-106:

Refer to the Kilbane Testimony, page 12, regarding the deferred maintenance costs and to the Application, Exhibit 28.8. Provide a schedule that shows the beginning and ending balances and all activity during the year for account 181002 Def Chgs – Tank Maint and Repair and account 182002 Acc. Amort -Def Chgs – Tank Maint and Repair for 2018, 2019, 2020, 2021, and through the most recent month with available data. Identify and separate the balances by specific tank maintenance project, indicate the amortization periods utilized to record amortization for each deferral project, and cite all authorities for those amortization periods.

Response: Please see Excel file AG DR 106 Deferred.xlsx.

All the deferred tank charges included in the current filing were included in Case No. 2020-00160. The only adjustment in the final order was to the amortization period of the tank reconditioning projects, noted in the attachment as asset numbers 1013221 and 1013222. All other deferred tank amortization periods were not adjusted in the final order.

Witness: James Kilbane

AG DR 1-107:

Refer to the Kilbane Testimony, pages 13 and 14, regarding the computations for transportation expense applicable to the Application, Schedule 29.10. Provide the workpaper computations performed in electronic format with all formulas intact.

Response: Please see Excel file PSC DR 1-50 Fuel Cost Estimated.xlsx for fuel cost. For all other transportation costs, please see Excel file PSC DR 1-50 Adaptive Files.xlsx.

Witness: James Kilbane

AG DR 1-108:

Refer to the Kilbane Testimony, page 20, regarding the computations for property tax. Provide the workpaper computations performed in electronic format with all formulas intact.

Response: Please see Excel file PSC DR 1-49 Exhibits 27-28-29 and subparts – Rev Reqt 2022 WSCKY as Filed.xlsx, tab TOTI, cell T24.

Witness: James Kilbane

AG DR 1-109:

Refer to the Kilbane Testimony, page 26, and the Application, Exhibit 29, Schedule C, regarding the allocation of capital costs for the Fusion project.

a. Provide the amortization period of the asset used to determine the amortization expense in the revenue requirement and explain the basis of using that period of time.

b. Explain why these capitalized costs are included as a non-current asset, subject to amortization, and not part of plant in service, subject to depreciation.

Response:

a. Please see response to AG DR 135. The amortization period reflects the non-cancelable term of the arrangement – 5 years, plus the period covered by the option to extend the arrangement if Corix is reasonably certain to exercise that option. Please see the attached guidance document issued by Grant Thornton on implementation costs for cloud computing, PDF file AG DR 1-109 NDS-2018-11-implementation-costs-hosting-arrangement.pdf, page 5.

b. As the Fusion ERP system constitutes a cloud computing system, it cannot be classified as a fixed asset. Corix has identified Fusion as meeting the criteria of a service contract, as it does not own software licenses for the product, and capitalizable costs must therefore be categorized as a non-plant asset and amortized. This treatment is consistent with FASB EITF 17-A and FASB Subtopic 350-40-30-5.

Witness: James Kilbane

September 11, 2018 NDS 2018-11

Grant Thornton

New Developments Summary

Implementation costs in a hosting arrangement

ASU 2018-15 addresses customer accounting

Summary

The FASB issued ASU 2018-15, *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract (a consensus of the FASB Emerging Issues Task Force)*, to address how a customer should account for the costs of implementing a cloud computing service arrangement (also referred to as a "hosting arrangement").

Under ASU 2018-15, entities should account for costs associated with implementing a cloud computing arrangement that is considered a service contract in the same way as accounting for implementation costs incurred to develop or obtain software for internal use using the guidance in ASC 350-40.

The amendments address when costs should be capitalized rather than expensed, the term to use when amortizing capitalized costs, and how to evaluate the unamortized portion of these capitalized implementation costs for impairment. The ASU also includes guidance on how to present implementation costs in the financial statements and creates additional disclosure requirements.

Public business entities should apply the amendments in fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. All other entities should apply the amendments in fiscal years beginning after December 15, 2020 and in interim periods within fiscal years beginning after December 15, 2021.

Contents

Scope

The guidance in ASU 2018-15, *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract (a consensus of the FASB Emerging Issues Task Force)*, applies to all implementation, setup, and other upfront costs incurred by a customer in a hosting arrangement that is a service contract. The Master Glossary defines a hosting arrangement as follows.

Hosting Arrangement: In connection with accessing and using software products, an arrangement in which the customer of the software does not currently have possession of the software; rather, the customer accesses and uses the software on an as-needed basis.

With the issuance of ASU 2018-15, the guidance in ASC 350-40, *Intangibles – Goodwill and Other: Internal-Use Software*, now comprises two subsections. The General Subsection applies to any costs incurred in developing or obtaining internal-use software. ASU 2018-15 adds a new subsection to ASC 350-40, called Implementation Costs of a Hosting Arrangement That Is a Service Contract, which addresses the accounting for costs incurred by a customer when implementing a cloud computing arrangement.

Software subject to a hosting arrangement is within the scope of the existing guidance in the General Subsection of ASC 350-40 if both of the following criteria are met:

a. The customer has the contractual right to take possession of the software at any time during the hosting period without incurring a significant penalty.

b. The customer can feasibly run the software on its own hardware or contract with a third party unrelated to the vendor to host the software.

If one or both of these criteria are not met, the arrangement is considered a service contract rather than a contract to purchase or license software.

ASC 350-40-15-4A

The guidance in the General Subsections of this Subtopic applies only to internal-use software that a customer obtains access to in a hosting arrangement if both of the following criteria are met:

a. The customer has the contractual right to take possession of the software at any time during the hosting period without significant penalty.

b. It is feasible for the customer to either run the software on its own hardware or contract with another party unrelated to the vendor to host the software.

ASC 350-40-15-4C

Hosting arrangements that do not meet both criteria in paragraph 350-40-15-4A are service contracts and do not constitute a purchase of, or convey a license to, software.

ASC 350-40-15-4D

Implementation costs of a hosting arrangement that does not meet both criteria in paragraph 350-40-15-4A shall be accounted for in accordance with the Implementation Costs of a Hosting Arrangement That Is a Service Contract Subsections of this Subtopic.

ASC 350-40-25-18

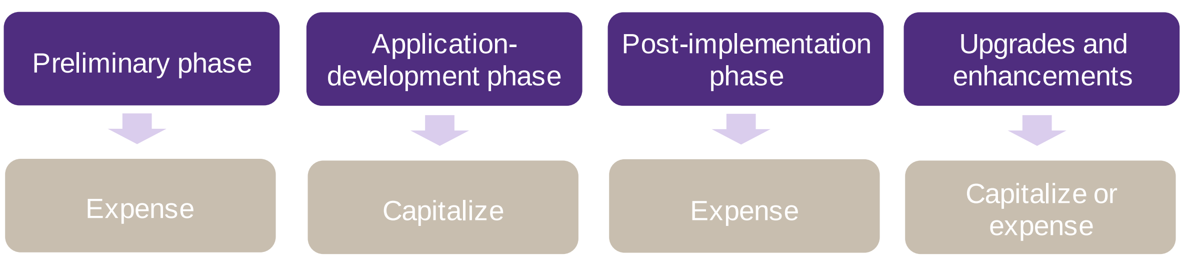
An entity shall apply the General Subsection of this Section as though the hosting arrangement that is a service contract were an internal-use computer software project to determine when implementation costs of a hosting arrangement that is a service contract are and are not capitalized.

The impact of this new guidance is that implementation costs incurred in a hosting arrangement will be capitalized or expensed using the same guidance applied to internal-use software, even when a hosted software does not meet the criteria to be classified as such.

Accounting for implementation costs

When accounting for implementation costs incurred in a hosting arrangement, entities should apply the existing internal-use software guidance in ASC 350-40. In other words, entities should consider both the nature of the costs and the phase of development in which the implementation costs are incurred to determine whether the costs should be capitalized or expensed. Under ASC 350-40, costs related to implementation activities in the preliminary and post-implementation phases of a project are expensed as incurred, while costs incurred to develop internal-use computer software during the application-development phase are generally capitalized. Entities that incur costs to upgrade or enhance existing software will either capitalize or expense the costs, depending on the type of cost.

Figure 1: Accounting for costs incurred for internal-use software



When assessing which stage of development a software project is in, entities should consider the processes performed. For example, an entity would be in the preliminary phase when determining the performance and system requirements for the proposed software and evaluating potential methods for meeting their requirements with the resources available.

GT insights: Evaluating costs when project stages are unclear

Many companies employ agile software development whereby multiple project stages are conducted simultaneously. In this process, a software project may reach a certain stage and, due to various developmental issues, return back to a previous stage, which creates complexities when applying the guidance in ASC 350-40.

In ASC 350-40-55-3, the FASB outlines which processes fall into each stage, but the Board also acknowledges that these stages and processes do not always occur linearly in the order presented in the guidance. When project stages fluctuate or are not clearly distinguishable, we believe that entities should focus on the type of activity rather than on a project's stage. For example, when an entity decides to move forward with a software project and commits to funding the project through completion, it typically enters the application-development stage. However, some entities may commit to a project before evaluating all the alternatives and selecting a specific solution. Costs incurred for these activities would still be considered part of the preliminary project stage based on the nature of the costs incurred, even if the entity has already committed to the project.

The following example illustrates how to apply the new guidance when accounting for implementation costs incurred in a cloud computing arrangement that is a service agreement.

Evaluating implementation costs for capitalization versus expense

Company A enters into a software as a service (SaaS) contract with a provider to host its customer database. The initial contract includes two years of hosting services at $25,000 per month, with an option to renew for three additional annual periods. Company A has determined that it cannot take possession of the software or run it on its own or a third party's hardware.

Company A pays $1 million upfront to the cloud computing provider to customize the software for its purposes and to implement the solution. These costs are all directly related to the development of the software and are therefore capitalized in accordance with ASC 350-40-30-1.

The company also expects to incur a total of $500,000 of internal costs related to the project, of which $100,000 relates to the initial outreach performed to obtain information on the cost of implementing the system. These costs are considered preliminary project expenses and are expensed as incurred.

Of the remaining $400,000 of internal costs, $100,000 relates to training employees to work with the database and is expensed as incurred. The rest of the costs are incurred by Company A's IT department while working with the software engineers from the third-party provider to develop a customized product to meet the company's needs. The company determines that these costs relate directly to the development of the hosted software and should be capitalized.

Company A capitalizes $1.3 million of the total implementation costs and expenses $200,000 for training and preliminary stage costs.

Multiple elements included in purchase price

When an entity purchases hosting services from a third party in a multiple-element arrangement, it needs to allocate the consideration paid between the various elements based on the relative stand-alone selling price and capitalize only the costs for those elements that meet the capitalization criteria previously discussed. In other words, only the implementation costs allocated to the hosting arrangement are subject to the guidance in ASC 350-40.

ASC 350-40-30-4

Entities may purchase internal-use computer software from a third party or may enter into a hosting arrangement. In some cases, the price includes multiple elements, such as the license or hosting, training for the software, maintenance fees for routine maintenance work to be performed by the third party, data conversion costs, reengineering costs, and rights to future upgrades and enhancements. Entities shall allocate the cost among all individual elements. The allocation shall be based on the relative standalone price of the elements in the contract, not necessarily separate prices stated within the contract for each element. Those elements included in the scope of this Subtopic shall be accounted for in accordance with the provisions of this Subtopic.

GT insights: Estimating stand-alone selling price

In some cases, the elements of a bundled arrangement may not be sold on a stand-alone basis. When observable stand-alone selling prices are not available, the customer in a hosting arrangement needs to estimate the stand-alone selling prices of the various elements. While ASC 606 includes guidance on how a vendor should estimate stand-alone selling price, the FASB has not provided explicit guidance for customers. This does not mean that an entity may default to the list prices stated in the hosting contract. Rather, entities need to apply judgment to estimate the stand-alone selling price of each element in the contract and to allocate the costs based on those estimates.

Amortization

Entities should amortize capitalized implementation costs over the term of the cloud computing arrangement, which includes the noncancellable term of the arrangement plus periods covered by an option to

- Extend the arrangement if the entity is reasonably certain to exercise that option.
- Terminate the arrangement if the entity is reasonably certain not to exercise the termination option.
- Extend (or not terminate) the arrangement if the vendor controls whether or not the option will be exercised.

GT insights: Determining the amortization period

Estimating the amortization period for internal-use software costs is analogous to estimating the amortization or depreciation period for other intangible and tangible assets. The process is subjective and requires entities to evaluate the facts and circumstances. Because software is generally more prone to obsolescence and changing technology, entities often need to exercise judgment when developing an estimate of the amortization period. The pace of change in the software and technology industry may result in software having a useful life that is shorter that the full term of the arrangement, including all options to renew the arrangement, because an entity may be more likely to enter into an arrangement for a new hosted software product rather than renewing an existing arrangement for an older product.

Capitalized implementation costs should be amortized on a straight-line basis, unless another systematic and rational basis better represents the pattern in which the entity expects to benefit from accessing the software. The amendments to ASC 350-40 also specify that the right to access the hosted software is considered equivalent to actually using the software. Therefore, entities should not recognize amortization expense based on the extent to which the entity uses or is expected to use the hosted software.

An entity should consider the unit of account when determining when to start amortizing implementation costs incurred in a hosting arrangement. Each module or component of the hosting arrangement should be considered separately, unless the functionality of the module depends on the completion of other modules. If a module is ready for its intended use, testing is complete, and use of the module does not depend on the completion of any other modules, the entity should begin amortizing the implementation costs related to that module. If the functionality of a module or component is entirely dependent on another module, amortization should begin when both modules are completed and ready for use.

The estimated term of the arrangement should be periodically reassessed and any change in the term should be accounted for as a change in accounting estimate under ASC 250, *Accounting Changes and Error Corrections*.

The FASB outlined the following factors to consider when assessing the estimated term of an arrangement.

ASC 350-40-35-16

An entity shall consider the effects of all the following when determining the term of the hosting arrangement in accordance with paragraph 350-40-35-14 and when reassessing the term of the hosting arrangement in accordance with paragraph 350-40-35-15:

a. Obsolescence

b. Technology

c. Competition

d. Other economic factors

e. Rapid changes that may be occurring in the development of hosting arrangements or hosted software

Impairment

The amendments in ASC 350-40-35 require entities to evaluate the unamortized portion of capitalized implementation costs for impairment, as if these capitalized implementation costs were long-lived assets, using the measurement and recognition guidance in ASC 360-10-35.

The amended guidance also provides examples of events and changes in circumstances that might indicate the carrying amount of the related implementation costs may not be recoverable and the asset should be impaired.

ASC 350-40-35-11

Impairment shall be recognized and measured in accordance with the provisions of Section 360-10-35 as if the capitalized implementation costs were a long-lived asset. That guidance requires that assets be grouped at the lowest level for which there are identifiable cash flows that are largely independent of the cash flows of other groups of assets. The guidance is applicable, for example, when one of the following events or changes in circumstances occurs related to the hosting arrangement that is a service contract indicating that the carrying amount of the related implementation costs may not be recoverable:

a. The hosting arrangement is not expected to provide substantive service potential.

b. A significant change occurs in the extent or manner in which the hosting arrangement is used or is expected to be used.

c. A significant change is made or will be made to the hosting arrangement.

The capitalized implementation costs related to each module or component of a hosting arrangement should be evaluated separately to determine whether the related asset is no longer used, and should therefore be accounted for as abandoned, under the impairment guidance in ASC 360-10-35.

In some cases, an entity might decide to abandon a project midway through implementation, for example, due to budget constraints or to changes in either the business or a feasibility assessment. When this happens, the entity must stop capitalizing implementation costs and evaluate the asset for impairment.

The termination of a hosting arrangement, whether in full or only for a particular model or component, cuts off the customer's access to any benefit that could be derived from using the hosted software. As a result, the related asset for capitalized implementation costs is no longer used. In these cases, the entity must write off all related capitalized costs remaining.

Presentation and disclosure

Entities should present capitalized implementation costs and the related amortization in the same line item in the balance sheet, income statement, and statement of cash flow as the related payments for the hosting arrangement that is a service contract.

The amendments in ASU 2018-15 require entities to disclose the nature of their hosting arrangements that are service contracts, and to provide the disclosures required in ASC 360 as though the capitalized implementation costs were a separate major class of depreciable asset, including the following information:

- Amortization expense for the period
- Balance of major classes of depreciable assets
- Accumulated amortization at the balance-sheet date
- A general description of the method/s used in computing amortization for major classes of depreciable assets

Effective date and transition

Public business entities should apply the amendments in fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. All other entities should apply the amendments in fiscal years beginning after December 15, 2020 and in interim periods within fiscal years beginning after December 15, 2021. Early adoption is permitted for all entities in any annual or interim period if the financial statements have not been issued or made available for issuance.

Entities should apply the amendments either (1) retrospectively, with the cumulative effect of applying the amendments presented in the financial statements recognized in the opening retained earnings of the earliest period presented, or (2) prospectively to costs for activities performed on or after the adoption date of the ASU.

AG DR 1-110:

Refer to the Baryenbruch Testimony, page 15. Expand the table to include the same information for the years 2017, 2018, and 2019.

Response: Please see below.

WSCK	2017 Actual	2018 Actual	2019 Actual
Corporate Support Services	$ 719,583	$ 886,601	$ 704,071
Customer Count	7,199	7,193	7,920
Cost per Customer	$ 100	$ 123	$ 89

Witness: Pat Baryenbruch

AG DR 1-111:

Refer to the Watkins Testimony, page 4. Provide the percentage comparison to the market midpoint for each individual component of total compensation for 2022.

Response: Please refer to AG DR 1-41.

Witness: Quentin M. Watkins

AG DR 1-112:

Refer to the Watkins Testimony, page 4.

a. Provide the percentage increases for each position assumed for 2023 in order to take base compensation from 5% below the market midpoint to 3% above the market midpoint.

b. Provide the percentage comparison to the market midpoint for each individual component of total compensation projected for 2023.

Response:

a. Please refer to Attachment AG DR 1-41.

b. As stated in the response to AG DR 1-41, Mr. Watkins did not conduct the total compensation analysis for 2023. The base compensation analysis is company-specific for the analysis of 2023 costs as compared to the health and retirement benefits analysis.

Witness:

Quentin M. Watkins

AG DR 1-113:

Refer to the monthly variance reports provided as Exhibit 22. A number of the monthly variance reports show that salaries were lower than budget due to two open positions. Describe the positions that were open, the location of each, how long the positions were open, and whether the positions have now been filled.

Response: The Field Tech 1 position in Middlesboro has been filled. The position was open for approximately 12 months. The Student Operations Apprentice position in Kentucky remains open for applications. The position has been open for approximately 14 months. This position was reposted 4 months ago, prior to the end of the school year.

Witness: Colby Wilson

AG DR 1-114:

Refer to the Kilbane Testimony, page 10, which discusses base year and forecast year estimates for salaries, taxes, and benefits for employees.

a. Provide a detailed breakdown of the amounts estimated for the base year and forecast year by employee, including merit raises and competitive wage adjustments assumed, in electronic format with all formulas intact.

b. Provide the annual raise that Water Service Kentucky provided to each of its employees as well as the average for all employees for the calendar years 2017, 2018, 2019, 2020, 2021, and 2022. In addition, identify the location of each employee that received an annual raise in the calendar years listed.

c. Identify all bonuses that Water Service Kentucky provided to its employees for the calendar years 2017, 2018, 2019, 2020, 2021, and 2022. Identify the location of each employee that received a bonus in the calendar years listed.

Response:

a & b. Please see Excel file PSC DR 1-49 Exhibit 18-32-29 - Schedule B - S&W-PR Taxes-Benefits CONFIDENTIAL.xlsx.

c. Please see response to AG DR 1-3.

Witness: James Kilbane

AG DR 1-115:

Refer to the Wilson Testimony, page 5, and further to the tables showing the unaccounted-for-water ("UFW") statistics for 2021 for Middlesboro and Clinton. Provide in the same format the annual UFW statistics separately for Middlesboro and Clinton for 2017, 2018, 2019, 2020, and thus far for 2022.

Response:

2017- Clinton=5.9%

Middlesboro=3.2%

2018- Clinton=14.9%

Middlesboro=13.9%

2019- Clinton=8.4%

Middlesboro=14.3%

2020- Clinton=6.7%

Middlesboro=19.6%

2022 thru June- Clinton=7.52%

Middlesboro=16.11%

Witness: Colby Wilson

AG DR 1-116:

Refer to the projected balance sheet provided as Application, Exhibit 15, and further to line 53, which shows projected 2023 Other Non Current Liabilities of $395,726. Provide a breakdown of this projected amount by individual balance and indicate whether each amount was included in rate base, and if not why not.

Response:

Amount	Description	Entity
(39,774.19)	Non-Qualified Deferred Compensation	WSC - Allocated
(76,154.27)	Reserve for Chicago Office Rent	WSC - Allocated
(2,122.18)	TCJA Excess ADIT	WSC - Allocated
(52,360.00)	TCJA surcredit liability	WSCK
(225,315.21)	ASC 842 - Operating Lease Reserve	WSC - Allocated
(395,725.85)		

- Non-Qualified Deferred Compensation: This balance represents certain employee elections to defer compensation (base salaries and/or EIP) for future payment. CRU records the liability for the future payments, while purchasing COLI assets to informally fund the liability. As the liability and asset balances are designed to approximately offset, there is no need to include the amount above in the rate base.
- Reserve for Chicago Rent: This balance reflects the reserve created by the rent abatements and Tenant Improvement Credits included in the WSC's Chicago office lease, which are created by the lease accounting requirements to capture the difference in rent paid and the straight-line expense recorded over the lease term. As tenant improvements funded by the agreement's credit are included in WSC's allocated fixed assets and CRU's recorded rent expense exceeded its payments due to rent abatement for the first 27 months of the lease, the Company is agreeable to including the WSCK allocated portion

of rent liability in its rate base. The Company has attached an updated balance for the 13-month average for 2023, please see Excel file AG DR 1-116 Chicago Rent Schedule.xlsx.

- TCJA Excess ADIT: This balance represents the Excess ADIT established in 2017, adjusted in 2018, for WSC. WSC expects to write off this balance in 2022.
- TCJA Surcredit Liability: This balance represents the accrual of the TCJA surcredit that was approved in the Company's 2018 rate case and returned to customers in 2019. As the liability has now been returned to customers, the above balance will be written off.
- ASC 842 Operating Lease Reserve: CRU adopted ASC 842 in 2022, and therefore was required to establish reserves for the value of operating leases – both right-of-use asset and lease liability balances. While the liability balance noted above has begun allocation to CRU affiliates, the final accounting of the allocations is still being determined. However, because the asset and liability reserves are designed to approximately offset, and represent a financial statement presentation and not solely the requirement of future payment, there is no need to include the amount above in rate base.

Witness: James Kilbane

AG DR 1-117:

Refer to the corporate and regional income statement allocations of costs from WSC and Corix reflected in the Application, Exhibit 26. Provide the same information related to years 2016, 2017, and 2018.

Response: Please see below.

	2016	2017	2018
WSC	$ 716,364	$ 719,583	$ 767,338
Corix			$ 119,263
Total	$ 716,364	$ 719,583	$ 886,601

Witness: James Kilbane

AG DR 1-118:

Refer to the allocations of balance sheet costs from WSC reflected in the Application, Exhibit 26. Provide a breakdown of the allocated long term assets of $131,323 and long term liabilities of ($112,056) in the forecast period and indicate whether those amounts are included in the revenue requirement. If included, explain how. If not included, explain why not.

Response:

- Long Term Asset: This balance consists of the Non-Current Asset for the Fusion Implementation, as shown in Exhibit 28.7. Exhibit 28.7 reflects the 13-month average of the asset, while Exhibit 26 reflects the year-end balance.

Long Term Liabilities:

Amount	Description	Entity
(35,144)	Non-Qualified Deferred Compensation	WSC - Allocated
2,453	ADIT	WSC - Allocated
(77,951)	Reserve for Chicago Office Rent	WSC - Allocated
(1,414)	TCJA Excess ADIT	WSC - Allocated
(112,056)		

- Non-Qualified Deferred Compensation: Please see response to AG DR 1-116 above.
- Reserve for Chicago Rent: Please see response to AG DR 1-116 above.
- TCJA Excess ADIT: Please see response to AG DR 1-116 above.
- ADIT: This balance represents WSC's ADIT balance allocated to WSCK. The Company has not historically requested inclusion in the rate base of this item.

Witness: James Kilbane

AG DR 1-119:

Refer to the Direct Testimony of Dylan W. D'Ascendis ("D'Ascendis Testimony"). Provide all workpapers and supporting documentation used and relied upon by Mr. D'Ascendis in the preparation of his Direct Testimony, schedules, and exhibits. Provide all spreadsheets in Excel format with cell formulas intact.

Response: Please see response to PSC DR 2-20.

Witness: Dylan D'Ascendis

AG DR 1-120:

Provide copies of all articles and publications cited by Mr. D'Ascendis in his Direct Testimony.

Response: Please see response to PSC DR 2-20.

Witness: Dylan D’Ascendis

AG DR 1-121:

Provide Mr. D'Ascendis' exhibits in native spreadsheet format with cell formulas intact.

Response: Please see response to PSC DR 2-20.

Witness: Dylan D'Ascendis

AG DR 1-122:

If not provided previously, provide all supporting documentation and spreadsheet analyses for Mr. D'Ascendis' size adjustment, the description of which begins on page 46 of his Direct Testimony.

Response: Please see response to PSC DR 2-20.

Witness: Dylan D’Ascendis

AG DR 1-123:

Refer to the D'Ascendis Testimony, page 20. Provide the most recent update to the Blue Chip Financial Forecasts.

Response: Please see Attachments AG DR 1-123 (a) and (b) which contain the latest long-term and short-term Blue Chip forecasts.

Witness: Dylan D'Ascendis

Blue Chip Financial Forecasts®

Top Analysts' Forecasts Of U.S. And Foreign Interest Rates, Currency Values And The Factors That Influence Them

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BLUE CHIP FINANCIAL FORECASTS®

Executive Editor: Joseph Aguinaldo
Assistant Editor: Jules Valencia
Haver Analytics
60 East 42nd Street
New York, NY 10165
Phone (212) 986-9300
E-mail: bluechip@haver.com

Robert J. Eggert, Founder
Randell E. Moore, Editor Emeritus
Chris Sullivan, General Manager

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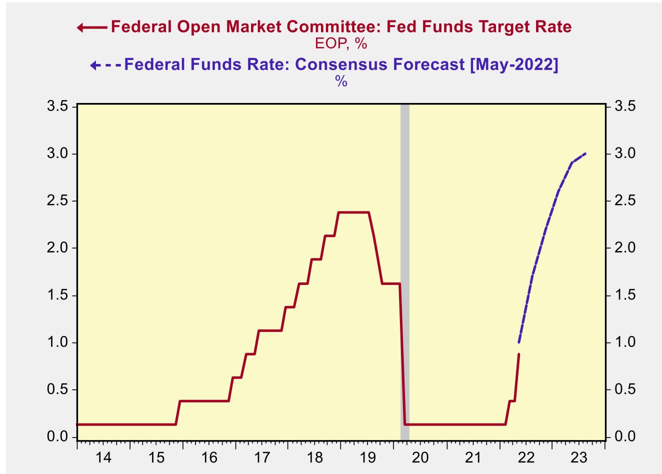
More Fed Tightening To Fight Inflation

Inflation Can Moderate without Recession. Inflation continues to be the main issue facing policymakers, investor and traders, to say nothing of consumers and business managers. To combat rising inflation, the Federal Reserve is tightening monetary policy with both interest rate and balance sheet tools. Against this backdrop, the Blue Chip Financial Forecast panelists generally believe that inflation can be slowed without the economy entering a recession. Indeed, in response to a specific Special Question, 72% of panelists believe this is the likely outcome. Indeed, another Special Question's results show that the panel believes the probability of recession this year is just 25%, although it is expected to rise to 38% during 2023. This latter expectation is still noticeably below 50%.

The Blue Chip Financial Forecasts inflation prospects are slightly higher this month than last month. The personal consumption expenditure price index rose at a 7.0% annual rate in Q1 2022, unrevised from the initial report; the Blue Chip panel's estimate for Q2 is 5.8%, the same as last month. For Q3, the panel currently looks for 4.3%, up from the May forecast of 3.9%. While these forecasts are modestly higher, both are well above the Federal Reserve's target pace of 2%.

Fed Expected To Invoke Larger Increases in Rates. Thus, there is clearly considerable work to be done to reduce inflation. In a speech on Monday, May 30, Fed Governor Christopher Waller emphasized the Fed's shift to 50-basis-point increases in the federal funds rate, and he expects at least a couple more of them after the one at the May 3-4 FOMC meeting. This view does correspond to the Blue Chip panel's forecast the rate rising to 2.4% for the fourth quarter of this year. In addition, as Waller pointed out, the Fed's purchases of Treasury securities and mortgage-backed bonds ceased in March and beginning today, June 1, the Fed will reduce its balance sheet holdings by replacing only a portion of those securities that mature. This may well contribute to increases in long-term interest rates.

Long-Term Rates, Already Up, Expected To Rise Moderately More. Longer-term interest rates are already reflecting some response to higher inflation and the Fed's shifting portfolio strategy. Ten-year Treasury yields averaged 1.94% in Q1 this year but then reached 3.01% in the first week of May. On May 31, they were trading at 2.86%. The Blue Chip panel expects them to settle above 3% for the rest of this year and at 3.4% for much of 2023. With the tightening of monetary policy and still higher inflation, the greater financial risk would generate somewhat wider credit spreads even in high-quality securities. The spreads to Treasuries for high-rated corporate bonds would also be somewhat wider; Aaa corporate bond yields are seen by the panel to rise to 4.7% by Q4 this year, 130 basis points over 30-year Treasuries, and to maintain that spread through 2023. For comparison, this spread averaged 80 basis points last year and 116 basis points during 2020.



Sources: Federal Reserve Board, Wolters Kluwer/Haver Analytics

Mortgage rates pierced 5% during April, according to Freddie Mac data; this is the first time they have been that high since 2011. The Blue Chip panel projects them to increase to 5.5% by Q4 2022 and to stay there during 2023.

Semi-Annual Long-Term Financial Outlook

The Blue Chip surveys check out longer-term prospects twice a year. The last check on a longer-term view of financial markets was in December. The pace of inflation and the overall level of interest rates are considerably higher now than they were back then. In particular, the 7.0% inflation rate for the PCE price index in Q1 and the current Blue Chip 5.8% estimate for Q2 compare to 2.9% and 2.5%, respectively, in the December forecasts. The 2022 inflation forecast is noticeably higher than it was the last time longer-run estimates were collected. The earlier projection put 2022 inflation at 3.9% over 2021 while the current estimate is 5.8%. By 2025, the Blue Chip panel projects that PCE inflation will slow to 2.3%, just marginally higher than the 2.1% in the December survey. This suggests longer-term interest rates at 3.4% for 10-year Treasuries in 2025 would be somewhat higher than the 3.1% expected back in December. And the 3.4% level indicates that the current rate range would be sustained over the long haul.

This is the first longer-term look at SOFR, the secured overnight financing rate that we began to cover late in 2021 as the key measure of short-term private sector borrowing cost. It is currently at 0.78% and estimated for this year to average 1.3%. Going forward, that is for 2025, the Blue Chip Financial Forecasts panel projects it at 2.5% and at levels very similar to the fed funds rate.

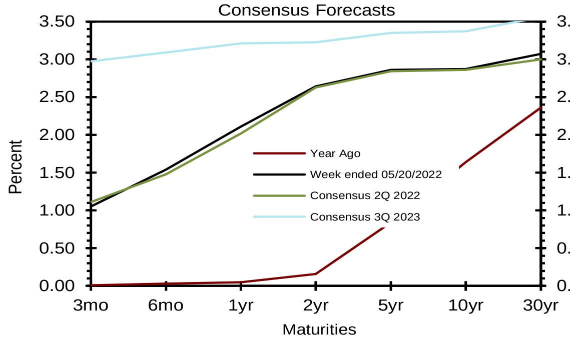
Carol Stone, CBE (Haver Analytics, New York, NY)

Consensus Forecasts of U.S. Interest Rates and Key Assumptions

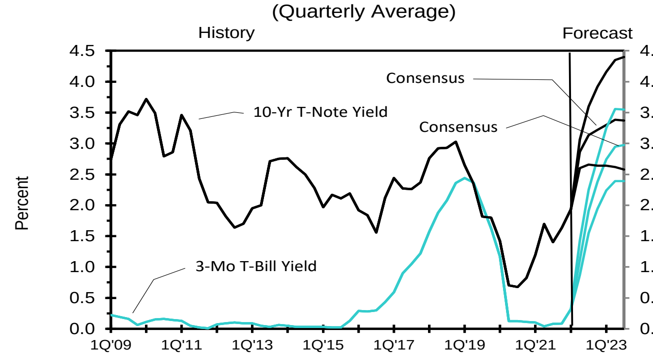
	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			*Latest Qtr*	2Q	3Q	4Q	1Q	2Q	3Q
Interest Rates	May 20	May 13	May 6	Apr 29	Apr	Mar	Feb	1Q 2022	2022	2022	2022	2023	2023	2023
Federal Funds Rate	0.83	0.83	0.33	0.33	0.33	0.20	0.08	0.12	**1.0**	**1.9**	**2.4**	**2.8**	**3.0**	**3.1**
Prime Rate	4.00	4.00	3.50	3.50	3.50	3.37	3.25	3.29	**4.0**	**5.0**	**5.5**	**5.9**	**6.1**	**6.2**
SOFR	0.79	0.78	0.49	0.28	0.29	0.16	0.05	0.09	**0.9**	**1.8**	**2.3**	**2.7**	**2.9**	**3.0**
Commercial Paper, 1-mo.	0.83	0.82	0.71	0.55	0.44	0.32	0.16	0.18	**0.9**	**1.8**	**2.4**	**2.8**	**3.0**	**3.0**
Treasury bill, 3-mo.	1.05	0.94	0.88	0.85	0.76	0.45	0.31	0.30	**1.1**	**1.9**	**2.4**	**2.7**	**2.9**	**3.0**
Treasury bill, 6-mo.	1.54	1.44	1.43	1.40	1.26	0.86	0.64	0.61	**1.5**	**2.2**	**2.6**	**2.9**	**3.1**	**3.1**
Treasury bill, 1 yr.	2.11	2.00	2.10	2.03	1.89	1.34	1.00	0.96	**2.0**	**2.6**	**2.9**	**3.1**	**3.2**	**3.2**
Treasury note, 2 yr.	2.64	2.61	2.72	2.62	2.54	1.91	1.44	1.44	**2.6**	**2.9**	**3.1**	**3.2**	**3.3**	**3.2**
Treasury note, 5 yr.	2.86	2.89	3.00	2.84	2.78	2.11	1.81	1.82	**2.8**	**3.1**	**3.2**	**3.3**	**3.4**	**3.4**
Treasury note, 10 yr.	2.87	2.94	3.01	2.83	2.75	2.13	1.93	1.94	**2.9**	**3.1**	**3.2**	**3.3**	**3.4**	**3.4**
Treasury note, 30 yr.	3.07	3.09	3.10	2.91	2.81	2.41	2.25	2.25	**3.0**	**3.3**	**3.4**	**3.5**	**3.6**	**3.6**
Corporate Aaa bond	4.43	4.42	4.40	4.19	4.01	3.63	3.36	3.35	**4.1**	**4.5**	**4.7**	**4.8**	**4.9**	**4.9**
Corporate Baa bond	5.13	5.10	5.06	4.84	4.63	4.23	3.92	3.90	**5.0**	**5.4**	**5.6**	**5.7**	**5.8**	**5.8**
State & Local bonds	4.09	4.03	3.93	3.84	3.70	3.30	3.01	3.02	**3.5**	**3.8**	**4.0**	**4.1**	**4.2**	**4.2**
Home mortgage rate	5.25	5.30	5.27	5.10	4.98	4.17	3.76	3.79	**5.1**	**5.3**	**5.5**	**5.6**	**5.6**	**5.5**
	History								Consensus Forecasts-Quarterly					
	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Key Assumptions	2020	2020	2020	2021	2021	2021	2021	2022	2022	2022	2022	2023	2023	2023
Fed's AFE $ Index	112.4	107.2	105.1	103.4	102.9	105.0	107.0	108.4	**112.7**	**113.9**	**114.1**	**114.0**	**113.6**	**112.9**
Real GDP	-31.2	33.8	4.5	6.3	6.7	2.3	6.9	-1.5	**2.9**	**2.5**	**2.2**	**1.8**	**1.6**	**1.6**
GDP Price Index	-1.5	3.6	2.2	4.3	6.1	6.0	7.1	8.1	**5.9**	**4.6**	**3.5**	**3.1**	**2.8**	**2.7**
Consumer Price Index	-3.4	4.8	2.2	4.1	8.2	6.7	7.9	9.2	**7.6**	**4.8**	**3.4**	**3.0**	**2.6**	**2.6**
PCE Price Index	-1.6	3.7	1.5	3.8	6.5	5.3	6.4	7.0	**5.8**	**4.3**	**3.2**	**2.8**	**2.6**	**2.5**

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index, PCE Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data are sourced from Haver Analytics. Historical data for Fed's Major Currency Index are from FRSR H.10. Historical data for Real GDP, GDP Price Index and PCE Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index history is from the Department of Labor's Bureau of Labor Statistics (BLS).

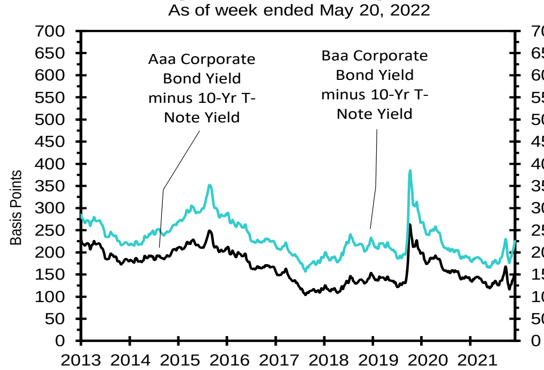
U.S. Treasury Yield Curve
Week ended May 20, 2022 & Year Ago vs.
2Q 2022 & 3Q 2023
Consensus Forecasts



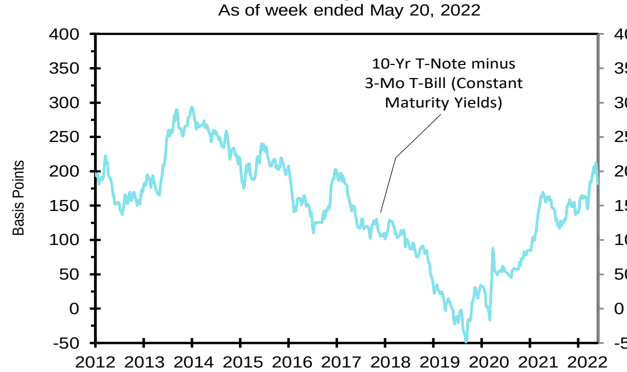
US 3-Mo T-Bills & 10-Yr T-Note Yield
(Quarterly Average)



Corporate Bond Spreads
As of week ended May 20, 2022



U.S. Treasury Yield Curve
As of week ended May 20, 2022



Policy Rates[1]

	History: Latest	History: Month Ago	History: Year Ago	Consensus Forecasts Months From Now: 3	6	12
U.S.	0.88	0.38	0.13	**1.88**	**2.45**	**3.19**
Japan	-0.10	-0.10	-0.10	**-0.09**	**-0.06**	**-0.03**
U.K.	1.00	0.75	0.10	**1.26**	**1.45**	**1.84**
Switzerland	-0.75	-0.75	-0.75	**-0.69**	**-0.56**	**-0.18**
Canada	1.00	1.00	0.25	**2.00**	**2.46**	**3.07**
Australia	0.35	0.10	0.10	**0.82**	**1.13**	**1.65**
Euro area	0.00	0.00	0.00	**0.06**	**0.21**	**0.48**

10-Yr. Government Bond Yields[2]

	History: Latest	History: Month Ago	History: Year Ago	Consensus Forecasts Months From Now: 3	6	12
U.S.	2.78	2.90	1.63	**3.08**	**3.12**	**3.19**
Germany	0.94	0.97	-0.13	**1.15**	**1.23**	**1.35**
Japan	0.24	0.25	0.09	**0.26**	**0.26**	**0.25**
U.K.	1.90	1.98	0.92	**1.91**	**2.19**	**2.35**
France	1.47	1.43	0.25	**1.68**	**1.72**	**1.81**
Italy	2.99	2.69	1.03	**3.00**	**3.01**	**2.98**
Switzerland	0.69	0.91	-0.14	**0.86**	**1.01**	**1.15**
Canada	2.83	2.87	1.54	**3.12**	**3.21**	**3.28**
Australia	3.31	3.13	1.63	**3.27**	**3.53**	**3.66**
Spain	2.02	1.83	0.58	**2.11**	**2.21**	**2.35**

Foreign Exchange Rates[3]

	History: Latest	History: Month Ago	History: Year Ago	Consensus Forecasts Months From Now: 3	6	12
U.S.	114.22	112.44	101.68	**114.0**	**113.4**	**112.4**
Japan	127.86	128.78	108.94	**126.9**	**125.1**	**122.7**
U.K.	1.25	1.28	1.42	**1.26**	**1.27**	**1.29**
Switzerland	0.97	0.96	0.90	**0.96**	**0.94**	**0.93**
Canada	1.28	1.27	1.21	**1.25**	**1.24**	**1.24**
Australia	0.70	0.73	0.77	**0.72**	**0.72**	**0.71**
Euro	1.06	1.08	1.22	**1.07**	**1.07**	**1.11**

Consensus Policy Rates vs. US Rate

	Now	In 12 Mo.
Japan	-0.98	**-3.22**
U.K.	0.13	**-1.35**
Switzerland	-1.63	**-3.36**
Canada	0.13	**-0.12**
Australia	-0.53	**-1.54**
Euro area	-0.88	**-2.71**

Consensus 10-Year Gov't Yields vs. U.S. Yield

	Now	In 12 Mo.
Germany	-1.84	**-1.84**
Japan	-2.54	**-2.94**
U.K.	-0.88	**-0.83**
France	-1.31	**-1.38**
Italy	0.21	**-0.20**
Switzerland	-2.09	**-2.04**
Canada	0.05	**0.09**
Australia	0.53	**0.47**
Spain	-0.76	**-0.84**

Forecasts of panel members are on pages 10 and 11. Definitions of variables are as follows: [1]Monetary policy rates. [2]Government bonds are yields to maturity. [3]Foreign exchange rate forecasts for U.K., Australia and the Euro are U.S. dollars per currency unit. For the U.S dollar, forecasts are of the U.S. Federal Reserve Board's AFE Dollar Index.

International. The global economic recovery from the pandemic, which has been rather resilient, is beginning to show signs of cracking under the strain of the ongoing fallout from the Russia-Ukraine conflict, lingering supply-chain problems exacerbated by COVID lockdowns in China, a further rise in food and energy prices, and a broadening bevy of central banks attempting to corral inflation with higher domestic policy interest rates. Real GDP in the first quarter declined in several major economies—e.g., the US, Japan, France and Italy. And while UK GDP posted a solid increase in Q1, the pace of activity slowed during the quarter with monthly GDP declining in March. Looking into Q2, flash Purchasing Managers' Indexes generally pointed to a further slowing in activity in May, notably in China. By contrast and despite inflation delivering a big blow to purchasing power, consumer spending was comparatively solid in Q1 across most developed economies.

At the center of the rising global recession risk is the move to less accommodative monetary policy all across the globe to combat decades-high inflation rates. In May, there were 34 policy interest rate increases with the vast majority made by emerging market central banks in an attempt to stem the fall in their currencies. For developed economies, the increased intensity of policy rate hikes has been led by the US Fed, the Bank of England and the Reserve Bank of New Zealand with each increasing their policy interest rates in May. The Fed raised its federal funds rate target by 50bps, the first increase of this size in more than 20 years. Moreover, subsequent comments from myriad Fed officials have led financial markets to expect additional 50bp increases in the near term (see lead commentary). The Bank of England raised its base interest rate for the fourth time in as many meetings. The increase was 25 bps with three members of the committee voting for a 50bp hike, although the committee's rhetoric concerning likely future rate increases was softened a bit. The RBNZ raised its policy interest rate, also for the fourth time in as many meetings, by 50 bps, the second consecutive 50bp increase and raising the rate to 2.00%, above where it was just prior to the pandemic.

A major policy reversal came from the Reserve Bank of Australia. It completely surprised financial market expectations and retreated markedly from previous guidance by raising its policy rate 25 bps at its early May meeting, the first increase in more than a decade. With inflation having accelerated markedly in recent months and the Bank having raised its inflation outlook meaningfully, financial markets are now looking for a series of further policy rate increases ahead.

The European Central Bank came in a close second for policy U-turns. In a blog on the Bank's website, President Lagarde provided a very detailed argument as to why the pre-pandemic and the ensuing emergency pandemic policy settings are no longer appropriate. She argued that the inflation outlook has shifted upwards relative to prior to the pandemic. And so policy interest rates should also be adjusted up. Leaving policy rates unchanged in such an environment, she noted, would be an implicit easing of monetary policy, which would not be warranted. She expects asset purchases to end early in the third quarter, which "would allow us a rate lift-off at our meeting in July…and be in a position to exit negative interest rates by the end of the third quarter." Market rate expectations have been adjusted up accordingly.

The central banks of Japan and China continue to be the outliers in the global shift to less accommodative monetary policies. In the face of a sharply slowing domestic economy owing in large part to extremely onerous COVID lockdowns, the People's Bank of China unexpectedly eased policy on May 20 with a 15bp cut in its benchmark rate on loans of five years or more to 4.45%, the largest single reduction since the rate took on policy significance in 2019. The Bank of Japan left its extremely accommodative policy unchanged at its late April meeting.

Second Quarter 2022

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter															Avg. For ---Qtr.---	(Q-Q % Change) (SAAR)			
	Short-Term							Intermediate-Term			Long-Term									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	A.	B.	C.	D.	E.
	Federal Funds Rate	Prime Bank Rate	SOFR Rate	Com. Paper 1-Mo.	Treas. Bills 3-Mo.	Treas. Bills 6-Mo.	Treas. Bills 1-Yr.	Treas. Notes 2-Yr.	Treas. Notes 5-Yr.	Treas. Notes 10-Yr.	Treas. Bond 30-Yr.	Aaa Corp. Bond	Baa Corp. Bond	State & Local Bonds	Home Mtg. Rate	Fed's Adv Fgn Econ $ Index	Real GDP	GDP Price Index	Cons. Price Index	PCE Price Index
Scotiabank Group	1.5 H	4.5 H	1.3	na	1.9 H	na	2.4 H	2.8	3.0	3.0	na	na	na	na	na	na	4.7	8.0	9.6 H	7.9 H
Bank of America	1.4	na	1.7 H	na	na	na	na	3.0 H	3.2 H	3.2 H	3.2	na	na	na	na	na	3.1	6.3	8.7	5.3
Barclays	1.4	4.5 H	na	na	na	na	na	2.9	3.0	3.0	3.2	na	na	na	na	na	5.0	5.3	8.8	5.7
BNP Paribas Americas	1.4	na	na	na	na	na	na	2.6	na	2.5	2.7	na	na	na	na	na	2.8	na	6.5	na
Goldman Sachs & Co.	1.4	na	na	na	1.5	na	na	2.8	3.2 H	3.2 H	3.3	na	na	na	na	na	2.5	5.1	7.5	5.1
ING	1.4	na	1.5	na	na	na	na	2.8	3.0	3.0	3.1	na	na	na	na	na	3.0	na	na	na
Mizuho Research Institute	1.4	na	na	na	na	na	na	na	na	2.6	na	na	na	na	na	na	na	na	na	na
NatWest Markets	1.4	4.4	na	1.5 H	1.9 H	2.0 H	2.1	2.6	2.5	2.5	2.6	4.3	5.3 H	3.6	4.4	na	6.0 H	7.5	9.2	6.6
Nomura Securities, Inc.	1.4	4.5 H	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.6	4.2	9.3	5.8
ACIMA Private Wealth	1.3	4.3	1.3	1.4	1.3	1.8	2.3	2.6	2.8	2.9	3.0	3.9	5.0	1.9 L	5.4	112.0	3.5	6.5	7.0	5.3
TS Lombard	1.3	4.4	1.2	1.3	1.6	1.6	1.7	2.5	2.6	2.8	2.9	3.7	4.5 L	2.8	4.6	114.0	2.0	5.0	5.0	5.0
MacroFin Analytics & Rutgers Bus School	1.1	4.3	1.1	1.2	1.2	1.6	2.2	2.8	2.9	3.0	3.1	4.3	4.9	3.8	4.9	114.6	2.0	5.6	7.0	5.8
GLC Financial Economics	1.0	4.1	0.8	0.9	1.0	1.4	2.0	2.5	2.8	2.8	3.0	3.7	4.6	3.3	4.9	110.8	1.5	6.9	6.0	6.5
J.P. Morgan Chase	1.0	na	na	na	na	na	na	2.4	2.5	2.5	2.5 L	na	na	na	na	na	3.3	5.0	8.0	7.3
Wells Fargo	1.0	4.0	0.8	1.1	0.8	1.1	1.6	2.2	2.5	2.7	2.9	4.1	4.9	3.5	5.3	na	2.3	6.5	8.4	6.4
Bank of the West	0.9	4.0	0.7	0.8	0.9	1.4	1.9	2.6	2.9	2.9	2.9	4.2	5.0	4.0	5.1	113.9	2.5	5.0	7.9	5.9
BMO Capital Markets	0.9	4.0	0.7	na	1.1	1.6	2.1	2.7	2.9	2.9	3.0	na	na	na	5.2	113.7	2.6	6.6	9.1	7.4
Daiwa Capital Markets America	0.9	4.0	0.7	0.9	1.0	1.5	2.0	2.7	2.9	2.9	3.1	4.2	5.2	na	5.3	113.0	2.0	5.5	8.0	5.2
Economist Intelligence Unit	0.9	4.0	na	0.8	1.1	1.6	2.2	2.8	3.0	3.0	3.1	na	na	na	5.2	na	2.2	na	9.0	na
Loomis, Sayles & Company	0.9	4.0	0.8	0.9	1.2	1.7	2.1	2.7	2.9	3.0	3.0	4.3	5.2	4.2 H	5.0	113.2	1.6	6.3	7.9	6.3
Swiss Re	0.9	4.0	na	0.9	0.9	1.4	1.9	2.5	2.8	2.8	3.0	4.3	5.0	na	5.3	113.4	4.4	8.9 H	7.8	4.2
Via Nova Investment Mgt.	0.9	4.1	0.9	1.0	1.2	1.7	2.3	2.9	3.1	3.1	3.2	4.4 H	5.1	4.1	5.5	113.6	3.0	5.6	6.8	5.7
Action Economics	0.8	4.0	0.5 L	0.9	1.2	1.6	2.1	2.7	2.9	2.9	3.1	4.0	5.0	2.9	5.5	108.4 L	3.4	6.9	8.2	6.2
Chan Economics	0.8	3.8	0.8	0.8	1.1	1.5	2.1	2.6	2.8	2.8	2.9	3.7	4.5 L	3.6	5.0	114.5	2.5	5.5	7.9	5.9
Chmura Economics & Analytics	0.8	3.9	0.7	0.9	1.0	1.4	2.1	2.7	2.9	2.9	3.0	4.1	na	na	5.2	110.0	1.1 L	7.1	8.7	6.2
Comerica Bank	0.8	3.9	na	na	1.2	1.5	2.0	2.7	3.0	3.0	3.1	4.2	5.1	na	5.2	na	5.4	6.8	7.6	6.1
DePrince & Assoc.	0.8	3.7 L	0.7	0.8	1.0	1.5	2.1	2.7	2.9	2.9	3.0	4.1	5.1	3.4	5.2	115.1 H	2.9	6.1	6.3	5.8
Fannie Mae	0.8	3.9	na	na	1.1	1.5	2.1	2.6	2.8	2.8	3.0	na	na	na	5.1	na	1.6	5.5	5.8	5.2
Georgia State University	0.8	4.0	na	na	1.1	1.5	1.9	2.7	2.9	3.1	3.2	4.3	5.0	na	4.5	na	1.7	5.8	7.0	4.6
Grant Thornton/Diane Swonk	0.8	3.9	0.7	0.5 L	0.5 L	1.2	1.7	2.3	2.6	2.6	2.9	3.8	5.3 H	na	5.4	na	1.5	5.6	5.3	5.0
Moody's Analytics	0.8	3.8	0.6	0.7	1.0	1.5	2.2	2.8	3.1	3.0	3.2	4.3	5.3 H	3.5	5.3	na	3.6	4.2	6.5	5.8
Oxford Economics	0.8	4.0	0.7	na	1.1	1.1	2.1	2.8	2.9	3.0	3.0	3.6 L	na	na	5.6 H	111.8	2.7	5.2	9.5	7.0
Regions Financial Corporation	0.8	3.9	1.7 H	0.7	0.9	1.4	2.0	2.6	2.9	2.8	2.9	4.2	5.0	3.7	5.2	113.2	2.7	5.4	7.6	5.9
S&P Global Ratings	0.8	3.9	0.8	na	0.9	0.9 L	1.2 L	1.5 L	2.0 L	2.2 L	2.6	na	na	na	4.3 L	na	2.1	3.2 L	4.0 L	3.0 L
The Northern Trust Company	0.8	3.9	0.7	0.9	0.9	1.4	2.1	2.7	2.9	3.0	3.4 H	4.4 H	5.1	4.2 H	4.9	112.0	3.4	6.2	7.8	5.8
Thru the Cycle	0.8	3.9	0.7	0.9	1.0	1.5	2.0	2.6	2.8	2.8	3.0	4.1	4.8	3.8	5.0	113.9	3.2	5.1	8.5	5.7
Amherst Pierpont Securities	0.7 L	3.9	0.7	0.9	1.0	1.5	2.1	2.7	2.9	2.9	3.0	4.1	5.1	3.3	5.2	113.3	3.9	6.1	8.9	6.4
PNC Financial Services Corp.	0.7 L	3.9	0.7	na	1.0	1.4	1.9	2.6	2.8	2.9	3.0	na	4.9	3.3	5.1	109.7	3.7	6.7	8.6	6.9
S&P Global Market Intelligence	0.7 L	3.9	0.6	na	0.9	1.4	2.0	2.6	2.9	2.9	3.0	na	na	na	5.2	na	1.9	4.7	5.3	5.1
Societe Generale	0.7 L	3.9	0.7	na	1.1	1.6	2.1	2.5	2.7	2.8	2.9	na	na	na	na	na	4.0	5.1	7.1	5.5
June Consensus	**1.0**	**4.0**	**0.9**	**0.9**	**1.1**	**1.5**	**2.0**	**2.6**	**2.8**	**2.9**	**3.0**	**4.1**	**5.0**	**3.5**	**5.1**	**112.7**	**2.9**	**5.9**	**7.6**	**5.8**
Top 10 Avg.	1.4	4.3	1.2	1.1	1.4	1.7	2.2	2.8	3.1	3.1	3.2	4.3	5.2	3.9	5.4	114.0	4.4	7.2	9.1	6.9
Bottom 10 Avg.	0.8	3.9	0.7	0.8	0.9	1.3	1.8	2.4	2.6	2.6	2.8	3.9	4.8	3.2	4.8	111.4	1.7	4.7	5.8	4.8
May Consensus	1.0	4.0	0.8	0.9	1.0	1.4	2.0	2.6	2.8	2.8	2.9	4.0	4.8	3.4	4.9	110.9	2.8	5.6	6.9	5.8
Number of Forecasts Changed From A Month Ago:																				
Down	3	5	5	4	11	8	6	6	8	4	3	4	2	3	2	1	18	10	9	12
Same	27	21	17	9	7	5	15	15	12	20	12	10	8	7	11	2	5	7	6	5
Up	10	8	6	9	15	18	11	17	17	15	22	10	13	8	17	16	16	19	23	19
Diffusion Index	59%	54%	52%	61%	56%	66%	58%	64%	62%	64%	76%	63%	74%	64%	75%	89%	47%	63%	68%	60%

Third Quarter 2022

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	1 Federal Funds Rate	2 Prime Bank Rate	3 SOFR Rate	4 Com. Paper 1-Mo.	5 Treas. Bills 3-Mo.	6 Treas. Bills 6-Mo.	7 Treas. Bills 1-Yr.	8 Treas. Notes 2-Yr.	9 Treas. Notes 5-Yr.	10 Treas. Notes 10-Yr.	11 Treas. Bond 30-Yr.	12 Aaa Corp. Bond	13 Baa Corp. Bond	14 State & Local Bonds	15 Home Mtg. Rate	A. Fed's Adv Fgn Econ $ Index	B. Real GDP	C. GDP Price Index	D. Cons. Price Index	E. PCE Price Index
	Percent Per Annum -- Average For Quarter: Short-Term (1–7), Intermediate-Term (8–10), Long-Term (11–15)															Avg. For ---Qtr.---	(Q-Q % Change) (SAAR)			
Scotiabank Group	2.5 H	5.5 H	2.3	na	2.6 H	na	2.7	2.9	3.0	3.1	na	na	na	na	na	na	2.7	5.2	5.5	4.5
BNP Paribas Americas	2.4	na	na	na	na	na	na	2.7	na	2.6	2.7	na	na	na	na	na	2.6	na	2.9	na
ING	2.4	na	2.5 H	na	na	na	na	3.0	3.2	3.3	3.3	na	na	na	na	na	2.8	na	na	na
Nomura Securities, Inc.	2.4	5.5 H	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.6	3.8	6.8	5.1
Via Nova Investment Mgt.	2.2	5.4	2.2	2.3 H	2.4	2.9 H	3.6 H	4.1 H	4.3 H	4.3 H	4.5 H	5.7 H	6.3 H	5.3 H	6.7 H	115.0	3.0	4.0	4.0	3.9
Bank of America	2.1	na	2.3	na	na	na	na	3.3	3.3	3.3	3.3	na	na	na	na	na	2.5	5.7	5.4	4.2
Barclays	2.1	5.3	na	na	na	na	na	3.0	3.0	2.9	3.1	na	na	na	na	na	4.0	4.2	5.0	4.3
Goldman Sachs & Co.	2.1	na	na	na	2.1	na	na	3.1	3.3	3.3	3.3	na	na	na	na	na	2.3	5.6	6.1	5.0
MacroFin Analytics & Rutgers Bus School	2.1	5.1	2.1	2.2	2.2	2.4	2.9	3.5	3.7	3.9	4.1	5.3	5.9	4.7	5.8	115.2	2.4	4.1	4.2	3.3
NatWest Markets	2.1	5.1	na	2.2	2.4	2.5	2.6	2.7	2.6	2.5	2.5 L	4.3	5.3	3.5	4.3 L	na	2.5	5.7	5.0	4.7
ACIMA Private Wealth	2.0	4.3 L	2.0	2.1	2.1	2.6	2.5	2.5	2.5	2.5	2.6	3.8 L	5.2	1.5 L	5.0	115.0	1.5	5.0	4.5	4.0
Bank of the West	2.0	5.1	1.8	1.9	1.9	2.2	2.5	3.0	3.2	3.2	3.2	4.5	5.3	4.3	5.4	116.2 H	1.9	3.8	5.2	4.8
BMO Capital Markets	2.0	5.2	1.7	na	1.9	2.3	2.5	2.8	3.0	3.1	3.2	na	na	na	5.4	114.3	2.5	6.3	6.3	6.0 H
Economist Intelligence Unit	2.0	5.1	na	1.9	2.1	2.6	3.2	3.5	3.8	3.8	3.9	na	na	na	5.5	na	1.6	na	5.6	na
TS Lombard	2.0	5.1	1.9	2.0	2.3	2.3	2.4	2.6	3.3	3.5	3.6	4.4	5.2	3.5	5.3	116.0	3.5	4.8	4.8	4.8
Wells Fargo	2.0	5.0	1.8	2.0	2.1	2.4	2.6	3.1	3.2	3.3	3.5	4.7	5.5	4.0	5.4	na	2.0	4.8	5.6	4.7
Action Economics	1.9	5.1	1.3 L	2.0	1.9	2.1	2.3	2.7	3.0	3.1	3.2	4.1	5.1	2.9	5.5	114.1	3.6	4.5	4.2	3.7
J.P. Morgan Chase	1.9	na	na	na	na	na	na	2.7	2.7	2.7	2.7	na	na	na	na	na	2.8	3.2	5.6	5.1
Loomis, Sayles & Company	1.9	5.0	1.8	1.9	2.2	2.7	2.9	3.1	3.2	3.3	3.4	4.6	5.6	4.5	5.3	114.6	2.4	5.6	5.7	5.2
Mizuho Research Institute	1.9	na	na	na	na	na	na	na	na	2.8	na	na	na	na	na	na	na	na	na	na
Comerica Bank	1.8	4.9	na	na	2.0	2.2	2.5	3.0	3.1	3.2	3.4	4.4	5.4	na	5.4	na	0.8	6.0	5.8	4.8
Daiwa Capital Markets America	1.8	4.9	1.4	1.5	2.0	2.4	2.9	3.4	3.5	3.6	3.8	5.1	6.1	na	6.0	115.0	1.4	4.2	4.5	4.2
Fannie Mae	1.8	4.9	na	na	1.9	2.1	2.5	2.7	2.8	2.8	3.0	na	na	na	5.0	na	2.9	5.1	4.8	4.4
GLC Financial Economics	1.8	5.0	1.6	1.7	1.8	1.9	2.4	2.9	3.0	3.0	3.1	4.2	4.9	3.7	5.1	111.4	2.0	5.2	3.2	3.7
Oxford Economics	1.8	4.9	1.8	na	1.9	1.9	2.6	3.0	3.2	3.2	3.3	3.8 L	na	na	5.7	112.9	1.8	2.8	3.5	3.1
PNC Financial Services Corp.	1.8	4.9	1.7	na	1.9	2.2	2.5	2.8	2.9	3.0	3.1	na	5.0	3.3	5.2	110.7	2.7	5.0	4.1	4.1
Swiss Re	1.8	5.0	na	1.8	1.8	2.0	2.3	2.7	2.8	2.8	3.0	4.3	5.0	na	5.2	114.5	3.6	5.6	3.3	2.6
The Northern Trust Company	1.8	4.9	1.7	1.9	1.9	2.2	2.7	3.1	3.2	3.2	3.7	4.7	5.6	4.6	5.1	111.0	2.7	4.2	4.9	3.7
Thru the Cycle	1.8	4.9	1.7	1.9	1.9	2.3	2.4	2.5	2.7	2.8	3.0	4.1	4.8 L	3.8	4.9	114.7	3.0	4.2	7.0	5.7
Amherst Pierpont Securities	1.7	4.9	1.7	1.9	2.0	2.4	2.8	3.0	3.2	3.3	3.4	4.5	5.6	3.7	5.6	114.3	5.2 H	5.3	5.0	4.3
Chmura Economics & Analytics	1.7	4.8	1.7	1.8	1.7	2.1	2.7	3.1	3.3	3.4	3.4	4.6	na	na	5.6	109.9 L	2.2	6.8 H	7.5 H	5.9
DePrince & Assoc.	1.7	4.9	1.6	1.8	1.9	2.2	2.7	3.2	3.3	3.2	3.3	4.6	5.6	3.9	5.4	114.2	2.9	4.0	4.2	3.8
Grant Thornton/Diane Swonk	1.7	4.9	1.7	1.1 L	1.0 L	2.0	2.3	2.8	3.1	3.2	3.4	4.4	5.4	na	5.6	na	0.6 L	5.3	4.1	3.9
S&P Global Market Intelligence	1.7	4.9	1.7	na	1.5	1.7	2.2	2.8	3.0	3.0	3.0	na	na	na	5.3	na	2.3	4.9	4.0	4.1
Societe Generale	1.7	4.8	1.7	na	2.0	2.2	2.4	2.6	2.7	2.7	3.0	na	na	na	na	na	1.6	3.8	4.5	4.2
Georgia State University	1.6	4.8	na	na	1.5	1.9	2.6	3.2	3.5	3.4	3.5	4.9	5.8	na	5.2	na	1.1	4.0	4.7	3.1
Moody's Analytics	1.6	4.7	1.5	1.6	1.6	1.8	2.4	2.8	3.1	3.1	3.3	4.6	5.7	3.7	5.2	na	2.9	4.0	3.7	3.3
Chan Economics	1.5	4.5	1.5	1.5	1.7	2.2	2.7	3.3	3.4	3.5	3.6	4.4	5.2	4.3	5.7	114.7	3.0	4.5	5.5	4.9
Regions Financial Corporation	1.5	4.7	1.3 L	1.2	1.5	1.7	2.2	2.7	3.0	2.9	3.0	4.4	5.2	3.8	5.3	114.4	2.6	4.5	5.4	4.7
S&P Global Ratings	1.4 L	4.5	1.4	na	1.4	1.4 L	1.6 L	1.9 L	2.2 L	2.4 L	2.6	na	na	na	4.3 L	na	2.8	1.1 L	2.0 L	1.5 L
June Consensus	**1.9**	**5.0**	**1.8**	**1.8**	**1.9**	**2.2**	**2.6**	**2.9**	**3.1**	**3.1**	**3.3**	**4.5**	**5.4**	**3.8**	**5.3**	**113.9**	**2.5**	**4.6**	**4.8**	**4.3**
Top 10 Avg.	2.2	5.2	2.1	2.1	2.3	2.5	2.9	3.4	3.5	3.6	3.8	4.9	5.8	4.3	5.8	115.1	3.5	5.8	6.2	5.3
Bottom 10 Avg.	1.6	4.7	1.5	1.6	1.6	1.8	2.3	2.6	2.7	2.7	2.8	4.2	5.1	3.3	4.9	112.7	1.4	3.5	3.5	3.2
May Consensus	1.7	4.8	1.6	1.7	1.8	2.1	2.4	2.9	3.0	3.0	3.1	4.2	5.1	3.7	5.1	111.5	2.7	4.0	4.3	3.9
Number of Forecasts Changed From A Month Ago:																				
Down	2	3	3	2	4	3	3	7	7	6	4	2	1	1	2	0	21	2	4	5
Same	12	10	6	6	9	11	10	9	9	11	9	4	6	4	7	1	11	9	7	7
Up	26	21	19	14	20	17	19	22	21	22	24	18	16	13	21	18	7	25	27	24
Diffusion Index	80%	76%	79%	77%	74%	73%	75%	70%	69%	71%	77%	83%	83%	83%	82%	97%	32%	82%	80%	76%

Fourth Quarter 2022

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter: Short-Term							Intermediate-Term			Long-Term					Avg. For Qtr.	(Q-Q % Change) (SAAR)			
	1 Federal Funds Rate	2 Prime Bank Rate	3 SOFR Rate	4 Com. Paper 1-Mo.	5 Treas. Bills 3-Mo.	6 Treas. Bills 6-Mo.	7 Treas. Bills 1-Yr.	8 Treas. Notes 2-Yr.	9 Treas. Notes 5-Yr.	10 Treas. Notes 10-Yr.	11 Treas. Bond 30-Yr.	12 Aaa Corp. Bond	13 Baa Corp. Bond	14 State & Local Bonds	15 Home Mtg. Rate	A. Fed's Adv Fgn Econ $ Index	B. Real GDP	C. GDP Price Index	D. Cons. Price Index	E. PCE Price Index
Scotiabank Group	3.0 H	6.0 H	2.8	na	2.8	na	2.9	3.0	3.1	3.1	na	na	na	na	na	na	3.5	3.9	4.1	2.9
BNP Paribas Americas	2.9	na	na	na	na	na	na	2.8	na	2.7	2.8	na	na	na	na	na	2.2	na	2.8	na
Nomura Securities, Inc.	2.9	6.0 H	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.8	2.9	4.0	3.4
Wells Fargo	2.8	5.8	2.6	2.8 H	2.8	3.0	3.2	3.3	3.2	3.3	3.5	4.8	5.7	4.1	5.5	na	2.1	3.6	3.9	3.6
ING	2.7	na	3.0 H	na	na	na	na	3.0	3.0	3.0	3.1	na	na	na	na	na	2.1	na	na	na
Bank of America	2.6	na	2.8	na	na	na	na	3.5	3.4	3.3	3.3	na	na	na	na	na	1.8	5.0	3.3	3.1
Barclays	2.6	5.8	na	na	na	na	na	3.0	3.0	2.8	3.0	na	na	na	na	na	2.5	2.4	1.8	2.2
Goldman Sachs & Co.	2.6	na	na	na	2.5	na	na	3.2	3.3	3.3	3.4	na	na	na	na	na	1.5	4.0	2.7	3.3
Loomis, Sayles & Company	2.6	5.8	2.6	2.6	2.9 H	3.2 H	3.2	3.2	3.3	3.4	3.5	4.7	5.6	4.6	5.4	114.6	2.3	3.5	4.0	3.9
NatWest Markets	2.6	5.6	na	2.7	2.9 H	3.0	3.1	2.8	2.6	2.5	2.5	4.3	5.2	3.5	4.3 L	na	2.0	4.5	2.0	3.1
TS Lombard	2.6	5.7	2.6	2.6	2.9 H	2.9	3.1	3.2	3.9	3.5	3.6	4.4	5.2	3.5	5.3	118.0 H	3.0	4.0	4.0	4.0
ACIMA Private Wealth	2.5	4.5 L	2.5	2.6	2.6	2.5	2.4	2.3	2.3 L	2.0 L	2.1 L	3.7 L	5.3	1.0 L	4.5	118.0 H	0.5 L	3.0	3.3	2.0
BMO Capital Markets	2.5	5.6	2.4	na	2.4	2.7	2.8	2.9	3.1	3.1	3.3	na	na	na	5.5	113.8	1.9	3.6	3.7	3.5
Chan Economics	2.5	5.5	2.5	2.5	2.7	3.2 H	3.7	4.3	4.4	4.5	4.6	5.4	6.2	5.3	6.7	115.0	3.0	4.0	4.5	4.4
J.P. Morgan Chase	2.5	na	na	na	na	na	na	2.8	2.9	2.8	2.8	na	na	na	na	na	2.0	2.1	2.5	2.2
MacroFin Analytics & Rutgers Bus School	2.5	5.4	2.4	2.6	2.6	2.8	3.3	3.9	4.1	4.2	4.5	5.7	6.5	5.1	6.2	115.8	2.5	2.7	3.2	2.9
Swiss Re	2.5	5.6	na	2.5	2.4	2.5	2.6	2.8	2.8	2.8	3.0	4.4	5.1	na	5.1	113.7	2.8	4.8	2.3	2.6
Via Nova Investment Mgt.	2.5	5.8	2.5	2.6	2.7	3.2 H	3.9 H	4.4 H	4.6 H	4.7 H	4.8 H	6.1 H	6.7 H	5.7 H	7.1 H	115.0	2.7	3.5	3.3	3.0
Action Economics	2.4	5.5	2.0	2.4	2.4	2.4	2.5	2.7	3.0	3.1	3.2	4.1	5.1	3.0	5.6	115.7	3.4	3.3	2.5	2.3
Bank of the West	2.4	5.5	2.2	2.4	2.3	2.6	2.9	3.3	3.4	3.3	3.3	4.6	5.5	4.5	5.6	115.9	1.8	3.5	4.7	4.2
Chmura Economics & Analytics	2.4	5.5	2.4	2.4	2.4	2.7	3.1	3.5	3.4	3.6	3.8	4.8	na	na	5.8	109.7	1.4	6.4 H	7.1 H	5.1
Daiwa Capital Markets America	2.4	5.6	1.9	2.0	2.6	3.0	3.4	3.9	4.0	4.1	4.2	5.7	6.7 H	na	6.6	115.0	1.3	3.9	4.0	3.8
DePrince & Assoc.	2.4	5.5	2.2	2.5	2.5	2.8	3.3	3.6	3.5	3.5	3.5	4.9	5.7	4.1	5.6	113.3	2.6	3.6	3.7	3.4
Economist Intelligence Unit	2.4	5.5	na	2.3	2.5	3.0	3.6	4.0	4.0	4.0	4.2	na	na	na	5.5	na	1.4	na	3.7	na
Oxford Economics	2.4	5.5	2.3	na	2.5	2.6	3.0	3.3	3.3	3.2	3.3	3.8	na	na	5.8	111.8	1.8	1.7	1.4	1.5
Amherst Pierpont Securities	2.3	5.5	2.3	2.4	2.5	2.8	3.1	3.2	3.5	3.5	3.7	4.8	5.9	3.9	5.8	115.0	3.7 H	4.5	3.8	3.4
Comerica Bank	2.3	5.4	na	na	2.4	2.6	2.8	3.0	3.1	3.1	3.3	4.3	5.3	na	5.4	na	2.4	3.8	5.6	5.3 H
Fannie Mae	2.3	5.5	na	na	2.3	2.5	2.7	2.9	2.9	2.8	3.0	na	na	na	4.9	na	2.0	3.1	3.2	3.2
PNC Financial Services Corp.	2.3	5.5	2.3	na	2.3	2.5	2.7	2.9	3.0	3.0	3.1	na	5.0	3.4	5.2	109.3 L	1.8	3.7	3.0	3.1
S&P Global Market Intelligence	2.3	5.5	2.3	na	2.0	2.2	2.7	3.0	3.1	3.0	3.1	na	na	na	5.3	na	2.4	2.9	3.0	2.8
The Northern Trust Company	2.3	5.5	2.3	2.4	2.4	2.7	3.0	3.3	3.4	3.4	3.9	4.9	5.8	4.9	5.3	110.5	2.5	3.6	3.1	3.1
GLC Financial Economics	2.2	5.3	2.0	2.0	2.1	2.2	2.6	3.1	3.1	3.1	3.3	4.4	5.5	3.8	5.2	111.5	2.4	3.7	2.5	2.6
Societe Generale	2.2	5.4	2.2	na	2.4	2.5	2.5	2.6	2.7	2.8	3.1	na	na	na	na	na	1.3	3.2	4.1	3.8
Thru the Cycle	2.2	5.3	2.1	2.3	2.2	2.5	2.4	2.4	2.7	2.7	2.9	4.1	4.8 L	3.8	4.8	115.6	2.1	3.4	5.3	4.9
Grant Thornton/Diane Swonk	2.1	5.3	2.1	1.1 L	1.1 L	2.2	2.3	2.6	2.9	3.2	3.4	4.4	5.3	na	6.1	na	1.2	2.6	1.4	2.1
Moody's Analytics	2.1	5.2	2.0	2.1	2.0	2.1	2.6	2.8	3.1	3.2	3.4	4.7	5.7	3.7	5.2	na	2.7	3.5	2.6	2.6
Regions Financial Corporation	2.1	5.2	1.8	2.0	2.0	2.2	2.3	2.9	3.0	3.0	3.1	4.5	5.4	3.9	5.4	114.8	2.5	3.8	4.5	4.1
Georgia State University	2.0	5.2	na	na	1.9	2.0	2.7	3.3	3.6	3.6	3.7	5.0	6.0	na	5.5	na	1.4	3.4	4.0	2.6
Mizuho Research Institute	1.9	na	na	na	na	na	na	na	na	2.9	na	na	na	na	na	na	na	na	na	na
S&P Global Ratings	1.5 L	4.6	1.5 L	na	1.5	1.5 L	1.6 L	1.9 L	2.3 L	2.5	2.7	na	na	na	4.4	na	2.3	0.7 L	1.1 L	1.2 L
June Consensus	**2.4**	**5.5**	**2.3**	**2.4**	**2.4**	**2.6**	**2.9**	**3.1**	**3.2**	**3.2**	**3.4**	**4.7**	**5.6**	**4.0**	**5.5**	**114.1**	**2.2**	**3.5**	**3.4**	**3.2**
Top 10 Avg.	2.7	5.8	2.6	2.6	2.8	3.0	3.4	3.8	3.9	3.9	4.1	5.2	6.1	4.6	6.1	115.9	3.0	4.5	4.8	4.4
Bottom 10 Avg.	2.1	5.1	2.0	2.1	1.9	2.2	2.4	2.6	2.7	2.6	2.8	4.2	5.2	3.4	4.9	112.3	1.4	2.4	2.0	2.1
May Consensus	2.2	5.2	2.1	2.1	2.2	2.4	2.7	3.0	3.1	3.1	3.2	4.4	5.3	3.8	5.2	111.7	2.4	3.4	3.4	3.2
Number of Forecasts Changed From A Month Ago:																				
Down	1	3	2	1	4	3	3	5	5	5	4	2	2	1	3	2	21	4	9	9
Same	12	8	7	6	9	9	8	12	9	12	9	4	5	5	5	1	9	10	11	9
Up	27	23	19	15	20	19	21	21	23	22	24	18	16	12	22	16	9	22	18	18
Diffusion Index	83%	79%	80%	82%	74%	76%	78%	71%	74%	72%	77%	83%	80%	81%	82%	87%	35%	75%	62%	63%

First Quarter 2023

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	1 Federal Funds Rate	2 Prime Bank Rate	3 SOFR Rate	4 Com. Paper 1-Mo.	5 Treas. Bills 3-Mo.	6 Treas. Bills 6-Mo.	7 Treas. Bills 1-Yr.	8 Treas. Notes 2-Yr.	9 Treas. Notes 5-Yr.	10 Treas. Notes 10-Yr.	11 Treas. Bond 30-Yr.	12 Aaa Corp. Bond	13 Baa Corp. Bond	14 State & Local Bonds	15 Home Mtg. Rate	A. Fed's Adv Fgn Econ $ Index	B. Real GDP	C. GDP Price Index	D. Cons. Price Index	E. PCE Price Index
	----Percent Per Annum -- Average For Quarter----															Avg. For ---Qtr.---	----(Q-Q % Change)---- (SAAR)			
	----Short-Term----							---Intermediate-Term---			----Long-Term----									
TS Lombard	4.3 H	7.4 H	4.2 H	4.2 H	4.3 H	4.3 H	4.2 H	4.0	4.5	3.8	3.9	4.7	5.5	3.8	5.6	120.0 H	2.5	3.8	3.8	3.8
Nomura Securities, Inc.	3.4	6.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.0	2.5	3.6	2.8
Wells Fargo	3.3	6.3	3.0	3.2	3.3	3.4	3.5	3.4	3.3	3.4	3.6	4.9	5.8	4.2	5.5	na	2.3	3.7	2.2	2.7
Bank of America	3.1	na	3.0	na	na	na	na	3.3	3.1	3.1	3.1	na	na	na	na	na	1.5	4.7	2.9	2.7
BNP Paribas Americas	3.1	na	na	na	na	na	na	2.8	na	2.7	2.8	na	na	na	na	na	1.6	na	2.6	na
ING	3.1	na	3.2	na	na	na	na	3.0	2.9	2.8	3.0	na	na	na	na	na	1.6	na	na	na
Loomis, Sayles & Company	3.1	6.3	3.1	3.2	3.5	3.7	3.5	3.2	3.3	3.3	3.4	4.6	5.5	4.5	5.3	114.6	2.2	3.6	3.6	3.5
Economist Intelligence Unit	3.0	6.1	na	2.9	3.1	3.6	4.2 H	4.5	4.4	4.4	4.5	na	na	na	5.5	na	1.3	na	3.6	na
J.P. Morgan Chase	3.0	na	na	na	na	na	na	3.0	3.0	2.9	2.9	na	na	na	na	na	1.8	2.2	2.9	2.5
MacroFin Analytics & Rutgers Bus School	3.0	5.9	2.9	3.2	3.1	3.3	3.8	4.4	4.7	4.8	5.2 H	6.4 H	7.2 H	5.7 H	6.8	116.0	2.0	2.3	2.2	2.2
Scotiabank Group	3.0	6.0	2.8	na	2.8	na	3.0	3.1	3.1	3.2	na	na	na	na	na	na	3.1 H	3.9	3.9	3.0
Barclays	2.9	6.0	na	na	na	na	na	3.0	2.9	2.8	3.0	na	na	na	na	na	2.0	2.3	2.1	2.0
Chan Economics	2.9	5.9	2.9	2.9	3.1	3.6	4.1	4.7 H	4.8 H	4.9 H	5.0	5.8	6.6	5.7 H	7.1 H	114.9	2.5	3.7	4.4	4.1
Daiwa Capital Markets America	2.9	6.1	2.2	2.3	3.1	3.4	3.8	4.3	4.3	4.3	4.4	6.1	7.2 H	na	6.9	116.0	1.1	3.5	3.5	3.3
Goldman Sachs & Co.	2.9	na	na	na	2.8	na	na	3.3	3.2	3.2	3.3	na	na	na	na	na	1.3	3.6	3.0	3.0
NatWest Markets	2.9	5.9	na	3.0	3.1	3.2	3.3	2.8	2.6	2.5	2.4	4.3	5.3	3.4	4.2 L	na	1.8	4.0	2.3	3.3
Amherst Pierpont Securities	2.8	6.0	2.8	2.9	3.0	3.2	3.5	3.5	3.7	3.8	4.0	5.0	6.0	4.1	6.0	115.5	2.9	4.1	3.4	3.1
Bank of the West	2.8	5.9	2.7	2.8	2.7	3.0	3.1	3.7	3.7	3.6	3.7	5.0	5.9	4.8	5.8	115.3	1.6	2.9	3.4	3.2
Chmura Economics & Analytics	2.8	5.9	2.8	2.9	2.8	3.0	3.2	3.6	3.5	3.6	4.1	4.8	na	na	5.8	109.3	2.3	5.6 H	6.5 H	4.9 H
DePrince & Assoc.	2.8	5.9	2.6	2.8	2.9	3.1	3.5	3.8	3.6	3.6	3.7	5.0	5.8	4.2	5.7	113.8	2.3	3.3	3.4	3.2
Fannie Mae	2.8	6.0	na	na	2.6	2.7	2.9	2.9	2.9	2.8	3.0	na	na	na	4.9	na	1.0	3.0	2.7	2.6
Oxford Economics	2.8	5.9	2.8	na	2.9	3.0	3.1	3.3	3.3	3.3	3.3	3.9	na	na	5.7	110.5	1.7	1.8	1.2	1.2 L
PNC Financial Services Corp.	2.8	6.0	2.8	na	2.7	2.8	2.9	3.0	3.0	3.0	3.2	na	5.0	3.4	5.2	108.9 L	1.6	3.2	2.5	2.6
S&P Global Market Intelligence	2.8	6.0	2.8	na	2.4	2.5	3.0	3.2	3.1	3.1	3.2	na	na	na	5.2	na	2.2	2.8	2.7	2.5
The Northern Trust Company	2.8	6.0	2.8	2.9	2.8	3.0	3.2	3.4	3.5	3.5	4.1	5.0	5.9	5.1	5.4	110.0	2.1	3.2	2.7	2.8
Via Nova Investment Mgt.	2.8	6.1	2.8	2.9	2.9	3.2	4.0	4.5	4.7	4.7	4.8	6.1	6.7	5.7 H	7.0	114.0	2.5	3.0	3.0	2.7
BMO Capital Markets	2.7	5.8	2.7	na	2.7	2.8	2.9	3.0	3.1	3.2	3.4	na	na	na	5.6	113.3	1.4	3.1	3.4	3.2
Comerica Bank	2.7	5.8	na	na	2.8	2.8	2.9	3.0	3.0	2.9	3.2	4.2	5.1	na	5.3	na	1.4	3.5	3.6	3.9
Action Economics	2.6	5.8	2.5	2.7	2.5	2.5	2.6	2.7	3.0	3.1	3.2	4.1	5.1	3.0	5.6	115.8	2.8	2.2	2.5	2.2
Grant Thornton/Diane Swonk	2.6	5.8	2.6	1.3 L	1.3 L	2.4	2.4	2.6	2.9	3.3	3.5	4.5	5.4	na	6.3	na	0.7	3.0	3.1	2.6
Swiss Re	2.6	5.8	na	2.7	2.5	2.6	2.6	2.7	2.7	2.8	3.0	4.4	5.1	na	5.0	112.9	0.5	3.8	2.2	2.3
ACIMA Private Wealth	2.5	4.5 L	2.5	2.6	2.6	2.5	2.3	2.0 L	2.0 L	1.8 L	1.9 L	3.5 L	5.0	0.8 L	4.3	117.0	-2.0 L	1.0 L	0.8 L	1.8
Moody's Analytics	2.5	5.7	2.5	2.5	2.3	2.4	2.7	2.9	3.1	3.2	3.5	4.7	5.8	3.9	5.2	na	2.8	2.6	2.2	2.2
Regions Financial Corporation	2.5	5.7	2.0 L	2.4	2.2	2.5	2.5	3.0	3.1	3.1	3.2	4.7	5.5	4.0	5.5	114.8	2.2	3.1	3.6	3.4
Societe Generale	2.5	5.7	2.5	na	2.5	2.5	2.4	2.6	2.7	2.8	3.1	na	na	na	na	na	1.3	3.0	3.5	3.2
Georgia State University	2.4	5.5	na	na	2.3	2.3	3.0	3.2	3.7	3.7	3.8	5.1	6.1	na	5.6	na	1.6	3.3	3.5	2.5
GLC Financial Economics	2.4	5.5	2.2	2.3	2.4	2.4	2.6	3.2	3.4	3.4	3.4	4.6	5.7	3.9	5.4	111.6	2.9	2.9	2.9	2.2
Mizuho Research Institute	2.4	na	na	na	na	na	na	na	na	2.9	na	na	na	na	na	na	na	na	na	na
Thru the Cycle	2.4	5.5	2.3	2.5	2.4	2.6	2.5	2.4	2.6	2.7	2.9	4.1	4.8 L	3.8	4.7	116.4	1.9	3.0	3.2	3.2
S&P Global Ratings	2.1 L	5.2	2.1	na	2.1	2.1 L	2.2 L	2.3	2.6	2.7	2.9	na	na	na	4.7	na	2.1	1.5	1.8	1.6
June Consensus	**2.8**	**5.9**	**2.7**	**2.8**	**2.7**	**2.9**	**3.1**	**3.2**	**3.3**	**3.3**	**3.5**	**4.8**	**5.7**	**4.1**	**5.6**	**114.0**	**1.8**	**3.1**	**3.0**	**2.8**
Top 10 Avg.	3.2	6.3	3.1	3.1	3.3	3.5	3.8	4.1	4.2	4.2	4.4	5.4	6.3	4.8	6.3	116.2	2.7	4.1	4.0	3.7
Bottom 10 Avg.	2.4	5.5	2.3	2.4	2.2	2.4	2.5	2.6	2.7	2.6	2.8	4.2	5.2	3.4	4.9	111.9	0.8	2.1	2.0	2.0
May Consensus	2.6	5.6	2.5	2.6	2.6	2.8	3.0	3.2	3.3	3.3	3.4	4.6	5.5	4.0	5.3	111.5	2.3	3.0	3.0	2.8
Number of Forecasts Changed From A Month Ago:																				
Down	2	3	3	2	4	5	3	5	6	6	5	2	3	2	5	2	27	6	10	11
Same	12	9	7	7	9	7	8	11	8	12	8	6	4	4	5	1	7	13	15	12
Up	26	22	17	13	20	19	21	21	22	20	23	16	16	12	20	16	5	17	13	13
Diffusion Index	80%	78%	76%	75%	74%	73%	78%	72%	72%	68%	75%	79%	78%	78%	75%	87%	22%	65%	54%	53%

Second Quarter 2023

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter															Avg. For	(Q-Q % Change)			
	Short-Term							Intermediate-Term			Long-Term					---Qtr.---	(SAAR)			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	A.	B.	C.	D.	E.
	Federal Funds Rate	Prime Bank Rate	SOFR Rate	Com. Paper 1-Mo.	Treas. Bills 3-Mo.	Treas. Bills 6-Mo.	Treas. Bills 1-Yr.	Treas. Notes 2-Yr.	Treas. Notes 5-Yr.	Treas. Notes 10-Yr.	Treas. Bond 30-Yr.	Aaa Corp. Bond	Baa Corp. Bond	State & Local Bonds	Home Mtg. Rate	Fed's Adv Fgn Econ $ Index	Real GDP	GDP Price Index	Cons. Price Index	PCE Price Index
TS Lombard	4.5 H	7.6 H	4.4 H	4.5 H	4.5 H	4.5 H	4.4	4.3	4.7	3.8	3.9	4.7	5.5	3.8	5.6	120.0 H	-0.5	3.5	3.5	3.5
Nomura Securities, Inc.	3.9	7.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.6	2.1	2.7	2.1
Wells Fargo	3.6	6.6	3.5	3.6	3.6	3.6	3.6	3.4	3.3	3.3	3.5	4.8	5.6	4.1	5.3	na	2.1	1.6	0.4	1.5 L
Loomis, Sayles & Company	3.5	6.7	3.5	3.5	3.8	3.9	3.7	3.1	3.3	3.3	3.4	4.6	5.5	4.5	5.3	114.6	2.1	3.3	3.1	2.9
Bank of America	3.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.0	4.6 H	2.8	2.6
Chan Economics	3.4	6.4	3.4	3.4	3.6	4.1	4.6 H	5.2 H	5.3 H	5.4 H	5.5 H	6.3	7.1	6.2 H	7.6 H	114.4	2.0	3.5	4.0	3.9 H
Daiwa Capital Markets America	3.4	6.6	2.6	2.7	3.6	3.8	4.2	4.6	4.5	4.5	4.5	6.4	7.5 H	na	7.1	116.0	0.8	3.2	3.3	3.0
Amherst Pierpont Securities	3.3	6.5	3.3	3.4	3.4	3.6	3.7	3.7	3.9	4.0	4.2	5.2	6.2	4.3	6.2	115.5	2.7	3.6	3.3	2.9
J.P. Morgan Chase	3.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.3	2.2	2.7	2.4
Fannie Mae	3.2	6.3	na	na	2.8	2.9	3.0	3.0	2.9	2.9	3.0	na	na	na	4.8	na	0.7	2.8	2.3	2.1
PNC Financial Services Corp.	3.2	6.3	3.1	na	3.0	3.0	3.0	3.0	3.0	3.1	3.2	na	5.1	3.5	5.2	108.4 L	1.3	2.3	2.1	2.0
BNP Paribas Americas	3.1	na	na	na	na	na	na	2.7	na	2.7	2.8	na	na	na	na	na	1.4	na	2.0	na
Chmura Economics & Analytics	3.1	6.3	3.2	3.2	3.2	3.2	3.4	3.7	3.6	3.8	4.2	4.9	na	na	5.8	109.0	1.8	4.5	5.3 H	3.5
Economist Intelligence Unit	3.1	6.3	na	3.0	3.2	3.7	4.3	4.6	4.5	4.5	4.6	na	na	na	5.6	na	1.2	na	2.8	na
Goldman Sachs & Co.	3.1	na	na	na	3.0	na	na	3.3	3.2	3.2	3.3	na	na	na	na	na	1.5	3.0	2.9	2.7
Grant Thornton/Diane Swonk	3.1	6.2	3.0	1.5 L	1.5 L	2.8	2.7	2.8	3.1	3.5	3.8	4.7	5.4	na	6.2	na	1.0	2.5	1.5	1.8
ING	3.1	na	3.2	na	na	na	na	2.8	2.7	2.5	2.8	na	na	na	na	na	1.5	na	na	na
MacroFin Analytics & Rutgers Bus School	3.1	6.0	3.1	3.3	3.3	3.5	4.0	4.6	4.8	5.0	5.4	6.7 H	7.4	5.8	6.9	116.3	1.9	2.2	2.1	2.0
NatWest Markets	3.1	6.1	na	3.2	3.4	3.5	3.6	2.8	2.6	2.5	2.4	4.3	5.3	3.4	4.2	na	1.9	4.0	2.0	3.3
Oxford Economics	3.1	6.2	3.0	na	3.1	3.2	3.2	3.2	3.3	3.2	3.3	3.9	na	na	5.6	109.5	1.4	2.2	1.4	1.6
S&P Global Market Intelligence	3.1	6.3	3.1	na	2.6	2.7	3.1	3.2	3.1	3.1	3.2	na	na	na	5.2	na	2.5	2.5	2.0	1.8
Bank of the West	3.0	6.1	2.8	2.9	2.9	3.1	3.3	3.8	3.8	3.7	3.8	5.1	6.0	4.9	5.9	115.5	1.5	2.7	3.2	3.0
Scotiabank Group	3.0	6.0	2.8	na	2.8	na	3.0	3.1	3.1	3.2	na	na	na	na	na	na	2.5	3.4	4.5	3.6
Via Nova Investment Mgt.	3.0	6.3	3.0	3.1	3.1	3.4	4.1	4.7	4.9	4.9	5.0	6.3	6.9	5.9	7.2	112.0	2.3	3.8	2.8	2.5
Barclays	2.9	6.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.5	2.1	1.5	1.7
BMO Capital Markets	2.9	6.0	2.9	na	2.8	2.9	2.9	3.0	3.1	3.2	3.4	na	na	na	5.5	112.9	1.5	2.9	3.3	3.2
Comerica Bank	2.9	6.0	na	na	2.9	2.9	2.9	2.9	2.9	2.7	3.0	4.0	5.0	na	5.0	na	1.2	3.3	3.1	3.4
DePrince & Assoc.	2.9	6.1	2.8	3.0	3.1	3.2	3.5	3.7	3.6	3.7	3.9	5.1	5.8	4.3	5.7	114.9	2.2	3.1	3.3	3.0
Mizuho Research Institute	2.9	na	na	na	na	na	na	na	na	3.0	na	na	na	na	na	na	na	na	na	na
Swiss Re	2.9	6.0	na	2.9	2.7	2.7	2.7	2.7	2.7	2.8	3.1	4.5	5.2	na	4.9	111.8	0.2	3.8	2.9	2.5
The Northern Trust Company	2.9	6.0	2.8	3.0	2.9	3.0	3.2	3.4	3.5	3.5	4.1	5.0	5.9	5.1	5.4	109.0	2.2	3.0	2.6	2.6
GLC Financial Economics	2.7	5.8	2.5	2.6	2.7	2.8	2.9	3.2	3.4	3.4	3.7	4.9	6.0	4.0	5.5	111.0	3.0 H	3.0	3.0	2.6
Moody's Analytics	2.7	5.9	2.7	2.7	2.5	2.6	2.8	2.9	3.1	3.2	3.6	4.7	5.8	3.9	5.2	na	2.3	2.4	2.3	2.1
Action Economics	2.6	5.8	2.7	2.7	2.5	2.5	2.6	2.7	3.0	3.1	3.3	4.1	5.1	3.0	5.6	115.8	2.7	2.0	2.5	2.3
Regions Financial Corporation	2.6	5.8	2.2 L	2.5	2.4	2.6	2.6	3.0	3.2	3.1	3.3	4.8	5.6	4.1	5.4	114.3	2.1	2.4	2.8	2.8
ACIMA Private Wealth	2.5	4.5 L	2.5	2.6	2.6	2.1 L	2.0 L	2.0 L	1.9 L	1.9 L	2.0 L	3.2 L	4.7 L	0.9 L	4.1 L	115.0	-2.0 L	-1.5 L	-1.0 L	1.5 L
Georgia State University	2.5	5.7	na	na	2.4	2.4	3.1	3.2	3.7	3.9	4.0	5.2	6.3	na	5.7	na	2.0	3.2	3.1	2.6
Societe Generale	2.5	5.7	2.5	na	2.5	2.5	2.4	2.6	2.7	2.7	3.0	na	na	na	na	na	2.1	2.7	2.9	2.6
S&P Global Ratings	2.4 L	5.6	2.4	na	2.5	2.5	2.5	2.6	2.7	2.8	3.0	na	na	na	4.9	na	1.7	2.3	1.8	1.9
Thru the Cycle	2.4 L	5.5	2.3	2.5	2.4	2.5	2.5	2.4	2.5	2.7	2.9	4.1	4.8	3.8	4.7	116.5	1.9	2.7	2.9	3.0
June Consensus	**3.0**	**6.1**	**2.9**	**3.0**	**2.9**	**3.1**	**3.2**	**3.3**	**3.4**	**3.4**	**3.6**	**4.9**	**5.8**	**4.2**	**5.6**	**113.6**	**1.6**	**2.8**	**2.6**	**2.6**
Top 10 Avg.	3.6	6.6	3.4	3.4	3.6	3.8	4.0	4.3	4.4	4.4	4.5	5.6	6.5	4.9	6.4	116.0	2.5	3.8	3.7	3.3
Bottom 10 Avg.	2.6	5.6	2.5	2.6	2.4	2.5	2.6	2.6	2.7	2.6	2.8	4.2	5.2	3.5	4.8	111.2	0.4	1.8	1.4	1.8
May Consensus	2.9	5.9	2.7	2.8	2.8	3.0	3.1	3.2	3.3	3.3	3.5	4.7	5.6	4.1	5.4	111.2	2.1	2.8	2.7	2.6
Number of Forecasts Changed From A Month Ago:																				
Down	3	3	5	3	5	5	5	6	5	5	5	1	2	2	6	2	24	7	11	8
Same	14	9	6	6	9	8	8	10	9	12	8	8	6	5	5	1	9	13	14	17
Up	23	22	16	13	19	18	19	19	20	19	21	15	15	11	19	16	6	16	13	11
Diffusion Index	75%	78%	70%	73%	71%	71%	72%	69%	72%	69%	74%	79%	78%	75%	72%	87%	27%	63%	53%	54%

Third Quarter 2023

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter															Avg. For ---Qtr.---	(Q-Q % Change) (SAAR)			
	Short-Term							Intermediate-Term		Long-Term										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	A.	B.	C.	D.	E.
	Federal Funds Rate	Prime Bank Rate	SOFR Rate	Com. Paper 1-Mo.	Treas. Bills 3-Mo.	Treas. Bills 6-Mo.	Treas. Bills 1-Yr.	Treas. Notes 2-Yr.	Treas. Notes 5-Yr.	Treas. Notes 10-Yr.	Treas. Bond 30-Yr.	Aaa Corp. Bond	Baa Corp. Bond	State & Local Bonds	Home Mtg. Rate	Fed's Adv Fgn Econ $ Index	Real GDP	GDP Price Index	Cons. Price Index	PCE Price Index
Daiwa Capital Markets America	3.9 H	7.1 H	3.0	3.1	4.1 H	4.3 H	4.6 H	4.9	4.9	4.8	4.8	6.8 H	7.9 H	na	7.4	115.0	0.8	3.0	3.1	2.9
Nomura Securities, Inc.	3.9 H	7.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.5	2.2	2.9	2.2
Amherst Pierpont Securities	3.8	6.9	3.7 H	3.8 H	3.8	3.9	3.9	3.9	4.0	4.2	4.3	5.3	6.3	4.5	6.3	115.5	2.6	3.4	3.3	2.9
Wells Fargo	3.8	6.8	3.7 H	3.8 H	3.6	3.5	3.4	3.2	3.2	3.2	3.4	4.7	5.5	4.0	5.2	na	1.4	2.3	1.6	2.2
Loomis, Sayles & Company	3.6	6.8	3.6	3.7	3.9	4.0	3.7	3.1	3.2	3.2	3.4	4.5	5.5	4.4	5.2	114.6	1.8	3.2	3.0	2.8
TS Lombard	3.6	6.7	3.5	3.6	3.4	3.4	3.4	3.3	3.7	3.0	3.1	3.9	4.7	3.0	4.8	115.0	-1.5 L	3.0	3.0	3.0
Bank of America	3.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.7	4.8 H	3.1	2.8
Chan Economics	3.4	6.4	3.4	3.4	3.6	4.1	4.6 H	5.2 H	5.3 H	5.4 H	5.5 H	6.3	7.1	6.2 H	7.6 H	114.0	1.8	3.0	3.5	3.4 H
Fannie Mae	3.4	6.5	na	na	2.9	3.0	3.0	3.0	2.9	2.9	3.0	na	na	na	4.7	na	-0.5	2.8	2.0	2.0
Grant Thornton/Diane Swonk	3.4	6.5	3.3	1.8 L	1.8 L	3.0	2.8	2.9	3.2	3.7	3.9	4.8	5.5	na	6.0	na	1.0	2.5	1.7	1.7
PNC Financial Services Corp.	3.4	6.5	3.4	na	3.1	3.1	3.0	2.9	3.0	3.1	3.3	na	5.1	3.6	5.1	108.1	0.9	2.0	2.1	2.0
J.P. Morgan Chase	3.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.0	2.3	2.7	2.4
Bank of the West	3.2	6.3	3.1	3.2	3.2	3.3	3.5	3.8	3.9	3.8	3.8	5.2	6.1	4.9	5.9	115.7	1.4	2.5	2.9	2.7
Oxford Economics	3.2	6.3	3.1	na	3.1	3.2	3.1	3.0	3.2	3.2	3.2	3.9	na	na	5.5	108.7	1.7	2.3	1.6	1.6
BNP Paribas Americas	3.1	na	na	na	na	na	na	2.7	na	2.6	2.8	na	na	na	na	na	1.8	na	2.4	na
Chmura Economics & Analytics	3.1	6.3	3.2	3.2	3.1	3.2	3.3	3.6	3.5	3.7	4.2	4.9	na	na	5.7	108.1	1.7	4.2	4.7 H	3.3
Economist Intelligence Unit	3.1	6.3	na	3.0	3.2	3.7	4.3	4.5	4.5	4.5	4.6	na	na	na	5.6	na	1.1	na	2.0	na
Goldman Sachs & Co.	3.1	na	na	na	3.2	na	na	2.3	2.4	3.2	2.4	na	na	na	na	na	1.5	2.6	2.7	2.4
ING	3.1	na	3.1	na	na	na	na	2.5	2.6	2.3	2.7	na	na	na	na	na	1.7	na	na	na
MacroFin Analytics & Rutgers Bus School	3.1	6.0	3.1	3.3	3.3	3.5	4.0	4.6	4.9	5.0	5.4	6.8 H	7.6	5.9	7.0	116.5	1.7	2.1	2.0	1.9
NatWest Markets	3.1	6.1	na	3.2	3.4	3.5	3.6	2.8	2.7	2.5	2.4	4.3	5.3	3.4	4.2	na	1.6	3.8	1.4 L	3.1
S&P Global Market Intelligence	3.1	6.3	3.1	na	2.5	2.6	3.1	3.2	3.1	3.1	3.2	na	na	na	5.1	na	2.5	2.5	2.0	1.8
Scotiabank Group	3.0	6.0	2.8	na	2.8	na	3.0	3.1	3.1	3.2	na	na	na	na	na	na	2.0	1.1 L	2.4	2.2
Via Nova Investment Mgt.	3.0	6.3	3.0	3.1	3.1	3.4	3.8	4.7	4.9	4.9	5.0	6.3	6.9	5.9	7.2	110.0	2.3	2.7	2.8	2.5
Barclays	2.9	6.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.5	2.4	2.1	2.1
BMO Capital Markets	2.9	6.0	2.9	na	2.8	2.9	2.9	3.0	3.0	3.1	3.3	na	na	na	5.4	112.5	1.6	2.5	2.9	2.8
Comerica Bank	2.9	6.0	na	na	2.9	2.9	2.8	2.8	2.8	2.6	3.0	3.9	4.9	na	4.6	na	1.1	3.0	2.9	3.0
DePrince & Assoc.	2.9	6.0	2.7	3.0	3.1	3.2	3.4	3.6	3.5	3.8	4.0	5.2	5.9	4.3	5.7	115.0	2.1	2.9	3.0	2.8
GLC Financial Economics	2.9	6.0	2.7	2.9	3.0	2.6	3.2	3.4	3.6	3.7	3.9	5.2	6.3	4.3	5.8	110.7	2.9	3.1	2.7	2.9
Mizuho Research Institute	2.9	na	na	na	na	na	na	na	na	3.0	na	na	na	na	na	na	na	na	na	na
Swiss Re	2.9	6.1	na	3.0	2.7	2.7	2.7	2.7	2.7	2.8	3.1	4.5	5.3	na	4.8	110.8	0.2	4.3	4.3	3.3
The Northern Trust Company	2.9	6.0	2.8	3.0	2.9	3.0	3.2	3.4	3.5	3.5	4.3	5.0	5.9	5.1	5.4	108.0 L	2.1	2.8	2.5	2.5
Moody's Analytics	2.8	5.9	2.7	2.7	2.5	2.6	2.8	2.9	3.1	3.2	3.6	4.7	5.8	3.9	5.2	na	2.2	2.3	1.9	1.9
Action Economics	2.6	5.8	2.7	2.7	2.6	2.6	2.7	2.8	3.0	3.2	3.3	4.2	5.2	3.0	5.6	115.8	na	na	na	na
Georgia State University	2.6	5.8	na	na	2.5	2.5	3.3	3.0	3.7	3.9	4.0	5.2	6.4	na	5.8	na	2.3	3.0	2.5	2.5
Regions Financial Corporation	2.6	5.8	2.3	2.6	2.4	2.7	2.6	2.9	3.1	3.0	3.2	4.8	5.7	4.1	5.4	113.6	2.2	2.0	2.3	2.3
S&P Global Ratings	2.6	5.7	2.6	na	2.7	2.7	2.6	2.7	2.8	2.9	3.0	na	na	na	5.0	na	1.7	2.5	2.1	2.0
Societe Generale	2.5	5.7	2.5	na	2.4	2.3	2.3	2.5	2.6	2.7	3.0	na	na	na	na	na	2.2	2.7	2.9	2.6
Thru the Cycle	2.4	5.5	2.3	2.5	2.4	2.5	2.4	2.4	2.5	2.6	2.8	4.1	4.8	3.7	4.6	117.5 H	1.8	2.5	2.1	2.5
ACIMA Private Wealth	2.0 L	4.5 L	2.0 L	2.1	2.1	1.9 L	1.7 L	1.6 L	1.8 L	1.9 L	2.0 L	2.9 L	4.3 L	0.9 L	4.0 L	112.0	5.5 H	1.9	1.5	1.4 L
June Consensus	**3.1**	**6.2**	**3.0**	**3.0**	**3.0**	**3.1**	**3.2**	**3.2**	**3.4**	**3.4**	**3.6**	**4.9**	**5.8**	**4.2**	**5.5**	**112.9**	**1.6**	**2.7**	**2.6**	**2.5**
Top 10 Avg.	3.6	6.7	3.4	3.4	3.6	3.7	3.9	4.2	4.3	4.4	4.6	5.7	6.6	5.0	6.5	115.5	2.7	3.6	3.4	3.1
Bottom 10 Avg.	2.6	5.7	2.5	2.6	2.4	2.5	2.5	2.5	2.6	2.6	2.7	4.1	5.1	3.4	4.7	110.3	0.4	2.1	1.8	1.8
May Consensus	3.0	6.1	2.9	3.0	2.9	3.1	3.2	3.2	3.3	3.3	3.5	4.8	5.7	4.1	5.4	110.9	2.0	2.6	2.6	2.4
Number of Forecasts Changed From A Month Ago:																				
Down	3	3	7	4	7	7	8	9	7	6	5	3	3	3	6	2	21	5	12	7
Same	17	12	6	6	10	10	8	9	10	12	9	8	6	5	5	1	10	15	14	17
Up	20	19	14	12	16	14	16	17	17	18	20	13	14	10	19	16	7	15	11	11
Diffusion Index	71%	74%	63%	68%	64%	61%	63%	61%	65%	67%	72%	71%	74%	69%	72%	87%	32%	64%	49%	56%

International Interest Rate And Foreign Exchange Rate Forecasts

United States

	Fed Fund Target Rate			10 Yr. Gov't Bond Yield %			Fed's AFE $ Index		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	2.13	2.63	--	2.85	2.75	--	--	--	--
BMO Capital Markets	1.88	2.38	2.88	3.05	3.10	3.20	114.3	113.8	112.9
ING Financial Markets	1.88	2.88	3.13	3.25	3.00	2.50	114.6	112.3	109.7
Mizuho Research Institute	1.88	1.88	2.88	2.75	2.85	2.95	--	--	--
Moody's Analytics	0.80	1.62	2.55	2.96	3.05	3.19	--	--	--
Northern Trust	1.88	2.38	2.88	3.20	3.40	3.50	112.0	111.0	110.0
Oxford Economics	1.88	2.38	3.13	3.15	3.23	3.20	112.9	111.8	109.5
S&P Global Market Intelligence	--	--	--	2.96	2.97	3.07	--	--	--
Scotiabank	2.50	3.00	3.00	3.05	3.10	3.20	--	--	--
TS Lombard	2.00	2.63	4.50	3.50	3.50	3.80	116.0	118.0	120.0
Wells Fargo	2.00	2.75	3.75	3.20	3.35	3.25	--	--	--
June Consensus	**1.88**	**2.45**	**3.19**	**3.08**	**3.12**	**3.19**	**114.0**	**113.4**	**112.4**
High	2.50	3.00	4.50	3.50	3.50	3.80	116.0	118.0	120.0
Low	0.80	1.62	2.55	2.75	2.75	2.50	112.0	111.0	109.5
Last Months Avg.	1.49	2.03	2.88	2.80	2.89	2.99	109.8	109.2	108.0

Japan

	Policy-Rate Balance Rate			10 Yr. Gov't Bond Yield %			Yen per US$		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	-0.10	-0.10	--	0.40	0.40	--	118.0	116.0	--
BMO Capital Markets	-0.10	-0.10	-0.10	0.25	0.25	0.30	131.0	132.0	131.0
ING Financial Markets	-0.10	-0.10	-0.10	0.20	0.20	0.20	130.0	128.0	126.0
Mizuho Research Institute	-0.10	-0.10	-0.10	0.25	0.25	0.25	126.0	127.0	127.0
Moody's Analytics	-0.10	-0.10	-0.10	0.24	0.23	0.20	126.5	124.5	120.9
Nomura Securities	--	--	--	--	--	--	123.0	120.0	118.0
Northern Trust	-0.10	-0.10	-0.10	0.25	0.25	0.25	126.0	124.0	123.0
Oxford Economics	-0.03	-0.04	-0.05	0.21	0.18	0.08	126.2	124.1	118.5
S&P Global Market Intelligence	--	--	--	--	--	--	134.6	135.2	132.2
Scotiabank	-0.10	-0.10	-0.10	--	--	--	130.0	125.0	120.0
TS Lombard	-0.10	0.20	0.50	0.25	0.35	0.45	125.0	120.0	110.0
Wells Fargo	-0.10	-0.10	-0.10	0.25	0.25	0.25	--	--	--
June Consensus	**-0.09**	**-0.06**	**-0.03**	**0.26**	**0.26**	**0.25**	**126.9**	**125.1**	**122.7**
High	-0.03	0.20	0.50	0.40	0.40	0.45	134.6	135.2	132.2
Low	-0.10	-0.10	-0.10	0.20	0.18	0.08	118.0	116.0	110.0
Last Months Avg.	-0.09	-0.06	-0.03	0.24	0.24	0.24	124.3	124.2	122.2

United Kingdom

	Official Bank Rate			10 Yr. Gilt Yields %			US$ per Pound Sterling		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	1.25	1.50	--	1.90	1.90	--	1.35	1.39	--
BMO Capital Markets	1.50	1.75	2.25	2.25	2.60	2.70	1.24	1.25	1.26
ING Financial Markets	1.50	1.50	1.50	1.90	1.80	1.70	1.24	1.26	1.29
Moody's Analytics	0.91	1.16	1.50	1.95	2.14	2.44	1.28	1.31	1.41
Nomura Securities	--	--	--	--	--	--	1.31	1.34	1.45
Northern Trust	1.25	1.25	1.25	1.95	2.05	2.15	1.25	1.26	1.27
Oxford Economics	1.42	1.50	1.50	1.88	1.94	2.03	1.26	1.28	1.32
S&P Global Market Intelligence	--	--	--	--	--	--	1.21	1.21	1.23
Scotiabank	1.25	1.25	1.50	--	--	--	1.24	1.25	1.27
TS Lombard	1.00	1.63	3.50	1.50	3.10	3.40	1.22	1.15	1.10
Wells Fargo	1.25	1.50	1.75	1.95	2.00	2.05	--	--	--
June Consensus	**1.26**	**1.45**	**1.84**	**1.91**	**2.19**	**2.35**	**1.26**	**1.27**	**1.29**
High	1.50	1.75	3.50	2.25	3.10	3.40	1.35	1.39	1.45
Low	0.91	1.16	1.25	1.50	1.80	1.70	1.21	1.15	1.10
Last Months Avg.	1.05	1.27	1.58	1.80	2.08	2.22	1.30	1.30	1.31

Switzerland

	SNB Policy Rate			10 Yr. Gov't Bond Yield %			CHF per US$		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	-0.75	-0.75	--	--	--	--	0.94	0.92	--
ING Financial Markets	-0.50	-0.25	0.00	1.05	1.05	0.95	1.00	1.00	0.99
Moody's Analytics	-0.75	-0.75	-0.75	0.90	1.07	1.35	0.96	0.93	0.84
Nomura Securities	--	--	--	--	--	--	0.94	0.92	0.92
Northern Trust	-0.75	-0.50	0.25	0.75	0.80	0.90	0.95	0.93	0.92
Oxford Economics	-0.63	-0.38	-0.13	0.92	0.96	1.04	0.97	0.95	0.94
S&P Global Market Intelligence	--	--	--	--	--	--	0.99	0.98	0.97
Scotiabank	--	--	--	--	--	--	0.97	0.95	0.96
TS Lombard	-0.75	-0.75	-0.25	0.67	1.19	1.49	0.92	0.92	0.92
June Consensus	**-0.69**	**-0.56**	**-0.18**	**0.86**	**1.01**	**1.15**	**0.96**	**0.94**	**0.93**
High	-0.50	-0.25	0.25	1.05	1.19	1.49	1.00	1.00	0.99
Low	-0.75	-0.75	-0.75	0.67	0.80	0.90	0.92	0.92	0.84
Last Months Avg.	-0.75	-0.75	-0.53	0.63	0.73	0.89	0.93	0.93	0.92

Canada

	O/N MMkt Financing Rate			10 Yr. Gov't Bond Yield %			C$ per US$		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	2.00	2.50	--	--	--	--	1.24	1.23	--
BMO Capital Markets	2.00	2.25	2.75	3.05	3.10	3.15	1.26	1.24	1.24
ING Financial Markets	2.50	3.00	3.50	3.25	3.40	3.00	1.24	1.22	1.21
Moody's Analytics	1.13	1.78	2.50	2.87	3.01	3.27	1.27	1.25	1.22
Nomura Securities	--	--	--	--	--	--	1.26	1.26	1.25
Northern Trust	2.00	2.50	3.00	2.95	3.10	3.25	1.27	1.26	1.25
Oxford Economics	1.63	1.75	2.00	3.05	3.12	3.14	1.28	1.29	1.30
S&P Global Market Intelligence	--	--	--	--	--	--	1.21	1.21	1.22
Scotiabank	2.50	3.00	3.00	2.95	3.10	3.20	1.20	1.20	1.22
TS Lombard	2.25	2.88	4.75	3.60	3.60	3.90	1.26	1.26	1.26
Wells Fargo	--	--	--	3.20	3.25	3.30	--	--	--
June Consensus	**2.00**	**2.46**	**3.07**	**3.12**	**3.21**	**3.28**	**1.25**	**1.24**	**1.24**
High	2.50	3.00	4.75	3.60	3.60	3.90	1.28	1.29	1.30
Low	1.13	1.75	2.00	2.87	3.01	3.00	1.20	1.20	1.21
Last Months Avg.	1.49	2.02	2.61	2.72	2.85	2.94	1.25	1.24	1.24

International Interest Rate And Foreign Exchange Rate Forecasts

Australia

Blue Chip Forecasters	Official Cash Rate In 3 Mo.	Official Cash Rate In 6 Mo.	Official Cash Rate In 12 Mo.	10 Yr. Gov't Bond Yield % In 3 Mo.	10 Yr. Gov't Bond Yield % In 6 Mo.	10 Yr. Gov't Bond Yield % In 12 Mo.	US$ per A$ In 3 Mo.	US$ per A$ In 6 Mo.	US$ per A$ In 12 Mo.
Barclays	1.50	1.75	--	--	--	--	0.74	0.76	--
ING Financial Markets	1.10	1.60	2.50	3.80	4.00	3.80	0.70	0.72	0.74
Moody's Analytics	0.43	0.75	1.50	2.99	2.93	3.39	0.72	0.71	0.72
Nomura Securities	--	--	--	--	--	--	0.73	0.74	0.75
Northern Trust	1.25	1.50	2.00	3.35	3.45	3.55	0.71	0.70	0.69
Oxford Economics	0.85	1.23	1.73	3.38	3.41	3.39	0.73	0.73	0.75
S&P Global Market Intelligence	--	--	--	--	--	--	0.71	0.71	0.66
Scotiabank	0.50	0.75	1.50	--	--	--	0.72	0.74	0.74
TS Lombard	0.10	0.35	0.65	2.84	3.85	4.15	0.75	0.70	0.65
June Consensus	**0.82**	**1.13**	**1.65**	**3.27**	**3.53**	**3.66**	**0.72**	**0.72**	**0.71**
High	1.50	1.75	2.50	3.80	4.00	4.15	0.75	0.76	0.75
Low	0.10	0.35	0.65	2.84	2.93	3.39	0.70	0.70	0.65
Last Months Avg.	0.18	0.52	1.03	2.86	3.11	3.30	0.74	0.74	0.73

Euro area

Blue Chip Forecasters	Main Refinancing Rate In 3 Mo.	Main Refinancing Rate In 6 Mo.	Main Refinancing Rate In 12 Mo.	US$ per Euro In 3 Mo.	US$ per Euro In 6 Mo.	US$ per Euro In 12 Mo.
Barclays	0.25	0.50	--	1.12	1.15	--
BMO Capital Markets	0.00	0.25	0.75	1.06	1.06	1.08
ING Financial Markets	0.25	0.50	0.75	1.05	1.08	1.12
Mizuho Research Institute	0.00	0.00	0.00	1.08	1.10	1.10
Moody's Analytics	0.00	0.06	0.56	1.07	1.08	1.17
Nomura Securities	--	--	--	1.10	1.14	1.20
Northern Trust	0.25	0.25	0.25	1.08	1.09	1.10
Oxford Economics	0.06	0.31	0.50	1.07	1.09	1.12
S&P Global Market Intelligence	--	--	--	1.06	1.07	1.08
Scotiabank	0.00	0.00	0.50	1.08	1.10	1.10
TS Lombard	0.00	0.25	0.50	1.00	0.85	1.00
Wells Fargo	-0.25	0.00	0.50	--	--	--
June Consensus	**0.06**	**0.21**	**0.48**	**1.07**	**1.07**	**1.11**
High	0.25	0.50	0.75	1.12	1.15	1.20
Low	-0.25	0.00	0.00	1.00	0.85	1.00
Last Months Avg.	-0.06	0.01	0.27	1.08	1.07	1.11

10 Yr. Gov't Bond Yields %

Blue Chip Forecasters	Germany In 3 Mo.	Germany In 6 Mo.	Germany In 12 Mo.	France In 3 Mo.	France In 6 Mo.	France In 12 Mo.	Italy In 3 Mo.	Italy In 6 Mo.	Italy In 12 Mo.	Spain In 3 Mo.	Spain In 6 Mo.	Spain In 12 Mo.
Barclays	1.25	1.30	--	--	--	--	--	--	--	--	--	--
BMO Capital Markets	1.15	1.30	1.45	--	--	--	--	--	--	--	--	--
ING Financial Markets	1.20	1.20	1.10	1.65	1.60	1.40	2.95	2.70	2.10	1.80	1.80	1.70
Mizuho Research Institute	0.73	0.78	0.78	--	--	--	--	--	--	--	--	--
Moody's Analytics	1.02	1.20	1.51	1.52	1.65	1.86	2.88	3.04	3.04	1.93	2.24	2.48
Northern Trust	1.00	1.10	1.20	1.55	1.65	1.75	3.00	3.10	3.20	2.20	2.30	2.40
Oxford Economics	1.03	1.09	1.21	1.51	1.54	1.59	3.08	3.12	3.18	2.09	2.17	2.30
TS Lombard	1.80	1.80	2.10	2.15	2.15	2.45	3.10	3.10	3.40	2.55	2.55	2.85
Wells Fargo	1.20	1.30	1.45	--	--	--	--	--	--	--	--	--
June Consensus	**1.15**	**1.23**	**1.35**	**1.68**	**1.72**	**1.81**	**3.00**	**3.01**	**2.98**	**2.11**	**2.21**	**2.35**
High	1.80	1.80	2.10	2.15	2.15	2.45	3.10	3.12	3.40	2.55	2.55	2.85
Low	0.73	0.78	0.78	1.51	1.54	1.40	2.88	2.70	2.10	1.80	1.80	1.70
Last Months Avg.	0.77	0.90	1.07	1.21	1.30	1.45	2.30	2.36	2.47	1.65	1.74	1.92

Consensus Forecasts: 10-year Bond Yields vs U.S. Yield

	Current	In 3 Mo.	In 6 Mo.	In 12 Mo.
Japan	-2.54	-2.83	-2.86	-2.94
United Kingdom	-0.88	-1.17	-0.93	-0.83
Switzerland	-2.09	-2.23	-2.10	-2.04
Canada	0.05	0.03	0.09	0.09
Australia	0.53	0.19	0.41	0.47
Germany	-1.84	-1.93	-1.89	-1.84
France	-1.31	-1.41	-1.40	-1.38
Italy	0.21	-0.08	-0.11	-0.20
Spain	-0.76	-0.97	-0.91	-0.84

Consensus Forecasts: Policy Rates vs U.S. Target Rate

	Current	In 3 Mo.	In 6 Mo.	In 12 Mo.
Japan	-0.98	-1.98	-2.39	-3.22
United Kingdom	0.13	-0.62	-1.00	-1.35
Switzerland	-1.63	-2.57	-3.02	-3.36
Canada	0.13	0.12	0.00	-0.12
Australia	-0.53	-1.06	-1.32	-1.54
Euro area	-0.88	-1.83	-2.24	-2.71

Special Questions:

1. How much do you expect the FFR to be increased in total:

in 2022 (incl the 75bps increase so far)?	244 bps
in 2023?	55 bps

2. a. What do you think is the neutral (long-run) Fed funds rate? 2.45%

b. When do you think the neutral FFR will be achieved?

by the end 2022	by the end 2023	by the end 2024	by the end 2025	Later
62%	24%	14%	0%	0%

3. a. Do you think that by removing monetary accommodation the US Fed will be successful in slowing inflation without precipitating a recession?

Yes	No
72%	28%

b. What probability do you attach to a US recession beginning in 2022? In 2023?

	2022	2023
Consensus	**25%**	**38%**
Top 10	40%	57%
Bot 10	11%	23%

4. In your view, which of the following factors poses the biggest risk to global financial stability at present:

A much more aggressive response from Central Banks to persistently high levels of inflation	44%
A further escalation of the conflict in Ukraine accompanied by even higher energy and food prices	19%
The discovery of another dangerous mutation of the COVID virus that is both more transmissible and more immune to existing vaccines	6%
More intense financial instability in emerging economies triggered by e.g. a sovereign debt default in Russia	3%
Growing alarm on outlook for global growth triggered by eg higher food+energy prices/ebbing purch power/tighter global fiscal policies	28%

Viewpoints:

A Sampling of Views on the Economy, Financial Markets and Government Policy Excerpted from Recent Reports Issued by our Blue Chip Panel Members and Others

Beauty walks a razor's edge

The global economy continues to display impressive resilience in the face of large drags. This week's data releases from the US suggest that surging inflation is not derailing consumers, whose spending is expanding at a faster than 3%ar pace in the first two quarters of the year in response to boomy labor income gains and falling saving rates. In Europe, a modest rebound in activity is underway despite surging energy prices and concerns around the Russian war in Ukraine. On balance, the DM looks to be sustaining solid growth into May according to this week's flash PMIs. Together, DM demand gains are promoting resiliency across Asia in the face of a sharp downturn in China.

Although the global economy (outside China) is passing its 1H22 resilience test with flying colors, the anticipated reward for this achievement (a return to above-potential growth in 2H22) can no longer be forecasted confidently. The headwinds holding back growth are not fading as anticipated. Although April inflation delivered a much-needed moderation from the spike in March, global consumer prices still posted a large 0.6% gain last month. Moreover, near-term moderation looks less likely as energy prices have jumped over the past six weeks amid supply concerns related to a European embargo on Russian oil, the souring of chances for a deal with Iran, and the lack of a supply response from OPEC and US producers. At the same time, refining bottlenecks are boosting gasoline and diesel margins. In the US, the risk of $6/gallon gasoline poses yet another potential body-blow to the US consumer.

Alongside the continued purchasing power squeeze, China's COVID drag is proving to be deeper and more persistent. We revised down current-quarter GDP growth dramatically this week to -5.4%ar and look for only a partial rebound in 2H22 given the government's continued adherence to its zero-COVID policy. The risks of a meaningful negative spillover to growth elsewhere are increasing. We estimate that the China shock could shave 0.6% off the level of GDP outside China. Finally, the additional tightening in US financial conditions over the past month has been a surprise, and there are now clear signs that this will produce a contraction in residential investment.

Recession risks remain low as a result of the health of the private sector that has delivered 1H22 resiliency. Next week's US labor market report should support this point; we expect jobs to rise 375k. But this week's US data also highlight the cost of this resilience to the underlying fundamentals. Corporate profits are reported to have contracted last quarter as pricing power did not keep pace with surging labor costs and a tumble in productivity.

Meanwhile, 1H22 headwinds have driven the US saving rate to 4.4% in April (nearly 3%-pts below its pre-pandemic level). Saving rates are falling elsewhere across the DM. Excess saving remains considerable—as much as 10%-12% of household income. However, with saving rates now below pre-pandemic norms and wealth declining in response to equity and housing market cooling, it is unclear how much further households will be willing to reduce saving rates if inflation does not moderate as much as we anticipate. These risks are underscored by the sharp drop in confidence of late suggesting household patience is running thin.

Policy tensions and offsets. In addition to the tension between resiliency and drags, there is a building tension in macro policy setting. Fiscal authorities are responding to high inflation with additional stimulus. This week, the UK announced new measures to support growth. Combining this with actions expected in China, we have added 0.7% to our global fiscal thrust estimate in recent months. However, rising fiscal supports contrast with the sharp tightening forecasted for central banks. This week's minutes from the recent Fed meeting reinforced the message of continued 50bp hikes at the coming meetings. Next week, we expect the BoC to follow with a 50bp hike for the second meeting in a row and we expect a third 50bp increase in July. Deputy Governor Gravelle noted recently "we are taking actions to normalize our policy rate quickly and are prepared to be as forceful as needed." Similarly, we added a 50bp rate hike to our Riksbank forecast reflecting signals of higher and more broad-based underlying price pressure as well as elevated inflation expectations. Overall, our global policy rate forecast for end 2022 is up nearly 100bp since the start of the year.

However, it is important to note that central banks are not immune to growth risks. Although they are on the march, a part of our call for global resilience incorporates a judgment that DM central banks stay committed to sustaining the expansion. We see them being sensitive to signs of slowing growth—underscored by our forecast that the Fed returns to a 25bp tightening pace as US growth slows to 2%ar by 4Q22. A counterpoint to this call for sensitivity, however, came this week from a hawkish RBNZ that boosted its terminal rate forecast to nearly 4% (well above neutral) despite already-weaker activity and housing data.

Risks to rebound from China slump. A deeper slowdown in April activity has led us to revise down forecasts of current-quarter growth in China to -5.4%q/q, saar (1.5%oya and full-year growth to 3.7%yoy). Despite the downgrade, our GDP Nowcaster is tracking a contraction of 10.1%ar this quarter. New COVID infections are moderating and this should set up a strong bounce back starting in May and June as the economy reopens. The high-frequency indicators show modest improvement in passenger and freight flows in May, though economic activity was still weak. The PMI readings to be released next week will provide the first signal of whether the Omicron drag has started to fade. We expect May activity will be only marginally better than April's, and a more meaningful recovery will take place in June. Hence, we look for next week's NBS manufacturing PMI to improve to 48.5, compared to 47.4 in May. However, risks are skewed to the downside as improvement could be short-circuited by a resurgence in cases as the economy reopens. Importantly, policy continues to ramp up. This week, the State Council announced policy measures to support growth, adding as much as another 1.5%-pts to annual fiscal thrust. However, the actual impact could be more muted given the countervailing policies around zero-COVID.

JP Morgan Economic and Policy Research (May 27, 2022)

Long-Range Survey:

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2023 through 2028 and averages for the five-year periods 2024-2028 and 2029-2033. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

		Average For The Year						Five-Year Averages	
		2023	2024	2025	2026	2027	2028	2024-2028	2029-2033
1. Federal Funds Rate	CONSENSUS	**3.0**	**2.7**	**2.5**	**2.5**	**2.5**	**2.5**	**2.6**	**2.5**
	Top 10 Average	3.5	3.3	3.0	2.8	2.8	2.8	3.0	2.8
	Bottom 10 Average	2.6	2.1	2.0	2.2	2.2	2.2	2.2	2.1
2. Prime Rate	CONSENSUS	**6.1**	**5.9**	**5.7**	**5.6**	**5.6**	**5.6**	**5.7**	**5.6**
	Top 10 Average	6.6	6.4	6.1	6.0	6.0	6.0	6.1	5.9
	Bottom 10 Average	5.6	5.3	5.2	5.3	5.3	5.3	5.3	5.2
3. SOFR	CONSENSUS	**3.0**	**2.8**	**2.5**	**2.5**	**2.5**	**2.5**	**2.6**	**2.5**
	Top 10 Average	3.4	3.3	3.0	2.9	2.8	2.8	3.0	2.8
	Bottom 10 Average	2.7	2.2	2.0	2.2	2.2	2.2	2.2	2.1
4. Commercial Paper, 1-Mo	CONSENSUS	**3.2**	**2.9**	**2.6**	**2.6**	**2.6**	**2.6**	**2.7**	**2.6**
	Top 10 Average	3.5	3.4	3.1	2.9	2.9	2.9	3.0	2.9
	Bottom 10 Average	2.8	2.5	2.3	2.4	2.4	2.3	2.3	2.3
5. Treasury Bill Yield, 3-Mo	CONSENSUS	**3.0**	**2.8**	**2.6**	**2.6**	**2.6**	**2.5**	**2.6**	**2.5**
	Top 10 Average	3.6	3.4	3.1	3.1	3.0	2.9	3.1	2.9
	Bottom 10 Average	2.5	2.2	2.0	2.1	2.2	2.2	2.1	2.2
6. Treasury Bill Yield, 6-Mo	CONSENSUS	**3.2**	**2.9**	**2.7**	**2.7**	**2.7**	**2.6**	**2.7**	**2.6**
	Top 10 Average	3.8	3.6	3.2	3.2	3.1	3.0	3.2	3.0
	Bottom 10 Average	2.6	2.2	2.1	2.2	2.3	2.3	2.2	2.3
7. Treasury Bill Yield, 1-Yr	CONSENSUS	**3.2**	**3.0**	**2.9**	**2.9**	**2.8**	**2.8**	**2.9**	**2.8**
	Top 10 Average	3.9	3.8	3.5	3.4	3.3	3.2	3.4	3.2
	Bottom 10 Average	2.6	2.4	2.2	2.4	2.4	2.4	2.3	2.4
8. Treasury Note Yield, 2-Yr	CONSENSUS	**3.4**	**3.2**	**3.1**	**3.1**	**3.0**	**3.0**	**3.1**	**3.0**
	Top 10 Average	4.3	4.1	3.8	3.6	3.5	3.5	3.7	3.5
	Bottom 10 Average	2.7	2.4	2.3	2.5	2.6	2.5	2.4	2.5
9. Treasury Note Yield, 5-Yr	CONSENSUS	**3.5**	**3.4**	**3.3**	**3.3**	**3.3**	**3.2**	**3.3**	**3.3**
	Top 10 Average	4.3	4.2	4.1	3.9	3.8	3.8	3.9	3.8
	Bottom 10 Average	2.8	2.6	2.5	2.7	2.7	2.7	2.6	2.8
10. Treasury Note Yield, 10-Yr	CONSENSUS	**3.5**	**3.5**	**3.4**	**3.5**	**3.5**	**3.4**	**3.5**	**3.5**
	Top 10 Average	4.4	4.4	4.2	4.2	4.1	4.1	4.2	4.1
	Bottom 10 Average	2.8	2.5	2.6	2.9	2.9	2.8	2.7	2.8
11. Treasury Bond Yield, 30-Yr	CONSENSUS	**3.8**	**3.8**	**3.8**	**3.9**	**3.8**	**3.8**	**3.8**	**3.9**
	Top 10 Average	4.6	4.7	4.5	4.5	4.4	4.5	4.5	4.5
	Bottom 10 Average	3.0	2.9	3.0	3.3	3.2	3.2	3.1	3.2
12. Corporate Aaa Bond Yield	CONSENSUS	**5.0**	**5.0**	**4.9**	**5.0**	**5.0**	**4.9**	**4.9**	**5.0**
	Top 10 Average	5.7	5.7	5.6	5.5	5.5	5.5	5.5	5.6
	Bottom 10 Average	4.4	4.2	4.3	4.4	4.4	4.4	4.3	4.4
13. Corporate Baa Bond Yield	CONSENSUS	**6.0**	**5.9**	**5.8**	**5.9**	**5.9**	**5.9**	**5.9**	**5.9**
	Top 10 Average	6.6	6.6	6.4	6.3	6.3	6.3	6.4	6.4
	Bottom 10 Average	5.4	5.3	5.2	5.4	5.4	5.4	5.3	5.4
14. State & Local Bonds Yield	CONSENSUS	**4.3**	**4.3**	**4.2**	**4.3**	**4.3**	**4.3**	**4.3**	**4.3**
	Top 10 Average	5.0	5.0	4.8	4.8	4.7	4.7	4.8	4.8
	Bottom 10 Average	3.7	3.7	3.7	3.9	3.9	3.9	3.8	3.9
15. Home Mortgage Rate	CONSENSUS	**5.7**	**5.5**	**5.4**	**5.4**	**5.4**	**5.4**	**5.4**	**5.4**
	Top 10 Average	6.4	6.4	6.1	6.0	6.0	6.0	6.1	6.0
	Bottom 10 Average	4.9	4.7	4.6	4.8	4.8	4.8	4.7	4.8
A. Fed's AFE Nominal $ Index	CONSENSUS	**113.8**	**112.8**	**111.9**	**111.0**	**110.6**	**110.4**	**111.3**	**109.8**
	Top 10 Average	115.6	114.7	114.0	113.4	113.1	112.8	113.6	112.7
	Bottom 10 Average	112.2	111.0	109.9	108.8	108.2	107.9	109.2	107.4

		Year-Over-Year, % Change						Five-Year Averages	
		2023	2024	2025	2026	2027	2028	2024-2028	2029-2033
B. Real GDP	CONSENSUS	**2.0**	**2.0**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.0**
	Top 10 Average	2.6	2.4	2.4	2.4	2.4	2.4	2.4	2.3
	Bottom 10 Average	1.5	1.5	1.8	1.8	1.8	1.8	1.7	1.8
C. GDP Chained Price Index	CONSENSUS	**3.0**	**2.4**	**2.3**	**2.3**	**2.2**	**2.2**	**2.3**	**2.2**
	Top 10 Average	3.7	2.8	2.7	2.6	2.6	2.6	2.7	2.6
	Bottom 10 Average	2.3	2.0	1.9	1.9	1.9	1.9	1.9	1.9
D. Consumer Price Index	CONSENSUS	**3.2**	**2.4**	**2.4**	**2.4**	**2.3**	**2.3**	**2.4**	**2.3**
	Top 10 Average	4.1	3.0	2.9	2.8	2.7	2.7	2.8	2.7
	Bottom 10 Average	2.3	1.8	2.0	2.0	1.9	1.9	1.9	1.9
E. PCE Price Index	CONSENSUS	**3.0**	**2.3**	**2.3**	**2.3**	**2.3**	**2.2**	**2.3**	**2.3**
	Top 10 Average	3.8	2.8	2.8	2.7	2.7	2.6	2.7	2.7
	Bottom 10 Average	2.2	1.8	1.9	1.9	1.9	1.8	1.9	1.9

Databank:

2022 Historical Data

Monthly Indicator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Retail and Food Service Sales (a)	2.7	1.7	1.4	0.9	····	····	····	····	····	····	····	····
Auto & Light Truck Sales (b)	15.05	13.98	13.41	14.28	····	····	····	····	····	····	····	····
Personal Income (a, current $)	0.1	0.6	0.5	0.4	····	····	····	····	····	····	····	····
Personal Consumption (a, current $)	2.1	0.6	1.4	0.9	····	····	····	····	····	····	····	····
Consumer Credit (e)	4.6	10.2	14.0	····	····	····	····	····	····	····	····	····
Consumer Sentiment (U. of Mich.)	67.2	62.8	59.4	65.2	58.4	····	····	····	····	····	····	····
Household Employment (c)	1199	548	736	-353	····	····	····	····	····	····	····	····
Nonfarm Payroll Employment (c)	504	714	428	428	····	····	····	····	····	····	····	····
Unemployment Rate (%)	4.0	3.8	3.6	3.6	····	····	····	····	····	····	····	····
Average Hourly Earnings (All, cur. $)	31.56	31.60	31.75	31.85	····	····	····	····	····	····	····	····
Average Workweek (All, hrs.)	34.6	34.7	34.6	34.6	····	····	····	····	····	····	····	····
Industrial Production (d)	3.2	7.5	5.4	6.4	····	····	····	····	····	····	····	····
Capacity Utilization (%)	76.9	77.6	78.2	79.0	····	····	····	····	····	····	····	····
ISM Manufacturing Index (g)	57.6	58.6	57.1	55.4	····	····	····	····	····	····	····	····
ISM Nonmanufacturing Index (g)	59.9	56.5	58.3	57.1	····	····	····	····	····	····	····	····
Housing Starts (b)	1.666	1.777	1.728	1.724	····	····	····	····	····	····	····	····
Housing Permits (b)	1.841	1.857	1.879	1.823	····	····	····	····	····	····	····	····
New Home Sales (1-family, c)	831	792	709	591	····	····	····	····	····	····	····	····
Construction Expenditures (a)	3.0	0.5	0.1	····	····	····	····	····	····	····	····	····
Consumer Price Index (nsa, d)	7.5	7.9	8.5	8.3	····	····	····	····	····	····	····	····
CPI ex. Food and Energy (nsa, d)	6.0	6.4	6.5	6.2	····	····	····	····	····	····	····	····
PCE Chain Price Index (d)	6.0	6.3	6.6	6.3	····	····	····	····	····	····	····	····
Core PCE Chain Price Index (d)	5.1	5.3	5.2	4.9	····	····	····	····	····	····	····	····
Producer Price Index (nsa, d)	10.1	10.4	11.5	11.0	····	····	····	····	····	····	····	····
Durable Goods Orders (a)	3.1	-0.7	0.6	0.4	····	····	····	····	····	····	····	····
Leading Economic Indicators (a)	-0.6	0.7	0.1	-0.3	····	····	····	····	····	····	····	····
Balance of Trade & Services (f)	-89.2	-89.8	-109.8	····	····	····	····	····	····	····	····	····
Federal Funds Rate (%)	0.08	0.08	0.20	0.33	····	····	····	····	····	····	····	····
3-Mo. Treasury Bill Rate (%)	0.15	0.31	0.45	0.76	····	····	····	····	····	····	····	····
10-Year Treasury Note Yield (%)	1.76	1.93	2.13	2.75	····	····	····	····	····	····	····	····

2021 Historical Data

Monthly Indicator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Retail and Food Service Sales (a)	5.5	-1.8	11.2	0.1	-1.0	1.1	-1.0	0.7	1.0	1.6	0.6	-1.6
Auto & Light Truck Sales (b)	16.78	15.93	17.64	18.30	16.89	15.47	14.66	13.09	12.29	13.05	13.04	12.54
Personal Income (a, current $)	9.9	-7.2	21.0	-13.3	-2.0	0.3	1.3	0.4	-0.9	0.8	0.7	0.5
Personal Consumption (a, current $)	3.3	-1.1	5.2	1.0	0.0	1.1	0.1	1.1	0.6	1.4	0.5	-0.9
Consumer Credit (e)	2.4	5.4	4.6	5.4	7.6	6.6	4.5	5.1	6.6	5.8	8.8	6.3
Consumer Sentiment (U. of Mich.)	79.0	76.8	84.9	88.3	82.9	85.5	81.2	70.3	72.8	71.7	67.4	70.6
Household Employment (c)	121	363	573	319	291	62	1092	463	639	428	1090	651
Nonfarm Payroll Employment (c)	520	710	704	263	447	557	689	517	424	677	647	588
Unemployment Rate (%)	6.4	6.2	6.0	6.0	5.8	5.9	5.4	5.2	4.7	4.6	4.2	3.9
Average Hourly Earnings (All, cur. $)	29.93	30.04	30.06	30.20	30.36	30.52	30.67	30.76	30.92	31.11	31.23	31.38
Average Workweek (All, hrs.)	35.0	34.6	34.9	34.9	34.9	34.8	34.8	34.7	34.8	34.8	34.8	34.8
Industrial Production (d)	-1.7	-4.9	1.8	17.9	16.4	10.2	6.6	5.4	4.5	4.8	5.0	3.5
Capacity Utilization (%)	75.0	72.7	74.8	74.8	75.3	75.7	76.2	76.1	75.1	76.1	76.6	76.4
ISM Manufacturing Index (g)	59.4	60.9	63.7	60.6	61.6	60.9	59.9	59.7	60.5	60.8	60.6	58.8
ISM Nonmanufacturing Index (g)	58.5	55.9	62.2	62.7	63.2	60.7	64.1	62.2	62.6	66.7	68.4	62.3
Housing Starts (b)	1.602	1.430	1.711	1.505	1.605	1.664	1.573	1.576	1.559	1.563	1.706	1.768
Housing Permits (b)	1.843	1.743	1.773	1.765	1.691	1.661	1.655	1.772	1.615	1.698	1.729	1.896
New Home Sales (1-family, c)	911	768	881	809	740	714	726	686	732	671	756	839
Construction Expenditures (a)	3.0	-1.1	1.0	0.3	0.7	1.0	0.1	1.0	1.0	0.9	1.0	1.6
Consumer Price Index (nsa, d)	1.4	1.7	2.6	4.2	5.0	5.4	5.4	5.3	5.4	6.2	6.8	7.0
CPI ex. Food and Energy (nsa, d)	1.4	1.3	1.6	3.0	3.8	4.5	4.3	4.0	4.0	4.6	4.9	5.5
PCE Chain Price Index (d)	1.4	1.6	2.5	3.6	4.0	4.0	4.2	4.2	4.4	5.1	5.6	5.8
Core PCE Chain Price Index (d)	1.5	1.5	2.0	3.1	3.5	3.6	3.6	3.6	3.7	4.2	4.7	4.9
Producer Price Index (nsa, d)	1.6	3.0	4.1	6.5	7.0	7.6	8.0	8.7	8.8	8.9	9.9	10.0
Durable Goods Orders (a)	2.5	0.1	1.6	-2.0	2.1	1.8	0.4	1.6	-1.5	1.5	1.4	0.9
Leading Economic Indicators (a)	0.6	-0.1	1.1	1.1	0.9	0.6	1.0	0.7	0.2	0.4	0.6	0.4
Balance of Trade & Services (f)	-65.1	-67.5	-71.4	-65.4	-67.3	-72.2	-69.7	-72.5	-81.2	-66.9	-80.1	-82.0
Federal Funds Rate (%)	0.09	0.08	0.07	0.07	0.06	0.08	0.10	0.09	0.08	0.08	0.08	0.08
3-Mo. Treasury Bill Rate (%)	0.08	0.04	0.03	0.02	0.02	0.04	0.05	0.05	0.04	0.05	0.05	0.06
10-Year Treasury Note Yield (%)	1.08	1.26	1.61	1.64	1.62	1.52	1.32	1.28	1.37	1.58	1.56	1.47

(a) month-over-month % change; (b) millions, saar; (c) month-over-month change, thousands; (d) year-over-year % change; (e) annualized % change; (f) $ billions; (g) level. Most series are subject to frequent government revisions. Use with care.

Calendar of Upcoming Economic Data Releases

Monday	Tuesday	Wednesday	Thursday	Friday
30 **Memorial Day** **All Markets Closed**	**31** FHFA HPI (Mar & Q1) Case-Shiller HPI (Mar) Chicago PMI (May) Texas Manufacturing Outlook Survey (May) Consumer Confidence (May) Agricultural Prices (May) Retail E-Commerce Sales (Q1)	**June 1** Construction (Apr) ISM Manufacturing (May) S&P Global Mfg PMI (May) JOLTS (Apr) Texas Service Sector Outlook Survey (May) Mortgage Applications	**2** Productivity & Costs (Q1) MSIO (Apr) Challenger Employment Report (May) BEA Auto Sales (May) BEA Truck Sales (May) ADP Employment Report (May) EIA Crude Oil Stocks Weekly Jobless Claims	**3** Employment Situation (May) ISM Services PMI (May) S&P Global Services PMI (May)
6 Public Debt (May) Interest on the Public Debt (Jun)	**7** Intl Trade (Apr & Revisions) QFR (Q1) Consumer Credit (Apr) Treasury Auction Allotments (May) Kansas City Fed Labor Market Conditions Indicators (May)	**8** Wholesale Trade (Apr) EIA Crude Oil Stocks Mortgage Applications	**9** Financial Accounts (Q1) Kansas City Financial Stress Index (May) Weekly Jobless Claims	**10** CPI (May) Real Earnings (May) Housing Affordability (Apr) Consumer Sentiment (Jun, Preliminary) QSS (Q1) Cleveland Fed Median CPI (May) Monthly Treasury (May)
13	**14** Producer Prices (May) Manpower Survey (Q3) NFIB (May) OPEC Crude Oil Spot Prices (May) FOMC Meeting	**15** Import & Export Prices (May) Advance Retail Sales (May) MTIS (Apr) Transportation Services (Apr) Empire State Mfg Survey (Jun) Home Builders (Jun) TIC Data (Apr) FOMC Meeting EIA Crude Oil Stocks Mortgage Applications	**16** New Residential Construction (May) ECEC (Q1) Business Leaders Survey (Jun) Philadelphia Fed Mfg Business Outlook Survey (Jun) Weekly Jobless Claims	**17** IP & Capacity Utilization (May) Livingston Survey (Jun) Composite Indexes (May)
20 **Juneteenth Observed** **All Markets Closed**	**21** Existing Home Sales (May) Chicago Fed National Activity Index (May) Philadelphia Fed Nonmfg Business Outlook Survey (Jun)	**22** Treasury Auction Allotments (Jun) Mortgage Applications	**23** International Transactions (Q1 & Revisions) Kansas City Fed Manufacturing Survey (Jun) S&P Global Flash PMIs (Jun) EIA Crude Oil Stocks Weekly Jobless Claims	**24** New Residential Sales (May) Final Building Permits (May) Consumer Sentiment (Jun, Final) Steel Imports for Consumption (May)
27 Advance Durable Goods (May) Texas Manufacturing Outlook Survey (Jun) Pending Home Sales (May)	**28** IIP (Q1 & Revision) Adv Trade & Inventories(May) FHFA HPI (Apr) Case-Shiller HPI (Apr) H.6 Money Stock (Apr) IP Revisions Consumer Confidence (Jun) Richmond Fed Mfg & Service Sector Srvy (Jun) Texas Service Sector (Jun)	**29** GDP (Q1, 3rd Estimate) EIA Crude Oil Stocks Mortgage Applications	**30** Personal Income (May) Dallas Fed Trimmed-Mean PCE (May) Chicago PMI (Jun) Agricultural Prices (May) Weekly Jobless Claims	**July 1** Construction (May) ISM Manufacturing (Jun) S&P Global Mfg PMI (Jun)
4 **Independence Day** **All Markets Closed**	**5** Manufacturers' Shipments, Inventories & Orders (May) BEA Auto Sales (Jun) BEA Truck Sales (Jun)	**6** ISM Services PMI (Jun) S&P Global Services PMI (Jun) JOLTS (May) Mortgage Applications	**7** ADP Employment Report (Jun) International Trade (May) Public Debt (Jun) Interest on the Public Debt (Jul) Challenger Employment Report (Jun) EIA Crude Oil Stocks Weekly Jobless Claims	**8** Employment Situation (Jun) Wholesale Trade (May) Consumer Credit (May)

BLUE CHIP FORECASTERS

CONTRIBUTORS TO DOMESTIC SURVEY

ACIMA Private Wealth, Richmond, VA
Ardavan Mobasheri
Action Economics, LLC, Boulder, CO
Michael Englund
AIG, New York, NY
Henry Mo and Jerry Cai
Amherst Pierpont Securities, Stamford, CT
Stephen Stanley
Bank of America, New York, NY
Ethan Harris
Bank of the West, SF, CA
Scott Anderson
Barclays, New York, NY
Michael Gapen
BMO Capital Markets Economics, Toronto, Canada
Douglas Porter
BNP Paribas North America, New York, NY
Andrew Schneider
Chan Economics, New York, NY
Anthony Chan
Chmura Economics & Analytics, Richmond, VA
Christine Chmura and Xiaobing Shuai
Comerica, Dallas, TX
Bill Adams
Daiwa Capital Markets America, New York, NY
Michael Moran
DePrince & Associates, Murfreesburo, TN
Albert E. DePrince Jr.
Economist Intelligence Unit, New York, NY
Leo Abruzzese and Jan Friederich
Fannie Mae, Washington, DC
Douglas Duncan
Georgia State University, Atlanta, GA
Rajeev Dhawan
GLC Financial Economics, Providence, RI
Gary L. Ciminero
Goldman, Sachs & Co., New York, NY
Jan Hatzius
Grant Thornton, Chicago, IL
Diane Swonk
ING Financial Markets, London, England
James Knightley
J.P. Morgan Chase, New York, NY
Bruce Kasman
Loomis, Sayles & Company, L.P., Boston, MA
Brian Horrigan
MacroFin Analytics & Rutgers Business School, Wayne, NJ
Parul Jain
MacroPolicy Perspectives, New York, NY
Julia Coronado and Laura Rosner
Mizuho Research Institute, Tokyo, Japan
Takehiro Noguchi
Moody's Analytics, West Chester, PA
Mark M. Zandi
Naroff Economic Advisors, Philadelphia, PA
Joel L. Naroff
NatWest Markets, Greenwich, CT
Michelle Girard and Kevin Cummins
Nomura Securities International, Inc., New York, NY
U.S. Economics
Northern Trust Company, Chicago, IL
Carl Tannenbaum
Oxford Economics, New York, NY
Gregory Daco
PNC Financial Services Group, Pittsburgh, PA
Gus Faucher
RDQ Economics, New York, NY
John Ryding and Conrad de Quadros
Regions Financial Corporation, Birmingham, AL
Richard F. Moody
Scotiabank Group, Toronto, Canada
Jean-Francois Perrault
Societe Generale, New York, NY
Stephen W. Gallagher
S&P Global Market Intelligence, St. Louis, MO
Joel Prakken & Chris Varvares
S&P Global Ratings, New York, NY
Beth Ann Bovino
Swiss Re, New York, NY
Jerome Haegeli
ThruTheCycle.com, White Plains, NY
John Lonski
TS Lombard, London, UK
Steven Blitz
Via Nova Investment Management, Fredericksburg, VA
Alan Gayle
Wells Fargo, Charlotte, NC
Jay Bryson and Mark Vitner

CONTRIBUTORS TO INTERNATIONAL SURVEY

Barclays Capital, New York, NY
BMO Capital Markets Economics, Toronto, Canada
ING Financial Markets, London, England
Mizuho Research Institute, Tokyo, Japan
Moody's Analytics, West Chester, PA
Nomura Securities International, Inc., New York, NY
Northern Trust Company, Chicago, IL
Oxford Economics, Wayne, PA
Scotiabank Group, Toronto, Canada
S&P Global Market Intelligence, St. Louis, MO
S&P Global Ratings, New York, NY
TS Lombard, London, UK
Wells Fargo, Charlotte, NC

Blue Chip Financial Forecasts®

Top Analysts' Forecasts Of U.S. And Foreign Interest Rates, Currency Values And The Factors That Influence Them

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BLUE CHIP FINANCIAL FORECASTS®

Executive Editor: Joseph Aguinaldo
Assistant Editor: Jules Valencia
Haver Analytics
60 East 42nd Street
New York, NY 10165
Phone (212) 986-9300
E-mail: *bluechip@haver.com*

Robert J. Eggert, Founder
Randell E. Moore, Editor Emeritus
Chris Sullivan, General Manager

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Fed Fights Inflation; Recession Prospects for 2023 at 44%

Supply-side Issues Continue to Weigh on Economy. U.S. economic activity and inflation continue to be impacted by several forces. These remain, as they have been for at least the last two years, to be mainly supply-side issues: the effect of the war in Ukraine on oil markets and now food supply, since Ukraine is a major provider of wheat for global markets. Furthermore, the COVID pandemic has continued to leave long shadows with China's zero-COVID policy restraining world trade growth and further blocking global supply-chain channels.

Fed Raising Rates More To Fight Inflation. The steep climb in inflation that has resulted from these developments is now generating an increasingly forceful policy response from the Federal Reserve as well as other central banks. At the last meeting of the Federal Open Market Committee on June 14-15, the increase in the federal funds rate was a substantial 75 basis points, putting the rate in the range of 1.50%-1.75%. The Committee expects further hikes in the period ahead. Indeed their own forecasts suggest the rate could reach 3.4% by year-end 2022 and then 3.8% by year-end 2023.

The Blue Chip panel has a similar vision of the interest rate pattern this year, with the federal funds rate averaging 3.1% in Q4 2022 and 3.5% in Q1 2023. So the rate at this year-end would be about 3.3%. However, the panel does not appear to believe that much further tightening would be necessary across 2023. Their fed funds rate consensus forecast during that year shows it steady at 3.5% until the fourth quarter, when it would go down just to 3.4%. The FOMC members, by contrast are forecasting a rate of 3.8% in late 2023. The difference between the Blue Chip panel's forecasts and the FOMC is not trivial but nevertheless does not imply a marked difference in policy rate expectations.

Tighter Monetary Policy Expected To Be Effective. Following an estimate of 5.8% at an annual rate in Q2 2022, the panel's inflation forecast shows the PCE price index rising in Q3 at a 5.2% annual rate, then moderating to 3.6% in Q4. In 2023, it is expected to continue the moderating trend, showing an increase Q4 over Q4 of 2.6%; in other words, the panel is expecting inflation to edge back toward the Fed's target pace of 2%.

But will the tightening of monetary policy that helps bring about this moderation of inflation generate a recession?

Blue Chip Forecast Show Weak Growth, but No Recession. The Blue Chip forecasts for GDP do not show any more quarterly declines following the -1.6% seasonally adjusted annual rate of decline in Q1 this year. But growth is still expected to be quite sluggish and well below potential. The Blue Chip panel projects growth this year of 1.2%, Q4 over Q4, and 1.3% across 2023. However, the margin of error between sub-trend growth outcome and a recession is small.

In fact, the answers to a Special Question this month about the probability of recession illustrate this. Panelists' answers for recession probability this year in the U.S. are just 31%, ranging from 16% for the bottom 10 and 48% for the top 10. For 2023, the expectation does increase markedly to 44%, ranging from 27% for the bottom 10 to 64% for the top 10.

Further, in another Special Question, the panel indicates that they believe that as the Fed removes its monetary accommodation, there is a 55% probability that it can do so without invoking a recession.

Long-Term Interest Rates Seen Just Slightly Higher as Inflation Moderates. The combination of Fed tightening and higher inflation usually means longer-term interest rates are higher relative to recent history and also relative to recent forecasts. However, the increased aggressiveness of expected Fed action has raised the risk of recession sufficiently to generate a slight reversal in longer-term rates. Ten-year Treasuries climbed from 2.75% in April to 2.90% in May and averaged as much as 3.36% in mid-June. But they have eased visibly since then, back to right at 3% on June 30. The forecast continues that general notion, with yields on the 10-year note and the 30-year Treasury bond projected to remain below 4% through the course of next year.

Credit Spreads Forecast Suggest Financial Stability Maintained. Increases in corporate bond yields and mortgage rates are expected, but the upward movement is not seen to be all that large. Aaa corporate yields recently hovered just above 4.5% and the Blue Chip panel looks for them to rise gradually to 5.1% by early 2023 and generally stay there through that year. The spread to 30-year Treasuries could climb from 120 basis points to 140. This might suggest that investors will remain confident that there should be no substantial credit difficulties going forward.

Mortgage rates, measured by the Freddie Mac 30-year rate, climbed sharply in the last few weeks, but then dropped by 11 basis points to 5.70% in the very latest reading, published on June 30. This is the highest level since late 2008 in the midst of the Great Recession. The Blue Chip panel expects some further increase to 6%, which would be sustained across much of 2023. Thus, while the markets would have some further response to recent high inflation, that is expected to be limited.

Carol Stone, CBE (Haver Analytics, New York, NY)

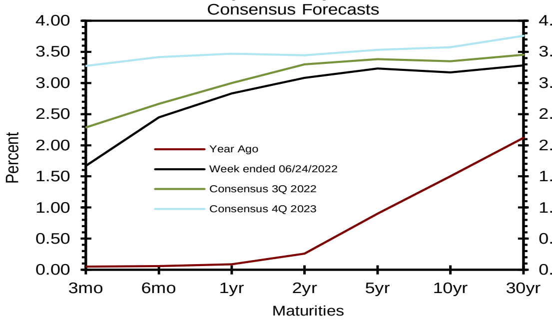
Consensus Forecasts of U.S. Interest Rates and Key Assumptions

	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			*Latest Qtr*	3Q	4Q	1Q	2Q	3Q	4Q
Interest Rates	Jun 24	Jun 17	Jun 10	Jun 3	May	Apr	Mar	2Q 2022*	2022	2022	2023	2023	2023	2023
Federal Funds Rate	1.58	0.83	0.83	0.83	0.77	0.33	0.20	0.73	**2.4**	**3.1**	**3.5**	**3.5**	**3.5**	**3.4**
Prime Rate	4.75	4.00	4.00	4.00	3.94	3.50	3.37	3.90	**5.4**	**6.2**	**6.6**	**6.7**	**6.6**	**6.5**
SOFR	1.45	1.00	0.76	0.79	0.72	0.29	0.16	0.69	**2.1**	**2.9**	**3.4**	**3.5**	**3.4**	**3.3**
Commercial Paper, 1-mo.	1.60	1.40	1.00	0.87	0.80	0.44	0.32	0.80	**2.2**	**3.0**	**3.4**	**3.4**	**3.4**	**3.3**
Treasury bill, 3-mo.	1.67	1.70	1.30	1.17	0.99	0.76	0.45	1.08	**2.3**	**3.0**	**3.4**	**3.4**	**3.4**	**3.3**
Treasury bill, 6-mo.	2.45	2.30	1.81	1.65	1.49	1.26	0.86	1.62	**2.7**	**3.3**	**3.5**	**3.6**	**3.5**	**3.4**
Treasury bill, 1 yr.	2.83	2.94	2.34	2.14	2.06	1.89	1.34	2.18	**3.0**	**3.5**	**3.7**	**3.7**	**3.6**	**3.5**
Treasury note, 2 yr.	3.08	3.27	2.83	2.63	2.62	2.54	1.91	2.71	**3.3**	**3.6**	**3.7**	**3.6**	**3.6**	**3.4**
Treasury note, 5 yr.	3.23	3.45	3.07	2.91	2.87	2.78	2.11	2.95	**3.4**	**3.6**	**3.6**	**3.6**	**3.6**	**3.5**
Treasury note, 10 yr.	3.17	3.36	3.05	2.92	2.90	2.75	2.13	2.93	**3.3**	**3.5**	**3.6**	**3.6**	**3.6**	**3.6**
Treasury note, 30 yr.	3.28	3.38	3.18	3.09	3.07	2.81	2.41	3.04	**3.5**	**3.6**	**3.7**	**3.8**	**3.8**	**3.8**
Corporate Aaa bond	4.58	4.68	4.39	4.27	4.37	4.01	3.63	4.30	**4.7**	**5.0**	**5.1**	**5.1**	**5.1**	**5.1**
Corporate Baa bond	5.30	5.38	5.05	4.94	5.05	4.63	4.23	4.97	**5.6**	**6.0**	**6.2**	**6.2**	**6.2**	**6.2**
State & Local bonds	4.05	4.08	3.77	3.73	3.96	3.70	3.30	3.87	**4.0**	**4.3**	**4.4**	**4.5**	**4.5**	**4.4**
Home mortgage rate	5.81	5.78	5.23	5.09	5.23	4.98	4.17	5.23	**5.7**	**5.9**	**6.0**	**5.9**	**5.8**	**5.7**
	History								Consensus Forecasts-Quarterly					
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Key Assumptions	2020	2020	2021	2021	2021	2021	2022	2022**	2022	2022	2023	2023	2023	2023
Fed's AFE $ Index	107.2	105.1	103.4	102.9	105.0	107.0	108.4	113.6	**115.3**	**115.4**	**115.1**	**114.6**	**114.0**	**113.8**
Real GDP	33.8	4.5	6.3	6.7	2.3	6.9	-1.6	2.9	**2.1**	**1.6**	**1.2**	**1.0**	**1.3**	**1.6**
GDP Price Index	3.6	2.2	4.3	6.1	6.0	7.1	8.2	5.9	**5.2**	**3.9**	**3.4**	**2.8**	**2.7**	**2.6**
Consumer Price Index	4.8	2.2	4.1	8.2	6.7	7.9	9.2	7.6	**6.0**	**3.8**	**3.3**	**2.7**	**2.5**	**2.5**
PCE Price Index	3.7	1.5	3.8	6.5	5.3	6.4	7.1	5.8	**5.2**	**3.6**	**3.1**	**2.5**	**2.4**	**2.3**

Forecasts for interest rates and the Federal Reserve's Advanced Foreign Economies Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index, CPI and PCE Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; SOFR from the New York Fed. *Interest rate data for 2Q 2022 based on historical data through the week ended June 24. **Data for 2Q 2022 for the Fed's AFE $ Index based on data through the week ended June 24. Figures for 2Q 2022 Real GDP, GDP Chained Price Index, Consumer Price Index, and PCE Price Index are consensus forecasts from the June 2022 survey.

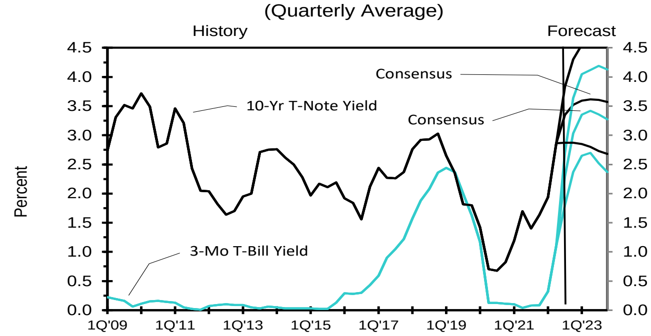
U.S. Treasury Yield Curve

Week ended Jun 24, 2022 & Year Ago vs. 3Q 2022 & 4Q 2023 Consensus Forecasts



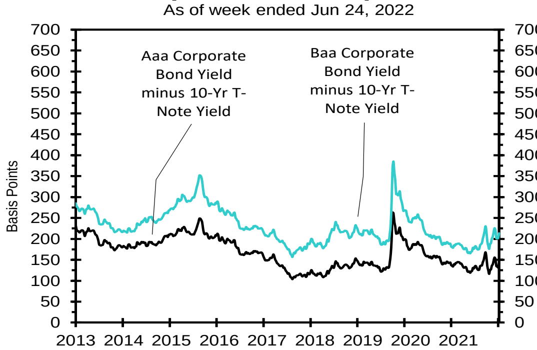
US 3-Mo T-Bills & 10-Yr T-Note Yield

(Quarterly Average)



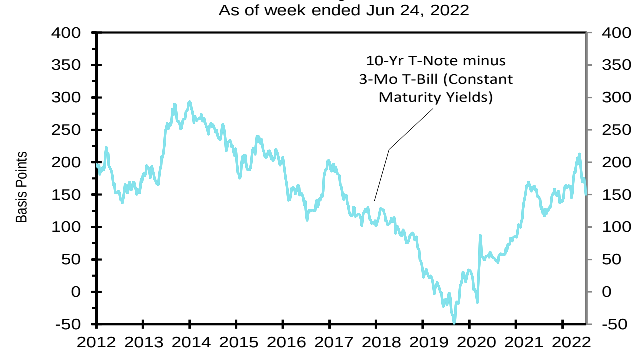
Corporate Bond Spreads

As of week ended Jun 24, 2022



U.S. Treasury Yield Curve

As of week ended Jun 24, 2022



Policy Rates[1]

	History: Latest	History: Month Ago	History: Year Ago	Consensus Forecasts Months From Now: 3	6	12
U.S.	1.63	0.88	0.13	**2.75**	**3.41**	**3.67**
Japan	-0.10	-0.10	-0.10	**-0.09**	**-0.06**	**-0.03**
U.K.	1.25	1.00	0.10	**1.45**	**1.67**	**1.70**
Switzerland	-0.25	-0.75	-0.75	**-0.19**	**0.02**	**0.05**
Canada	1.50	1.00	0.25	**2.78**	**3.40**	**3.46**
Australia	0.85	0.35	0.10	**1.54**	**2.15**	**2.51**
Euro area	0.00	0.00	0.00	**0.36**	**0.61**	**0.91**

10-Yr. Government Bond Yields[2]

	History: Latest	History: Month Ago	History: Year Ago	Consensus Forecasts Months From Now: 3	6	12
U.S.	3.13	2.74	1.54	**3.33**	**3.41**	**3.37**
Germany	1.44	0.98	-0.15	**1.54**	**1.58**	**1.58**
Japan	0.24	0.24	0.06	**0.26**	**0.28**	**0.25**
U.K.	2.30	1.92	0.86	**2.26**	**2.55**	**2.53**
France	1.97	1.48	0.20	**1.95**	**1.92**	**1.96**
Italy	3.57	2.90	0.92	**3.25**	**3.23**	**3.17**
Switzerland	1.19	0.74	-0.21	**1.09**	**1.26**	**1.31**
Canada	3.33	2.79	1.46	**3.36**	**3.44**	**3.41**
Australia	3.72	3.26	1.52	**3.40**	**3.66**	**3.70**
Spain	2.60	2.02	0.46	**2.43**	**2.44**	**2.53**

Foreign Exchange Rates[3]

	History: Latest	History: Month Ago	History: Year Ago	Consensus Forecasts Months From Now: 3	6	12
U.S.	115.41	112.95	103.61	**116.7**	**115.9**	**114.7**
Japan	135.22	127.14	110.78	**133.1**	**131.1**	**127.7**
U.K.	1.23	1.26	1.39	**1.24**	**1.24**	**1.27**
Switzerland	0.96	0.96	0.92	**0.96**	**0.96**	**0.96**
Canada	1.29	1.27	1.23	**1.25**	**1.25**	**1.26**
Australia	0.69	0.72	0.76	**0.71**	**0.71**	**0.70**
Euro	1.05	1.07	1.19	**1.06**	**1.05**	**1.09**

Consensus Policy Rates vs. US Rate

	Now	In 12 Mo.
Japan	-1.73	**-3.69**
U.K.	-0.38	**-1.97**
Switzerland	-1.88	**-3.62**
Canada	-0.13	**-0.21**
Australia	-0.78	**-1.16**
Euro area	-1.63	**-2.75**

Consensus 10-Year Gov't Yields vs. U.S. Yield

	Now	In 12 Mo.
Germany	-1.69	**-1.80**
Japan	-2.89	**-3.12**
U.K.	-0.83	**-0.85**
France	-1.16	**-1.41**
Italy	0.44	**-0.20**
Switzerland	-1.94	**-2.06**
Canada	0.19	**0.04**
Australia	0.59	**0.33**
Spain	-0.53	**-0.84**

Forecasts of panel members are on pages 10 and 11. Definitions of variables are as follows: [1]Monetary policy rates. [2]Government bonds are yields to maturity. [3]Foreign exchange rate forecasts for U.K., Australia and the Euro are U.S. dollars per currency unit. For the U.S dollar, forecasts are of the U.S. Federal Reserve Board's AFE Dollar Index.

International. The world economy is still adjusting to some powerful forces—the COVID pandemic and the Russian invasion of Ukraine—that have intensified inflationary pressures in recent months. Policy responses to these pressures, however, have also been magnifying the risks of a global recession. Indeed, the greater willingness of some central banks to lean against inflation in recent weeks has heightened financial stability risks—particularly in emerging economies—as financial markets have both lifted their expectations for central bank policy rates and reduced their expectations for global growth.

The latest flash PMI surveys for June underscored some of the world economy's current vulnerabilities. Specifically, the data showed that economic growth slowed sharply in the US, Euro area and UK in June, and with further weakness likely in coming months. Forward-looking indicators, such as gauges of new orders and business expectations, declined to levels that have previously been associated with a contraction in GDP. Those same surveys, however, equally suggested that inflationary pressures remain elevated, indeed they were a key factor cited by many companies as triggering the recent erosion of economic growth. That said, cost and price pressures have eased a little of late thanks to both some loosening of supply side constraints as well as due to reduced demand.

Against this backdrop policymakers face some difficult challenges. A further swift removal of monetary policy accommodation designed to lean against inflation could aggravate the downside risk for global growth not least given the central role played by broken supply chains in the world's current inflation malaise. That would be a "hawkish" approach. A more hesitant "dovish" approach, however, designed to temporarily shore up economic activity, could further magnify inflation tensions by lifting wage pressures in labor markets that are, by many measures, already tight.

Central banks in advanced economies that are presently in the hawkish camp include the US Fed as evidenced by both its decision in mid-June to raise the federal funds rate by a lofty 75bps and its earlier step to reduce its balance sheet. The latest interest rate steps from a number of smaller central banks including Canada's, Australia's, New Zealand's and Switzerland's suggest they too fall into this category. This camp has also been joined in recent weeks by the ECB following communications telegraphing several policy rate hikes in the months ahead. This has not come without difficulties, however, insofar as the prospect of higher debt service costs has heightened Euro area fragmentation risks. Active discussions at the ECB about policy tools that could be deployed to prevent yield spreads in periphery debt markets from widening too much have certainly not gone unnoticed.

Half-way between these two camps lies the Bank of England. It stuck with a further policy rate hike of 25bps at its June meeting and signaled that there will be more to follow. But perhaps more significantly, its forward guidance has been far less precise than that of the ECB or the Fed. For example, rather than providing specific clues as to how much and when the Bank may tighten in the coming months, it simply said that the extent and pace of future tightening would depend on the outlook for the economy and inflation.

Meanwhile, lying very firmly in the dovish camp, remain the Bank of Japan and China's PBOC. This is partly because of bigger challenges from the COVID pandemic, and, in China's case, its relatively restrictive lockdown policy. In addition, inflationary pressures in both Japan and China have been benign which has offered more leeway for its central banks to maintain accommodative monetary policies.

As for other emerging economies, a number of central banks in Latin America, Eastern Europe and other parts of Asia have continued to respond quickly to rising inflation with tighter monetary policy. This, though, has stoked concerns about financial instability and capital outflows. After all, many of these economies are highly vulnerable to firm food and energy prices, weaker world trade, tighter US Fed policy and a firm US dollar.

Third Quarter 2022

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter: Short-Term: 1 Federal Funds Rate	2 Prime Bank Rate	3 SOFR Rate	4 Com. Paper 1-Mo.	5 Treas. Bills 3-Mo.	6 Treas. Bills 6-Mo.	7 Treas. Bills 1-Yr.	Intermediate-Term: 8 Treas. Notes 2-Yr.	9 Treas. Notes 5-Yr.	10 Treas. Notes 10-Yr.	Long-Term: 11 Treas. Bond 30-Yr.	12 Aaa Corp. Bond	13 Baa Corp. Bond	14 State & Local Bonds	15 Home Mtg. Rate	Avg. For Qtr.: A. Fed's Adv Fgn Econ $ Index	(Q-Q % Change) (SAAR): B. Real GDP	C. GDP Price Index	D. Cons. Price Index	E. PCE Price Index
Mizuho Research Institute	3.1 H	na	na	na	na	na	na	na	na	3.5	na	na	na	na	na	na	na	na	na	na
Bank of America	2.9	na	3.2 H	na	na	na	na	3.5	3.5	3.5	3.5	na	na	na	na	na	2.5	5.7	6.0	4.2
BNP Paribas Americas	2.9	na	na	na	na	na	na	3.2	na	3.1	3.3	na	na	na	na	na	2.6	na	4.3	na
Goldman Sachs & Co.	2.9	na	na	na	2.1	na	na	3.1	3.3	3.3	3.3	na	na	na	na	na	1.8	5.7	6.4	5.1
NatWest Markets	2.9	6.0 H	na	3.0 H	3.1 H	3.2	3.3	3.3	3.3	3.2	3.2	4.3	5.3	3.5	4.3 L	na	1.5	5.7	6.6	5.7
Nomura Securities, Inc.	2.9	6.0 H	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.4 L	3.8	7.9	5.4
ING	2.8	na	na	na	na	na	na	3.3	3.5	3.3	3.3	na	na	na	na	na	2.9	na	na	na
Barclays	2.6	5.8	na	na	na	na	na	3.3	3.3	3.2	3.3	na	na	na	na	na	1.5	4.4	6.1	4.6
Economist Intelligence Unit	2.6	5.5	na	2.5	2.5	3.0	3.3	3.5	3.5	3.6	3.7	na	na	na	5.9	na	1.7	na	5.6	na
TS Lombard	2.6	5.7	2.6	2.6	2.9	2.9	3.2	3.6	4.3	4.0	4.1	4.9	5.7	4.0	5.8	125.0 H	2.0	5.0	5.0	5.0
Via Nova Investment Mgt.	2.6	5.8	2.6	2.7	2.8	3.3 H	4.0 H	4.4 H	4.6 H	4.6 H	4.7 H	6.0 H	6.6 H	5.6 H	7.0 H	115.0	2.5	4.0	4.0	3.9
ACIMA Private Wealth	2.5	5.5	2.5	2.6	2.6	2.5	2.4	2.3 L	2.3 L	2.0 L	2.1 L	4.3	5.5	1.0 L	6.0	115.0	1.5	5.0	4.5	5.0
Action Economics	2.5	5.7	1.4 L	2.6	2.3	2.6	2.8	3.1	3.2	3.4	3.4	4.5	5.5	3.2	5.7	113.5	2.3	6.0	6.2	5.0
Bank of the West	2.5	5.7	2.4	2.5	2.5	2.7	3.1	3.6	3.8	3.7	3.8	5.0	5.9	4.8	6.0	116.2	1.0	3.8	6.2	5.3
BMO Capital Markets	2.5	5.7	2.1	na	2.3	2.8	3.0	3.2	3.3	3.3	3.4	na	na	na	5.6	115.0	1.5	8.3 H	9.2	9.0 H
Wells Fargo	2.5	5.5	2.3	2.5	2.6	3.0	3.3	3.4	3.4	3.7	3.6	4.9	5.8	4.4	5.8	na	1.7	6.3	9.3 H	6.2
Fannie Mae	2.4	5.5	na	na	2.9	3.1	3.1	3.3	3.3	3.2	3.3	na	na	na	5.7	na	2.1	6.5	8.4	6.4
GLC Financial Economics	2.4	5.5	2.2	2.3	2.4	2.4	2.9	3.5	3.5	3.5	3.3	4.5	5.1 L	3.9	6.0	111.4	1.8	5.2	3.8 L	4.6
Comerica Bank	2.3	5.5	na	na	2.4	2.7	3.0	3.4	3.2	3.0	3.8	4.9	5.8	na	5.8	na	1.6	6.2	6.2	5.2
Daiwa Capital Markets America	2.3	5.4	1.4 L	1.5	2.3	3.0	3.3	3.8	3.9	3.8	3.9	4.9	5.9	na	6.4	115.0	0.9	5.0	7.0	6.0
Georgia State University	2.3	5.4	na	na	1.9	2.4	2.9	3.7	3.7	3.7	3.8	5.4	6.3	na	5.5	na	1.1	5.0	4.7	4.3
Loomis, Sayles & Company	2.3	5.5	2.3	2.4	2.6	3.1	3.2	3.2	3.1	3.2	3.3	4.3	5.3	4.2	5.8	115.9	2.3	6.4	7.2	5.8
MacroFin Analytics & Rutgers Bus School	2.3	5.4	2.2	2.4	2.4	2.7	3.2	3.8	3.8	3.9	4.0	5.3	5.9	4.7	6.0	116.5	2.4	4.6	4.2	4.1
Amherst Pierpont Securities	2.2	5.3	2.1	2.4	2.4	3.1	3.5	3.4	3.7	3.6	3.7	4.6	5.6	3.8	5.8	116.0	4.7 H	5.3	7.4	5.6
Grant Thornton/Diane Swonk	2.2	5.4	2.2	0.6 L	0.6 L	1.9	2.0 L	2.3 L	2.7	2.9	3.0	4.0	5.3	na	5.2	na	1.7	5.4	4.5	4.3
Oxford Economics	2.2	5.4	2.3	na	2.4	2.4	3.1	3.3	3.2	3.2	3.2	3.8 L	na	na	5.7	115.6	2.0	na	4.7	3.9
RDQ Economics	2.2	5.3	2.2	2.3	2.5	2.9	3.2	3.4	3.3	3.2	3.4	4.4	5.3	4.2	5.4	115.2	4.4	4.3	4.8	4.2
Regions Financial Corporation	2.2	5.1	2.1	2.1	2.1	2.6	2.9	3.3	3.5	3.4	3.6	4.6	5.3	4.2	5.9	114.1	1.3	5.8	8.1	6.1
The Northern Trust Company	2.2	5.4	2.2	2.3	2.5	2.8	3.1	3.4	3.5	3.5	3.9	4.8	5.9	4.9	5.5	116.0	2.4	5.5	7.0	6.0
Thru the Cycle	2.2	5.3	2.1	2.3	2.3	2.7	2.9	3.1	3.2	3.2	3.3	4.6	5.4	4.2	5.7	116.1	2.6	4.7	7.5	5.7
Chmura Economics & Analytics	2.1	5.3	2.2	2.2	2.1	2.6	3.0	3.6	3.6	3.6	3.7	4.8	na	na	5.9	112.9	2.0	7.8	8.4	6.2
DePrince & Assoc.	2.1	5.3	2.0	2.2	2.3	2.8	3.1	3.5	3.6	3.4	3.4	4.5	5.5	3.8	5.6	114.2	2.7	4.0	4.9	3.8
PNC Financial Services Corp.	2.0	5.2	2.0	na	2.1	2.6	3.1	3.4	3.5	3.3	3.4	na	5.7	3.9	5.6	110.7 L	2.7	4.6	4.4	4.3
Societe Generale	1.9	5.1	1.9	na	2.2	2.5	2.9	3.2	3.0	3.1	3.3	na	na	na	na	na	1.4	4.4	6.9	6.4
Swiss Re	1.9	5.1	2.4	1.9	2.0	2.4	2.6	3.0	2.9	2.8	2.9	4.6	5.4	na	5.5	117.8	1.3	5.5	5.1	na
Chan Economics	1.7	4.7 L	1.7	1.7	1.9	2.4	2.9	3.5	3.6	3.7	3.8	4.6	5.4	4.5	5.9	115.0	2.0	4.5	5.5	4.9
J.P. Morgan Chase	1.7	na	na	na	na	na	na	2.7	2.8	2.7	2.8	na	na	na	na	na	2.0	3.2 L	7.2	6.4
S&P Global Market Intelligence	1.7	4.9	1.7	na	1.6	1.7 L	2.2	2.7	2.9	2.9	3.0	na	na	na	5.2	na	2.2	5.4	4.5	4.3
Moody's Analytics	1.6 L	4.7 L	1.5	1.6	1.6	1.8	2.4	2.8	3.0	3.0	3.3	4.6	5.6	3.7	5.2	na	3.6	4.1	3.8 L	3.5 L
Scotiabank Group	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.6	5.6	5.9	4.6
July Consensus	**2.4**	**5.4**	**2.1**	**2.2**	**2.3**	**2.7**	**3.0**	**3.3**	**3.4**	**3.3**	**3.5**	**4.7**	**5.6**	**4.0**	**5.7**	**115.3**	**2.1**	**5.2**	**6.0**	**5.2**
Top 10 Avg.	2.8	5.7	2.5	2.6	2.7	3.1	3.4	3.7	3.9	3.8	4.0	5.1	6.0	4.6	6.1	117.0	3.1	6.5	8.1	6.5
Bottom 10 Avg.	1.9	5.1	1.8	1.8	1.8	2.2	2.6	2.8	2.9	2.9	3.0	4.3	5.3	3.5	5.3	113.7	1.2	4.1	4.3	4.1
June Consensus	1.9	5.0	1.8	1.8	1.9	2.2	2.6	2.9	3.1	3.1	3.3	4.5	5.4	3.8	5.3	113.9	2.5	4.6	4.8	4.3
Number of Forecasts Changed From A Month Ago:																				
Down	1	0	0	1	1	2	2	3	6	7	7	4	5	4	2	2	27	2	0	0
Same	2	2	3	2	2	2	2	4	2	6	4	4	3	3	3	7	6	12	7	6
Up	36	31	23	20	29	27	27	30	28	25	26	17	16	12	25	12	6	21	31	29
Diffusion Index	95%	97%	94%	91%	94%	90%	90%	86%	81%	74%	76%	76%	73%	71%	88%	74%	23%	77%	91%	91%

Fourth Quarter 2022

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter: Short-Term							Intermediate-Term			Long-Term					Avg. For Qtr.	(Q-Q % Change) (SAAR)			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	A.	B.	C.	D.	E.
	Federal Funds Rate	Prime Bank Rate	SOFR Rate	Com. Paper 1-Mo.	Treas. Bills 3-Mo.	Treas. Bills 6-Mo.	Treas. Bills 1-Yr.	Treas. Notes 2-Yr.	Treas. Notes 5-Yr.	Treas. Notes 10-Yr.	Treas. Bond 30-Yr.	Aaa Corp. Bond	Baa Corp. Bond	State & Local Bonds	Home Mtg. Rate	Fed's Adv Fgn Econ $ Index	Real GDP	GDP Price Index	Cons. Price Index	PCE Price Index
TS Lombard	4.3 H	7.4 H	4.2 H	4.2 H	4.3 H	4.3 H	3.9	3.5	3.8	4.0	4.1	4.9	5.7	4.0	5.8	125.0 H	2.0	4.5	4.5	4.5
Chmura Economics & Analytics	3.8	6.9	3.9	3.9	3.7	4.1	4.2	4.4	4.2	4.2	4.3	5.3	na	na	6.2	112.7	0.6	7.0 H	7.6 H	5.6 H
ING	3.6	na	na	na	na	na	na	3.5	3.3	3.0	3.1	na	na	na	na	na	1.5	na	na	na
Wells Fargo	3.5	6.5	3.2	3.4	3.9	4.1	4.1	4.0	4.0	3.8	3.7	5.1	6.0	4.5	5.9	na	0.8	3.9	4.9	3.9
Bank of America	3.4	na	3.7	na	na	na	na	3.8	3.7	3.5	3.5	na	na	na	na	na	1.8	4.7	3.2	2.7
BNP Paribas Americas	3.4	na	na	na	na	na	na	3.1	na	3.2	3.4	na	na	na	na	na	2.2	na	2.4	na
Fannie Mae	3.4	6.5	na	na	3.4	3.3	3.2	3.3	3.3	3.2	3.3	na	na	na	5.6	na	1.8	2.7	1.5 L	2.4
Goldman Sachs & Co.	3.4	na	na	na	2.5	na	na	3.2	3.3	3.3	3.4	na	na	na	na	na	0.8	3.8	2.9	3.0
Mizuho Research Institute	3.4	na	na	na	na	na	na	na	na	3.6	na	na	na	na	na	na	na	na	na	na
NatWest Markets	3.4	6.5	na	3.5	3.6	3.7	3.8	3.4	3.2	3.1	3.0	4.3	5.2 L	3.5	4.3 L	na	2.3	4.5	1.6	3.1
Nomura Securities, Inc.	3.4	6.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	-1.4 L	2.9	3.8	3.0
ACIMA Private Wealth	3.3	6.3	3.3	3.4	3.3	2.5	2.3 L	2.0 L	2.0 L	1.8 L	1.9 L	5.0	6.5	0.8 L	5.8	116.0	0.5	3.0	3.3	3.0
Georgia State University	3.3	6.4	na	na	2.8	3.1	3.5	4.3	4.3	4.3	4.3	5.9	6.9	na	6.0	na	1.2	4.5	4.0	3.6
Oxford Economics	3.3	6.5	3.3	na	3.5	3.5	3.9	3.9	3.5	3.2	3.1	3.9 L	na	na	6.1	116.0	1.5	na	1.8	1.8
RDQ Economics	3.3	6.4	3.3	3.4	3.6	3.9	3.9	3.8	3.4	3.2	3.5	4.4	5.3	4.3	5.4	115.7	4.2 H	4.2	4.5	4.1
Via Nova Investment Mgt.	3.3	6.5	3.3	3.4	3.5	4.0	4.7 H	5.1 H	5.3 H	5.3 H	5.4 H	6.7 H	7.3 H	6.3 H	7.7 H	115.0	2.7	3.5	3.3	3.0
Amherst Pierpont Securities	3.2	6.4	3.2	3.4	3.4	3.8	4.1	3.9	4.1	4.0	4.1	5.0	6.1	4.3	6.2	117.0	3.3	4.5	4.6	4.3
The Northern Trust Company	3.2	6.4	3.2	3.3	3.5	3.6	3.7	3.8	3.8	3.8	4.3	5.3	6.2	5.3	5.8	116.5	2.1	3.1	3.1	3.3
Action Economics	3.1	6.3	2.4	3.2	2.9	3.0	3.0	3.1	3.3	3.5	3.5	4.6	5.6	3.2	5.8	115.2	2.0	3.3	2.9	2.5
Bank of the West	3.1	6.3	3.0	3.1	3.1	3.3	3.7	4.0	4.1	4.1	4.1	5.3	6.3	5.2	6.4	115.9	1.0	3.5	5.0	4.5
Barclays	3.1	6.3	na	na	na	na	na	3.3	3.2	3.1	3.2	na	na	na	na	na	1.5	2.3	1.8	2.1
BMO Capital Markets	3.1	6.3	3.0	na	3.0	3.3	3.3	3.4	3.4	3.5	3.6	na	na	na	5.8	114.9	0.3	5.0	5.7	5.4
Daiwa Capital Markets America	3.1	6.3	1.9 L	2.0	3.2	3.8	4.1	4.6	4.6	4.5	4.6	5.8	6.9	na	7.1	115.0	0.7	4.0	5.5	4.8
DePrince & Assoc.	3.1	6.2	3.0	3.2	3.3	3.6	3.8	4.1	4.0	3.7	3.5	4.8	5.7	4.1	5.8	113.5	2.4	3.2	3.9	3.1
Economist Intelligence Unit	3.1	6.3	na	3.0	3.1	3.5	3.5	3.6	3.7	3.8	4.0	na	na	na	6.2	na	1.4	na	3.7	na
Grant Thornton/Diane Swonk	3.1	6.3	3.1	0.8 L	0.9 L	2.5	2.4	2.5	2.8	3.0	3.1	4.2	5.4	na	5.4	na	1.1	3.7	4.2	3.8
Regions Financial Corporation	3.1	6.0	3.0	3.0	3.0	3.4	3.6	3.8	4.0	3.9	4.1	5.2	6.0	4.8	6.3	113.9	0.8	3.7	4.7	3.7
Comerica Bank	3.0	6.2	na	na	3.1	3.4	3.6	3.7	3.3	2.9	3.9	5.0	5.9	na	6.0	na	1.9	4.8	5.9	5.1
PNC Financial Services Corp.	3.0	6.1	3.0	na	3.0	3.2	3.3	3.5	3.5	3.4	3.4	na	5.9	4.0	5.6	109.1 L	1.8	3.5	3.8	3.5
Loomis, Sayles & Company	2.8	6.0	2.8	2.9	3.1	3.4	3.4	3.3	3.3	3.3	3.4	4.4	5.4	4.3	5.9	115.9	2.1	3.8	3.9	3.8
GLC Financial Economics	2.7	5.8	2.5	2.6	2.7	2.8	3.2	3.6	3.6	3.7	3.9	5.1	6.3	4.4	6.2	111.5	2.6	4.9	3.0	3.9
Thru the Cycle	2.7	5.8	2.6	2.8	2.8	3.0	3.0	3.1	2.9	3.0	3.0	4.4	5.2 L	4.0	5.5	116.5	1.7	3.9	5.1	4.9
J.P. Morgan Chase	2.6	na	na	na	na	na	na	3.3	3.3	3.3	3.2	na	na	na	na	na	2.0	2.1 L	1.7	1.5 L
Swiss Re	2.6	5.8	3.0	2.7	2.6	2.8	2.9	3.1	2.9	2.8	2.9	4.6	5.5	na	5.3	117.1	-0.4	4.1	2.5	na
MacroFin Analytics & Rutgers Bus School	2.5	5.6	2.4	2.7	2.7	2.9	3.4	4.0	4.2	4.3	4.6	5.8	6.6	5.2	6.2	116.8	2.5	3.5	4.0	3.6
Societe Generale	2.5	5.7	2.5	na	2.8	3.0	3.1	3.2	3.1	3.1	3.4	na	na	na	na	na	1.0	3.5	4.6	4.3
Chan Economics	2.4	5.4	2.4	2.4	2.6	3.1	3.6	4.2	4.3	4.4	4.5	5.3	6.1	5.2	6.6	114.9	2.3	4.0	4.5	4.4
S&P Global Market Intelligence	2.3	5.5	2.3	na	2.1	2.3	2.6	2.9	3.0	2.9	3.1	na	na	na	5.2	na	2.5	3.6	4.2	3.8
Moody's Analytics	2.1 L	5.2 L	2.0	2.1	2.0	2.1 L	2.6	2.8	3.1	3.1	3.4	4.6	5.7	3.7	5.1	na	2.7	3.4	3.0	2.8
Scotiabank Group	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.5	4.4	5.2	4.0
July Consensus	**3.1**	**6.2**	**2.9**	**3.0**	**3.0**	**3.3**	**3.5**	**3.6**	**3.6**	**3.5**	**3.6**	**5.0**	**6.0**	**4.3**	**5.9**	**115.4**	**1.6**	**3.9**	**3.8**	**3.6**
Top 10 Avg.	3.6	6.6	3.5	3.5	3.6	3.9	4.1	4.3	4.3	4.3	4.4	5.6	6.5	5.0	6.5	117.3	2.8	4.9	5.4	4.8
Bottom 10 Avg.	2.5	5.7	2.4	2.4	2.4	2.7	2.8	2.9	3.0	2.9	3.0	4.4	5.5	3.6	5.3	113.6	0.4	3.0	2.2	2.5
June Consensus	2.4	5.5	2.3	2.4	2.4	2.6	2.9	3.1	3.2	3.2	3.4	4.7	5.6	4.0	5.5	114.1	2.2	3.5	3.4	3.2
Number of Forecasts Changed From A Month Ago:																				
Down	1	1	1	2	2	1	4	5	6	8	7	5	2	4	4	5	26	10	8	10
Same	3	2	4	2	2	2	1	2	3	4	5	1	3	3	2	4	9	10	8	5
Up	35	30	21	19	28	28	26	30	27	26	25	19	19	12	24	12	4	15	22	20
Diffusion Index	94%	94%	88%	87%	91%	94%	85%	84%	79%	74%	74%	78%	85%	71%	83%	67%	22%	57%	68%	64%

First Quarter 2023

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter: Short-Term							Intermediate-Term			Long-Term					Avg. For ---Qtr.---	(Q-Q % Change) (SAAR)			
	1 Federal Funds Rate	2 Prime Bank Rate	3 SOFR Rate	4 Com. Paper 1-Mo.	5 Treas. Bills 3-Mo.	6 Treas. Bills 6-Mo.	7 Treas. Bills 1-Yr.	8 Treas. Notes 2-Yr.	9 Treas. Notes 5-Yr.	10 Treas. Notes 10-Yr.	11 Treas. Bond 30-Yr.	12 Aaa Corp. Bond	13 Baa Corp. Bond	14 State & Local Bonds	15 Home Mtg. Rate	A. Fed's Adv Fgn Econ $ Index	B. Real GDP	C. GDP Price Index	D. Cons. Price Index	E. PCE Price Index
Chmura Economics & Analytics	4.5 H	7.5	4.6 H	4.5 H	4.3 H	4.4 H	4.5 H	4.7	4.4	4.4	4.6	5.3	na	na	6.3	112.3	0.8	6.5 H	6.7 H	4.6 H
TS Lombard	4.5 H	7.6 H	4.4	4.5 H	4.3 H	4.3	3.9	3.5	3.4	3.5	3.6	4.4	5.2 L	3.5	5.3	120.0 H	-0.5	4.0	4.0	4.0
Wells Fargo	4.3	7.3	4.2	4.2	4.3 H	4.4 H	4.3	4.2	4.1	3.8	3.8	5.1	6.0	4.5	5.9	na	0.3	3.1	3.1	3.0
Bank of America	3.9	na	3.4	na	na	na	na	3.5	3.5	3.4	3.4	na	na	na	na	na	1.3	4.7	2.8	2.6
NatWest Markets	3.9	7.0	na	4.0	4.1	4.2	4.3	3.4	3.2	3.1	3.0	4.3	5.3	3.4	4.2 L	na	1.2	4.0	2.3	3.2
Oxford Economics	3.8	6.9	3.8	na	3.9	3.9	4.0	3.9	3.5	3.3	3.1	3.9 L	na	na	6.2	115.1	1.0	na	0.8 L	1.0 L
RDQ Economics	3.8	6.9	3.8	3.9	4.2	4.4 H	4.2	3.9	3.5	3.3	3.6	4.5	5.4	4.4	5.6	116.3	3.5 H	4.2	4.5	3.9
The Northern Trust Company	3.8	7.0	3.8	3.9	4.0	4.1	4.3	4.5	4.5	4.5	5.0	6.0	6.9	6.1 H	6.5	117.0	1.5	2.8	2.7	2.9
Amherst Pierpont Securities	3.7	6.9	3.7	3.8	3.9	4.1	4.3	4.2	4.3	4.2	4.5	5.4	6.5	4.5	6.4	117.5	2.8	4.1	4.2	4.0
Georgia State University	3.6	6.8	na	na	3.2	3.4	3.8	4.2	4.3	4.3	4.3	5.9	7.1	na	6.2	na	1.3	4.0	3.5	3.0
Grant Thornton/Diane Swonk	3.6	6.8	3.6	1.0 L	1.0 L	2.8	2.7	2.7	2.8	3.1	3.2	4.3	5.5	na	5.3	na	0.4	3.2	3.0	2.8
ING	3.6	na	na	na	na	na	na	3.5	3.0	2.8	3.0	na	na	na	na	na	0.2	na	na	na
Loomis, Sayles & Company	3.6	6.8	3.6	3.7	3.9	4.1	3.9	3.3	3.3	3.4	3.5	4.5	5.4	4.3	5.9	115.9	2.0	3.6	3.6	3.5
Mizuho Research Institute	3.6	na	na	na	na	na	na	na	na	3.5	na	na	na	na	na	na	na	na	na	na
Nomura Securities, Inc.	3.6	6.8	na	na	na	na	na	na	na	na	na	na	na	na	na	na	-1.6	2.5	3.3	2.6
Regions Financial Corporation	3.6	6.4	3.4	3.5	3.5	3.7	3.9	4.0	4.1	4.0	4.2	5.4	6.3	4.9	6.5	113.6	1.1	3.4	3.5	3.6
Bank of the West	3.5	6.7	3.4	3.5	3.5	3.7	3.9	4.2	4.4	4.4	4.4	5.7	6.6	5.5	6.6	115.3	0.8	2.9	3.5	3.2
Daiwa Capital Markets America	3.5	6.7	2.2 L	2.3	3.6	4.1	4.3	4.9 H	4.8	4.8	4.8	6.3	7.3 H	na	7.3	116.0	-0.1	3.5	4.3	4.3
DePrince & Assoc.	3.5	6.6	3.3	3.5	3.6	3.8	3.9	4.2	4.0	3.8	3.6	5.0	5.9	4.2	5.9	114.2	2.1	2.8	3.4	2.7
PNC Financial Services Corp.	3.5	6.7	3.5	na	3.4	3.5	3.5	3.4	3.4	3.4	3.4	na	5.9	4.1	5.5	108.6 L	1.6	3.1	3.0	2.8
Action Economics	3.4	6.5	3.1	3.4	3.1	3.1	3.1	3.2	3.3	3.5	3.5	4.6	5.6	3.2	5.8	115.2	1.7	2.3	3.0	2.5
Barclays	3.4	6.5	na	na	na	na	na	3.1	3.1	3.0	3.1	na	na	na	na	na	1.0	2.3	2.1	2.0
BMO Capital Markets	3.4	6.5	3.4	na	3.3	3.4	3.4	3.4	3.5	3.5	3.6	na	na	na	5.8	114.6	0.3	3.8	4.3	4.1
BNP Paribas Americas	3.4	na	na	na	na	na	na	3.0	na	3.2	3.4	na	na	na	na	na	1.6	na	3.9	na
Comerica Bank	3.4	6.5	na	na	3.4	3.6	3.7	3.7	3.2	2.8	3.8	4.8	5.8	na	5.8	na	1.6	3.6	3.9	3.5
Economist Intelligence Unit	3.4	6.5	na	3.3	3.4	3.8	4.0	4.0	4.0	3.9	4.1	na	na	na	6.1	na	1.2	na	3.2	na
Goldman Sachs & Co.	3.4	na	na	na	2.8	na	na	3.3	3.2	3.2	3.3	na	na	na	na	na	1.0	3.5	2.8	2.8
ACIMA Private Wealth	3.3	6.3	3.3	3.4	3.3	2.1 L	2.0 L	2.0 L	1.9 L	1.9 L	2.0 L	4.8	7.0	0.9 L	5.5	117.0	-2.0 L	1.0 L	0.8 L	1.0 L
Fannie Mae	3.2	6.3	na	na	3.1	3.1	3.2	3.3	3.3	3.2	3.3	na	na	na	5.5	na	1.1	3.7	3.1	3.1
J.P. Morgan Chase	3.2	na	na	na	na	na	na	3.6	3.6	3.5	3.4	na	na	na	na	na	1.8	2.2	2.8	2.6
Via Nova Investment Mgt.	3.2	6.4	3.2	3.3	3.3	3.6	4.4	4.9 H	5.1 H	5.1 H	5.2	6.5 H	7.1	6.1 H	7.4 H	114.0	2.3	3.0	3.0	2.7
MacroFin Analytics & Rutgers Bus School	3.0	6.1	2.9	3.2	3.2	3.4	3.9	4.5	4.7	4.9	5.3 H	6.5 H	7.3 H	5.7	6.8	117.0	2.0	3.0	3.0	2.9
Societe Generale	3.0	6.2	3.0	na	3.2	3.2	3.2	3.2	3.0	3.1	3.4	na	na	na	na	na	1.3	3.2	3.7	3.4
Thru the Cycle	3.0	6.2	3.0	3.2	3.1	3.2	3.1	2.9	2.8	2.9	3.0	4.3	5.2 L	4.0	5.5	115.3	1.9	3.2	3.1	3.2
Chan Economics	2.9	5.9	2.9	2.9	3.1	3.6	4.1	4.7	4.8	4.9	5.0	5.8	6.6	5.7	7.1	114.6	2.5	3.7	4.4	4.1
Swiss Re	2.9	6.1	3.1	2.9	2.7	2.8	2.8	2.9	2.8	2.8	3.0	4.5	5.4	na	5.1	116.0	0.5	2.8	2.8	na
GLC Financial Economics	2.8	5.9	2.6	2.7	2.8	2.9	3.2	3.8	4.0	4.0	4.1	5.4	6.5	4.6	6.4	111.6	2.3	4.0	2.3	2.9
S&P Global Market Intelligence	2.8	6.0	2.8	na	2.5	2.7	2.9	3.1	3.1	3.0	3.2	na	na	na	5.2	na	1.4	3.3	3.1	2.8
Moody's Analytics	2.5 L	5.7 L	2.5	2.5	2.3	2.4	2.7	2.9	3.1	3.2	3.5	4.7	5.8	3.9	5.1	na	2.3	2.7	2.3	2.3
Scotiabank Group	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.4	4.0	4.6	3.2
July Consensus	**3.5**	**6.6**	**3.4**	**3.4**	**3.4**	**3.5**	**3.7**	**3.7**	**3.6**	**3.6**	**3.7**	**5.1**	**6.2**	**4.4**	**6.0**	**115.1**	**1.2**	**3.4**	**3.3**	**3.1**
Top 10 Avg.	4.0	7.1	3.9	4.0	4.1	4.2	4.3	4.5	4.5	4.6	4.7	5.9	6.9	5.2	6.7	116.8	2.4	4.3	4.5	4.0
Bottom 10 Avg.	2.9	6.1	2.8	2.7	2.7	2.8	2.9	2.9	2.9	2.9	3.0	4.4	5.5	3.6	5.2	113.4	-0.2	2.4	2.2	2.2
June Consensus	2.8	5.9	2.7	2.8	2.7	2.9	3.1	3.2	3.3	3.3	3.5	4.8	5.7	4.1	5.6	114.0	1.8	3.1	3.0	2.8
Number of Forecasts Changed From A Month Ago:																				
Down	0	0	0	1	1	1	4	3	4	5	6	3	3	3	3	5	28	6	10	9
Same	4	3	5	4	4	3	2	4	6	7	6	6	3	5	4	6	9	13	10	7
Up	35	30	21	18	27	27	25	30	26	26	25	16	18	11	23	10	2	16	18	19
Diffusion Index	95%	95%	90%	87%	91%	92%	84%	86%	81%	78%	76%	76%	81%	71%	83%	62%	17%	64%	61%	64%

Second Quarter 2023

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter: Short-Term							Intermediate-Term			Long-Term					Avg. For Qtr.	(Q-Q % Change) (SAAR)			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	A.	B.	C.	D.	E.
	Federal Funds Rate	Prime Bank Rate	SOFR Rate	Com. Paper 1-Mo.	Treas. Bills 3-Mo.	Treas. Bills 6-Mo.	Treas. Bills 1-Yr.	Treas. Notes 2-Yr.	Treas. Notes 5-Yr.	Treas. Notes 10-Yr.	Treas. Bond 30-Yr.	Aaa Corp. Bond	Baa Corp. Bond	State & Local Bonds	Home Mtg. Rate	Fed's Adv Fgn Econ $ Index	Real GDP	GDP Price Index	Cons. Price Index	PCE Price Index
Chmura Economics & Analytics	4.5 H	7.5 H	4.6 H	4.5 H	4.3	4.4	4.5	4.7	4.4	4.4	4.6	5.3	na	na	6.1	112.5	-1.2	4.7 H	5.3 H	4.2 H
Wells Fargo	4.5 H	7.5 H	4.4	4.4	4.4	4.4	4.2	4.0	3.8	3.7	3.7	5.0	5.9	4.4	5.8	na	-2.0 L	1.4	0.7	1.5
Amherst Pierpont Securities	4.3	7.5 H	4.3	4.4	4.4	4.5	4.7 H	4.5	4.5	4.4	4.7	5.7	6.8	4.7	6.5	118.0 H	2.8	3.6	3.8	3.5
RDQ Economics	4.3	7.4	4.3	4.4	4.6 H	4.8 H	4.4	4.0	3.8	3.6	3.9	4.8	5.8	4.8	5.9	116.9	3.4 H	4.1	4.3	3.7
Bank of America	4.1	na	3.2	na	na	na	na	3.3	3.3	3.3	3.4	na	na	na	na	na	0.9	4.7 H	2.8	2.6
TS Lombard	4.0	7.1	3.9	4.0	3.5	3.5	3.4	3.3	3.4	3.5	3.6	4.4	5.2 L	3.5	5.3	118.0 H	-1.5	3.5	3.5	3.5
Grant Thornton/Diane Swonk	3.9	7.0	3.9	1.0 L	1.1 L	3.0	2.9	2.8	2.9	3.2	3.3	4.4	5.5	na	5.3	na	0.5	2.7	2.0	1.8
Loomis, Sayles & Company	3.9	7.0	3.8	3.8	4.0	4.1	3.8	3.3	3.3	3.3	3.4	4.4	5.4	4.3	5.7	115.9	1.7	3.2	3.0	2.8
NatWest Markets	3.9	7.0	na	4.0	4.1	4.2	4.3	3.4	3.1	3.1	3.0	4.3	5.3	3.4	4.2 L	na	1.8	4.0	2.0	3.2
Oxford Economics	3.9	7.0	3.9	na	3.9	4.0	3.9	3.7	3.4	3.2	3.1	4.0	na	na	6.0	114.3	0.5	na	1.5	1.5
The Northern Trust Company	3.9	7.0	3.8	4.0	4.0	4.1	4.3	4.5	4.5	4.5	5.0	6.0	6.9	6.1	6.5	117.5	1.3	2.7	2.6	2.7
Daiwa Capital Markets America	3.8	6.9	2.6	2.7	3.8	4.2	4.4	5.0	4.9	4.9	4.9	6.5	7.5 H	na	7.4	116.0	-0.8	3.2	3.5	3.3
Bank of the West	3.7	6.8	3.6	3.7	3.7	3.8	4.0	4.3	4.5	4.5	4.5	5.8	6.7	5.6	6.7	115.5	0.7	2.7	3.2	3.0
Georgia State University	3.6	6.8	na	na	3.3	3.3	3.7	4.1	4.2	4.4	4.4	5.9	7.1	na	6.2	na	1.7	3.4	3.1	2.6
ING	3.6	na	na	na	na	na	na	3.4	2.9	2.5	2.8	na	na	na	na	na	-1.5	na	na	na
Mizuho Research Institute	3.6	na	na	na	na	na	na	na	na	3.5	na	na	na	na	na	na	na	na	na	na
Nomura Securities, Inc.	3.6	6.8	na	na	na	na	na	na	na	na	na	na	na	na	na	na	-1.6	2.1	2.4	1.9
PNC Financial Services Corp.	3.6	6.8	3.6	na	3.5	3.4	3.4	3.3	3.3	3.3	3.4	na	5.8	4.0	5.4	108.1 L	1.3	2.3	2.6	2.0
Regions Financial Corporation	3.6	6.5	3.5	3.6	3.6	3.8	3.9	4.1	4.2	4.1	4.2	5.6	6.5	5.0	6.5	113.1	0.9	2.6	2.9	3.0
DePrince & Assoc.	3.5	6.6	3.4	3.5	3.7	3.8	3.8	4.1	4.0	3.9	3.8	5.1	5.9	4.3	5.9	115.3	2.0	2.5	3.0	2.4
Action Economics	3.4	6.5	3.2	3.4	3.1	3.1	3.2	3.2	3.4	3.5	3.5	4.6	5.6	3.3	5.8	115.3	1.8	2.1	3.0	2.6
Barclays	3.4	6.5	na	na	na	na	na	2.9	3.0	3.0	3.1	na	na	na	na	na	1.0	2.1	1.5	1.8
BMO Capital Markets	3.4	6.5	3.4	na	3.3	3.4	3.4	3.4	3.5	3.5	3.5	na	na	na	5.8	114.3	1.3	2.8	3.2	3.0
BNP Paribas Americas	3.4	na	na	na	na	na	na	2.9	na	3.1	3.4	na	na	na	na	na	1.5	na	4.6	na
Chan Economics	3.4	6.4	3.4	3.4	3.6	4.1	4.6	5.2 H	5.3 H	5.4 H	5.5 H	6.3	7.1	6.2 H	7.6 H	114.4	2.0	3.5	4.0	3.9
Comerica Bank	3.4	6.5	na	na	3.4	3.4	3.5	3.4	3.0	2.6	3.5	4.5	5.4	na	5.4	na	1.1	3.0	3.3	3.0
Economist Intelligence Unit	3.4	6.5	na	3.3	3.5	3.9	4.0	4.1	4.1	4.1	4.3	na	na	na	6.0	na	1.1	na	2.8	na
Goldman Sachs & Co.	3.4	na	na	na	3.0	na	na	3.3	3.2	3.2	3.3	na	na	na	na	na	1.5	3.0	3.0	2.6
J.P. Morgan Chase	3.4	na	na	na	na	na	na	3.6	3.6	3.5	3.5	na	na	na	na	na	1.3	2.2	3.5	3.1
Societe Generale	3.3	6.5	3.3	na	3.3	3.3	3.1	3.1	3.0	3.1	3.4	na	na	na	na	na	2.0	3.0	3.0	2.7
MacroFin Analytics & Rutgers Bus School	3.1	6.3	3.0	3.3	3.4	3.6	4.1	4.7	4.9	5.0	5.4	6.8 H	7.5 H	5.9	7.0	117.3	1.9	2.6	2.3	2.5
S&P Global Market Intelligence	3.1	6.3	3.1	na	2.8	2.9	3.1	3.2	3.1	3.0	3.2	na	na	na	5.1	na	1.6	2.8	2.1	1.9
Swiss Re	3.1	6.3	3.3	3.2	2.8	2.9	2.9	2.9	2.8	2.8	3.0	4.5	5.5	na	5.0	115.0	0.9	3.0	3.4	na
Thru the Cycle	3.1	6.2	3.1	3.3	3.1	3.1	2.9	2.8	2.8	2.9	2.9	4.3	5.2 L	4.0	5.5	113.8	1.9	2.7	2.9	3.0
Fannie Mae	3.0	6.1	na	na	3.0	3.0	3.2	3.4	3.3	3.2	3.3	na	na	na	5.4	na	0.4	1.9	-1.3 L	0.3
Via Nova Investment Mgt.	3.0	6.3	3.0	3.1	3.1	3.4	4.1	4.7	4.9	4.9	5.0	6.3	6.9	5.9	7.2	112.0	2.0	3.8	2.8	2.5
GLC Financial Economics	2.9	6.0	2.7	2.9	3.0	3.0	3.3	3.9	4.1	4.2	4.4	5.9	7.0	4.9	6.7	111.0	3.2	2.6	2.9	2.6
Moody's Analytics	2.7	5.9	2.7	2.7	2.5	2.6	2.8	2.9	3.1	3.2	3.5	4.7	5.8	3.9	5.1	na	2.3	2.6	2.2	2.0
ACIMA Private Wealth	2.5 L	5.5 L	2.5 L	2.6	2.6	1.9 L	1.7 L	1.6 L	1.8 L	1.9 L	2.0 L	3.5 L	6.5	0.9 L	4.5	113.0	-2.0 L	-1.5 L	-1.0	-1.1 L
Scotiabank Group	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.2	3.2	3.3	3.2
July Consensus	**3.5**	**6.7**	**3.5**	**3.4**	**3.4**	**3.6**	**3.7**	**3.6**	**3.6**	**3.6**	**3.8**	**5.1**	**6.2**	**4.5**	**5.9**	**114.6**	**1.0**	**2.8**	**2.7**	**2.5**
Top 10 Avg.	4.1	7.2	4.1	4.1	4.1	4.3	4.4	4.6	4.6	4.7	4.8	6.1	7.0	5.4	6.8	116.6	2.4	3.9	3.9	3.5
Bottom 10 Avg.	3.0	6.1	2.9	2.8	2.7	2.9	2.9	2.8	2.8	2.8	3.0	4.3	5.5	3.6	5.1	112.7	-0.9	1.8	1.2	1.4
June Consensus	3.0	6.1	2.9	3.0	2.9	3.1	3.2	3.3	3.4	3.4	3.6	4.9	5.8	4.2	5.6	113.6	1.6	2.8	2.6	2.6
Number of Forecasts Changed From A Month Ago:																				
Down	3	3	2	2	2	2	3	3	4	5	8	3	2	3	4	7	26	10	8	12
Same	6	4	6	6	5	3	4	6	6	11	9	7	6	6	3	5	9	15	14	12
Up	30	26	17	15	25	26	24	25	23	19	17	15	16	10	23	9	4	10	16	11
Diffusion Index	85%	85%	80%	78%	86%	89%	84%	82%	79%	70%	63%	74%	79%	68%	82%	55%	22%	50%	61%	49%

Third Quarter 2023

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter: Short-Term							Intermediate-Term			Long-Term					Avg. For ---Qtr.---	(Q-Q % Change) (SAAR)			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	A.	B.	C.	D.	E.
	Federal Funds Rate	Prime Bank Rate	SOFR Rate	Com. Paper 1-Mo.	Treas. Bills 3-Mo.	Treas. Bills 6-Mo.	Treas. Bills 1-Yr.	Treas. Notes 2-Yr.	Treas. Notes 5-Yr.	Treas. Notes 10-Yr.	Treas. Bond 30-Yr.	Aaa Corp. Bond	Baa Corp. Bond	State & Local Bonds	Home Mtg. Rate	Fed's Adv Fgn Econ $ Index	Real GDP	GDP Price Index	Cons. Price Index	PCE Price Index
Amherst Pierpont Securities	4.6 H	7.8 H	4.6 H	4.6	4.6	4.7	4.6	4.6	4.6	4.5	4.8	5.8	6.9	4.8	6.5	117.0	2.6	3.4	3.4	3.2
RDQ Economics	4.6 H	7.7	4.6 H	4.7 H	4.8 H	5.0 H	4.6	4.1	3.9	3.8	4.1	5.0	6.1	4.9	6.1	117.4	3.3	3.7	3.9	3.5
Wells Fargo	4.5	7.5	4.4	4.4	4.3	4.2	4.0	3.7	3.5	3.5	3.5	4.9	5.9	4.3	5.5	na	-2.4 L	2.0	1.8	2.0
Chmura Economics & Analytics	4.3	7.4	4.4	4.4	4.2	4.2	4.3	4.3	4.2	4.2	4.5	5.3	na	na	5.8	113.0	-1.6	3.9	4.2 H	3.7 H
Bank of America	4.1	na	na	na	na	na	na	3.0	3.2	3.3	3.3	na	na	na	na	na	0.6	4.8 H	2.8	2.7
Daiwa Capital Markets America	4.0	7.2	3.0	3.1	4.0	4.3	4.5	5.0	4.9	4.9	5.0	6.7	7.8 H	na	7.4	115.0	-0.9	3.0	3.0	2.8
Bank of the West	3.9	7.0	3.8	3.9	3.8	3.9	4.1	4.4	4.5	4.4	4.5	5.8	6.4	5.6	6.4	115.7	0.6	2.5	2.9	2.6
Chan Economics	3.9	6.9	3.9	3.9	4.1	4.6	5.1 H	5.7 H	5.8 H	5.9 H	6.0 H	6.8	7.6	6.7 H	8.1 H	114.0	1.8	3.0	3.5	3.4
Loomis, Sayles & Company	3.9	7.0	3.8	3.8	4.0	4.1	3.8	3.2	3.2	3.2	3.4	4.3	5.3	4.2	5.6	115.9	1.5	3.0	2.8	2.7
NatWest Markets	3.9	7.0	na	4.0	4.1	4.2	4.3	3.3	3.1	3.0	2.9	4.3	5.3	3.4	4.2	na	1.6	3.8	0.9 L	3.1
The Northern Trust Company	3.9	7.0	3.8	4.0	4.0	4.1	4.3	4.5	4.5	4.5	5.0	6.0	6.9	6.1	6.5	118.0 H	1.3	2.6	2.5	2.4
Grant Thornton/Diane Swonk	3.6	6.8	3.6	1.2	1.3	3.0	2.9	2.9	2.9	3.2	3.4	4.4	5.5	na	5.3	na	0.7	2.4	1.9	1.6
Mizuho Research Institute	3.6	na	na	na	na	na	na	na	na	3.5	na	na	na	na	na	na	na	na	na	na
Oxford Economics	3.6	6.8	3.6	na	3.6	3.7	3.5	3.4	3.2	3.2	3.1	4.0	na	na	5.8	113.4	1.0	na	1.7	1.7
PNC Financial Services Corp.	3.6	6.8	3.6	na	3.4	3.3	3.3	3.2	3.2	3.3	3.4	na	5.7	4.0	5.4	107.9 L	0.9	2.1	2.3	1.9
Regions Financial Corporation	3.6	6.5	3.5	3.6	3.6	3.8	4.0	4.0	4.2	3.9	4.2	5.7	6.6	4.9	6.4	112.9	1.3	2.3	2.4	2.6
J.P. Morgan Chase	3.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.0	2.3	3.0	2.7
TS Lombard	3.5	6.6	3.4	3.5	3.0	3.0	3.1	3.2	3.1	3.4	3.5	4.3	5.1 L	3.4	5.2	115.0	1.0	2.5	2.5	2.5
Action Economics	3.4	6.5	3.2	3.4	3.1	3.1	3.2	3.3	3.4	3.5	3.6	4.6	5.6	3.3	5.9	115.3	na	na	na	na
Barclays	3.4	6.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.5	2.2	1.8	2.0
BMO Capital Markets	3.4	6.5	3.4	na	3.3	3.4	3.4	3.4	3.4	3.5	3.5	na	na	na	5.8	113.9	1.6	2.8	3.4	3.3
BNP Paribas Americas	3.4	na	na	na	na	na	na	2.9	na	3.1	3.3	na	na	na	na	na	1.8	na	2.8	na
Comerica Bank	3.4	6.5	na	na	3.4	3.5	3.4	3.3	2.9	2.6	3.5	4.4	5.4	na	5.0	na	1.2	2.5	2.9	2.7
DePrince & Assoc.	3.4	6.5	3.2	3.4	3.5	3.7	3.5	3.8	3.8	3.9	3.8	5.2	5.9	4.3	5.9	116.1	1.9	2.4	2.9	2.3
Economist Intelligence Unit	3.4	6.5	na	3.3	3.5	3.9	4.0	4.1	4.1	4.2	4.3	na	na	na	5.9	na	1.1	na	2.0	na
Georgia State University	3.4	6.5	na	na	3.0	3.1	3.6	3.5	3.9	4.2	4.3	5.7	6.9	na	6.1	na	2.1	3.0	2.5	2.6
Goldman Sachs & Co.	3.4	na	na	na	3.2	na	na	3.3	3.1	3.2	2.4	na	na	na	na	na	1.5	2.5	2.7	2.4
Nomura Securities, Inc.	3.4	6.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	-1.2	2.2	2.7	1.7
Societe Generale	3.3	6.5	3.3	na	3.3	3.2	3.0	3.0	3.0	3.0	3.3	na	na	na	na	na	2.0	3.0	2.9	2.6
Swiss Re	3.2	6.3	3.3	3.2	2.8	2.9	2.8	2.8	2.8	2.8	3.1	4.5	5.5	na	4.9	114.1	2.6	3.5	3.6	na
ING	3.1	na	na	na	na	na	na	3.1	2.7	2.3	2.7	na	na	na	na	na	1.1	na	na	na
MacroFin Analytics & Rutgers Bus School	3.1	6.3	3.0	3.4	3.4	3.6	4.1	4.7	4.9	5.1	5.5	6.9 H	7.7	5.9	7.0	117.5	1.7	2.2	2.1	2.3
S&P Global Market Intelligence	3.1	6.3	3.1	na	2.8	2.9	3.1	3.2	3.1	3.1	3.3	na	na	na	5.1	na	1.5	2.6	2.1	1.9
Fannie Mae	3.0	6.1	na	na	3.0	3.2	3.4	3.4	3.4	3.2	3.3	na	na	na	5.3	na	-0.5	2.8	0.9 L	1.5
GLC Financial Economics	3.0	6.1	2.8	3.0	3.0	3.1	3.3	3.8	4.1	4.1	4.4	5.8	6.9	4.8	6.5	110.7	2.8	3.0	2.9	2.9
Via Nova Investment Mgt.	3.0	6.3	3.0	3.1	3.1	3.4	3.8	4.7	4.9	4.9	5.0	6.3	6.9	5.9	7.2	110.0	2.0	2.7	2.8	2.5
Moody's Analytics	2.7	5.9	2.7	2.7	2.5	2.6	2.8	2.9	3.1	3.2	3.6	4.7	5.8	3.9	5.1	na	2.6	2.2	1.9	1.8
Thru the Cycle	2.7	5.8	2.7	2.9	2.7	2.8	2.7	2.7	2.7	2.7	2.8	4.2	5.1 L	3.8	5.3	111.6	1.7	2.6	2.0	2.5
ACIMA Private Wealth	1.0 L	4.0 L	1.0 L	1.1 L	1.1 L	1.0 L	0.8 L	0.7 L	1.5 L	1.5 L	2.3 L	2.5 L	6.0	0.5 L	3.5 L	110.0	5.5 H	1.9	1.5	0.8 L
Scotiabank Group	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.0	1.5 L	2.2	1.7
July Consensus	**3.5**	**6.6**	**3.4**	**3.4**	**3.4**	**3.5**	**3.6**	**3.6**	**3.6**	**3.6**	**3.8**	**5.1**	**6.2**	**4.5**	**5.8**	**114.0**	**1.3**	**2.7**	**2.5**	**2.4**
Top 10 Avg.	4.2	7.3	4.1	4.1	4.2	4.3	4.4	4.6	4.7	4.7	4.9	6.2	7.1	5.4	6.8	116.3	2.8	3.5	3.4	3.1
Bottom 10 Avg.	2.8	6.0	2.8	2.7	2.5	2.8	2.8	2.7	2.8	2.7	2.9	4.2	5.4	3.5	4.9	111.7	-0.3	2.1	1.6	1.7
June Consensus	3.1	6.2	3.0	3.0	3.0	3.1	3.2	3.2	3.4	3.4	3.6	4.9	5.8	4.2	5.5	112.9	1.6	2.7	2.6	2.5
Number of Forecasts Changed From A Month Ago:																				
Down	5	4	3	3	4	2	4	3	4	3	5	4	2	3	3	6	21	13	13	17
Same	4	3	4	3	4	4	3	4	7	10	7	6	6	5	5	6	13	13	12	8
Up	30	26	18	17	24	25	24	27	22	22	22	15	16	11	22	9	4	8	12	9
Diffusion Index	82%	83%	80%	80%	81%	87%	82%	85%	77%	77%	75%	72%	79%	71%	82%	57%	28%	43%	49%	38%

Fourth Quarter 2023

Interest Rate Forecasts

Key Assumptions

Blue Chip Financial Forecasts Panel Members	Percent Per Annum -- Average For Quarter: Short-Term							Intermediate-Term			Long-Term					Avg. For ---Qtr.---	(Q-Q % Change) (SAAR)			
	1 Federal Funds Rate	2 Prime Bank Rate	3 SOFR Rate	4 Com. Paper 1-Mo.	5 Treas. Bills 3-Mo.	6 Treas. Bills 6-Mo.	7 Treas. Bills 1-Yr.	8 Treas. Notes 2-Yr.	9 Treas. Notes 5-Yr.	10 Treas. Notes 10-Yr.	11 Treas. Bond 30-Yr.	12 Aaa Corp. Bond	13 Baa Corp. Bond	14 State & Local Bonds	15 Home Mtg. Rate	A. Fed's Adv Fgn Econ $ Index	B. Real GDP	C. GDP Price Index	D. Cons. Price Index	E. PCE Price Index
Amherst Pierpont Securities	4.6 H	7.8 H	4.6 H	4.6	4.6	4.6	4.5	4.6	4.5	4.5	4.8	5.8	6.9	4.8	6.4	116.0	2.6	3.3	3.3	3.0
RDQ Economics	4.6 H	7.7	4.6 H	4.7 H	4.8 H	5.0 H	4.6	4.1	4.0	4.0	4.3	5.2	6.3	5.2	6.3	117.4	2.9	3.6	3.8 H	3.5 H
Daiwa Capital Markets America	4.3	7.4	3.2	3.3	4.3	4.5	4.7	5.0	5.0	5.0	5.1	6.8	7.9 H	na	7.5	114.0	0.0	2.7	2.5	2.3
Wells Fargo	4.3	7.3	4.2	4.3	3.8	3.6	3.4	3.2	3.2	3.2	3.3	4.6	5.9	4.0	5.2	na	1.1	2.2	2.2	2.2
Bank of America	4.1	na	na	na	na	na	na	3.0	3.2	3.3	3.3	na	na	na	na	na	0.4	4.8 H	3.0	2.7
Chmura Economics & Analytics	4.0	7.1	4.0	4.0	3.9	4.0	4.1	4.1	4.3	4.1	4.4	5.2	na	na	5.5	112.5	1.4	3.3	3.7	3.5 H
Bank of the West	3.9	7.0	3.8	3.9	3.8	3.9	4.0	4.3	4.3	4.3	4.3	5.7	6.4	5.4	6.4	115.9	0.5	2.3	2.5	2.5
Chan Economics	3.9	6.9	3.9	3.9	4.1	4.6	5.1 H	5.7 H	5.8 H	5.9 H	6.0 H	6.8	7.6	6.7 H	8.1 H	113.9	2.0	2.8	3.2	3.0
Loomis, Sayles & Company	3.9	7.0	3.8	3.8	4.0	4.0	3.7	3.2	3.1	3.2	3.3	4.3	5.3	4.2	5.6	115.9	1.4	2.7	2.8	2.5
NatWest Markets	3.9	7.0	na	4.0	4.1	4.2	4.3	3.2	3.0	3.0	2.9	4.4	5.3	3.4	4.2	na	1.7	3.5	1.9	3.0
The Northern Trust Company	3.9	7.0	3.8	4.0	3.9	4.1	4.3	4.4	4.5	4.5	5.0	6.0	6.9	6.1	6.5	118.0 H	1.4	2.5	2.4	2.4
Mizuho Research Institute	3.6	na	na	na	na	na	na	na	na	3.5	na	na	na	na	na	na	na	na	na	na
PNC Financial Services Corp.	3.6	6.7	3.6	na	3.3	3.3	3.2	3.0	3.1	3.2	3.4	na	5.6	3.9	5.3	107.8 L	0.9	2.0	2.1	1.9
J.P. Morgan Chase	3.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.0	2.3	2.7	2.4
Regions Financial Corporation	3.5	6.3	3.3	3.4	3.4	3.7	3.9	3.9	4.0	3.8	4.0	5.6	6.5	4.9	6.2	112.6	1.6	2.2	2.2	2.4
Action Economics	3.4	6.6	3.2	3.5	3.2	3.2	3.3	3.4	3.4	3.5	3.6	4.6	5.6	3.3	5.9	115.3	na	na	na	na
Barclays	3.4	6.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.5	2.4	2.3	2.2
BMO Capital Markets	3.4	6.5	3.4	na	3.3	3.4	3.4	3.4	3.4	3.4	3.4	na	na	na	5.7	113.5	1.6	2.2	2.5	2.3
BNP Paribas Americas	3.4	na	na	na	na	na	na	2.8	na	3.0	3.3	na	na	na	na	na	1.8	na	3.0	na
Comerica Bank	3.4	6.5	na	na	3.4	3.5	3.4	3.2	2.9	2.6	3.4	4.4	5.4	na	4.8	na	1.5	2.4	2.5	2.4
Economist Intelligence Unit	3.4	6.5	na	3.3	3.5	3.9	3.8	3.9	4.0	4.2	4.3	na	na	na	5.6	na	1.1	na	1.8	na
Goldman Sachs & Co.	3.4	na	na	na	3.2	na	na	3.2	3.1	3.2	2.4	na	na	na	na	na	1.8	2.3	2.6	2.1
Societe Generale	3.3	6.5	3.3	na	3.2	3.0	2.8	2.9	2.9	3.0	3.3	na	na	na	na	na	2.0	3.1	3.0	2.7
DePrince & Assoc.	3.2	6.4	3.1	3.3	3.4	3.5	3.2	3.5	3.6	3.9	3.9	5.2	6.0	4.4	5.8	116.5	1.9	2.4	2.9	2.3
Fannie Mae	3.2	6.3	na	na	3.3	3.4	3.5	3.4	3.4	3.2	3.3	na	na	na	5.2	na	-1.4 L	2.5	0.9 L	1.3
Swiss Re	3.2	6.4	3.3	3.3	2.8	2.8	2.8	2.8	2.8	2.9	3.1	4.5	5.5	na	4.9	113.4	2.8	3.7	3.6	na
Georgia State University	3.1	6.3	na	na	2.9	2.9	3.3	3.3	3.6	3.9	4.1	5.3	6.5	na	5.8	na	2.8	2.8	2.3	2.4
MacroFin Analytics & Rutgers Bus School	3.1	6.3	3.0	3.4	3.4	3.6	4.1	4.7	5.0	5.1	5.5	7.0 H	7.8	6.0	7.0	117.7	1.5	2.2	2.0	2.0
S&P Global Market Intelligence	3.1	6.3	3.1	na	2.8	2.9	3.1	3.1	3.0	3.1	3.3	na	na	na	5.1	na	1.8	2.4	1.9	1.7
GLC Financial Economics	3.0	6.1	2.8	3.0	3.1	3.1	3.3	3.7	3.9	4.0	4.2	5.6	6.7	4.6	6.3	110.3	2.9	3.2	2.9	3.0
TS Lombard	3.0	6.1	2.9	3.0	2.8	2.8	2.8	2.8	3.0	3.4	3.5	4.3	5.1 L	3.4	5.2	115.0	1.5	2.5	2.5	2.5
Via Nova Investment Mgt.	3.0	6.3	3.0	3.1	3.1	3.4	3.8	4.7	4.9	4.9	5.0	6.3	6.9	5.9	7.2	110.0	2.0	2.7	2.8	2.5
Grant Thornton/Diane Swonk	2.9	6.1	2.9	1.3	1.3	2.7	2.8	2.9	3.0	3.3	3.5	4.5	5.6	na	5.2	na	1.3	2.1	1.6	1.4
Nomura Securities, Inc.	2.9	6.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	-0.5	2.0	2.4	1.6
Moody's Analytics	2.7	5.9	2.7	2.7	2.6	2.6	2.8	2.9	3.1	3.3	3.6	4.7	5.8	3.9	5.2	na	2.8	2.2	2.1	2.1
Oxford Economics	2.7	5.8	2.7	na	2.7	2.7	2.6	2.7	2.9	3.1	3.3	3.9	na	na	5.4	112.3	2.2	na	1.4	1.5
ING	2.6	na	na	na	na	na	na	2.5	2.2	2.0	2.4	na	na	na	na	na	1.7	na	na	na
Thru the Cycle	2.6	5.8	2.6	2.9	2.6	2.7	2.6	2.5	2.6	2.6	2.7	4.1	5.1 L	3.7	5.1	112.4	1.7	2.4	2.0	2.4
ACIMA Private Wealth	0.0 L	3.0 L	0.0 L	0.1 L	0.1 L	0.2 L	0.3 L	0.5 L	1.3 L	1.5 L	2.3 L	2.5 L	5.5	0.5 L	3.1 L	109.0	4.0 H	1.8	2.0	2.2
Scotiabank Group	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.8	0.7 L	1.6	1.2 L
July Consensus	**3.4**	**6.5**	**3.3**	**3.3**	**3.3**	**3.4**	**3.5**	**3.4**	**3.5**	**3.6**	**3.8**	**5.1**	**6.2**	**4.4**	**5.7**	**113.8**	**1.6**	**2.6**	**2.5**	**2.3**
Top 10 Avg.	4.2	7.2	4.0	4.1	4.1	4.3	4.4	4.6	4.6	4.7	4.9	6.1	7.0	5.4	6.8	116.2	2.7	3.4	3.2	2.9
Bottom 10 Avg.	2.5	5.7	2.6	2.6	2.4	2.5	2.6	2.5	2.7	2.7	2.9	4.2	5.4	3.5	4.8	111.4	0.4	2.0	1.7	1.7
June Consensus	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Number of Forecasts Changed From A Month Ago:																				
Down	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Same	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Up	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Diffusion Index	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

International Interest Rate And Foreign Exchange Rate Forecasts

United States

	Fed Fund Target Rate			10 Yr. Gov't Bond Yield %			Fed's AFE $ Index		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	3.13	3.38	--	3.10	3.00	--	--	--	--
BMO Capital Markets	2.88	3.38	3.38	3.30	3.50	3.45	115.0	114.9	114.1
ING Financial Markets	2.88	3.63	3.63	3.30	3.00	2.50	113.8	111.8	109.3
Mizuho Research Institute	3.13	3.38	3.63	3.45	3.55	3.44	--	--	--
Moody's Analytics	0.69	1.60	2.55	2.90	3.03	3.18	--	--	--
Northern Trust	2.63	3.63	3.88	3.50	4.50	4.50	116.0	117.0	118.0
Oxford Economics	2.25	3.33	3.88	3.15	3.25	3.15	113.9	115.6	114.3
S&P Global Market Intelligence	--	--	--	2.87	2.95	3.04	--	--	--
TS Lombard	4.25	4.50	4.00	4.00	3.50	3.50	125.0	120.0	118.0
Wells Fargo	2.88	3.88	4.38	3.70	3.80	3.60	--	--	--
July Consensus	**2.75**	**3.41**	**3.67**	**3.33**	**3.41**	**3.37**	**116.7**	**115.9**	**114.7**
High	4.25	4.50	4.38	4.00	4.50	4.50	125.0	120.0	118.0
Low	0.69	1.60	2.55	2.87	2.95	2.50	113.8	111.8	109.3
Last Months Avg.	1.88	2.45	3.19	3.08	3.12	3.19	114.0	113.4	112.4

Japan

	Policy-Rate Balance Rate			10 Yr. Gov't Bond Yield %			Yen per US$		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	-0.10	-0.10	--	0.40	0.45	--	130.0	128.0	--
BMO Capital Markets	-0.10	-0.10	-0.10	0.25	0.30	0.30	136.0	137.0	135.0
ING Financial Markets	-0.10	-0.10	-0.10	0.20	0.20	0.20	130.0	128.0	126.0
Mizuho Research Institute	-0.10	-0.10	-0.10	0.25	0.25	0.25	133.0	133.0	133.0
Moody's Analytics	-0.10	-0.10	-0.10	0.24	0.23	0.20	128.1	126.8	124.0
Nomura Securities	--	--	--	--	--	--	135.0	128.0	120.0
Northern Trust	-0.10	-0.10	-0.10	0.25	0.25	0.25	133.0	135.0	137.0
Oxford Economics	-0.03	-0.04	-0.05	0.24	0.23	0.12	132.1	129.5	123.1
S&P Global Market Intelligence	--	--	--	--	--	--	136.8	136.6	133.6
Scotiabank	-0.10	-0.10	-0.10	--	--	--	130.0	125.0	120.0
TS Lombard	-0.10	0.20	0.50	0.25	0.35	0.45	140.0	135.0	125.0
Wells Fargo	-0.10	-0.10	-0.10	0.25	0.25	0.25	--	--	--
July Consensus	**-0.09**	**-0.06**	**-0.03**	**0.26**	**0.28**	**0.25**	**133.1**	**131.1**	**127.7**
High	-0.03	0.20	0.50	0.40	0.45	0.45	140.0	137.0	137.0
Low	-0.10	-0.10	-0.10	0.20	0.20	0.12	128.1	125.0	120.0
Last Months Avg.	-0.09	-0.06	-0.03	0.26	0.26	0.25	126.9	125.1	122.7

United Kingdom

	Official Bank Rate			10 Yr. Gilt Yields %			US$ per Pound Sterling		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	1.75	1.75	--	2.75	2.80	--	1.22	1.24	--
BMO Capital Markets	1.50	1.75	1.75	2.40	2.75	2.70	1.22	1.20	1.22
ING Financial Markets	1.75	1.75	1.75	2.00	1.90	1.70	1.24	1.26	1.29
Moody's Analytics	0.89	1.16	1.50	1.87	2.14	2.44	1.27	1.31	1.42
Nomura Securities	--	--	--	--	--	--	1.29	1.32	1.42
Northern Trust	1.75	2.00	2.00	2.70	2.80	2.90	1.23	1.21	1.19
Oxford Economics	1.45	1.91	1.84	2.58	2.64	2.60	1.24	1.22	1.23
S&P Global Market Intelligence	--	--	--	--	--	--	1.24	1.24	1.27
Scotiabank	1.50	1.75	2.00	--	--	--	1.24	1.25	1.27
TS Lombard	1.00	1.25	0.75	1.50	3.10	3.10	1.22	1.15	1.10
Wells Fargo	1.50	1.75	2.00	2.25	2.30	2.25	--	--	--
July Consensus	**1.45**	**1.67**	**1.70**	**2.26**	**2.55**	**2.53**	**1.24**	**1.24**	**1.27**
High	1.75	2.00	2.00	2.75	3.10	3.10	1.29	1.32	1.42
Low	0.89	1.16	0.75	1.50	1.90	1.70	1.22	1.15	1.10
Last Months Avg.	1.26	1.45	1.84	1.91	2.19	2.35	1.26	1.27	1.29

Switzerland

	SNB Policy Rate			10 Yr. Gov't Bond Yield %			CHF per US$		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	0.75	1.00	--	--	--	--	0.93	0.94	--
ING Financial Markets	-0.25	0.00	0.00	1.15	1.15	1.05	1.03	1.08	1.10
Moody's Analytics	-0.75	-0.75	-0.25	0.90	1.20	1.59	0.96	0.92	0.84
Nomura Securities	--	--	--	--	--	--	0.95	0.94	0.93
Northern Trust	0.00	0.50	0.50	1.50	1.60	1.70	0.95	0.93	0.92
Oxford Economics	-0.13	0.13	0.25	1.25	1.15	1.04	0.97	0.99	0.99
S&P Global Market Intelligence	--	--	--	--	--	--	1.00	1.01	1.00
Scotiabank	--	--	--	--	--	--	0.97	0.95	0.96
TS Lombard	-0.75	-0.75	-0.25	0.67	1.19	1.19	0.92	0.92	0.92
July Consensus	**-0.19**	**0.02**	**0.05**	**1.09**	**1.26**	**1.31**	**0.96**	**0.96**	**0.96**
High	0.75	1.00	0.50	1.50	1.60	1.70	1.03	1.08	1.10
Low	-0.75	-0.75	-0.25	0.67	1.15	1.04	0.92	0.92	0.84
Last Months Avg.	-0.69	-0.56	-0.18	0.86	1.01	1.15	0.96	0.94	0.93

Canada

	O/N MMkt Financing Rate			10 Yr. Gov't Bond Yield %			C$ per US$		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	3.50	3.50	--	--	--	--	1.25	1.23	--
BMO Capital Markets	2.75	3.25	3.25	3.40	3.50	3.45	1.26	1.24	1.25
ING Financial Markets	2.75	3.75	3.75	3.25	3.40	3.00	1.24	1.22	1.21
Moody's Analytics	1.09	1.78	2.50	2.91	3.06	3.33	1.25	1.25	1.25
Nomura Securities	--	--	--	--	--	--	1.26	1.26	1.25
Northern Trust	3.00	4.00	4.00	3.50	4.00	4.00	1.29	1.31	1.33
Oxford Economics	1.88	2.75	3.00	2.98	3.10	3.14	1.28	1.31	1.32
S&P Global Market Intelligence	--	--	--	--	--	--	1.20	1.21	1.22
Scotiabank	--	--	--	--	--	--	1.20	1.20	1.22
TS Lombard	4.50	4.75	4.25	4.10	3.60	3.60	1.30	1.30	1.30
Wells Fargo	--	--	--	3.40	3.45	3.35	--	--	--
July Consensus	**2.78**	**3.40**	**3.46**	**3.36**	**3.44**	**3.41**	**1.25**	**1.25**	**1.26**
High	4.50	4.75	4.25	4.10	4.00	4.00	1.30	1.31	1.33
Low	1.09	1.78	2.50	2.91	3.06	3.00	1.20	1.20	1.21
Last Months Avg.	2.00	2.46	3.07	3.12	3.21	3.28	1.25	1.24	1.24

International Interest Rate And Foreign Exchange Rate Forecasts

Australia

	Official Cash Rate			10 Yr. Gov't Bond Yield %			US$ per A$		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	2.25	2.50	--	--	--	--	0.73	0.75	--
ING Financial Markets	1.10	1.60	2.50	3.60	3.80	3.60	0.70	0.72	0.74
Moody's Analytics	0.40	1.17	2.00	3.21	2.97	3.42	0.72	0.71	0.72
Nomura Securities	--	--	--	--	--	--	0.69	0.69	0.74
Northern Trust	2.35	3.10	3.10	4.00	4.25	4.25	0.69	0.69	0.69
Oxford Economics	1.35	1.97	2.43	3.34	3.41	3.39	0.72	0.73	0.75
S&P Global Market Intelligence	--	--	--	--	--	--	0.72	0.71	0.65
Scotiabank	1.75	2.50	2.50	--	--	--	0.72	0.74	0.74
TS Lombard	1.55	2.24	2.50	2.84	3.85	3.85	0.70	0.65	0.60
July Consensus	**1.54**	**2.15**	**2.51**	**3.40**	**3.66**	**3.70**	**0.71**	**0.71**	**0.70**
High	2.35	3.10	3.10	4.00	4.25	4.25	0.73	0.75	0.75
Low	0.40	1.17	2.00	2.84	2.97	3.39	0.69	0.65	0.60
Last Months Avg.	0.82	1.13	1.65	3.27	3.53	3.66	0.72	0.72	0.71

Euro area

	Main Refinancing Rate			US$ per Euro		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	1.00	1.00	--	1.06	1.08	--
BMO Capital Markets	0.75	1.25	1.75	1.05	1.05	1.06
ING Financial Markets	0.50	0.75	1.00	1.05	1.08	1.12
Mizuho Research Institute	0.00	0.00	0.00	1.08	1.08	1.08
Moody's Analytics	0.00	0.26	1.22	1.08	1.10	1.19
Nomura Securities	--	--	--	1.08	1.12	1.18
Northern Trust	0.75	1.00	1.00	1.06	1.04	1.02
Oxford Economics	0.06	0.31	0.50	1.07	1.05	1.06
S&P Global Market Intelligence	--	--	--	1.04	1.04	1.05
Scotiabank	0.50	1.00	1.50	1.08	1.10	1.10
TS Lombard	0.00	0.25	0.50	1.00	0.85	1.00
Wells Fargo	0.00	0.25	0.75	--	--	--
July Consensus	**0.36**	**0.61**	**0.91**	**1.06**	**1.05**	**1.09**
High	1.00	1.25	1.75	1.08	1.12	1.19
Low	0.00	0.00	0.00	1.00	0.85	1.00
Last Months Avg.	0.06	0.21	0.48	1.07	1.07	1.11

10 Yr. Gov't Bond Yields %

	Germany			France			Italy			Spain		
Blue Chip Forecasters	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.	In 3 Mo.	In 6 Mo.	In 12 Mo.
Barclays	1.85	1.90	--	--	--	--	--	--	--	--	--	--
BMO Capital Markets	1.60	2.00	1.90	--	--	--	--	--	--	--	--	--
ING Financial Markets	1.20	1.20	1.10	1.65	1.60	1.40	2.95	2.70	2.10	2.00	1.90	1.80
Mizuho Research Institute	1.55	1.40	1.15	--	--	--	--	--	--	--	--	--
Moody's Analytics	0.99	1.33	1.78	1.53	1.83	2.17	2.84	3.38	3.56	2.01	2.52	2.96
Northern Trust	1.75	1.85	1.95	2.25	2.35	2.45	3.70	3.80	3.90	2.80	2.90	3.00
Oxford Economics	1.17	1.20	1.24	1.66	1.66	1.63	3.18	3.19	3.19	2.31	2.33	2.35
TS Lombard	2.30	1.80	1.80	2.65	2.15	2.15	3.60	3.10	3.10	3.05	2.55	2.55
Wells Fargo	1.45	1.55	1.70	--	--	--	--	--	--	--	--	--
July Consensus	**1.54**	**1.58**	**1.58**	**1.95**	**1.92**	**1.96**	**3.25**	**3.23**	**3.17**	**2.43**	**2.44**	**2.53**
High	2.30	2.00	1.95	2.65	2.35	2.45	3.70	3.80	3.90	3.05	2.90	3.00
Low	0.99	1.20	1.10	1.53	1.60	1.40	2.84	2.70	2.10	2.00	1.90	1.80
Last Months Avg.	1.15	1.23	1.35	1.68	1.72	1.81	3.00	3.01	2.98	2.11	2.21	2.35

	Consensus Forecasts 10-year Bond Yields vs U.S. Yield			
	Current	In 3 Mo.	In 6 Mo.	In 12 Mo.
Japan	-2.89	-3.07	-3.13	-3.12
United Kingdom	-0.83	-1.07	-0.85	-0.85
Switzerland	-1.94	-2.23	-2.15	-2.06
Canada	0.19	0.04	0.04	0.04
Australia	0.59	0.07	0.25	0.33
Germany	-1.69	-1.79	-1.83	-1.80
France	-1.16	-1.38	-1.49	-1.41
Italy	0.44	-0.07	-0.17	-0.20
Spain	-0.53	-0.89	-0.97	-0.84

	Consensus Forecasts Policy Rates vs U.S. Target Rate			
	Current	In 3 Mo.	In 6 Mo.	In 12 Mo.
Japan	-1.73	-2.84	-3.35	-3.69
United Kingdom	-0.38	-1.29	-1.74	-1.97
Switzerland	-1.88	-2.94	-3.39	-3.62
Canada	-0.13	0.03	-0.02	-0.21
Australia	-0.78	-1.21	-1.26	-1.16
Euro area	-1.63	-2.39	-2.81	-2.75

Viewpoints:

A Sampling of Views on the Economy, Financial Markets and Government Policy Excerpted from Recent Reports Issued by our Blue Chip Panel Members and Others

What Wage Growth Rate Is Compatible With 2% Inflation?

Our wage tracker rose 5.4% over the last year, well above the pre-pandemic pace of 3% and too high to be consistent with the Fed's 2% inflation target. But just how much does it need to slow?

Economic principles suggest that, on average, inflation should roughly equal wage growth minus productivity growth. If nonlabor costs grow at the same pace as wages, wage growth should be an accurate proxy for the growth in companies' total costs. Assuming profit margins are stable, cost growth should in turn track revenue growth well, and this implies that wage growth net of productivity growth—which implicitly adjusts for how much output is produced—should be a reasonable proxy for inflation. The usual math is therefore that with 1.5-2% productivity growth, 3.5-4% wage growth is compatible with 2% inflation.

But in practice, inflation was about 0.9pp higher than the difference between the most popular wage growth measures and productivity growth over the 20 years before the pandemic. If this gap persists, wage growth would need to slow to about 2.5-3% instead, which would require narrowing the jobs-workers gap considerably more.

We find that three factors explain most of this 0.9pp gap.

Explanation #1: Headline consumer prices grew faster than nonfarm business sector prices. Faster growth of headline PCE prices than nonfarm business sector prices—the relevant deflator for productivity—explains 0.2pp of the gap. This difference comes mostly from the fact that the nonfarm business sector deflator excludes the rental value of owner occupied dwellings, which grew faster than other consumer prices on average, but includes investment prices, which grew slower than overall consumer price inflation. The influence of the weight differential has been evident in the past year. Goods inflation has been considerably faster than that for service inflation (11.7 percent versus 4.7 percent), but because of its greater weight, the contribution to core and overall inflation from services is slightly larger than that for goods.

However, the gap between investment and consumer inflation has narrowed substantially, as the large declines in equipment prices in the late 1990s and early 2000s moderated in recent years. We expect investment prices to continue to grow in line with consumer prices, which implies that about ¾ of the 20-year gap between headline PCE and nonfarm business sector inflation should close going forward.

Explanation #2: Nonlabor costs grew faster than labor costs. Unit nonlabor payments grew about 1.1pp faster than unit labor costs, putting upward pressure on prices and contributing another 0.5pp to the gap. Corporate profits and depreciation account for the majority of nonlabor payments, and both have grown faster than labor costs over the last several years.

While profit growth has increased significantly since the pandemic began, we expect it to normalize as supply-chain disruptions fade and profit margins return to their already-elevated pre-pandemic levels. Coupled with stable depreciation rates, this implies that most of the gap between nonlabor payments and labor costs should fade as wage growth increases relative to its pre-pandemic pace.

Explanation #3: Compensation per hour grew faster than the ECI and average hourly earnings. Compensation per hour—the relevant measure of labor costs in the productivity accounts—grew faster than the most popular wage measures, average hourly earnings and the employment cost index, and this explains 0.2pp of the gap.

The gap between compensation per hour and average hourly earnings reflects differences in coverage. Compensation per hour includes a broader range of benefits, bonuses, and supplements than average hourly earnings. Although these generally grew faster than wages in the early 2000s, that trend has narrowed since, and we therefore expect that average hourly earnings will continue to grow more in line with compensation per hour.

The gap between compensation per hour and the ECI, on the other hand, mostly reflects changes in the composition of the labor force, which the ECI removes by design. As the labor force shifts toward more productive industries and occupations, the positive composition effects will tend to boost compensation per hour but not the ECI. The gap between the two measures has been relatively stable over time, and we expect it to persist. Taken together, we expect about ½ of the difference between AHE and ECI wage growth and compensation per hour to close going forward.

We estimate that 3.5% wage growth should be compatible on average with the Fed's 2% inflation target going forward, though factors other than labor costs can of course have large effects on inflation too. Our forecast implies that wage growth will moderate sufficiently over the next 2-3 years, assuming that policymakers slow growth enough to rebalance supply and demand in the labor market.

Manuel Abecasis (Goldman Sachs)

Higher Interest Rates Are Already Starting to Weigh on the Housing Market

With the Federal Open Market Committee now aggressively tightening monetary policy, both short-term and long-term interest rates have risen sharply in 2022. In particular, the interest rate on a typical 30-year fixed rate mortgage has increased from 3.2% at the beginning of the year to 5.8% by mid-June, according to Freddie Mac. Higher mortgage rates are now weighing on the housing market, contributing to the ongoing slowing in economic growth. The central bank is hoping that a softening in interest-rate sensitive industries, including housing, will bring inflation back down to 2% over the next couple of years, without pushing the U.S. economy into recession.

The FOMC moved quickly to support the economy when the coronavirus pandemic came to the United States. The committee rapidly cut the federal funds rate—their key short-term policy rate—to close to zero. It also expanded the central bank's balance sheet by creating money electronically, using the proceeds to purchase longer-term Treasurys and mortgage-backed securities. As a result, the interest rate on a typical 30-year fixed rate mortgage fell from around 3.6% in early 2020 before the pandemic, to a record low of 2.7% in early 2021. This, along with support for household incomes from the federal government, spurred a very strong housing market. With very low mortgage rates making it less expensive to buy a home, households used their stimulus funds to make down payments. Sales of existing home sales soared in 2021, as did prices. Construction of new single-family homes rose to 1.13 million in 2021, up from around 1 million in 2020 and below one million every year from 2008 to 2019. And low borrowing costs made it much less expensive for households to undertake home renovations and repairs. All of this supported economic growth during the first two years of recovery following the start of the pandemic.

But with inflation now well above the FOMC's 2% objective, the Fed is trying to slow economic growth to reduce inflationary pressures in the economy. The FOMC has quickly raised the federal funds rate this year, including a 0.75 percentage point increase at the committee's meeting on June 15, the biggest increase in the rate since 1994; this has pushed up short-term borrowing costs. The FOMC is also pushing up long-term borrowing costs. Earlier this year the central bank ended its purchases of long-term securities, and in June the Fed stopped rolling over some maturing long-term Treasurys and mortgage-backed securities, up to a cap of $47.5 billion per month; that cap will increase to $95 billion per month in September. Because the Fed has been telegraphing these moves to financial markets since the beginning of the year, long-term interest rates, including mortgage rates, have increased throughout 2022.

Higher mortgage rates have led to a slowing in the housing market. Existing home sales fell 17% from January to May, while housing starts fell 13% from February to May. Although house price growth remains very strong, it appears to be peaking in mid-2022 as higher prices and mortgage rates have greatly reduced housing affordability. All of these factors are weighing on overall economic growth. Reduced housing starts show up directly in GDP and falling sales of existing homes reduce consumer spending on goods and services like furniture and renovations. Slower house price growth will weigh on household wealth, acting as a brake on consumer spending growth.

Housing activity will continue to slow over the next couple of years. Tighter monetary policy will also weigh on other interest-rate sensitive industries, like business capital spending and consumer purchases of durable goods. The Fed's hope is that this will slow economic growth to a more sustainable pace over the next couple of years and bring inflation back down to 2%, while avoiding recession—an outright contraction in the U.S. economy. But the central bank has little room for error, especially since the Russian invasion of Ukraine has pushed up inflation while simultaneously weighing on economic growth.

PNC's baseline forecast is for slower growth over the next few years, but not recession. Real GDP growth is expected to slow from above 5% in 2021 to below 2% this year (Q4 to Q4 basis), and then to around 1% in both 2023 and 2024. Weaker growth will lead to a slight increase in the unemployment rate in 2023 and 2024, to around 4%, up from 3.6% in May 2022. Inflation will gradually ease to 2% by mid-2024 as economic growth softens, particularly in interest-rate sensitive industries like housing. While the risk of recession this year remains low given solid consumer fundamentals, the probability is around 40% for 2023 and 2024, about double what it was prior to the Russian invasion of Ukraine.

Augustine Faucher (PNC Economics Division)

U.S. Economy Is Slowing But Not In A Recession; Fed on Course for Two More Half Percentage Point Rate Hikes in June and July

The expansion is slowing amid headwinds from Russia-Ukraine, surging energy and food prices, the end of crisis-era stimulus programs, tighter monetary policy, and Chinese lockdowns. But the U.S. is not currently in a recession, and the first quarter's negative GDP looks like a red herring. U.S. payrolls averaged a monthly increase of nearly half a million in the first five months of 2022, the unemployment rate is a solid notch lower than at the end of 2021, and industrial production is growing solidly. However, industries that surged during the pandemic like retail, e-commerce, and housing are retrenching as consumer spending shifts from goods back to services.

Inflation likely has peaked in year-over-year terms but will stay well above the Fed's target through the end of 2022 as Russia-Ukraine keeps food and energy prices elevated. Prices of durable goods including used cars and trucks have started to edge back down, and wage growth is slowing. Retailers are starting to discount consumer goods again after a big increase in inventories since the fall of 2021. But there is no relief in sight for food, gasoline, diesel, and other energy prices as the Russia-Ukraine conflict grinds on.

Fed policymakers are largely aligned behind two more half-percentage point rate hikes in June and July, but less certain about subsequent plans. They will likely raise the federal funds target a quarter percentage point at each of the September, November and December decisions, but could pause if inflation and growth slow sharply. Comerica forecasts a peak for the federal funds rate in 2023 at a range of 2.75%-3.00%, slightly below the consensus forecast, which sees a peak just above 3%. The Fed will likely follow through on its plan to reduce its balance sheet $47.5 billion per month through September, then $95 billion per month subsequently. Balance sheet reductions will likely continue at this pace at least through the end of 2023. Longer-term yields face upside risk from the Fed shrinking its balance sheet, as well as oil and food prices, and downside risks from slowing growth, a cooling housing market, slowing inflation, and reduced Treasury issuance as the fiscal deficit shrinks.

Bill Adams (Comerica)

Special Questions:

1. a. How much do you expect the FFR to be increased in total in: 2022? 313 bps 2023? 30 bps

2. a. What do you think is the neutral (long run) Fed funds rate? 2.56 %

   b. When do you think the neutral FFR will be achieved?

by the end 2022	by June 2023	by the end 2023	Later
71%	11%	7%	11%

3. Do you think that by removing monetary accommodation, major central banks will be successful in slowing inflation without precipitating a recession?

	Yes	No
US	55%	45%
euro area	27%	73%
UK	27%	73%

4. What probability do you attach to a recession beginning in:

	2022	2023
the US	31%	44%
the euro area	45%	52%
Globally	43%	51%

5. How long do you expect supply-chain bottlenecks to provide a significant boost to inflation?

0-6 months	48%
7-9 months	18%
10-12 months	30%
13-24 months	3%
More than 24 months	0%

6. What is the one factor most influencing your US inflation forecast over the next 12 months? Expectations concerning…

Overall economic growth	22%
Fiscal policy	0%
Supply-chain bottlenecks	19%
Monetary policy	22%
The behavior of energy/commodity prices	38%

7. Is COVID still a major factor in your near-term economic forecast? Yes 16% No 84%

8. In your view, which of the following factors poses the biggest risk to global financial stability at present?

A much more aggressive response from Central Banks to persistently high levels of inflation	69%
Growing alarm on outlook for global growth triggered by eg higher food+energy prices/ebbing purch power/tighter global fiscal policies	13%
The discovery of another dangerous mutation of the COVID virus that is both more transmissible and more immune to existing vaccines	0%
A further escalation of the conflict in Ukraine accompanied by even higher energy and food prices	19%
Increased tensions between the US and China	0%

Databank:

2022 Historical Data

Monthly Indicator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Retail and Food Service Sales (a)	2.7	1.7	1.2	0.7	-0.3	····	····	····	····	····	····	····
Auto & Light Truck Sales (b)	15.05	13.98	13.41	14.50	12.68	····	····	····	····	····	····	····
Personal Income (a, current $)	0.0	0.6	0.6	0.5	0.5	····	····	····	····	····	····	····
Personal Consumption (a, current $)	1.9	0.6	1.2	0.6	0.2	····	····	····	····	····	····	····
Consumer Credit (e)	4.1	9.2	12.7	10.1	····	····	····	····	····	····	····	····
Consumer Sentiment (U. of Mich.)	67.2	62.8	59.4	65.2	58.4	50.0	····	····	····	····	····	····
Household Employment (c)	1199	548	736	-353	321	····	····	····	····	····	····	····
Nonfarm Payroll Employment (c)	504	714	398	436	390	····	····	····	····	····	····	····
Unemployment Rate (%)	4.0	3.8	3.6	3.6	3.6	····	····	····	····	····	····	····
Average Hourly Earnings (All, cur. $)	31.56	31.60	31.75	31.85	31.95	····	····	····	····	····	····	····
Average Workweek (All, hrs.)	34.6	34.7	34.6	34.6	34.6	····	····	····	····	····	····	····
Industrial Production (d)	2.9	7.1	4.9	6.1	5.4	····	····	····	····	····	····	····
Capacity Utilization (%)	79.0	79.5	79.9	80.9	80.8	····	····	····	····	····	····	····
ISM Manufacturing Index (g)	57.6	58.6	57.1	55.4	56.1	····	····	····	····	····	····	····
ISM Nonmanufacturing Index (g)	59.9	56.5	58.3	57.1	55.9	····	····	····	····	····	····	····
Housing Starts (b)	1.666	1.777	1.716	1.810	1.549	····	····	····	····	····	····	····
Housing Permits (b)	1.841	1.857	1.879	1.823	1.695	····	····	····	····	····	····	····
New Home Sales (1-family, c)	831	790	715	629	696	····	····	····	····	····	····	····
Construction Expenditures (a)	3.0	1.0	0.3	0.2	····	····	····	····	····	····	····	····
Consumer Price Index (nsa, d)	7.5	7.9	8.5	8.3	8.6	····	····	····	····	····	····	····
CPI ex. Food and Energy (nsa, d)	6.0	6.4	6.5	6.2	6.0	····	····	····	····	····	····	····
PCE Chain Price Index (d)	6.0	6.3	6.6	6.3	6.3	····	····	····	····	····	····	····
Core PCE Chain Price Index (d)	5.1	5.3	5.2	4.9	4.7	····	····	····	····	····	····	····
Producer Price Index (nsa, d)	10.1	10.4	11.5	10.9	10.8	····	····	····	····	····	····	····
Durable Goods Orders (a)	3.1	-0.7	0.7	0.4	0.7	····	····	····	····	····	····	····
Leading Economic Indicators (a)	-0.7	0.8	-0.1	-0.4	-0.4	····	····	····	····	····	····	····
Balance of Trade & Services (f)	-88.0	-88.1	-107.7	-87.1	····	····	····	····	····	····	····	····
Federal Funds Rate (%)	0.08	0.08	0.20	0.33	0.77	····	····	····	····	····	····	····
3-Mo. Treasury Bill Rate (%)	0.15	0.31	0.45	0.76	0.99	····	····	····	····	····	····	····
10-Year Treasury Note Yield (%)	1.76	1.93	2.13	2.75	2.90	····	····	····	····	····	····	····

2021 Historical Data

Monthly Indicator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Retail and Food Service Sales (a)	5.5	-1.8	11.2	0.0	-0.5	0.7	-1.0	0.7	1.0	1.6	0.6	-1.6
Auto & Light Truck Sales (b)	16.78	15.93	17.64	18.30	16.89	15.47	14.66	13.09	12.29	13.05	13.04	12.54
Personal Income (a, current $)	9.9	-7.2	21.0	-13.3	-2.0	0.3	1.3	0.4	-0.9	0.8	0.7	0.5
Personal Consumption (a, current $)	3.3	-1.1	5.2	1.0	0.0	1.1	0.1	1.1	0.6	1.4	0.5	-0.9
Consumer Credit (e)	2.4	5.4	4.6	5.4	7.6	6.6	4.5	5.1	6.6	5.8	8.8	6.2
Consumer Sentiment (U. of Mich.)	79.0	76.8	84.9	88.3	82.9	85.5	81.2	70.3	72.8	71.7	67.4	70.6
Household Employment (c)	121	363	573	319	291	62	1092	463	639	428	1090	651
Nonfarm Payroll Employment (c)	520	710	704	263	447	557	689	517	424	677	647	588
Unemployment Rate (%)	6.4	6.2	6.0	6.0	5.8	5.9	5.4	5.2	4.7	4.6	4.2	3.9
Average Hourly Earnings (All, cur. $)	29.93	30.04	30.06	30.20	30.36	30.52	30.67	30.76	30.92	31.11	31.23	31.38
Average Workweek (All, hrs.)	35.0	34.6	34.9	34.9	34.9	34.8	34.8	34.7	34.8	34.8	34.8	34.8
Industrial Production (d)	-2.0	-5.4	1.0	16.6	15.6	9.2	5.9	4.9	3.9	4.7	5.0	3.7
Capacity Utilization (%)	76.4	74.2	76.3	76.6	77.3	77.7	78.2	78.2	77.4	78.6	79.0	78.7
ISM Manufacturing Index (g)	59.4	60.9	63.7	60.6	61.6	60.9	59.9	59.7	60.5	60.8	60.6	58.8
ISM Nonmanufacturing Index (g)	58.5	55.9	62.2	62.7	63.2	60.7	64.1	62.2	62.6	66.7	68.4	62.3
Housing Starts (b)	1.602	1.430	1.711	1.505	1.605	1.664	1.573	1.576	1.559	1.563	1.706	1.768
Housing Permits (b)	1.843	1.743	1.773	1.765	1.691	1.661	1.655	1.772	1.615	1.698	1.729	1.896
New Home Sales (1-family, c)	911	768	881	809	740	714	726	686	732	671	756	839
Construction Expenditures (a)	3.0	-1.1	1.0	0.3	0.7	1.0	0.1	1.0	1.0	0.9	1.0	1.6
Consumer Price Index (nsa, d)	1.4	1.7	2.6	4.2	5.0	5.4	5.4	5.3	5.4	6.2	6.8	7.0
CPI ex. Food and Energy (nsa, d)	1.4	1.3	1.6	3.0	3.8	4.5	4.3	4.0	4.0	4.6	4.9	5.5
PCE Chain Price Index (d)	1.4	1.6	2.5	3.6	4.0	4.0	4.2	4.2	4.4	5.1	5.6	5.8
Core PCE Chain Price Index (d)	1.5	1.5	2.0	3.1	3.5	3.6	3.6	3.6	3.7	4.2	4.7	4.9
Producer Price Index (nsa, d)	1.6	3.0	4.1	6.5	7.0	7.6	8.0	8.7	8.8	8.9	9.9	10.0
Durable Goods Orders (a)	2.5	0.1	1.6	-2.0	2.1	1.8	0.4	1.6	-1.5	1.5	1.4	0.9
Leading Economic Indicators (a)	0.6	-0.1	1.1	1.1	0.9	0.6	1.0	0.7	0.2	0.4	0.6	0.4
Balance of Trade & Services (f)	-63.8	-65.3	-68.1	-65.7	-66.6	-71.4	-69.4	-71.4	-78.3	-68.2	-78.0	-78.9
Federal Funds Rate (%)	0.09	0.08	0.07	0.07	0.06	0.08	0.10	0.09	0.08	0.08	0.08	0.08
3-Mo. Treasury Bill Rate (%)	0.08	0.04	0.03	0.02	0.02	0.04	0.05	0.05	0.04	0.05	0.05	0.06
10-Year Treasury Note Yield (%)	1.08	1.26	1.61	1.64	1.62	1.52	1.32	1.28	1.37	1.58	1.56	1.47

(a) month-over-month % change; (b) millions, saar; (c) month-over-month change, thousands; (d) year-over-year % change; (e) annualized % change; (f) $ billions; (g) level. Most series are subject to frequent government revisions. Use with care.

Calendar of Upcoming Economic Data Releases

Monday	Tuesday	Wednesday	Thursday	Friday
July 4 **Independence Day All Markets Closed**	**5** Manufacturers' Shipments, Inventories & Orders (May) BEA Auto Sales (Jun) BEA Truck Sales (Jun)	**6** ISM Services PMI (Jun) S&P Global Services PMI (Jun) JOLTS (May) Mortgage Applications	**7** International Trade (May) Public Debt (Jun) Interest on the Public Debt (Jul) Challenger Employment Report (Jun) EIA Crude Oil Stocks Weekly Jobless Claims	**8** Employment Situation (Jun) Wholesale Trade (May) Consumer Credit (May) Treasury Auction Allotments (Jun) Housing Affordability (May)
11	**12** NFIB (Jun) Kansas City Fed Labor Market Conditions Indicators (Jun) Kansas City Financial Stress Index (Jun) OPEC Crude Oil Spot Prices (Jun)	**13** CPI (Jun) Real Earnings (Jun) Cleveland Fed Median CPI (Jun) Monthly Treasury Statement (Jun) Transportation Services Index (May) EIA Crude Oil Stocks Mortgage Applications	**14** Producer Prices (Jun) Weekly Jobless Claims	**15** Advance Retail Sales (Jun) Import & Export Prices (Jun) IP & Capacity Utilization (Jun) MTIS (May) Consumer Sentiment (Jul, Preliminary) Empire State Mfg Survey (Jul)
18 Business Leaders Survey (Jul) Home Builders (Jul) TIC Data (May)	**19** New Residential Construction (Jun)	**20** Existing Home Sales (Jun) EIA Crude Oil Stocks Mortgage Applications	**21** Philadelphia Fed Mfg Business Outlook Survey (Jul) BCI Composite Indexes (Jun) Weekly Jobless Claims	**22** S&P Global Flash PMIs (Jul) Treasury Auction Allotments (Jul)
25 NABE Business Conditions Survey (Q2) Chicago Fed National Activity Index (Jun) Texas Manufacturing Outlook Survey (Jul)	**26** FHFA & Case-Shiller HPI (May) New Residential Sales (Jun) H.6 Money Stock (May) Consumer Confidence (Jul) Final Building Permits (Jun) Philly Fed Nonmfg Bus (Jul) Richmond Fed Mfg/Service(Jul) Texas Service Sector (Jul) Steel Imports (Jun) FOMC Meeting	**27** Advance Durable Goods (Jun) Advance Trade & Inventories (Jun) BED (Q4) Pending Home Sales (Jun) EIA Crude Oil Stocks Mortgage Applications FOMC Meeting	**28** GDP (Q2, Advance) Kansas City Fed Manufacturing Survey (Jul) Weekly Jobless Claims	**29** Personal Income (Jun) Employment Cost Index (Q2) Agricultural Prices (Jun) Strike Report (Jul) Dallas Fed Trimmed-Mean PCE (Jun) Chicago PMI (Jul) Consumer Sentiment (Jul, Final) Alternate Measures of Labor Underutilization (Q2)
August 1 Construction (Jun) ISM Manufacturing (Jul) S&P Global Mfg PMI (Jul)	**2** Housing Vacancies (Q2) JOLTS (Jun) Senior Loan Officer Survey(Q3)	**3** BEA Auto Sales (Jul) BEA Truck Sales (Jul) Manufacturers' Shipments, Inventories & Orders (Jun) ISM Services PMI (Jul) S&P Global Services PMI (Jul) EIA Crude Oil Stocks Mortgage Applications	**4** International Trade (Jun) Public Debt (Jul) Challenger Employment Report (Jul) Weekly Jobless Claims	**5** Employment Situation (Jul) Consumer Credit (Jun)
8 Treasury Auction Allotments (Jul)	**9** Productivity & Costs (Q2) NFIB (Jul) Kansas City Fed Labor Market Conditions Indicators (Jul) Kansas City Financial Stress Index (Jul)	**10** CPI & Real Earnings (Jul) Wholesale Trade (Jun) Transportation Services Index (Jun) Cleveland Fed Median CPI (Jul) Monthly Treasury Statement(Jul) EIA Crude Oil Stocks Mortgage Applications	**11** Producer Prices (Jul) First Time Housing Affordability (Q2) OPEC Crude Oil Spot Prices (Jul) Weekly Jobless Claims	**12** Import & Export Prices (Jul) Consumer Sentiment (Aug, Preliminary) Survey of Professional Forecasters (Q3)

BLUE CHIP FORECASTERS

CONTRIBUTORS TO DOMESTIC SURVEY

ACIMA Private Wealth, Richmond, VA
Ardavan Mobasheri

Action Economics, LLC, Boulder, CO
Michael Englund

AIG, New York, NY
Henry Mo and Jerry Cai

Amherst Pierpont Securities, Stamford, CT
Stephen Stanley

Bank of America, New York, NY
Ethan Harris

Bank of the West, SF, CA
Scott Anderson

Barclays, New York, NY
Michael Gapen

BMO Capital Markets Economics, Toronto, Canada
Douglas Porter

BNP Paribas North America, New York, NY
Andrew Schneider

Chan Economics, New York, NY
Anthony Chan

Chmura Economics & Analytics, Richmond, VA
Christine Chmura and Xiaobing Shuai

Comerica, Dallas, TX
Bill Adams

Daiwa Capital Markets America, New York, NY
Michael Moran

DePrince & Associates, Murfreesburo, TN
Albert E. DePrince Jr.

Economist Intelligence Unit, New York, NY
Leo Abruzzese and Jan Friederich

Fannie Mae, Washington, DC
Douglas Duncan

Georgia State University, Atlanta, GA
Rajeev Dhawan

GLC Financial Economics, Providence, RI
Gary L. Ciminero

Goldman, Sachs & Co., New York, NY
Jan Hatzius

Grant Thornton, Chicago, IL
Diane Swonk

ING Financial Markets, London, England
James Knightley

J.P. Morgan Chase, New York, NY
Bruce Kasman

Loomis, Sayles & Company, L.P., Boston, MA
Brian Horrigan

MacroFin Analytics & Rutgers Business School, Wayne, NJ
Parul Jain

MacroPolicy Perspectives, New York, NY
Julia Coronado and Laura Rosner

Mizuho Research Institute, Tokyo, Japan
Takehiro Noguchi

Moody's Analytics, West Chester, PA
Mark M. Zandi

Naroff Economic Advisors, Philadelphia, PA
Joel L. Naroff

NatWest Markets, Greenwich, CT
Michelle Girard and Kevin Cummins

Nomura Securities International, Inc., New York, NY
U.S. Economics

Northern Trust Company, Chicago, IL
Carl Tannenbaum

Oxford Economics, New York, NY
Gregory Daco

PNC Financial Services Group, Pittsburgh, PA
Gus Faucher

RDQ Economics, New York, NY
John Ryding and Conrad de Quadros

Regions Financial Corporation, Birmingham, AL
Richard F. Moody

Scotiabank Group, Toronto, Canada
Jean-Francois Perrault

Societe Generale, New York, NY
Stephen W. Gallagher

S&P Global Market Intelligence, St. Louis, MO
Joel Prakken & Chris Varvares

S&P Global Ratings, New York, NY
Beth Ann Bovino

Swiss Re, New York, NY
Jerome Haegeli

ThruTheCycle.com, White Plains, NY
John Lonski

TS Lombard, London, UK
Steven Blitz

Via Nova Investment Management, Fredericksburg, VA
Alan Gayle

Wells Fargo, Charlotte, NC
Jay Bryson and Mark Vitner

CONTRIBUTORS TO INTERNATIONAL SURVEY

Barclays Capital, New York, NY
BMO Capital Markets Economics, Toronto, Canada
ING Financial Markets, London, England
Mizuho Research Institute, Tokyo, Japan
Moody's Analytics, West Chester, PA
Nomura Securities International, Inc., New York, NY
Northern Trust Company, Chicago, IL
Oxford Economics, Wayne, PA
Scotiabank Group, Toronto, Canada
S&P Global Market Intelligence, St. Louis, MO
S&P Global Ratings, New York, NY
TS Lombard, London, UK
Wells Fargo, Charlotte, NC

AG DR 1-124:

If not provided previously, provide all supporting spreadsheets, workpapers, and documentation for the risk premium calculations included in the D'Ascendis Testimony, Exhibit 9.5, Schedule DWD-4. Include all source data used in the calculations. Provide all spreadsheets in Excel format with cell formulas intact.

Response: Please see response to PSC DR 2-20.

Witness: Dylan D'Ascendis

AG DR 1-125:

Refer to the D'Ascendis Testimony, page 19, and specifically Mr. D'Ascendis' discussion of the Predictive Risk Premium Model ("PRPM").

a. Aside from Mr. D'Ascendis, provide names of the other colleagues or rate of return witnesses who have presented the PRPM in proceedings to estimate the risk premium rate of return for regulated utilities. Include in the response the case number, regulatory jurisdiction, and year.

b. Provide the proceedings of which Mr. D'Ascendis is aware in which regulatory commissions have accepted or rejected the PRPM. Include in the response the case number, year, and a copy of the Commission's Order.

c. Provide evidence that the PRPM method is widely used and accepted by investors to estimate their required return on equity ("ROE") for regulated utilities.

Response:

a. While Mr. D'Ascendis has not performed an exhaustive review of all past regulatory proposals of the PRPM, he understands that Pauline M. Ahern, Frank J. Hanley, Robert B. Hevert, and John Perkins have similarly included PRPM analyses in regulated utility cases for which they provided testimony. WSCK objects to providing the case number, regulatory jurisdiction, and year of cases in which the above listed individuals have presented the PRPM to estimate the risk premium rate of return for regulated utilities. This information is publicly available, and the Attorney General may access it easily.

b. The North Carolina Utilities Commission accepted the PRPM, in part, as shown in AG DR-1-125 (a) Carolina Water Service Rate Case Order; the Public Service Commission of South Carolina accepted the PRPM, as presented in this proceeding, as shown in AG DR-1-125 (b)

2017-292-WS; the Florida Public Service Commission rejected the PRPM as shown in AG DR-1-125 (c) Utilities, Inc., Docket No. 20200139 Final Order; and as discussed in Mr. D'Ascendis' Direct Testimony, this Commission rejected the PRPM in Case No. 2021-00214, as shown on AG DR-1-125 (d) 20220519_PSC_ORDER Atmos Ky.

c. Please refer to pages 18 through 24 of Mr. D'Ascendis' Direct Testimony.

Witness: Dylan D'Ascendis

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. W-354, SUB 363
DOCKET NO. W-354, SUB 364
DOCKET NO. W-354, SUB 365

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. W-354, SUB 363

In the Matter of
Application by Carolina Water Service, Inc. of North Carolina, 4944 Parkway Plaza Boulevard, Suite 375, Charlotte, North Carolina, 28217, for an Accounting Order to Defer Incremental Storm Damage Expenses Incurred as a Result of Hurricane Florence

DOCKET NO. W-354, SUB 364

In the Matter of
Application by Carolina Water Service, Inc. of North Carolina, 4944 Parkway Plaza Boulevard, Suite 375, Charlotte, North Carolina, 28217, for Authority to Adjust and Increase Rates for Water and Sewer Utility Service in All of its Service Areas in North Carolina

DOCKET NO. W-354, SUB 365

In the Matter of
Application by Carolina Water Service, Inc. of North Carolina, 4944 Parkway Plaza Boulevard, Suite 375, Charlotte, North Carolina, 28217, for an Accounting Order to Defer Post-In-Service Depreciation and Financing Costs Related to Major New Projects That Are or Will Be In-Service Prior to the Date of An Order in Petitioner's Pending Base Rate Case

ORDER GRANTING PARTIAL RATE INCREASE AND REQUIRING CUSTOMER NOTICE

HEARD: Thursday, September 5, 2019, at 7:00 p.m., in Courtroom 5350, Mecklenburg County Courthouse, 832 East 4th Street, Charlotte, North Carolina

Tuesday, September 10, 2019, at 7:00 p.m., in Courtroom A, Dare County Courthouse, 962 Marshall C. Collins Drive, Manteo, North Carolina

Tuesday, October 8, 2019, at 7:00 p.m., in Courtroom #1, Watauga County Courthouse, 842 W. King Street, Boone, North Carolina

Wednesday, October 9, 2019, at 7:00 p.m., in Courtroom 1A, Buncombe County Courthouse, 60 Court Plaza, Asheville, North Carolina

Monday, October 14, 2019, at 7:00 p.m., in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina

Tuesday, October 22, 2019, at 7:00 p.m., in the Superior Courtroom, Onslow County Courthouse, 625 Court Street, Jacksonville, North Carolina

Monday, December 2, 2019, at 2:00 p.m., in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina

BEFORE: Commissioner ToNola D. Brown-Bland, Presiding; Chair Charlotte A. Mitchell; and Commissioners Lyons Gray, Daniel G. Clodfelter, Kimberly W. Duffley, and Jeffrey A. Hughes

APPEARANCES:

For Carolina Water Service, Inc. of North Carolina:

Jo Anne Sanford, Sanford Law Office, PLLC, Post Office Box 28085, Raleigh, North Carolina 27611

Robert H. Bennink, Jr., Bennink Law Office, 130 Murphy Drive, Cary, North Carolina 27513

Mark R. Alson, Ice Miller LLP, One American Square, Suite 290, Indianapolis, Indiana 46282-0200

Christina D. Cress, Nichols, Choi & Lee, PLLC, 4700 Homewood Court, Suite 220, Raleigh, North Carolina 27609

For Corolla Light Community Association, Inc.:

Brady W. Allen, The Allen Law Offices, PLLC, 1514 Glenwood Ave., Suite 200, Raleigh, North Carolina 27608

For the Using and Consuming Public:

Gina C. Holt, William E. Grantmyre, John Little, and William E. H. Creech, Staff Attorneys, Public Staff – North Carolina Utilities Commission, 4326 Mail Service Center, Raleigh, North Carolina 27699

BY THE COMMISSION: On January 17, 2019, in Docket No. W-354, Sub 363 (Sub 363) Carolina Water Service, Inc., of North Carolina (CWSNC or Company) filed a Petition for an Accounting Order to Defer Unplanned Incremental Hurricane Florence Storm Damage Expenses, Capital Investments, and Revenue Loss.

On May 24, 2019, pursuant to Commission Rule R1-17(a), CWSNC submitted notice of its intent to file a general rate case application in Docket No. W-354, Sub 364 (Sub 364).

On June 6, 2019, the Commission entered an order consolidating Sub 363 and Sub 364.

On June 28, 2019, CWSNC filed its verified application for a general rate increase (Application) in Sub 364 seeking authority to: (1) increase and adjust its rates for water and sewer utility service in all of its service areas in North Carolina, including the service areas of Riverbend Estates and Pace Utilities Group, Inc., which have been recently transferred to CWSNC; (2) consolidate rates for the Corolla Light/Monteray Shores (CLMS) service area with the Uniform Sewer Rate Division rates; and (3) pass through any increases in purchased bulk water rates and any increased costs of wastewater treatment performed by third parties and billed to CWSNC, all subject to CWSNC providing sufficient proof of such increases. In addition, the Company included as part of its rate case filing certain information and data required by NCUC Form W-1.

As part of the its Application CWSNC filed direct testimony of the following witnesses: Catherine E. Heigel, President of CWSNC, Tennessee Water Service, Inc., and Blue Granite Water Company; [1] Dante M. DeStefano, Director of Financial Planning and Analysis for CWSNC; Gordon R. Barefoot, President and CEO of Corix Infrastructure, Inc.;[2] J. Bryce Mendenhall, Vice President of Operations for CWSNC; Anthony Gray,

[1] On November 1, 2019, CWSNC filed notice that Donald H. Denton would adopt the prefiled direct testimony of Catherine E. Heigel.

[2] On November 8, 2019, CWSNC filed notice that Shawn Elicegui would adopt the prefiled direct testimony of Gordon R. Barefoot.

Senior Financial and Regulatory Analyst, CWSNC; and Dylan W. D'Ascendis, Director at ScottMadden, Inc.

The Company stated in its Application that it presently has approximately 34,915 water customers and 21,403 sewer customers in North Carolina (including water and sewer availability customers).[3] The present rates for water and sewer service have been in effect since February 21, 2019, pursuant to the Commission's Order Approving Joint Partial Settlement Agreement and Stipulation, Granting Partial Rate Increase and Requiring Customer Notice issued in CWSNC's last general rate case in Docket No. W-354, Sub 360 (Sub 360 Order).

On June 28, 2019, in Docket No. W-354, Sub 365 (Sub 365), CWSNC also filed a Petition for an Accounting Order to Defer Post-In-Service Depreciation and Financing Costs Relating to Major New Projects.

On July 15, 2019, the Commission issued an Order Establishing General Rate Case and Suspending Rates. By that order, the Commission declared the matter to be a general rate case pursuant to N.C. Gen. Stat. § 62-137, suspended the proposed new rates for up to 270 days pursuant to N.C.G.S. § 62-134, and established the test year period for this case as the 12-month period ending March 31, 2019.

On August 2, 2019, the Commission issued an Order Scheduling Hearings and Requiring Customer Notice (Scheduling Order) which required the parties to prefile testimony and exhibits, scheduled the matter for hearing, and required notice to all affected customers. That order scheduled customer hearings to be held in Charlotte, Manteo, Boone, Asheville, Raleigh, and Jacksonville, North Carolina, and set the expert witness hearing to be held in Raleigh, North Carolina.

Also on August 2, 2019, CWSNC witness DeStefano filed supplemental testimony, and on August 23, 2019, CWSNC filed an amended exhibit to witness DeStefano's supplemental testimony.

On August 21, 2019, CWSNC filed a certificate of service demonstrating that the Company provided notice of this general rate case proceeding to customers as required by the Commission's Scheduling Order.

On August 22, 2019, Corolla Light Community Association, Inc. (CLCA), filed a Petition to Intervene, which the Commission granted by order dated September 5, 2019.

[3] The Company did not indicate the specific date related to its present number of customers stated in the Application. The number of customers presented in Finding of Fact No. 13 herein is based on the detailed billing analysis prepared by Public Staff witness Casselberry for the 12-month period ended March 31, 2019, and is not disputed by the Company.

The Public Staff – North Carolina Utilities Commission's (Public Staff) participation in this proceeding is recognized pursuant to N.C.G.S. § 62-15(d) and Commission Rule R1-19(e).

Public witness hearings were held as scheduled. A total of 23 Company customers testified as public witnesses at the public witness hearings held in this proceeding.

CWSNC responded to public witness testimony by its filings of September 25 (combined Charlotte and Manteo), October 24 (combined Boone and Asheville), October 30 (Raleigh), and November 8, 2019 (Jacksonville).

On October 4, 2019, CWSNC filed its rate case updates, schedules, and supporting data as required by Ordering Paragraph No. 6 of the Commission's Scheduling Order.

The Public Staff filed its direct testimony on November 4, 2019, consisting of testimony and exhibits of Public Staff witnesses Gina Y. Casselberry, Utilities Engineer, Water, Sewer, and Telephone Division; Charles M. Junis, Utilities Engineer, Water, Sewer, and Telephone Division; Lindsey Q. Darden, Utilities Engineer, Water, Sewer, and Telephone Division**;** Windley E. Henry, Manager, Water, Sewer, and Telephone Section, Accounting Division; Michelle M. Boswell, Staff Accountant, Accounting Division; Lynn L. Feasel, Staff Accountant, Accounting Division; and John R. Hinton, Director, Economic Research Division.

The Public Staff filed the supplemental testimony of witness Casselberry on November 15, 2019.

On November 15, 2019, the Company filed a request to consolidate Sub 365 with this rate case. The Commission issued an order consolidating Sub 364 and Sub 365 on November 19, 2019.

The Public Staff filed revised exhibits of Public Staff witnesses Feasel and Henry on November 18, 2019.

On November 18, 2019, CWSNC withdrew its request for consideration of the Company's proposed Consumption Adjustment Mechanism and Conservation Rate Pilot Program proposed for The Point Subdivision.

CWSNC filed the rebuttal testimony of Company witnesses DeStefano, Mendenhall, and D'Ascendis on November 20, 2019.

On November 26, 2019, Public Staff witness Hinton filed supplemental testimony and exhibits, revising his recommended rate of return on common equity and updating four exhibits filed with his testimony on November 4, 2019.

On November 27, 2019, CWSNC and the Public Staff (Stipulating Parties) filed a Joint Partial Settlement Agreement and Stipulation (Stipulation). On that date, the Public Staff also filed exhibits and supporting schedules for the Stipulation.

On December 2, 2019, CLCA filed a resolution opposing CWSNC's rate increase Application but requesting that CLMS' rates be set as part of CWSNC's uniform rate division.

The expert witness hearing was held as scheduled beginning on December 2, 2019. All prefiled testimony and exhibits filed in the consolidated dockets were admitted into evidence without objection. All parties agreed to waive cross-examination on all prefiled direct testimony with respect to the issues the parties resolved by Stipulation.

During the hearing the Commissioners requested certain additional information in the form of late-filed exhibits. The Public Staff filed the late-filed exhibits of Public Staff witnesses Casselberry and Henry on December 9 and 11, 2019, respectively. CWSNC filed the late-filed exhibits of Company witnesses DeStefano, D'Ascendis, and Mendenhall on December 13, 2019.

On January 10, 2020, CWSNC filed the affidavit of its Financial Planning and Analysis Manager, Matthew Schellinger, providing the updated amount of regulatory commission expense agreed to by CWSNC and the Public Staff.

On January 13, 2020, the Public Staff filed Revised Settlement Exhibits I and II providing the final expense information of CWSNC and the Public Staff's final revised recommendation.

Based upon the foregoing, including the verified Application and accompanying NCUC Form W-1, the testimony and exhibits of the public witnesses appearing at the hearings, the testimony and exhibits of the expert witnesses received into evidence, the Stipulation, and the entire record herein, the Commission makes the following:

FINDINGS OF FACT

General Matters

1. CWSNC is a corporation duly organized under the laws of and is authorized to do business in the State of North Carolina. It is a franchised public utility providing water and sewer utility service to customers in 38 counties in North Carolina. CWSNC is

a wholly-owned subsidiary of Corix Regulated Utilities, Inc. (Corix),[4] previously known as Utilities, Inc.

2. CWSNC is properly before the Commission pursuant to Chapter 62 of the North Carolina General Statutes for a determination of the justness and reasonableness of its proposed rates and charges for the water and sewer utility service it provides to customers in North Carolina.

3. The appropriate test year for use in this proceeding is the 12-month period ending March 31, 2019, updated for known and measurable changes through the close of the expert witness hearing.

4. CWSNC's present rates for water and sewer service have been in effect since February 21, 2019, pursuant to the Commission's Sub 360 Order.

The Stipulation

5. On November 27, 2019, the Stipulating Parties filed the Stipulation, resolving all but two of the contested issues between CWSNC and the Public Staff in this matter.

6. The Stipulation is the product of give-and-take in negotiations between the Stipulating Parties, is material evidence in this proceeding, and is entitled to be given appropriate weight in this case along with the other evidence of record, including that submitted by the Company, the Public Staff, and the public witnesses who testified at the public witness hearings.

7. The Stipulation is a settlement of matters in controversy in this proceeding as between the Stipulating Parties and was not joined in nor objected to by CLCA, the other party to the proceeding.

8. The two remaining contested issues (Unsettled Issues) which were not resolved by the Stipulation between CWSNC and the Public Staff are:

a. Rate of return on common equity; and

b. CWSNC's request for deferred accounting treatment of certain costs related to the Automatic Meter Reading (AMR) meter installation projects in the Fairfield Mountain and Connestee Falls systems.

[4] Pursuant to the Articles of Amendment filed with the Illinois Secretary of State, Department of Business Services on July 25, 2019, Utilities Inc, changed its corporate name to Corix Regulated Utilities, Inc. Corix owns regulated utilities which provide water and sewer utility service to approximately 190,000 customers in 17 states, with primary service areas in Florida, North Carolina, South Carolina, Louisiana, and Nevada.

Acceptance of Stipulation

9. The Stipulation will provide CWSNC and its ratepayers just and reasonable rates when combined with the rate effects of the Commission's decisions regarding the Unsettled Issues in this proceeding.

10. The provisions of the Stipulation are just and reasonable to all parties to this proceeding, as well as the CWSNC ratepaying customers, and serve the public interest.

11. It is appropriate to approve the Stipulation in its entirety.

Customer Concerns and Service

12. As of the 12-month period ended March 31, 2019, CWSNC served approximately 30,724 water customers and 20,105 wastewater customers, including CLMS. For the same period, CWSNC also had 3,532 water availability customers in Carolina Forest, Woodrun, Linville Ridge, Sapphire Valley, Connestee Falls, and Fairfield Harbour; and 1,274 sewer availability customers in Sapphire Valley, Connestee Falls, and Fairfield Harbour. CWSNC operates 96 water utility systems and 37 sewer utility systems.

13. A total of 23 witnesses testified at the six public witness hearings held for the purpose of receiving customer testimony.[5] In general, public witness testimony at those hearings primarily dealt with objections to the rate increase with some customers raising concerns about quality of service, including, but not limited to, old equipment, delays in attention to meter repair, hardness of the water, digital meter boxes installed below the water table, boil water notices (including incidents and related communication), sewer spills in the lake at Connestee Falls, fluoride in the water, the ratio of base to fixed charges, response time to some inquiries, mineral content, the proposed Consumption Adjustment Mechanism, and the requirement of paying sewer charges while a home was unoccupied due to hurricane damage.

14. As of November 15, 2019, the Public Staff had received approximately 316 written customer statements of position from CWSNC customers. The service areas represented by those submitting such statements are: Belvedere (1), Brandywine Bay (2), Carolina Pines (1), Carolina Trace (11), Corolla Light/Monteray Shores (1), Connestee Falls (48), Fairfield Harbour (33), Kings Grant (1), Sapphire Valley (2), The Point (161), Treasure Cove (1), Ski Mountain (1) Waterglyn, (1) Woodhaven (1), and unspecified service areas (51).[6] All of the customers objected to the magnitude and frequency of the

[5] As noted above in the procedural history, there were no witnesses in Manteo, four in Charlotte, none in Boone, nine in Asheville, four in Raleigh, and six in Jacksonville.

[6] Approximately 80% of the customer statements came from four subdivisions or systems. Public Staff witness Casselberry testified that nearly all of the customers in The Point Subdivision opposed CWSNC's proposed Pilot Program.

Company's rate increases. Their primary concern was that CWSNC's request for another rate increase was so soon after the most recent increase was granted in February 2019. Customers were also concerned about the rate of return on common equity requested, the increase in rates compared to inflation, the impact of recent federal corporate income tax reductions, and the ratio of the base facility charge to volumetric charges. The majority of the customers in The Point Subdivision opposed CWSNC's proposed Pilot Program.[7]

15. CWSNC filed four verified reports with the Commission addressing the service-related concerns and other comments by witnesses who testified at the public witness hearings. The reports described each of the witnesses' specific service-related concerns and comments, the Company's response, and how each concern and comment was resolved or addressed, if applicable.

16. The Company's customers in the Bradfield Farms Subdivision, Brandywine Bay, and the Fairfield Harbour Service Area testified to hardness of the water and unpleasant taste, conditions that are not regulated by the North Carolina Department of Environmental Quality (DEQ).

17. It is appropriate for CWSNC to provide an estimate of the cost of installing a central water filter system for Bradfield Farms Subdivision and the Fairfield Harbour Service Area, for the homeowners' association's consideration, within 60 days of the final order in this case, as recommended by the Public Staff.[8]

18. CWSNC has continued its course of increased attention to the communications component of service to customers since the Company's last rate case, with a positive emphasis on more proactive communications and the expansion of several social media platforms.

19. The Public Staff's description of the quality of service provided by CWSNC as "good" is supported by the record in this case.

20. The overall quality of service provided by CWSNC is adequate.

[7] Public Staff witness Casselberry testified that the primary objections of customers at The Point Subdivision were that: (1) customers in The Point Subdivision were being penalized and that the block rates should apply to all CWSNC customers, (2) the average consumption did not take into account customers who live on the lake and use lake water for irrigation, (3) the covenants do not allow individual wells for irrigation, and (4) the conditions and rules for landscaping would increase the average bill by approximately 30% if the block tiered rates were approved.

[8] Public Staff witness Casselberry testified that in CWSNC's previous rate case, Sub 360, filed in 2018, the Public Staff investigated whether installing a central water filter system for Fairfield Harbour was a prudent investment. In that proceeding the Public Staff determined it was not a prudent investment because most customers had individual water softeners and filter systems in their homes and the cost in 2011 to install the system was approaching $1 million dollars. However, since it still remains an issue with customers at Fairfield Harbour and Bradfield Farms, the Public Staff recommended that if the majority of homeowners want a central water filter system, a monthly surcharge could be added to customer bills in those service areas to recover the costs for the systems.

Rate Base

21. The appropriate level of rate base used and useful in providing service is $132,897,368 for CWSNC's combined operations, itemized as follows:

Item	Amount
Plant in service	$238,212,084
Accumulated depreciation	(57,897,943)
Net plant in service	180,314,141
Cash working capital	2,404,800
Contributions in aid of construction	(40,270,675)
Advances in aid of construction	(32,940)
Accumulated deferred income taxes	(5,995,444)
Customer deposits	(315,447)
Inventory	271,956
Gain on sale and flow back taxes	(417,811)
Plant acquisition adjustment	(837,878)
Excess book value	(0)
Cost-free capital	(261,499)
Average tax accruals	(143,198)
Regulatory liability for excess deferred taxes	(3,941,344)
Deferred charges	2,122,707
Pro forma plant	0
Original cost rate base	$132,897,368

Operating Revenues

22. The appropriate level of operating revenues under present rates for use in this proceeding is $33,968,582, consisting of service revenues of $33,852,232 and miscellaneous revenues of $387,492, reduced by uncollectibles of $271,142.

Maintenance and General Expense

23. The appropriate level of maintenance expense and general expense for combined operations for use in this proceeding is $14,897,501 and $6,560,142, respectively.

24. It is appropriate for CWSNC to recover total rate case expenses of $519,416 related to the current proceeding and $649,806 of unamortized rate case costs related to the prior proceedings in Docket Nos. W-354, Sub 356 (Sub 356) and W-354, Sub 360 (Sub 360).

25. It is appropriate to amortize the total rate case costs for the current and prior proceedings over five years and to include an annual level of costs in the amount of

$73,911 related to miscellaneous regulatory matters, resulting in an annual level of rate case expense of $307,755, as agreed to by the Stipulating Parties.

Storm Reserve Fund and Normalized Storm Damage Expense

26. It is reasonable and appropriate for CWSNC to include in rates an annualized level of storm expenses in its maintenance and repair expense, based on a ten-year average of the Company's actual storm costs. This is the first general rate case proceeding in which CWSNC has sought Commission approval of a normalized level of storm expenses to be included in base rates. As part of the Stipulation CWSNC and the Public Staff agreed that CWSNC would rescind its request for a storm reserve fund and that the calculation of normalized storm damage expense would be based on a ten-year average of the Company's actual storm costs rather than utilizing the Company's requested three-year average.

27. The appropriate annual amount of normalized storm costs that should be included in the Company's rates in this case is $34,567, as set out in the Stipulation.

Hurricane Florence Expense

28. It is reasonable and appropriate for CWSNC to include in rates the incremental operating and maintenance (O&M) costs amounting to $146,773 incurred by the Company related to Hurricane Florence.

29. The Company and the Public Staff have agreed to use deferral accounting treatment for Hurricane Florence storm-related expenses, which will be amortized over three years.

30. It is appropriate to include in the Company's maintenance and repair expense Hurricane Florence storm-related costs in the amount of $48,924, as set out in the Stipulation.

Deferral of Wastewater Treatment Plant and AMR Meter Installation Projects

31. In its Petition for an Accounting Order to Defer Post-In-Service Depreciation and Financing Costs Relating to Major New Projects in Sub 365 CWSNC requested deferral accounting treatment for post-in-service depreciation expense and financing costs (carrying costs) related to the Connestee Falls wastewater treatment plant (WWTP) project in Buncombe County; the Nags Head WWTP project in Dare County; the Fairfield Mountain AMR meter installation project in Transylvania County; and the Connestee Falls AMR meter installation project, also in Buncombe County.

32. During the test year for this rate case CWSNC earned a return on equity per books of 1.63% on a consolidated basis. The Company's current rates were set in the Sub 360 rate case effective for service rendered on and after February 21, 2019, based upon an authorized rate of return on common equity of 9.75%. CWSNC invested

approximately $22 million of additional capital in its North Carolina water and sewer systems since the Sub 360 rate case, which served to depress its post-test year earned rate of return on common equity.

33. Each of the four capital projects covered by the Petition requesting deferral accounting treatment was completed and placed in service prior to the expert witness hearing in these proceedings. As evidenced by the Stipulation, CWSNC and the Public Staff agreed to the Company's deferral of incremental post-in-service depreciation expense and financing costs of the two WWTP projects and to the amount of the costs to be included in the rate case.

34. The Public Staff did not agree to deferral accounting treatment for the incremental post-in-service depreciation expense and return on capital expenditures relating to the two AMR meter installation projects.

35. In this case the two WWTP projects subject to the Company's deferral request were prudent and necessary to the provision of service, and the costs for each of those projects were reasonable and prudently incurred. CWSNC and the Public Staff agree that the Company should be authorized to defer post-in-service costs of $1,098,778 for the two WWTP projects ($520,144 for Connestee Falls and $578,634 for Nags Head). CWSNC and the Public Staff also agree that the rate of return on common equity impact is 434 basis points for the Uniform Sewer Rate Division.

36. The project costs for each of the two WWTP projects, considered both collectively and singularly, are unusual or extraordinary in that they represent major capital investments in the Company's infrastructure; they are non-routine projects which are of considerable complexity and major significance; and they are necessary to CWSNC's provision of safe, adequate, reliable, and affordable utility service in this state. The WWTP costs are of a magnitude that would have an adverse material impact on the Company's financial condition if they are not afforded deferral accounting treatment.

37. It is reasonable and appropriate for CWSNC to receive deferral accounting treatment for the post-in-service depreciation expense and carrying costs related to the Company's capital investments in the WWTPs placed in service at Nags Head and Connestee Falls during the pendency of this proceeding.

38. The Company should be authorized to defer and amortize post-in-service depreciation expense and carrying costs in the amount of $1,098,778 related to its capital investments in the Nags Head and Connestee Falls WWTPs for the ten- and eight-month periods, respectively, from their in-service dates until the projects are included for recovery in base rates, as stipulated between CWSNC and the Public Staff. These costs should be amortized over a period of five years.

39. CWSNC expects significant ongoing capital needs at levels comparable to the $22 million additional capital it invested in its North Carolina water and sewer systems since the Sub 360 rate case. Deferral accounting treatment for the post-in-service costs

related to the two WWTPs is appropriate to support the Company's ability to earn its authorized return and, as a result, could impact CWSNC's ability to finance needed investments on reasonable terms. Accordingly, deferral accounting treatment for the two WWTP costs will have a favorable impact on CWSNC's earnings and financial standing in general thereby enhancing the Company's ability to access and obtain capital on favorable terms and such results will accrue to the benefit of the Company's customers as well as to its investors.

40. The two AMR meter installation projects included in CWSNC's deferral accounting request were prudent and the costs for the installation were reasonable and prudently incurred. CWSNC and the Public Staff agree that the rate of return on common equity impact is 24 basis points for the Uniform Water Rate Division.[9] CWSNC and the Public Staff also agree that the requested cost deferral amount related to the AMR meter installation costs is $64,736 for the eight-month period from their in-service dates until the projects are included for recovery in base rates in this case.

41. The two AMR meter installation projects in the Fairfield Mountain and Connestee Falls service areas are not unusual or extraordinary, and thus the incremental post-in-service depreciation expense and carrying costs related to the two projects are not appropriate for deferral accounting treatment.

Depreciation and Amortization Expense

42. The appropriate level of depreciation and amortization expense for combined operations for use in this proceeding is $5,026,554.

Franchise, Property, Payroll, and Other Taxes

43. The appropriate level of franchise, property, payroll, and other taxes for use in this proceeding is $795,507 for combined operations, consisting of ($655) for franchise and other taxes, $268,734 for property taxes, and $527,428 for payroll taxes.

Regulatory Fee and Income Taxes

44. It is reasonable and appropriate to calculate regulatory fee expense using the regulatory fee rate of 0.13% effective July 1, 2019, pursuant to the Commission's June 18, 2019 Order issued in Docket No. M-100, Sub 142. The appropriate level of regulatory fee for use in this proceeding is $44,159.

[9] Calculated on a rate division basis, per Public Staff DeStefano Cross-Examination Exhibit 2. The total company ROE impact is 13 basis points as shown on Public Staff witness Henry Late-Filed Exhibit 4, Line 9.

45. It is reasonable and appropriate to use the current North Carolina corporate income tax rate of 2.50% to calculate CWSNC's revenue requirement. The appropriate level of state income taxes for use in this proceeding is $75,474.

46. It is reasonable and appropriate to use the federal corporate income tax rate of 21.00% to calculate CWSNC's revenue requirement. The appropriate level of federal income taxes for use in this proceeding is $618,133.

47. It is appropriate to calculate income taxes for ratemaking purposes based on the adjusted level of revenues and expenses and the tax rates for utility operations.

The Federal Tax Cuts and Jobs Act

48. CWSNC's federal protected EDIT should continue to be flowed back in accordance with the Reverse South Georgia Method (RSGM) as ordered by the Commission in the Sub 360 Order.

49. It is reasonable and appropriate, for purposes of this proceeding, for CWSNC to refund its remaining federal unprotected EDIT balances over 24 months instead of the remaining 35 months as originally ordered by the Commission in the Sub 360 Order.

50. CWSNC's North Carolina EDIT recorded pursuant to the Commission's May 13, 2014 Order Addressing the Impacts of HB 998 on North Carolina Public Utilities issued in Docket No. M-100, Sub 138 should continue to be amortized in accordance with the Commission's Sub 356 Order.

Capital Structure, Cost of Capital, and Overall Rate of Return

51. The cost of capital and revenue increase approved in this order is intended to provide CWSNC, through sound management, the opportunity to earn an overall rate of return of 7.39%. This overall rate of return is derived from applying an embedded cost of debt of 5.36%, and a rate of return on common equity of 9.50%, to a capital structure consisting of 50.90% long-term debt and 49.10% common equity.

52. A 9.50% rate of return on common equity for CWSNC is just and reasonable in this general rate case.

53. A 49.10% equity and 50.90% debt ratio is a reasonable and appropriate capital structure for CWSNC in this case.

54. A 5.36% cost of debt for CWSNC is reasonable and appropriate for the purpose of this case.

55. Any increase in the Company's rate for service will be difficult for some of CWSNC's customers to pay, in particular for those considered to be low-income customers.

56. Continuous safe, adequate, reliable, and affordable water and wastewater utility service by CWSNC is essential to CWSNC's customers.

57. The rate of return on common equity and capital structure approved by the Commission appropriately balances the benefits received by CWSNC's customers from CWSNC's provision of safe, adequate, and reliable water and wastewater utility service with the difficulties that some of CWSNC's customers will experience in paying the Company's increased rates.

58. The 9.50% rate of return on common equity and the 49.10% equity capital structure approved by the Commission balance CWSNC's need to obtain equity and debt financing with its customers' need to pay the lowest possible rates.

59. The authorized levels of overall rate of return and rate of return on common equity set forth above are supported by competent, material, and substantial record evidence; are consistent with the requirements of N.C.G.S. § 62-133; and are fair to CWSNC's customers generally and in light of the impact of changing economic conditions.

Revenue Requirement

60. CWSNC's rates should be changed by amounts which, after all pro forma adjustments, will produce the following increases in revenues:

Item	Amount
CWSNC Uniform Water	$ 1,778,015
CWSNC Uniform Sewer	2,929,386
BF/FH/TC Water	96,561
BF/FH Sewer	141,797
Total	$4,945,759

These increases will allow CWSNC the opportunity to earn a 7.39% overall rate of return, which the Commission has found to be reasonable upon consideration of the findings in this order.

Rate Design

61. Regarding the CLMS sewer service area, CWSNC has maintained the CLMS system at the same rates for the last four general rate cases (Docket No. W-354, Subs 336, 344, 356, and 360) in order to allow the remainder of the Uniform Sewer Rate Division to move toward parity with the CLMS sewer rates. In this proceeding the Company proposes to consolidate the CLMS sewer service area rates with the Uniform

Sewer Rate Division rates, as the total Uniform Sewer revenue requirement is currently sufficient to allow for such consolidation of rate structures. It is reasonable and appropriate at this time to consolidate the CLMS sewer service area rates with the Company's Uniform Sewer rates. This rate design is supported by both the Public Staff and CLCA.

62. It is reasonable and appropriate for CWSNC's rate design for water utility service for its Uniform Water and Bradfield Farms/Fairfield Harbour/Treasure Cove (BF/FH/TC) Water residential customers to be based on a 50/50 ratio of base charge to usage charge, and to use an 80/20 ratio of base charge to usage charge for CWSNC's Uniform Sewer residential customers, as set out in the Stipulation.

63. The rates and charges included in Appendices A-1 and A-2, and the Schedules of Connection Fees for Uniform Water and Uniform Sewer, attached hereto as Appendices B-1 and B-2, are just and reasonable and should be approved.

Water and Sewer System Improvement Charges

64. Consistent with Commission Rules R7-39(k) and R10-36(k), CWSNC's WSIC and SSIC surcharges will reset to zero as of the effective date of the approved rates in this proceeding.

65. Pursuant to N.C.G.S. § 62-133.12, the cumulative maximum charges that the Company can recover between rate cases cannot exceed 5% of the total service revenues approved by the Commission in this rate case.

Recommendations of the Public Staff

66. It is reasonable and appropriate for the Company, in its next general rate case filing, to ensure that its NCUC Form W-1, Item 26 has been carefully reviewed so that the filing does not include double bills, that the Company accounts for multi-unit customers, and that other bills produced, such as final bills, late notices, re-bills, or other miscellaneous bills, are not included in the filing.

67. It is reasonable to approve an increase in the Company's reconnection fee from $27.00 to $42.00.

68. The connection charge of $1,080 for water and $1,400 for sewer for Winston Pointe Subdivision, Phase IA, recommended by the Public Staff is reasonable and appropriate.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 1–4

General Matters

The evidence supporting these findings of fact is found in the verified Application and the accompanying NCUC Form W-1, the testimony and exhibits of the witnesses, and the entire record in this proceeding. These findings are informational, procedural, and jurisdictional in nature and are not contested by any party.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 5–11

The Stipulation and Acceptance of Stipulation

The evidence supporting these findings of fact is found in the Stipulation, the testimony of both CWSNC's and the Public Staff's witnesses, the affidavit of Matthew Schellinger, and Revised Settlement Exhibits I and II.

On November 27, 2019, CWSNC and the Public Staff entered into and filed a Partial Settlement Agreement and Stipulation, which memorializes their agreements on some of the issues in this proceeding. Attached to the Stipulation is Settlement Exhibit 1, which demonstrates the impact of the Stipulating Parties' agreements on the calculation of CWSNC's gross revenue for the test year ended March 31, 2019. Thus, the Stipulation is based upon the same test period as the Company's Application, adjusted for certain changes in plant, revenues, and costs that were not known at the time the case was filed, but are based upon circumstances occurring or becoming known through the close of the expert witness hearing. In addition to the Stipulating Parties' agreements on some of the issues in this proceeding, the Stipulation provides that CWSNC and the Public Staff agree that the Stipulation reflects a give-and-take partial settlement of contested issues, and that the provisions of the Stipulation do not reflect any position asserted by either CWSNC or the Public Staff, but instead reflect compromise and settlement between them. The Stipulation provides that it is binding as between CWSNC and the Public Staff, and that it is conditioned upon the Commission's acceptance of the Stipulation in its entirety. No party filed a formal statement or presented testimony indicating opposition to the Stipulation. During the expert witness hearing in response to a question from the Commission, CLCA indicated that it has no objection to the Stipulation. Tr. vol. 9, 200–01. There are no other parties to this proceeding.

The key aspects of the Stipulation are as follows:

- ***Tariff Rate Design*** – The Stipulating Parties agree that rate design in this case should be based on a 50/50 ratio of fixed/volumetric revenues for the Uniform Water and BF/FH/TC Water residential customers and an 80/20 ratio of fixed/volumetric revenues for the Uniform Sewer residential customers.

- ***Capital Structure*** – The Stipulating Parties agree that the capital structure appropriate for use in this proceeding is a capital structure consisting of 49.10% common equity and 50.90% long-term debt at a cost of 5.36%.

- ***Property Insurance Expense*** – The Stipulating Parties agree to the Company's rebuttal position of $279,912.

- ***Treatment of Water Service Corporation (WSC) Rent Expense*** – The Stipulating Parties agree to the Public Staff's calculation of WSC's rent expense for its Chicago, Illinois office lease as reflected in Revised Feasel Exhibit I, Schedule 3-11.

- ***Water Loss Adjustment for Purchased Water Expense*** – The Stipulating Parties agree upon a 20% water loss threshold for Whispering Pines, Zemosa Acres, Woodrun, High Vista, and Carolina Forest subdivisions.

- ***Purchase Acquisition Adjustment (PAA) Amortization Expense Rates*** – The Company agrees to the Public Staff's PAA amortization rates per Revised Feasel Exhibit I, Schedule 3-15.

- ***Storm Reserve Fund and Storm Expense*** – The Company agrees to rescind its request to implement its proposed Storm Reserve Fund, and to utilize the Public Staff's position per Revised Feasel Exhibit I, Schedule 3-4.

- ***Application of Hurricane Florence Insurance Proceeds*** – The Public Staff agrees to the Company's rebuttal position removing insurance overpayments to date from the insurer.

- ***Accumulated Deferred Income Taxes (ADIT)*** - The Company agrees to the Public Staff's proposed calculations of ADIT regarding unamortized rate case expense. The Stipulating Parties agree to revise ADIT for any updates made to rate case expense deferrals.

- ***Deferral Accounting for Capital Investments in WWTPs -*** The Stipulating Parties agree that deferral accounting treatment for post-in-service depreciation expense and carrying costs related to the Company's capital investments in WWTPs placed in service at Nags Head and Connestee Falls during the pendency of this proceeding is reasonable and appropriate.

- ***Regulatory Commission Expense*** - The Stipulating Parties agree to a methodology for calculating regulatory commission expense, also known as rate case expense, and agreed to update the number in Settlement Exhibit 1, Line 41, for actual and estimated costs once supporting documentation is provided by the Company. The Stipulating Parties agreed to amortize rate case expenses for a five-year period.

- ***Revenue Requirement*** – The Stipulating Parties agree to certain other revenue requirement issues designated as "Settled Items" on Settlement Exhibit 1, which was attached to the Stipulation and is incorporated by reference therein.

As the Stipulation has not been adopted by all of the parties to this docket, its acceptance by the Commission is governed by the standards set out by the North Carolina Supreme Court in *State ex rel. Utils. Comm'n v. Carolina Util. Customers Ass'n, Inc.*, 348 N.C. 452, 500 S.E.2d 693 (1998) (*CUCA I*), and *State ex rel. Utils. Comm'n v. Carolina Util. Customers Ass'n, Inc.*, 351 N.C. 223, 524 S.E.2d 10 (2000) (*CUCA II*). In *CUCA I*, the Supreme Court held that:

> a stipulation entered into by less than all of the parties as to any facts or issues in a contested case proceeding under Chapter 62 should be accorded full consideration and weighed by the Commission with all other evidence presented by any of the parties in the proceeding. The Commission must consider the nonunanimous stipulation along with all the evidence presented and any other facts the Commission finds relevant to the fair and just determination of the proceeding. The Commission may even adopt the recommendations or provisions of the nonunanimous stipulation as long as the Commission sets forth its reasoning and makes "its own independent conclusion" supported by substantial evidence on the record that the proposal is just and reasonable to all parties in light of all the evidence presented.

348 N.C. at 466, 500 S.E.2d at 703. However, as the Court made clear in *CUCA II*, the fact that fewer than all of the parties have adopted a settlement does not permit the Court to subject the Commission's order adopting the provisions of a nonunanimous stipulation to a "heightened standard" of review. *CUCA II*, 351 N.C. at 231, 524 S.E.2d at 16. Rather, the Court said that Commission approval of the provisions of a nonunanimous stipulation "requires only that the Commission ma[k]e an independent determination supported by substantial evidence on the record [and] . . . satisf[y] the requirements of [C]hapter 62 by independently considering and analyzing all the evidence and any other facts relevant to a determination that the proposal is just and reasonable to all parties." *Id*. at 231-32, 524 S.E.2d at 17.

Based upon the foregoing and the entire record herein, the Commission finds that the Stipulation was entered into by the Stipulating Parties after full discovery and extensive negotiations, that the Stipulation is the product of give-and-take in settlement negotiations between CWSNC and the Public Staff, and that the Stipulation represents a reasonable and appropriate resolution of certain specific matters in dispute in this proceeding. In making this finding the Commission gives substantial weight to the testimony of CWSNC witness DeStefano and the testimony and supporting exhibits of Public Staff witnesses Henry and Feasel which support the Stipulation, and notes that no party expressed opposition to the provisions of the Stipulation. In addition when the provisions of the Stipulation are compared to CWSNC's Application and the recommendations included in the testimony of the Public Staff's witnesses, the Stipulation results in a number of downward adjustments to the expenses sought to be recovered by CWSNC, and resolves issues, some of which were more important to CWSNC and, others of which were more important to the Public Staff. Therefore, the Commission further finds that the Stipulation is material evidence to be given appropriate weight in this proceeding, along with all other evidence of record, including that submitted by CWSNC, the Public Staff, CLCA, and the public witnesses who testified at the hearings.

In addition, the Commission finds that the Stipulation is a nonunanimous settlement of matters in controversy in this proceeding and that the Stipulation resolves only some of the disputed issues between CWSNC and the Public Staff. The Stipulation leaves the following Unsettled Issues to be resolved by the Commission: (1) rate of return on common equity; and (2) the deferral of expenses related to the installation of AMR meters in the Company's Fairfield Mountain and Connestee Falls service areas.

After careful consideration the Commission finds that when combined with the rate effects of the Commission's decisions regarding the foregoing Unsettled Issues, the Stipulation strikes a fair balance between the interests of CWSNC to maintain its financial strength at a level that enables it to attract sufficient capital on reasonable terms, on the one hand, and its customers to receive safe, adequate, reliable, and affordable water and sewer service at the lowest reasonably possible rates, on the other. The Commission finds that the resulting rates are just and reasonable to both CWSNC and its ratepayers. In addition, the Commission finds that the provisions of the Stipulation are just and reasonable to all parties to this proceeding and serve the public interest, and that it is appropriate to approve the Stipulation in its entirety.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 12-20

Customer Concerns and Service

The evidence supporting these findings of fact is found in the testimony of the public witnesses appearing at the hearings, in the testimony of Public Staff witness Casselberry, in the testimony and exhibits of CWSNC witnesses DeStefano and Mendenhall, and in the verified reports filed by CWSNC in response to the concerns testified to by the public witnesses at hearings.

On June 28, 2019, CWSNC filed an application for a general rate increase, which was verified by CWSNC's Financial Planning and Analysis Manager. The Application stated that CWSNC presently serves approximately 34,915 water customers and 21,403 sewer customers in North Carolina. The Company's service territory spans 38 counties in North Carolina, from Corolla in Currituck County to Bear Paw in Cherokee County.

The Commission held hearings throughout CWSNC's service territory for the purpose of receiving testimony from members of the public, and particularly from CWSNC's water and wastewater customers, as follows:

Hearing Date	Location	Public Witnesses
September 5, 2019	Charlotte	William Colyer, Rachel Fields, William Michael Wade, and James Sylvester
September 10, 2019	Manteo	None
October 8, 2019	Boone	None
October 9, 2019	Asheville	Chuck Van Rens, Jack Zinselmeier, Jeff Geisler, Phil Reitano, Jeannie Moore, Linda Huber, Brian McCarthy, Ron Shuping, and Steve Walker
October 14, 2019	Raleigh	Alfred Rushatz, Vince Roy, Mark Gibson, and David Smoak
October 22, 2019	Jacksonville	Danny Conner, Ralph Tridico, James C. Kraft, John Gumbel, David Stevenson, and Irving Joffee

Public Staff witness Casselberry testified that her investigation included a review of customer complaints, contact with the DEQ Division of Water Resources (DWR) and Public Water Supply Section (PWSS), review of Company records, and analysis of revenues at existing and proposed rates. Tr. vol. 8, 78. Witness Casselberry testified that she contacted the seven regional offices in North Carolina. The PWSS identified four water systems – Riverwood, Meadow Glen, Wood Trace, and Sapphire Valley – which required action by CWSNC; DWR identified three wastewater treatment plants – CLMS, Carolina Trace, and Asheley Hills – which required action by CWSNC. Witness Casselberry investigated each concern and testified that CWSNC has taken the necessary actions and that the Public Staff is satisfied that the concerns reported by PWSS and DWR have been addressed or are in the process of being resolved. Tr. vol. 8, 81.

In addition, witness Casselberry testified that she had reviewed approximately 316 consumer statements of position from CWSNC customers received by the Public Staff as a result of this proceeding. Witness Casselberry stated that the service areas represented by those submitting statements are Belvedere (1), Brandywine Bay (2), Carolina Pines (1), Carolina Trace (11), Corolla Light/Monteray Shores (1), Connestee Falls (48), Fairfield Harbour (33), Kings Grant (1), Sapphire Valley (2), The Point (161), Treasure Cove (1), Ski Mountain (1), Waterglyn (1), Woodhaven (1), and unspecified service areas (51). Tr. vol. 8, 96. She testified that all customers objected to the magnitude of the rate increase. She indicated that public witnesses' primary concern was that CWSNC's request for another rate increase was filed just four months after it had been granted an increase in rates in February 2019. Most of the customers in Connestee Falls said there was no justification for such a large increase, that they had to pay the base charge for service when they were not occupying their homes, and that they experienced numerous leaks and boil water advisory notices over the summer. The customers in Fairfield Harbour said that they were still recovering from Hurricane Florence and that they could not afford an increase. They also stated that the water quality was poor and that they had to install individual softeners and filter systems. Nearly all of the customers in The Point Subdivision opposed CWSNC's proposed Pilot Program. Their primary objections were that (1) customers in The Point were being penalized, and that the block rates should apply to all CWSNC customers, (2) the average consumption did not take into account customers who live on the lake and use lake water for irrigation, (3) the covenants do not allow individual wells for irrigation, and (4) the conditions and rules for landscaping would increase the average bill by approximately 30 percent if the block tiered rates were approved. Tr. vol. 8, 96–101. Customer concerns were addressed in Public Staff witness Casselberry's supplemental testimony filed on November 15, 2019.

Witness Casselberry also testified regarding service and water quality complaints registered by customers at each of the five public hearings. Tr. vol. 8, 111. She stated that she had read each of the four reports filed by CWSNC in response to the customer concerns and complaints which were included in testimony at the public hearings. Witness Casselberry testified that there were a few isolated service issues which the Company had addressed or was in the process of resolving.

After reviewing the testimony and complaints of the customers regarding water quality and hardness in the Fairfield Harbour and Bradfield Farms service areas, witness Casselberry stated CWSNC should provide an estimate of the cost of installing a central water filter system for Bradfield Farms Subdivision, Tr. vol. 8, 102–03, and the Fairfield Harbour Service Area, Tr. vol. 8, 109–110, for the homeowners' associations' consideration.

With the exception of her recommendation for Bradfield Farms Subdivision and the Fairfield Harbour Service Area, witness Casselberry had no additional comments or recommendations. Tr. vol. 8, 111. She testified that CWSNC's quality of service is good. Tr. vol. 8, 111. Witness Casselberry also testified that the quality of water meets the standards set forth by the Safe Drinking Water Act and is satisfactory. Tr. vol. 8, 111.

With regard to the concerns expressed by customers about the Company's proposed Pilot Program to test conservation rates in The Point Subdivision, the Commission acknowledges that this matter is no longer an issue in this proceeding because CWSNC withdrew its request for authority to implement its proposed Pilot Program on November 18, 2019. CWSNC stated its withdrawal of the Pilot Program was based on the Public Staff's opposition to CWSNC's proposed Pilot Program in the present case and the existence of the Commission's generic rate design proceeding in Docket No. W-100, Sub 59 (Sub 59). CWSNC noted that the Company will continue to actively participate in the Commission's Sub 59 generic rate design proceeding to explore and consider rate design proposals that may better achieve the Company's desire for revenue sufficiency and stability, while also sending appropriate signals to consumers that support and encourage water efficiency and conservation.

Additionally, in CWSNC's November 18, 2019 filing, the Company withdrew its request for the consumption adjustment mechanism (CAM) proposed in this proceeding. CWSNC stated its withdrawal for the CAM was prompted by the Commission's initiation of a rulemaking proceeding in Docket No. W-100, Sub 61 on November 14, 2019; the Public Staff's testimony in this matter recommending that the Commission deny CWSNC's request to implement a CAM; and the Company's expectation that other water and wastewater providers will seek to have input on the implementation of any CAM guidelines. CWSNC maintained that the contested issues concerning the requested CAM are more suitable for resolution in the generic proceeding than in this rate case proceeding.

Based upon the foregoing, and after careful review of the testimony of the customers at the public hearings, the Company's reports on customer comments, the Public Staff's engineering and service quality investigation, and the late-filed exhibits submitted by CWSNC and the Public Staff, the Commission concludes that, consistent with the statutory requirements of N.C.G.S. § 62-131(b), the overall quality of service provided by CWSNC is adequate, efficient, and reasonable.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 21

Rate Base

The evidence supporting this finding of fact is found in the verified Application and the accompanying NCUC Form W-1, the testimony of Company witness DeStefano, the testimony of Public Staff witnesses Feasel and Henry, the Stipulation, and Revised Settlement Exhibits I and II.

The following table summarizes the differences between the Company's level of rate base from its Application and the amounts recommended by the Public Staff:

Item	Company Per Application	Difference	Amount Per Public Staff
Plant in service	$217,460,239	$20,751,845	$238,212,084
Accumulated depreciation	($55,739,757)	($2,158,186)	($57,897,943)
Net plant in service	161,720,483	18,593,659	180,314,141
Cash working capital	2,467,676	(62,876)	2,404,800
Contributions in aid of construct.	(40,916,105)	645,430	(40,270,675)
Advances in aid of construction	(32,940)	0	(32,940)
Accum. deferred income taxes	(6,699,939)	704,495	(5,995,444)
Customer deposits	(304,114)	(11,333)	(315,447)
Inventory	271,956	0	271,956
Gain on sale and flow back taxes	(131,695)	(286,116)	(417,811)
Plant acquisition adjustment	(873,734)	35,856	(837,878)
Excess book value	(331)	331	0
Cost-free capital	(261,499)	0	(261,499)
Average tax accruals	125,013	(268,211)	(143,198)
Regulatory liability for EDIT	(3,941,344)	0	(3,941,344)
Deferred charges	2,252,645	(129,938)	2,122,707
Pro forma plant	17,195,228	(17,195,228)	0
Original cost rate base	$130,871,300	$2,026,068	$132,897,368

On the basis of the Stipulation and revisions made by the Public Staff in its Revised Settlement Exhibits I and II, the Company and the Public Staff are in agreement concerning all components of rate base except for the amount of cash working capital. Therefore, the Commission finds that the uncontested adjustments to rate base recommended by the Public Staff are appropriate adjustments to be made in this proceeding.

CWSNC and the Public Staff disagree on the amount of cash working capital to include in rate base for use in this proceeding due to the unsettled issue concerning the deferral accounting treatment of the AMR meter installation projects in Fairfield Mountain and Connestee Falls. Based on the testimony of Company witness DeStefano, CWSNC disagrees with the Public Staff's recommendation to deny deferral accounting treatment for the two AMR meter installation projects. As a result of their differing positions concerning this issue and its effect on their respective recommended level of maintenance and repair expense, CWSNC and the Public Staff recommend different amounts for cash working capital to include in rate base, $2,406,418 and $2,404,800, respectively.

Based on the conclusions reached elsewhere in this order concerning the deferral accounting treatment for AMR meter installation projects in Fairfield Mountain and Connestee Falls, the Commission concludes that the appropriate amount for cash working capital is $2,404,800. Consequently, the appropriate level of rate base for combined operations for use in this proceeding is as follows:

Item	Amount
Plant in service	$238,212,084
Accumulated depreciation	($57,897,943)
Net plant in service	180,314,141
Cash working capital	2,404,800
Contributions in aid of construction	(40,270,675)
Advances in aid of construction	(32,940)
Accumulated deferred income taxes	(5,995,444)
Customer deposits	(315,447)
Inventory	271,956
Gain on sale and flow back taxes	(417,811)
Plant acquisition adjustment	(837,878)
Excess book value	0
Cost-free capital	(261,499)
Average tax accruals	(143,198)
Regulatory liability for excess deferred taxes	(3,941,344)
Deferred charges	2,122,707
Pro forma plant	0
Original cost rate base	$132,897,368

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 22

Operating Revenues

The evidence supporting this finding of fact is found in the testimony of Public Staff witnesses Feasel and Casselberry, and Company witness DeStefano. The following table summarizes the differences between the Company's level of operating revenues under present rates from its Application and the amounts recommended by the Public Staff:

Item	Company per Application	Difference	Amount per Public Staff
Operating Revenues:			
Service revenues	$33,269,517	$582,715	$33,852,232
Miscellaneous revenues	353,280	34,212	387,492
Uncollectible accounts	(246,348)	(24,794)	(271,142)
Total operating revenues	$33,376,449	$592,133	$33,968,582

Based on the Stipulation and the revisions made by the Public Staff in its Feasel Revised Exhibits I and II, the Company does not dispute the following Public Staff adjustments to operating revenues under present rates:

Item	Amount
Reflect pro forma level of service revenues	$582,715
Adjustment to forfeited discounts	10,128
Adjustment to sale of utility property	24,084
Adjustment to uncollectible accounts	(24,794)
Total	$592,133

For reasons discussed elsewhere in this order, the Commission has found that the adjustments listed above are appropriate adjustments to be made to operating revenues under present rates in this proceeding.

Based on the foregoing, the Commission concludes that the appropriate level of operating revenues under present rates for combined operations for use in this proceeding is as follows:

Item	Amount
Service revenues	$33,852,232
Miscellaneous revenues	387,492
Uncollectible accounts	(271,142)
Total operating revenues	$33,968,582

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 23-25

Maintenance and General Expenses

The evidence for these findings of fact is found in the verified Application and the accompanying NCUC Form W-1; the testimony of Public Staff witnesses Feasel, Henry, and Darden; the testimony of Company witnesses DeStefano and Mendenhall; the affidavit of Matthew Schellinger; and the Revised Settlement Exhibits I and II.

The following table summarizes the differences between the Company's requested level of maintenance and general expenses and the amounts recommended by the Public Staff:

Item	Company Per Application	Difference	Amount Per Public Staff
Maintenance Expenses:			
Salaries and wages	$5,143,430	($193,719)	$4,949,710
Purchased power	2,110,722	(7,679)	2,103,043
Purchased water & sewer	2,171,965	47,278	2,219,243
Maintenance and repair	2,955,315	165,620	3,120,935
Maintenance testing	546,264	(1,832)	544,432
Meter reading	206,176	0	206,176
Chemicals	713,452	(19,856)	693,596
Transportation	539,115	(4,915)	534,200
Operating expenses charged to plant	(615,663)	(49,470)	(665,133)
Outside services - other	1,219,715	(28,417)	1,191,299
Total maintenance expenses	$14,990,492	($92,991)	$14,897,501
General Expenses:			
Salaries and wages	$2,386,901	($382,491)	$2,004,409
Office supplies and other office expense	569,400	(536)	568,864
Regulatory commission expense	303,485	4,269	307,754
Pension and other benefits	1,531,096	69,062	1,600,158
Rent	392,552	(62,244)	330,308
Insurance	664,043	118,519	782,562
Office utilities	751,728	(4,058)	747,670
Miscellaneous	355,931	(137,513)	218,417
Total general expenses	$6,955,135	($394,993)	$6,560,142

Regulatory Commission Expense

In his January 10, 2020 affidavit, Matthew Schellinger provided an amount of $519,416 for the actual costs incurred to date and the estimated expense to be incurred related to this rate case. Affiant Schellinger requested that the Commission approve total rate case costs of $1,169,222 to be amortized over five years. He stated that the $1,169,222 includes $649,806 for unamortized rate case expense from prior proceedings plus $519,416 related to this case. Affiant Schellinger commented that the annual amortization expense for rate case costs for this proceeding total $233,844 ($1,169,222 amortized over five years). Affiant Schellinger also requested that the Commission include in regulatory commission expense an annual amount of $73,911 in miscellaneous regulatory costs for filings and compliance type activities not directly related to rate case costs. He maintained that these expenses are a direct cost of service, are not disputed, and were agreed upon between CWSNC and the Public Staff in the Stipulation. In sum, Affiant Schellinger requested that the Commission include a total annual amount of

$307,755 in regulatory commission expense in this proceeding, consisting of rate case costs of $233,844 and miscellaneous regulatory costs of $73,911.

The Public Staff stated that it has reviewed the invoices and other supporting documents along with the rate case expense spreadsheet provided by CWSNC and found that the types of rate case expense in this rate case matched the nature of the expense in prior rate cases and the amount of these expenses in the current proceeding are appropriate and reasonable to be included in this rate case. The Public Staff and the Company are in agreement that the miscellaneous regulatory matters costs in the Company's books as provided in the affidavit of Matthew Schellinger should also be included as regulatory commission expense to be recovered in this rate case as a reasonable cost of service incurred by CWSNC. Therefore, in light of the foregoing the Commission finds that it is appropriate and reasonable to amortize the sum of the total rate case costs of $519,416 for the current proceeding and the unamortized rate case cost balance of $649,806 from the prior rate cases over five years and to include an annual level of costs in the amount of $73,911 related to miscellaneous regulatory matters, resulting in an annual level of regulatory commission expense of $307,755 to be recovered in this proceeding.

On the basis of the Stipulation and revisions made by the Public Staff in Henry Revised Exhibit I, Feasel Revised Exhibits I and II, and Revised Settlement Exhibits I and II, the Company and the Public Staff are in agreement concerning all adjustments recommended by the Public Staff to maintenance and general expenses except for maintenance and repair expense. Therefore, the Commission finds that the uncontested adjustments to maintenance and general expenses recommended by the Public Staff are appropriate adjustments to be made in this proceeding.

CWSNC and the Public Staff disagree on the amount of maintenance and repair expense to include in maintenance and general expenses in this proceeding due to the unsettled issue concerning the deferral accounting treatment of the AMR meter installation projects in Fairfield Mountain and Connestee Falls. Based on the testimony of Company witness DeStefano, CWSNC disagrees with the Public Staff's recommendation to deny deferral accounting treatment for the two AMR meter installation projects. As a result of their differing positions concerning this issue, CWSNC and the Public Staff recommend differing amounts for maintenance and repair expense, $3,133,882[10] and $3,120,935, respectively. The Company included an amount of $12,947 ($64,736 amortized over five years) in maintenance and repair expense related to its requested deferral accounting treatment for the two AMR meter installation projects whereas the Public Staff did not.

Based on the conclusions reached elsewhere in this Order concerning the deferral accounting treatment for the AMR meter installation projects in Fairfield Mountain and

[10] See page 160 of the Company's proposed order filed on January 10, 2020, in these dockets which includes the agreed-upon pro forma adjustments per the Stipulation and CWSNC's recommendations concerning the two unsettled issues in this rate case.

Connestee Falls, the Commission concludes that the appropriate level of maintenance and repair expense for combined operations for use in this proceeding is $3,120,935.

Based upon the foregoing, the Commission concludes that the appropriate level of maintenance and general expenses for combined operations for use in this proceeding are as follows:

Item	Amount
Maintenance Expenses:	
Salaries and wages	$4,949,710
Purchased power	2,103,043
Purchased sewer	2,219,243
Maintenance and repair	3,120,935
Maintenance testing	544,432
Meter reading	206,176
Chemicals	693,596
Transportation	534,200
Operation exp. charged to plant	(665,133)
Outside services - other	1,191,299
Total maintenance expenses	$14,897,501
General Expenses:	
Salaries and wages	$2,004,409
Office supplies and other office expense	568,864
Regulatory commission expense	307,754
Pension and other benefits	1,600,158
Rent	330,308
Insurance	782,562
Office utilities	747,670
Miscellaneous	218,417
Total general expenses	$6,560,142

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 26-27

Storm Reserve Fund and Normalized Storm Damage Expense

The evidence for these findings of fact is found in the verified Application and the accompanying NCUC Form W-1, the testimony of Public Staff witnesses Feasel and Henry, and the Stipulation and Revised Settlement Exhibits I and II.

In the Company's Application, it requested to establish a storm reserve fund to support extraordinary O&M costs resulting from damages sustained in severe storms such as Hurricane Florence. CWSNC witness DeStefano testified that CWSNC proposes to create a monthly, flat surcharge for each active customer's water and sewer service bill until the reserve threshold of $250,000 is reached. Witness DeStefano commented that CWSNC proposed to collect a monthly surcharge of $0.42 per customer per month based on the threshold of $250,000. In addition, this is the first general rate case proceeding in which CWSNC seeks Commission approval of a normalized level of storm expenses to be included in base rates. In NCUC Form W-1, Item 10, Schedule 24, the Company used three years (2016–2018) to calculate the average storm cost requested to be recovered in this rate case. Witness DeStefano maintained that the storm reserve fund would only be utilized if the Company's storm costs for the last 12 months exceed the level of normalized storm expenses included in the base rate revenue requirement.

Public Staff witness Henry testified that in addition to the storm reserve fund, CWSNC applied to include in rates a normalized level of storm expense calculated using a three-year average of actual storm expenses incurred, excluding Hurricane Florence expenses. Witness Henry stated that ten years has historically been used to calculate the average storm cost because a ten-year time period would include some years in which storm costs were high and others in which they were low, resulting in a more reasonable average than that which would result from using only the three most recent years. Additionally, witness Henry stated that using a ten-year time period has been approved by the Commission in prior decisions. For the reasons set forth in his prefiled testimony, witness Henry recommends that the Commission deny CWSNC's request for a storm reserve fund. In the Stipulation the Company agreed to rescind its request to implement its proposed storm reserve fund and also agreed to the Public Staff's use of a ten-year average for storm costs. The Stipulating Parties have agreed to a normalized level of storm expenses in the amount of $34,567, to be included in maintenance and repair expense.

Therefore, in light of the foregoing the Commission concludes that it is appropriate and reasonable to continue its historical practice of using a ten-year time period as the standard for calculating average annualized storm costs to be recovered in the Company's rates as an ongoing level of expense. Consequently, the appropriate annual level of normalized storm costs that should be included in CWSNC's rates in this proceeding is $34,567, as set out in the Stipulation.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 28-30

Hurricane Florence Expense

The evidence supporting these findings of fact is found in the Company's Petition for Accounting Order in Sub 363, the testimony of Company witness DeStefano, the testimony of Public Staff witnesses Henry and Feasel, the Stipulation, Settlement Exhibit I, and Revised Settlement Exhibits I and II in Sub 364.

On January 17, 2019, CWSNC filed a Petition for an Accounting Order to Defer Unplanned Incremental Hurricane Florence Storm Damage Expenses, Capital Investments, and Revenue Loss in Sub 363 requesting an accounting order authorizing it to establish a regulatory asset and defer until the Company's next general rate case costs incurred in connection with damage to the Company's water and wastewater systems resulting from the impacts of Hurricane Florence. Additionally, the Company sought Commission approval to defer O&M costs, lost revenues, and depreciation expense on its capital investments. According to the Sub 363 Petition, CWSNC's facilities suffered extensive damage due to the storm, particularly in the coastal region of the Company's service territory.

CWSNC stated that it incurred extraordinary, unplanned operating and capital costs, as well as lost revenues from customers who were forced to disconnect their service due to damage to their homes. Additionally, the Company provided invoices to the Public Staff showing that it has incurred, to date, $146,773 in storm-related incremental O&M expenses, $582,570 in capital investments, and $46,320 in estimated revenue loss. In its comments filed on April 4, 2019, the Public Staff did not object to CWSNC's recovery of a substantial portion of its 2018 verified storm O&M costs and deferral accounting treatment for the incremental O&M costs related to Hurricane Florence; however, it opposed CWSNC's request to defer depreciation expense associated with the Company's capital investments and lost revenues. Additionally, the Public Staff recommended that the amortization period begin as of October 2018, the date of the storm, and not begin with the effective date of the Company's next general rate case, which is the instant case, Sub 364, filed on June 28, 2019.

After considering prior cases and the tests applied by the Commission, the Public Staff determined that "the damage to CWSNC's system from Hurricane Florence was greater than that caused by any other storm in the Company's history, which will affect the Company's rate of return on common equity. The Public Staff concluded that this is an exceptional circumstance justifying some deferral of costs." Public Staff's Sub 363 Comments. However, in opposing CWSNC's request to defer depreciation expense associated with the Company's capital costs and lost revenues, the Public Staff cited the Commission's order in the last Duke Energy Progress, LLC. (DEP), general rate case, Docket No. E-2, Sub 1142, where DEP's request for deferral of depreciation expense, return on the undepreciated balance of capital costs, and the carrying costs on the entirety of the deferred costs was denied.

The Public Staff, therefore, recommends the following:

(a) that the Commission approve a deferral of $146,773 in 2018 Hurricane Florence storm O&M expenses, but no deferral of CWSNC's depreciation expense or lost revenues;
(b) that CWSNC be required to amortize the costs deferred over a three-year period beginning in October 2018;
(c) that upon final determination of the actual amount of costs of Hurricane Florence the Company be required to file a final accounting of said costs with the Commission for review and approval;
(d) that approval of this accounting procedure is without prejudice to the right of any party to take issue with the amount of or the ratemaking treatment accorded these costs in any future regulatory proceeding; and
(e) that any applicable insurance proceeds received by CWSNC will be used to offset the deferred O&M expenses.

As shown in Settlement Exhibit I, witness Feasel calculated a total deferral amount of $146,773 for the incremental O&M costs related to the 2018 storm costs with an amortization period of three years beginning in October 2018, using the procedure recommended by witness Henry. The Company and the Public Staff agree to the amount of Hurricane Florence storm-related costs included in Settlement Exhibit I as noted in the Stipulation.

The Commission finds and concludes that it is just and reasonable for the Company to receive deferral accounting treatment for the incremental O&M costs amounting to $146,773 in Hurricane Florence storm costs and that these costs should be amortized over three years. Consequently, it is appropriate to include in CWSNC's maintenance and repair expense Hurricane Florence storm-related costs in the amount of $48,924, as set out in the Stipulation.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 31-41

Deferral of WWTP Projects and AMR Meter Installation Projects

The evidence for these findings of fact is found in the record of Sub 365, including the initial comments of the Public Staff and the reply comments of the Company; the testimony of Company witnesses DeStefano and Mendenhall; the testimony and exhibits of Public Staff witnesses Henry, Feasel, and Junis; the Stipulation, and Revised Settlement Exhibits I and II.

Summary of the Evidence

On June 28, 2019, contemporaneously with the Sub 364 rate case application, the Company filed a Petition for an Accounting Order to Defer Post-In-Service Depreciation and Financing Costs Relating to Major New Projects in Sub 365.

On September 20, 2019, the Public Staff filed comments, and on October 21, 2019, CWSNC filed reply comments. On November 15, 2019, the Company filed a motion to consolidate the Sub 365 docket with the Sub 364 rate case proceeding, which was granted by Commission order dated November 19, 2019.

In its Sub 365 petition, CWSNC describes four major new projects that were in progress and would be placed in service after the close of the test year but during the pendency of this general rate case proceeding. The Company requests authority to defer the incremental post-in-service depreciation expense and financing costs of those projects and then to recover those costs in the rates approved in Sub 364, amortized over a five-year period. The four projects are:

(a) Connestee Falls WWTP in Buncombe County;
(b) Nags Head WWTP in Dare County;
(c) Fairfield Mountain AMR meters installed in Transylvania County; and
(d) Connestee Falls AMR meters installed in Buncombe County.

CWSNC witness DeStefano's testimony explained that the accounting and cost recovery treatment of these projects would have a material impact on the Company's ability to earn its authorized return from its last rate case. The Company requests deferral of incremental post-in-service depreciation expense and financing costs on these four projects from their respective in-service dates until the projects are included for recovery in base rates in this case.

Company witness Mendenhall described the four projects. He stated that the Connestee Falls WWTP project involved the installation of a “sequencing batch reactors” treatment facility which replaced a 300,000 gallons per day (gpd) concrete plant installed in the early 1970s. He noted that the plant is located in the mountains and exposed to winter weather, including cold, ice, and snow. These conditions led to the serious erosion of exposed areas of concrete, most significantly the above-the-waterline walls and walkways, due to years of “freeze/thaw” cycles. Witness Mendenhall maintained that the concrete deterioration had reached the point of “end of life” of the asset and that the old plant presented a high risk of failure. He stated that the build-out needs of the community require 460,000 gpd of wastewater treatment capacity and that the new plant was built adjacent to the existing plant. He commented that the cost of the project was $7,177,326 and that it was placed in-service on July 31, 2019.

Witness Mendenhall testified that the Nags Head WWTP project consisted of the installation of a new membrane treatment facility to allow for effluent disposal below permitted nitrate levels in groundwater monitoring wells. He explained that the purpose of this project was to modify the existing Aeromod 0.400 million gallon per day (mgd) plant with membrane filtration to provide reuse-quality effluent to meet groundwater nitrate and total dissolved solids (TDS) compliance testing limits. Witness Mendenhall noted that in 2018, the Division of Water Quality, DEQ, issued a Notice of Violation requiring the plant to comply with current groundwater testing limits of 500 mg/L for TDS and 5 mg/L for nitrates. He stated that the previous plant met the wastewater treatment plant effluent limits but was unable to meet the newly imposed groundwater limits for the monitoring wells. Witness Mendenhall maintained that had the new facility not been constructed, the risk of imposition of severe penalties or a consent decree was high. He noted that the cost of the project was $6,876,116, and it was placed in-service on May 31, 2019.

Witness Mendenhall further stated that in 2019, CWSNC continued to expand its AMR meter footprint in its mountain systems. He commented that approximately 2,500 AMR meters were installed in the Connestee Falls and Fairfield Mountain Subdivisions. Witness Mendenhall testified that benefits of AMR meter technology to customers and the Company include: (1) customer satisfaction with data and billing accuracy; (2) improved customer service; (3) reduction in re-read/re-billing; (4) employee safety, especially during hazardous weather events; (5) replacement of inaccurate meters which can improve non-revenue water percentages; and (6) customer interaction with respect to personal consumption habits and trends. He noted that while AMR technology would be beneficial to CWSNC customers across the state, the mountain area systems, in particular, benefit due to the extreme weather events and related safety hazards that are common in this region. Witness Mendenhall testified that the Connestee Falls and

Fairfield Mountain AMR meter installation projects were completed by July 31, 2019, at a total cost of $880,209.

At the time this rate case and CWSNC's deferral accounting Petition were filed Company witness DeStefano estimated that implementing these four projects would create a material drag on the consolidated Company's earned rate of return on common equity of 193 basis points. Witness DeStefano testified that the Company included in its rate case filing both a calculation of the deferral balances and proposed amortizations of the deferrals, as well as a pro forma adjustment relating to O&M savings that will result from the implementation of the AMR meter projects[11]. Public Staff witness Darden confirmed in her testimony that the Company included in this rate case proceeding a pro forma adjustment of $21,000 to remove the meter reading expense for the Fairfield Mountain and Connestee Falls water systems because AMR meters do not require an operator to read each meter individually.

According to Public Staff witness Henry, all of the foregoing projects were completed and in service as of the date of the expert witness hearing as verified by Public Staff witness Casselberry, and final invoices were reviewed by the Public Staff. Tr. vol. 8, 172.

In its Sub 365 comments, the Public Staff recommended that the requested deferral accounting treatment with respect to the cost of the WWTPs at Nags Head and Connestee Falls be granted and that the requested deferral accounting treatment with respect to the AMR meters installed in Fairfield Mountain and Connestee Falls be denied in its entirety.

The Public Staff commented that in its Order Approving Deferral Accounting with Conditions in Docket No. E-7, Sub 874, the Commission stated:

> [T]he Commission has historically treated deferral accounting as a tool to be allowed only as an exception to the general rule, and its use has been allowed sparingly. That is due, in part, to the fact that deferral accounting, typically, provides for the future recovery of costs for utility services provided to ratepayers in the past; and . . . the longer the deferral period, the greater the likelihood that the ratepayers who are ultimately required to pay rates including the deferred charges, which are related to resources consumed by the utility in providing services in earlier periods, may not be the same ratepayers who received the services. The Commission has also been reluctant to allow deferral accounting because it, typically, equates to single-issue ratemaking for the period of deferral, contrary to the well-established, general ratemaking principle that all items of revenue and costs germane to the ratemaking and cost-recovery

[11] See NCUC Form W-1, Item 10, Schedules 26 and 34, filed June 28, 2019.

> process should be examined in their totality in determining the appropriateness of the utility's existing rates and charges.

Order Approving Deferral Accounting with Conditions, *Petition of Duke Energy Carolinas, LLC, for an Accounting Order to Defer Certain Environmental Compliance Costs and the Incremental Costs Incurred From the Purchase of a Portion of Saluda River's Ownership in the Catawba Nuclear Station*, No. E-7, Sub 874, at 24 (N.C.U.C. Mar. 31, 2009) (DEC Sub 874 Order).

In addition the Public Staff noted that in its Order Approving in Part and Denying in Part Request for Deferral Accounting in Docket No. E-7, Sub 1029, the Commission stated, "In determining whether to allow deferral requests, the Commission has consistently and appropriately based its decision on whether, absent deferral, the costs in question would have a material impact on the company's financial condition, and in particular, the company's achieved level of earnings." Order Approving in Part and Denying in Part Request for Deferral Accounting, *Petition of Duke Energy Carolinas, LLC, for an Accounting Order to Defer Certain Capital and Operating Costs Incurred for the Advanced Clean Coal Cliffside Unit 6 Steam Generating Plant, the Dan River Natural Gas Combined Cycle Generating Plant, and the Capacity-Related Modifications at the McGuire Nuclear Generating Plant,* No. E-7, Sub 1029, at 12-13 (N.C.U.C. Apr. 3, 2013).

Thus, the Public Staff maintained that the Commission's receptivity to deferral requests is not unlimited or without regard for traditional ratemaking principles. Rather, the Public Staff stated that the Commission requires a clear and convincing showing that the costs in question were of an unusual or extraordinary nature and that, absent deferral, the costs for which deferral was requested would have a material impact on the Company's financial condition.

In determining whether to grant a deferral request the Public Staff noted that the Commission analyzes the impact the costs would have on currently achieved earnings of the utility. The Public Staff stated that the appropriate test and criteria are as follows:

> The impact on earnings, typically, has been measured and assessed in terms of ROE, considered in conjunction with (1) the return on equity (ROE) realized and (2) the company's currently authorized ROE. Also . . . current economic conditions; the Company's need for new investment capital; and the impact that the Commission decision will have on future availability and cost of such capital are also relevant to the appropriate resolution of matters of this nature. Additionally, whether the company has requested or is contemplating requesting a general rate increase and the timing, or proposed timing, of the filing of such a request is also pertinent.

DEC Sub 874 Order at 26.

The Public Staff stated in its Sub 365 comments that it had evaluated the deferrals requested in CWSNC's petition against the above criteria. Based on these criteria and other Commission decisions, the Public Staff supported deferral accounting treatment for the costs related to the WWTP projects at Nags Head and Connestee Falls. The Public Staff based its recommendation on the fact that (1) costs for the WWTPs were related to major construction projects that, at the time the Sub 365 comments were filed, were not yet in service but expected to be completed and in operation prior to the date of the expert witness hearing in this general rate case; (2) the deferral accounting request was made contemporaneously with the filing of the rate case application; and (3) the deferral period would not be so long as to cause undue concern that the ratepayers who pay rates including the deferred WWTP costs during the deferral period may not be the same ratepayers who receive service from the WWTPs. Sub 365 Comments at 6–7. Additionally, the Public Staff stated that “the impact of the costs, if not deferred, on the Company’s rate of return on common equity of 9.75% approved in the Sub 360 Rate Case, will be significant. Without deferral, the Company’s earnings can be expected to decline due to the WWTPs becoming plant in service.” *Id*. at 7. Thus, the Public Staff contended that the WWTPs at Nags Head and Connestee Falls presented the kind of circumstances in terms of nature, impact, and timing for which deferral accounting treatment is appropriate.

Moreover, as evidenced by the Stipulation filed on November 27, 2019, the Company and the Public Staff are in agreement that the Company’s request to defer incremental post-in-service depreciation expense and financing costs of the WWTPs at Nags Head and Connestee Falls is appropriate and have agreed that the Company should be authorized to defer its costs of $1,098,778 related to its WWTPs, and these costs should be amortized over five years, for an annual amount to be included in rates of $219,756.

With respect to the Public Staff’s recommendation that the Commission deny deferral accounting treatment for the AMR meters installed in Fairfield Mountain and Connestee Falls, the Public Staff stated it used the same criteria for evaluating the Company’s request for deferral of the WWTPs and the AMR meter costs and concluded that CWSNC’s request for deferral of the AMR meter costs should be denied. Witness Henry contended that CWSNC failed to make a clear, complete, and convincing showing, in view of the entire record, that the costs of the AMR meters are of an unusual or extraordinary nature and, absent deferral, will have a material impact on the Company's financial condition. In his direct testimony, witness Henry referred the Commission to the Public Staff’s initial comments filed on September 20, 2019 in Sub 365.

In its Sub 365 initial comments, the Public Staff contended that meter replacement of any kind (AMR, AMI, traditional, etc.) is not an extraordinary or unusual project but should be considered routine and as part of a properly planned and managed meter replacement program. The Public Staff stated that water meters have an industry recognized 10- to 20-year useful life before degradation of functionality and accuracy necessitate replacement. Additionally, the Public Staff stated that CWSNC has water meters in service that range in age and condition, and that it is not unusual for a water and sewer utility to undertake, during one time period, to replace a large number of aged meters in an entire subdivision or service area because doing so promotes efficiency of time and cost. Due to the nature of meter replacement being an expected and usual occurrence, the Public Staff stated that the only different or unusual aspect of the Company's replacement project is the increased cost of the new AMR meters over the cost of analog meters. The Public Staff further noted that although the Company stated that the upgraded technology will benefit the Company and the customers, the Company's decision to upgrade does not change the nature of the typical and expected meter replacement project. The Public Staff maintained that the increased cost of AMR meters and the number of meters replaced is the result of management decisions within CWSNC's control and a failure of the Company to implement a systematic and measured meter replacement program.

On cross-examination witness Henry confirmed that the Public Staff's accounting investigation did not raise any prudency issues with respect to the costs incurred by the Company to complete the AMR meter installation projects, that the Public Staff did not recommend any significant disallowance of any part of these costs for ratemaking purposes, that this is the third rate case in which the Company has included costs for AMR meters for its mountain systems, and that the Public Staff did not raise any objections or questions about the prudency of the installations or of the costs of prior AMR meter installations in the previous two cases. He also agreed that deferred accounting is one way to address the issue of regulatory lag faced by a utility.

Further, witness Henry agreed that the $22 million in additional investment made by the Company since its last rate case is a significant amount of investment of capital for a company the size of CWSNC and that those investments result in regulatory lag, depending on the timing of the investments and when those investments are incorporated for recovery in rates. He also updated his estimate of earnings erosion that would occur if CWSNC's request for deferral of costs related to AMR meter installation projects is denied based upon the Company's updated project costs. He testified that the Company's rate of return on common equity for the Uniform Water Rate Division would be negatively impacted by 24 basis points if the Commission denies deferral accounting treatment for the AMR meter installation projects. Witness Henry testified that he added the AMR meter installation projects to the rate case model that was used to calculate the gross revenue and overall rate of return allowed by the Commission in the Sub 360 Rate Order. Witness Henry stated that by including the AMR meter installation projects in that model for the Uniform Water Rate Division the rate of return on common equity granted in the Sub 360 case was decreased from 9.75% to 9.51%, a decrease of 24 basis points. Tr. vol. 8, 180. Witness Henry maintained that it was appropriate to evaluate the rate of return on common equity impact at the Rate Division level because CWSNC has four separate rate divisions: Uniform Water, Uniform Sewer, BF/FH/TC Water, and BF/FH Sewer. He stated that each of these rate divisions has a separate rate base, revenues, expenses, and rate of return. Tr. vol. 8, 217–18. Witness Henry further stated that rates have not been established on a total company basis in this rate case nor in prior rate cases filed by CWSNC.

Witness Henry agreed that, in addition to the basis point impact on rate of return on common equity, the Commission has considered the actual earned rate of return on common equity of the utility requesting deferral accounting when addressing whether non-deferral of project costs would have a material negative impact on a company's financial condition. Further, he agreed that the Commission considers deferral requests on a case-by-case basis.

On cross-examination Public Staff witness Junis expanded upon witness Henry's conclusion that the Company's AMR meter installation projects did not meet the Commission's criteria for deferral accounting. He maintained that the projects were not unusual or extraordinary because they were the result of a business choice by the Company to install AMR meter technology. Tr. vol. 8, 191. He stated that the Company could have installed traditional meters rather than AMR meters. Witness Junis testified that meter replacement should be a part of normal business. Further, he stated that AMR meters are not providing service to customers or improving service to customers and thus they are not integral to providing service. Tr. vol. 8, 198. Witness Junis distinguished AMR meters from new electricity generation investments or wastewater treatment plant investments, stating that the latter are integral to providing quality service. *Id.*

Witness Junis discounted CWSNC's claim that the Company is underearning because the underearning took place primarily under previously set rates, before the current rates were established by the last rate order in Sub 360. Tr. vol. 8, 205. Witness Junis contended that for this reason, the test period would not be the "proper window to look at when considering are they under-earning or over-earning" for purposes of the Commission's test to determine whether deferral accounting is appropriate. Tr. vol. 8, 205–06. He testified that the utility decides when it files rate cases; the Company's management decides how much consequence of regulatory lag it can accept and financially tolerate between rate cases. Tr. vol. 8, 195.

On cross-examination, witness Junis acknowledged that the Public Staff's position is that AMR meter installation projects are not eligible for cost recovery in WSIC proceedings because the WSIC statute calls for "in-kind" replacements. Witness Junis testified that the Public Staff does not consider AMR meters as in-kind with regard to differing kinds of meters. Tr. vol. 8, 195–96. He further testified that both deferral accounting and the WSIC and SSIC statute minimize regulatory lag for cost-recovery purposes. He agreed that the fact that the AMR meter installation projects do not qualify for WSIC treatment is worth considering in the context of a deferral accounting request. However, he testified that it should not be a major factor in the determination and ultimately this fact did not change the Public Staff's position that deferral should be denied.

Witness DeStefano presented rebuttal testimony explaining the appropriateness of deferral accounting treatment for the Company's two AMR meter installation projects. First, he testified that major technological upgrades such as the Company's AMR meter projects are the type of projects for which deferral accounting is appropriate. He noted that the Company's AMR meter program involves the mass replacement and technological upgrade of aged analog meters in certain targeted geographical areas, as opposed to the typical individual meter replacements that occur due to aging or damaged individual meters. He emphasized that this AMR meter program differs dramatically from individual and routine meter replacements in scope, scale, purpose, and financial impact. Witness DeStefano generally testified that the large-scale meter replacement at issue was undertaken to improve service through efficiencies, safety, and advanced technology, and that the project benefitted customers by saving some costs associated with manual meter reading and reducing system water loss. He further testified that the Company would face significant adverse impact if either the four projects subject to the petition to defer or the AMR meter projects alone were not afforded deferral accounting treatment. He explained that the Company's current overall rate of return of 7.75% authorized by the Commission in Sub 360 was not being achieved and that the Company's consolidated actual earned overall return during the test year for the instant rate case was only 3.69%.

Witness DeStefano maintained that the Public Staff's proposed rejection of deferral accounting for the two AMR meter installation projects, as well as the inability of the Company to recover the costs of depreciation and a return on the full investment of AMR meters in a WSIC filing, has the effect of significantly penalizing the Company through denial of timely cost recovery for investments in modernizing its water system operations. Witness DeStefano contended that if the Company's cost recovery for AMR meters is limited solely to a final decision in a general rate case, with no interim deferral accounting, the Company's earnings will be materially affected to its detriment. He reported that other state regulatory commissions have authorized deferral accounting in connection with meter replacement projects although he did not state whether such deferrals related specifically to the deferral of post-in-service depreciation expense and carrying costs from the AMR meter replacement projects in-service dates until the projects are included for recovery in base rates as requested by CWSNC in its petition.

Witness DeStefano urged the Commission to consider the collective financial impact of the four projects, noting that the Commission has previously considered projects on a collective basis when making deferral accounting determinations. Witness DeStefano commented that in the DEC Sub 874 Order, the Commission authorized a utility to use deferred accounting combining costs for two projects, wherein it allowed deferral accounting for both an environmental compliance cost project and the purchase of a portion of a nuclear facility on the grounds that the authorized rate of return on common equity would be eroded due to the rate of return on common equity impact of costs of 114 basis points — 67 for the environmental costs and 47 points for the facility purchase. In its reply comments CWSNC maintained that when considering the four major new projects together, the financial impact to the total Company earnings would be materially adverse, having a rate of return on common equity impact of 187 total basis points.[12]

[12] See updated Schedule 1 attached to CWSNC's reply comments filed on October 21, 2019 in Sub 365. In its Petition filed on June 28, 2019 CWSNC calculated a rate of return on common equity impact of 193 basis points for the four major new projects on a total Company basis.

Finally, witness DeStefano argued that even if the Commission were to evaluate the WWTP and the AMR meter projects separately, the rate of return on common equity impact of the AMR meter costs would still have an adverse material effect on the Company's earnings, and, thus, deferral accounting for the meter projects is merited – particularly given the Company's current underearning position. Witness DeStefano stated that given the Company's size and current underearning status, a 20-basis point AMR meter impact for the Uniform Water Rate Division[13] is unquestionably material to the Company.

During cross-examination Company witness DeStefano was questioned about Public Staff DeStefano Cross-examination Exhibit 1, which contained witness DeStefano's responses to Public Staff Data Request No. 81. Witness DeStefano confirmed that the Company had sought and received rate recovery in its Docket No. W-354, Sub 344 (Sub 344) rate case for AMR meter installation projects that occurred in 2015 in seven systems. The evidence presented confirmed that the Company's Sub 344 rate increase included the costs of 1,157 AMR meters for a total cost of over $1.2 million, and in the Company's Sub 356 rate case, CWSNC received rate recovery for AMR meter installation projects in three systems, including 2,440 meters, for a total cost of over $1.8 million. Tr. vol. 9, 158–59. Witness DeStefano also confirmed that the Company planned to complete eight similar projects over the next four years, including nearly 4,000 AMR meter replacements. Witness DeStefano further confirmed that the Company has already completed ten AMR meter projects, including 3,597 meters at a total capital cost of over $3 million, prior to the two projects presented in this case at a cost of less than $900,000.

Upon further questioning by the Public Staff witness DeStefano explained why CWSNC requested deferral accounting for two AMR meter projects at issue, but not for its previous AMR meter projects. He explained that the AMR meter projects currently being made are part of a much larger overall capital investment by the Company. He noted that in prior years overall capital investments made by the Company were in the $10 million per year range, versus $20 million invested in the current year. As a result, according to witness DeStefano, the deferral accounting request is due in part to the additional regulatory lag impact being experienced by the Company beyond the impact of the AMR meter projects alone. Additionally, he testified that the two AMR meter installation projects for which deferral accounting treatment is currently requested are larger than every meter system previously installed.[14] He explained that installing AMR meters in these two systems in this one year and trying to gain the efficiencies of completing the projects this year increases the financial implications to the Company and the significance of the projects to the Company. In summary witness DeStefano testified that with the magnitude of the capital spending CWSNC anticipates over the next few

[13] During the expert witness hearing, witness DeStefano agreed with Public Staff witness Henry's calculation of a 24-basis point negative impact on CWSNC's earned rate of return on common equity for the Uniform Water Rate Division if deferral accounting treatment for the AMR meter projects is not approved by the Commission.

[14] Company witness Mendenhall added that the 2,500 AMR meters at issue represent about 40% of the total AMR meters installed and about 8% of CWSNC's total meters in service in the State.

years to address aging system needs, the Company is looking for ways to mitigate the effect of regulatory lag on earned returns.

Discussion and Conclusions

In its Sub 365 Petition CWSNC has requested that the Commission enter an accounting order allowing the Company to defer certain post-in-service costs that were incurred in connection with two WWTP projects and two AMR meter installation projects. The related costs for which the Company seeks deferral include the incremental post-in-service depreciation expense and cost of capital (financing costs) from their respective in-service dates until the projects are included for recovery in base rates in this case. According to the evidence of record, the amounts of such costs with respect to the WWTP projects and the AMR meter installation projects are $1,098,778 and $64,736, respectively. The Company contends that the financial impact of these costs is material and would, absent deferral, equate to a significant basis point reduction in the Company's rate of return on common equity. Evidence submitted by the Public Staff confirmed that such projects when included in plant in service would individually equate to a 434-basis point rate of return on common equity reduction for the WWTPs and a 24-basis point rate of return on common equity reduction for the AMR meter installation projects for the Uniform Sewer Rate Division and the Uniform Water Rate Division, respectively. No party has suggested that either the WWTP projects or the AMR meter installation projects are imprudent in any way. Moreover, the Company and the Public Staff are in agreement regarding the amount of costs included in plant in service in this proceeding for the WWTP projects and the AMR meter installation projects.

Under the Company's proposal the costs in question would not be charged against revenues realized during the accounting period in which the costs were actually incurred. Rather, such costs would be deferred and accumulated in a regulatory asset account. As a result, the deferred costs, in effect, would be specifically reserved for recovery prospectively. The period over which the costs would be accumulated in a regulatory asset account would begin when the assets were placed in service and end on the date the Company is authorized to begin charging rates reflecting the inclusion of the WWTPs and the AMR meter installation projects in CWSNC’s water and wastewater cost of service. Consequently, approval of CWSNC's deferral and cost recovery proposal would ultimately result in a level of rates, to be charged prospectively, that would specifically include an allowance providing for the recovery of the present deferred costs. On the other hand, if the request for deferral is denied, the Company would then be required to recognize the costs for which it seeks deferral as items of expense in the period in which they were incurred. In this instance, the Company would then be required to recognize those costs during a period in which it contends it is already significantly under-recovering its Commission-authorized return.

Deferral accounting should only be used sparingly as an exception to the general rule that all items of revenue and costs germane to the ratemaking and cost-recovery process should be examined in their totality in determining the appropriateness of the utility's existing rates and charges. DEC Sub 874 Order at 24. Deferral is not favored, in part, because deferral accounting typically provides for the future recovery of costs for utility services provided to ratepayers in the past. The Commission has also been reluctant to allow deferral accounting because it typically equates to single-issue ratemaking for the period of deferral. *Id.* The Commission acknowledges that considering an increase in one or a few expense items in isolation, without considering reductions in other costs, brings with it the increased risk of over-recovery. However, the Commission gives significant weight in this instance that the consolidation of the Sub 365 petition for deferral accounting with the Sub 364 general rate case means that the concern regarding single-issue ratemaking and the related risk of such over-recovery should be reduced and of lesser concern because all revenues and expenses will have been examined close in time to any possible deferral.

While deferral accounting must not be used routinely or frequently, the Commission has found that an exception can be made when the costs at issue "were reasonably and prudently incurred, unusual or extraordinary in nature, and of a magnitude that would result in a material impact on the Company's financial position (level of earnings)." Order Denying Request to Implement Rate Rider and Schedule Hearing to Consider Request for Creation of Regulatory Asset Account, *Application of Duke Energy Carolinas, LLC, for Approval of Rate Rider to Allow Prompt Recovery of Costs Related to Purchases of Capacity Due to Drought Conditions,* No. E-7, Sub 849, at 19 (N.C.U.C. June 2, 2008) The Commission has, over the years, on infrequent but appropriate occasions, approved requests proposing the use of deferral accounting. Such requests, by necessity, must be examined and resolved on a case-by-case fact-specific basis and will be approved only where the Commission is persuaded by clear and convincing evidence that the costs in question are unusual or extraordinary in nature and that, absent deferral, would have a material impact on the utility's financial condition. *Id. See also,* Order Approving Deferral Accounting with Conditions*, Petition of Duke Energy Carolinas, LLC, for an Accounting Order to Defer Certain Environmental Compliance Costs and the Incremental Costs Incurred From the Purchase of a Portion of Saluda River's Ownership in the Catawba Nuclear Station,* No. E-7, Sub 874 (N.C.U.C. Mar. 31, 2009); Order Approving Deferral Accounting, *Petition of Duke Energy Carolinas, LLC, for an Accounting Order to Defer Certain Capital and Operating Costs Incurred for the Buck Natural Gas Combined Cycle Generating Plant and the Bridgewater Hydro Generating Plant*, No. E-7, Sub 999 (N.C.U.C. June 20, 2012) (DEC Sub 999 Order); Order Approving Deferral and Amortization, *Request by Duke Power, A Division of Duke Energy Corporation for Approval of Accounting Treatment,* No. E-7, Sub 776 (Dec. 28, 2004).

In determining whether the costs sought to be deferred or the events or circumstances leading to the costs are of such an unusual or extraordinary nature as to justify an exception to the rule against allowing deferral accounting treatment, the Commission historically examines the record for clear and convincing evidence that the costs in question represent major non-routine, infrequent, non-regularly occurring investments of considerable complexity and significance or were beyond the control of the utility such as storm costs or new operating requirements/standards imposed by newly-enacted legislation or other governmental action. *See,* Order Approving Deferral Accounting, *Petition of Duke Energy Carolinas, LLC, for an Accounting Order to Defer*

Certain Environmental Compliance Costs at Unit 5 of the Cliffside Steam Station, No. E-7, Sub 966 at 10 (N.C.U.C. June 27, 2011); *Order Ruling on Petition,* Petition of Duke Energy Carolinas, LLC, for an Accounting Order to Defer 2009 and 2010 Non-Fuel Energy Costs Excluded from Cost Recovery in the Commission's August 6, 2010 Order in Docket No. E-7, Sub 934, No. E-7, Sub 967, at 14-15 (N.C.U.C. June 14, 2011); *Order Approving in Part and Denying in Part Request for Deferral Accounting,* Petition of Duke Energy Carolinas, LLC for an Accounting Order to Defer Certain Capital and Operating Costs Incurred for the Advanced Clean Coal Cliffside Unit 6 Steam Generating Plant, the Dan River Natural Gas Combined Cycle Generating Plant, and the Capacity-Related Modifications at the McGuire Nuclear Generating Plant, No. E-7, Sub 1029, at 13, 15 (N.C.U.C. April 3, 2013); Order Adopting and Amending Rules, *Rulemaking Proceeding to Implement G.S. 62-110.8,* No, E-100, Sub 150 at 22 (November 16, 2017).

In certain circumstances the Commission may find that the magnitude or level of the costs requested for deferral make the costs major, non-routine, or extraordinary. In some cases, the Commission has looked to determine whether costs were unanticipated, unplanned, beyond the control of the utility, and of an infrequent, non-recurring nature; that is, whether the costs and the circumstances of the costs are sufficiently unusual or extraordinary to warrant deferral accounting treatment – a tool not to be used routinely but sparingly as discussed above. Order Approving Amended Schedule NS and Denying Deferral Accounting, *Application by Virginia Electric and Power Company, d/b/a Dominion North Carolina Power, for Approval of Amended Schedule NS,* No. E-22, Sub 517, at 11–12 (N.C.U.C. Mar. 29, 2016). A finding that the magnitude of the costs supports a determination that they are unusual or extraordinary may not, in some circumstances also support a finding that these costs, if not deferred, will have a material adverse impact on the company's financial condition to warrant deferral accounting treatment. In determining whether deferral or non-deferral will have a material impact on the company's financial condition while the Commission may consider other matters, it often examines whether and to what extent the costs incurred will have a significant impact on the level of company earnings and the company's ability to achieve its currently authorized rate of return on common equity. DEP Sub 874 Order at 25–26. In determining materiality, while the Commission may consider other matters, it often examines whether and to what extent the costs incurred will have a significant impact on the level of company earnings and the company's ability to achieve its currently authorized rate of return on common equity. *Id.*

With regard to the WWTP projects, the Commission is persuaded that the costs are of an unusual, extraordinary nature. Both the Company and the Public Staff also agree that the costs associated with the WWTP projects are unusual or extraordinary in nature, as the Commission has used those terms in previous deferral accounting orders and as those terms are commonly understood. The Commission observes as stated in a previous deferral accounting case, *"[t]he costs in question are unusual or extraordinary in the sense that they are associated with the incorporation of the costs of two [WWTP] facilities – representing major investments – into the Company's rate structure; which is not a simple, regularly occurring, inconsequential event, but rather, is a major non-routine matter of considerable complexity and major significance."* DEC Sub 999 Order, at 18. In the present proceeding, the evidence demonstrates that the WWTP projects were not an everyday, regular occurrence but were in fact non-routine, complex, and of major significance and that the associated costs are similarly unusual or extraordinary. The WWTP projects involved the installation of new treatment facilities that were integral to providing wastewater utility service and that were necessitated by conditions causing the old facilities to present unacceptable risks of failure and inability to comply with environmental requirements exposing the company to the further high risk of severe penalties and imposition of a consent decree. Such circumstances and replacement of such major facilities that are at risk of both functional and environmental compliance failure do not occur on a frequent basis.

The Commission is likewise persuaded that absent deferral, the costs will have a material impact on the Company's financial condition. The evidence demonstrates that the Company is not meeting its currently authorized rate of return on common equity and that even if the Sub 360 rate increase had been in effect for a full year, the rate of return on common equity impact of the costs of the WWTP projects would have an adverse impact on the Company's financial condition. The Commission gives significant weight to the undisputed testimony of witness DeStefano that CWSNC's consolidated actual earned rate of return on common equity during the test year for this rate case (the 12-month period ended March 31, 2019) was 1.63%. The Commission further finds credible the evidence that the rate increase in the last rate case was approximately $1.1 million, which would not make up the difference from an actual rate of return on common equity of 1.63% to 9.75%, CWSNC's authorized rate of return on common equity granted in the Sub 360 Rate Order. Further, the evidence shows that the WWTP investments of approximately $14 million would result in a 434-basis point rate of return on common equity reduction for the Uniform Sewer Rate Division. The Commission concludes that if the requested deferral for the WWTP projects is not allowed, it would appear that the Company's already low rate of return on common equity would be further eroded and that the Company would not have a reasonable opportunity to earn its authorized rate of return on common equity.

Furthermore, given the Company's depressed level of current earnings and its expected near-term significant financing needs, the Commission determines that deferral of the WWTP costs as requested by CWSNC will have a favorable impact on CWSNC's earnings and financial standing in general. As such, the deferral will enhance the Company's ability to access and obtain capital on more favorable terms, as it will help assure investor confidence in the Company. Such results will ultimately accrue to the benefit of CWSNC's customers.

Moreover, the Company and the Public Staff have agreed by Stipulation that the Company should be allowed to defer the incremental post-in-service depreciation expense and financing costs of the WWTPs at Nags Head and Connestee Falls as requested by CWSNC because they are both unusual in nature and material to the Company's financial condition. In light of the Commission's having accepted the Stipulation in its entirety and in light of the foregoing independent determination based on the evidence of record that the costs at issue are both unusual, non-routine, and material to the Company's financial well-being, the Commission finds the Company's request to defer post-in-service depreciation and financing costs for the WWTP projects is just and reasonable and should be approved.

Thus, as provided in the Stipulation, Revised Settlement Exhibits I and II, and the testimony of witness Henry (as revised on the stand) and in Henry Late-Filed Exhibits 2, 3, and 4, the Commission finds and concludes that the Company should be authorized to defer its WWTP costs of $1,098,778 related to its WWTPs (consisting of incremental post-in-service depreciation expense and financing costs from their respective in-service dates until the WWTPs are included for recovery in base rates in this case), and these costs should be amortized over five years, for an annual amount to be included in rates of $219,756.

Unlike the deferral accounting request related to the WWTP projects, the Public Staff opposed deferral accounting treatment of the costs associated with the two AMR meter installation projects. The Commission agrees with the Public Staff. The Commission finds that the Company provided insufficient evidence that the projects and their associated costs are unusual or extraordinary such as to warrant deferral accounting. While a mass replacement of meters in an entire subdivision is not an everyday occurrence for CWSNC, the Commission is not convinced that such an event is sufficiently unusual or extraordinary to justify special deferral accounting treatment. The need to replace meters on a planned schedule is an anticipated need of the business and the timing and manner of implementation of such replacement, at least as was the case in this proceeding, is entirely within the control of the Company. Further, the Company did not establish by clear and convincing evidence that the meter installation costs sought to be deferred support a finding that the projects or said costs are unusual or extraordinary. On cross-examination witness DeStefano confirmed that the Company had sought and received rate recovery in its Docket No. W-354, Sub 344 (Sub 344) rate case for AMR meter installation projects that occurred in 2015 in seven systems. The evidence presented confirmed that the Company's Sub 344 rate increase included the costs of 1,157 AMR meters, for a total cost of over $1.2 million, and in the Company's Sub 356 rate case, CWSNC received rate recovery for AMR meter installation projects in three systems, including 2,440 meters, for a total cost of over $1.8 million. Considering that since 2015 CWSNC has completed ten AMR meter projects, including 3,597 meters at a total capital cost of over $3 million, the Commission determines that the two AMR meter installation projects for Fairfield Mountain and Connestee Falls in the amount of $880,209 are not major non-routine, infrequent, non-regularly occurring investments of considerable complexity and significance for CWSNC. Rather, the Commission finds that the two AMR meter installation projects are routine and regularly occurring and are not unusual or extraordinary in nature.

Having determined that the Company failed to establish that its AMR meter installation project and the related costs were unusual or extraordinary such as to justify allowing exceptional deferral accounting treatment, the Commission does not reach the issue of whether the AMR costs sought to be deferred have a material adverse impact on the Company's financial condition or stability. The determination that this project and its related costs are not unusual or extraordinary is dispositive. Therefore, the Company's petition to defer these costs is not just and reasonable and is denied. However, the Commission emphasizes that decisions such as this one are made on a case-by-case basis, and this decision should not be construed to suggest that costs relating to a meter project can never be allowed deferral accounting treatment. The Commission acknowledges that every request for deferral accounting is shaped by its own unique factual circumstances, and whether an event and its related costs are sufficiently unusual or extraordinary in nature to merit an exception to the general rule against deferral accounting treatment is a determination for the Commission that will be based on the specific facts of each such request. The Commission notes that the Company's request for deferral accounting treatment for costs related to the WWTPs and the two AMR installation projects is determined within the context of this general rate case where the Commission is setting just and reasonable rates on a going-forward basis. The Commission's decision either granting or denying deferral accounting treatment in the present case is made from the standpoint of fairness and equity to both consumers and the Company.

Although deferral accounting is to be employed sparingly, the Commission finds that CWSNC has another option available to use to recover costs associated with future AMR meter deployments. Recognizing the challenges confronting North Carolina's water and wastewater industries in needing to make high cost capital investments to install and replace aging infrastructure, the General Assembly has provided the Commission with a tool specific to water and sewer utilities to alleviate the effects of regulatory lag. Section 62-133.12 authorizes the Commission to approve a rate adjustment mechanism in a general rate case to allow a water or sewer utility to recover the incremental depreciation expense and capital costs associated with reasonable and prudently incurred investment in eligible system improvement projects through the collection from customers of a water or sewer system improvement charge (WSIC or SSIC). The Commission approved such a mechanism for CWSNC in Docket No. W-354, Sub 336 pursuant to an order issued on March 10, 2014. Eligible water system improvements to be recovered by use of WSIC include "distribution system mains, valves, utility service lines (including meter boxes and appurtenances), meters, and hydrants installed as in-kind replacements." N.C.G.S. § 62-133.12(c)(1).

Notwithstanding this tool created to help utilities better manage regulatory lag, both Public Staff witness Junis and CWSNC witness DeStefano testified that, other than deferral, there is currently no rate mechanism such as the WSIC or SSIC mechanism available to the Company to mitigate the regulatory lag and resultant adverse earnings impacts associated with the mass replacement of traditional meters with AMR meters because, according to them, the WSIC and SSIC statute only allows recovery for "in-kind" replacements. Tr. vol. 8, 61-62, 195–96. As is clear from the testimony and CWSNC's stated position in its proposed order, the Company has accepted the Public Staff's interpretation that replacing an analog meter with an AMR meter is not an "in-kind" replacement. Tr. vol. 8, 61–62. The Commission does not agree with this interpretation. Although this question has not previously been brought to the Commission for decision, the Commission holds that the exchange of one type of meter reading device for another type of meter reading device is an "in-kind" replacement as that term is used in

N.C.G.S. § 62-133.12(c)(1). The Public Staff appears to read the words “in kind” to mean “like kind and quality’ or perhaps “like grade and quality” but this amounts to an impermissible rewriting of the statute. Such an interpretation would defeat the purpose of providing water and sewer utilities with the opportunity to seek recovery under an approved rate adjustment mechanism. Black’s Law Dictionary defines “in kind” as “of the same species or category” or “in the same kind, class or genus.” Black’s Law Dictionary (5th ed. 1979) Bouvier Law Dictionary defines “in kind” as “[p]roperty in its physical form, or property similar to property in issue. In kind refers to specific property, either the property itself in issue or similar property of the same form, quality, and value as the property in issue.” Bouvier Law Dictionary (Desk ed. 2020) The Commission concludes an “in-kind” replacement can be an identical replacement or one that is a reasonable alternative to serve the same purpose. If the General Assembly’s use of “in kind” limited replacement to the exact identical equipment, upgrade replacements could never be eligible improvements for WSIC or SSIC recovery. A utility seeking to replace a non-functioning obsolete item of equipment with the then-current industry standard equipment would be stymied, and the Commission is not able to conclude that such an outcome was intended by a statute that was meant to facilitate repair and replacement of basic items of utility plant and equipment. Accordingly, with regard to AMR meter installation projects planned for the future, CWSNC and the Public Staff should work together pursuant to Commission Rule R7-39 to mitigate regulatory lag using WSIC recovery. However, the Commission’s decision herein does not in any way relieve the Company of its burden to prove its investments are reasonable and prudently incurred as required by N.C.G.S. § 62-133.12 and Commission Rule R7-39(a). Moreover, in its Order Adopting Rules to Implement G.S. § 62-133.12, *Petition for Rulemaking to Implement G.S.62-133.12, North Carolina Session Law 2013-106(House Bill 710)*, No. W-100, Sub 54 (N.C.U.C. June 6, 2014), the Commission concluded that

> any rate adjustments authorized under the WSIC and SSIC mechanisms outside of a general rate case will be allowed to become effective, but not unconditionally approved. In other words, the adjustments will be provisional, will not be deemed *prima facie* just and reasonable, and, thus, may be rescinded retroactively in the utility’s subsequent general rate case, at which time the adjustment may be further examined for a determination of its justness and reasonableness.

Id. at 5.

The Commission also notes the Company’s testimony and evidence regarding ongoing improvement projects and the need and plans for substantial capital investment in the near future. In consideration of this continuing and anticipated increase in capital spending to address aging infrastructure, the Commission recommends that CWSNC seek to make better use of the WSIC and SSIC mechanisms as a regulatory tool to mitigate the negative effects of regulatory lag for all statutorily allowed system improvement projects.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 42

Depreciation and Amortization Expense

The evidence supporting this finding of fact is found in the verified Application and the accompanying NCUC Form W-1, the testimony of Public Staff witnesses Feasel and Henry, and the testimony of Company witness DeStefano. The following table summarizes the differences between the Company's level of depreciation and amortization expenses from its Application and the amounts recommended by the Public Staff:

Item	Company per Application	Difference	Amount per Public Staff
Depreciation expense	$6,399,241	$181,470	$6,580,711
Amortization exp. - CIAC	(1,485,664)	8,710	(1,476,955)
Amortization exp. - PAA	(85,341)	8,718	(76,623)
Amortization of ITC	(579)	0	(579)
Total	$4,827,656	$198,898	$5,026,554

With respect to CWSNC's depreciation expense, in light of the agreements reached in the Stipulation and revisions recommended by the Public Staff in its testimony and reflected in Henry Revised Exhibit I and Feasel Revised Exhibits I and II, the Company does not dispute the adjustments recommended by the Public Staff to depreciation expense. As detailed elsewhere in this Order, the Commission finds that the adjustments recommended by the Public Staff to depreciation expense, which are not contested, are appropriate adjustments to be made to operating revenue deductions in this proceeding.

Based on the foregoing, the Commission concludes that the appropriate level of depreciation and amortization expense for use in this proceeding is as follows:

Item	Amount
Depreciation expense	$6,580,711
Amortization expense – CIAC	(1,476,955)
Amortization expense – PAA	(76,623)
Amortization of ITC	(579)
Total	$5,026,554

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 43

Franchise, Property, Payroll and Other Taxes

The evidence supporting this finding of fact is found in the verified Application and the accompanying NCUC Form W-1, and in the testimony of Public Staff witness Henry and Company witness DeStefano. The following table summarizes the differences between the Company's level of franchise, property, payroll, and other taxes from its Application and the amounts recommended by the Public Staff:

Item	Company Application	Difference	Amount per Public Staff
Franchise and other taxes	($789)	$135	($655)
Property taxes	268,734	0	268,734
Payroll taxes	596,100	(68,672)	527,428
Total	$864,045	$(68,537)	$795,507

With the Stipulation and revisions made by the Public Staff in its Feasel Revised Exhibits I and II and Henry Revised Exhibit I, the Company does not dispute adjustments recommended by the Public Staff to franchise and other taxes and property taxes. Therefore, the Commission finds that the adjustments recommended by the Public Staff to franchise and other taxes and payroll taxes, which are not contested, are appropriate adjustments to be made to operating revenue deductions in this proceeding.

Based on the foregoing, the Commission concludes that the appropriate level of franchise, property, payroll, and other taxes for use in this proceeding is as follows:

Item	Amount
Franchise and other taxes	($655)
Property tax	268,734
Payroll taxes	527,428
Total	$795,507

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 44-47

Regulatory Fee and Income Taxes

The evidence supporting these findings of fact is found in the testimony of Public Staff witnesses Boswell and Henry, and of Company witness DeStefano. The following table summarizes the differences between the Company's level of regulatory fee and income taxes from its Application and the amounts recommended by the Public Staff:

Item	Company per Application	Difference	Amount per Public Staff
Regulatory fee	$56,361	($12,202)	$44,159
State income taxes	218,982	(143,508)	75,474
Federal income taxes	1,793,462	(1,175,329)	618,133
Deferred income taxes	0	(69,128)	(69,128)
Total	$2,068,805	($1,400,167)	$668,638

Regulatory Fee

The difference in the level of regulatory fee is due to the differing levels of revenues recommended by the Company and the Public Staff. Based on conclusions reached elsewhere in this Order regarding the levels of revenues, the Commission concludes that the appropriate level of regulatory fee for use in this proceeding is $44,159.

State Income Taxes

The difference in the level of state income taxes is due to the differing levels of revenues and expenses recommended by the Company and the Public Staff. Based on the conclusions reached elsewhere in the Order regarding the levels of revenues and expenses, the Commission concludes that the appropriate level of state income taxes for use in this proceeding is $75,474 based on the current state corporate income tax rate of 2.50%.

Federal Income Taxes

The difference in the level of federal income taxes is due to the differing levels of revenues and expenses recommended by the Company and the Public Staff. Based on the conclusions reached elsewhere in the Order regarding the levels of revenues and expenses, the Commission concludes that the appropriate level of federal income taxes for use in this proceeding is $618,133 based on the current federal corporate income tax rate of 21.00%.

Deferred Income Taxes

With the Stipulation and revisions made by the Public Staff in its Feasel Revised Exhibits I and II, and Henry Revised Exhibit I, and in the testimony of witness Boswell and Boswell Exhibit 1, the Company agreed with the Public Staff adjustment to deferred income tax of $69,128 to reflect the annual amortization of protected and unprotected federal EDIT.

Based on the foregoing, the Commission concludes that the appropriate level of regulatory fee and income taxes for use in this proceeding is as follows:

Item	Amount
Regulatory fee	$44,159
State income taxes	75,474
Federal income taxes	618,133
Deferred income taxes	(69,128)
Total	$668,638

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 48-50

The Federal Tax Cuts and Jobs Act

The evidence supporting these findings of fact is found in the verified Application and the accompanying NCUC Form W-1, the testimony of Company witness DeStefano, the testimony of Public Staff witness Boswell, and the Stipulation and Settlement Exhibit 1.

In its Application and in the direct testimony of CWSNC witness DeStefano, the Company proposes to include adjustments to the reserve balances for both federal protected EDIT and federal unprotected EDIT based upon the Company's final 2017 federal income tax return filed in late 2018. For federal protected EDIT the Company recommends that the Commission conclude that it is appropriate for CWSNC to continue to return the federal protected EDIT balance maintaining the amortization period approved by the Commission in the Sub 360 Order. In addition, in witness DeStefano's testimony, the Company recommends reducing the term of the federal unprotected EDIT rider approved in the Sub 360 Order (originally 48 months with 35 months now remaining) to a two-year (or 24-month) term as of the effective date of the current proceeding.

Public Staff witness Boswell stated in her direct testimony that certain adjustments to book balances and reserves related to EDIT were recorded to CWSNC's books, adjustments that were not reflected in the Company's most recent rate case. She noted that these adjustments affect the balance of both federal protected EDIT and federal unprotected EDIT. Witness Boswell further stated that the adjustments to the federal protected EDIT and federal unprotected EDIT balances are primarily because: (1) the Company took advantage of a late IRS notice stating that regulated utilities were allowed 100% bonus depreciation for those assets placed in service during the period of September 28, 2017, to December 31, 2017, without a binding contract in place before September 28, 2017, and (2) the Company adjusted amounts utilized in the prior rate case to the actual amounts on its final tax return for 2017. Witness Boswell recommended one adjustment to correct mismatched calculations. She proposed calculating both federal protected EDIT and federal unprotected EDIT amortizations with the adjustments effective as of April 1, 2020. Finally, the Public Staff does not oppose the Company's request to refund the remaining federal unprotected EDIT balance over 24 months instead of the remaining 35 months as originally ordered in Sub 360.

Settlement Exhibit I filed with the Stipulation in the current proceeding reflects the correction to the calculation of federal unprotected EDIT proposed by Public Staff witness Boswell, the reduction of the rider period for the federal unprotected EDIT from 35 months to 24 months, and includes the rate base impact of the flow back of federal protected EDIT in accordance with the RSGM, as approved in Sub 360, in the revenue requirement. In addition, the revenue requirement depicted on Settlement Exhibit I also includes the flow back of state EDIT in accordance with previous Commission orders in Sub 356 and Sub 360. No other party presented evidence on these matters.

Based on the foregoing, the Commission concludes that it is reasonable and appropriate for purposes of this proceeding to accept the Stipulation between CWSNC and the Public Staff on the tax issues. Therefore, the Commission concludes that CWSNC should continue to flow back the federal protected EDIT in accordance with the RSGM as ordered in Sub 360, and the Company shall refund its remaining federal unprotected EDIT balances over 24 months instead of the remaining 35 months as originally ordered by the Commission in Sub 360. Further, CWSNC should continue to flow back the state EDIT (which was originally over a three-year period) in accordance with the Commission's Sub 356 Order as confirmed in the Commission's Sub 360 Order.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 51-59

Capital Structure, Cost of Capital, and Overall Rate of Return

The evidence supporting these findings of fact and conclusions is contained in the verified Application and the accompanying NCUC Form W-1, the testimony and exhibits of the public witnesses, the direct and rebuttal testimony and exhibits of Company witness D'Ascendis, and the direct and supplemental testimony and exhibits of Public Staff witness Hinton.

Rate of Return on Equity

The Commission's consideration of the evidence and decision on this issue is set out below and is organized into three sections. The first is a summary of the record evidence on rate of return on common equity. The second is a summary of the law applicable to the Commission's decision on rate of return on common equity. The third is an application of the law to the evidence and a discussion and explanation of the Commission's ultimate decision on rate of return on common equity.

Summary of Record Evidence on Return on Equity

In its Application, the Company requested approval for its rates to be set using a rate of return on common equity of 10.75%. This request was based upon and supported by the direct testimony of CWSNC witness D'Ascendis. In his rebuttal testimony, witness D'Ascendis reduced his recommended rate of return on common equity to 10.20% based upon his updated analyses. This rate of return on common equity compares to a 9.75% rate of return on common equity underlying CWSNC's current rates. Public Staff witness Hinton, in his direct testimony, recommended a rate of return on common equity for CWSNC of 9.00%. In his supplemental testimony, witness Hinton revised and increased his recommended return on common equity to 9.10%.

Direct and Rebuttal Testimony of Dylan W. D'Ascendis (CWSNC)

Company witness D'Ascendis recommended in his direct testimony a rate of return on common equity of 10.75%. This 10.75% was based upon his indicated cost of common equity of 10.35%, plus a recommended size adjustment of 0.40%. In his rebuttal testimony, witness D'Ascendis provided an updated analysis reflecting current investor expectations and reduced his recommended rate of return on common equity to 10.20%, including his recommended 0.40% size adjustment.

CWSNC witness D'Ascendis' recommendation was based upon his Discounted Cash Flow (DCF) model, his Risk Premium Model (RPM), and his Capital Asset Pricing Model (CAPM), applied to market data of a proxy group of six water companies (Utility Proxy Group). He also applied the DCF, RPM, and CAPM to a proxy group of domestic, non-price regulated companies (Non-Price Regulated Proxy Group) which he described as comparable in total risk to his Utility Proxy Group.

The results derived from witness D'Ascendis' analyses in his direct and rebuttal testimony are as follows:

Summary of D'Ascendis Pre-Filed Testimony on Common Equity Cost Rate		
	Direct Testimony	Rebuttal Testimony
Discounted Cash Flow Model	8.70%	8.81%
Risk Premium Model	10.62%	10.12%
Capital Asset Pricing Model	10.21%	9.35%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Proxy Group	11.78%	11.29%
Indicated Common Equity Cost Rate Before Adjustment	10.35%	9.80%
Size Adjustment	0.40%	0.40%
Recommended Common Equity Cost Rate After Adjustment	10.75%	10.20%

He concluded that a common equity cost rate of 9.80% for CWSNC is indicated before any Company-specific adjustments. He then adjusted this indicated rate upward by 0.40% to reflect CWSNC's smaller relative size as compared with the members of his Utility Proxy Group, resulting in a size-adjusted indicated common equity cost rate of 10.20%.

CWSNC witness D'Ascendis testified the six companies in his Utility Proxy Group were: American States Water Co.; American Water Works Co., Inc.; Artesian Resources, Inc.; California Water Service Group; Middlesex Water Co.; and York Water Co.

CWSNC witness D'Ascendis testified he used the single-stage constant growth DCF model. He testified his unadjusted dividend yields are based on the proxy companies' dividends as of October 18, 2019, divided by the average of closing market prices for the 60 trading days ending October 18, 2019.[15] He made an adjustment to the dividend yield because dividends are paid periodically, usually quarterly.

For CWSNC witness D'Ascendis' DCF growth rate he testified he only used analysts' five-year forecasts of earning per share (EPS) growth. He testified the mean result of his application of the single-stage DCF model is 8.73%, the median result is 8.88%, and the average of the two is 8.81% for his Utility Proxy Group as shown on D'Ascendis Rebuttal Exhibit 1, Schedule DWD-1R, page 3. He testified in arriving at a conclusion for the DCF-indicated common equity cost rate for his Utility Proxy Group, he relied on an average of the mean and the median results of the DCF.

Witness D'Ascendis used two risk premium methods. He testified his first method is the Predictive Risk Premium Model (PRPM), while the second method is a Risk Premium Model Using an Adjusted Total Market Approach. He testified the PRPM estimates the risk/return relationship directly, as the predicted equity risk premium is generated by the prediction of volatility or risk. He testified the inputs to his PRPM are the historical returns on the common shares of each company in the Utility Proxy Group minus the historical monthly yield on long-term U.S. Treasury securities through April 2019. He testified he added the forecasted 30-year U.S. Treasury Bond yield, 2.64% to each company's PRPM-derived equity risk premium to arrive at an indicated cost of common equity. His rebuttal mean PRPM indicated common equity cost rate for the Utility Proxy Group is 11.30%, and the median is 10.38%. He relied on the average of the mean and median results of the Utility Proxy Group PRPM to calculate a cost of common equity rate of 10.84% as shown on D'Ascendis Rebuttal Exhibit 1, Schedule DWD-1R, page 11, column (5).

CWSNC witness D'Ascendis testified his total market approach RPM adds a prospective public utility bond yield to an average of (1) an equity risk premium that is derived from a beta-adjusted total market equity risk premium, and (2) an equity risk premium based on the S&P Utilities Index. He calculated in his rebuttal testimony the adjusted prospective bond yield for the Utility Proxy Group to be 4.01% as shown on D'Ascendis Rebuttal Exhibit 1, Schedule DWD-1R, page 12, line 5, and the average equity risk premium to be 5.38% resulting in risk premium derived common equity to be 9.39% for his RPM using his Total Market Approach.

For his CAPM, witness D'Ascendis testified he applied both the traditional CAPM and the empirical CAPM (ECAPM) to the companies in his Utility Proxy Group and averaged the results. He testified the model is applied by adding a risk-free rate of return to a market risk premium, which is adjusted proportionately to reflect the systematic risk of the individual security relative to the total market as measured by the beta coefficient. For his CAPM beta coefficient, he considered two methods of calculation: the average of the beta coefficients of the Utility Proxy Group companies reported by Bloomberg

[15] See Schedule DWD-1R, page 3, footnote 1.

Professional Services, and the average of the beta coefficients of the Utility Proxy Group companies as reported by Value Line Investment Survey (Value Line).

CWSNC witness D'Ascendis in his rebuttal testified the risk-free rate adopted for both applications of the CAPM at 2.64%. This risk-free rate of 2.64% is based on the average of the *Blue Chip* consensus forecast of the expected yields on 30-year U.S. Treasury bonds for the six quarters beginning with the fourth calendar quarter of 2019 and ending with the first quarter in 2021, and long-term projections for the years 2021 to 2025, and 2026 to 2030. D'Ascendis Rebuttal Exhibit 1, DWD-1R, page 22, column (5), and page 23, column (2).

Witness D'Ascendis testified on rebuttal that the mean result of his CAPM/ECAPM analyses is 9.39%, the median is 9.31%, and the average of the two is 9.35%. Witness D'Ascendis testified that, consistent with his reliance on the average of his mean and median DCF results, the indicated common equity costs rate using the CAPM/ECAPM is 9.35%.

Witness D'Ascendis also selected 11 domestic, non-price regulated companies for his Non-Price Regulated Proxy Group that he believes are comparable in total risk to his Utility Proxy Group. He calculated common equity cost rates using the DCF, RPM, and CAPM for the Non-Price Regulated Proxy Group. In his rebuttal testimony, witness D'Ascendis' DCF result was 11.63%, his RPM cost rate was 11.41%, and his CAPM/ECAPM cost rate was 10.44%. Witness D'Ascendis testified that the average of the mean and median of these models was 11.29%, which he used as the indicated common equity cost rate for the Non-Price Regulated Proxy Group.

Based on the results of the application of multiple cost of common equity models to the Utility Proxy Group and the Non-Price Regulated Proxy Group, witness D'Ascendis testified that the reasonable, appropriate and indicated cost of equity for CWSNC before any adjustment for relative risk was 9.80%.

Witness D'Ascendis also made a 0.40% equity cost rate adjustment due to CWSNC's small size relative to the Utility Proxy Group. He testified that the Company has greater relative risk than the average company in the Utility Proxy Group because of its smaller size compared with the group, as measured by an estimated market capitalization of common equity for CWSNC (whose common stock is not publicly traded). This resulted in a size-adjusted cost of common equity for CWSNC of 10.20%.

Additionally, witness D'Ascendis stated that he had reviewed the Commission's Sub 360 Order regarding the issues of the use of the PRPM, the ECAPM, the use of a non-price regulated proxy group, and the applicability of a size adjusted cost of common equity for CWSNC. In response to these concerns, witness D'Ascendis provided testimony further supporting the inclusion of such factors in determining his recommended return on equity.

Specifically, in terms of the PRPM, he addressed the Commission's concerns about using a specific statistical package to calculate the PRPM results, which made the Commission skeptical that investors would place significant weight on the model. He explained that the general autoregressive conditional heteroskedasticity (GARCH) model used for the PRPM has been in the public domain since the 1980s and is available in several statistical packages which are not financially prohibitive for investors.

In response to the Commission's concerns regarding the ECAPM, which were that there was not enough evidence in the record as to why the ECAPM was superior to the CAPM, witness D'Ascendis provided substantially more information on the subject than what was presented in Sub 360.

In response to the Commission's concerns regarding the use of non-price regulated companies, which were that the non-price regulated companies were not of similar risk to the utility proxy group, witness D'Ascendis provided an additional measure of risk to show that, indeed, his non-price regulated proxy group was similar in total risk to the utility proxy group. The study showed that the non-price regulated proxy group's mean and median coefficient of variation (CoV), of net profit were within the range of CoVs of net profit set by the utility proxy group. The coefficient of variation is often used by investors and economists to determine volatility (i.e. risk) and the use of net profit directly ties to earnings and stock prices.

Finally, witness D'Ascendis responded to the Commission's concerns regarding the size adjustment which were whether the size studies presented in the record were applicable to utilities, and that the selection of a 40-basis point adjustment from an indicated 461 basis point risk premium was rather arbitrary. In order to provide more information to the Commission in this case, witness D'Ascendis conducted a study on whether the size effect is in fact applicable to utilities. His study included the universe of water, gas, and electric companies included in Value Line Standard Edition. From each of the utilities' Value Line Ratings & Reports, witness D'Ascendis calculated the 10-year CoV of net profit (a measure of risk) and current market capitalization (a measure of size) for each company. After ranking the companies by size (largest to smallest) and risk (least risky to most risky), he made a scatter plot of the data, as shown on Chart 1 in his direct testimony.

Witness D'Ascendis testified that, as shown in his Chart 1 of his direct testimony, as company size decreases (increasing size rank), the CoV increases, linking size and risk for utilities. The R-Squared value of 0.0962 means that approximately 10% of the change in risk rank is explained by the size rank. While a 0.0962 R-Squared value does not appear to have strong explanatory power, the average R-Squared value of the Utility Proxy Group's beta coefficient is 0.0794. The selection of a 40-basis point upward adjustment based on its difference in size given an indicated risk premium of approximately 400 basis points is consistent with the approximate 0.10 R-Squared value of the size study applicable to utilities. With this additional information, witness D'Ascendis stated that he hoped the Commission would revisit this concern in its Order in this case.

Witness D'Ascendis' rebuttal testimony criticized the testimony of witness Hinton's approach to estimating CWSNC's required return on equity for a number of perceived shortcomings, including Hinton's:

(a) Inclusion of a gas proxy group to determine a rate of return on common equity for a water utility;
(b) Misapplication of the discounted cash flow model;
(c) Misapplication of the risk premium model;
(d) Misapplication of the capital asset pricing model;
(e) Misapplication of the Comparable Earnings Model;
(f) Failure to account for size-specific risks; and
(g) Opinion that the approval of the Company's requested consumption adjustment mechanism (CAM) in this proceeding requires a downward adjustment to the rate of return on common equity.

Tr. vol. 8, 267–68.

CWSNC Witness D'Ascendis Cross-Examination

CWSNC witness D'Ascendis testified on cross-examination that in the Middlesex Water Company, New Jersey general rate case decided in July 2015, he recommended a specific rate of return on common equity of 10.40%, but that a rate of return on common equity of 9.75% was approved which was 65 basis points less than his recommendation. Witness D'Ascendis testified that in the Carolina Water Service, Inc. South Carolina 2015 general rate case where his recommended rate of return on common equity range was 10.00% to 10.50%, the approved rate of return on common equity was 9.34% which was 91 basis points below the midpoint of his recommended range.

CWSNC witness D'Ascendis further testified on cross-examination that in the Middlesex Water Company, New Jersey general rate case decided in March 2018, his recommended specific rate of return on common equity was 10.70%, and a 9.60% rate of return on common equity was approved whereby his recommended rate of return on common equity was 110 basis points above the approved rate of return on common equity. He testified that the 2018 South Carolina decision for Carolina Water Service, Inc. of South Carolina was the only one of the fifteen listed return on equity decisions, that a commission approved an allowed rate of return on common equity within his recommended range. He also testified that in the recent CWSNC general rate case, order dated February 21, 2019, his recommended rate of return on common equity range was 10.80% to 11.20%, with a midpoint of 11.00%, which was 125 basis points above the Commission approved rate of return on common equity of 9.75%.

Witness D'Ascendis testified on cross-examination that the authorized rates of return on equity for all 15 decisions averaged 127 basis points below his recommended rates of return on equity, and after removing a 2016 outlier case in Missouri where he was 360 basis points above the approved rate of return on common equity, the average difference between falls to 110 basis points. He further testified on cross-examination that his rebuttal specific return on equity recommendation of 10.20% less the 110 basis points, would be the same number as Public Staff witness Hinton's recommended 9.10% rate of return on common equity.

Witness D'Ascendis also testified that Public Staff D'Ascendis Cross-Examination Exhibit 1, page 2 listed the RRA approved rates of return on equity for the last three years for his Utility Proxy Group companies with approved average rates of return on equity of 9.42%.

Witness D'Ascendis testified that as shown on Public Staff D'Ascendis Cross-Examination Exhibit 2, which was a RRA summary of commission approved rates of return on equity from January 2014 through June 30, 2019, the average approved return on equity was 9.50% for 30 return on equity decisions in the most recent three-year period July 1, 2016 through June 30, 2019.

With respect to his recommended 40 basis point size adjustment, witness D'Ascendis testified on cross-examination that he knew CWSNC served approximately 50,000 customers in North Carolina, was the second largest Commission regulated water and wastewater utility in North Carolina, and the two next largest companies serve approximately 7,000 customers each.

Witness D'Ascendis testified he was aware CWSNC did not have any industrial customers, and that more than 99.5% of its customers were residential plus some small stores and some schools. He testified that CWSNC was geographically diversified in North Carolina with systems along the North Carolina coast, the Piedmont and throughout the mountains.

Witness D'Ascendis further testified on cross-examination that CWSNC obtains all its debt through its parent, Utilities, Inc., and that CWSNC does not go into the debt market. He testified that Utilities Inc. is owned by Corix. Witness D'Ascendis read into the record sections of the pre-filed testimony of Corix CEO and President Gordan Barefoot, which stated Corix provides to CWSNC a full suite of support services, and Corix provides access to favorable terms for debt financing in capital markets. Both the Public Staff and CWSNC used the Utilities, Inc. capital structure and debt costs for CWSNC in this general rate case.

Witness D'Ascendis testified that based on Public Staff D'Ascendis Cross-Examination, Exhibit 4, that the Utilities, Inc. has common equity of $280.2 million. When multiplied by the D'Ascendis Utility Proxy Group market to book ratio of 347.3%, the result is a market capitalization for Utilities, Inc. of $973.3 million. Witness D'Ascendis testified that this market capitalization of three of the companies in the D'Ascendis Utility Proxy Group; those companies being Artesian Resources Corporation at $316.0 million, York Water Company at $440.0 million, and Middlesex Water Company at $951.0 million.

CWSNC witness D'Ascendis on cross-examination further testified Public Staff D'Ascendis Cross-Examination Exhibit 5 was a comparison of the growth in dividends and stock market prices of the D'Ascendis Proxy Group of companies from April 15, 2011 to November 29, 2019. During that period dividend and stock price movements were as follows:

Company	Dividend Growth	Share Price Appreciation
American States Water	126%	378%
American Water Works	127%	419%
Artesian Resource Group	32%	91%
California Water Service	27%	173%
Middlesex Water Company	29%	243%
York Water Co.	36%	163%
Six Company Average	59%	245%

Witness D'Ascendis testified that he agreed that stock market prices have increased materially since April 2011, and dividend amounts have lagged way behind. He further testified that dividend yields are one of the two major components of the DCF.

During cross-examination CWSNC witness D'Ascendis also testified as to the stock price increases subsequent to the California Public Utilities Commission Order dated March 22, 2018 which approved a 9.20% rate of return on common equity for California American Water Co., a wholly-owned subsidiary of American Water Works; a 9.20% rate of return on common equity for California Water Service Co.; an 8.90% rate of return on common equity for Golden State Water Co., a wholly-owned subsidiary of American States Water; and an 8.90% rate of return on common equity for San Jose Water Co. The stock market percentage increases for the period March 22, 2018 to November 29, 2019, were: American Water Works 51.0%, American States Water 56.6%, California Water Service 36.3% and San Jose Water 33.1%, as shown on Public Staff D'Ascendis Cross-Examination Exhibit 6.

Witness D'Ascendis also testified on cross-examination about the significant decrease in the yields of 30-year Treasury Bond and A-Rated Public Utility Bonds as shown on Public Staff D'Ascendis Cross-Examination Exhibit 7. During the one-year period September 2018 to September 2019, the yields on A Rated Public Utility Bonds decreased from 4.32% to 3.37%, a decrease of 95 basis points from the previous CWSNC general rate case expert witness hearing heard before the Commission on October 16, 2018. Witness D'Ascendis' risk free 30-year Treasury Bond projected yield in this current case, shown in rebuttal exhibits filed on November 20, 2019, Schedule DWD-1R, page 22 was 2.64% compared to the 3.74% in September 2018, as stated in his prior Sub 360 CWSNC case testimony in D'Ascendis Rebuttal Exhibit 1, Schedule DWD-1R, page 11, column 6, and page 22, footnote 2, resulting in a bond yield decrease between his two rebuttal testimonies of 110 basis points. He further testified that as of November 29, 2019, the actual 30-year Treasury Bond yield was 2.19% compared to the October 16, 2018 actual 30-year Treasury Bond yield of 3.32%, a decrease of 113 basis points.

With respect to the non-price regulated companies in witness D'Ascendis' testimony for which he performed DCF, Risk Premium and CAPM analyses, he testified on cross-examination that these companies had competition unlike CWSNC, which has franchises protecting it from competition by other investor owned water utilities. Witness D'Ascendis testified that each time he has presented the non-priced regulated company analyses, the Commission has rejected and given no weight to these analyses.

Witness D'Ascendis testified that the Commission in CWSNC's February 19, 2019, Sub 360 Order found credible, probative, and entitled to substantial weight to his DCF, Total Market Risk Premium, and Traditional CAPM. He testified that his rebuttal exhibits in this case for these same analyses stated DCF 8.81%, Total Market Risk Premium 9.39%, Traditional CAPM 8.90%, with the average of these three of his models being 9.03%, all as shown on Public Staff D'Ascendis Cross-Examination Exhibit 10.

In response to a request by Chair Mitchell, CWSNC witness D'Ascendis filed a Late Filed Exhibit on December 13, 2019, showing the effect on each of his models using witness Hinton's 2.53% interest rate as the current yield for 30-year Treasury Bonds rather than the projected yields in witness D'Ascendis' rebuttal exhibits. This D'Ascendis On-the-Record Data Request provided the following results:

	D'Ascendis Late-Filed Exhibit #1
Discounted Cash Flow Model	8.81%
Risk Premium Model	10.00%
Capital Asset Pricing Model	9.29%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Proxy Group	11.16%
Indicated Common Equity Cost Rate Before Adjustment	9.75%
Size Adjustment	0.40%
Recommended Common Equity Cost Rate After Adjustment	10.15%

Public Staff Witness Hinton Testimony

Public Staff Director of Economic Research John R. Hinton testified the Public Staff recommends an overall rate of return of 7.20%, based on a capital structure consisting of 50.90% long-term debt at a cost rate of 5.36% and 49.10% common equity at a cost rate of 9.10%. He testified his recommendations result in pre-tax interest coverage equaling 3.1 times and a funds flow to debt ratio of 25.0%, which should qualify for a single "A" bond rating.

Witness Hinton described the current financial market conditions, testifying that the cost of financing is much lower today than in the more inflationary period of the 1990s. More recently, the continued low rates of inflation and expectations of future low inflation rates have contributed to even lower long-term interest rates. He testified that according to Moody's Bond Survey, yields on long-term "A" rated public utility bonds have fallen 88 basis points from 4.25% on February 21, 2019, the date of the order in Sub 360, as compared to 3.37% for September 2019. He testified that by the close of this proceeding, CWSNC will have received five rate increases over the last six years in Docket Nos. W-354, Sub 360, Sub 356, Sub 344, and Sub 336. He further testified relative to the filing of the cost of capital settlement in the CWSNC January 2014 rate case in Docket No. W-354, Sub 336, yields on Moody's A-rated utility bonds are 126 basis points lower than the average 4.63% yield observed during the CWSNC January 2014, as illustrated by Hinton Exhibit JRH-1.

Witness Hinton testified that interest rates on various loans have fallen as the yields on treasury securities have declined since the Commission issued its order on February 21, 2019. The graph on page 15 of witness Hinton's direct testimony shows the lower yields that on average are over 100 basis points lower for all durations except for a minor increase in 90-day treasury bills. He testified that the average decrease in treasury bonds of 5-, 7-, 10-, 20-, and 30-year bonds is 111 basis points. He testified while Utilities, Inc., Corix, and its ultimate parent, the British Columbia Investment Management Corporation (BCIMC) generally cannot obtain capital at these interest rates, the falling yields are indicators of the declining cost of debt capital.

Public Staff witness Hinton testified that the current lower interest rates, especially for longer-term securities, and stable inflationary environment of today indicate that borrowers are paying less for the time value of money. He testified that this is significant since utility stocks and utility capital costs are highly interest rate-sensitive relative to most industries within the securities markets. He testified that given that investors often view purchases of the common stocks of utilities as substitutes for fixed income investments, the reductions in interest rates observed over the past ten years or more has paralleled the decreases in investor required rates of return on common equity.

Public Staff witness Hinton testified that he does not rely on interest rate forecasts. Rather, he believes that relying on current interest rates, especially in relation to yields on long-term bonds, is more appropriate for ratemaking in that it is reasonable to expect that as investors in the marketplace price bonds based upon expectations on demand and supply of capital, future interest rates, inflation rates, etc. He testified that while he has a healthy respect for forecasting, he is aware of the risk of relying on predictions of rising interest rates to determine utility rates. He presented a portion of the testimony of Aqua North Carolina, Inc. witness Pauline Ahern in the 2013 Aqua rate case, Docket No. W-218, Sub 363. In that case she identified several interest rate forecasts by Blue Chip Financial Forecasts of 30-year Treasury Bond yields that were predicted to rise to 4.3% in 2015, 4.70% in 2016, 5.20% in 2017, and 5.50% for 2020-2024. He presented the graph 30-Year US Treasury Bonds on page 18 of his direct testimony, which showed in 2015, the range was approximately 2.50% to 3.10%, in 2016 the range was approximately 2.50% to 3.10%, and in 2017 the range was approximately 2.25% to 3.10%. Witness Hinton testified that similar overestimated forecasts can be identified in witness D'Ascendis' Exhibit DWD-4 in the CWSNC's 2018 rate case where the Blue-Chip consensus forecast predicted the 30-year Treasury Bonds would rise to 3.80% by the third quarter of 2019. According to the Federal Reserve, the highest observed yield on 30-year Treasury Bonds for the third quarter of 2019 is 2.65%, and the average for the quarter was 2.29%. He testified that these types of errors make these interest rate forecasts inappropriate for ratemaking.

Public Staff witness Hinton testified that he used the discounted cash flow (DCF) model and the Risk Premium model to determine the cost of equity for CWSNC. He testified that the DCF model is a method of evaluating the expected cash flows from an investment by giving appropriate consideration to the time value of money. Witness Hinton testified that the DCF model is based on the theory that the price of the investment will equal the discounted cash flows of returns. The return to an equity investor comes in the form of expected future dividends and price appreciation. He testified that as the new price will again be the sum of the discounted cash flows, price appreciation is ignored, and attention focused on the expected stream of dividends.

Witness Hinton testified that he applied the DCF method to a comparable group of seven water utilities followed by Value Line Investment Survey. He testified that the standard edition of Value Line covers eight water companies. He excluded Consolidated Water Co. due to its significant overseas operations. Witness Hinton included a group of nine natural gas local distribution companies (LDCs) in his DCF analysis stating these LDCs exhibit risk measures similar to his proxy group of water companies.

Public Staff witness Hinton calculated the dividend yield component of the DCF by using the Value Line estimate of dividends to be declared over the next 12 months divided by the price of the stock as reported in the Value Line Summary and Index sections for each week of the 13-week period July 26, 2019, through October 18, 2019. He testified that a 13-week averaging period tends to smooth out short-term variations in the stock prices. This process resulted in an average dividend yield of 1.7% for his proxy group of water utilities and 2.6% for the LDC group utilities.

To calculate the expected growth rate component of the DCF, Public Staff witness Hinton employed the growth rates of his proxy group in earnings per share (EPS), dividends per share (DPS), and book value per share (BPS) as reported in Value Line over the past ten and five years. He also employed the forecasts of the growth rates of his water and LDC proxy groups in EPS, DPS, and BPS as reported in Value Line. He testified that the historical and forecast growth rates are prepared by analysts of an independent advisory service that is widely available to investors and should also provide an estimate of investor expectations. He testified that he includes both historical known growth rates and forecast growth rates, because it is reasonable to expect that investors consider both sets of data in deriving their expectations.

Public Staff witness Hinton testified that he also incorporated the consensus of various analysts' forecasts of five-year EPS growth rate projections as reported in Yahoo Finance. He testified the dividend yields and growth rates for each of the companies and for the average for his comparable proxy groups are shown in Exhibit JRH-4.

Public Staff witness Hinton concluded that based upon his DCF analysis that a reasonable expected dividend yield is 1.7% with an expected growth rate of 6.0% to 7.0%. He testified that his DCF analysis produces a cost of common equity for his comparable proxy group of water utilities of 7.7% to 8.7%. Based upon the DCF analysis for the comparable group of LDCs, he determined that a reasonable expected dividend yield is 2.6%, with an expected growth rate of 5.7% to 6.7%, which yields a range of results of 8.3% to 9.3% for the cost of equity.

He testified that his ultimate DCF based cost of equity is based on the average estimates for the two groups of companies, which he summarized in his Hinton Exhibit 8 that quantifies an approximate range of DCF based cost of equity estimates of 8.48% to 8.80% for his DCF based cost of equity estimate of 8.64%.

Witness Hinton testified that the equity risk premium method can be defined as the difference between the expected return on a common stock and the expected return on a debt security. The differential between the two rates of return are indicative of the return investors require in order to compensate them for the additional risk involved with an investment in the company’s common stock over an investment in the company’s bonds that involves less risk.

Witness Hinton testified that his method relies on approved returns on common equity for water utility companies from various public utilities commissions that is published by the Regulatory Research Associates, Inc. (RRA), within SNL Global Market Intelligence. In order to estimate the relationship with a representative cost of debt capital, he regressed the average annual allowed equity returns with the average Moody’s A-rated yields for Public Utility Bonds from 2006 through 2019. His regression analysis which incorporates years of historical data is combined with recent monthly yields to provide an estimate of the current cost of common equity.

Witness Hinton testified that the use of allowed returns as the basis for the expected equity return has two strengths over other approaches that involve various models that estimate the expected equity return on common stocks and subtracting a representative cost of debt. He testified that one strength of his approach is that authorized returns on equity are generally arrived at through lengthy investigations by various parties with opposing views on the rate of return required by investors. He testified that it is reasonable to conclude that the approved allowed returns are good estimates of the cost of equity.

Public Staff witness Hinton testified that the summary data of risk premiums shown on his Exhibit JRH-5, page 1 of 2, indicates that the average risk premium is 5.00%, with a maximum premium of 5.78%, and minimum premium of 3.73%, which when combined with the last six months of Moody’s A-rated utility bond yields produces yields with an average cost of equity of 8.70%, a maximum cost of equity of 9.48%, and a minimum cost of equity of 7.44%. To better estimate the current cost of equity, he performed a statistical regression analysis as shown on Exhibit JRH 5, page 2 of 2 in order to quantify the relationship of allowed equity returns and bond costs. He testified that by applying the risk premium to the current utility bond cost of 3.71%, resulted in a current estimate of the equity risk premium of equity of 9.57%.

Public Staff witness Hinton concluded that based on all of the results of his DCF model that indicate a cost of equity from 8.48% to 8.80% with a central point estimate of 8.64%, and the risk premium model that indicates a cost of equity of 9.57%, he determined that the investor required rate of return on common equity for CWSNC is between 9.11% which he rounded to 9.10% as shown on Hinton Exhibit 8.

Public Staff witness Hinton testified as to the reasonableness of his recommended return, that he considered the pre-tax interest coverage ratio produced by his cost estimates for the cost equity. He testified that based on his recommended capital structure, cost of debt, and equity return of 9.10%, the pre-tax interest coverage ratio is approximately 3.1 times. He testified that this tax interest coverage and a funds flow to debt ratio of 25.0%, as shown on Supplemental Hinton Exhibit 10, should allow CWSNC to qualify for a single “A” bond rating.

Witness Hinton also performed a comparable earnings analysis and a CAPM analysis solely as checks on the results of this DCF and Risk Premium Regression Analysis. He testified that his comparable earnings analysis for a group of eight water utilities and nine LDC companies produced a five-year average return on equity of 9.83%. He testified that a weakness is that actual earned rates of return can be impacted by factors outside the company’s control, such as weather, inflation, and tax changes, including deferred income taxes. These unforeseen developments can cause a company’s earned rate of return to exceed or fall short of its cost of capital during any certain period making this method somewhat less reliable than other cost of capital methods, and it suffers from circular reasoning. In addition, he testified that earned rates of return on equity may often include non–regulated income. He testified that his CAPM analysis utilizing his preferred geometric mean return produced return on equity estimates of 7.65% and 7.68% that are at the low end of CWSNC’s cost of equity. As such, he testified his CAPM provides a limited check on his recommended cost of equity.

Witness Hinton in his direct testimony had a recommended a rate of return on common equity of 9.10% with a downward 10 basis point adjustment to reflect reduced risk due to the consumption adjustment mechanism CWSNC applied for in this proceeding. His resulting recommended allowed rate return on equity was thus 9.00%. After CWSNC withdrew its request for a consumption adjustment mechanism, witness Hinton filed supplemental testimony withdrawing this 10-basis point downward adjustment.

Witness Hinton testified that his recommended return on common equity takes into consideration the impact of the water and sewer system improvement charges (WSIC and SSIC) pursuant to N.C.G.S. § 62-113.12 on CWSNC’s financial risk. He testified that the WSIC and SSIC mechanisms provide the ability for enhanced cost recovery of the eligible capital improvements which reduces regulatory lag through incremental and timely rate increases. He testified he believes this mechanism is seen by debt and equity investors as supportive regulation that mitigates business and regulatory risk. Witness Hinton testified that he believes that this mechanism is noteworthy and is supportive of his 9.10% return on equity recommendation.

Witness Hinton testified that it is not appropriate to add a risk premium to the cost of equity due to the size of the company. He testified that CWSNC is owned by Corix Infrastructure, Inc. (Corix), which is owned by BCIMC. Corix has a significant influence over the balances of common equity and long-term debt of Utilities, Inc. and CWSNC. Corix determines the amounts of dividend payments to BCIMC and the frequency of those payments. He testified that from a regulatory policy perspective; ratepayers should not be required to pay higher rates because they are located in the franchise area of a utility of a size which is arbitrarily considered to be small. He further testified that if such adjustments were routinely allowed, an incentive would exist for large existing utilities to form subsidiaries when merging or even to split-up into subsidiaries as to obtain higher allowed returns. He further testified that CWSNC operates in a franchise environment that insulates the company from competition and it operates with procedures in place that allow for rate adjustments for eligible capital improvements, cost increases, and other unusual circumstances that impact its earnings. Witness Hinton testified that CWSNC operates in the water and sewer industry, where expensive bottled water provides the only alternative to utility service. It is factually correct that rating agencies and investors add a risk factor for small companies with relatively limited capital resources; however, the inherent protection from competition removes this risk that would otherwise be a concern to investors.

Witness Hinton noted that he also testified to these same size adjustment concerns in the last CWSNC rate case, Sub 360, where the Commission found that a size adjustment was not warranted. He testified that similar arguments were made in a 1997 CWS System, Inc., rate case, Docket No. W-778, Sub 31, by witness Hanley of AUS Consultants, who relied on similar cost of capital methods as witness D'Ascendis, as noted on pages 824-25 in its Eighty-Seventh Report of Orders and Decisions. In CWSNC's 1994 rate case, Docket No. W-354, Sub 128, the Commission was not persuaded to accept an adjustment for small size and its elevated risk, as noted on page 520 in its Eighty-Fourth Report on Orders and Decisions. Tr. vol. 7, 785–86. In a rate case brought by North Carolina Natural Gas, Inc., Docket No, G-21, Sub 293, the explicit consideration of the small size of a regulated utility was argued before this Commission. In its December 6, 1991 Order in that case, the Commission disagreed with the Company witness who testified that the Company's small size warranted the selection of other small sized companies in his proxy group. Witness Hinton testified that while there are published studies that address how the small size of a company relates to higher risks, he is aware of only one study by Dr. Annie Wong[16] that focuses on the size of regulated utilities and risk. He testified that Dr. Wong has tested the data for a size premium in utilities and concluded that "unlike industrial stocks, utility stocks do not exhibit a significant size premium. As explained, there are several reasons why such a size

[16] Annie Wong, "Utility Stocks and the Size Effect: An Empirical Analysis," Journal of the Midwest Finance Association, pp. 95-101, (1993).

premium would not be attributable to utilities because they are regulated closely by state and federal agencies and commissions, and hence, their financial performance is monitored on an ongoing basis by both the state and federal governments." Tr. vol. 7, 187.

Public Staff Witness Hinton Cross-Examination

Witness Hinton testified on cross-examination that the electric and natural gas industries in North Carolina have a number of surcharge rate adjustment mechanisms available to them which serve to enhance revenue recovery and thereby stabilize earnings and that those mechanisms also employ deferral accounting as part of the true-up process. Witness Hinton also testified that all utilities are concerned with regulatory lag and that surcharge rate adjustment mechanisms reduce regulatory lag, . . . maybe significantly . . . ." Tr. vol. 7, 105, 93.

Witness Hinton also testified on cross-examination that during "the last couple years your [CWSNC's] earned returns have been less than your allowed returns." *Id.* at 104.

Witness Hinton further stated that he considered his initial proposal (which he withdrew when CWSNC withdrew its request to implement a CAM) to impose a 10-basis point downward adjustment with respect to his recommended rate of return on common equity in consideration of the Company's initially-proposed CAM to be a "material" adjustment. *Id.* at 111.

Witness Hinton also testified on cross-examination that the 23-basis point reduction in CWSNC's cost of long-term debt from 5.59% at the time the Company filed its Verified Rate Case Application to 5.36% at September 30, 2019, was "material." *Id*. at 133.

Law Governing the Commission's Decision on Return on Equity

In the absence of a settlement agreed to by all parties the Commission must exercise its independent judgment and arrive at its own independent conclusion as to all matters at issue, including the rate of return on common equity. *See, e.g., CUCA I,* 348 N.C. at 466, 500 S.E.2d 707. In order to reach an appropriate independent conclusion regarding the rate of return on common equity the Commission should evaluate the admitted evidence, particularly that presented by conflicting expert witnesses. *State ex rel. Utils. Comm'n v. Cooper*, 366 N.C. 484, 739 S.E.2d 541, 546-47 (2013) (*Cooper I*). In this case the evidence relating to the Company's cost of equity capital was presented by Company witness D'Ascendis and Public Staff witness Hinton. No rate of return on common equity expert evidence was presented by any other party.

The baseline for establishment of an appropriate rate of return on common equity is the constitutional constraints established by the decisions of the United States Supreme Court in *Bluefield Water Works & Improvement Co., v. Pub. Serv. Comm'n of W. Va.,* 262

U.S. 679 (1923) (*Bluefield*), and *Fed. Power Comm'n v. Hope Natural Gas Co.,* 320 U.S. 591 (1944) (*Hope*) which, as the Commission has previously noted, establish that:

> To fix rates that do not allow a utility to recover its costs, including the cost of equity capital, would be an unconstitutional taking. In assessing the impact of changing economic conditions on customers in setting an ROE, the Commission must still provide the public utility with the opportunity, by sound management, to (1) produce a fair profit for its shareholders, in view of current economic conditions, (2) maintain its facilities and service, and (3) compete in the marketplace for capital.

DEC Sub 1146 Order at 50; *see also State ex rel. Utils. Comm'n v. Gen. Tel. Co.*, 281 N.C. 318, 370, 189 S.E.2d 705, 738 (1972) (*General Telephone*). As the North Carolina Supreme Court held in *General Telephone*, these factors constitute "the test of a fair rate of return declared" in *Bluefield* and *Hope*. *Id.*

The rate of return on common equity is, in fact, a cost. The return that equity investors require represents the cost to the utility of equity capital.

> [T]he cost of capital to the utility is synonymous with the investor's return, and the cost of capital is the earnings which must be generated by the investment of that capital in order to pay its price, that is, in order to meet the investor's required rate of return.

Morin, Roger A., *Utilities' Cost of Capital* 19-21 (Public Utilities Reports, Inc. 1984). "The term 'cost of capital' may [also] be defined as the annual percentage that a utility must receive to maintain its credit, to pay a return to the owners of the enterprise, and to ensure the attraction of capital in amounts adequate to meet future needs." Phillips, Charles F., Jr., *The Regulation of Public Utilities* (Public Utilities Reports, Inc. 1993), at 388.

Long-standing decisions of the North Carolina Supreme Court have recognized that the Commission's subjective judgment is a necessary part of determining the authorized rate of return on common equity. *Public Staff,* 323 NC at 490, 374 S.E.2d at 369. Likewise, the Commission has observed as much in exercising its duty to determine the rate of return on common equity, noting that such determination is not made by application of any one simple mathematical formula:

> Throughout all of its decisions, the [United States] Supreme Court has formulated no specific rules for determining a fair rate of return, but it has enumerated a number of guidelines. The Court has made it clear that confiscation of property must be avoided, that no one rate can be considered fair at all times and that regulation does not guarantee a fair return. The Court also has consistently stated that a necessary prerequisite for profitable operations is efficient and economical

> management. Beyond this is a list of several factors the commissions are supposed to consider in making their Decisions, but no weights have been assigned.
>
> The relevant economic criteria enunciated by the Court are three: financial integrity, capital attraction and comparable earnings. Stated another way, the rate of return allowed a public utility should be high enough: (1) to maintain the financial integrity of the enterprise, (2) to enable the utility to attract the new capital it needs to serve the public, and (3) to provide a return on common equity that is commensurate with returns on investments in other enterprises of corresponding risk. These three economic criteria are interrelated and have been used widely for many years by regulatory commissions throughout the country in determining the rate of return allowed public utilities.
>
> In reality, the concept of a fair rate of return represents a “zone of reasonableness.” As explained by the Pennsylvania commission:
>
>> There is a range of reasonableness within which earnings may properly fluctuate and still be deemed just and reasonable and not excessive or extortionate. It is bounded at one level by investor interest against confiscation and the need for averting any threat to the security for the capital embarked upon the enterprise. At the other level it is bounded by consumer interest against excessive and unreasonable charges for service.
>
> As long as the allowed return falls within this zone, therefore, it is just and reasonable . . . . It is the task of the commissions to translate these generalizations into quantitative terms.

Charles F. Phillips, Jr., *The Regulation of Public Utilities,* 3d ed. 1993, pp. 381-82. (notes omitted)

Order Granting General Rate Increase, *Application of Carolina Power & Light Company, d/b/a Progress Energy Carolinas, Inc., for Adjustment of Rates and Charges Applicable to Electric Utility Service in North Carolina,* No. E-2, Sub 1023, at 35-36 (N.C.U.C. May 30, 2013), *aff’d, State ex rel. Utils. Comm’n v. Cooper,* 367 N.C. 444, 761 S.E.2d 640 (2014) (2013 DEP Rate Case Order) (additions and omissions after the first quoted paragraph in original).

Moreover, in setting rates the Commission must not only adhere to the dictates of both the United States and North Carolina Constitutions, but, as has been held by the North Carolina Supreme Court, it must set rates as low as possible consistent with constitutional law. *State ex rel. Utils. Comm'n v. Pub. Staff-N. Carolina Utils. Comm'n*, 323 N.C. 481, 490, 374 S.E.2d 361, 370 (1988) (*Public Staff)*. Further, the North Carolina General Assembly has provided that the Commission must also set rates employing a multi-element formula set forth in N.C.G.S. § 62-133. The formula requires consideration of elements beyond just the rate of return on equity element, and it inherently necessitates that the Commission make many subjective determinations, in addition to the subjectivity required to determine the rate of return on equity. The subjective decisions the Commission must make as to each of the elements of the formula can and often do have multiple and varied impacts on all of the other elements of the formula. In other words, the formula elements are intertwined and often interdependent in their impact to the setting of just and reasonable rates.

The fixing of a rate of return on the cost of property used and useful to the provision of service (as determined through the end of the historic 12-month test period prior to the proposed effective date of a requested change in rates, and adjusted for proven changes occurring up to the close of the evidentiary hearing) is but one of several interdependent elements of the statutory formula to be used in setting just and reasonable rates. *See* N.C.G.S. § 62-133. North Carolina General Statute § 62-133(b)(4) provides in pertinent part that the Commission shall:

> Fix such rate of return on the cost of the property . . .as will enable the public utility by sound management [1] to produce a fair return for its shareholders, *considering changing economic conditions and other factors* . . . [2] to maintain its facilities and services in accordance with the reasonable requirements of its customers in the territory covered by its franchise, and [3] to compete in the market for capital funds on terms that are reasonable and that are fair to its customers and to its existing investors. [Emphasis added.]

The North Carolina Supreme Court has interpreted the above-emphasized language as requiring the Commission to make findings regarding the impact of changing economic conditions on customers when determining the proper rate of return on common equity for a public utility. *Cooper I*, 366 N.C. at 495, 739 S.E.2d at 548. The Commission must exercise its subjective judgment so as to balance two competing rate of return on common equity-related factors—the economic conditions facing the Company's customers and the Company's need to attract equity financing on reasonable terms in order to continue providing safe and reliable service. 2013 DEP Rate Case Order at 35-36. The Commission's determination in setting rates pursuant to N.C.G.S § 62-133, which includes the fixing of the rate of return on common equity, always takes into account affordability of public utility service to the using and consuming public. The impact of changing economic conditions on customers is embedded in the testimony of expert witnesses regarding their analyses of the rate of return on common equity using various economic models widely used and accepted in utility regulatory rate-setting proceedings. 2013 DEP Rate Case Order, at 38. Further,

> [t]he Commission always places primary emphasis on consumers' ability to pay where economic conditions are difficult. By the same token, it places the same emphasis on consumers' ability to pay when economic conditions are favorable as when the unemployment rate is low. Always there are customers facing difficulty in paying utility bills. The Commission does not grant higher rates of return on equity when the general body of ratepayers is in a better position to pay than at other times . . . .

Id. at 37. Economic conditions existing during the modified test year, at the time of the public hearings, and at the date of the issuance of the Commission's order setting rates will affect not only the ability of the utility's customers to pay rates, but also the ability of the utility to earn the authorized rate of return during the period the new rates will be in effect. However, in setting the rate of return, just as the Commission is constrained to address the impact of difficult economic times on customers' ability to pay for service by establishing a lower rate of return on common equity in isolation from the many subjective determinations that must be made in a general rate case, it likewise is constrained to address the effect of regulatory lag[17] on the Company by establishing a higher rate of return on common equity in isolation. Instead, the Commission sets the rate of return considering both of these negative impacts taken together in its ultimate decision fixing a utility's rates.

Thus, in summary and in accordance with the applicable law, the Commission's duty under N.C.G.S. § 62-133 is to set rates as low as reasonably possible to the benefit of the customers without impairing the Company's ability to attract the capital needed to provide reliable electric service and recover its cost of providing service. The Commission is guided by this premise when it makes it determination of the appropriate rate of return on common equity.

It is against this backdrop of overarching principles that the Commission analyzes the evidence presented in this case.

[17] Regulatory lag exists where a utility's realized, earned return is less than its authorized return negatively affecting the shareholder's return on investment as other expenses and debts owed are paid ahead of investor return.

Discussion and Application of Law to the Facts in this Case Regarding the Issue of Rate of Return on Common Equity

The Commission has carefully evaluated the testimony of CWSNC witness D'Ascendis and Public Staff witness Hinton. The results of each of the models or methods used by these two witnesses to derive the return on equity that each witness recommends is shown below:

Utility Proxy Group	D'Ascendis Rebuttal Exhibits	D'Ascendis Late-Filed Exhibits	Hinton
DCF	8.81%	8.81%	8.64%
Risk Premium	10.12%	10.00%	9.57%
PRPM	10.84%	10.73%	
Total Market RPM	9.39%	9.27%	
CAPM	9.35%	9.29%	7.65-8.96%*
Traditional CAPM	8.90%	8.84%	
ECAPM	9.80%	9.74%	
Comparable Earnings	———	———	9.83%*
Non–Price Regulated Proxy Group	11.29%	11.16%	———
DCF	11.63%	11.63%	
Risk Premium	11.41%	11.23%	
CAPM	10.44%	10.39%	
Indicated on Return on Equity Before Adjustment	9.80%	9.75%	9.10%
Size Adjustment	0.40%	0.40%	———
Recommended Return on Equity	10.20%	10.15%	9.10%

* Note: Provided solely as a check and not used in formulating this witness's recommended allowed rate of return on common equity.

The range of the rate of return on common equity recommendations from the two expert witnesses is 9.10% to 10.20%. Underlying the lower rate of return on common equity recommendation of 9.10%, is a rate of return on common equity range of 7.65% to 9.83%, according to witness Hinton's testimony concerning his cost of common equity analyses. Similarly, underlying the higher rate of return on common equity recommendation of 10.20% is a range of 8.81% to 11.29%, according to witness D'Ascendis' rebuttal testimony concerning his cost of common equity analyses. Such a wide range of estimates by expert witnesses is not atypical in proceedings before the Commission with respect to the return on the equity issue. Neither is the seemingly endless debate and habitual differences in judgment among expert witnesses on the virtues of one model or method versus another and how to best determine and measure the required inputs of each model in representing the interests of the party on whose behalf they are testifying. Nonetheless, the Commission is uniquely situated, qualified, and required to use its impartial judgment to determine the return on equity based on the testimony and evidence in this proceeding in accordance with the legal guidelines discussed above.

In doing so the Commission finds that the DCF (8.81%), Risk Premium (10.00%) and CAPM (9.29%) model results provided by witness D'Ascendis, as updated to use current rates in D'Ascendis Late-Filed Exhibit No. 1, as well as the risk premium (9.57%) analysis of witness Hinton, are credible, probative, and are entitled to substantial weight as set forth below. The Commission further finds that the rate of return on common equity trends, particularly as embodied by data points in Public Staff D'Ascendis Cross-Examination Exhibits 1 and 2 to be credible, positive and corroborative evidence entitled to some weight.[18] Accordingly, the evidence presented concerning other authorized rates of return on equity, when put into proper context, lends substantial support and corroboration to a finding that a 9.50% rate of return on common equity is appropriate in this case.

Company witness D'Ascendis, noting that CWSNC is not publicly traded, first established a group of six relatively comparable risk water companies that are publicly traded (Utility Proxy Group). He testified that use of relatively comparable risk companies as proxies is consistent with principles of fair rate of return established in the Hope and Bluefield cases, which are recognized as the primary standards for the establishment of a fair return for a regulated public utility. He then applied the DCF, the CAPM, and the risk premium models to the market data of the Utility Proxy Group. Witness D'Ascendis' DCF model indicated a cost of equity of 8.81%, his CAPM model indicated a cost of equity of 9.29%, and his Risk Premium model indicated a cost of equity of 10.00%. The Commission finds and concludes that analyses using interest rate forecasts rely unnecessarily on projections. The Commission approves the use of current interest rates, rather than projected near–term or long–term interest rates. The Commission finds witness D'Ascendis' late-filed exhibit Risk Premium Model and his late-filed exhibit CAPM analysis using the current 30–year Treasury yields to be credible, probative and entitled to substantial weight.

Witness Hinton applied a risk premium analysis by performing a regression analysis using the allowed returns on common equity for water utilities from various public utility commissions, as reported in an RRA Water Advisory, with the average Moody's

[18] The Commission determines the appropriate rate of return on common equity based upon the evidence and particular circumstances of each case. However, the Commission believes that the rate of return on common equity trends and decisions by other regulatory authorities deserve some weight, as (1) they provide a check or additional perspective on the case-specific circumstances, and (2) the Company must compete with other regulated utilities in the capital markets, meaning that a rate of return on common equity significantly lower than that approved for other utilities of comparable risk would undermine the Company's ability to raise necessary capital, while a rate of return on common equity significantly higher than other utilities of comparable risk would result in customers paying more than necessary. In this proceeding, witness Hinton's risk premium analysis, as well as Public Staff D'Ascendis Cross-Examination Exhibit No. 1, page 2 and No. 2 provide credible, positive and corroborative evidence.

A-rated bond yields for public utility bonds from 2006 through 2019. The results of the regression analysis were combined with recent monthly yields to provide the current cost of equity. According to witness Hinton, the use of allowed returns as the basis for the expected equity return has strengths over other risk premium approaches that estimate the expected return on equity and subtract a representative cost of debt. He testified that one strength of his approach is that authorized returns on equity are generally arrived at through lengthy investigations by various parties with opposing views on the rate of return required by investors. Thus, it is reasonable to conclude that the approved returns are good estimates for the cost of equity. Witness Hinton testified that applying the significant statistical relationship of the allowed equity returns and bond yields from the regression analysis and adding current utility bond cost of 3.71% resulted in a current estimate of the cost of equity of 9.57%.

The average of witness D'Ascendis' Utility Proxy Group late-filed exhibit DCF result of 8.81%, CAPM result of 9.29% and RPM result of 10.00% and witness Hinton's RPM of 9.57% is 9.42%. A return on common equity of 9.50% is thus supported by the average of the results of the four above-listed cost of equity models which the Commission finds are credible, probative, and entitled to consideration based on the record in this proceeding.

The Commission gives no weight to the DCF, CAPM and comparable earnings analyses of witness Hinton who presented his CAPM and comparable earnings methods only as a check on his DCF and Risk Premium Regression analyses. For reasons generally stated by witness D'Ascendis, the Commission concludes that witness Hinton's use of a proxy group of natural gas companies in his DCF and CAPM analyses is inappropriate for determining the appropriate return on equity in this case. The indicated returns on equity using the water proxy groups in witness Hinton's DCF (8.48%) and CAPM (7.65% to 8.96% with a midpoint of 8.31%) are outliers as they fall far below the other rate of return on common equity analyses in this proceeding.

Witness Hinton's comparable earnings analyses are not reliable as the earned rates of return on equity listed in Hinton Exhibit 6 contain non-regulated earnings and increased earnings resulting from deferred income taxes. Witness D'Ascendis on cross-examination testified that American States Water has significant operations in Army bases around the country and also has an electric utility. Although the California Utilities Commission on March 22, 2018, approved an 8.90% rate of return on common equity for Golden State Water Company which is a wholly-owned subsidiary of American States Water as shown on Public Staff D'Ascendis Cross-Examination Exhibit 6, American States Water achieved earned rates of return on equity of 11.40% in 2018 and 12.0% in 2019 as shown on Hinton Exhibit 6. In addition, although the most recent rate order for Middlesex Water Co. in New Jersey was issued on March 24, 2018, which approved a 9.60% rate of return on common equity as shown on Public Staff D'Ascendis Cross-Examination Exhibit 3, the Middlesex Water Co. earned rate of return on common equity for 2018 was 13.0% and 2019 earned rate of return on common equity was 12.0% as shown on Hinton Exhibit 6.

In addition to estimating the cost of equity for his Utility Proxy Group of publicly-traded water utilities, witness D'Ascendis attempted to estimate the cost of equity for another proxy group consisting of 10 domestic, non-price regulated companies. The rebuttal results of the DCF, RPM, and CAPM applied to the non-price regulated proxy group are 11.63%, 11.23%, and 10.39%, respectively. The Commission concludes that these results are unreasonably high. Each of these results is higher than witness D'Ascendis' estimates of the cost of equity for his own Utility Proxy Group and deserves no weight. The Commission further concludes that given the difference in these results, the risk of the two groups is not equal and the Utility Proxy Group is more reliable as a proxy for the investment risk of common equity in CWSNC.

After determining that the indicated cost of equity from the DCF, CAPM, and risk premium methods applied to both of his proxy groups equals in his rebuttal 9.80% rate of return on common equity, witness D'Ascendis then adjusted the indicated cost of equity upward by 0.40% to reflect CWSNC's smaller size compared to companies in his Utility Proxy Group. He testified that the size of the company is a significant element of business risk for which investors expect to be compensated through higher returns. Witness D'Ascendis calculated his size adjustment as described in his prefiled direct testimony and stated that even though a 3.94% upward size adjustment is indicated, he applies a 0.40% size premium to CWSNC's indicated common equity cost rate.

Witness Hinton testified that he does not believe it is appropriate to add a risk premium to the cost of equity of CWSNC due to size for several reasons. First, from a regulatory policy perspective, witness Hinton stated that ratepayers should not be required to pay higher rates because they are located in the franchise area of a utility that is arbitrarily considered to be small. Further, if such adjustments were routinely allowed, an incentive would exist for large utilities to form subsidiaries or split-up subsidiaries to obtain higher returns. In addition, he noted that CWSNC operates in a franchise environment that insulates the Company from the competition with procedures in place for rate adjustments for circumstances that impact its earnings. Finally, while witness Hinton stated that while there are studies that address how the small size of a company relates to higher returns, he is aware of only one study that focuses on the size of regulated utilities and risk and that study concluded that utility stocks do not exhibit a significant differential in risk due to size. In rebuttal, witness D'Ascendis maintained that a small size adjustment was necessary based on the results of studies he cited and discussed. He contended that the study concerning size premiums for utilities discussed by witness Hinton was flawed.

The uncontroverted evidence is that both CWSNC and the Public Staff used the Utilities, Inc. capital structure and debt cost in this proceeding. CWSNC obtains all its debt and equity from CWSNC's parent company Utilities, Inc. CWSNC does not participate in the debt markets. The Corix CEO, Gordon Barefoot, testified that Corix, the parent company of Utilities, Inc., provides access to favorable terms for debt financing in capital markets.

Based upon the foregoing and the entire record in this proceeding, the Commission concludes that a size adjustment of 0.40% is not warranted and should not be approved. The Commission determines there is insufficient evidence to authorize an adjustment to the approved rate of return on common equity in this case. The record simply does not indicate the extent to which CWSNC's size alone justifies the added risk premium. While a small water/wastewater utility might face greater risk than a publicly-traded peer group, because for example the service area was confined to a hurricane-prone coastal geographic area, evidence of such factual predicates is absent from the record. CWSNC has water and wastewater systems along the North Carolina coast, in the Piedmont, and in the mountains. The Commission notes that the witnesses also disagreed with respect to whether the studies discussed in the testimony concerning size and risk are reliable or even applicable to regulated utilities. The Commission concludes that the testimony regarding these studies is not convincing and does not support a size adjustment.

Having determined that the appropriate rate of return on common equity based upon the evidence in this proceeding is 9.50%, the Commission notes that there is considerable testimony concerning the authorized returns on equity for water utilities in other jurisdictions. While the Commission has relied upon the record in this proceeding and is certainly aware that returns in other jurisdictions can be influenced by many factors, such as different capital market conditions during different periods of time, settlements versus full litigation, the Commission concludes that the rate of return on common equity trends and decisions by other regulatory authorities deserve some weight as (1) they provide a check or additional perspective on the case-specific circumstances, and (2) the Company must compete with other regulated utilities in the capital markets, meaning that a rate of return significantly lower than that approved for other utilities of comparable risk would undermine the Company's ability to raise necessary capital, while a rate of return significantly higher than other utilities of comparable risk would result in customers paying more than necessary.

Public Staff D'Ascendis Cross-Examination Exhibit 2, which has RRA approved rate of return on common equity listings showing approved return on equity decisions for water utilities across the country from January 2014 through June 30, 2019, is helpful in illustrating that the average rate of return on common equity for water utilities was 9.59% in 2014, 9.79% in 2015, 9.71% in 2016, 9.31% in 2017, 9.45% in 2018, and in the only five reported cases for the first six months of 2019 the average is 9.60%. This authorized return data is generally supportive of the Commission approved return on equity of 9.50% based upon all the evidence in this proceeding.

These factors lead the Commission to conclude that a 9.50% rate of return on common equity is supported by the substantial weight of the evidence in this proceeding. However, to meet its obligation in accord with the holding in *Cooper I*, the Commission will next address the impact of changing economic conditions on customers.

In this case all parties had the opportunity to present the Commission with evidence concerning changing economic conditions as they affect customers. The testimony of witnesses D'Ascendis and Hinton, which the Commission finds entitled to substantial weight, addresses changing economic conditions. As to the impact of changing economic conditions on CWSNC's customers, witness Hinton testified that he reviewed information on the economic conditions in the areas served by CWSNC, specifically, the 2016 and 2017 data on total personal income from the Bureau of Economic Analysis (BEA) and the 2019 Development Tier Designations published by the North Carolina Department of Commerce for the counties in which CWSNC's systems are located. The BEA data indicates that total personal income weighted by the number of water customers by county grew at a compound annual growth rate of approximately 3.1%.

Witness Hinton testified that the North Carolina Department of Commerce annually ranks the state's 100 counties based on economic well-being and assigns each a Tier designation. The most distressed counties are rated a "1" and the most prosperous counties are rated a "3". The rankings examine several economic measures such as, household income, poverty rates, unemployment rates, population growth, and per capita property tax base. For 2017, the average Tier ranking that has been weighted by the number of water customers by county is 2.5. He testified that both of these economic measures indicate that there has been improvement in the economic conditions for CWSNC's service area relative to the three previous CWSNC rate increases in Sub 360, Sub 356, and Sub 344 that were approved in 2019, 2017, and 2015, respectively.

Witness D'Ascendis testified concerning his review of economic conditions in North Carolina that he reviewed. He testified that he reviewed: unemployment rates from the United States, North Carolina, and the counties comprising CWSNC's service territory; the growth in Gross National Product (GDP) in both the United States and North Carolina; median household income in the United States and in North Carolina; and national income and consumption trends.

Witness D'Ascendis testified that the rate of unemployment has fallen substantially in North Carolina and the U.S. since late 2009 and early 2010, when the rates peaked at 10.00% and 12.00%, respectively. He testified that by April 2019, the unemployment rate had fallen to less than one-half of those peak levels: 3.30% nationally; and 3.60% in North Carolina.

Witness D'Ascendis testified that he was also able to review (seasonally unadjusted) unemployment rates in the counties served by CWSNC. At its peak, which occurred in late 2009 into early 2010, the unemployment rate in those counties reached an average 12.86% (58 basis points higher than the State-wide average); by April 2019, it had fallen to 3.68% (8 basis points higher than the state-wide average).

Witness D'Ascendis testified that for real Gross Domestic Product growth, there also has been a relatively strong correlation between North Carolina and the national economy (approximately 69%). Since the financial crisis, the national rate of growth at times (during portions of 2010 and 2012) outpaced North Carolina's rate of growth. He testified that since the second quarter of 2015; however, North Carolina has consistently exceeded the national growth rate.

As to median household income, witness D'Ascendis testified that the correlation between North Carolina and the U.S. is relatively strong (approximately 87% from 2005 through 2018). Since 2009, the years subsequent to the financial crisis, median household income in North Carolina has grown at a similar annual rate as the national median income (2.32% vs. 2.65%).

Witness D'Ascendis summarized stating in the Commission's order on Remand in Docket No. E-22, Sub 479, the Commission observed that economic conditions in North Carolina were highly correlated with national conditions, such that they were reflected in the analyses used to determine the cost of common equity. He testified that those relationships still hold: Economic conditions in North Carolina continue to improve from the recession following the 2008/2009 financial crisis, and they continue to be strongly correlated to conditions in the United States, generally. He testified that unemployment, at both the State and county level, continues to fall and remains highly correlated with national rates of unemployment; real Gross Domestic Product recently has grown faster in North Carolina than the national rate of growth, although the two remain fairly well correlated; and median household income also has grown faster in North Carolina than the rest of the Country, and remains strongly correlated with national levels.

The Commission's review also includes consideration of the evidence presented by 23 witnesses during the public witness hearings, almost all of whom presently are customers of CWSNC. The Commission held six evening hearings throughout CWSNC's North Carolina service territory to receive public testimony. The testimony presented at the hearings illustrates the difficult economic conditions facing many North Carolina citizens. The Commission accepts as credible, probative, and entitled to substantial weight the testimony of the public witnesses.

Based upon the general state of the economy and the continuing affordability of water and wastewater utility service, and after weighing and balancing factors affected by the changing economic conditions in making the subjective decisions required, the Commission concludes that an allowed rate of return on common equity of 9.50% will not cause undue hardship to customers even though some will struggle to pay the increased rates resulting from this decision. When the Commission's decisions are viewed as a whole, including the decision to establish the rate of return on common equity at 9.50%, the Commission's overall decision fixing rates in this general rate case results in lower rates to consumers in the existing economic environment.[19]

All of the scores of adjustments the Commission approves reduce the revenues to be recovered from ratepayers and the return to be paid to equity investors. Some

[19] The Commission notes consumers pay rates, a charge in dollars per 1,000 gallons for the water they consume and a monthly flat rate for residential wastewater customers. They do not pay a "rate of return on equity," though it is a component of the Company's cost of providing service which is built into the billed rates. Investors are compensated by earning a return on the capital they invest in the business. Per the Commission determination of the rate of return on common equity in this matter, investors will have the opportunity to be paid in dollars for the dollars they invested at the rate of 9.50%.

adjustments reduce the authorized rate of return on investment financed by equity investors. The noted adjustments are made solely to reduce rates and provide rate stability to consumers (and return to equity investors) to recognize the difficulty for consumers to pay in the current economic environment. while the equity investor's cost was calculated by resort to a rate of return on common equity of 9.50% instead of the 10.20% recommended by CWSNC witness D'Ascendis on rebuttal. This is only one approved adjustment that reduced ratepayer responsibility and equity investor reward. Many other adjustments reduced the dollars the investors actually have the opportunity to receive. Therefore, nearly all of these other adjustments reduce ratepayer responsibility and equity investor returns in compliance with the Commission's responsibility to establish rates as low as reasonably permissible without transgressing constitutional constraints, and thus, inure to the benefit of consumers' ability to pay their bills in this economic environment.

Despite the improving economic conditions and their effects on CWSNC's customers, the Commission recognizes the financial difficulty that an increase in CWSNC's rates may create for some of CWSNC's customers, especially low-income customers. As shown by the evidence, relatively small changes in the rate of return on common equity have a substantial impact on a utility's base rates. Therefore, the Commission has carefully considered changing economic conditions and their effects on CWSNC's customers in reaching its decision regarding CWSNC's approved rate of return on common equity.

The Commission recognizes that the Company is investing significant sums in system improvements to serve its customers, thus requiring the Company to maintain its creditworthiness in order to compete for large sums of capital on reasonable terms. The Commission must weigh the impact of changing economic conditions on CWSNC's customers against the benefits that those customers derive from the Company's ability to provide safe, adequate, and reliable water and wastewater service. Safe, adequate, and reliable water and wastewater service is essential to the well-being of CWSNC's customers.

The Commission finds and concludes that these investments by the Company provide significant benefits to CWSNC's customers. The Commission concludes that the return on equity approved by the Commission in this proceeding appropriately balances the benefits received by CWSNC's customers from CWSNC's provision of safe, adequate, and reliable water and wastewater service with the difficulties that some of CWSNC's customers will experience in paying CWSNC's increased rates.

The Commission notes further that its approval of a rate of return on common equity at the level of 9.50% or for that matter at any level, is not a guarantee to the Company that it will earn a rate of return on common equity at that level. Rather, as North Carolina law requires, setting the rate of return on common equity at this level merely affords CWSNC the opportunity to achieve such a return. The Commission finds and concludes, based upon all the evidence presented, that the rate of return on common equity provided for herein will indeed afford the Company the opportunity to earn a reasonable and sufficient return for its shareholders while at the same time producing rates that are just and reasonable to its customers.

Capital Structure

CWSNC witness D'Ascendis' direct testimony recommended the use of the actual capital structure of Utilities, Inc. of 52.04% long-term debt and 47.96% common equity as of March 31, 2019.

In his testimony Public Staff witness Hinton recommended a 50.90% long-term debt and 49.10% common equity capital structure based upon updated information provided by CWSNC concerning the Utilities, Inc. actual capital structure at September 30, 2019. The Partial Stipulation also supports a 50.90% long-term debt and 49.10% common equity capital structure. No other party presented evidence as to a different capital structure.

Accordingly, the Commission finds that the recommended capital structure of 49.10% common equity and 50.90% long-term debt is just and reasonable to all parties in light of all the evidence presented.

Cost of Debt

In its Application CWSNC proposed a cost rate for long-term debt of 5.59%. In his testimony, witness Hinton recommended the cost of debt 5.36% as of September 30, 2019. In addition, the Stipulation includes a cost of debt rate of 5.36%. No other party offered any evidence supporting a debt cost rate below 5.36%.

Therefore, the Commission finds that the use of a debt cost rate of 5.36% is just and reasonable to all parties based upon the evidence presented in this proceeding.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 60

Revenue Requirement

The following schedules summarize the gross revenue and overall rate of return that the Company should have a reasonable opportunity to achieve based on the increases in revenues approved in this Order for each rate entity. These schedules, illustrating the Company's gross revenue requirements, incorporate the adjustments found appropriate by the Commission in this Order.

SCHEDULE I

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
Net Operating Income for a Return
For the Twelve Months Ended March 31, 2019
CWSNC Combined Operations

	Present Rates	Increase Approved	After Approved Increase
Operating Revenues:			
Service revenues	$33,852,232	$4,969,441	$38,821,673
Miscellaneous revenues	387,492	14,956	402,448
Uncollectibles	(271,142)	(38,638)	(309,780)
Total operating revenues	33,968,582	4,945,759	38,914,341
Operating Revenue Deductions:			
Salaries and wages – Maintenance	4,949,710	0	4,949,710
Purchased power	2,103,043	0	2,103,043
Purchased water and sewer	2,219,243	0	2,219,243
Maintenance and repair	3,120,935	0	3,120,935
Maintenance testing	544,432	0	544,432
Meter reading	206,176	0	206,176
Chemicals	693,596	0	693,596
Transportation	534,200	0	534,200
Operating expense charged to plant	(665,133)	0	(665,133)
Outside services – other	1,191,299	0	1,191,299
Salaries and wages – General	2,004,409	0	2,004,409
Office supplies & other office exp.	568,864	0	568,864
Regulatory commission expense	307,754	0	307,754
Pension and other benefits	1,600,158	0	1,600,158
Rent	330,308	0	330,308
Insurance	782,562	0	782,562
Office utilities	747,670	0	747,670
Miscellaneous	218,417	0	218,417
Depreciation expense	6,580,711	0	6,580,711
Amortization of CIAC	(1,476,955)	0	(1,476,955)
Amortization of PAA	(76,623)	0	(76,623)
Amortization of ITC	(579)	0	(579)
Franchise and other taxes	(655)	0	(655)
Property taxes	268,734	0	268,734
Payroll taxes	527,428	0	527,428
Regulatory fee	44,159	6,429	50,588
Deferred income tax	(69,128)	0	(69,128)
State income tax	75,474	123,484	198,958
Federal income tax	618,133	1,011,327	1,629,460
Rounding	0	1	1
Total operating revenue deductions	27,948,343	1,141,241	29,089,584
Net operating income for a return	$6,020,239	$3,804,518	$9,824,757

SCHEDULE II

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
Original Cost Rate Base
For the Twelve Months Ended March 31, 2019
CWSNC Combined Operations

Item	Amount
Plant in service	$238,212,084
Accumulated depreciation	(57,897,943)
Net plant in service	180,314,141
Cash working capital	2,404,800
Contributions in aid of construction	(40,270,675)
Advances in aid of construction	(32,940)
Accumulated deferred income taxes	(5,995,444)
Customer deposits	(315,447)
Inventory	271,956
Gain on sale and flow back taxes	(417,811)
Plant acquisition adjustment	(837,878)
Excess book value	0
Cost-free capital	(261,499)
Average tax accruals	(143,198)
Regulatory liability for excess deferred taxes	(3,941,344)
Deferred charges	2,122,707
Pro forma plant	0
Original cost rate base	$132,897,368
Rates of return:	
Present	4.53%
Approved	7.39%

SCHEDULE III

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
Statement of Capitalization and Related Costs
For the Twelve Months Ended March 31, 2019
CWSNC Combined Operations

	Ratio	Original Cost Rate Base	Embedded Cost	Net Operating Income
		PRESENT RATES		
Long-Term Debt	50.90%	$ 67,644,760	5.36%	$3,625,759
Common Equity	49.10%	65,252,608	3.67%	2,394,480
Total	100.00%	$132,897,368		$6,020,239
		APPROVED RATES		
Long-Term Debt	50.90%	$ 67,644,760	5.36%	$3,625,759
Common Equity	49.10%	65,252,608	9.50%	6,198,998
Total	100.00%	$132,897,368		$9,824,757

SCHEDULE I-A

Carolina Water Service, Inc. of North Carolina

Docket No. W-354, Sub 364

Net Operating Income for a Return

For the Twelve Months Ended March 31, 2019

CWSNC Water Operations

	Present Rates	Increase Approved	After Approved Increase
Operating Revenues:			
Service revenues	$17,485,912	$1,785,873	$19,271,785
Miscellaneous revenues	189,818	5,357	195,175
Uncollectibles	(129,396)	(13,215)	(142,611)
Total operating revenues	17,546,334	1,778,015	19,324,349
Operating Revenue Deductions:			
Salaries and wages – Maintenance	2,684,228	0	2,684,228
Purchased power	1,048,858	0	1,048,858
Purchased water and sewer	1,478,502	0	1,478,502
Maintenance and repair	909,143	0	909,143
Maintenance testing	202,228	0	202,228
Meter reading	175,422	0	175,422
Chemicals	311,580	0	311,580
Transportation	283,615	0	283,615
Operating expense charged to plant	(360,703)	0	(360,703)
Outside services – other	654,506	0	654,506
Salaries and wages – General	1,086,991	0	1,086,991
Office supplies & other office expense	308,786	0	308,786
Regulatory commission expense	169,355	0	169,355
Pension and other benefits	867,766	0	867,766
Rent	178,706	0	178,706
Insurance	423,389	0	423,389
Office utilities	411,346	0	411,346
Miscellaneous	120,273	0	120,273
Depreciation expense	3,198,990	0	3,198,990
Amortization of CIAC	(704,302)	0	(704,302)
Amortization of PAA	(115,669)	0	(115,669)
Amortization of ITC	(328)	0	(328)
Franchise and other taxes	(3,473)	0	(3,473)
Property taxes	154,066	0	154,066
Payroll taxes	286,024	0	286,024
Regulatory fee	22,810	2,312	25,122
Deferred income tax	(26,513)	0	(26,513)
State income tax	50,650	44,393	95,043
Federal income tax	414,823	363,575	778,398
Total operating revenue deductions	14,231,071	410,280	14,641,351
Net operating income for a return	$3,315,263	$1,367,735	$4,682,998

SCHEDULE II-A
Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
Original Cost Rate Base
For the Twelve Months Ended March 31, 2019
CWSNC Water Operations

Item	Amount
Plant in service	$114,766,817
Accumulated depreciation	(29,553,703)
Net plant in service	85,213,114
Cash working capital	1,184,436
Contributions in aid of construction	(17,662,813)
Advances in aid of construction	(23,760)
Accumulated deferred income taxes	(2,312,807)
Customer deposits	(175,942)
Inventory	167,608
Gain on sale and flow back taxes	(281,868)
Plant acquisition adjustment	(2,085,004)
Excess book value	0
Cost-free capital	(121,791)
Average tax accruals	(81,595)
Regulatory liability for excess deferred taxes	(2,084,991)
Deferred charges	1,611,323
Pro forma plant	0
Original cost rate base	$63,345,909

Rates of return:

Present	5.23%
Approved	7.39%

SCHEDULE III-A

Carolina Water Service, Inc. of North Carolina

Docket No. W-354, Sub 364

Statement of Capitalization and Related Costs

For the Twelve Months Ended March 31, 2019

CWSNC Water Operations

	Ratio	Original Cost Rate Base	Embedded Cost	Net Operating Income
		PRESENT RATES		
Long-term Debt	50.90%	$32,243,068	5.36%	$1,728,228
Common Equity	49.10%	31,102,841	5.10%	1,587,035
Total	100.00%	$ 63,345,909		$3,315,263
		APPROVED RATES		
Long-term Debt	50.90%	$ 32,243,068	5.36%	$1,728,228
Common Equity	49.10%	31,102,841	9.50%	2,954,770
Total	100.00%	$ 63,345,909		$4,682,998

SCHEDULE I-B
Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
Net Operating Income for a Return
For the Twelve Months Ended March 31, 2019
CWSNC Sewer Operations

	Present Rates	Increase Approved	After Approved Increased
Operating Revenues:			
Service revenues	$12,961,929	$2,942,923	$15,904,852
Miscellaneous revenues	124,500	8,829	133,329
Uncollectibles	(98,511)	(22,366)	(120,877)
Total operating revenues	12,987,918	2,929,386	15,917,304
Operating Revenue Deductions:			
Salaries and wages – Maintenance	1,622,020	0	1,622,020
Purchased power	838,308	0	838,308
Purchased water and sewer	740,741	0	740,741
Maintenance and repair	1,940,932	0	1,940,932
Maintenance testing	308,671	0	308,671
Meter reading	0	0	0
Chemicals	318,617	0	318,617
Transportation	171,371	0	171,371
Operating expense charged to plant	(217,966)	0	(217,966)
Outside services – other	395,475	0	395,475
Salaries and wages – General	656,845	0	656,845
Office supplies & other office exp.	186,580	0	186,580
Regulatory commission expense	102,331	0	102,331
Pension and other benefits	524,372	0	524,372
Rent	107,979	0	107,979
Insurance	255,830	0	255,830
Office utilities	248,550	0	248,550
Miscellaneous	74,254	0	74,254
Depreciation expense	2,821,151	0	2,821,151
Amortization of CIAC	(570,054)	0	(570,054)
Amortization of PAA	(16,931)	0	(16,931)
Amortization of ITC	(251)	0	(251)
Franchise and other taxes	(2,595)	0	(2,595)
Property taxes	93,092	0	93,092
Payroll taxes	172,838	0	172,838
Regulatory fee	16,884	3,808	20,692
Deferred income tax	(33,406)	0	(33,406)
State income tax	14,845	73,140	87,985
Federal income tax	121,581	599,012	720,593
Total operating revenue deductions	10,892,064	675,960	11,568,024
Net operating income for a return	$2,095,854	$2,253,426	$4,349,280

SCHEDULE II-B
Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
Original Cost Rate Base
For the Twelve Months Ended March 31, 2019
CWSNC Sewer Operations

Item	Amount
Plant in service	$102,974,564
Accumulated depreciation	(23,646,093)
Net plant in service	79,328,471
Cash working capital	941,771
Contributions in aid of construction	(17,559,280)
Advances in aid of construction	(9,180)
Accumulated deferred income taxes	(2,884,203)
Customer deposits	(106,311)
Inventory	101,275
Gain on sale and flow back taxes	(135,943)
Plant acquisition adjustment	296,963
Excess book value	0
Cost-free capital	(139,708)
Average tax accruals	(49,923)
Regulatory liability for excess deferred taxes	(1,259,826)
Deferred charges	307,657
Pro forma plant	0
Original cost rate base	$58,831,763

Rates of return:

Present	3.56%
Approved	7.39%

SCHEDULE III-B
Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
Statement of Capitalization and Related Costs
For the Twelve Months Ended March 31, 2019
CWSNC Sewer Operations

	Ratio	Original Cost Rate Base	Embedded Cost	Net Operating Income
		PRESENT RATES		
Long-term Debt	50.90%	$ 29,945,367	5.36%	$1,605,072
Common Equity	49.10%	28,886,396	1.70%	490,782
Total	100.00%	$ 58,831,763		$2,095,854
		APPROVED RATES		
Long-term Debt	50.90%	$ 29,945,367	5.36%	$1,605,072
Common Equity	49.10%	28,886,396	9.50%	2,744,208
Total	100.00%	$ 58,831,763		$4,349,280

SCHEDULE I-C
Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
Net Operating Income for a Return
For the Twelve Months Ended March 31, 2019
BF/FH/TC Water Operations

	Present Rates	Increase Approved	After Approved Increase
Operating Revenues:			
Service revenues	$1,304,521	$97,488	$1,402,009
Miscellaneous revenues	51,060	312	51,372
Uncollectibles	(16,567)	(1,239)	(17,806)
Total operating revenues	1,339,014	96,561	1,435,575
Operating Revenue Deductions:			
Salaries and wages – Maintenance	308,862	0	308,862
Purchased power	69,724	0	69,724
Purchased water and sewer	0	0	0
Maintenance and repair	63,151	0	63,151
Maintenance testing	8,314	0	8,314
Meter reading	30,753	0	30,753
Chemicals	44,189	0	44,189
Transportation	38,746	0	38,746
Operating expense charged to plant	(41,503)	0	(41,503)
Outside services – other	69,135	0	69,135
Salaries and wages – General	125,075	0	125,075
Office supplies & other office exp.	35,984	0	35,984
Regulatory commission expense	17,639	0	17,639
Pension and other benefits	99,850	0	99,850
Rent	21,337	0	21,337
Insurance	50,550	0	50,550
Office utilities	43,252	0	43,252
Miscellaneous	11,671	0	11,671
Depreciation expense	169,164	0	169,164
Amortization of CIAC	(56,417)	0	(56,417)
Amortization of PAA	13,303	0	13,303
Amortization of ITC	0	0	0
Franchise and other taxes	2,583	0	2,583
Property taxes	10,553	0	10,553
Payroll taxes	32,912	0	32,912
Regulatory fee	1,741	125	1,866
Deferred income tax	(923)	0	(923)
State income tax	2,145	2,411	4,556
Federal income tax	17,569	19,745	37,314
Total operating revenue deductions	1,189,358	22,281	1,211,639
Net operating income for a return	$149,656	$74,280	$223,936

SCHEDULE II-C
Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
Original Cost Rate Base
For the Twelve Months Ended March 31, 2019
BF/FH/TC Water Operations

Item	Amount
Plant in service	$6,285,688
Accumulated depreciation	(2,083,262)
Net plant in service	4,202,426
Cash working capital	124,591
Contributions in aid of construction	(1,055,139)
Advances in aid of construction	0
Accumulated deferred income taxes	(84,226)
Customer deposits	(16,236)
Inventory	1,503
Gain on sale and flow back taxes	0
Plant acquisition adjustment	13,196
Excess book value	0
Cost-free capital	0
Average tax accruals	(5,624)
Regulatory liability for excess deferred taxes	(291,777)
Deferred charges	140,413
Pro forma plant	0
Original cost rate base	$3,029,127
Rates of return:	
Present	4.94%
Approved	7.39%

SCHEDULE III-C
Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
Statement of Capitalization and Related Costs
For the Twelve Months Ended March 31, 2019
BF/FH/TC Water Operations

	Ratio	Original Cost Rate Base	Embedded Cost	Net Operating Income
		PRESENT RATES		
Long-term Debt	50.90%	$ 1,541,826	5.36%	$82,642
Common Equity	49.10%	1,487,301	4.51%	67,014
Total	100.00%	$ 3,029,127		$149,656
		APPROVED RATES		
Long-term Debt	50.90%	$ 1,541,826	5.36%	$82,642
Common Equity	49.10%	1,487,301	9.50%	141,294
Total	100.00%	$ 3,029,127		$223,936

SCHEDULE I-D
Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
Net Operating Income for a Return
For the Twelve Months Ended March 31, 2019
BF/FH Sewer Operations

	Present Rates	Increase Approved	After Approved Increase
Operating Revenues:			
Service revenues	$2,099,870	$143,157	$2,243,027
Miscellaneous revenues	22,114	458	22,572
Uncollectibles	(26,668)	(1,818)	(28,486)
Total operating revenues	2,095,316	141,797	2,237,113
Operating Revenue Deductions:			
Salaries and wages – Maintenance	334,600	0	334,600
Purchased power	146,154	0	146,154
Purchased water and sewer	0	0	0
Maintenance and repair	207,709	0	207,709
Maintenance testing	25,219	0	25,219
Meter reading	0	0	0
Chemicals	19,210	0	19,210
Transportation	40,468	0	40,468
Operating expense charged to plant	(44,961)	0	(44,961)
Outside services – other	72,182	0	72,182
Salaries and wages – General	135,498	0	135,498
Office supplies & other office expense	37,514	0	37,514
Regulatory commission expense	18,429	0	18,429
Pension and other benefits	108,171	0	108,171
Rent	22,286	0	22,286
Insurance	52,793	0	52,793
Office utilities	44,523	0	44,523
Miscellaneous	12,219	0	12,219
Depreciation expense	391,406	0	391,406
Amortization of CIAC	(146,182)	0	(146,182)
Amortization of PAA	42,674	0	42,674
Amortization of ITC	0	0	0
Franchise and other taxes	2,830	0	2,830
Property taxes	11,022	0	11,022
Payroll taxes	35,654	0	35,654
Regulatory fee	2,724	184	2,908
Deferred income tax	(8,286)	0	(8,286)
State income tax	7,834	3,540	11,374
Federal income tax	64,160	28,995	93,155
Total operating revenue deductions	1,635,850	32,719	1,668,569
Net operating income for a return	$459,466	$109,078	$568,544

SCHEDULE II-D
Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
Original Cost Rate Base
For the Twelve Months Ended March 31, 2019
BF/FH Sewer Operations

Item	Amount
Plant in service	$14,185,016
Accumulated depreciation	(2,614,885)
Net plant in service	11,570,131
Cash working capital	154,002
Contributions in aid of construction	(3,993,443)
Advances in aid of construction	0
Accumulated deferred income taxes	(714,208)
Customer deposits	(16,958)
Inventory	1,570
Gain on sale and flow back taxes	0
Plant acquisition adjustment	936,967
Excess book value	0
Cost-free capital	0
Average tax accruals	(6,056)
Regulatory liability for excess deferred taxes	(304,750)
Deferred charges	63,314
Pro forma plant	0
Original cost rate base	$7,690,568
Rates of return:	
Present	5.97%
Approved	7.39%

SCHEDULE III-D

Carolina Water Service, Inc. of North Carolina

Docket No. W-354, Sub 364

Statement of Capitalization and Related Costs

For the Twelve Months Ended March 31, 2019

BF/FH Sewer Operations

	Ratio	Original Cost Rate Base	Embedded Cost	Net Operating Income
		PRESENT RATES		
Long-term Debt	50.90%	$ 3,914,499	5.36%	$209,817
Common Equity	49.10%	3,776,069	6.61%	249,649
Total	100.00%	$ 7,690,568		$ 459,466
		APPROVED RATES		
Long-term Debt	50.90%	$ 3,914,499	5.36%	$ 209,817
Common Equity	49.10%	3,776,069	9.50%	358,727
Total	100.00%	$ 7,690,568		$ 568,544

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 61–63

Rate Design

The evidence supporting these findings of fact is found in the verified Application and the accompanying NCUC Form W-1, the Stipulation, and the testimony and exhibits of Public Staff witnesses Junis and Casselberry and CWSNC witness DeStefano.

The water rates proposed by CWSNC in its Application were based on a fixed-to-variable ratio of 52% fixed for the base facility charge and 48% variable for the usage charge. Sewer rates were based on a fixed-to-variable ratio of 80% fixed for the base facility charge and 20% variable for the usage charge.

As part of its Application and as a matter of rate design in this case CWSNC proposes to include in its Uniform Sewer Rate Division, customers in the CLMS service area. CWSNC has maintained the CLMS system rates steady for the last four general rate cases (Docket No. W-354, Subs 336, 344, 356, and 360) in order to allow the remainder of the Uniform Sewer Rate Division to move toward parity with the CLMS sewer rates.

Public Staff witness Junis testified that the Public Staff recommended a service revenue ratio of 45/55 (base facilities charge to usage charge) for Uniform Water and BF/FH/TC Water residential customers, which he stated was consistent with the Public Staff's previous recommendations in CWSNC rate cases and similar to the stated target of 40/60 in the most recent Aqua North Carolina, Inc. (Aqua) rate case, Docket No. W-218, Sub 497. Moreover, he stated the rate design ratio of 45/55 was incorporated in Public Staff witness Casselberry's testimony and exhibits detailing the billing analysis and proposed rates. Tr. vol. 8, 107, 155.

Public Staff witness Junis recommended a 65/35 ratio for Uniform Sewer residential customers, an incremental approach to the target of 45/55, which was also incorporated in witness Casselberry's billing analysis and proposed rates. Tr. vol. 8, 159. Further, the Public Staff recommended that CLMS should be fully incorporated into the Uniform Sewer Rate Division as requested by the Company and that the Public Staff's recommended rates for the Uniform Sewer Rate Division should apply to CLMS customers.

On December 2, 2019, the CLCA filed a Resolution with the Commission whereby it stated that the Association

- strongly opposes being singled out for higher rates than any other territory served by CWSNC, and requests that the Commission adopt a uniform rate schedule for all CWSNC wastewater treatment customers; and
- requests that the Commission move Corolla Light and Monteray Shores area to the uniform rate schedule after thoroughly investigating and

analyzing the basis of the CWSNC request, allowing only an increase that is clearly justified.

During the expert witness hearing in response to a question from the Commission, CLCA indicated that it has no objection to the Stipulation. Tr. vol. 9, 200–01.

In the Stipulation, the Stipulating Parties agreed to a rate design for water utility service for its Uniform Water and BF/FH/TC Water residential customers to be based on a 50/50 ratio of base charge to usage charge, and to use an 80/20 ratio of base charge to usage charge for CWSNC's Uniform Sewer residential customers.[20]

Based upon the foregoing and the entire record herein, the Commission finds that it is appropriate to utilize a 50/50 ratio of base charge to usage charge in this proceeding for CWSNC's Uniform Water and BF/FH/TC Water residential customers and an 80/20 ratio of base charge to usage charge for CWSNC's Uniform Sewer residential customers as agreed to by the Company and the Public Staff, embodied in the Stipulation, and not opposed by any party. Further, the Commission concludes that it is reasonable and appropriate to consolidate the CLMS sewer service rates with the Company's Uniform Sewer Division rates as requested by CWSNC and supported by both the Public Staff and the CLCA. The Commission concludes that such rate design is fair and reasonable to both CWSNC and its customers. Therefore, taking into account the forgoing findings and conclusions, the Commission concludes that the rates and charges included in Appendices A-1 and A-2, and the Schedules of Connection Fees for Uniform Water and Uniform Sewer, attached hereto as Appendices B-1 and B-2, are just and reasonable and should be approved.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 64-65

Water and Sewer System Improvement Charges

The evidence supporting these findings of fact is found in the generic rulemaking proceeding, Docket No. W-100, Sub 54, wherein the Commission issued orders establishing procedures for implementing and applying the WSIC and SSIC mechanism; in CWSNC's 2013 rate case, Docket No. W-354, Sub 336, wherein the Commission initially approved the Company's WSIC and SSIC mechanism; and in the Commission's prior orders approving WSIC and SSIC mechanisms for CWSNC and the other Corix companies that have been merged into CWSNC.

The Commission's previously-approved WSIC and SSIC rate adjustment mechanism continues in effect, although as required by Commission Rules R7-39(k) and R10-26(k), it has been reset to zero in this rate case. The WSIC and SSIC mechanism is designed to recover between rate case proceedings the costs associated with investment in certain completed, eligible projects for water and sewer system or water quality improvements pursuant to N.C.G.S. § 62-133.12. The WSIC and SSIC surcharge is

[20] BF/FH Sewer Rate Division has a monthly flat rate for residential customers.

subject to Commission approval and to audit and refund provisions. Any cumulative system improvement charge recovered pursuant to the WSIC and SSIC mechanism may not exceed 5% of the total annual service revenues approved by the Commission in this rate case proceeding.

Based on the service revenues set forth and approved in this Order, the maximum WSIC and SSIC charges as of the effective date of this Order are:

Item	Service Revenues	Cap %	WSIC & SSIC Cap
CWSNC Uniform Water Operations	$19,271,785	X 5% =	$963,589
CWSNC Uniform Sewer Operations	$15,904,852	X 5% =	$795,243
BF/FH/TC Water Operations	$1,402,009	X 5% =	$70,100
BF/FH Sewer Operations	$2,243,027	X 5% =	$112,151

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 66-68

Recommendations of the Public Staff

The evidence for these findings of fact is found in the Company's NCUC Form W-1, the testimony of Public Staff witness Casselberry, and the testimony of Company witness DeStefano.

In her prefiled testimony, witness Casselberry stated,

> The Public Staff recommends that in the next general rate case, W-1, Item 26, be reconciled with the Company's bill data to ensure that the filing does not include double bills, that the Company accounts for multi-unit customers, and that other bills produced, such as final bills, late notices, re-bills, or other miscellaneous bills are not included in the W-1, Item 26 filing.

Tr. vol. 8, 91. The Company does not oppose this recommendation of the Public Staff.

In response to the Commission's question during the expert witness hearing regarding whether the Company will be able to provide the information requested by the Public Staff, witness DeStefano responded that, "[t]he Company expects to be able to provide the information requested." Tr. vol. 9, 197.

In its Application the Company requested to increase its reconnection fee from $27.00 to $42.00. Witness Casselberry stated in her testimony that the Public Staff did not oppose increasing the reconnection fee from $27.00 to $42.00.

In its Application the Company also proposed to increase the water connection charge from $500 to $1,080 and the sewer connection charge from $2,000 to $2,635 for Winston Pointe Subdivision, Phase IA. Witness Casselberry stated in her testimony that the Public Staff recommended a connection charge of $1,080 for water and $1,400 for sewer in Winston Pointe Subdivision, Phase IA, as the connection charge should reflect Johnston County's – where the Company purchases bulk water and sewer treatment for Winston Pointe Subdivision – current bulk capacity fee for water and sewer. Witness Casselberry stated that CWSNC indicated that it agreed with the Public Staff's recommendation. Tr. vol. 8, 94.

In light of the foregoing the Commission concludes that it is reasonable and appropriate for the Company to provide accurate bill data and ensure that accurate data is filed in its NCUC Form W-1, Item 26 in its next rate case filing. The Commission further concludes that the reconnection fee should be increased from $27.00 to $42.00, and that a connection charge of $1,080 for water and $1,400 for sewer in Winston Pointe Subdivision, Phase 1A, is reasonable and appropriate.

IT IS, THEREFORE, ORDERED as follows:

1. That the affidavit of CWSNC's Financial Planning and Analysis Manager, Matthew Schellinger, filed on January 10, 2020, and the Public Staff's Revised Settlement Exhibits I and II filed on January 13, 2020, in these dockets are hereby entered into evidence;

2. That all late-filed exhibits filed by CWSNC and the Public Staff in these dockets are hereby admitted into evidence. That the Resolution of Corolla Light Community Association, Inc., filed on December 2, 2019 is also admitted into evidence;

3. That the Partial Joint Settlement Agreement and Stipulation is incorporated herein by reference and is hereby approved in its entirety;

4. That the Partial Joint Settlement Agreement and Stipulation and the parts of this Order pertaining to the contents of that agreement shall not be cited or treated as precedent in future proceedings;

5. That CWSNC's request to defer incremental O&M costs related to Hurricane Florence storm impacts is approved as set forth in the Stipulation and stated herein, and that CWSNC's request to defer depreciation expense on its capital investments and lost revenues related to Hurricane Florence storm impacts is hereby denied;

6. That CWSNC's Petition to defer post-in-service costs associated with the two WWTPs is approved; provided, however, that the Company shall be, and hereby is, required to cease deferring said costs concurrent with the date the Company is authorized to begin reflecting the costs associated with the WWTPs in rates;

7. That CWSNC's Petition to defer post-in-service costs associated with the two AMR installation projects is denied;

8. That the Schedules of Rates, attached hereto as Appendices A-1 and A-2, and the Schedules of Connection Fees for Uniform Water and Uniform Sewer, attached hereto as Appendices B-1 and B-2, are hereby approved and deemed to be filed with the Commission pursuant to N.C.G.S. § 62-138, and are hereby authorized to become effective for service rendered on and after the issuance date of this Order;[21]

9. That the Notices to Customers, attached hereto as Appendices C-1 and C-2 shall be mailed with sufficient postage or hand delivered to all affected customers in each relevant service area, respectively, in conjunction with the next regularly scheduled billing process;

10. That CWSNC shall file the attached Certificate of Service, properly signed and notarized, not later than ten days after the Notices to Customers are mailed or hand delivered to customers;

11. That CWSNC's federal protected EDIT should continue to be flowed back in accordance with the RSGM pursuant to the Commission's Sub 360 Order;

12. That it is reasonable and appropriate for purposes of this proceeding for CWSNC to refund its remaining federal unprotected EDIT balances over 24 months instead of the remaining 35 months as originally ordered by the Commission in Sub 360;

13. That CWSNC's state EDIT recorded pursuant to the Commission's Sub 138 Order should continue to be amortized in accordance with the Commission's Sub 356 Order and as confirmed by the Commission in its Sub 360 Order;

14. That CWSNC shall receive estimates for the cost of a filtration system in Bradfield Farms Subdivision within 60 days of the date of this Order and shall share those estimates with the Bradfield Farms Homeowners Association;

15. That with respect to AMR meter installation projects planned for the future, CWSNC shall work with the Public Staff pursuant to N.C.G.S. § 62-133.12 and Commission Rule R7-39 to mitigate regulatory lag using WSIC recovery. The burden to prove CWSNC's investments recovered under the WSIC mechanism are reasonably and prudently incurred as required by N.C.G.S. § 62-133.12 and Commission Rule R7-39 shall remain with CWSNC;

16. That in the Company's next general rate case filing CWSNC shall ensure that its NCUC Form W-1, Item 26 is reconciled with the Company's bill data to ensure that the filing does not include double bills, that the Company accounts for multi-unit

[21] CWSNC's tariffs will be revised to reflect the change in taxability of CIAC based on the process outlined in Ordering Paragraph 4 of the Commission's February 11, 2020 Order, in Docket Nos. W-100, Sub 57 and W-100, Sub 62.

customers, and that other bills produced, such as final bills, late notices, re-bills, or other miscellaneous bills are not included in the NCUC Form W-1, Item 26 filing; and

17. That the Chief Clerk shall establish Docket No. W-354, Sub 364A as the single docket to be used for all future WSIC and SSIC filings, orders, and reporting requirements and shall close Docket No. W-354, Sub 360A.

ISSUED BY ORDER OF THE COMMISSION.

This the 31st day of March, 2020.

NORTH CAROLINA UTILITIES COMMISSION

Kimberley A. Campbell

Kimberley A. Campbell, Chief Clerk

SCHEDULE OF RATES

for

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

for providing water and sewer utility service

in

ALL OF ITS SERVICE AREAS IN NORTH CAROLINA

(excluding Fairfield Harbour Service Area, Treasure Cove, Register Place Estates, North Hills, Glen Arbor/North Bend, Bradfield Farms, Silverton, Woodland Farms, and Larkhaven Subdivisions, and Hawthorne at the Green Apartments

WATER RATES AND CHARGES

Monthly Metered Water Service (Residential and Commercial):

Base Facility Charge (based on meter size with zero usage)

< 1” meter	$ 28.92
1” meter	$ 72.30
1 1/2” meter	$ 144.60
2” meter	$ 231.36
3” meter	$ 433.80
4” meter	$ 723.00
6” meter	$1,446.00

Usage Charge:

A. Treated Water/1,000 gallons $ 8.27

B. Untreated Water/1,000 gallons
(Brandywine Bay Irrigation Water) $ 4.23

C. Purchased Water for Resale, per 1,000 gallons:

Service Area	Bulk Provider		
Carolina Forest	Montgomery County	$	3.19
High Vista Estates	City of Hendersonville	$	3.40
Riverbend	Town of Franklin	$	7.50
Riverpointe	Charlotte Water	$	6.48
Whispering Pines	Town of Southern Pines	$	3.28
White Oak Plantation/ Lee Forest	Johnston County	$	2.65
Winston Plantation	Johnston County	$	2.65
Winston Point	Johnston County	$	2.65
Woodrun	Montgomery County	$	3.19
Yorktown	City of Winston Salem	$	5.79
Zemosa Acres	City of Concord	$	5.41
Carolina Trace	City of Sanford	$	2.21

Commercial customers, including condominiums or other property owner associations who bill their members directly, shall have a separate account set up for each meter and each meter shall be billed separately based on the size of the meter and usage associated with the meter.

When because of the method of water line installation utilized by the developer or owner, it is impractical to meter each unit or other structure separately, the following will apply:

Sugar Mountain Service Area:
Where service to multiple units or other structures is provided through a single meter, the average usage for each unit or structure served by that meter will be calculated. Each unit or structure will be billed based upon that average usage plus the base monthly charge for a <1" meter.

Mount Mitchell Service Area:
Service will be billed based upon the Commission-approved monthly flat rate.

Monthly Flat Rate Service: (Billed in Arrears) $ 58.54

Availability Rate: (Semiannual)

Applicable only to property owners in Carolina Forest and Woodrun Subdivisions in Montgomery County $ 27.15

Availability Rate: (Monthly)

Applicable only to property owners in Linville Ridge Subdivision $ 13.60

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Sapphire Valley Service Area	$ 10.05

Availability Rate: (Monthly rate, billed quarterly))

Applicable only to property owners in Connestee Falls	$ 5.30
Meter Testing Fee: [1/]	$ 20.00
New Water Customer Charge:	$ 27.00

Reconnection Charge: [2/]

If water service is cut off by utility for good cause	$ 42.00
If water service is discontinued at customer's request	$ 42.00

Reconnection Charge: [3/](Flat-rate water customers)

If water service is cut off by utility for good cause	Actual Cost

Management Fee: (in the following subdivisions only)

(Per connection)

Wolf Laurel	$150.00
Covington Cross Subdivision (Phases 1 & 2)	$100.00

Oversizing Fee: (in the following subdivision only)

(One-time charge per single-family equivalent)

Winghurst	$400.00

Meter Fee:

For <1" meters	$ 50.00
For meters 1" or larger	Actual Cost
Irrigation Meter Installation:	Actual Cost

SEWER RATES AND CHARGES

Monthly Metered Sewer Service:

A. Base Facility Charge:

Residential (zero usage)	$ 58.91
Commercial (based on meter size with zero usage)	
< 1" meter	$ 58.91
1" meter	$ 147.28
1 1/2" meter	$ 294.55
2" meter	$ 471.28
3" meter	$ 883.65
4" meter	$1,472.75
6" meter	$2,945.50

B. Usage charge, per 1,000 gallons $ 4.59

Commercial customers, including condominiums or other property owner associations who bill their members directly, shall have a separate account set up for each meter and each meter shall be billed separately based on the size of the meter and usage associated with the meter.

Monthly Metered Purchased Sewer Service:

Collection Charge (Residential and Commercial) $ 41.24

Usage charge, per 1,000 gallons
(based on purchased water consumption)

Service Area	Bulk Provider	
White Oak Plantation/ Lee Forest/Winston Pt.	Johnston County	$ 5.57
Kings Grant	Two Rivers Utilities	$ 3.98
College Park	Town of Dallas	$ 7.33

Monthly Flat Rate Service: $ 73.73

Multi-residential customers who are served by a master meter shall be charged the flat rate per unit. $ 73.73

Mt. Carmel Subdivision Service Area:

Monthly Base Facility Charge	$ 7.29
Monthly Collection Charge (Residential and Commercial)	$ 41.24
Usage Charge, per 1,000 gallons (based on metered water from the water supplier)	$ 6.32

Regalwood and White Oak Estates Subdivision Service Area:

Monthly Flat Rate Sewer Service	
Residential Service	$ 73.73
White Oak High School	$2,187.33
Child Castle Daycare	$ 280.41
Pantry	$ 153.76

Fairfield Mountain/Apple Valley (a.k.a. Rumbling Bald) Service Area, and Highland Shores Subdivision:

Monthly Sewer Rates:

Residential	
Collection charge/dwelling unit	$ 41.24
Treatment charge/dwelling unit	$ 69.50
Total monthly flat rate/dwelling unit	$ 110.74

Commercial and Other:

Minimum monthly collection and treatment charge	$ 110.74
Monthly collection and treatment charge for customers who do not take water service	$ 110.74
Treatment charge per dwelling unit	
Small (less than 2,500 gallons per month)	$ 78.50
Medium (2,500 to 10,000 gallons per month)	$ 139.50
Large (over 10,000 gallons per month)	$ 219.50
Collection Charge (per 1,000 gallons)	$ 13.93

The Ridges at Mountain Harbour:

Monthly Sewer Rates:

Collection charge (Residential and Commercial)	$ 41.24
Treatment charge (Residential and Commercial)	
< 1" meter	$ 18.42
2" meter	$ 147.36

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Sapphire Valley Service Area	$ 10.20

Availability Rate: (Monthly rate, billed quarterly)

Applicable only to property owners in Connestee Falls	$ 5.75

New Sewer Customer Charge: 4/ $ 27.00

Reconnection Charge: 5/

If sewer service is cut off by utility for good cause: Actual Cost

MISCELLANEOUS UTILITY MATTERS

Charge for processing NSF Checks:	$ 25.00
Bills Due:	On billing date
Bills Past Due:	21 days after billing date
Billing Frequency:	Bills shall be rendered monthly in all service areas, except for Mt. Carmel, which will be billed bimonthly. Availability rates will be billed quarterly in advance for Connestee Falls, semiannually in advance for Carolina Forest, Woodrun, and Fairfield Sapphire Valley, and monthly for Linville Ridge.

Finance Charge for Late Payment:	1% per month will be applied to the unpaid balance of all bills still past due 25 days after billing date.

Notes:

[1/] If a customer requests a test of a water meter more frequently than once in a 24-month period, the Company will collect a $20.00 service charge to defray the cost of the test. If the meter is found to register in excess of the prescribed accuracy limits, the meter testing charge will be waived. If the meter is found to register accurately or below prescribed accuracy limits, the charge shall be retained by the Company. Regardless of the test results, customers may request a meter test once in a 24-month period without charge.

[2/] Customers who request to be reconnected within nine months of disconnection at the same address shall be charged the base facility charge for the service period they were disconnected.

[3/] The utility shall itemize the estimated cost of disconnecting and reconnecting service and shall furnish this estimate to customer with cut-off notice.

[4/] This charge shall be waived if customer is also a water customer within the same service area.

[5/] The utility shall itemize the estimated cost of disconnecting and reconnecting service and shall furnish this estimate to customer with cut-off notice. This charge will be waived if customer also receives water service from Carolina Water Service within the same service area. Customers who request to be reconnected within nine months of disconnection at the same address shall be charged the base facility charge for the service period they were disconnected.

SCHEDULE OF RATES

for

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

for providing water and sewer utility service

in

TREASURE COVE, REGISTER PLACE ESTATES, NORTH HILLS, GLEN ARBOR/NORTH BEND SUBDIVISIONS, FAIRFIELD HARBOUR SERVICE AREA, BRADFIELD FARMS SUBDIVISION, LARKHAVEN SUBDIVISION, SILVERTON, AND WOODLAND FARMS SUBDIVISIONS, AND HAWTHORNE AT THE GREEN APARTMENTS

WATER RATES AND CHARGES

Monthly Metered Water Service (Residential and Commercial):

Base Facility Charge (based on meter size with zero usage)

< 1” meter	$ 17.30
1” meter	$ 43.25
1 1/2” meter	$ 86.50
2” meter	$138.40

Usage Charge, per 1,000 gallons	$ 4.20

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Harbour Service Area	$ 3.55

Connection Charge:

Treasure Cove Subdivision	$ 0.00
North Hills Subdivision	$ 100.00
Glen Arbor/North Bend Subdivision	$ 0.00
Register Place Estates	$ 500.00

Fairfield Harbor: [1/]

All Areas Except Harbor Pointe II Subdivision

Recoupment of capital fees per tap	$ 335.00
Connection charge per tap	$ 140.00

Harbor Pointe Subdivision and any area where mains have been installed after July 24, 1989

Recoupment of capital fee per tap	$ 650.00
Connection charge per tap	$ 320.00

Bradfield Farms:

Connection charge per tap	None

Meter Testing Fee: [2/]	$ 20.00
New Water Customer Charge:	$ 27.00

Reconnection Charge: [3/]

If water service is cut off by utility for good cause	$ 42.00
If water service is discontinued at customer's request	$ 42.00

New Meter Charge:	Actual Cost
Irrigation Meter Installation:	Actual Cost

SEWER RATES AND CHARGES

Monthly Sewer Service:

Residential:

Flat Rate, per dwelling unit	$ 53.91
Bulk Flat Rate, per REU	$ 53.91

Commercial and Other:

Monthly Flat Rate (Customers who do not take water service)	$ 53.91

Monthly Metered Rates
(based on meter size with zero usage)

<1" meter	$ 44.62
1" meter	$ 111.55
1 1/2" meter	$ 223.10
2" meter	$ 356.96

Usage Charge, per 1,000 gallons $ 2.25

Bulk Sewer Service for Hawthorne at the Green Apartments: 4/

Bulk Flat Rate, per REU $ 53.91

(To be collected from Hawthorne and delivered to Carolina Water Service, Inc. of North Carolina for treatment of the Hawthorne wastewater pursuant to Docket No. W-218, Sub 291)

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Harbour Service Area $ 2.85

Connection Charge

Fairfield Harbour: 1/

All Areas Except Harbor Pointe II Subdivision

Recoupment of capital fees per tap	$ 735.00
Connection charge per tap	$ 140.00

Harbor Pointe Subdivision and any area where mains have been installed after July 24, 1989

Recoupment of capital fee per tap	$ 2,215.00
Connection charge per tap	$ 310.00

Bradfield Farms:

Connection charge per tap None

New Sewer Customer Charge: 5/ $ 27.00

Reconnection Charge: 6/
If sewer service is cut off by utility for good cause: Actual Cost

MISCELLANEOUS UTILITY MATTERS

Charge for processing NSF Checks:	$ 25.00
Bills Due:	On billing date
Bills Past Due:	21 days after billing date
Billing Frequency:	Bills shall be monthly for service in arrears. Availability billings semiannually in advance.
Finance Charge for Late Payment:	1% per month will be applied to the unpaid balance of all bills still past due 25 days after billing date.

Notes:

[1/] The recoupment of capital portion of the connection charges shall be due and payable at such time as the main water and sewer lines are installed in front of each lot, and the tap-on fee for water and sewer shall be payable upon request by the owner of each lot to be connected to the water and sewer lines. With written consent of the company, payment of the recoupment capital portion of the connection charge may be made payable over five-year period following the installation of the water and sewer mains in front of each lot, payment to be made in such a manner and in such installments as agreed upon between lot owner and the company, together with interest on the balance of the unpaid recoupment of capital fee from said time until payment in full at the rate of 6% per annum.

[2/] If a customer requests a test of a water meter more frequently than once in a 24-month period, the Company will collect a $20.00 service charge to defray the cost of the test. If the meter is found to register in excess of the prescribed accuracy limits, the meter testing charge will be waived. If the meter is found to register accurately or below prescribed accuracy limits, the charge shall be retained by the Company. Regardless of the test results, customers may request a meter test once in a 24-month period without charge.

[3/] Customers who request to be reconnected within nine months of disconnection at the same address shall be charged the base facility charge for the service period they were disconnected.

[4/] Each Apartment building will be considered 92.42% occupied on an ongoing basis for billing purposes as soon as the certificate of occupancy is issued for that apartment building.

[5/] This charge shall be waived if customer is also a water customer within the same service area.

[6/] The utility shall itemize the estimated cost of disconnecting and reconnecting service and shall furnish this estimate to customer with cut-off notice. This charge will be waived if customer also receives water service from Carolina Water Service within the same service area. Customers who request to be reconnected within nine months of disconnection at the same address shall be charged the base facility charge for the service period they were disconnected.

Issued in Accordance with Authority Granted by the North Carolina Utilities Commission in Docket No. W-354, Sub 364, on this the 31st day of March, 2020.

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

SCHEDULE OF CONNECTION FEES

FOR WATER UTILITY SERVICE UNDER UNIFORM RATES

Uniform Connection Fees: [1/]

The following uniform connection fees apply unless specified differently by contract approved by and on file with the North Carolina Utilities Commission.

Connection Charge (CC), per SFE (Single-Family Equivalent)	$ 100.00
Plant Modification Fee (PMF), per SFE	$ 400.00

The systems where connection fees other than the uniform fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows. These fees are per SFE:

Subdivision	CC	PMF
Abington	$ 0.00	$ 0.00
Abington, Phase 14	$ 0.00	$ 0.00
Amherst	$ 250.00	$ 0.00
Bent Creek	$ 0.00	$ 0.00
Blue Mountain at Wolf Laurel	$ 925.00	$ 0.00
Buffalo Creek, Phase I, II, III, IV	$ 825.00	$ 0.00
Carolina Forest	$ 0.00	$ 0.00
Chapel Hills	$ 150.00	$ 400.00
Eagle Crossing	$ 0.00	$ 0.00
Elk River Development	$1,000.00	$ 0.00
Forest Brook/Old Lamp Place	$ 0.00	$ 0.00
Harbour	$ 75.00	$ 0.00
Hestron Park	$ 0.00	$ 0.00
Hound Ears	$ 300.00	$ 0.00
Kings Grant/Willow Run	$ 0.00	$ 0.00
Lemmond Acres	$ 0.00	$ 0.00
Linville Ridge	$ 400.00	$ 0.00
Monterrey (Monterrey LLC)	$ 0.00	$ 0.00
Quail Ridge	$ 750.00	$ 0.00
Queens Harbour/Yachtsman	$ 0.00	$ 0.00
Riverpointe	$ 300.00	$ 0.00
Riverpointe (Simonini Bldrs.)	$ 0.00	$ 0.00
Riverwood, Phase 6E (Johnston County)	$ 825.00	$ 0.00
Saddlewood/Oak Hollow (Summey Bldrs.)	$ 0.00	$ 0.00

Subdivision	CC	PMF
Sherwood Forest	$ 950.00	$ 0.00
Ski Country	$ 100.00	$ 0.00
The Ridges at Mountain Harbour	$2,500.00	$ 0.00
White Oak Plantation	$ 0.00	$ 0.00
Wildlife Bay	$ 870.00	$ 0.00
Willowbrook	$ 0.00	$ 0.00
Winston Plantation	$1,100.00	$ 0.00
Winston Pointe, Phase 1A	$1,080.00	$ 0.00
Wolf Laurel	$ 925.00	$ 0.00
Woodrun	$ 0.00	$ 0.00
Woodside Falls	$ 500.00	$ 0.00

Other Connection Fees:

The following connection fees apply unless specified differently by contract approved and/or filed with the North Carolina Utilities Commission.

Amber Acres, Amber Acres North, Amber Ridge, Ashley Hills North, Bishop Pointe, Carriage Manor, Country Crossing, Covington Cross, Heather Glen, Hidden Hollow, Jordan Woods, Lindsey Point, Neuse Woods, Oakes Plantation, Randsdell Forest, Rutledge Landing, Sandy Trails, Stewart's Ridge, Tuckahoe, Wilder's Village and Forest Hill Subdivisions

Connection Charge:

A. 5/8" meter	$ 500.00
B. All other meter sizes	Actual cost of meter and installation

The systems where other connection fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows:

Subdivision	CC
Lindsey Point Subdivision	$ 0.00
Amber Acres North, Sections II & IV	$ 570.00
Fairfield Mountain/Apple Valley (a.ka.a Rumbing Bald) Service Area	$ 500.00
Highland Shores Subdivision	$ 500.00
Laurel Mountain Estates	$ 0.00
Carolina Trace	$ 605.00
Connestee Falls	$ 600.00

The following connection fees apply unless specified differently by contract approved and/or filed with the North Carolina Utilities Commission.

<u>All Areas Except Holly Forest XI, Holly Forest XIV, Holly Forest XV, Whisper Lake I, Whisper Lake II, Whisper Lake III, Deer Run, Lonesome Valley Phases I and II, and Chattooga Ridge</u>

Recoupment of Capital Fee (RCF) [2/]	$ 0.00
Connection charge	$ 400.00

The systems where other connection fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows.

Subdivision	CC	RCF
Holly Forest XI	$ 400.00	$2,400.00
Holly Forest XIV	$ 400.00	$ 250.00
Holly Forest XV	$ 400.00	$ 500.00
Whispering Lake Phase I	$ 400.00	$1,250.00
Whispering Lake Phases II and III	$ 400.00	$2,450.00
Deer Run	$ 400.00	$1,900.00
Lonesome Valley Phases I and II	$ 0.00	$ 0.00
Chattooga Ridge	$ 0.00	$ 0.00

[1/] These fees are only applicable one time, when the unit is initially connected to the system.
[2/] The recoupment of capital portion of the connection charges shall be due and payable at such time as the main water and sewer lines are installed in front of each lot, and the tap-on fee for water and sewer shall be payable upon request by the owner of each lot to be connected to the water and sewer lines. With written consent of the company, payment of the recoupment capital portion of the connection charge may be made payable over five-year period following the installation of the water and sewer mains in front of each lot, payment to be made in such a manner and in such installments as agreed upon between lot owner and the company, together with interest on the balance of the unpaid recoupment of capital fee from said time until payment in full at the rate of 6% per annum.

Issued in Accordance with Authority Granted by the North Carolina Utilities Commission in Docket No. W-354, Sub 364, on this the 31st day of March, 2020.

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

SCHEDULE OF CONNECTION FEES FOR

SEWER UTILITY SERVICE UNDER UNIFROM RATES

Uniform Connection Fees: [1/]

The following uniform connection fees apply unless specified differently by contract approved by and on file with the North Carolina Utilities Commission.

Connection Charge (CC), per SFE (Single-Family Equivalent)	$ 100.00
Plant Modification Fee (PMF), per SFE	$1,000.00

The systems where connection fees other than the uniform fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows. These fees are per SFE:

Subdivision	CC	PMF
Abington	$ 0.00	$ 0.00
Abington, Phase 14	$ 0.00	$ 0.00
Amber Acres North (Phases II & IV)	$ 815.00	$ 0.00
Ashley Hills	$ 0.00	$ 0.00
Amherst	$ 500.00	$ 0.00
Bent Creek	$ 0.00	$ 0.00
Brandywine Bay	$ 100.00	$1,456.00
Camp Morehead by the Sea	$ 100.00	$1,456.00
Elk River Development	$1,200.00	$ 0.00
Hammock Place	$ 100.00	$1,456.00
Hestron Park	$ 0.00	$ 0.00
Hound Ears	$ 30.00	$ 0.00
Independent/Hemby Acres/Beacon Hills (Griffin Bldrs.)	$ 0.00	$ 0.00
Kings Grant/Willow Run	$ 0.00	$ 0.00
Kynwood	$ 0.00	$ 0.00
Mt. Carmel/Section 5A	$ 500.00	$ 0.00
Queens Harbor/Yachtsman	$ 0.00	$ 0.00
Riverpointe	$ 300.00	$ 0.00
Riverpointe (Simonini Bldrs.)	$ 0.00	$ 0.00
Steeplechase (Spartabrook)	$ 0.00	$ 0.00
The Ridges at Mountain Harbour	$2,500.00	$ 0.00
White Oak Plantation	$ 0.00	$ 0.00
Willowbrook	$ 0.00	$ 0.00

Willowbrook (Phase 3)	$ 0.00	$ 0.00
Winston pointe (Phase 1A)	$1,400.00	$ 0.00
Woodside Falls	$ 0.00	$ 0.00

Other Connection Fees:

The systems where other connection fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows.

Subdivision

Carolina Pines

Residential	$1,350.00 per unit (including single-family homes, condominiums, apartments, and mobile homes)
Hotels	$750.00 per unit
Nonresidential	$3.57 per gallon of daily design of discharge or $900.00 per unit, whichever is greater

Subdivision	CC
Fairfield Mountain/Apply Valley (a.k.a. Rumbling Bald)	
Service Area	$ 550.00
Highland Shores	$ 550.00
Carolina Trace	$ 533.00
Connestee Falls	$ 400.00

The following connection fees apply unless specified differently by contract approved and/or filed with the North Carolina Utilities Commission.

All Areas Except Holly Forest XIV, Holly Forest XV, Deer Run, and Lonesome Valley Phases I and II

Recoupment of Capital Fee (RCF) [2/]	$ 0.00
Connection charge	$ 550.00

The systems where other connection fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows:

Subdivision	CC	RCF
Holly Forest XIV	$ 550.00	$1,650.00
Holly Forest XV	$ 550.00	$ 475.00
Deer Run	$ 550.00	$1,650.00
Lonesome Valley Phases I and II	$ 0.00	$ 0.00

[1/] These fees are only applicable one time, when the unit is initially connected to the system.
[2/] The recoupment of capital portion of the connection charges shall be due and payable at such time as the main water and sewer lines are installed in front of each lot, and the tap-on fee for water and sewer shall be payable upon request by the owner of each lot to be connected to the water and sewer lines. With written consent of the company, payment of the recoupment capital portion of the connection charge may be made payable over five-year period following the installation of the water and sewer mains in front of each lot, payment to be made in such a manner and in such installments as agreed upon between lot owner and the company, together with interest on the balance of the unpaid recoupment of capital fee from said time until payment in full at the rate of 6% per annum.

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. W-354, SUB 364

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of

Application by Carolina Water Service, Inc. of North Carolina, 4944 Parkway Plaza Boulevard, Suite 375, Charlotte, North Carolina 28217, for Authority to Adjust and Increase Rates for Water and Sewer Utility Service in All of its Service Areas in North Carolina	)))))))	NOTICE TO CUSTOMERS

NOTICE IS HEREBY GIVEN that the North Carolina Utilities Commission has issued an Order authorizing Carolina Water Service, Inc. of North Carolina (CWSNC) to increase rates for water and sewer utility service in all of its service areas in North Carolina. The new approved rates are as follows:

WATER RATES AND CHARGES

(Excluding Fairfield Harbour Service Area and Treasure Cove, Register Place Estates, North Hills, Glen Arbor/North Bend, Bradfield Farms, Larkhaven, Silverton, and Woodland Farms Subdivisions, and Hawthorne at the Green Apartments

Uniform Water Customers:

Monthly Metered Water Service (Residential and Commercial):

Base Facility Charge (based on meter size with zero usage)

< 1” meter	$ 28.92
1” meter	$ 72.30
1 1/2” meter	$ 144.60
2” meter	$ 231.36
3” meter	$ 433.80
4” meter	$ 723.00
6” meter	$1,446.00

Usage Charge:

A. Treated Water/1,000 gallons $ 8.27
B. Untreated Water/1,000 gallons
(Brandywine Bay Irrigation Water) $ 4.23

C. Purchased Water for Resale, per1,000 gallons:

Service Area	Bulk Provider		
Carolina Forest	Montgomery County	$	3.19
High Vista Estates	City of Hendersonville	$	3.40
Riverbend	Town of Franklin	$	7.50
Riverpointe	Charlotte Water	$	6.48
Whispering Pines	Town of Southern Pines	$	3.28
White Oak Plantation/ Lee Forest	Johnston County	$	2.65
Winston Plantation	Johnston County	$	2.65
Winston Point	Johnston County	$	2.65
Woodrun	Montgomery County	$	3.19
Yorktown	City of Winston Salem	$	5.79
Zemosa Acres	City of Concord	$	5.41
Carolina Trace	City of Sanford	$	2.21

Commercial customers, including condominiums or other property owner associations who bill their members directly, shall have a separate account set up for each meter and each meter shall be billed separately based on the size of the meter and usage associated with the meter.

When because of the method of water line installation utilized by the developer or owner, it is impractical to meter each unit or other structure separately, the following will apply:

Sugar Mountain Service Area:
Where service to multiple units or other structures is provided through a single meter, the average usage for each unit or structure served by that meter will be calculated. Each unit or structure will be billed based upon that average usage plus the base monthly charge for a <1" meter.

Mount Mitchell Service Area:
Service will be billed based upon the Commission-approved monthly flat rate.

Monthly Flat Rate Service: (Billed in Arrears) $ 58.54
Availability Rate: (Semiannual)

Applicable only to property owners in Carolina Forest and Woodrun Subdivisions in Montgomery County $ 27.15

Availability Rate: (Monthly)

Applicable only to property owners in Linville Ridge Subdivision $ 13.60

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Sapphire Valley Service Area	$ 10.05

Availability Rate: (Monthly rate, billed quarterly)

Applicable only to property owners in Connestee Falls	$ 5.30

SEWER RATES AND CHARGES

(Excluding Fairfield Harbour Service Area, Treasure Cove, Register Place Estates, North Hills and Glen Arbor/North Bend Subdivisions, Bradfield Farms, Larkhaven, Silverton, and Woodland Farms Subdivisions, and Hawthorne at the Green Apartments

Uniform Sewer Customers:

Monthly Metered Sewer Service:

Base Facility Charge:

Residential (zero usage)	$ 58.91

Commercial (based on meter size with zero usage)

< 1” meter	$ 58.91
1” meter	$ 147.28
1 1/2” meter	$ 294.55
2” meter	$ 471.28
3” meter	$ 883.65
4” meter	$1,472.75
6” meter	$2,945.50

Usage charge, per 1,000 gallons	$ 4.59

Commercial customers, including condominiums or other property owner associations who bill their members directly, shall have a separate account set up for each meter and each meter shall be billed separately based on the size of the meter and usage associated with the meter.

Monthly Metered Purchased Sewer Service:

Collection Charge (residential and commercial)	$ 41.24

Usage charge, per 1,000 gallons based on purchased water consumption

Service Area	Bulk Provider	
White Oak Plantation/ Lee Forest/Winston Pt.	Johnston County	$ 5.57
Kings Grant	Two Rivers Utilities	$ 3.98
College Park	Town of Dallas	$ 7.33

Monthly Flat Rate Service: $ 73.73

Multi-residential customers who are served by a master meter shall be charged the flat rate per unit. $ 73.73

Mt. Carmel Subdivision Service Area:

Monthly Base Facility Charge	$ 7.29
Monthly Collection Charge (Residential and commercial)	$ 41.24
Usage Charge/1,000 gallons based on purchased water	$ 6.32

Regalwood and White Oak Estates Subdivision Service Area:

Monthly Flat Rate Sewer Service

Residential Service	$ 73.73
White Oak High School	$2,187.33
Child Castle Daycare	$ 280.41
Pantry	$ 153.76

Fairfield Mountain/Apple Valley (a.k.a. Rumbling Bald) Service Area, Highland Shores Subdivisions and Laurel Mountain Estates
Monthly Sewer Rates:

Residential:

Collection charge/dwelling unit	$ 41.24
Treatment charge/dwelling unit	$ 69.50
Total monthly flat rate/dwelling unit	$ 110.74

Commercial and Other:

Minimum monthly collection and treatment charge	$ 110.74
Monthly collection and treatment charge for customers Who do not take water service (per single family unit)	$ 110.74

Treatment charge per dwelling unit

Small (less than 2,500 gallons per month)	$ 78.50
Medium (2,500 to 10,000 gallons per month)	$ 139.50
Large (over 10,000 gallons per month)	$ 219.50

Collection Charge (per 1,000 gallons)	$ 13.93

The Ridges at Mountain Harbour:

Monthly Sewer Rates:

Collection charge (Residential and Commercial)	$ 41.24
Treatment Charge (Residential and Commercial)	
< 1 inch meter	$ 18.42
2 inch meter	$ 147.36

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Sapphire Valley Service Area	$ 10.20

Availability Rate: (Monthly rate, billed quarterly)

Applicable only to property owners in Connestee Falls	$ 5.75

RATE ADJUSTMENT MECHANISM:

The Commission-authorized water and sewer system improvement charge (WSIC/SSIC) rate adjustment mechanism continues in effect and will now be applicable to all customers in CWSNC's North Carolina service areas. It has been reset at zero in the Docket No. W-354, Sub 364 rate case, but CWSNC may, under the Rules and Regulations of the Commission, next apply for a rate surcharge on July 31, 2020 to become effective October 1, 2020. The WSIC/SSIC mechanism is designed to recover, between rate case proceedings, the costs associated with investment in certain completed, eligible projects for system or water quality improvement. The WSIC/SSIC mechanism is subject to Commission approval and to audit and refund provisions. Any cumulative system improvement charge recovered pursuant to the WSIC/SSIC mechanism may not exceed 5% of the total annual service revenues approved by the Commission in this general rate case proceeding. Additional information regarding the WSIC/SSIC mechanism is contained in the Commission's Order and can be accessed from the Commission's website at www.ncuc.net, under Docket Information, using the Docket Search feature for docket number "W-354 Sub 360A" and "W-354, Sub 364A" .

CREDIT/REFUNDS DUE TO REDUCTION IN FEDERAL CORPORATE INCOME TAX RATE:

On December 22, 2017, President Donald J. Trump signed into law the Tax Cuts and Jobs Act (The Tax Act), which among other things, reduced the federal corporate income tax rate from 35% to 21%, effective for taxable years beginning after December 31, 2017.

With respect to excess deferred income taxes (EDIT) resulting from the reduction in the federal corporate income tax rate, the Commission is requiring that: (1) CWSNC shall continue to flow back the federal protected EDIT to customers in accordance with the Reverse South Georgia Method as ordered by the Commission in CWSNC's last rate case (Docket No. W-354, Sub 360), and (2) CWSNC shall refund the remaining federal unprotected EDIT to customers through a levelized rider over a period of 24 months as requested by CWSNC instead of the remaining 35-month period as originally ordered by the Commission in Docket No. W-354, Sub 360.

CWSNC will provide the applicable dollar amount concerning the federal EDIT rider (refund) shown as a separate line item on individual customers' monthly bills, along with explanatory information.

ISSUED BY ORDER OF THE COMMISSION.

This the 31st day of March, 2020.

NORTH CAROLINA UTILITIES COMMISSION

Kimberley A. Campbell

Kimberley A. Campbell, Chief Clerk

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. W-354, SUB 364

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Application by Carolina Water Service, Inc. of North Carolina, 4944 Parkway Plaza Boulevard, Suite 375, Charlotte, North Carolina 28217, for Authority to Adjust and Increase Rates for Water and Sewer Utility Service in All of its Service Areas in North Carolina	)	NOTICE TO CUSTOMERS IN TREASURE COVE, REGISTER PLACE ESTATES, NORTH HILLS, AND GLEN ARBOR/NORTH BEND SUBDIVISIONS, FAIRFIELD HARBOUR SERVICE AREA, BRADFIELD FARMS, LARKHAVEN, SILVERTON, AND WOODLAND FARMS SUBDIVISIONS, AND HAWTHORNE AT THE GREEN APARTMENTS

NOTICE IS HEREBY GIVEN that the North Carolina Utilities Commission has issued an Order authorizing Carolina Water Service, Inc. of North Carolina to charge the following new rates for water and sewer utility service in Treasure Cove, Register Place Estates, North Hills, and Glen Arbor/North Bend Subdivisions, Fairfield Harbour Service Area, Bradfield Farms, Larkhaven, Silverton, and Woodland Farms Subdivisions, and Hawthorne at the Green Apartments:

WATER RATES AND CHARGES

<u>Monthly Metered Water Service (Residential and Commercial)</u>:

Base Facility Charge (based on meter size with zero usage)	
< 1” meter	$ 17.30
1” meter	$ 43.25
1 1/2” meter	$ 86.50
2” meter	$ 138.40
Usage Charge, per 1,000 gallons	$ 4.20

<u>Availability Rate:</u> (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Harbour Service Area	$ 3.55

SEWER RATES AND CHARGES

Monthly Sewer Service:

Residential:

Flat Rate, per dwelling unit	$ 53.91
Bulk Flat Rate, per REU	$ 53.91

Commercial and Other:

Monthly Flat Rate (Customers who do not take water service)	$ 53.91

Monthly Metered Rates
(based on meter size with zero usage)

<1” meter	$ 44.62
1” meter	$111.55
1 1/2” meter	$223.10
2” meter	$356.96

Usage Charge, per 1,000 gallons	$ 2.25

Bulk Sewer Service for Hawthorne at the Green Apartments:

Bulk Flat Rate, per REU	$ 53.91

(To be collected from Hawthorne and delivered to Carolina Water Service, Inc. of North Carolina for treatment of the Hawthorne wastewater pursuant to Docket No. W-218, Sub 291)

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Harbour Service Area	$ 2.85

RATE ADJUSTMENT MECHANISM:

The Commission-authorized water and sewer system improvement charge (WSIC/SSIC) rate adjustment mechanism continues in effect and will now be applicable to all customers in CWSNC’s North Carolina service areas. It has been reset at zero in the Docket No. W-354, Sub 364 rate case, but CWSNC may, under the Rules and Regulations of the Commission, next apply for a rate surcharge on July 31, 2020, to become effective October 1, 2020. The WSIC/SSIC mechanism is designed to recover, between rate case proceedings, the costs associated with investment in certain completed, eligible projects for system or water quality improvement. The WSIC/SSIC mechanism is subject to Commission approval and to audit and refund provisions. Any cumulative system improvement charge recovered pursuant to the WSIC/SSIC mechanism may not exceed 5% of the total annual service revenues approved by the Commission in this general rate case proceeding. Additional information regarding the WSIC/SSIC mechanism is contained in the Commission's Order and can be accessed from the Commission's website at www.ncuc.net, under Docket Information, using the Docket Search feature for docket number "W-354 Sub 360A" and "W-354 Sub 364A".

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With respect to excess deferred income taxes (EDIT) resulting from the reduction in the federal corporate income tax rate, the Commission is requiring that: (1) CWSNC shall continue to flow back the federal protected EDIT to customers in accordance with the Reverse South Georgia Method as ordered by the Commission in CWSNC's last rate case (Docket No. W-354, Sub 360), and (2) CWSNC shall refund the remaining federal unprotected EDIT to customers through a levelized rider over a period of 24 months as requested by CWSNC instead of the remaining 35-month period as originally ordered by the Commission in Docket No. W-354, Sub 360.

CWSNC will provide the applicable dollar amount concerning the federal EDIT rider (refund) shown as a separate line item on individual customers' monthly bills, along with explanatory information.

ISSUED BY ORDER OF THE COMMISSION.

This the 31st day of March, 2020.

NORTH CAROLINA UTILITIES COMMISSION

Kimberley A. Campbell

Kimberley A. Campbell, Chief Clerk

CERTIFICATE OF SERVICE

I, ____, mailed with sufficient postage or hand delivered to all affected customers the attached Notices to Customers issued by the North Carolina Utilities Commission in Docket No. W-354, Subs 363, 364, and 365, and the Notices were mailed or hand delivered by the date specified in the Order.

This the _____ day of ____________________, 2020.

By:____________________________________
Signature

____
Name of Utility Company

The above named Applicant, ____________________________________, personally appeared before me this day and, being first duly sworn, says that the required Notices to Customers were mailed or hand delivered to all affected customers, as required by the Commission Order dated __________________ in Docket No. W-354, Subs 363, 364, and 365.

Witness my hand and notarial seal, this the ___ day of ___________, 2020.

____
Notary Public

____
Printed or Typed Name

(SEAL) My Commission Expires: ____________________________________
Date

BEFORE

THE PUBLIC SERVICE COMMISSION OF

SOUTH CAROLINA

DOCKET NO. 2017-292-WS - ORDER NO. 2018-345

MAY 17, 2018

IN RE:	Application of Carolina Water Service, Inc. for Adjustment of Rates and Charges and Modification to Certain Terms and Conditions for the Provision of Water and Sewer Service	)))))	ORDER APPROVING RATES AND CHARGES

This matter is before the Public Service Commission of South Carolina ("Commission") on the Application of Carolina Water Service, Inc. ("CWS" or "Company") for approval of a new schedule of rates and charges and modifications to certain terms and conditions for the provision of water and sewer services for its customers in South Carolina. CWS filed its Application on November 10, 2017, pursuant to S.C. Code § 58-5-240 and S.C. Code Regs. §§ 103-503, 103-703, 103-512.4.A and 103-712.4.A.

In the Application, CWS requested an increase in revenues for combined operations of $4,511,414 consisting of a water revenue increase of $2,272,914 and a sewer revenue increase of $2,238,500. The revenue increase utilizes a return on equity ("ROE") of 10.5% based on the rate of return on rate base methodology and a historical test year beginning September 1, 2016, and ending August 31, 2017.

CWS requested permission to modify its sewer service tariff to reduce the frequency with which customers must test their backflow devices from every year to every two years, and to authorize the Company to terminate service, after notice, to a customer who fails to demonstrate that his backflow device is working properly. App. p. 6, ¶ 20. CWS requested authorization to increase its Water Meter Installation Charge from $35 to $45 per year, to more accurately reflect the utility's cost of providing this service. App. p. 6, ¶ 21. The Company also requested approval of a provision in its tariff limiting the liability of the Company, its agents, and employees for interruption of service, whether caused by acts or omissions, to those remedies provided in the Commission's rules and regulations. App. p. 6, ¶ 22.

CWS last rate case before this Commission was in Docket No. 2015-199-WS. In that case, the Commission approved a settlement in which CWS received a combined revenue increase of $3,068,441 based on a $50,955,443 rate base; an operating margin of 11.95%, an ROE of 9.34%, and a return on rate base of 7.99%.

CWS' South Carolina operations are classified by the National Association of Regulatory Utility Commissioners ("NARUC") as a Class A water and wastewater utility according to water and sewer revenues reported on its Application for the test year ending August 31, 2017. The Commission's approved service area for CWS is in parts of sixteen counties.

I. PROCEDURAL BACKGROUND

The Commission's Clerk's Office instructed CWS to publish a prepared Notice of Filing, one time, in a newspaper of general circulation in the area affected by CWS' Application and to mail copies of the Notice of Filing to all customers affected by the proposed rates and charges and modifications. The Notice of Filing indicated the nature of the Application and advised all interested parties desiring to participate in the scheduled proceeding of the manner and time in which to file the appropriate pleadings. CWS filed affidavits demonstrating the Notice of Filing had been duly published and provided to all customers.

Petitions to Intervene were subsequently filed on behalf of the Forty Love Point Homeowners' Association ("Forty Love"), York County, and James S. Knowlton. The South Carolina Office of Regulatory Staff ("ORS"), a party of record pursuant to S.C. Code § 58-4-10(B), made on-site investigations of CWS' facilities, audited CWS' books and records, issued data requests, and gathered other detailed information concerning CWS' operations.

CWS was represented by Charles L.A. Terreni, and Scott Elliott. Laura P. Valtorta represented Forty Love. Michael K. Kendree represented York County, Mr. Knowlton appeared pro se. Jeffrey M. Nelson, and Florence P. Belser represented the ORS. On March 28, 2018 York County moved to withdraw from the proceedings without prejudice after CWS withdrew its request for approval of the Utility System Improvement Rate ("USIR"). York County's request was granted on the same day. Order No. 2018-38-H.

The Commission held public hearings in Lexington, York, and Greenville counties to allow CWS's customers to present their views regarding the Application. An evidentiary hearing was held April 3-4, 2018, at the Commission's offices in Columbia with the Honorable Swain E. Whitfield, presiding.

The Company presented the testimony of Michael R. Cartin, Operations and Regulatory Affairs Manager (direct, rebuttal and supplemental), Robert M. Hunter, Financial Planning and Analysis Manager (direct and rebuttal), and Bob Gilroy, Vice President of Operations (direct, rebuttal, and testimony responsive to customers who testified at public hearings). Mr. Cartin, testified about the Company's operations and various expenses and capital expenditures made by CWS. Mr. Hunter testified about the Company's finances and revenue requirement, and Mr. Gilroy testified about various aspects of the Company's operations and customer service. The Company also presented the testimony of Dylan W. D'Ascendis, CRRA, Director at ScottMadden, Inc., who testified to the Company's capital structure, cost of debt, and recommended ROE.

Forty Love presented the direct testimony of subdivision residents and customers Barbara King and Jay Dixon. They testified to problems experienced with the sewer system serving Forty Love Point. Mr. Knowlton presented his rebuttal testimony opposing the amount and frequency of the Company's rate increases.

ORS presented the testimony of Matthew Schellinger (direct and surrebuttal), Zachary Payne (direct and surrebuttal), and Douglas H. Carlisle, Jr., Ph.D. (direct and surrebuttal) as a panel. Dr. Carlisle testified to the Company's capital structure, cost of debt, and recommended ROE.

Dr. Carlisle's testimony included an analysis and recommendation for an allowed ROE. Mr. Payne testified about ORS's examination of the Application and CWS' books and records and the subsequent accounting and pro forma adjustments recommended by ORS. Mr. Schellinger's direct testimony focused on CWS' compliance with Commission rules and regulations, ORS' business office compliance review, inspections of CWS' water and wastewater systems, test year and proposed revenue, and performance bond requirements.

II. REVIEW OF THE EVIDENCE AND EVIDENTIARY CONCLUSIONS

A. Standards and Required Findings

In considering the Application, the Commission must ascertain and fix just and reasonable rates, standards, classifications, regulations, practices, and measurements of service to be furnished. The Commission must give due consideration to the Company's total revenue requirements and review the operating revenues and operating expenses of CWS to establish adequate and reasonable levels of revenues and expenses. The Commission will consider a fair rate of return for CWS based on the record and any increase must be just and reasonable and free of undue discrimination. CWS has also asked this Commission to approve revenues based on an authorized ROE established to allow CWS the opportunity to earn a fair return.

After evaluation of the positions of the parties, the Commission reaches the legal and factual conclusions discussed below, based on its review of the facts and evidence of record. The evidence supporting the Company's business and legal status is contained in the Application filed by CWS, testimony, and in prior Commission orders in the docket files of the Commission, of which the Commission takes judicial notice.

CWS has approximately 16,000 water customers and 14,000 sewer customers in Lexington, Richland, Sumter, Aiken, Saluda, Orangeburg, Beaufort, Georgetown, Abbeville, Union, Anderson, York, Cherokee, Greenville, Greenwood, and Williamsburg counties. App. Schd. F; R. p. 345 (Gilroy Dir. p. 2, ll. 21-24). As a public utility, its operations are subject to the jurisdiction of the Commission pursuant to S.C. Code §§ 58-5-10 et seq.

B. Test Year

A fundamental principle of the ratemaking process is the establishment of a historical test year as the basis for calculating a utility's return on rate base. To determine the utility's expenses and revenues, we must select a 'test year' for the measurement of the expenses and revenues. Heater of Seabrook v. PSC, 324 S.C. 56, 59 n.1 (1996). While the Commission considers a utility's proposed rate increase based upon occurrences within the test year, the Commission will also consider adjustments for any known and measurable out-of-test year changes in expenses, revenues, and investments, and will also consider adjustments for any unusual situations which occurred in the test year. When the test year figures are atypical, the Commission should adjust the test year data. See S. Bell Tel. & Tel. Co. v. Pub. Serv. Com, 270 S.C. 590, 603 (1978).

In its Application, CWS utilized a historic test year, the twelve months beginning September 1, 2016, and ending August 31, 2017, with adjustments for 2018 expectations. App. p.2, ¶ 5. ORS used the same historical test year. R. p. 729 (Payne Dir. p. 2, ll. 5-10). None of the other parties contested CWS' proposed test year. Based on the information available to the Commission, and that none of the parties objected to CWS' proposed test year, the Commission concludes that the test year beginning September 1, 2016, and ending August 31, 2017, is appropriate for this Application.

C. Rate of Return on Rate Base

The Company requested rate base and rate of return treatment for its Application. App. pp. 4-5, ¶ 16. No other party of record proposed an alternative method for determining just and reasonable rates and the testimony of ORS' witnesses Payne and Carlisle assumes that return on rate base will be the methodology employed.

The Commission has wide latitude in selecting a rate setting methodology. Heater of Seabrook, at 64. Even though S.C. Code § 58-5-240(H) requires the Commission to specify an operating margin in all water and sewer rate cases, the Commission is not precluded by that statute from employing the return on rate base approach to ratemaking. Id. Operating margin "is less appropriate for utilities that have large rate bases and need to earn a rate of return sufficient to obtain the necessary debt and equity capital that a large utility needs for sound operation." Id at 65. In the Company's last rate case, the Commission employed the return on rate base methodology. The Commission finds the return on rate base methodology is appropriate. The Company's rate base, according to its Application, is $54,853,170. App. Ex. B, Sch. C, p. 1.

The determination of return on rate base requires consideration of three components, namely: capital structure, cost of equity (or "ROE") and the cost of debt. R. pp. 397-398 (D' Ascendis Dir. pp. 4-5).

Mr. D'Ascendis and Dr. Carlisle agreed the capital structure and cost of debt of CWS's parent, Utilities, Inc. should be employed: it is 48.11% long-term debt and 51.89% common equity. R. pp. 395 (D'Ascendis Dir. p. 2, ll. 10-17); 649 (Carlisle Dir. p.4, ll. 21-

p.5, l. 3). No other party disagreed. The Commission finds this capital structure supported by the uncontroverted testimony of the parties.

Mr. D'Ascendis and Dr. Carlisle disagreed on CWS's cost of debt. Mr. D'Ascendis used an embedded debt rate of 6.60%. Dr. Carlisle lowered CWS's cost of debt rate from 6.60% to 6.58% due to what he described as "unfavorable terms" of the Company's long-term debt. R. p. 649 (Carlisle Dir., p. 4, l. 21 – p. 5, l. 9). Dr. Carlisle argued the Company imprudently refinanced its long-term debt when interest rates were high and agreed to terms which prevent it from refinancing now that interest rates are lower. Id. Mr. D' Ascendis countered that the Company's long-term debt financing, which was agreed to in 2006, was in line with bond yields for similarly situated companies at the time. R. p. 438 (D'Ascendis, Rebut. p. 3, ll. 1-14). However, the Commission has not been provided any evidence to support the ORS position. We find the appropriate long-term debt rate for CWS is 6.60%.

The rate of return on common equity, or ROE, is a key figure used in calculating a utility's overall rate of return. Porter v. PSC, 333 S.C. 12 (1998). A utility is entitled to the opportunity to earn a fair rate of return. Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944) and Bluefield Water Works Improvement Co. v. Public Service Comm'n, 262 U.S. 679 (1922),

Mr. D'Ascendis recommended that CWS' ROE should fall within a range of 10.45% to 10.95%. R. p. 397 (D'Ascendis Dir. p. 4, ll. 4-20 (Table 2)).

To determine the cost of equity, Mr. D'Ascendis used the Discounted Cash Flow ("DCF") Risk Premium Model ("RPM") and the Capital Asset Pricing Model ("CAP-M") and (“ECAP-M”) model to similar risk companies, i.e. proxy groups, of regulated and non-regulated companies. R. pp. 396-397 (D’Ascendis Direct pp. 3-4).

The proxy groups were used by Mr. D’Ascendis because the Company's common stock is not publicly traded, and, therefore, CWS's market-based common equity cost rates cannot be determined directly. Id. He used a proxy group of eight water companies whose common stocks were actively traded for insight into a common equity cost rate applicable to CWS. R. p. 402 (D’Ascendis Direct, p.10). The utility proxy group was selected according to these criteria: 1) they are included in the Water Utility Group of Value Line's Standard Edition (October 13, 2017); 2) they have 70% or greater of 2016 total operating income and 70% or greater of 2016 total assets attributable to regulated water operations; 3) at the time of the preparation of this testimony, they had not publicly announced that they were involved in any major merger or acquisition activity (i.e. one publicly traded utility merging with or acquiring another); 4) they have not cut or omitted their common dividends during the five years ending 2016 or through the time of the preparation of this testimony; 5) they have Value Line and Bloomberg adjusted betas; 6) they have a positive Value Line five-year dividends per share ("DPS") growth rate projection; and 7) they have Value Line, Reuters, Zacks, or Yahoo! Finance consensus five-year earnings per share ("EPS") growth rate projections. Id. The companies that met Mr. D’Ascendis’ criteria were: American States Water Co., American Water Works Co., Inc., Aqua America, Inc., California Water Service Group, Connecticut Water Service, Inc., Middlesex Water Co., SJW Corp., and York Water Co. Id.

Mr. D'Ascendis also selected a proxy group of twenty-eight non-price regulated companies comparable in total risk to the proxy group of water companies. R. Ex. 8 (D'Ascendis Direct, Ex. 1, Schd. DWD-6). The criteria for non-price regulated proxy group were: 1) they must be covered by Value Line Investment Survey (Standard Edition); 2) they must be domestic, non-price regulated companies, i.e., non-utilities; 3) their beta coefficients must lie within plus or minus two standard deviations of the average unadjusted beta of the utility proxy group; and 4) the residual standard errors of the Value Line regressions, which gave rise to the unadjusted beta coefficients, must lie within plus or minus two standard deviations of the average residual standard error of the utility proxy group. R, p. 423 (D'Ascendis Direct, p. 30, ll. 15-23).

Mr. D'Ascendis' DCF analysis yields cost rates for the water company proxy group of 8.64%. The RPM analysis produced a common equity cost rate of 10.69% for the water company proxy group. The CAP-M cost rate is 10.51% for the water company proxy group. D'Ascendis averaged the mean, 10.43%, and median, 10.58%, equity costs of the water company proxy group, resulting in 10.51%. R. p. 424 (D'Ascendis Direct, p. 29, ll. 10-15). With the non-price regulated proxy group, the DCF yields 13.57%, the RPM, 11.91%, and the CAP-M/ECAP-M, 11.15%. R. p. 424 (D'Ascendis Direct, pp. 31, l. 12-32, l. 4). The average of the mean and median of the non-price regulated proxy group is 12.06%. R. p. 425 (D'Ascendis Direct, p. 32, ll. 7-14).

The approximate average of the results produced by any of Mr. D'Ascendis' models is 10.45%. R. p. 426 (D'Ascendis Direct, p. 33, ll. 5-9). He also recommended an upward adjustment of 0.50% ROE, due to CWS's small size. R. pp. 426 - 429 (D'Ascendis Direct,

p. 33, l. 11- 36, l. 20). His average ROE after the size adjustment is 10.95%. R. p. 429 (D'Ascendis Direct, p. 36, ll. 17-20). Mr. D'Ascendis recommended range of ROE was 10.45% to 10.95%. R. p. 397 (D'Ascendis Dir. p. 4, ll. 4-20 (Table 2)).

Dr. Carlisle employed the DCF model, the Comparable Earnings Model ("CEM"), and the CAP-M method to calculate his ROE range of 8.82% to 9.54%. R. p. 647 (Carlisle Direct, p. 2, ll. 12-15).

Dr. Carlisle also used a water company proxy group of ten water companies for his DCF and CAP-M analyses. R. p. 649 (Carlisle Direct, p. 4, ll. 15-20). Dr. Carlisle's water company proxy group was identical to Mr. D'Ascendis' water company proxy group except for the addition of Global Water Resources and Artesian Resources. Carlisle Rev. Exhibit DHC-4.

Dr. Carlisle's DCF analysis yields cost rates for his water company proxy group of 8.82%. R. p. 654 (Carlisle Direct, p. 9, ll. 5-6). Dr. Carlisle did not perform the DCF analysis on non-price regulated proxy group as Mr. D'Ascendis did.

Dr. Carlisle's CAP-M analysis compared the returns of the companies in his water company proxy group to a "risk free rate of return" (projected 30 yr. Treasury bond yield). R. p. 658 (Carlisle Direct, p. 13, ll. 17-23). Dr. Carlisle's CAP-M analysis produced a range of 9.38% to 9.70%, which he averaged for a final CAP-M rate of 9.54%. R. p. 659 (Carlisle Direct, p. 14, ll. 12-13). Dr. Carlisle did not perform the CAP-M analysis on comparable non-price regulated stocks, as Mr. D'Ascendis did.

Dr. Carlisle's CEM analysis, was applied to a group of non-price regulated stocks selected from Value Line with a comparable price volatility factor ("beta" or "ß") to those in his water company proxy group. R. p. 655 (Carlisle Dir. p. 10, ll. 1-6). The CEM analysis produced a “retrospective” return on equity of 9.15%, and a “prospective” ROE of 8.63%. Dr. Carlisle averaged the two to arrive at a CEM ROE of 8.89%. R. p. 656 (Carlisle Dir. p. 11, ll. 3-7).

Finally, Dr. Carlisle averaged his DCF, CEM, and CAP-M rates to arrive at his recommended ROE of 9.08%.

Mr. D’Ascendis and Dr. Carlisle disagreed often. Mr. D’Ascendis argued that Dr. Carlisle should have relied on analysts’ estimates of earnings per share rather than historical and projected measures of book value per share, dividends per share, and sales growth to predict growth in earnings per share when performing his DCF analysis. R. p. 438 (D’Ascendis, Rebut. p. 3, l. 15 – p. 7, l. 5). On the other hand, Dr. Carlisle took issue with Mr. D’ Ascendis’ reliance on analysts’ projections of earnings per share (“EPS”) as the sole factor in his DCF analysis. R. pp. 666–667 (Carlisle Surr. p. 5, l. 8 – p. 6, l. 12). Dr. Carlisle, instead, also considers dividends per share (“DPS”), book value per share (“BPS”), and revenue or sales. R. pp. 650-651 (Carlisle Dir., pp. 6-7). Mr. D’Ascendis pointed to common market references, such as Yahoo Finance and Bloomberg, which provide earnings per share projections, but not projections of dividends per share, book value per share or sales growth, as evidence the investment community relies on the former but not the latter. R. p. 458, l. 24 – p. 459, l. 13. Had he done so, Mr. D’Ascendis testified, Dr. Carlisle's analysis would have produced a higher ROE. R. p. 442 (D'Ascendis Rebut., p. 7, ll. 1-5). Dr. Carlisle disagreed, citing studies showing that analysts’ estimates have been historically overly optimistic, and should not be the sole basis for the DCF analysis. R. pp. 664–666 (Carlisle, Surr. p. 3, l. 6 – p. 5, l. 4).

Mr. D'Ascendis also disagreed with Dr. Carlisle' CAP-M calculations. He argued that Dr. Carlisle used the wrong measures of market return, and that he should have used the arithmetic mean of monthly total return rates instead of a geometric mean (or compound growth rate). Mr. D'Ascendis contends using the arithmetic produces the best insight into future returns. R. pp. 443–445 (D' Ascendis Rebut. pp. 8-10). Dr. Carlisle responded that his market return measure better reflects the variety of companies in the market. Dr. Carlisle also defended his use of the geometric mean arguing that the arithmetic mean ignores the "compounding" effect of investing and can mislead investors by masking over the ups and downs of the market. R. p. 668 (Carlisle Surr. p. 7, l. 5 – p. 10, l. 26).

Mr. D'Ascendis criticized Dr. Carlisle for not performing an ECAP-M analysis, which he testified would have produced an equity cost rate of 10.03%. R. pp. 444–445 (D'Ascendis Rebut. p. 9, l. 8 – p. 10, l. 9). Mr. D'Ascendis also testified that Dr. Carlisle's selection of non-price regulated companies for his CEM analysis failed to reflect the total risk of his water company proxy group. Mr. D'Ascendis performed Dr. Carlisle's DCF and CAP-M analyses using a group that better reflected the risk of the water proxy group and found cost rates of 14.66% and 9.85% respectively. R. p. 448 (D'Ascendis Rebut. p. 13, ll. 14-24). Using the amended proxy group, Dr. Carlisle's range would change to 9.57% (DCF), 10.03% (CAP-M), and 12.26% (CEM) with an average of 10.62%. R. p. 449 (D'Ascendis Rebut. p. 14, ll. 4-10).

The Commission finds Mr. D'Ascendis' arguments persuasive. He provided more indicia of market returns, by using more analytical methods and proxy group calculations. Mr. D'Ascendis' use of analysts' estimates for his DCF analysis is supported by consensus, as is his use of the arithmetic mean. The Commission also finds that Mr. D'Ascendis' non-price regulated proxy group more accurately reflects the total risk faced price regulated utilities and CWS. Furthermore, there is no dispute that CWS is significantly smaller than its proxy group counterparts, and, therefore, it may present a higher risk. . An appropriate ROE for CWS is 10.45% to 10.95%. The Company used an ROE of 10.5% in computing its Application, a return on the low end of Mr. D'Ascendis' range, and the Commission finds that ROE is supported by the evidence.

Table 1 below indicates the capital structure of the Company, the cost of debt, the cost of equity as approved in this Order, and the resulting rate of return on rate base:

Table 1: Summary of Overall Rate of Return

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	48.11%	6.60%	3.17%
Common Equity	51.89%	10.50%	5.45%
Total	100.00%		8.62%

D. Contested Rate Base Adjustments

The rate base proposed by CWS for combined operations was $54,853,170. App. Ex B., Sch. C. CWS disputed two of ORS's rate base adjustments: Adj. 32(c) in which ORS proposes to disallow $1,081,375 spent in connection with a liner of the equalization basin ("EQ Liner") at the Friarsgate wastewater treatment plant, and Adj. 32(d) in which ORS proposes to disallow $306,552 in engineering costs incurred at the Friarsgate Plant. R. p. 744 (Payne Direct, p. 17).

1. Friarsgate EQ Basin Removal and Site Remediation

The Company proposes to include $1,081,375 for engineering costs and remediation costs associated with the replacement of the Equalization Basin's ("EQ") liner at the Friarsgate WWTF. An EQ Liner is a heavy-mill plastic liner placed in an in-ground basin that holds water. R. p. 478, ll. 20-24. CWS hired an engineering firm, W.K. Dickson, after an upset occurred at its Friarsgate Wastewater Treatment Facility ("Friarsgate Plant"). W.K. Dickson assisted CWS in formulating and presenting a Corrective Action Plan required by a Consent Order with DHEC. R. p. 555, l. 16 – p. 557, l. 1. W.K. Dickson submitted engineering plans on an expedited basis for various changes and improvements made to the plant. R. p. 555, ll. 19-25. DHEC also required CWS to have a professional engineer who was a wastewater expert on site to supervise the plant's operations. R. p. 556, ll. 14-22. W.K Dickson also provided required monthly reports to DHEC. R. p. 556, l. 22 – p. 557, l. 1.

The Company was required by a DHEC Consent Order to: 1) remove the existing liner, 2) complete any environmental mitigation efforts concerning the soils under the existing liner, and 3) replace the EQ Liner. This effort included removing and properly disposing of any affected soils. Once the site was sufficiently mitigated, new soil was brought in, graded, and compacted to prepare the site for the installation of the new liner. Although the EQ plastic liner has yet to be installed, the Company removed the existing

EQ Liner and completed the environmental mitigation required by DHEC before the audit cutoff date of February 12, 2018. CWS acted expeditiously to comply with the DHEC mandate. CWS is not asking to recover the cost of the new liner. R. p. 505, ll. 8-14.

CWS witness Cartin testified that the DHEC Consent Order required CWS to remove the EQ Liner at the Friarsgate Plant, remediate the soil underneath the liner, and replace the liner. R. pp. 318-319 (Cartin Rebut. p. 3, l. 3 – p. 4, l. 2). CWS spent $1,081,375 to remove the EQ Liner and remediate the soil under the liner. Id. The Company had not installed the new liner yet but is in the process of doing so. Id. CWS contends that its compliance with DHEC's Consent Order was required for its continued operations and the public has benefitted from the removal of the old EQ Liner and the soil remediation, and therefore the costs should be included in rate base. Id.

The ORS proposes to disallow these costs because the EQ Liner has not yet been replaced. The ORS reasons that the project included both the engineering and remediation and the replacement of the EQ Liner. ORS's witness, Zachary Payne, testified that, since the new EQ Liner is still under construction, the whole project is not used and useful and should not be included in rate base. R. p. 754 (Payne Surr. p. 4, ll. 7-17).

The Commission finds the measures required by the DHEC Consent Order were in the public interest. Disallowing recovery of remediation costs acts to impair a utility's ability to address environmental concerns and conflicts with the policy of allowing recovery of necessary and prudently incurred costs. These known and measurable expenditures provided prompt regulatory and environmental compliance and immediate environmental and customer benefits. CWS has not requested recovery of the cost of the new EQ Liner, the part of the project that ORS challenges as not used and useful. The Commission finds the $1,081,375 cost of the removal of the existing EQ Liner and environmental remediation served the Company's customers and the public interest, and the Company is entitled to its recovery.

2. Friarsgate Engineering Costs

ORS proposed to disallow $306,552 in engineering costs paid to the W.K. Dickson firm for services at the Friarsgate Plant. R. p. 744 (Payne Direct, p. 17, l. 11 (Adj. 32(d)). CWS contends the costs are recoverable because W.K. Dickson was hired to comply with the terms of the Consent Order with DHEC. R. pp. 319-320 (Cartin Rebut. p. 4, l. 3 – p. 5, l. 4). Mr. Cartin testified that W.K. Dickson was hired to design an O&M Manual and take other measures to ensure compliance at the plant. Id. Mr. Gilroy testified that W.K. Dickson was continuously present at the plant following an upset that occurred in June 2016 whichled to a DHEC enforcement action. R. p. 353 (Gilroy Direct p. 10 ll. 1-7); R. p. 487, l. 12 – p. 488, l. 9. During that period, W.K. Dickson served as the principal point of contact with DHEC personnel and obtained permission for changes and improvements made to the facility. Id.

ORS took the position the W.K. Dickson costs should not be recoverable because they were incurred to comply with DHEC's Consent Order, which was caused by the Company's failure to adequately operate and maintain the Friarsgate Plant. R. p. 683, ll. 5-22. ORS's witness, Mr. Schellinger also testified the invoices for the work lacked sufficient detail to allow it to determine the work performed, and the work was required by Consent Orders which arose from the Company's violation of its NPDES permit. R.

pp.712-715 (Schellinger Surr. p. 5, l. 13 – p. 8, l. 20). If the costs were allowable, Mr. Schellinger testified that they should be booked as operations and maintenance expenses, not capital assets. CWS responded that costs incurred to ensure the Company's compliance with environmental regulations should be recoverable, and that treating them as capital expenditures is consistent with the practice adopted by the Company and the ORS in the settlement of the last rate case. R. pp. 319 - 320 (Cartin Rebut. p. 4, l. 3 – p. 5, l. 4). The Commission finds the engineering fees are recoverable as a capital expense prudently incurred to ensure necessary compliance with environmental regulations.

E. Expenses

CWS contested adjustments proposed by the ORS to the Company's O&M expenses: a reduction of $96,892 in sludge hauling expenses (Adj. 9(d)), and the disallowance of $998,606 in legal expenses incurred during litigation involving the I-20 wastewater treatment plant (Adj. 16).

1. Adjustment for Litigation Expenses

The Company proposes to amortize $998,606 in financial costs and litigation expenses associated with its I-20 sewer system over 66.67 years. R, pp. 316-317 (Cartin Rebut., p. 1, l. 12 – p. 2, l. 18). These costs were primarily incurred with five actions: 1) a lawsuit brought by the Congaree Riverkeeper in the U.S. District Court, 2) a condemnation action brought by the Town of Lexington, 3) a challenge to DHEC's denial of a permit for the I-20 Plant in the Administrative Law Court, 4) the Town of Lexington's challenge of DHEC's order that it interconnect with CWS brought in the Administrative Law Court, and 5) CWS's lawsuit against the EPA in the United States District Court. Schellinger Sur.

p. 3, ll. 1-11. The Company proposed to amortize these costs over 66.7 years, resulting in an expense of $14,979 per year. R. p. 300 (Cartin, Dir., p. 2, ll. 15-18).

ORS argued the legal expenses should not be allowed for two reasons. Mr. Schellinger testified that legal expenses incurred to defend the Congaree Riverkeeper's lawsuit should not be allowed because the District Court had ruled against CWS finding various violations of its NPDES permit and of effluent limitations since 2009. R. p. 692 (Schellinger Surr. p. 3, l. 11 – p. 4, l. 5). Mr. Schellinger viewed the company's lawsuit against the EPA and its litigation in the Administrative Law Court as related to the Riverkeeper proceeding, a position not disputed by CWS. Schellinger asserts that CWS should not be allowed to recover its legal costs because the actions arose from the Company's violations of environmental regulations. Id.

Schellinger testified the legal costs incurred in the condemnation action should not be recovered because CWS may be allowed to recover some costs if it prevailed. R. p. 730 (Schellinger Surr. p. 4, ll. 6-22). Schellinger also posited the actions before the Administrative Law Court could turn on the outcome of the condemnation action. R. p. 731 (Schellinger Surr. p. 5, ll. 1-12). He testified that since the outcome of the condemnation action was unknown and since if successful CWS may recover its litigation costs, the Commission should establish a regulatory asset in which to defer the litigation costs for future rate making treatment.

Mr. Cartin testified that CWS had no choice but to defend the Congaree Riverkeeper's lawsuit, and to prosecute its related actions. R. p. 490, l. 22 – p. 491, l. 7. He pointed out the Congaree Riverkeeper brought his suit to force an interconnection of the I-20 Plant to the Town of Lexington's sewer system, an action CWS was ready to take but the Town of Lexington would not allow. R. p. 489, ll. 8-20. It was not until 2016, after DHEC ordered the Town of Lexington to seek an interconnection with CWS, that Lexington brought its condemnation proceeding. R. p. 567, ll. 1-12. When the condemnation suit was brought, CWS readily allowed the town to take possession of the I-20 system and interconnect the plant, reserving its right to contest Lexington's valuation of the plant. Id.

The Commission finds that regulated utilities, like any business, will experience litigation costs associated with its business operations. CWS acted to limit exposure to liability and benefit the utility and its rate payers. The financial and litigation costs were prudently incurred. Recovery of these costs equates to $14,979 in annual amortization expense. As Mr. Cartin testified, CWS had no alternative but to defend the Congaree Riverkeeper's lawsuit and engage in the related litigation. Therefore, CWS will be allowed to recover $998,606 amortized over 66.7 years, at the rate of $14,979 per year.

2. Sludge Hauling Expenses

CWS incurred $284,233 in sludge hauling expenses at its Friarsgate Plant and at its Watergate wastewater treatment facility ("Watergate Plant") during the test year. R. p. 753 (Payne Surr. p. 3). ORS proposed to remove $96,892 in sludge hauling costs. ORS proposes an adjustment to allow recovery of a three-year average of annual sludge hauling costs at the two facilities.

ORS witness Payne testified that the ORS reviewed the sludge costs in the test year and the costs in the previous two years, concluding that the sludge hauling costs in the test year were atypical. R. pp. 751-752 (Payne Surr. p. 2, l. 19 – p. 3, l. 12). The ORS proposes to average the annual sludge expense for the three years reviewed and proposed an adjustment of $96,892, normalizing this operating expense. Id.

CWS witness Gilroy testified the increase of sludge hauling expense during the test year was caused by additional sludge removal requirements at the Friarsgate WWTF which produces large amounts of sludge that must be disposed of in a timely manner. R. pp. 358-360. The amount of sludge produced depends on many factors within the process of the waste water treatment. Id. The active sludge inventory within the process must be kept at a certain concentration for the biological process to be effective and result in a clear compliant effluent. Id. Excess sludge inventory must be removed frequently to keep sludge from building up to unacceptable levels which could cause problems with effluent quality. Id.

Mr. Gilroy testified that because the Friarsgate WWTF has been on a Consent Order, these sludge inventories are also monitored by DHEC, which recommends that the inventory to be kept at a constant rate. R. p. 365 (Gilroy Rebut. p. 3, ll. 3-12)). Ordinarily, the liquid sludge is poured into filtrate boxes that drain off the water leaving a very dry cake behind, which is then hauled and disposed of at the Northeast Sanitary Landfill. Id. When the sludge production exceeds the capacity of the filtrate boxes, CWS utilizes contractor liquid tanker trucks to haul the sludge to the City of Cayce's disposal site. Id. Disposing of the sludge in the cake form is more cost-effective than hauling truckloads of liquid sludge. Id. Although more expensive, sometimes the filtrate boxes are full, and tankers must be utilized. Id.

The Commission finds that the sludge hauling costs in the test year are recoverable as known and measurable, prudently incurred costs. The ORS does not dispute the sludge costs in the test year. It simply speculates that the costs will not recur in a similar amount. Speculation is not sufficient. Moreover, the testimony indicates that the sludge costs have increased because of the DHEC Consent Order, and were prudently incurred. The Commission denies the ORS adjustment to reduce the sludge hauling expenses.

3. Effects of the Income Tax and Jobs Act

a) Excess Accumulated Deferred Income Taxes

The Company filed its Application before Congress enacted the Tax Cuts and Jobs Act of 2017 ("TCJA"), which took effect on January 1, 2018. P.L. No: 115-97. The TCJA changed the tax laws affecting the Company. Mr. Hunter testified the TCJA reduced the corporate income tax rate from 35% to 21%, causing the Company to reduce its requested revenue requirement by approximately $877,000. R. p. 255, ll. 16-22. This Commission held in Order No. 2018-308 that, beginning January 1, 2018, regulatory accounting treatment is required for all regulated utilities for any impacts of the new law, including current and deferred tax impacts. We also held that the utilities should track and defer the effects resulting from the Tax Act in a regulatory liability account, and further, for water/wastewater utilities with operating revenues that are equal or greater than $250,000, the issue will be addressed at the next rate case or other proceeding. The provisions of Order No. 2018-308 apply to the present case, as well as to other utilities indicated in Order No. 2018-308.

F. Rate Case Expenses

CWS proposed to include rate case expenses incurred in this rate case through the date of the hearing, and ORS agreed to this proposal, subject to its review of the requested additional amount and examination of supporting documentation. R p. 754 (Payne Surreb., p. 4, ll. 5-7). ORS received and reviewed documentation supporting rate case expenses of $88,500 and informed the Commission at the hearing that the ORS agrees with them. After the hearing, CWS presented documentation supporting additional rate case expenses of $64,560. Because the additional rate case expenses are known and measurable, the Commission will allow them to be included in the total rate case expense and amortized over three years. We find the Company is entitled to $153,060 in total rate case expenses, including those expenses submitted to ORS post-hearing. This amount amortized over three years less the Company's per book amount yields a post-hearing adjustment of $21,520.

G. Other Adjustments

The remaining ORS adjustments are accepted by this Commission without discussion. They either were not disputed by the parties or were caused by carrying out the effects of the adjustments adopted above.

H. Deferred Accounts

By Order No. 2015-876 in Docket No. 2015-199-WS, the Commission approved two regulatory deferred accounts authorizing CWS 1) to record and monitor all rate increases from third-party providers for water supply and sewer treatment; and 2) to recover non-revenue water expenses. The Commission authorized CWS to seek recovery of the balance of these deferred accounts, subject to audit by ORS and approval by the Commission in a subsequent rate case. In this Application CWS is seeking recovery of the balance in the regulatory deferral account associated with increases in purchased water from bulk water providers. (Application, para. 17) Mr. Hunter testified that the purchase water deferred account had a balance of $669,808 as of March 8, 2018 and explained CWS sought recovery of this balance in this docket R. p. 278 (Hunter Rebut. p. 3 ll. 7–17). At the hearing, Mr. Payne testified that the ORS had reviewed the supporting documentation of the purchase water deferred account and that the ORS agreed with CWS' request to recover the balance of $669,808. R. p. 752 (Payne Surreb., p. 2, ll.8-18). The Commission finds it reasonable for CWS to recover the purchased water deferred account balance of $669,808.

Because the non-revenue water deferral account has a balance of zero, the ORS recommended this account be closed. R. p. 701 (Schellinger Dir., p. 11, l. 18 – p. 12, l. 8). The Company did not dispute this recommendation. The Commission finds it reasonable that the non-revenue water account be closed.

I. Performance Bond

CWS currently provides the maximum amount required for its performance bond in the amount of $350,000 for water and $350,000 for sewer operations. Using the criteria set forth in S.C. Code Regs. §§ 103-512.3.1 and 103-712.3.1, ORS recommended that CWS be required to continue the current performance bond amounts. R. p. 701 (Schellinger Dir. p. 12, ll. 9-15). CWS agreed to the performance bond amounts. The Commission requires that CWS maintain its performance bond in $350,000 for water and $350,000 for sewer operations.

J. Changes to Rates, Charges and Term of Service

1. Irrigation Only Meters

Mr. Cartin testified that after hearing concerns expressed by customers with irrigation only meters, the Company had determined to eliminate the base facilities charge for irrigation only meters for residential customers who are no longer receiving an economic benefit from having an irrigation meter. The impact on revenues will be $37,946 annually. The Company is not seeking recovery of this lost revenue here. R. p. 320 (Cartin Reb., p. 5, ll. 5-20).

The ORS has no objection to eliminating the base facilities charge on customers with irrigation only meters.

The Commission finds that eliminating the base facilities charge for customers with irrigation only meters is just and reasonable and in the public interest.

2. Backflow Testing.

CWS proposed to change the terms and conditions of its tariff to permit its customers to test their backflow devices every two years. The ORS proposed to limit the testing requirement to every two years for those residential customers with irrigation cross connections. R. pp. 699 - 700 (Schellinger Dir., p. 10, l. 18 – p. 11, l. 6). CWS concurred with the ORS recommendation with the additional provision that if the sewer system utilizes chemical injection, annual testing will be required. R. p. 363 (Gilroy Rebut., p. 1, ll. 1-7).

The Commission finds that permitting CWS' residential irrigation customers to test backflow preventers every two years is reasonable, provided that if the sewer system utilizes chemical injection, annual testing will be required

3. Water Meter Installation Charge

CWS requests authority to increase its Water Meter Installation Charge from$35.00 to $45.00 to more closely reflect the utility's costs. (Application at ¶ 20) The ORS has reviewed the cost justification for this increase and agrees the increase is reasonable. R. p. 699 (Schellinger Dir., p. 10, ll.14 – 17). The $45.00 charge is reasonable and CWS is authorized to increase its Water Meter Installation Charge to $45.00.

4. Limitation of Liability

CWS seeks authority to limit the liability of the Company, its agents and employees for damages arising out of interruption of service or the failure to furnish service, whether caused by acts or omission, to those remedies provided in the Commission's rules and regulations governing water and wastewater utilities. (Application at ¶ 22). Mr. Cartin points out that the Commission has promulgated regulations for quality of service and interruption of service. Limiting customer remedies to those provided in the regulations will eliminate the prospect of unnecessary litigation and result in cost savings which will benefit customers. R. pp. 310-311 (Cartin Dir., p. 12, l. 14 – p. 13 1, l. 2). The ORS does not oppose the Company's proposed changes to tariff language regarding liability for interruption of service. Interruption of service is regulated by the Commission in S.C, Code Ann. Regs. 103-771 and 103-551. R. p. 670 (Schellinger Dir., p. 11, ll. 7–12) The proposed limitation of liability to those protections found in S.C. Code Reg. 103-771 and 103-551 is reasonable and is approved.

K. Authorized Revenues

CWS requested in its Application to increase revenues for combined operations by $4,511,414, comprising a water revenue increase of $2,272,914 and a sewer revenue increase of $2,238,500, based on the rate of return on rate base methodology utilizing an ROE of 10.5% and an historical test year ending August 31, 2017. The revenue and expense adjustments to the requested increase in revenue set out herein at the approved ROE of 10.50% produce additional operating revenue of $2,936,437 consisting of a water revenue increase of $1,286,127 and a sewer revenue increase of $1,650,310.

L. Rate Design

Exhibit "A" to the Application contains the Company's Schedule of Proposed Water Charges. The proposed water rate structure for Territory 1 and Territory 2 will remain the same as approved in Order No. 2015-876. In Territory 1 and Territory 2 there will remain separate charges for Water Supply Customers (where water is supplied by wells owned and operated by CWS) and Water Distribution Customers (where water is purchased from a governmental body or agency or other entity for distribution and resale by CWS). R. p. 264 (Hunter Dir. p. 5, ll. 18–25).

Exhibit "A" to the Application contains the Company's Schedule of Proposed Sewer Charges. Under the existing tariff, the flat rate charge for Sewer Collection & Treatment Only Customers and the flat rate charge for Sewer Collection Only Customers are two different rates. CWS proposes to combine Sewer Collection & Treatment Only

Customers and Sewer Collection Only Customers into one single rate per unit. Separate rates will remain on the tariff for Mobile Homes, and The Village Sewer Collection Customers. R. p. 265 (Hunter Dir., p.6, ll. 16–23).

Rate design is a matter of discretion for the Commission. In establishing rates, it is incumbent upon us to fix rates which "distribute fairly the revenue requirements [of the utility]." See Seabrook Island Property Owners Association v. S.C. Public Service Comm'n, 303 S.C. 493, 499 (1991). Our determination of "fairness" with respect to the distribution of the Company's revenue requirement is subject to the requirement that it be based upon some objective and measurable framework. See Utilities Services of South Carolina, Inc., v. South Carolina Office of Regulatory Staff, 392 S.C. 96, 113-114 (2011).

CWS has combined certain of its sewer rates in this docket moving closer to uniform rates. The water rate design was approved by Order No. 2015-876. No party contests the proposed rate design and it is approved by the Commission.

M. Forty Love Point

The Forty Love Point Homeowners Association intervened questioning sewer service in the neighborhood. Barbara King and Jay Dixon, residents of the Forty Love subdivision, testified that they experienced sewer backups in their homes and chronicled the efforts of CWS to address their concerns. Representatives of CWS and its engineers, DHEC and ORS have met with the witnesses. CWS provides collection only services to Forty Love and Richland County treats the sewage. The witnesses testified that Richland County and CWS should coordinate any remedy for the customer concerns. The witnesses believe their sewer system is outdated and inadequate. The witnesses also contest the proposed rate increase. R. pp. 608–610 (Dixon Dir. p. 1, l. 1 – p. 4, l. 76); R. pp. 603 – 605 (King Dir., p. 1, l. 1 – p. 3, l. 59).

CWS witness Gilroy testified that the Forty Love sewer system is a LETTS design installed by the developer. LETTS systems are modified septic tanks in which solid waste accumulates in a holding tank with the gray water draining to a common sewer main for transport to the Richland County Utilities treatment plant. CWS has been working with the Kings and Dixons to determine why their LETTS tanks fail to drain during prolonged rain events. CWS believes the elevation and distance between their finished basements and the sewer main outside provides for no leeway when the sewer main backs up slightly. CWS has a contractor working to install a pump tank that will both pump their water into the main and provide the separation needed to eliminate backups of their homes. R. pp. 363–364 (Gilroy Rebut., p. 1, l. 8 – p. 2, l. 10).

CWS is also retaining a professional engineering firm to inspect the system and help solve the sewerage backup problems experienced by these customers. While it is working towards a permanent solution, CWS will continue to alleviate the problem by dispatching pump trucks to the neighborhood when heavy rains are anticipated. CWS is also inspecting each LETTS tank and will reseal them as necessary. Reduced water from the tanks should ease the stress placed on thesystem. Id.

CWS will continue to communicate the engineering assessment with the outside contractor with Forty Love. CWS and Forty Love have agreed to report their findings to the Commission and ORS in six months – by September 30, 2018. Id. The Commission finds that the agreement between CWS and Forty Love is reasonable.

CWS and the HOA have agreed to the following plan of action which, at their request, the Commission incorporates in its Order:

> CWS acknowledges that some of its customers in the Forty Love Point neighborhood have experienced problems with sewerage backups. CWS has taken, and will continue to take, measures to address these customers' concerns. CWS and the HOA agree to cooperatively investigate the source and extent of sewerage problems experienced by customers in the Forty Love Point neighborhood and formulate a plan to address them. The company is retaining an engineering firm to perform an assessment of the Forty Love Point system, and CWS will continue to work with DHEC and Richland County to determine whether issues with the latter's system may be affecting Forty Love Point. CWS and the HOA will report their findings to the PSC and the ORS in six months.

N. Dancing Dolphin, LLC

The Commission requested that the ORS investigate the allegations made by CWS' customer the Dancing Dolphin, LLC. The ORS recommends that CWS complete an inflow and infiltration study and a cost benefits analysis for the sewer system serving the properties owned by the Dancing Dolphin. R. pp. 705– 706 (Schellinger Dir., p. 16, l. 20 - -p. 17, l. 3) CWS will conduct an inflow and infiltration study and provide a report to the Commission within one year of the date of the Order. R. pp. 317–318 (Cartin Rebut., p. 2, 19 - p. 3, l. 2). In addition, CWS has credited the Dancing Dolphin, LLC with one month's bill to address the customer's concerns. R. p. 310 (Cartin Dir. p. 12, ll. 12–13). The Commission finds CWS conduct to be prudent and reasonable.

O. Customer Communications

The record reflects that CWS is working to give its customers a better understanding of the pressures and costs of operating its water and sewer systems. The Company has hired a communications coordinator to direct its customer outreach activities. R. pp. 251-253. Since December of 2017, CWS scheduled meetings with its customers in York County on December 4, 2017, and February 27, 2018; Lexington County on December 5, 2017; Anderson County on December 6, 2017; Richland County on February 21, 2018, and Greenville County on March 1, 2018. At those meetings, CWS gave customers the opportunity to meet with its management and field personnel to learn more about its operations and cost of service. R. p. 371 (Gilroy Resp., p.1, ll. 6–16).

This Commission would observe that, in prior years, the Company's customer service was perceived by some as being below standard. However, the Company's testimony in this case shows that it is committed to improvement in a proactive fashion. Relatively few customers appeared to complain about quality of service, as compared to the last several rate cases. We hold that the Company should routinely be responsive on quality of service issues, and that CWS should set the standard for quality and customer service.

However, in order to ensure that the Company is being responsive to quality of service issues, and to its customers, CWS shall prepare a report and submit it to the Commission and to ORS no less than semiannually, and the document should have headings for "Customer Complaint," "Company Response," "Customer Reaction to Company," and explain the Company reaction to Customer Complaints during the period addressed, along with any explanations regarding quality of service. The Company shall also submit a separate report no less than semiannually reporting on all capital improvements made during the period to enhance customer service and to explain the cost of such capital improvements.

III. FINDINGS OF FACT

1) CWS is a water and sewer utility providing water and sewer service in its assigned service area in South Carolina. The Commission is vested with authority to regulate rates of every public utility in this state and to ascertain and fix just and reasonable rates for service. S.C. §58-5-210, et. seq. CWS's operations in South Carolina are subject to the jurisdiction of the Commission.

2) CWS requested in its Application to increase revenues for combined operations by $4,511,414 comprising a water revenue increase of $2,272,914 and a sewer revenue increase of $2,238,500, based on the rate of return on rate base methodology utilizing an ROE of 10.5% and a historical test year ending August 31, 2017.

3) The test year period for this proceeding, selected by the Company, is September 1, 2016 through August 31, 2017.

4) The Commission will use the return on rate base methodology in determining and fixing just and reasonable rates.

5) The return on rate base methodology requires three components: capital structure, cost of debt, and cost of equity (or ROE).

6) CWS's rate base is $55,524,956 after the adjustments adopted by the Commission.

7) The Commission adopts and approves of a capital structure of 48.11% long-term debt and 51.89% equity; a cost of debt rate of 6.60%; and an ROE of 10.50%.

8) The approved capital structure, cost of debt rate, and ROE produce additional operating revenue of $2,936,437 consisting of a water revenue increase of $1,286,127 and a sewer revenue increase of $1,650,310.

9) The approved revenues and expenses establish a fair and reasonable operating margin of 13.23%, and a return on rate base of 8.62%.

10) The schedule of rates and terms and conditions attached to this Order as Exhibit A (Order Exhibit 1) are just and reasonable and designed to achieve the Company's new revenue requirement.

IV. CONCLUSIONS OF LAW

Based upon the discussion, findings of fact and the record of the instant proceeding, the Commission makes these Conclusions of Law:

1) CWS is a public utility as defined in S.C. Code § 58-5-10(3) and is subject to the jurisdiction of this Commission.

2) The appropriate test year on which to set rates for CWS is the twelve-month period beginning September 1, 2016 and ending August 31, 2017.

3) Based on the information provided by the parties, the Commission concludes the rate setting methodology to use as a guide in determining the lawfulness of CWS's proposed rates and for fixing just and reasonable rates is return on rate base.

4) For CWS to have the opportunity to earn the 10.5% ROE, found fair and reasonable herein, CWS must be allowed additional revenues of $2,936,437.

5) The schedule of rates and terms and conditions in the attached Exhibit A are approved for use by CWS and are just and reasonable without undue discrimination and are also designed to meet the revenue requirements of CWS.

6) Pursuant to S.C. Code § 58-5-720 and 10 S.C. Code Regs. §§ 103-512.3 and 103-712.3, CWS will post a performance bond of $350,000 for water and $350,000 for sewer operations.

V. ORDERING PROVISIONS

IT IS THEREFORE ORDERED THAT:

I. The rates, fees, and charges in Order Exhibit 1 are both fair and reasonable and will allow CWS to continue to provide its customers with adequate water and wastewater services.

II. The Company is to provide thirty (30) days' notice of the increase to customers of its water and wastewater services prior to the rates and schedules being put into effect for service rendered. The schedules will be deemed filed with the Commission under S.C. Code § 58-5-240.

III. An ROE of 10.5%, return on rate base of 8.62% and operating margin of 13.23% based on the new rates, fees, and charges, is approved for CWS.

IV. The Company will continue to maintain current performance bonds in the amounts of $350,000 for water operations and $350,000 for wastewater operations pursuant to S.C. Code § 58-5-720.

V. The Company shall provide the written reports on quality of service and capital improvements no less than semiannually as described above.

VI. This Order will remain in full force and effect until further order of the Commission.

BY ORDER OF THE COMMISSION:

Swain E. Whitfield, Chairman

ATTEST:

Comer H. Randall, Vice Chairman

EXHIBIT A

Tariff

Carolina Water Service, Inc.
Docket No. 2017-292-WS
SCHEDULE OF PROPOSED RATES AND CHARGES

WATER

Service Territory 1

Monthly Charges - Water Supply Customers Only

Where water is supplied by wells owned and operated by the Utility, the following rates apply:

	Current	Proposed
Residential		
Base Facilities Charge per single-family house, condominium, mobile home, or apartment unit	$14.64 per unit	$14.43 per unit
Residential Commodity Charge	$5.69 per 1,000 gal. or 134 cft.	$5.61 per 1,000 gal. or 134 cft.
Commercial		
Base Facilities Charge by meter size		
5/8" meter *	$ 14.64 per unit	$ 14.43 per unit
3/4" meter	$ 14.64 per unit	$ 14.43 per unit
1" meter	$ 38.10 per unit	$ 37.54 per unit
1.5" meter	$ 76.21 per unit	$ 75.10 per unit
2" meter	$ 121.93 per unit	$ 120.15 per unit
3" meter	$ 228.63 per unit	$ 225.29 per unit
4" meter	$ 381.16 per unit	$ 375.59 per unit
8" meter	$1,171.21 per unit	$1,154.08 per unit
Commercial Commodity Charge	$5.69 per 1,000 gal or 134 cft.	$5.61 per 1,000 gal. or 134 cft.

Monthly Charges - Water Distribution Customers Only

Where water is purchased from a governmental body or agency or other entity for distribution and resale by the Utility, the following rates apply:

	Current	Proposed
Residential		
Base Facilities Charge per single-family house, condominium, mobile home, or apartment unit	$14.64 per unit	$14.43 per unit
Residential Commodity Charge	$6.67 per 1,000 gal. or 134 cft.	$7.57 per 1,000 gal. or 134 cft.

Corrected

Carolina Water Service, Inc.
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	Current	Proposed
Commercial		
Base Facilities Charge by meter size		
5/8” meter *	$ 14.64 per unit	$ 14.43 per unit
3/4” meter	$ 14.64 per unit	$ 14.43 per unit
1” meter	$ 38.10 per unit	$ 37.54 per unit
1.5” meter	$ 76.21 per unit	$ 75.10 per unit
2” meter	$ 121.93 per unit	$ 120.15 per unit
3” meter	$ 228.63 per unit	$ 225.29 per unit
4” meter	$ 381.16 per unit	$ 375.59 per unit
8” meter	$1,171.21 per unit	$1,154.08 per unit
Commercial Commodity Charge	$6.67 per 1,000 gal. or 134 cft.	$7.57 per 1,000 gal. or 134 cft/

***A “Fire Line” customer will be billed a monthly base facilities charge of a 5/8” meter or at the rate of any other meter size used as a detector.**

Corrected

Carolina Water Service, Inc.
Docket No. 2017-292-WS
SCHEDULE OF PROPOSED RATES AND CHARGES

Service Territory 2

Monthly Charges - Water Supply Customers

Where water is supplied by wells owned and operated by the Utility, the following rates apply:

	Current	Proposed
Residential		
Base Facilities Charge per single-family house, condominium, mobile home or apartment unit:	$24.72 per unit	$28.62 per unit
Residential Commodity Charge	$ 8.88 per 1,000 gal. or 134 cft.	$10.28 per 1,000 gal. or 134 cft.
Commercial		
Base Facilities Charge by meter size		
5/8" meter*	$ 24.72 per unit	$ 28.62 per unit
1" meter	$ 68.81 per unit	$ 79.65 per unit
1.5" meter	$ 126.45 per unit	$146.38 per unit
3" meter	$ 431.52 per unit	$499.53 per unit
Commercial Commodity Charge	$ 8.88 per 1,000 gal. or 134 cft.	$10.28 per 1,000 gal. or 134 cft.

Monthly Charges - Water Distribution Customers Only

Where water is purchased from a governmental body or agency or other entity for distribution and resale by the Utility, the following rates apply:

	Current	Proposed
Residential		
Base Facilities Charge per single-family house, condominium, mobile home or apartment unit:	$ 24.72 per unit	$ 28.62 per unit
Residential Commodity Charge	$ 9.41 per 1,000 gal. or 134 cft.	$ 11.86 per 1,000 gal. or 134 cft.
Commercial		
Base Facilities Charge by meter size:		
5/8" meter*	$ 24.72 per unit	$ 28.62 per unit
1" meter	$ 68.81 per unit	$ 79.65 per unit
1.5" meter	$ 126.45 per unit	$146.38 per unit
3" meter	$ 431.52 per unit	$499.53 per unit
Commercial Commodity Charge	$ 9.41 per 1,000 gal.	$ 11.86 per 1,000 gal.

Carolina Water Service, Inc.
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SCHEDULE OF PROPOSED RATES AND CHARGES

or 134 cft.	or 134 cft.

***A "Fire Line" customer will be billed a monthly base facilities charge of a 5/8" meter or at the rate of any other meter size used as a detector.**

Carolina Water Service, Inc.
Docket No. 2017-292-WS
SCHEDULE OF PROPOSED RATES AND CHARGES

WATER SERVICE
TERMS AND CONDITIONS
AND
NON-RECURRING CHARGES

1. **Terms and Conditions**

A. Where the Utility is required by regulatory authority with jurisdiction over the Utility to interconnect to the water supply system of a government body or agency or other entity and tap/connection/impact fees are imposed by that entity, such tap/connection/impact fees will also be charged to the Utility's affected customers on a pro rata basis, without markup.

B. Commercial customers are those not included in the residential category above and include, but are not limited to, hotels, stores, restaurants, offices, industry, etc.

C. The Utility will, for the convenience of the owner, bill a tenant in a multi-unit building, consisting of four or more residential units (or in such other circumstances as the law may allow from time to time), which is served by a master water meter or a single water connection. However, in such cases all arrearages must be satisfied before service will be provided to a new tenant or before interrupted service will be restored. Failure of an owner to pay for services rendered to a tenant in these circumstances may result in service interruptions.

D. When, because of the method of water line installation utilized by the developer or owner, it is impractical to meter each unit separately, service will be provided through a single meter, and consumption of all units will be averaged; a bill will be calculated based on that average and the result multiplied by the number of units served by a single meter.

E. Billing Cycle
Recurring charges will be billed monthly in arrears. Nonrecurring charges will be billed and collected in advance of service being provided.

F. Extension of Utility Service Lines and Mains
The Utility shall have no obligation at its expense to extend its utility service lines or mains in order to permit any customer to connect to its water system. However, anyone or entity which is willing to pay all costs associated with extending an appropriately sized and constructed main or utility service line from his/her/its premises to any appropriate connection point, and pay the appropriate fees and charges as set forth in this rate schedule, and comply with the guidelines and standards hereof, shall not be denied service unless water supply is unavailable or unless the South Carolina Department of Health and Environmental Control or other government entity has for any reason restricted the Utility from adding additional customers to the serving water system. In no event will the Utility be required to construct additional water supply capacity to serve any customer or entity without an agreement acceptable to the Utility first having been reached for the payment of all costs associated with adding water supply capacity to the affected water system.

Carolina Water Service, Inc.
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SCHEDULE OF PROPOSED RATES AND CHARGES

G. Cross-Connection Inspection

Any customer installing, permitting to be installed, or maintain any cross connection between the Utilities water system and any other non-public water system, sewer, or a line from any container of liquids or other substances, must install an approved back-flow prevention device in accordance with 24A S.C. Code Ann. Regs. R.61-58.7.F.2, as may be amended for time to time. Such a customer shall have such cross connection inspected by a licensed certified tester and provide to Utility a copy of written inspection report indicating the back-flow device is functioning properly and testing results submitted by the tester in accordance with 24A S.C. Code Ann. Regs. R.61-58.7.F.2, as may be amended from time to time. Said report and results must be provided by the customer to the Utility no later June 30th of each year for required residential and commercial customers, provided that said report and results for residential irrigation customers shall be provided by the customer to the Utility no later than June 30th of every other year (unless the sewer system utilizes chemical injection for which annual testing will be required). Should a customer subject to these requirements fail to timely provide such report and results, Utility may arrange for inspection and testing by a licensed certified tester and add the charges incurred by the Utility in that regard to the customer's next bill. If after inspection and testing by the Utility's certified tester, the back-flow device fails to function properly, the customer will be notified and given a 30 day period in which to have the back-flow device repaired or replaced with a subsequent follow-up inspection by a licensed certified tester indicating the back-flow device is functioning properly. Failure to submit a report indicating the back-flow device is functioning properly will result in discontinuation of water service to said customer until such time as a passing inspection report is received by Utility.

H. A Single Family Equivalent (SFE) shall be determined by using the South Carolina Department of Health and Environmental Control Guidelines for Unit Contributory Loadings for Domestic Wastewater Treatment Facilities -- 6 S.C. Code Ann. Regs. 61-67 Appendix A, as may be amended from time to time. Where applicable, such guidelines shall be used for determination of the appropriate monthly service and tap fee. The Company shall have the right to request and receive water usage records from the water provider to its customers. In addition, the Company shall have the right to conduct an inspection of the customer's premises. If it is determined that actual flows or loadings are greater than the design flows or loadings, then the Company shall recalculate the customer's equivalency rating based on actual flows or loadings and thereafter bill for its services in accordance with such recalculated loadings.

I. The liability of the Company, its agents and employees for damages arising out of interruption of service or the failure to furnish service, whether caused by acts or omission, shall be limited to those remedies provided in the Public Service Commission's rules and regulations governing water utilities.

Carolina Water Service, Inc.
Docket No. 2017-292-WS
SCHEDULE OF PROPOSED RATES AND CHARGES

2. Non-Recurring Charges

A. Water Service Connection (New connections only) - $300 per SFE

B. Plant Impact Fee (New connections only) - $400 per SFE

The Plant Capacity Fee reflects the portion of plant capacity which will be used to provide service to the new customers as authorized by Commission Rule R. 103-702.13. The plant capacity fee represents the Utility's investment previously made (or planned to be made) in constructing water production, treatment and/or distribution facilities that are essential to provide adequate water service to the new customer's property.

C. Water Meter Installation - 5/8 inches x 3/4 inches meter $45.00

All 5/8 inch x 3/4 inch water meters shall meet the Utility's standards and shall be installed by the Utility. A one-time meter fee of $35 shall be due upon installation for those locations where no 5/8 inch x 3/4 inch meter has been provided by a developer to the Utility.

For the installation of all other meters, the customer shall be billed for the Utility's actual cost of installation. All such meters shall meet the Utility's standards and be installed by the Utility unless the Utility directs otherwise.

D. Customer Account Charge – (New customers only) $30.00

A one-time fee to defray the costs of initiating service.

E. Reconnection Charges: In addition to any other charges that may be due, in those cases where a customer's service has been disconnected for any reason as set forth in Commission Rule R.103-732.5, a reconnection fee shall be due in the amount of $40.00 and shall be due prior to the Utility reconnecting service.

F. Tampering Charge: In the event the Utility's equipment, water mains, water lines, meters, curb stops, service lines, valves or other facilities have been damaged or tampered with by a customer, the Utility may charge the customer responsible for the damage the actual cost of repairing the Utility's equipment, not to exceed $250. The tampering charge shall be paid in full prior to the Utility re-establishing service or continuing the provision of service.

Carolina Water Service, Inc.
Docket No. 2017-292-WS
SCHEDULE OF PROPOSED RATES AND CHARGES

SEWER

Service Territory 1 and 2
(Former customers of Carolina Water Service, Inc., Utilities Services of SC, Inc. and United Utility Companies, Inc.)

Former Customers of Carolina Water Service, Inc.

Monthly Charges – Sewer Collection & Treatment Only

Where sewage collection and treatment are provided through facilities owned and operated by the Utility, the following rates apply:

	Current	Proposed
Residential - charge per single-family house, condominium, villa, or apartment unit:	$57.58 per unit	$65.69 per unit
Mobile Homes:	$42.01 per unit	$47.94 per unit
Commercial	$57.58 per SFE*	$65.69 per SFE*

Commercial customers are those not included in the residential category above and include, but are not limited to, hotels, stores, restaurants, offices, industry, etc.

Monthly charge – Sewer Collection Only

When sewage is collected by the Utility and transferred to a government body or agency, or other entity for treatment, the Utility's rates are as follows:

Residential – per single-family house, condominium, or apartment unit	$52.93 per unit	$65.69 per unit
Commercial	$52.93 per SFE*	$65.69 per SFE*
The Village Sewer Collection	$29.95 per SFE*	$34.18 per SFE*

* Single Family Equivalent (SFE) shall be determined by using the South Carolina Department of Health and Environmental Control Guidelines for Unit Contributory Loadings for Domestic Wastewater Treatment Facilities -- 25 S.C. Code Ann. Regs. 61-67 Appendix A, as may be amended from time to time. Where applicable, such guidelines shall be used for determination of the appropriate monthly service and tap fee.

Corrected

SEWER SERVICE

Carolina Water Service, Inc.
Docket No. 2017-292-WS
SCHEDULE OF PROPOSED RATES AND CHARGES

TERMS AND CONDITIONS
AND
NON-RECURRING CHARGES

1. **Terms and Conditions**

A. Where the Utility is required under the terms of a 201/208 Plan, or by other regulatory authority with jurisdiction over the Utility, to interconnect to the sewage treatment system of a government body or agency or other entity and tap/connection/impact fees are imposed by that entity, such tap/connection/impact fees will be charged to the Utility's affected customers on a pro rata basis, without markup.

B. The Utility will, for the convenience of the owner, bill a tenant in a multi-unit building, consisting of four or more residential units (or in such other circumstances as the law may allow from time to time), which is served by a master sewer meter or a single sewer connection. However, in such cases all arrearages must be satisfied before service will be provided to a new tenant or before interrupted service will be restored. Failure of an owner to pay for services rendered to a tenant in these circumstances may result in service interruptions.

C. Billing Cycle
Recurring charges will be billed monthly in arrears. Non-recurring charges will be billed and collected in advance of service being provided.

D. Toxic and Pretreatment Effluent Guidelines
The utility will not accept or treat any substance or material that has been defined by the United States Environmental Protection Agency ("EPA") or the South Carolina Department of Health and Environmental Control ("DHEC") as a toxic pollutant, hazardous waste, or hazardous substance, including pollutants falling within the provisions of 40 CFR 129.4 and 401.15. Additionally, pollutants or pollutant properties subject to 40 CFR 403.5 and 403.6 are to be processed according to pretreatment standards applicable to such pollutants or pollutant properties, and such standards constitute the Utility's minimum pretreatment standards. Any person or entity introducing such prohibited or untreated materials into the Company's sewer system may have service interrupted without notice until such discharges cease, and shall be liable to the Utility for all damages and costs, including reasonable attorney's fees, incurred by the Utility as a result thereof.

E. Extension of Utility Service Lines and Mains
The Utility shall have no obligation at its expense to extend its utility service lines or mains in order to permit any customer to discharge acceptable wastewater into one of its sewer systems. However, anyone or entity which is willing to pay all costs associated with extending an appropriately sized and constructed main or utility service line from his/her/its premises to any appropriate connection point, and pay the appropriate fees and charges as set forth in this rate schedule, and comply with the guidelines and standards hereof, shall not be denied service unless sewer capacity is unavailable or unless the South Carolina Department of Health and Environmental Control or other government entity has for any reason restricted the Utility from adding additional customers to the serving sewer system.

In no event will the Utility be required to construct additional sewer treatment capacity to serve any customer or entity without an agreement acceptable to the Utility first having been reached for the payment of all costs associated with adding wastewater treatment capacity to the affected sewer system.

F. A Single Family Equivalent ("SFE") shall be determined by 6 S.C. Code Ann. Regs. 61-67 Appendix A, as may be amended from time to time. Where applicable, such guidelines shall be used for determination of the appropriate monthly service, plant impact fee and tap fee. The Company shall have the right to request and receive water usage records from the water provider to its customers. In addition, the Company shall have the right to conduct an inspection of the customer's premises. If it is determined that actual flows or loadings are greater than the design flows or loadings, then the Company shall recalculate the customer's equivalency rating based on actual flows or loadings and thereafter bill for its services in accordance with such recalculated loadings.

G. The liability of the Company, its agents and employees for damages arising out of interruption of service or the failure to furnish service, whether caused by acts or omission, shall be limited to those remedies provided in the Public Service Commission's rules and regulations governing wastewater utilities.

2. <u>Solids Interceptor Tanks</u>

For all customers receiving sewage collection service through an approved solids interceptor tank, the following additional charges shall apply:

A. Pumping Charge
At such time as the Utility determines through its inspection that excessive solids have accumulated in the interceptor tank, the Utility will arrange for the pumping tank and will include \$150.00 as a separate item in the next regular billing to the customer.

B. Pump Repair or Replacement Charge
If a separate pump is required to transport the customer's sewage from solids interceptor tank to the Utility's sewage collection system, the Utility will arrange to have this pump repaired or replaced as required and will include the cost of such repair or replacement as a separate item in the next regular billing to the customer and may be paid for over a one-year period.

C. Visual Inspection Port
In order for a customer who uses a solids interceptor tank to receive sewage service from the Utility or to continue to receive such service, the customer shall install at the customer's expense a visual inspection port which will allow for observation of the contents of the solids interceptor tank and extraction of test samples therefrom. Failure to provide such visual inspection port after timely notice of not less than thirty (30) days shall be just cause for interruption of service until a visual inspection port has been installed.

Carolina Water Service, Inc.
Docket No. 2017-292-WS
SCHEDULE OF PROPOSED RATES AND CHARGES

3. Non-recurring Charges

A. Sewer Service Connection (New connections only) $300 per SFE

B. Plant Capacity Fee (New connections only) $400 per SFE

The Plant Capacity Fee shall be computed by using South Carolina DHEC "Guide Lines for Unit Contributory Loadings to Wastewater Treatment Facilities" (1972) to determine the single family equivalency rating. The plant capacity fee represents the Utility's investment previously made (or planned to be made) in constructing treatment and/or collection system facilities that are essential to provide adequate treatment and disposal of the wastewater generated by the development of the new property.

The nonrecurring charges listed above are minimum charges and apply even if the equivalency rating of non-residential customer is less than one (1). If the equivalency rating of a non-residential customer is greater than one (1), then the proper charge may be obtained by multiplying the equivalency rating by the appropriate fee. These charges apply and are due at the time new service is applied for, or at the time connection to the sewer system is requested.

C. Notification Fee

A fee of $15.00 shall be charged to each customer per notice to whom the Utility mails the notice as required by Commission Rule R. 103-535.1 prior to service being discontinued. This fee assesses a portion of the clerical and mailing costs of such notices to the customers creating the cost.

D. Customer Account Charge - (New customers only)

$30.00

A one-time fee to defray the costs of initiating service. This charge will be waived if the customer is also a water customer.

E. Reconnection Charges: In addition to any other charges that may be due, in those cases where a customer's service has been disconnected for any reason as set forth in Commission Rule R. 103-532.4 a reconnection fee in the amount of $500.00 shall be due at the time the customer reconnects service. Where an elder valve has been previously installed, a reconnection fee of $40.00 shall be charged.

F. Tampering Charge: In the event the Utility's equipment, sewage pipes, meters, curb stops, service lines, elder valves or other facilities have been damaged or tampered with by a customer, the Utility may charge the customer responsible for the damage the actual cost of repairing the Utility's equipment, not to exceed $250. The tampering charge shall be paid in full prior to the Utility re-establishing service or continuing the provision of service.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties, by Utilities, Inc. of Florida.	DOCKET NO. 20200139-WS ORDER NO. PSC-2021-0206-FOF-WS ISSUED: June 4, 2021

The following Commissioners participated in the disposition of this matter:

GARY F. CLARK, Chairman
ART GRAHAM
ANDREW GILES FAY
MIKE LA ROSA

FINAL ORDER

BY THE COMMISSION:

MARTIN S. FRIEDMAN, ESQUIRE, DEAN MEAD, 420 South Orange Avenue, Suite 700, Orlando, FL 32801
JOHN L. WHARTON, ESQUIRE, DEAN, MEAD & DUNBAR, 106 East College Avenue, Suite 1200, Tallahassee, Florida 32301
On behalf of Utilities, Inc. of Florida (UIF).

RICHARD GENTRY, CHARLES J. REHWINKEL, STEPHANIE MORSE, ANASTACIA PIRRELLO, ESQUIRES, Office of Public Counsel, c/o The Florida Legislature, 111 West Madison Street, Room 812, Tallahassee, Florida 32399-1400
On behalf of the Citizens of the State of Florida (OPC).

WALTER L. TRIERWEILER and BIANCA Y. LHERISSON, ESQUIRES, Florida Public Service Commission, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850
On behalf of the Florida Public Service Commission (Staff).

MARY ANNE HELTON, ESQUIRE, Deputy General Counsel, Florida Public Service Commission, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850
Advisor to the Florida Public Service Commission.

KEITH C. HETRICK, ESQUIRE, General Counsel, Florida Public Service Commission, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850
Florida Public Service Commission General Counsel.

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Acronym Table

The following abbreviations used herein are listed below for reference purposes:

AA	Accumulated Amortization
AC	Asbestos Cement
ADIT	Accumulated Deferred Income Tax
AFUDC	Allowance for Funds Used During Construction
ARCH	Autoregressive Conditional Heteroskedasticity
BFC	Base Facility Charge
CAPM	Capital Asset Pricing Model
CIAC	Contributions in Aid of Construction
CIP	Capital Improvement Plan
CIPP	Cured-in-place Pipe
CRU-US	Corix Regulated Utilities (U.S.), Inc.
CWIP	Construction Work in Progress
DBP	Disinfection Byproducts
DCF	Discounted Cash Flow
DEP	Department of Environmental Protection
ECAPM	Empirical Capital Asset Pricing Model
EPS	Earnings Per Share
ERC	Equivalent Residential Connection
ERP	Equity Risk Premium
EUW	Excessive Unaccounted for Water
EWD	Englewood Water District
EXH	Exhibit
F.A.C.	Florida Administrative Code
FDOT	Florida Department of Transportation
FM	Force Main
FMV	Fair Market Value
F.S.	Florida Statutes
GARCH	Generalized Form of Autoregressive Conditional Heteroskedasticity
GDP	Gross Domestic Product
GRIP	Gas Reliability Infrastructure Program
GSM	Gravity Sewer Mains
GST	Gravity Storage Tank
I&I	Infiltration and/or Inflow
IDC	Interest During Construction
IRS	Internal Revenue Service
KWRU	KW Resorts Utilities Corp.
LUSI	Lake Utility Services, Inc.
MFRs	Minimum Filing Requirements
NARUC	National Association of Regulatory Utility Commissioners
O&M	Operation and Maintenance
OPC	Office of Public Counsel
PAA	Proposed Agency Action

PCF	UIF Witness Flynn's Exhibits
PFAS	Polyfluoroalkyl Substances
PRPM	Predicted Risk Premium Model
PVC	Polyvinyl Chloride
RAFs	Regulatory Assessment Fees
RAS	Return Activated Sludge
RPM	Risk Premium Model
RRA	Regulatory Research Associates
ROE	Return on Equity
RTU	Remote Terminal Unit
SCADA	Supervisory Control & Data Acquisition
SWIM	Sewer and Water Improvement Mechanism
TOTI	Taxes Other than Income
TR	Transcript
U&U	Used and Useful
UIF	Utilities, Inc. of Florida
USOA	Uniform System of Accounts
WACC	Weighted Average Cost of Capital
WM	Water Mains
WSC	Water Service Corporation
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

BACKGROUND

Utilities, Inc. of Florida (UIF or Utility) is a Class A utility providing water and wastewater service to 27 systems in the following counties: Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole. UIF is a wholly-owned subsidiary of Utilities, Inc. (UI). The Utility's last rate proceeding, processed in Docket No. 20160101-WS, utilized a historic December 31, 2015, test year.[1] That proceeding culminated in Order No. PSC-2017-0361-FOF-WS, issued September 25, 2017, as amended by Order No. PSC-2017-0361A-FOF-WS, issued October 4, 2017.

On October 20, 2017, the Office of Public Counsel (OPC) and Seminole County each filed a notice of administrative appeal with the First District Court of Appeal (the First DCA or the Court).[2] Our decision was affirmed by the First DCA in the appeal by Seminole County.[3] In OPC's appeal, the Court affirmed our order except as to that portion of the used and useful (U&U) determination involving prepaid connections. The Court remanded this issue to us to determine the extent to which prepaid connections meet the requirements of Section 367.081(2)(a)2.b., F.S.[4] For property to be considered used and useful in the public service under Section 367.081(2)(a)2.b., F.S., it must be shown to be "needed to serve customers 5 years after the end of the test year."

On remand from the First District Court of Appeal, in Order No. PSC-2019-0363-PAA-WS, issued on August 27, 2019, addressed the reversed and remanded portion of OPC's appeal, its effect on our previous decisions, and the Utility's motion for appellate and remand rate case expense.

Additionally, we approved a single, consolidated rate structure. The Utility's last rate proceeding occurred in Docket No. 20160101-WS utilizing a historic December 31, 2015, test year.[5]

In 2019, the Utility recorded total company operating revenues of $16,396,327 for water and $20,840,529 for wastewater, respectively. UIF reported net operating income for 2019 of $3,726,366 for water and $5,185,175 for wastewater. In 2019, UIF had 33,736 water and 23,885 wastewater customers for its combined systems.

On July 13, 2020, UIF filed an application for approval of interim and final water and wastewater rate increases. By letter dated August 5, 2020, our staff advised the Utility that its Minimum Filing Requirements (MFRs) had deficiencies. The Utility filed its response on August 24, 2020. A second deficiency letter was issued on August 28, 2020. The Utility filed a response to Commission staff's second deficiency letter on August 31, 2020, correcting its remaining

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[1] *In re: Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties by Utilities, Inc. of Florida.*
[2] Document Nos. 09000-2017 and 09009-2017.
[3] No. 1D17-4438.
[4] *Citizens of State v. Florida Public Service Commission*, 294 So. 3d 961 (Fla. 1st DCA 2019).
[5] *In re: Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties by Utilities, Inc. of Florida.*

deficiencies, and thus, August 31, 2020, became the official filing date pursuant to Sections 367.081 and 367.083, Florida Statutes (F.S.).

The Utility's application for increased interim and final water and wastewater rates is based on the historical 13-month average period ended December 31, 2019. The requested final rates include adjustments for pro forma projects. UIF requested final rates designed to generate additional revenues of $2,812,445, or 16.94 percent, for water operations and $6,521,686, or 32.12 percent, for wastewater operations.

Upon its request, the Office of Public Counsel (OPC) was added as an interested person to this docket on April 20, 2020. The intervention of the OPC was acknowledged by Order No. PSC-2020-0259-PCO-WS, issued July 24, 2020, in this docket.

On April 21, 2020, UIF filed a Petition for Variance or Waiver of a specific provision from Rule 25-30.437, Florida Administrative Code (F.A.C.), to waive the requirement to provide additional detailed billing analyses for each rate change period in the test year. By Order No. PSC-2020-0211-PAA-WS, issued June 26, 2020, this Commission approved the Utility's petition.

By Order No. PSC-2020-0322-PCO-WS, issued September 21, 2020, we authorized the collection of interim water and wastewater rates, subject to refund, pursuant to Section 367.082, F.S. The approved interim revenue requirements represented an increase of $918,223 for water and $1,051,222 for wastewater operations.[6]

Five customer service hearings were held via teleconference over the following dates: December 3, 2020, December 10, 2020, and January 6-7, 2021.

A formal evidentiary hearing was held on February 2-3, 2021. At the hearing, we approved Type II stipulations for Excessive Unaccounted for Water (EUW), Excessive Infiltration and/or Inflow (I&I), Used and Useful (U&U) – Water Treatment, U&U – Storage, U&U – Wastewater Treatment, U&U – Wastewater Collection Lines, U&U – Wastewater Distribution, Rate Case Expense, Operating Expense Amortizations, Water Rate Structure, Wastewater Rate Structure, Private Fire Protection Charges, Reuse Rates, Customer Deposits, Guaranteed Revenue Charges, Customer Deposits Included in Capital Structure, Cost Rates for Short-Term Debt, and Cost Rates for Long-Term Debt.[7] Those approved stipulations are set forth herein. The Parties filed post-hearing briefs on the remaining contested issues on February 23, 2021.

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[6] Order No. PSC-2020-0322-PCO-WS, issued September 21, 2020, in Docket No. 20200139-WS, *In re: Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties by Utilities, Inc. of Florida.*

[7] OPC takes no position on these issues nor does it have the burden of proof related to them. As such, OPC represents that it will not contest or oppose this Commission taking action approving a proposed stipulation between the Company and another party or our staff as a final resolution of these issues. No person is authorized to state that OPC is a participant in, or party to, a stipulation on these issues, either in this docket, in an order of this Commission, or in a representation to a Court.

This Order addresses the remaining issues concerning the Utility's final requested rates. As needed, individual systems within the consolidated Utility will be referred by their former names as follows: Cypress Lake Utilities, Inc. (Cypress Lakes), Utilities, Inc. of Eagle Ridge (Eagle Ridge), Labrador Utilities, Inc. (Labrador), Lake Placid Utilities, Inc. (Lake Placid), Lake Utility Services, Inc. (LUSI), Utilities, Inc. of Longwood (Longwood), Mid-County Services, Inc. (Mid-County), Utilities, Inc. of Pennbrooke (Pennbrooke), Utilities Inc. of Sandalhaven (Sandalhaven), Sanlando Utilities Corporation (Sanlando), Tierra Verde Utilities, Inc. (Tierra Verde), and Utilities, Inc. of Florida (UIF-Marion, UIF-Pinellas, UIF-Orange, UIF-Pasco, and UIF-Seminole. We have jurisdiction pursuant to Section 367.081, F.S.

DECISION

I. Quality of Service

A. Parties' Arguments

1. UIF

UIF asserted the quality of service for all its systems is satisfactory and most customers that attended one of the five virtual customer service hearings addressed the rate increase, not quality of service. UIF acknowledged that we evaluate quality of service based on three components: quality of the utility's product, operating conditions, and attempts to address customer satisfaction. The Utility stated that OPC did not outline its arguments in these three categories; but instead, its arguments are directed to systems with current or past Consent Orders with DEP. UIF argued this relates to the operating category and not the water quality customers receive. UIF noted that according to OPC the quality of service for LUSI, Sanlando Utilities (Wekiva Hunt Club), and the Mid-County systems is unsatisfactory.

In its brief, UIF separately addressed the three components noted above. The Utility argued the quality of the Utility's product (water) is satisfactory and specifically addresses the Summertree, LUSI, Sanlando, and Pennbrooke systems. UIF contended Summertree has had the most improvement since the last rate case with the completion of the interconnection with Pasco County in 2016. UIF stated water quality complaints have declined, and DEP has received no water quality complaints since the system was interconnected. The Utility stated that LUSI was determined to be marginal in the last rate case due to an open Consent Order regarding disinfection byproducts (DBP) exceedances. The Utility argued it should now be considered satisfactory because there were no customer complaints about water quality and DEP considers this system to be in compliance. For the Sanlando system, the main complaint of the customers that testified at the service hearings was the magnitude of the rate increase; however, while there were some comments related to water quality, none of them indicated "that there were systemic water quality issues." The Utility stated that DEP's records do not indicate any water quality complaints since 2017, and only a half dozen before that. Regarding Pennbrooke, UIF stated that three customers testified at the service hearings regarding aesthetics and hardness. In addition, OPC witness Lewis testified that she made contact with two residents in Pennbrooke who did not like the water quality and purchased filtration systems. UIF noted that neither of these customers had ever contacted the Utility to complain about water quality. Moreover, DEP has found this system to be in compliance and reported one water quality complaint in 2017.

Next, the Utility addressed operating conditions and argued that all systems are in compliance, except the Mid-County and Sanlando wastewater systems (Wekiva Hunt Club). The Utility specifically addressed both systems and the LUSI system. UIF countered OPC witness Lewis' recommendation that the Mid-County system be found unsatisfactory with a 50-basis point reduction, by stating the Consent Order was due to not having submitted final paperwork and the Consent Order was closed on December 21, 2020. The Utility also refuted witness Lewis's recommendation that the Sanlando wastewater system (Wekiva Hunt Club) should be found not satisfactory and a 50-basis point reduction should be applied due to current and past Consent Orders. The Utility asserted that since two pro forma projects are being requested in this docket, the compliance issue related to unauthorized discharges will be resolved and because UIF is taking the necessary "steps to meet the requirements of the Consent Order," a penalty should not be imposed. The Utility stated that witness Lewis recommended a marginal or unsatisfactory determination for the LUSI system due to a Consent Order from DEP relating to DBP exceedances. UIF argued the system is in compliance with DEP and the prior issues related to DBP exceedances have been resolved.

Last, in order to address customer satisfaction, the Utility contended it improved customer service and communications by creating a new position, Director of External Affairs, which Mr. Snow holds. UIF argued that based on the records, UIF timely addressed customer service issues; therefore, the Utility's attempt to address customer satisfaction should be considered satisfactory. This Commission has logged fewer complaints during this rate case's analyzed 5-year period compared to the same relative time of the Utility's last rate case. Twelve of the 18 water quality complaints recorded with DEP were for two of UIF's largest systems, Sanlando and LUSI. The Utility argued that DEP considers no water system out of compliance because of secondary water quality standards. Additionally, UIF reorganized its Customer Experience department to respond to the customers by their preferred method of communication and has expanded its platform for customer feedback and information to social media and its application, MyUtilityConnect. OPC witness Lewis commented on the number of billing complaints, to which UIF responded that it works with each customer individually to address high bill complaints.

2. OPC

OPC contended that UIF's overall quality of service is not satisfactory due to issues with the: LUSI, Sanlando (Wekiva Hunt Club), Mid-County, and Pennbrooke systems. OPC argued for a minimum of a 50-basis point reduction to LUSI, Mid-County, and Pennbrooke's return on equity (ROE) and a 100-basis point reduction to Sanlando's (Wekiva Hunt Club) ROE.

Regarding DEP compliance, OPC argued that UIF demonstrated consistent mismanagement of its facilities and that there has been a consistent pattern of compliance issues at UIF's wastewater facilities. Witness Lewis identified six Consent Orders relating to three facilities. Specifically, Wekiva Hunt Club/Sanlando was subject to three Consent Orders, in 2015, 2018, and 2019, all for the discharge of untreated or improperly treated wastewater. Mid-

County was also the subject of two Consent Orders, in 2018 and 2019. LUSI was the subject of a 2015 Consent Order related to maximum contaminant levels. OPC went on to note that Commission staff witness Hicks testified that the LUSI system had the second highest incidence of complaints recorded in this Commission's Consumer Activity Tracking System and about 20 percent of those LUSI complaints related to quality of service.

During the five customer service hearings, OPC contended that customers testified about poor water quality and having to purchase bottled water since home filters are too expensive. Customers also complained of staining on home appliances and home exteriors from their water. Further, customers stated they were then required to clean the stains on their homes or be fined by their homeowners' association. OPC argued that customers should not have this additional burden due to their water quality. Customers also had issues regarding the Utility's emergency telephone line going unanswered.

OPC contended that the Utility "should not be allowed to operate in non-compliance during the test year, later resolve the deficiencies in time for the rate case, and then expect to receive a clean bill of health from the Commission." OPC argues we should look at the Utility's history of non-compliance and take this into consideration when setting new rates. Further, OPC argues we should find UIF's quality of service to be unsatisfactory based on the Utility's compliance history with DEP as well as customer testimony for the following four systems: LUSI, Sanlando (Wekiva Hunt Club), Mid-County, and Pennbrooke. OPC also asserted that UIF's ROE should be reduced by a minimum of 50-basis points for LUSI, Mid-County, and Pennbrooke, and 100-basis points for Sanlando (Wekiva Hunt Club).

B. Analysis

Pursuant to Rule 25-30.433(1), F.A.C., this Commission "in every rate case shall make a determination of the quality of service provided by the utility by evaluating the quality of the Utility's product (water) and the Utility's attempt to address customer satisfaction (water and wastewater)." Also, pursuant to Rule 25-30.433(2), F.A.C., "in order to ensure safe, efficient, and sufficient service to utility customers, the Commission shall consider whether the infrastructure and operational conditions of the plant and facilities are in compliance with Rule 25-30.225, F.A.C." In doing so, we shall consider test results, inspections, complaints, testimony, as well as any citations, violations, or Consent Orders on file with DEP and county health department pursuant to Rule 25-30.433, F.A.C.

Section 367.0812(1), F.S., additionally requires us, in fixing rates, to consider the extent to which the utility provides water service that meets secondary water quality standards as established by DEP. Primary water standards relate to the safety of the water, while secondary standards relate to the aesthetics of the water like taste, color, odor, and sediment.

Rule 25-30.433(1), F.A.C., requires that the testimony of a utility's customers be considered in a rate case proceeding. Five remote service hearings were held due to the ongoing COVID-19 pandemic. There were a total of 42 customers and one appointed official that testified at the service hearings. Each customer that testified expressed their dissatisfaction with UIF's proposed rate increase; some customers also testified regarding odor, discolored water, or the additional cost of buying bottled water. Of the total customers who provided testimony at the service hearings, OPC asserted 35 percent addressed poor water quality, such as odor or bad taste, and 22 percent addressed customer service issues. However, we found that only 11 customers testified to quality of service related issues, which includes poor water quality, and three customers testified to customer service issues, which is approximately 26 and 7 percent, respectively, of the total 43 participants. UIF asserted that the majority of the customer comments from the service hearings were concerning the proposed rate increase and not relating to quality of service.

DEP provided compliance and complaint data from January 1, 2015, through August 31, 2020, which was included in the hearing record. DEP received a total of 44 complaints during this 5-year period: 23 complaints related to water and 21 complaints related to wastewater. The water complaints consisted of concerns primarily regarding odor, color, and pressure, and the wastewater complaints consisted of primarily odor concerns.

The Utility provided the complaints it received during the test year and four years prior in Vol. III of its MFRs. There were 1,460 billing and 2,532 service complaints for the test year for all of the Utility's systems. UIF's secondary water quality complaints for the four years prior to the test year amounted to 998 complaints, with some complaints having been addressed in prior rate proceedings.

As of February 3, 2021, there were a total of 906 comments, filed by 820 customers, in the docket file. UIF serves over 60,000 water and wastewater customers; therefore, approximately 1.4 percent of the Utility's customers provided comments in the instant docket. We analyzed all comments in the docket file and a total of 812 customers provided comments expressing their discontent with the proposed rate increase. In addition, 78 customers, approximately 9.5 percent of the total customers that commented in the docket file, provided comments regarding the quality of service and addressed their dissatisfaction with the odor, color, and pressure of their water product. Several customers provided comments also expressing their dissatisfaction with the Utility's customer service and pointed out that UIF's emergency number was not adequately managed.

We received a total of 194 complaints from October 5, 2015, through October 5, 2020, with 69 percent of the complaints concerning billing issues, and the remaining 31 percent concerning quality of service issues. Commission staff witness Hicks testified that most complaints for the analyzed 5-year period came from Seminole County, with 133 complaints followed by Lake County with 31 complaints. Out of the total complaints for both Seminole and Lake Counties, there were only six complaints regarding quality of service. UIF serves over 24,000 customers in Seminole County (Sanlando and UIF-Seminole) and over 18,000 customers in Lake County (LUSI and Pennbrooke). The total customer complaints we received represents a small fraction of UIF's customer base within Seminole and Lake Counties and also with respect to the Utility in its entirety. Further, witness Hicks testified that most of the UIF complaints received by this Commission were resolved or closed. Witness Hicks also stated that the Utility may have violated our rules for 15 of the 194 complaints received by this Commission. The majority of these potential rule violations involved inaccurate meters and meter readings, customer billing, deposit refunds, and failing to respond to the customers or us in a timely manner.

OPC witness Lewis focused her testimony on quality of service issues identified by DEP and customer testimony, complaints, and comments. The witness testified to specific concerns regarding past and present Consent Orders for the following systems: LUSI, Sanlando (Wekiva Hunt Club), and Mid-County. Witness Lewis asserted that we should consider the issues identified in the Consent Orders, even if the Utility has since corrected any deficiencies. With respect to the complaint-related documentation of this case, the witness testified that the majority of complaints are related to billing, but there were also several complaints related to customer service. Witness Lewis argued that the Utility does not respond to these complaints, until or unless the customer contacts us and we subsequently facilitate contact between the Utility and customer. The witness supported her argument by indicating that she spoke with three customers from different systems about the quality of the water product and associated issues, which included discussions regarding the color, odor, and staining of the product, as well as purchasing supplemental water filtration systems to help mitigate these issues. Witness Lewis recommended a finding of marginal or unsatisfactory quality of service for LUSI, Sanlando (Wekiva Hunt Club), and Mid-County, with a potential 50-basis point reduction to the Utility's ROE if we find the quality of service for these systems is unsatisfactory. Further, the witness concluded that if a specific system has a history of repeated or unresolved issues, the ROE should be reduced by 100-basis points, but she did not identify a particular system where this may be applicable. In its brief, OPC recommends, for the first time, that Pennbrooke be considered unsatisfactory; however, OPC provided limited support for its assessment of Pennbrooke's quality of service, and instead focused on two customer complaints and 3 service hearing comments concerning secondary water quality standards discussed in detail below. Further, in its brief, OPC argued we should find the quality of service unsatisfactory for LUSI, Sanlando (Wekiva Hunt Club), Mid-County, and Pennbrooke. OPC further stated that ROE should be reduced by 50-basis points for LUSI, Mid-County, and Pennbrooke and by 100-basis points for Sanlando (Wekiva Hunt Club). OPC also stated that the awarded ROE should be reduced by at least 50-100 basis points on a targeted underperforming system basis.

UIF witness Snow disagreed with witness Lewis' assertion that UIF does not respond to customers until we are involved. Witness Snow further stated that customers may choose to contact this Commission initially ahead of the Utility, and also indicated that OPC did not provide a specific example of where this occurred. Additionally, witness Snow addressed each of the three customers witness Lewis testified about regarding their quality of service concerns, and stated that these customers have either never filed a complaint with the Utility or else they have not done so within the past 14 years. Witness Snow further argued that the Utility is willing to work with customers individually to address any concerns. In response to witness Hicks' testimony about UIF's potential rule violations on responding to complaints promptly, witness Snow asserted these complaints were from 2015, 2017, and 2018, and none occurred during 2019 and 2020; therefore, this is not a current problem. In support of UIF's quality of service argument, witness Snow testified that UIF reorganized its Customer Experience department to better serve the customer, using the customer's preferred method of communication. Further, in response to OPC's argument regarding the compliance of the specific UIF systems identified previously that OPC contested, UIF discussed DEP's compliance determination for LUSI, Mid-County, and Sanlando (Wekiva Hunt Club).

In Vol III of its MFRs, UIF provided the required additional engineering information pursuant to Rule 25-30.440, F.A.C. Currently, all the Utility's water systems are in compliance with DEP's rules and regulations and are under no formal enforcement action or violation. In evaluating UIF's product quality (water), we reviewed the Utility's compliance with DEP's primary and secondary drinking water standards. Primary standards protect public health, while secondary standards regulate contaminants that may impact the taste, odor, and color of drinking water.

Below, is the quality of the Utility's product, pursuant to Rule 25-30.433(1), F.A.C., as well as the infrastructure and operating conditions of the plant and facilities, as required by Rule 25-30.433(2), F.A.C. Our analysis consists of: 1) a discussion of the systems which we deemed satisfactory, were satisfactory in the last rate case, and not contested by OPC; and 2) a discussion of the systems which we find to be satisfactory or marginal now, but were either found to be marginal or unsatisfactory in the last rate case or are contested by OPC in the instant docket. Table 1 summarizes the quality of service determinations from UIF's last rate case, the recommended determinations for the instant docket by UIF and OPC, as well as our approved determinations, by system.

Table 1
Quality of Service Determination Summary

System	Last Rate Case Determination	UIF Recommendation	OPC Recommendation	Commission Approved
Lake Placid	Satisfactory	Satisfactory	*	Satisfactory
UIF-Marion	Satisfactory	Satisfactory	*	Satisfactory
UIF-Orange	Satisfactory	Satisfactory	*	Satisfactory
UIF-Pasco-Orangewood	Satisfactory	Satisfactory	*	Satisfactory
UIF-Pinellas-Lake Tarpon	Satisfactory	Satisfactory	*	Satisfactory
LUSI	Marginal	Satisfactory	Unsatisfactory	Satisfactory
Pennbrooke	Marginal	Satisfactory	Unsatisfactory	Unsatisfactory
Labrador	Marginal	Satisfactory	*	Satisfactory
UIF-Pasco-Summertree	Unsatisfactory	Satisfactory	*	Satisfactory
Cypress Lakes	Marginal	Satisfactory	*	Satisfactory
UIF-Seminole	Marginal	Satisfactory	*	Satisfactory
Sanlando WTP	Satisfactory	Satisfactory	*	Satisfactory
Sanlando WWTP	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory
Mid-County	Marginal	Satisfactory	Unsatisfactory	Unsatisfactory

* These systems were not identified in OPC witness Lewis' testimony as having satisfactory, marginal, or unsatisfactory quality of service.

a. Systems with Satisfactory Determination in Last Rate Case and Uncontested Satisfactory Quality of Service

The water and wastewater systems below are in compliance with DEP requirements, including secondary water quality standards; had minimal customer participation at the service hearings; received few, if any, quality of service complaints; and were found to have satisfactory quality of service in the last rate case.[8] For water: Lake Placid, UIF-Marion, UIF-Orange, UIF-Pasco-Orangewood, and UIF-Pinellas-Lake Tarpon, and Sanlando. For wastewater: Sandalhaven, Cross Creek/Eagle Ridge, UIF- Marion, Lake Placid, Longwood, and Tierra Verde. As noted above, OPC did not identify any quality of service issues with these systems or address these systems specifically. As such, we find the quality of service for these systems to be satisfactory.

b. Systems with Unsatisfactory/Marginal Determination in Last Rate Case or Contested Satisfactory Quality of Service

As stated previously, in its brief, OPC argued the quality of service should be unsatisfactory for LUSI, Mid-County, Pennbrooke, and Sanlando (Wekiva Hunt Club). Also, OPC contends that a reduction of 50-basis points should be imposed for LUSI, Mid-County, and Pennbrooke, and a reduction of 100-basis points for Sanlando (Wekiva Hunt Club) to UIF's ROE, on a targeted underperforming system basis. In opposition to OPC, UIF argued all of its systems should be considered satisfactory. Below, we discuss the following systems in greater detail: LUSI, Pennbrooke, Labrador, UIF-Pasco-Summertree, Cypress Lakes, UIF-Seminole, Sanlando (WTP & WWTP), and Mid-County.

1. LUSI

We found the quality of service for the LUSI system to be marginal, with no penalty, in UIF's 2016 rate case.[9] This determination was due to an open Consent Order, entered into on September 6, 2016, for DBP exceedances at the LUSI water treatment plant (WTP). To rectify the issues associated with this Consent Order, UIF indicated that it upgraded its LUSI WTP with a chlorine dioxide pretreatment capability in 2019, which has significantly lowered the production of DBPs within the system. The Utility corrected all violations and satisfied all requirements of the Consent Order, and the order was subsequently closed in August 2019. LUSI's most recent chemical analyses results were performed on March 17, 2020, February 8, 2018, and April 10, 2018, and the results were in compliance with DEP's standards. There are currently no open Consent Orders for this system. DEP recorded two complaints regarding water quality: one complaint regarding smell in January 2016 and one complaint of high DBP in February 2016, both of which are prior to the system's chlorine dioxide pretreatment upgrade to LUSI's WTP discussed previously. In its brief, UIF stated one customer testified at the service hearings from this system. As noted above, OPC believes the quality of service for this system should be unsatisfactory. However, we find that UIF has taken the necessary steps to address the

[8] Order No. PSC-2017-0361-FOF-WS.
[9] Order No. PSC-2017-0361-FOF-WS.

past compliance issue of DBP exceedances for this system and there have been minimal complaints since UIF performed the upgrades to the WTP; therefore, we find this system's quality of service to be satisfactory.

2. Pennbrooke

We found the quality of service of the Pennbrooke system to be marginal, with a 50-basis point reduction to the Utility's ROE, in UIF's 2016 rate case.[10] This determination was due to excess levels of iron and customer complaints regarding discolored water, sediment, low pressure, and high iron. Pennbrooke's most recent chemical analyses were performed on February 8, 2018, and indicated an excess iron level. While Pennbrooke's results showed an iron exceedance, DEP did not impose any corrective measures since there was not a significant amount of complaints associated with excess iron levels in the one year period leading up to the violation. DEP indicated that Pennbrooke is in compliance.

In February 2017, DEP received two complaints for the Pennbrooke system: one for color and one for the hardness of the water. At the service hearings, one customer testified to the quality of the product and complained of discoloration, odor, sediment within pipes, and loss of water pressure due to irrigation within the community. Witness Lewis relied on this customer's service hearing testimony in her direct testimony concerning poor water quality, specifically discolored water. UIF rebutted witness Lewis' arguments with respect to this specific customer by stating that this customer has not complained to the Utility in over 14 years. Additionally, UIF argued that it has investigated treatment alternatives for the iron levels concentrated in its groundwater, but the Pennbrooke homeowners' association (HOA) declined to support the treatment upgrade due to potential bill impacts. Further, the Pennbrooke HOA provided comments in the docket file on behalf of its customers which addressed the community's water quality concerns relating to iron and chlorine within the water product and water pressure.

The Utility evaluated its complaint records to determine if there were clusters of complaints regarding secondary water quality and found that Pennbrooke was one of two areas of concern. UIF stated that Pennbrooke had considerable levels of soluble iron in the source water and adds a sequestrant to the water to keep the iron in soluble form. Further, the Utility asserted that since the last rate case, it met with HOA representatives in Pennbrooke and coordinated an irrigation schedule to spread the peak demand across more days of the week to address the low-pressure complaints. The Utility also activated routine flushing of dead-end mains to reduce water age, due to seasonal residence within the system.

As noted above, OPC believes the quality of service for this system should be unsatisfactory. UIF has demonstrated its readiness to address customers' satisfaction by meeting with the HOA representatives and implementing water treatment options, such as the addition of a sequestrant and routine flushing. However, there is still an issue of excess iron levels in the water product, as demonstrated in its 2018 chemical analyses and the customer correspondence analyzed for the instant docket. Therefore, we find the quality of service for Pennbrooke to be unsatisfactory.

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[10] Order No. PSC-2017-0361-FOF-WS.

3. Labrador

We found the quality of service of the Labrador system to be marginal, with no penalty, in UIF's 2016 rate case. This determination was largely due to water quality complaints and historical issues relating to Labrador's source water.[11] The most recent chemical analyses for Labrador were performed June 6, 2018, and were in compliance with DEP's drinking water standards. Additionally, there are minimal customer complaints contained within the record of the instant docket and there were no complaints filed with DEP for Labrador.

UIF asserted that since its last rate case, Labrador is maximizing the use of a different well that has enhanced water quality relative to the water source to improve Labrador's quality of service. Also, the Utility contended it has improved the reliability and performance of the emergency generator at the water treatment plant that has previously had equipment failures, as well as flushing parts of the water system monthly to address secondary water quality issues. OPC did not specifically address this system. Labrador is in compliance with DEP and UIF has made infrastructure and operating condition improvements, with the utilization of a different well, implementation of monthly flushing for parts of the water system, as well as improving its emergency generator; therefore, we find this system's quality of service to be satisfactory.

4. UIF-Pasco-Summertree

We found the quality of service of the UIF-Pasco-Summertree system to be unsatisfactory, with a 100-basis point reduction to the Utility's ROE, in UIF's 2016 rate case.[12] This determination was based upon UIF not maintaining secondary water quality standards and customer complaints. Since its interconnection with Pasco County Utilities in December 2016, UIF-Pasco-Summertree purchases bulk water from Pasco County. The Utility argued that Pasco's water chemistry levels fluctuate daily and as a result, a biofilm will accumulate on the pipe interiors. To monitor this issue, UIF tests daily for chlorine and ammonia at multiple locations. The Utility also performs semi-annual chlorine burns followed by uni-directional flushing to maintain water quality. Further, UIF implemented a chlorine dioxide pilot study within this system, with the objective of stabilizing the system's water quality and reducing the necessity of regular flushing. The Utility is requesting cost recovery of this chlorine dioxide pilot study, in PCF-38, which is discussed in greater detail below.

As a reseller of water, UIF-Pasco-Summertree is not subject to DEP's secondary water standards. However, due to the high volume of customer complaints in the previous rate proceeding, we required UIF to perform and report secondary water quality testing every six months for this system. The water samples were to be taken at the same six locations in the distribution system and testing was to continue until we found the water quality to be satisfactory.[13] While previous test results indicated slight iron exceedances, the most recent chemical analyses for secondary water contaminants were performed on October 1, 2020, and

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[11] Order No. PSC-2017-0361-FOF-WS.
[12] Order No. PSC-2017-0361-FOF-WS.
[13] Order No. PSC-16-0505-PAA-WS, issued October 31, 2016, in Docket No. 150269-WS, *In re: Application for limited proceeding water rate increase in Marion, Pasco, and Seminole Counties by Utilities, Inc. of Florida.*

was in compliance with DEP's standards. DEP stated UIF-Pasco-Summertree was in compliance, and the seven complaints concerning issues with water quality were received by DEP prior to the interconnection with Pasco County Utilities. OPC did not specifically address this system. Based on the aforementioned analyses of this system's compliance, complaints, and demonstrated efforts by UIF to address complaints, we find the quality of service for this system to be satisfactory. However, we find it appropriate that the additional testing and reporting requirements pursuant to Order PSC-16-0505-PAA-WS shall continue, but shall now be conducted on an annual basis, instead of on a semi-annual basis.

5. Cypress Lakes

We found the quality of service of the Cypress Lakes system to be marginal, with a 50-basis point reduction to the Utility's ROE, in UIF's 2016 rate case. This determination was due to the number of complaints involving secondary water quality issues and the lack of substantial improvement since previous rate cases in 2010 and 2007.[14] UIF asserted it has increased its attempts to examine the chlorine levels and monitors the age of the water within the system and aesthetic water quality characteristics to improve the quality of service for this system since its last rate case. The Utility also adjusts (from the monitoring data) feed rates of the chlorine and ammonia at the WTP and conducts periodic burns of the system followed by uni-directional flushing. The most recent chemical analyses were performed on March 25, 2020, and were in compliance with DEP's drinking water standards. DEP indicated Cypress Lakes was in compliance and did not receive any complaints from the customers of this system. OPC did not specifically address this system. Cypress Lakes is in compliance with DEP and the Utility has demonstrated that it has made improvements since the prior rate cases and has reduced customer complaints substantially. Therefore, we find the quality of service for this system to be satisfactory.

6. UIF-Seminole

We found the quality of service of the UIF-Seminole system to be marginal, with no penalty, in UIF's 2016 rate case. This determination was due to ongoing secondary water quality standard issues and the system's need for capital intensive upgrades.[15] The most recent chemical analyses for the seven systems within UIF-Seminole were performed for Bear Lake on February 19, 2018, Jansen on February 19, 2018, Little Wekiva on February 14, 2018, Oakland Shores on February 20, 2018, Park Ridge on March 7, 2018, Ravenna Park on March 7, 2018, and Weathersfield on March 26, 2020. While Jansen's results showed an iron exceedance, DEP did not impose any corrective measures since there was not a significant amount of complaints associated with excess iron levels in the one-year period leading up to the violation. Further, DEP indicated that Oakland Shores and Bear Lake incurred reporting violations for late bacteriological testing results, but these violations were closed once the results were received. DEP also indicated that Little Wekiva had a treatment technique violation, in which a residual fell under a required limit; however, this violation was closed as well. Additionally, Phillips had an iron violation in May 2018, but following this exceedance violation, Phillips merged with

[14] *Id.*
[15] Order No. PSC-2017-0361-FOF-WS.

Ravenna Park in February 2019 and no additional action was taken by DEP. Since Phillips merged with Ravenna Park, DEP conducted a sanitary survey on February 13, 2020. The facility was found in compliance, and DEP did not report any iron exceedances. As these violations have been corrected and closed, DEP reported all seven systems of UIF-Seminole as in compliance with DEP's standards.

UIF asserted that since the previous rate case, the Utility has completed a comprehensive replacement of the water system infrastructure in Bear Lake, Little Wekiva, Oakland Shores, and the combined system of Ravenna Park/Crystal Lake/Phillips. UIF stated the Park Ridge system was redone in 2014 and this improved water pressure, water aesthetics, and reduced widespread water outages by having functional isolation valves in each system. The Utility asserted that the two smallest water plants, Park Ridge and Little Wekiva, installed emergency generators and automatic transfer switches, to minimize the rate of recurrence and length of time without water service.

DEP did not receive any complaints for the Jansen, Bear Lake, Park Ridge, Little Wekiva, Oakland Shores, and Weathersfield systems. DEP reported four secondary water quality complaints for the Ravenna Park system since 2015. OPC did not specifically address this system. All systems of UIF-Seminole are in compliance with DEP's standards and DEP has not initiated any enforcement action. Additionally, there have been minimal customer complaints and UIF has made capital improvements in an effort to improve the quality of service since its last rate case. Therefore, we find the quality of service for this system to be satisfactory.

7. Sanlando (Water)

We found the quality of service of the Sanlando water system to be satisfactory in UIF's 2016 rate case.[16] The most recent chemical analyses for Sanlando, which consists of three WTPs, were completed on January 28, 2020, and February 19, 2020, and were all in compliance with DEP's standards. In December 2018, the Sanlando water system had reporting violations for late-filed bacteriological and DBP test results; however, these violations were closed when DEP received the test results in February 2019. DEP reported the Sanlando water system to be in compliance.

DEP received eight complaints for Sanlando's water system from 2015 through 2020, which varied in nature. At the service hearings, three customers from this system testified regarding poor water product and customer service. OPC did not specifically address Sanlando's water system. This system is in compliance with DEP and there have been minimal complaints from the customers of this system. Further, the nominal DEP violation against this system in 2018 was promptly corrected and late-filed test reports does not appear to be a repetitive issue. Therefore, we find the quality of service for the Sanlando water system to be satisfactory.

8. Sanlando (Wastewater)

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[16] Order No. PSC-2017-0361-FOF-WS.

We found the quality of service to be satisfactory for the Sanlando (Wekiva Hunt Club) wastewater system in UIF's 2016 rate case.[17] At that time, we considered DEP's 2015 Consent Order for unauthorized discharge and its subsequent closure.[18] A Consent Order was issued in 2018, due to overflows following Hurricane Irma and an effluent violation. The Utility indicated the 2018 Consent Order was mainly attributable to hydraulic bottlenecks within the treatment process and excess infiltration and inflow (I&I) as a consequence of Hurricane Irma. The Utility stated that it had satisfied the requirements of the 2018 Consent Order and it was being processed by DEP for case closure in December 2020. Further, the Utility asserted that it would continue to investigate sources of I&I within this system, which contains numerous miles of clay sewer mains. Additionally, UIF is requesting cost recovery for numerous improvements to the wastewater treatment plant (WWTP). This pro forma project, PCF-22, is discussed in greater detail below.

In October 2019, DEP found this system in violation for an unauthorized discharge and UIF was issued a Consent Order in 2020. UIF stated that the 2020 Consent Order was due to equipment failure, causing an unauthorized discharge. UIF is requesting cost recovery to construct larger, more capable headworks that will not cause overflows. This project, PCF-23, is discussed in greater detail below. The Utility asserted for its DEP-approved in-kind project, UIF will install water level transducers and solar arrays at six key lift stations. Due to the 2018 and 2020 Consent Orders, the Sanlando WWTP is out of compliance with DEP. While the 2018 and 2020 Consent Orders were due to unauthorized discharges, the causes which led to the discharges differ. The Utility has demonstrated a responsiveness to DEP based on the Utility's testimony stating that the 2018 Consent Order was in the closure process in December 2020 and the Utility has requested cost recovery for their DEP-approved in-kind project relating to the 2020 Consent Order. Additionally, the Utility asserted that it is taking the necessary steps to comply with the Consent Order, and therefore, we should follow our precedent and not impose a penalty for this system.

During the service hearings, there was testimony regarding an additional sewage spill at the Sanlando WWTP towards the end of December 2020. This sewage spill was due to a loss of power at a lift station which decreased pumping capacity for a short duration of time. UIF responded to the sewage spill and resolved the issue. The spill was contained within the retention pond around the lift station. The cause for this sewage spill was due to a loss of power at a lift station, which was not the cause for either of the prior unauthorized discharges addressed in the 2018 and 2020 Consent Orders.

Further, UIF has made $6,000,000 in plant improvements and more than $2,000,000 in collection system improvements to reduce I&I. With these improvements, and the two pro forma projects (PCF-22 and PCF-23) discussed below, we find that UIF is taking action to address the quality of service issues associated with the Sanlando wastewater system and has demonstrated its responsiveness to DEP. However, while the cause of each overflow event has differed, the unauthorized discharges still occurred and resulted in the issuance of two DEP Consent Orders.

[17] *Id.*
[18] *Id.*

We therefore find the quality of service for Sanlando (Wekiva Hunt Club) wastewater system to be unsatisfactory.

9. Mid-County

We found the quality of service of the Mid-Country system to be marginal, with a 50-basis point reduction to the Utility's ROE, in UIF's 2016 rate case.[19] This was due to the sewage spills that occurred between January 2015 and September 2016 along with odor complaints received by DEP. In 2018, Mid-County was under a Consent Order with DEP regarding effluent violations. DEP considered Mid-County to be out-of-compliance because UIF did not submit its final paperwork. DEP closed that Consent Order on July 30, 2019. Mid-County had a 2019 violation that resulted in a Consent Order regarding sanitary sewer overflows and failure to submit public notices of pollution for these overflows. UIF stated that the 2019 Consent Order was closed on December 21, 2020, after the Utility concluded an engineering study of the WWTP to ascertain the cause of the spill and reduce the risk of future spills. The Utility installed emergency generators and automatic transfer switches at two key lift stations as an in-kind project with DEP, in December 2020. UIF is requesting cost recovery of numerous pro forma projects that were identified in the engineering study that could improve the WWTP. These projects, PCF-14, PCF-15, and PCF-17, are discussed in greater detail below in Section III. Further, there has been very minimal customer participation from this system.

OPC argued that the quality of service for Mid-County should be unsatisfactory and an ROE reduction of 50-basis points should be imposed due to the two Consent Orders, which occurred between 2015 and 2020. UIF recognizes that the Mid-County system was out of compliance because UIF did not submit its final paperwork relating to the Consent Order, but the Consent Order was closed as of December 21, 2020. Mid-County previously had overflow issues in 2015, which we have already considered in UIF's quality of service determination of marginal in its prior rate case. Due to subsequent overflow issues in 2019, which resulted in the issuance of a DEP Consent Order, we find the quality of service for Mid-County to be unsatisfactory.

C. Conclusion

Based on the above, as shown in Table 1, we hereby find that the quality of service for all UIF systems to be satisfactory with the exclusion of the Pennbrooke water, Sanlando (Wekiva Hunt Club) wastewater, and Mid-County wastewater systems, which shall be deemed unsatisfactory. All existing ROE penalties associated with prior quality of service determinations shall be removed, and a reduction of 15 basis points to the Utility's overall ROE shall be implemented due to the unsatisfactory quality of service of the three aforementioned systems. Further, the secondary water quality reporting and testing requirements, pursuant to Order No. PSC-16-0505-PAA-WS for Summertree shall now be conducted on an annual basis, instead of a semi-annual basis.

[19] Order No. PSC-2017-0361-FOF-WS.

II. Test Year Plant-In Service Adjustments

A. Parties' Arguments

1. UIF

The Utility asserted that the only adjustments to test year plant balances were to allocate common plant between water and wastewater systems.

2. OPC

In its brief, OPC discussed reductions related to pro forma plant projects. These projects are discussed in Section III.

B. Analysis

UIF witness Swain made test year adjustments to the plant-in-service balance to correct allocations of common plant between water and wastewater and to reclassify plant accounts for the wastewater system. Although it addressed pro forma adjustments, OPC did not dispute the Utility's adjustments. Further, Commission staff witness Dobiac's testimony did not reflect any audit adjustments to the test year plant-in-service balances. As such, we find that these test year adjustments are appropriate and no further adjustments are necessary to the adjusted test year plant-in-service balances.

Based on the above, we hereby find no further adjustments to the adjusted test year plant-in-service balances. Adjustments to pro forma plant additions shall be made as set forth and discussed below.

III. Pro Forma Plant

A. Parties' Arguments

1. UIF

UIF argued that of the 45 pro forma project additions that had been identified by UIF witness Flynn, all had been supported by invoices or signed contracts and would be completed by December 31, 2021. Despite the change in completion date from witness Flynn's direct testimony for 15 of the projects, all of the pro forma projects would be completed within the 24-month statutory deadline. The costs for the 45 pro forma projects requested totaled $30,042,556. The Utility stated that OPC had indicated there were issues with the documentation provided; however, UIF witness Flynn had asserted that documentation may vary from project to project, and a lack of documentation does not affect a project's completion. For example, witness Flynn pointed to a specific project where a Notice to Proceed was not issued, but the project had been completed.

UIF argued that OPC's witness Radigan had not questioned the reasonableness or prudency of any of the projects, and the witness had been given the opportunity to visit the Utility's systems and evaluate the projects. UIF asserted that OPC had originally recommended exclusion of 11 projects for a lack of sufficient support, and six projects which it affirmed were not plant-in-service and should be construction work in progress (CWIP). However, OPC's witness later agreed that two of the projects, PCF-13 and PCF-29, had been fully supported, and another one, PCF-16, was partially supported. The Utility also argued that the study projects it had requested in this proceeding were similar to projects we approved in UIF's last rate case, which OPC did not object to at the time. Additionally, for the projects OPC characterized as CWIP, the Utility argued that the projects were not CWIP but should be in plant-in-service. Alternatively, if the projects were not included in plant-in-service, they should instead be placed in working capital.

UIF specifically addressed the projects that were contested by OPC. For PCF-6, the Utility argued that the project's development of a master sewer plan would be applied to the operation of the Labrador WWTP and would provide guidance for capital investment decisions. This master sewer plan would support construction projects that would follow in 2021. For PCF-21, UIF argued that it aimed to video inspect 10 percent of its Sandalhaven collection system, which consisted of clay pipes that are more prone to failure, each year on average. As an alternative, the Utility proposed that PCF-21 could be deferred and amortized over a reasonable timeframe, such as five years, rather than being included in rate base.

For PCF-26, UIF asserted that the engineering services for the project were a prerequisite to the replacement of three Sanlando force mains, which was an immediate need. The Utility stated it must move forward with the construction of the force main replacements in 2021. For PCF-30, UIF argued that the Utility was utilizing the engineering work from the project to support capital investment decisions; therefore, the project was in use and should be included in rate base. For PCF-39, the Utility argued that the scope of the Summertree I&I investigation project had been expanded to address the identified deficiencies and the investment should be fully recovered. Like PCF-39, UIF asserted that the scope of PCF-45 had also been expanded to include the construction costs for the Weathersfield Northwestern Bridge Crossing project and the investment should be fully recovered.

For PCF-14, the Utility argued that construction was underway for the Mid-County Master Lift Station project, which was scheduled to be completed by the end of June 2021. To date, approximately 15 percent of the work for PCF-14 had been completed and $282,018 had been spent of the $2,103,578 total projected cost. For PCF-16, UIF argued that the Mid-County Curlew Creek I&I Remediation project was on schedule and would be completed by January 31, 2021. Of the total $719,049 project cost for PCF-16, $234,906 has been spent to date. For PCF-17, the Utility stated that OPC witness Radigan was incorrect in believing that the Mid-County lift station project, PCF-14, would have to be completed prior to beginning PCF-17. The PCF-17 project was scheduled to be completed by November 2021, and the expenditures to date were limited to engineering services totaling $169,994 with a total projected budget of $2,424,782.

For PCF-18, UIF argued that the Mid-County Lift Station 10 Force Main Relocation project was scheduled to be completed by the end of December 2021, and the expenditures to date related to engineering service totaling $31,640 with a total projected cost of $57,451. For PCF-20, the Utility asserted that no expenditures had yet been made, but the project was on schedule to be completed in March 2021. For PCF-23, UIF argued that the Wekiva WWTP Headworks project would take nine months to complete and was scheduled to be completed in November 2021. The contractor had been mobilized on-site and was currently completing the Wekiva WWTP improvements, PCF-22, project. For PCF-28, the Utility argued that the plans for the E. E. Williamson Utility Relocations project had been drawn up, permits had been obtained, bids had been opened, and the project had been awarded to the lowest bidder. PCF-28 was scheduled to be completed by December 2021. For PCF-31, UIF argued that after a delay, the Sanlando Ground Storage Tank Rehabilitations project was on schedule. For PCF-33, the Utility stated that the Tierra Verde Force Main and Gravity Sewer Main Relocations project was nearly completed with only $5,500 of the work remaining of the total project cost of $593,368.

2. OPC

OPC argued that witness Radigan, testifying on behalf of OPC, had identified several projects for which sufficient documentation had not been provided by UIF to support a completion date and that the projects may not be completed within the 24-month limitation per Section 367.081(2)(a)2., F.S. Several other projects had been identified by witness Radigan as studies and were not connected to an active construction project. OPC argued that we had previously disallowed projects where insufficient documentation had been provided in support of a project.[20]

OPC argued that the burden of proof with respect to the pro forma projects was on UIF. Relating to insufficient supporting documentation, witness Radigan identified eight pro forma projects that he recommended should be disallowed, and partial recovery for one pro forma project which the Utility had not demonstrated would be completed within the 24 months. The costs for these nine projects totaled $9,401,299. OPC stated the UIF witness Flynn had testified there were four important documents for construction projects, which were a bid, an award form, a contract, and a Notice to Proceed. The Notice to Proceed must be issued and signed by both the Utility and contractor before construction work could begin. Witness Radigan reviewed the documentation offered and for projects with incomplete documentation, the witness recommended excluding the project. Witness Radigan also testified that one project in particular, PCF-17, could not begin until another project, PCF-14, had been completed. Due to a delay in the completion date for PCF-14, and the project timeframe for PCF-17, OPC stated “it will be impossible for PCF-17 to be completed by the 24-month deadline of December 31, 2021.”

OPC argued that it was unclear what criteria UIF had utilized for determining when an award form was necessary for a project. For some projects an award form was issued, such as PCF-42 and PCF-43, which both had a project cost below $100,000 and construction times of 168 calendar days. While for other projects, such as PCF-20 with a project cost of $128,000 and

[20] Order No. PSC-2017-0361-FOF-WS.

a construction time of 10 months, witness Flynn indicated it was unnecessary to issue an award form for the project. Also for PCF-16, which had a cost of $634,302 and would be carried out over several years, witness Flynn claimed an award form was not needed for the project. Further, related to PCF-16, OPC stated that witness Flynn had testified that a Notice to Proceed was not issued for each contractor, but instead suggested that a Notice to Proceed was only required for the contractor whose work constituted the largest financial cost. However, OPC argued that the Utility had been inconsistent in regards to the documentation, such as Notice to Proceed forms, it had supplied to support the projects. For example, a Notice to Proceed was provided for both PCF-42 and PCF-43, which had lower costs and shorter construction times than PCF-6, PCF-20, and PCF-33; however, a Notice to Proceed was not provided for either PCF-6, PCF-20, or PCF-33.

OPC stated that on cross examination, witness Flynn had "admitted that at least 15 of the 45 pro forma projects requested fell behind on their construction schedules" since the filing of his direct testimony. While several projects had been delayed, other projects such as PCF-31 had been paused and the Utility had not supplied support for a planned completion date. OPC argued that witness Flynn had admitted that there was no overarching reason for the project delays, but the delays could be the result of third-party action. OPC stated that Section 367.081(2)(a)2., F.S., outlines that a project must be placed into use within 24 months after the test year and it does not contemplate why a project was or was not completed in that timeframe. Therefore, based on a lack of sufficient documentation, OPC recommended that we should completely disallow PCF-14, PCF-17, PCF-18, PCF-20, PCF-23, PCF-28, PCF-31, and PCF-33, and we should disallow the portion of PCF-16 for which documentation was not provided.

For an additional six projects, OPC argued that a total cost of $432,673 should be disallowed because the projects did not have actual plant additions associated with them. Pursuant to the National Association of Regulatory Utility Commissioners (NARUC) Uniform System of Accounts (USOA) and Rule 25-30.116, F.A.C., studies and reports that are not attributed to an active construction project to be completed within the statutory timeframe cannot be considered plant-in-service or construction-work-in-progress. OPC identified PCF-6, PCF-21, and PCF-26 as studies and reports that would be used to develop future construction plans, but did not have any plant additions associated with them at this time. Additionally, OPC argued that witness Flynn had testified that several of these projects would require a separate capital project to address the findings.

OPC cited to Order No. PSC-2017-0361-FOF-WS, stating that although projects that were designated as investigations or studies were included in rate base, the decision to include these studies was contrary to the USOA and Rule 25-30.116, F.A.C. OPC cited to Section 120.68(7)(e), F.S., indicating that there is grounds for appeal when we deviate from official policy or agency rule. OPC stated that "a previous error on the part of the Commission does not become precedent for continuing to perpetuate the erroneous ruling if it is contrary to the controlling statute or in this case, rule." For these reasons, OPC recommended that we disallow PCF-6, PCF-21, PCF-26, PCF-30, PCF-39 and PCF-45 because the projects had no construction associated with a plant addition.

OPC argued that UIF should not be allowed to seek cost recovery for in-kind penalty projects, which are projects a utility may choose to implement as part of a DEP Consent Order and may involve capital improvements. OPC stated that per the Consent Order for PCF-22, an in-kind penalty project cost must be at least one and a half times the amount the utility would have been fined. OPC argued that UIF should not be allowed to recover these in-kind project costs from customers when it had elected to complete the project and the project costs were more than the fine. Additionally, OPC cited to Order No. PSC-2018-0014-FOF-EI,[21] stating "the Commission held that when a Consent Order required payment of an amount that was not a fine but was essentially a donation to avoid a fine, the utility could not recover that amount from customers." In UIF's case, the Consent Order allows the Utility to choose a project rather than paying a fine. Therefore, OPC recommended that we disallow the amount of DEP fines associated with PCF-15, PCF-17, PCF-22 and PCF-23, and embedded in capital costs totaling $56,147.

B. Analysis

Section 367.081(2)(a)2., F.S., provides that we, in fixing rates, shall consider facilities to be constructed within a reasonable time in the future, not to exceed 24 months after the end of the historic base year used to set final rates, unless a longer period is approved by us, to be used and useful (U&U) if such property is needed to serve current customers. In this proceeding, UIF requested cost recovery for 45 pro forma projects. Each project is discussed in detail below and the approved adjustments are summarized in Table 2.

[21] Order No. PSC-2018-0014-FOF-EI, issued January 5, 2018, in Docket No. 20180007-EI, *In re: Environmental cost recovery clause.*

Table 2
Commission Approved Pro Forma Plant Additions

PCF	Description	MFR	Commission	Adjustment
1	Cypress Lakes Inflow and Infiltration (I&I) Investigation	$45,000	$42,500	($2,500)
2	Eagle Ridge Lift Station 3 and 8 Rehabilitation	$84,411	$84,411	$0
3	Eagle Ridge Supervisory Control and Data Acquisition (SCADA) Remote Telemetry Unit (RTU) Installation	$247,761	$212,335	($35,426)
4	Eagle Ridge Engineering Site Improvements	$130,264	$48,713	($81,551)
5	Eagle Ridge Site Improvements	$707,506	$572,181	($135,325)
6	Labrador WWTP Master Plan	$40,636	$0	($40,630)
7	Longwood SCADA RTU Installation	$125,647	$122,160	($3,487)
8	LUSI Engineering of Crescent Bay Raw Water Main (WM)	$70,000	$71,500	$1,500
9	LUSI Crescent Bay Raw WM	$506,869	$488,700	($18,169)
10	LUSI Lake Groves Sulfuric Acid Storage Tank Replacement	$56,241	$55,089	($1,152)
11	LUSI Hydrochloric Acid Storage Tank Relocation	$33,165	$29,992	($3,173)
12	LUSI Lake Groves Return Activated Sludge (RAS) Pump Replacement	$45,660	$42,558	($3,102)
13	LUSI Barrington WWTP Improvements	$396,710	$378,559	($18,151)
14	Mid-County Master Lift Station	$1,878,199	$2,140,924	$262,725
15	Mid-County Generators at Lift Stations 4 and 7	$153,163	$120,952	($32,211)
16	Mid-County Curlew Creek I&I Remediation	$664,201	$624,220	($39,981)
17	Mid-County Headworks	$3,186,839	$2,478,657	($708,182)
18	Mid-County Lift Station 10 Force Main (FM) Relocation	$58,139	$56,170	($1,969)
19	Pennbrooke Diffuser Replacement	$34,000	$29,280	($4,720)
20	Sandalhaven SCADA Installation	$135,490	$129,299	($6,191)
21	Sandalhaven I&I Investigation	$61,847	$58,255	($3,592)
22	Wekiva WWTP Improvements	$6,859,793	$6,548,308	($311,485)
23	Wekiva WWTP Headworks	$3,100,024	$2,784,953	($315,071)
24	Sanlando Well Panel Replacements	$76,796	$76,812	$16
25	Sanlando FM and WM Replacement	$3,926,417	$3,718,965	($207,452)
26	Sanlando Engineering F5/C1/L2 FM Replacements	$202,637	$185,907	($16,730)
27	Sanlando I&I Corrections, Phase 4	$2,062,398	$2,161,675	$99,277
28	Sanlando E.E. Williamson Utility Relocations	$462,856	$450,686	($12,170)
29	Sanlando Lift Station Mechanical Rehabilitation	$560,469	$529,015	($31,455)
30	Sanlando FM Modeling and Development of Critical Infrastructure Plan (CIP)	$93,492	$103,746	$10,254
31	Sanlando Ground Storage Tank (GST) Remediation	$188,923	$184,578	($4,345)
32	Tierra Verde I&I Remediation	$172,192	$116,074	($56,118)
33	Tierra Verde FM and GSM Replacement	$609,491	$533,786	($75,705)
34	Tierra Verde Lift Station 4 Replacement	$854,450	$936,917	$82,467
35	Buena Vista Well Improvements	$98,145	$97,662	($483)
36	Orangewood Well 1 Improvements	$170,453	$167,775	($2,678)
37	Seminole County SCADA Installation	$96,664	$93,976	($2,688)
38	Summertree Chlorine Dioxide Pilot Study	$52,000	$91,301	$39,301
39	Summertree I&I Investigation	$27,481	$28,620	$1,139
40	Golden Hills Galvanized Pipe Replacement	$77,743	$79,553	($1,810)
41	Golden Hills Water Main Relocation	$170,810	$169,682	($1,128)
42	Little Wekiva Generator	$100,256	$97,053	($3,203)
43	Park Ridge Generator	$104,292	$88,706	($15,586)
44	Ravenna Park I&I Remediation	$678,829	$821,360	$142,531
45	Weathersfield Northwestern Bridge Crossing	$22,000	$140,246	$118,246
	Total	**$29,430,359**	**$27,993,811**	**($1,440,163)**

Source: EXH 48; EXH 148, BSP 111
Note: We approve amortizing $41,000 for PCF-6 and $76,391 for PCF-32 in O&M expense.

1. PCF-1 UIF – Cypress Lakes I&I Investigation

UIF requested cost recovery to jet clean and video inspect approximately 18,000 linear feet of 8 inch PVC gravity sewer mains (GSM) and manholes. This was done in zones 1 and 2 of the Cypress Lakes collection system to locate and evaluate pipe deficiencies and to remove accumulated solids deposited in manhole and pipe inverts. A report will be provided to identify any deficiencies in the piping that will require repairs. The Utility stated the investigation was necessary due to increased inflow during extended rain, which indicates the likelihood of excessive I&I.

In UIF witness Flynn's direct testimony, the requested amount for this project was $50,000. In witness Flynn's rebuttal testimony, he provided an updated project cost of $42,500. No interest during construction (IDC) or capitalized labor expense[22] (cap time) was incurred for this project. OPC witness Radigan did not address the Cypress Lakes I&I Investigation project or the costs in his testimony.

UIF provided one bid for the project totaling $42,500. In response to discovery, UIF specified that a $75,000 threshold for project costs was its parent company's policy for determining whether multiple bids should be obtained for a project. UIF stated that this policy "has been in place for over ten years and has been an accepted practice in many previous rate case dockets initiated by UIF and its affiliated companies in Florida." Since the I&I investigation cost was less than this threshold, only one bid was solicited.

In response to discovery, UIF provided an invoice for the project in the amount of $42,500. Witness Flynn testified that the Cypress Lakes I&I Investigation project was completed in August 2020. Based on the documentation provided by the Utility, as well as the testimony of witness Flynn, we find that $42,500 is reasonable for the project. UIF recorded a cost of $45,000 for PCF-1 in its MFRs as working capital; therefore, we find that an adjustment shall be made to decrease the cost of PCF-1 by $2,500. However, as there were no plant addition costs associated with the project, we find that the project costs shall be recorded in working capital. The appropriate working capital allowance will be discussed further below in Section XVI.

2. PCF-2 UIF – Eagle Ridge Lift Station 3 and 8 Rehabilitation

UIF requested cost recovery to replace pipes, valves, and fittings at lift stations 3 and 8 due to corrosion after many years of service. In addition, as there is no drain valve, rainwater fills the vault making the valves less accessible. By relocating the check and isolation valves from the vault to an above ground piping arrangement, the valves will be readily accessible without having to attempt to core drill the valve vault and wet well in a very limited space. This project also included coating the wet well walls to protect the concrete from further degradation.

In UIF witness Flynn's direct testimony, the requested amount for this project was $81,890. In witness Flynn's rebuttal testimony, he provided an updated project cost of $80,139, which included IDC and cap time. OPC witness Radigan did not address the Eagle Ridge Lift

[22] The treatment of capitalized labor expense is discussed in Section XXVI.

Station 3 and 8 Rehabilitation project or the costs in his testimony. UIF provided three bids for the rehabilitation project and the lowest bid of $77,890 was selected.

In response to discovery, UIF provided invoices for the rehabilitation project totaling $77,890, and an invoice for disposal fees totaling $4,301. Witness Flynn testified that the Eagle Ridge Lift Station 3 and 8 Rehabilitation project was completed in September 2020, and had a cap time cost of $2,220. Based on the documentation provided by the Utility, as well as witness testimony, we find that $84,411 ($77,890 + $4,301 + $2,220) is reasonable for the project. UIF recorded a cost of $84,411 for PCF-2 in its MFRs; therefore, we find that no adjustment is necessary for PCF-2.

3. PCF-3 UIF – Eagle Ridge SCADA RTU Installation

Similar to projects PCF-7, PCF-20, and PCF-37, UIF requested cost recovery to install RTUs and associated hardware and software at 13 lift stations and at the Eagle Ridge and Cross Creek WWTPs. UIF stated the project will interface with its existing SCADA network and information technology infrastructure to offer real time operational data during both normal and inclement weather conditions and thereby reduce the risk of sanitary sewer overflows and property damage caused by wastewater backups. The project was initiated at the urging of DEP after Hurricane Irma in 2017.

In UIF witness Flynn's direct testimony, the requested amount for this project was $229,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $229,159, which included IDC and cap time. OPC witness Radigan did not address the Eagle Ridge SCADA RTU Installation project or the costs in his testimony.

UIF provided one bid from the primary contractor, Sanders Co., totaling $162,619 and one bid from each of the two supporting contractors, totaling $48,920 and $18,055, respectively. UIF only obtained one primary contractor bid for this project, as the contractor being utilized for PCF-7, PCF-20, and PCF-37 was also selected for PCF-3. UIF stated the primary contractor was sole sourced due to their exceptional expertise and professionalism from their earlier work, and their excellent technical support, which is a critical criterion in selecting a contractor to install SCADA systems. Only one bid was solicited for the work performed by each of the supporting contractors, as both were below UIF's $75,000 threshold for obtaining multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases.

In response to discovery, UIF provided invoices for the SCADA installation totaling $210,534. Witness Flynn testified that the Eagle Ridge SCADA Installation project was completed in August 2020, and had a cap time cost of $1,801. Based on the documentation provided by the Utility, as well as the testimony of witness Flynn, we find that $212,335 ($210,534 + $1,801) is reasonable for the project. UIF recorded a cost of $247,761 for PCF-3 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-3 by $35,426.

4. PCF-4 UIF – Eagle Ridge Engineering Site Improvements

UIF requested cost recovery for engineering services in support of the replacement of the perimeter fence and gates, removal of invasive species, and installation of native landscaping materials in conformance with Lee County's land use ordinances. Services include providing construction engineering and inspection, and coordination with Lee County staff. This project is for engineering services only, in relation to the construction work performed under project PCF-5.

In UIF witness Flynn's direct testimony, the requested amount for this project was $130,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $163,483, which included IDC and cap time. Witness Flynn stated the project budget was increased due to the additional services required to obtain a variance to the county's development code, site plan approval, permitting, construction oversight, and coordination services. OPC witness Radigan did not address the Eagle Ridge Engineering Site Improvements project or the costs in his testimony.

UIF provided one bid for the site improvements totaling $81,000 and one subcontracted bid for a boundary survey totaling $9,555. Witness Flynn stated Kimley-Horn & Associates (Kimley-Horn) was selected to provide engineering services in support of the Eagle Ridge Site Improvements required by Lee County, and Echo UES, Inc., provided site survey services as a subcontractor of Kimley-Horn, since Kimley-Horn does not have its own in-house survey crew. Kimley-Horn was the preferred engineering consultant selected to work on the Eagle Ridge Site Improvements Project due to its familiarity with the facilities as well as the breadth and depth of the resources that were required for this project.

In response to discovery, UIF provided invoices from Kimley-Horn totaling $46,044. However, invoices were not provided for the permitting assistance or boundary survey. Witness Flynn provided a cap time cost of $2,669 for PCF-4 and testified that the project was completed in August 2020. Based on the documentation provided by the Utility, as well as the testimony of witness Flynn, we find that $48,713 ($46,044 + $2,669) is reasonable for the project. UIF recorded a cost of $130,264 for PCF-4 in its MFRs; therefore, we hereby find that an adjustment shall be made to decrease the cost of PCF-4 by $81,551 and the amount shall be capitalized under project PCF-5.

5. PCF-5 UIF – Eagle Ridge Site Improvements

UIF requested cost recovery to obtain a setback variance for the previously constructed equalization tank. This includes removal of all invasive trees and shrubs from the plant site, installation of a 9-foot high decorative fence on three sides and an 8-foot high chain link fence on the west side of the perimeter to replace the 1984 fence material, replace two access gates on the north and west sides, add landscaping buffer on all four sides, and add a drip irrigation system. UIF stated that the project is designed to meet Lee County's land development ordinance specifications.

In UIF witness Flynn's direct testimony, the requested amount for this project was $657,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $703,798, which included IDC and cap time. OPC witness Radigan did not address the Eagle Ridge Site Improvements project or the costs in his testimony.

UIF provided two bids for the fencing removal and installation, three bids for tree clearing, and one bid for the decorative fence. The Utility selected the lowest bids for the fencing removal and installation, totaling $72,808, and tree clearing, totaling $194,000. Witness Flynn stated that four bids were solicited for the decorative fence, but only one bid was received from the sole vendor who offered a product that met the fencing criteria, for a total of $233,752.

In response to discovery, UIF provided invoices for the Eagle Ridge Site Improvements project totaling $561,095. Witness Flynn provided a cap time cost of $11,086 for PCF-5 and testified that the project was completed in July 2020. Based on the documentation provided by the Utility, as well as the testimony of witness Flynn, we find that $572,181 ($561,095 + $11,086) is reasonable for the project. UIF recorded a cost of $707,506 for PCF-5 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-5 by $135,325.

6. PCF-6 UIF – Labrador WWTP Master Plan

UIF requested cost recovery to develop a preliminary design report for the removal and replacement of the three treatment trains, digesters, filter clear wells, chlorine contact tanks, and process blowers that are nearing the end of their service life. This project is for engineering services only.

In UIF witness Flynn's direct testimony, the requested amount for this project was $41,000. In witness Flynn's rebuttal testimony, he provided an updated project cost of $44,736. However, the Utility did not provide supporting documentation for this project increase. No IDC or cap time was included for this project. OPC witness Radigan testified that there were no plant addition costs associated with the Labrador WWTP Master Plan project. Instead this project was CWIP and should not be considered plant-in-service. Furthermore, witness Radigan stated that once the project was complete, the expenditures to date will be added to the construction costs and the project could then be eligible for inclusion in the calculation of revenue requirement at some future time. Witness Flynn testified that the project will identify the capital improvements necessary to comply with the WWTP operating permit.

UIF only obtained one bid for this project at a cost of $41,000, as it was below UIF's $75,000 threshold for obtaining multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases. As an exhibit to his rebuttal testimony, witness Flynn provided a signed agreement for the project totaling $41,000.

Witness Flynn testified that the report is scheduled to be completed by the end of January 2021. Based on the documentation provided by the Utility, as well as witness testimony, we find that $41,000 is reasonable for the project. However, regarding the concerns raised by witness Radigan, we agree that there were no plant addition costs associated with PCF-6. As the costs for this project are to maintain compliance with the WWTP operating permit, which expires March

22, 2025, we find that $41,000 be amortized over four years and included in operation and maintenance (O&M) expense. UIF recorded a cost of $40,636 for PCF-6 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-6 by $40,636.

7. PCF-7 UIF – Longwood SCADA RTU Installation

Similar to projects PCF-3, PCF-20, and PCF-37, UIF requested cost recovery to install remote telemetry units at 13 lift stations in the Longwood collection system. The 13 lift stations were being monitored with the use of alarm systems; however, UIF began implementing SCADA in other systems in 2016. With the use of SCADA, lift stations can be monitored remotely by operators, which can reduce the lag time between an alarm event and notification. It also provides technicians with the ability to pull reports for lift stations to prioritize work activities and the SCADA system can be used for tracking purposes, such as logging pump replacements or electrical issues.

In UIF witness Flynn's direct testimony, the requested amount for this project was $122,024. In witness Flynn's rebuttal testimony, he provided an updated project cost of $125,647, which included IDC and cap time. OPC witness Radigan did not address the Longwood SCADA RTU Installation project or the costs in his testimony. UIF only obtained one bid for this project, as the contractor being utilized for PCF-3, PCF-20, and PCF-37 was also selected for PCF-7. UIF stated that the selected contractor "offered consistent pricing for similar work as well as the ability to maintain safety and security protocols that are critically necessary when installing or modifying any cloud-based technology."

In response to discovery, UIF provided invoices for the SCADA installation totaling $122,024. Witness Flynn testified that the Longwood SCADA RTU Installation project was completed in January 2020, and had a cap time cost of $136. Based on the documentation provided by the Utility, as well as witness testimony, we find that $122,160 ($122,024 + $136) is reasonable for the project. UIF recorded a cost of $125,647 for PCF-7 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-7 by $3,487.

8. PCF-8 UIF – LUSI Engineering of Crescent Bay Raw WM

UIF requested cost recovery for the design, permitting, and construction of a raw WM connecting the existing Crescent Bay well with an underutilized WTP to meet peak water demand driven by growth. This project is for engineering services only, in relation to the construction work to be performed under project PCF-9.

In UIF witness Flynn's direct testimony, the requested amount for this project was $70,000. In witness Flynn's rebuttal testimony, he provided an updated project cost of $75,242, which included IDC and cap time. OPC witness Radigan did not address the LUSI Engineering of Crescent Bay Raw WM project or the costs in his testimony.

UIF provided one bid for the project totaling $70,000. UIF only solicited the service of Kimley-Horn for this project because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." As an exhibit to his rebuttal testimony, witness Flynn provided a signed authorization letter for the engineering service of Kimley-Horn totaling $70,000.

Witness Flynn projected a cap time cost of $1,500 for PCF-8 and testified that the project will be completed in May 2021. Based on the documentation provided by the Utility, as well as witness testimony, we find that $71,500 ($70,000 + $1,500) is reasonable for the project. UIF recorded a cost of $70,000 for PCF-8 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-8 by $1,500 and the amount shall be capitalized under project PCF-9.

9. PCF-9 UIF – LUSI Crescent Bay Raw WM

UIF requested cost recovery for construction of a raw WM connecting the existing Crescent Bay well with an underutilized WTP to meet peak water demand driven by growth. The project scope includes drilling 1,000 linear feet under a body of water and an additional 4,000 linear feet to connect to an existing raw WM. As stated above, the engineering services for this project are being performed under project PCF-8.

In UIF witness Flynn's direct testimony, the requested amount for this project was $486,514. In witness Flynn's rebuttal testimony, he provided an updated project cost of $503,031, which included IDC and cap time. OPC witness Radigan did not address the LUSI Crescent Bay Raw WM project or the costs in his testimony.

UIF provided three bids for the project and the lowest bid of $481,514 was selected. As an exhibit to his rebuttal testimony, witness Flynn provided a signed agreement for the project totaling $481,514.

Witness Flynn projected a cap time cost of $7,186 for PCF-9 and testified that the project will be completed in May 2021. Based on the documentation provided by the Utility, as well as witness testimony, we find that $488,700 ($481,514 + $7,186) is reasonable for the project. UIF recorded a cost of $506,869 for PCF-9 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-9 by $18,169.

10. PCF-10 UIF – LUSI Lake Groves Sulfuric Acid Storage Tank Replacement

UIF requested cost recovery to replace the existing sulfuric tank and associated piping with corrosion and UV resistant materials. These materials can withstand a concentration of 93 percent sulfuric acid that is used in the treatment of groundwater produced by Well 3. In UIF witness Flynn's direct testimony, the requested amount for this project was $54,303. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $55,504, which included IDC and cap time. OPC witness Radigan did not address the LUSI Lake Groves Sulfuric Acid Storage Tank Replacement project or the costs in his testimony.

UIF provided only one bid for the project totaling $54,302, as it was below UIF's $75,000 threshold for obtaining multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases. In response to discovery, UIF provided an invoice for the project totaling $54,302.

Witness Flynn testified that the project was completed in April 2020 and had a cap time cost of $787. Based on the documentation provided by the Utility, as well as the testimony of witness Flynn, we find that $55,089 ($54,302 + $787) is reasonable for the project. UIF recorded a cost of $56,241 for PCF-10 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-10 by $1,152.

11. PCF-11 UIF – LUSI Hydrochloric Acid Storage Tank Relocation

UIF requested cost recovery to relocate a 1,000 gallon acid storage tank and spill containment vessel to the exterior of the Lake Groves chemical storage building to prevent rapid corrosion of metal components and equipment inside the building. In UIF witness Flynn's direct testimony, the requested amount for this project was $29,992. No adjustment was made in witness Flynn's rebuttal testimony and there were no IDC or cap time costs associated with this project. OPC witness Radigan did not address the LUSI Hydrochloric Acid Storage Tank Relocation project or the costs in his testimony.

UIF obtained a bid from Florida Environmental Construction in the amount of $44,834 to complete the entire project. Witness Flynn stated this amount was more than expected, so UIF bid out the electrical and non-electrical components separately. In response to discovery, UIF provided an invoice for the electrical work totaling $10,753, and the non-electrical work totaling $19,239. Witness Flynn testified that the project was completed in March 2020, and the project cost totaled $29,992.

Based on the documentation provided by the Utility, as well as witness testimony, we find that $29,992 is reasonable for the project. UIF recorded a cost of $33,165 for PCF-11 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-11 by $3,173.

12. PCF-12 UIF – LUSI Lake Groves RAS Pump Replacement

UIF requested cost recovery to replace both existing WILO brand RAS pumps with two new Xylem brand pumps. The project scope also includes new piping, bypass piping, pump base adapters, and custom stainless steel bracket welding. Witness Flynn testified that the existing pumps do not provide reliable performance, are expensive to repair, and parts are not readily available for the WILO model.

In UIF witness Flynn's direct testimony, the requested amount for this project was $43,000. In witness Flynn's rebuttal testimony, he provided an updated project cost of $42,558. No IDC or cap time was included for this project. OPC witness Radigan did not address the LUSI Lake Groves RAS Pump Replacement project or the costs in his testimony.

UIF only provided one bid for the install work and one bid for the material costs of the pumps totaling $42,558, as the cost was below UIF's $75,000 threshold for obtaining multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases. As an exhibit to his rebuttal testimony, witness Flynn provided signed agreements for the project totaling $42,558.

Witness Flynn testified that the project will be completed in May 2021. Based on the documentation provided by the Utility, as well as witness testimony, we find that $42,558 is reasonable for the project. UIF recorded a cost of $45,660 for PCF-12 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-12 by $3,102.

13. PCF-13 UIF – LUSI Barrington WWTP Improvements

UIF requested cost recovery for improvements to the LUSI Barrington WWTP. This includes installation of a plant lift station, emergency generator, automatic transfer switch, equalization pumps, 200 square foot field office, and a process control lab following the acquisition of the facilities in 2019. The project components address items not included in the original plant design that are needed to meet operating permit requirements, and to provide backup power to prevent overflow during outages. In addition, the project includes engineering services for design, permitting, and construction inspection services.

In UIF witness Flynn's direct testimony, the requested amount for this project was $380,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $392,946, which includes projected IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the LUSI Barrington WWTP Improvements project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices had not been provided by UIF. Upon cross examination, however, witness Radigan agreed that sufficient information was provided to support project PCF-13.

UIF provided two bids for the construction work and the lower bid of $333,000 was selected. UIF provided one bid from Kimley-Horn for the engineering services, totaling $47,000. UIF stated that multiple bids were not obtained for the engineering services because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." As an exhibit to his rebuttal testimony, witness Flynn provided signed agreements from both contractors totaling $374,735.

Witness Flynn projected a cap time cost of $3,824 for PCF-13 and testified that the project will be completed in May 2021. Regarding the concerns raised by witness Radigan, additional support for PCF-13, including a contract and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by the Utility, as well as witness testimony, we find that $378,559 ($374,735 + $3,824) is reasonable for the project. UIF recorded a cost of $396,710 for PCF-13 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-13 by $18,151.

14. PCF-14 UIF – Mid-County Master Lift Station

UIF requested cost recovery to replace the master lift station at the WWTP. A DEP consent order required a preliminary design report of the WWTP which ultimately found that the master lift station will need to be replaced. This includes the wet well, pumps, piping, controls, and GSM, as well as demolition of the original lift station. In addition, the project includes engineering services for surveying, design, permitting, bidding, and construction monitoring services.

In UIF witness Flynn's direct testimony, the requested amount for this project was $1,766,115. As an exhibit to his rebuttal testimony, witness Flynn provided an updated project cost of $2,216,140, which includes projected IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the Mid-County Master Lift Station project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices had not been provided by UIF.

Bids were obtained from three contractors for the completion of the construction project, and the contractor with the lowest bid of $1,928,578 was selected. UIF provided one bid from Kimley-Horn for the engineering services, totaling $101,000. UIF stated that multiple bids were not obtained for the engineering services because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." As an exhibit to his rebuttal testimony, witness Flynn provided signed agreements from both the construction and engineering contractors totaling $2,102,058.

Witness Flynn projected a cap time cost of $38,866 for PCF-14 and testified that the project will be completed by June 2021. Regarding the concerns raised by witness Radigan, additional support for PCF-14, including a contract and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by the Utility, as well as witness testimony, we find that $2,140,924 ($2,102,058 + $38,866) is reasonable for the project. UIF recorded a cost of $1,878,199 for PCF-14 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-14 by $262,725.

15. PCF-15 UIF – Mid-County Generators at Lift Stations 4 and 7

UIF requested cost recovery for backup generators at Mid-County lift stations 4 and 7. This project is in response to DEP's warning letter, dated August 5, 2019, which was issued ahead of Mid-County's November 25, 2019 Consent Order and after lift stations 4 and 7 both had sanitary sewer overflows due to power loss. The project scope includes placement of generators, automatic transfer switches, subbase fuel storage tanks, and electrical components. In addition, the project includes engineering services for design, permitting, and construction coordination, and inspection services.

In UIF witness Flynn's direct testimony, the requested amount for this project was $145,000. In witness Flynn's rebuttal testimony, he provided an updated project cost of $136,163, which included IDC and cap time. OPC witness Radigan did not address the Mid-County Generators project or the costs in his testimony. As discussed above, OPC argues that since PCF-15 is an in-kind penalty project the capital costs should be disallowed and not be recovered from customers since the costs of the project exceed the amount of DEP's fine. However, in-kind projects benefit the customers more so than the utility paying a fine and not improving its service and not resolving issues within the Consent Order. Therefore, the costs of the in-kind project should be recovered through rates. Further, OPC relies Order No. 2018-0014-FOF-EI as a Commission precedent on this point, in which we disallowed the recovery of funds deposited into Escrow to be utilized as directed by DEP.[23] However, we also found that this fund component was not associated with operation of a particular facility for the benefit of customers and that the Utility in that case also failed to meet its burden of proof, which is not the case for the in-kind projects presented in the instant docket. In the instant docket, the in-kind projects directly benefit the customers and the Utility has provided documentation for us to evaluate the prudence and cost of the project. PCF-17, PCF-22, and PCF-23 are also considered in-kind projects and are discussed in greater detail within their respective subsections.

UIF provided three bids for the construction costs of the project and the lowest bid of $105,530 was selected. UIF provided one bid from Kimley-Horn for the engineering services, totaling $11,000. UIF stated that multiple bids were not obtained for the engineering services because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." As an exhibit to his rebuttal testimony, witness Flynn provided signed agreements from both the construction and engineering contractors totaling $116,530.

Witness Flynn projected a cap time cost of $4,422 for PCF-15 and testified that the project will be completed in May 2021. Regarding the in-kind project concern addressed in OPC's brief, a utility can recover environmental compliance costs pursuant to Section 367.081, F.S., which is consistent with our practice. Based on the documentation provided by the Utility, as well as witness testimony, we find that $120,952 ($116,530 + $4,422) is reasonable for the project. UIF recorded a cost of $153,163 for PCF-15 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-15 by $32,211.

16. PCF-16 UIF – Mid-County Curlew Creek I&I Remediation

UIF requested cost recovery to video inspect 6,500 linear feet of GSMs and manholes, replace a collapsed GSM, install sheeting around two manholes to prevent structural failure, line 6,500 linear feet of clay pipe with cured-in-place pipe (CIPP), rehabilitate 36 manholes, install fiberglass liners in three manholes, and install liners in 30 service laterals. In addition, the project includes engineering services for design, permitting, and construction coordination and inspection services. UIF stated this project was necessitated due to regulatory violations related to excessive I&I.

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[23] Order No. PSC-2018-0014-FOF-EI, issued January 5, 2018, Docket No. 20180007-EI, *In re: Environmental cost recovery clause*.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$634,302. In his rebuttal testimony, he provided an updated project cost of \$719,049, which includes projected IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the Mid-County Curlew Creek I&I Remediation project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices had not been provided by UIF. Upon cross examination, witness Radigan agreed that information was provided to partially support project PCF-16.

UIF obtained three bids for the construction services for GSM cleaning and inspection, CIPP lining, service lateral lining, and manhole rehabilitation. The contractor with the lowest bid of \$414,243 was selected. UIF provided one bid from Kimley-Horn for the engineering services, totaling \$28,520. UIF stated that multiple bids were not obtained for the engineering services because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." As an exhibit to his rebuttal testimony, witness Flynn provided a signed agreement from the primary contractor totaling \$414,243. In response to discovery, UIF provided invoices from Kimley-Horn totaling \$29,370. In addition, UIF provided supplemental invoices from six supporting contractors for the remainder of the project scope, totaling \$169,357.

Witness Flynn projected a cap time cost of \$11,250 for PCF-16 and testified that the project will be completed by the end of January 2021. Regarding the concerns raised by witness Radigan, additional support for PCF-16, including a contract and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$624,220 (\$414,243 + \$29,370 + \$169,357 + \$11,250) is reasonable for the project. UIF recorded a cost of \$664,201 for PCF-17 in its MFRs; therefore, we find an adjustment shall be made to decrease the cost of PCF-31 by \$39,981.

17. PCF-17 UIF – Mid-County Headworks

UIF requested cost recovery to replace a static screen, dewatering screw, and a metal platform that are badly corroded and at end of their service life. In addition, the stainless steel static screen does not adequately prevent debris from entering the treatment trains to the detriment of the treatment process. The project includes installing a 3 millimeter center flow screw, screening compactor, grit removal equipment, and control panel sized to meet peak influent flow characteristics.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$3,046,000. As an exhibit to his rebuttal testimony, witness Flynn provided an updated project cost of \$2,582,684, which includes projected IDC and cap time.

OPC witness Radigan testified that additional documentation was needed for the Mid-County Headworks project, and he could not recommend the costs be included in rate base at this time. Additionally, witness Radigan testified that project PCF-17, which had an expected completion date of March 2021, cannot be started until after the completion of PCF-14. However, witness Radigan testified that project PCF-14 was delayed and will not be complete until March 2021. For this reason, witness Radigan testified that there is a need for project scheduling information to determine if the project can meet the 24-month post test year limitation for inclusion in rate base. In rebuttal, witness Flynn testified that the start of project PCF-17 is not dependent on PCF-14, and that the two projects' workflows are being coordinated to accelerate the completion for both projects. In its post-hearing brief, OPC identified PCF-17 as an in-kind penalty project and argued that the fine embedded in capital costs should be disallowed. However, we find that it is appropriate to recover the cost of this project through rates as discussed above for PCF-15.

Bids were obtained from two contractors for the construction portion of the project, and the contractor with the lower bid of $2,237,777 was selected. UIF sole sourced Kimley-Horn for the engineering services, totaling $187,005. UIF stated that multiple bids were not obtained because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." As an exhibit to his rebuttal testimony, witness Flynn provided signed agreements from both the construction and engineering contractors totaling $2,424,782.

Witness Flynn projected a cap time cost of $53,875 for PCF-17 and testified that the project will be completed by November 2021. Regarding the concerns raised by witness Radigan, additional support for PCF-17, including a contract and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. Regarding the in-kind project concern addressed in OPC's brief, a utility can recover environmental compliance costs pursuant to Section 367.081(2)(a)2., F.S., which is consistent with our practice. Based on the documentation provided by the Utility, as well as witness testimony, we find that $2,478,657 ($2,424,782 + $53,875) is reasonable for the project. UIF recorded a cost of $3,186,839 for PCF-17 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-17 by $708,182.

18. PCF-18 UIF – Mid-County Lift Station 10 FM Relocation

UIF requested cost recovery to relocate a FM that conflicts with a planned Department of Transportation (DOT) road improvement project. The project scope is to design the relocation of segments of the pipe, coordinate with DOT to avoid conflicts with their plans, then obtain a DEP construction permit, solicit bids, and provide construction inspection services.

In UIF witness Flynn's direct testimony, the requested amount for this project was $55,750. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $57,451, which includes projected IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the Mid-County Lift Station 10 Force Main Relocation project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices had not been provided by UIF.

One bid was obtained from Kimley-Horn totaling $55,750. The work outlined in the bid included design, permitting, surveying, construction bidding, and construction coordination services. UIF stated that multiple bids were not obtained because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." As an exhibit to his rebuttal testimony, witness Flynn provided a signed proposal with Kimley-Horn for a project cost of $55,750. In addition, witness Flynn testified that "UIF must adjust its facilities before the DOT's contractor mobilizes late next year to avoid any delays on our part to the DOT's schedule."

Witness Flynn projected a cap time cost of $420 for PCF-18 and testified that the project will be completed by December 2021. Regarding the concerns raised by witness Radigan, additional support for PCF-18, including a contract and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by the Utility, as well as witness testimony, we find that $56,170 ($55,750 + $420) is reasonable for the project. UIF recorded a cost of $58,139 for PCF-18 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-18 by $1,969.

19. PCF-19 UIF – Pennbrooke Diffuser Replacement

UIF requested cost recovery to replace all diffusors and drop pipes in the Pennbrooke WWTP aeration basins. In UIF witness Flynn's direct testimony, the requested amount for this project was $33,420. In witness Flynn's rebuttal testimony, he provided an updated project cost of $33,419. OPC witness Radigan did not address the Pennbrooke Diffuser Replacement project or the costs in his testimony.

UIF only provided one bid for the repairs to the aeration basin totaling $29,280 and one bid for the new diffusors totaling $4,139, as the cost was below UIF's $75,000 threshold for obtaining multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases. In response to discovery, UIF provided an invoice for the repairs to the aeration basin totaling $29,280, which did not include the cost of the diffusors.

Witness Flynn testified that the project was completed in April 2020, and stated there were no IDC or cap time costs. Based on the documentation provided by the Utility, as well as the testimony of witness Flynn, we find that $29,280 is reasonable for the project. UIF recorded a cost of $34,000 for PCF-19 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-19 by $4,720.

20. PCF-20 UIF – Sandalhaven SCADA Installation

Similar to projects PCF-3, PCF-7, and PCF-37, UIF requested cost recovery to install RTUs at 13 lift stations in the Sandalhaven collection systems. The 13 lift stations were being monitored with the use of alarm systems; however, UIF began implementing SCADA in other systems in 2016. With the use of SCADA, lift stations can be monitored remotely by operators, which can reduce the lag time between an alarm event and notification. It also provides technicians with the ability to pull reports for lift stations to prioritize work activities, and the SCADA system can be used for tracking purposes, such as logging pump replacements or electrical issues.

In UIF witness Flynn's direct testimony, the requested amount for this project was $128,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $135,406, which includes projected IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the Sandalhaven SCADA Installation project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices had not been provided by UIF.

UIF only obtained one bid for this project, as the contractor being utilized for PCF-3, PCF-7, and PCF-37 was also selected for PCF-20. UIF stated that the selected contractor "offered consistent pricing for similar work as well as the ability to maintain safety and security protocols that are critically necessary when installing or modifying any cloud-based technology." As an exhibit to his rebuttal testimony, witness Flynn provided a signed quote for the work to be performed by the contractor totaling $127,349.

Witness Flynn projected a cost of $1,950 for cap time related to PCF-20, and testified that the planned completion date is March 2021. In addition, witness Flynn testified that once the equipment is in hand, in January 2021, the contractor will begin installing the RTUs at a rate of two per week. Regarding the concerns raised by witness Radigan, additional support for PCF-20, including an agreement and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by the Utility, as well as witness testimony, we find that $129,299 ($127,349 + $1,950) is reasonable for the project. UIF recorded a cost of $135,490 for PCF-20 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-20 by $6,191.

21. PCF-21 UIF – Sandalhaven I&I Investigation

UIF requested cost recovery to clean, video inspect and smoke test 8,000 linear feet of 8 inch GSM located in the Sandalhaven collection system, in an effort to identify sources of I&I. A report of any deficiencies requiring repairs would be generated following the inspection. However, a separate capital project would be developed to address the deficiencies identified in the I&I investigation.

In UIF witness Flynn's direct testimony, the requested amount for this project was $57,000. In witness Flynn's rebuttal testimony, he provided an updated project cost of $56,500. OPC witness Radigan testified that there were no plant additions associated with the project; therefore, this project was CWIP and not plant-in-service. Furthermore, OPC witness Radigan stated that once the project was complete, "the expenditures to date will be added to the construction costs and the project could then be eligible for inclusion in the calculation of revenue requirement at some future time."

UIF provided two bids for the project and the lower bid of $56,500 was selected. In witness Flynn's rebuttal testimony, a copy of the signed Contract with the contractor was provided as an exhibit. Witness Flynn testified that the Sandalhaven I&I Investigation project will commence in January 2021, and projected a cap time cost of $1,755.

Based on the documentation provided by the Utility, as well as witness testimony, we find that $58,255 ($56,500 + $1,755) is reasonable for the project. UIF recorded a cost of $61,847 for PCF-21 in its MFRs as working capital; therefore, we find that an adjustment shall be made to decrease the cost of PCF-21 by $3,592. Considering that witness Flynn indicated in his direct testimony that any corrections related to deficiencies of the I&I investigation would be captured under a separate capital project, and UIF did not supply sufficient documentation related to the corrections, we find that the costs be recorded in working capital. The appropriate working capital allowance is discussed further in Section XVI below.

22. PCF-22 UIF – Wekiva WWTP Improvements

UIF requested cost recovery for plant improvements at its Wekiva WWTP. The improvements included removal and replacement of the process blowers, air header, traveling bridge filters, and storage building. Additionally, the relocation of a belt press, upgrades to the sodium hypochlorite storage capacity, replacement of the sodium aluminate storage tank, and renewal of the plant operating permit, as well as the demolition and removal of all decommissioned tanks and equipment were also requested to be recovered. Improvements were also planned for the plant roadway and facility entrance gate. Furthermore, a Noise & Odor study was conducted at the Wekiva WWTP to provide a baseline of existing conditions at the plant boundary. The Noise & Odor study was used to determine if excessive noise or odors were being produced and carried off-site, as well as identify any measures for noise or odor reduction that were needed to maintain compliance with DEP regulations.

This project was a result of a consent order issued by DEP. Under the terms of the consent order, the Utility was required to perform an engineering study of the Wekiva WWTP to identify any deficiencies which led to the facility failing to meet its operating permit limits. The study would also examine whether the plant met Class I reliability standards. UIF submitted the report with the recommended improvements to DEP for review, and DEP determined that the outlined improvements met the objectives of the consent order. A permit application to construct the proposed improvements was submitted to DEP and a permit for construction was issued on January 31, 2019. Many of the improvements involved the replacement of various treatment components that were past their expected service life, were inadequate to treat wet weather flows, and/or lack adequate redundancy.

In UIF witness Flynn's direct testimony, the requested amount for the project was $6,112,000. In his rebuttal testimony, UIF witness Flynn updated the project cost for PCF-22 to $6,846,372, which included IDC and projected cap time. OPC witness Radigan did not address the Wekiva WWTP Improvements project or the costs in his testimony. However, in its post-hearing brief, OPC identified PCF-22 as an in-kind penalty project and argued that the fine embedded in capital costs should be disallowed. UIF obtained bids from two contractors for the WWTP improvements, and the contractor with the lowest bid of $6,355,772 was selected. In witness Flynn's rebuttal testimony, a copy of the signed agreement with the contractor was provided as an exhibit. Witness Flynn testified that the project was "substantially complete with all newly installed equipment placed into service in October and November. The project is scheduled to be completed by the end of December 2020."

In response to discovery, the Utility provided invoices to support the construction costs totaling $6,176,447. This updated project cost included three change orders for additional work that was required, including relocating a water main that was in conflict with the project, upgrading a sludge press, installing a new pump, and electrical upgrades. UIF provided invoices for engineering services related to the WWTP improvements and the Noise & Odor study totaling $280,700. Witness Flynn also projected a cost of $91,161 for cap time related to PCF-22. In its post-hearing brief, OPC identified PCF-22 as an in-kind penalty project and argued that the fine embedded in capital costs should be disallowed. However, we find that it is appropriate to recover the cost of this project through rates as discussed above for PCF-15. Based on the documentation provided by the Utility, as well as witness testimony, we find that a total cost of $6,548,308 ($6,176,447 + $280,700 + $91,161) is reasonable for the project. UIF recorded a cost of $6,859,793 for PCF-22 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-22 by $311,485.

23. PCF-23 UIF – Wekiva WWTP Headworks

UIF requested cost recovery for the design, permitting, bidding, construction, inspection, and engineering for the headworks improvements at the Wekiva WWTP. The improvements included new screens, enhanced flow monitoring, increased peak flow capacity, overflow piping, an emergency bypass pump, and upsized piping. This project was initiated to address a DEP issued consent order that resulted from wastewater overflow in 2019. The overflow occurred after a screen had become jammed and led to raw influent overflowing onto the ground and into a nearby area. It was determined that the incident was due to the facility receiving an influent flow that exceeded the headworks' design capacity. The headworks improvements would allow the WWTP to meet the historical and current flows, provide for additional redundancy in the event of equipment failures, and incorporate a SCADA system for monitoring the headworks operation.

In UIF witness Flynn's direct testimony, the requested amount for this project was $2,750,000. In his rebuttal testimony, UIF witness Flynn updated the project cost to $2,908,666, which included IDC and projected cap time. OPC witness Radigan testified that additional documentation was needed for the Wekiva WWTP Headworks project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices were not provided by the Utility. Additionally, the witness toured several projects, including the Wekiva Headworks project where construction had not yet begun. OPC also identified PCF-23 as an in-kind penalty project and argued that the fine embedded in capital costs should be disallowed.

UIF obtained bids from three contractors for the headworks improvements, and the contractor with the lowest bid was selected for a total cost of $2,563,162. As an exhibit to his rebuttal testimony, witness Flynn provided a signed contract, along with a Notice to Proceed indicating that substantial completion of the project would be achieved by September 1, 2021, and final payment would be due by October 1, 2021. Witness Flynn testified that the Wekiva WWTP Headworks project was estimated to be fully completed in November 2021.

In response to discovery, the Utility provided invoices related to the construction and engineering services totaling $2,768,827. Witness Flynn also projected a cost of $16,126 for cap time related to PCF-23. Regarding the concerns raised by witness Radigan, additional support for PCF-23, including a contract and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. In its post-hearing brief, OPC identified PCF-23 as an in-kind penalty project and argued that the fine embedded in capital costs should be disallowed. However, it is appropriate to recover the cost of this project through rates as discussed above for PCF-15. Based on the documentation provided by UIF, as well as witness testimony, we find that $2,784,953 ($2,768,827 + $16,126) is reasonable for the project. The Utility recorded a cost of $3,100,024 for PCF-23 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-23 by $315,071.

24. PCF-24 Sanlando Well Panel Replacements

In its filing, UIF requested cost recovery to replace control panels, electric meter bases, and associated electrical equipment at five of Sanlando's water supply wells. The existing well panels were original panels that were installed in the 1970s and had reached the end of their service life. Furthermore, the existing panels were not compliant with the National Electric Code and the procurement of replacement parts had become difficult.

In UIF witness Flynn's direct testimony, the requested amount for PCF-24 was $74,500. In his rebuttal testimony, UIF witness Flynn updated the project cost to $78,537, which included IDC and projected cap time. OPC witness Radigan did not address the Sanlando Well Panel Replacements project or the costs in his testimony. The Utility obtained one bid for this project at a cost of $74,500 as the cost was below UIF's $75,000 threshold for obtaining multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases.

In response to discovery, the Utility provided invoices for the well panel replacements totaling $74,500. Witness Flynn testified that the Sanlando Well Panel Replacements project was estimated to be completed in December 2020, and projected a cost of $2,312 for cap time related to PCF-24. Based on the documentation provided by UIF, as well as witness testimony, we find that $76,812 ($74,500 + $2,312) is reasonable for the project. The Utility recorded a cost of $76,796 for PCF-24 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-24 by $16.

25. PCF-25 Sanlando FM and WM Replacement

UIF requested cost recovery to replace 5,000 linear feet of asbestos-cement (AC) wastewater FM and 5,000 linear feet of AC WM with PVC mains. The existing wastewater FM was constructed in 1973 and is the only means of conveying flows from two areas of the

Sanlando collection system to the Wekiva WWTP. The existing WM in the Sanlando water distribution system was similar in age to the FM and also follows a similar route. The WM had incurred several breaks over the past two years and had been identified for a high risk of failure in the Utility's Asset Management Program.

In UIF witness Flynn's direct testimony, the requested amount for this project was $3,762,250. In his rebuttal testimony, UIF witness Flynn updated the project cost to $3,860,720, which included IDC and projected cap time. OPC witness Radigan did not address the Sanlando FM and WM Replacement project or the costs in his testimony. Bids were obtained from three contractors for the replacement of the WM and FM, and the contractor with the lowest combined bid was selected at a cost of $3,575,250. Additionally, the Utility provided two bids from Kimley-Horn for a combined total of $116,150 related to the design and permitting for the main replacements, as well as bidding and construction services. As an exhibit to his testimony, witness Flynn provided an agreement for the project, along with a Notice to Proceed indicating that the project would be substantially completed by May 23, 2021, and final payment would be due by June 22, 2021.

In response to discovery, UIF provided invoices supporting a project cost of $3,691,400. Witness Flynn testified that the Sanlando FM and WM Replacement project was estimated to be completed in May 2021, and projected a cost of $27,565 for cap time related to PCF-25. Based on the documentation provided by the Utility, as well as witness testimony, we find that $3,718,965 ($3,691,400 + $27,565) is reasonable for the project. UIF recorded a cost of $3,926,417 for PCF-25 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-25 by $207,452.

26. PCF-26 Sanlando Engineering F5/C1/L2 FM Replacements

UIF requested cost recovery to replace three FMs in the Sanlando system that had reached the end of their service life. The costs requested for the project related to the engineering, permitting, bidding, and inspection services; however, construction costs for the FM replacements were not included in PCF-26. The three FM segments to be replaced were constructed in the 1970s and 1980s and had been identified by the Utility as having a high probability for failure. Witness Flynn testified that the Utility had intended to include the construction costs in this proceeding; however, it would have resulted in the Utility delaying its filing. Nonetheless, witness Flynn stated that "the engineering services covered in this project are a prerequisite to the construction of the replacement FMs and the FM failure history indicates clearly that replacing the FMs is an immediate need."

In UIF witness Flynn's direct testimony, the requested amount for this project was $194,500. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $202,966, which included IDC and cap time. OPC witness Radigan testified that there were no plant additions associated with PCF-26, pointing out that UIF indicated that construction of the new FMs would be captured under a separate project. Therefore, witness Radigan testified that this project was CWIP and should not be considered plant-in-service. Furthermore, OPC witness Radigan stated that once the project was complete, "the expenditures to date will be added to the construction costs and the project could then be eligible for inclusion in the calculation of revenue requirement at some future time."

Three bids for engineering services were obtained from Kimley-Horn, one for each FM segment with all three totaling $185,500. The work outlined in the bids included FM route analysis, design, and permitting, as well as construction related services such as bid preparation and inspections for the FM replacements. The Utility stated that multiple bids were not obtained because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." Additionally, the Utility indicated that a separate bid was obtained for each of the three FMs to allow UIF to compare the engineering costs against the actual construction bids, which will be solicited individually for each FM.

In response to discovery, UIF provided invoices for the project totaling $185,500. The Utility stated that the Sanlando Engineering F5/C1/L2 FM Replacements project was estimated to be completed in December 2020, and witness Flynn projected a cost of $407 for cap time related to PCF-26. Based on the documentation provided by UIF, as well as witness testimony, we find that $185,907 ($185,500 + $407) is reasonable for the project. UIF recorded a cost of $202,637 for PCF-26 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-26 by $16,730.

27. PCF-27 Sanlando I&I Corrections, Phase 4

UIF requested cost recovery for cleaning and video inspection of 94,000 linear feet of its Sanlando gravity wastewater main and manholes to locate and evaluate pipe deficiencies, as well as remediation of any identified deficiencies. The deficiencies would be addressed through a combination of cured-in-place pipe (CIPP) lining and excavation and replacement. A large portion of Sanlando's collection system was constructed in the 1970s and is a combination of vitrified clay pipe and PVC. For several months in 2019, the Wekiva WWTP was treating wastewater flows over its rated capacity, resulting in the need to investigate where the excess inflow and infiltration was occurring.

In UIF witness Flynn's direct testimony, the requested amount for this project was $1,996,092. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $2,328,0234, which included IDC and cap time. OPC witness Radigan did not dispute the Sanlando I&I Corrections, Phase 4 project or the costs in his testimony. Bids were obtained from three contractors for the excavation and replacement of the manholes and a gravity main, and the contractor with the lowest bid of $2,391,373 was selected. Three bids were also obtained for the video inspection and CIPP linings, and the contractor with the lowest bid of $734,681 was selected. As an exhibit to his rebuttal testimony, witness Flynn provided signed agreements with the two contractors totaling $1,921,685. The witness also included Notice to Proceed forms that indicated that the final completion date for the excavation and replacement work was January 26, 2021, and April 20, 2021, for the video inspection and CIPP lining work.

In response to discovery, the Utility provided invoices and support for the two portions of the project totaling $2,068,761. This total included change orders for additional work that was required for the project, including raising a manhole, a pipe repair, and pipe cleanouts. UIF also included an invoice for an emergency sewer repair at a cost of $62,914. The Utility stated that the repair was due to a collapsed sewer pipe in January 2020, and was "the initiation of the proforma project's investigative efforts that ultimately identified numerous additional pipe and manhole deficiencies in Sanlando's collection system that were aggregated into the scope of the Sanlando I&I Corrections Phase project." Witness Flynn testified that the Sanlando I&I Corrections project was estimated to be completed in March 2021, and projected a cost of $30,000 for cap time related to PCF-27. Based on the documentation provided by UIF, as well as witness testimony, we find that $2,161,675 ($2,068,761+ $62,914 + $30,000) is reasonable for the project. The Utility recorded a cost of $2,062,398 for PCF-27 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-27 by $99,277.

28. PCF-28 Sanlando E.E. Williamson Utility Relocations

UIF requested cost recovery to relocate a water and wastewater main within the E.E. Williamson Road right of way, which conflicted with a road improvement project being completed by Seminole County. In UIF witness Flynn's direct testimony, the requested amount for this project was $444,026. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $462,535, which included IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the Sanlando E.E. Williamson Utility Relocations project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices had not been provided by the Utility.

Bids were obtained from three contractors for relocation of the water and wastewater mains, and the contractor with the lowest bid of $423,351 was selected. As an exhibit to his rebuttal testimony, witness Flynn provided a signed agreement with the contractor for a total project cost of $423,351. A signed proposal was also provided for engineering services totaling $20,675. The engineering services were comprised of preparing plans and drawings, and post design services related to the project.

Witness Flynn projected a cost of $6,660 for cap time related to PCF-28, and he testified that the Sanlando E.E. Williamson Utility Relocations project was an open project and was estimated to be completed by December 2021. However, UIF witness Flynn stated that the start of the project was dependent on Seminole County's schedule, which "currently identifies the county's intent to let their contractor proceed in the fourth quarter of 2021." Due to the fact that construction has not yet begun for PCF-28, invoices were not available for verification; however, it appears the project will be completed within the required 24 months following the test year. Regarding the concerns raised by witness Radigan, additional support for PCF-28, including a contract and scheduling information, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by UIF, as well as witness testimony, we find that $450,686 ($423,351 + $20,675 + $6,660) is reasonable for the project. The Utility recorded a cost of $462,856 for PCF-28 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-28 by $12,170.

29. PCF-29 Sanlando Lift Station Mechanical Rehabilitation

UIF requested cost recovery to remove and replace various parts, valves, and fittings at several of its Sanlando lift stations. The project also included costs for the replacement of control panels at 12 lift stations. The lift stations being rehabilitated were constructed 40 years ago, and the Utility had identified deficiencies with the control panels as part of its Asset Management Plan.

In UIF witness Flynn's direct testimony, the requested amount for this project was $540,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $543,277, which included IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the Sanlando Lift Station Mechanical Rehabilitation project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices had not been provided by UIF. Upon cross examination, however, witness Radigan agreed that sufficient information was provided to support project PCF-29.

Bids were obtained from three contractors for rehabilitation of the lift stations, and the contractor with the lowest bid of $432,850 was selected. As an exhibit to his rebuttal testimony, witness Flynn provided a signed agreement with the contractor for a total project cost of $465,950, along with a Notice to Proceed form indicating a final completion date of March 2, 2021. The Utility stated that "the project scope was expanded to include installation of a control panel and conduits at LS H-05 at $25,925 and to replace some discharge piping and valves at LS C-02 at $3,290."

In response to discovery, UIF provided invoices for the project totaling $508,764. This total included change orders for additional parts and labor, included a new plug valve and piping on two of the lift stations. Furthermore, the Utility included two invoices totaling $13,394 for the replacement of a main disconnect to a lift station and an emergency replacement of a breaker. Witness Flynn testified that the Sanlando Lift Station Mechanical Rehabilitation project was estimated to be completed by December 2020, and projected a cost of $6,856 for cap time related to PCF-29. Regarding the concerns raised by witness Radigan, additional support for PCF-29, including an agreement and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by UIF, as well as witness testimony, we find that $529,015 ($508,764 + $13,394 + $6,856) is reasonable for the project. The Utility recorded a cost of $560,469 for PCF-29 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-29 by $31,455.

30. PCF-30 Sanlando FM Modeling and Development of CIP

UIF requested cost recovery for two separate engineering tasks related to its Sanlando FM network. The first was a five-year capital plan for infrastructure renewal, which involved prioritization of improvements over a five-year period. This portion of the project identified 98,800 linear feet of FM, located largely in the Sanlando service area, as high priority. The second portion of the project involved the modeling of Sanlando FMs. Due to the size and complexity of the Sanlando system, FM modeling was needed to identify the most efficient route for replacing FM segments and to potentially improve pumping efficiencies.

In UIF witness Flynn's direct testimony, the requested amount for this project was $83,500. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $94,161, which included IDC and cap time. OPC witness Radigan testified that there were no plant addition costs associated with the Sanlando FM Modeling and Development of CIP project. Instead, this project was CWIP and should not be considered plant-in-service. Furthermore, witness Radigan stated that once the project was complete, "the expenditures to date will be added to the construction costs and the project could then be eligible for inclusion in the calculation of revenue requirement at some future time."

Two bids were obtained from Kimley-Horn, one for the five-year capital plan at a cost of $46,500 and one for the FM modeling at a cost of $37,000. During discovery, Commission staff inquired why bids from other contractors were not obtained, and the Utility stated that the costs for each task were below the $75,000 threshold requiring multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases. Additionally, UIF stated that for engineering related services, projects may be sole sourced to engineering firms that are familiar with the Utility's systems, facilities, and processes.

In response to discovery, the Utility provided invoices and documentation for the project totaling $83,500. As an exhibit to his rebuttal testimony, witness Flynn also provided a proposal for pressure gauges totaling $14,780. The pressure gauges were needed to complete the FM modeling, which required lift station drawdowns to be performed with pressure readings of the FM. Witness Flynn testified that the Sanlando FM Modeling and Development of CIP project was completed in June 2020, and included a cost of $5,466 for cap time related to PCF-30. Regarding the concerns raised by witness Radigan, plant additions were made for this project totaling $14,780 for the pressure gauges. Based on the documentation provided by UIF as well as witness testimony, we find that $103,746 ($83,500 + $14,780 + $5,466), is reasonable for the project. The Utility recorded a cost of $93,492 for PCF-30 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-30 by $10,254.

31. PCF-31 Sanlando GST Remediation

UIF requested cost recovery for the remediation of three ground water storage tanks at its Wekiva WTP and one ground water storage tank at its Des Pinar WTP. As required by DEP, the GSTs were inspected and several deficiencies were identified, including interior coating failures and corrosion of the interior ladders. The costs requested for PCF-31 were for sandblasting, epoxy, and painting of the interior of three tanks: two at the Wekiva WTP and the one at the Des Pinar WTP. The costs also included replacement of existing steel ladders with new fiberglass ladders in two of the Wekiva WTP tanks and the one Des Pinar WTP tank.

In UIF witness Flynn's direct testimony, the requested amount for this project was $181,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $194,003, which included IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the Sanlando GST Remediation project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project, as final contracts and invoices had not been provided by the Utility. Bids were obtained from two contractors for remediation of the storage tanks, and the contractor with the lowest bid of $148,983 was selected. As an exhibit to his rebuttal testimony, witness Flynn provided signed proposals with the contractor for a total project cost of $180,319. Included in this total was an additional proposal for the repair of a GST tank wall at the Wekiva WTP totaling $34,400.

Witness Flynn projected a cost of $4,259 for cap time related to PCF-31, and testified that the contractor had begun work in April 2020. However, at the direction of UIF, the project was postponed until late autumn or winter due to the annual increase in water demand that occurred in the spring. Delaying the project would allow for the tanks to be removed from service in sequence and would not reduce the system's storage capacity or negatively impact the delivery of service. The Utility stated that it had "elected to postpone further work until January 2021 reflecting the time of year when water demand is at its lowest." In response to discovery, UIF provided an invoice totaling $77,496 for the tank work that was completed before the project was delayed. Regarding the concerns raised by witness Radigan, additional support for PCF-31, including signed proposals and scheduling information, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by the Utility, as well as witness testimony, we find that $184,578 ($180,319 + $4,259) is reasonable for the project. UIF recorded a cost of $188,923 for PCF-31 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-31 by $4,345.

32. PCF-32 UIF – Tierra Verde I&I Remediation

UIF requested cost recovery to video inspect 64,300 linear feet of GSMs and 253 manholes, and remove accumulated solids throughout the collection system due to severe tuberculation. This project also included the cleaning and lining of portions of the collection system to prevent future tuberculation.

In UIF witness Flynn's direct testimony, the requested amount for this project was $165,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $219,560, inclusive of IDC and cap time. The project scope was expanded because the initial contractor, RedZone Robotics, did not have sufficient equipment to inspect the entire system, and an additional contractor was required to clean and inspect those portions. OPC witness Radigan did not address the Tierra Verde I&I Remediation project or the costs in his testimony.

UIF provided one bid for inspection services totaling $85,300, and one bid for cleaning and lining services totaling $74,276. UIF stated multiple bids were not obtained for the inspection services because of the competitive unit price offered, and the contractor's ability to inspect the majority of the collection system at once. UIF only obtained one bid for the cleaning and lining portion of the project since it was less than UIF's $75,000 threshold for obtaining multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases. In response to discovery, UIF provided invoices for the cleaning and lining portion of the project, including invoices from the additionally required contractor, totaling $102,562, and invoices for the inspection services totaling $76,391.

Witness Flynn testified that the project will be completed in December 2020, and projected a cap time cost of $13,512. Based on the documentation provided by the Utility, as well as witness testimony, we find that the cost of cleaning and lining the system, totaling $116,074 ($102,562 + $13,512), is reasonable and shall be capitalized. UIF recorded a cost of $172,192 for PCF-32 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-32 by $56,118. The cost for inspecting the system, totaling $76,391, which did not result in capital improvements, is a non-recurring expense. As such, we find that the cost shall be deferred and amortized over five years.

33. PCF-33 UIF – Tierra Verde FM and GSM Replacement

UIF requested cost recovery to relocate the Tierra Verde FM and GSM. This involves the replacement of 1,500 linear feet of 10 inch FM between lift station 4 and a receiving manhole, lining 400 linear feet of GSM, and installing two manholes. Part of the FM had failed in 2017 and was replaced. Following this event, a contractor attempted to video inspect and analyze the condition of the FM. However, heavy sedimentation in the bottom of the pipe made inspection impossible, and it was ultimately determined the entire FM needed replacement. In addition, the location of the FM and GSM, as well as the lift station being replaced in project PCF-34, conflicted with a traffic circle being installed by the DOT. For this reason, it was necessary to relocate the FM and GSM in advance of the DOT's traffic circle project to avoid incurring penalties for delaying the DOT's project.

In UIF witness Flynn's direct testimony, the requested amount for this project was $551,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $593,368, which included IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the project, and he could not recommend the costs be included in rate base at this time. Furthermore, OPC witness Radigan stated that once the project was complete, "the expenditures to date will be added to the construction costs and the project could then be eligible for inclusion in the calculation of revenue requirement at some future time."

UIF provided bids from McKenzie Contracting (McKenzie) for the construction work, totaling $501,294, and one bid for the engineering services of Kimley-Horn, totaling $24,042. Witness Flynn stated UIF solicited the service of seven qualified contractors to complete the construction work. However, only one bid was submitted and was awarded to McKenzie. UIF also stated that additional bids were not solicited due to time constraints resulting from the necessity to complete the work in advance of the DOT project. UIF stated that multiple bids were not obtained for the engineering services because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." As an exhibit to his rebuttal testimony, witness Flynn provided signed agreements for both the construction and engineering work, totaling $475,267. In response to discovery, UIF provided a change order in the amount of $50,069 for additional services performed by McKenzie, due to a concrete slab found under the roadway obstructing access to the FM.

In witness Flynn's rebuttal testimony, he stated that the project is nearly complete, with one manhole ring and cover requiring adjustment in coordination with the DOT. In addition, witness Flynn projected a cap time cost of $8,450, and a plant-in-service date of February 2021. Regarding the concerns raised by witness Radigan, additional support for PCF-33, including an agreement and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by the Utility, as well as witness testimony, we find that $533,786 ($475,267 + $50,069 + $8,450) is reasonable for the project. UIF recorded a cost of $609,491 for PCF-33 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-33 by $75,705.

34. PCF-34 UIF – Tierra Verde Lift Station 4 Replacement

UIF requested cost recovery to relocate the Tierra Verde Lift Station 4, in addition to the required engineering services to design, permit, and oversee the construction of the lift station. The construction contractor will construct a new lift station on Madonna Blvd. and convert the wet well from the prior lift station to a manhole. The existing wet well is undersized, and the lift station is at the end of its service life after being in service over 50 years. In addition, the location of the lift station, as well as the FM and GSM being replaced in project PCF-33, conflict with a traffic circle being installed by the DOT. The new lift station will be moved to a location that avoids conflicts with underground utilities and offers adequate room away from the edge of asphalt when performing maintenance on the facility. Similar to PCF-33, this project is being coordinated with the DOT to avoid scheduling conflicts.

In UIF witness Flynn's direct testimony, the requested amount for this project was $80,542 for engineering services, and $828,440 for construction. In UIF witness Flynn's rebuttal testimony, he provided an updated construction cost of $871,501, which included IDC and cap time. OPC witness Radigan did not address the Tierra Verde Lift Station 4 Replacement project or the costs in his testimony.

UIF provided bids from two contractors for the construction services, and the contractor with the lower bid of $828,440 was selected. UIF also provided bids from Kimley-Horn for the engineering services, totaling $85,300. UIF stated that multiple bids were not obtained for the engineering services because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." In response to discovery, witness Flynn provided signed agreements for both the construction and engineering work, totaling $913,740.

Witness Flynn stated that during the construction of project PCF-33, a conduit collapsed that supplied power to lift station 4. As a result, new conduit and conductors were routed on an expedited basis to resupply power to the lift station. Provisions were made to construct and place the new conduit and conductors in alignment with the construction plans for the new lift station. For this reason, the associated costs, totaling $10,650, were included in project PCF-34.

Witness Flynn testified that construction of the new lift station will begin in April 2021, once the DOT has restored Madonna Blvd.'s right-of-way, and will be completed in September 2021. In addition, witness Flynn provided a projected cap time cost of $12,527 for the project.

Based on the documentation provided by the Utility, as well as witness testimony, we find that $936,917 ($913,740 + $10,650 + $12,527) is reasonable for the project. UIF recorded a cost of $854,450 for PCF-34 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-34 by $82,467.

35. PCF-35 UIF – Buena Vista Well Improvements

UIF requested cost recovery for well improvements at its Buena Vista WTP, which included replacing the well pump assembly at Well 2, cleaning and inspecting the well casing, replacing the hydropneumatic tank and piping at Well 3, and making minor improvements to the well house. The Well 2 pump had been in service for over 30 years and was found to be operating below its design output. The hydropneumatic tank at Well 3 was inspected and found to need internal sandblasting and coating. However, according to witness Flynn's Exhibit PCF-35, due to the tank's installation date of 1996 and considering it was not an American Society of Mechanical Engineers code tank, the existing tank would instead be replaced. The new replacement hydropneumatic tank would be up to code and would negate the need for sandblasting and coating.

In UIF witness Flynn's direct testimony, the requested amount for this project was $95,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $80,233, which included IDC and cap time. OPC witness Radigan did not address the Buena Vista Well Improvements project or the costs in his testimony. The Utility provided one bid for the hydropneumatic tank and piping at Well 3 totaling $49,973 and an invoice for the improvements at Well 2 totaling $20,595. UIF stated that the costs for the work performed by the two contractors was below the $75,000 threshold, so additional bids were not obtained. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases. In addition, both contractors had been utilized previously and the Utility had been satisfied with the quality of the work performed and the costs for PCF-35 were in line with similar projects.

As an exhibit to his rebuttal testimony, witness Flynn provided invoices for the work related to the two wells totaling $37,340. In response to discovery, UIF provided an invoice for the Well 3 hydropneumatic tank and piping totaling $59,847. This total also included a change order of $9,874 for installation of piping, new check valve, concrete pedestal replacements, and plant site maintenance. Witness Flynn testified that the Buena Vista Well Improvements project was estimated to be completed by December 2020, and projected a cost of $475 for cap time related to PCF-35. Based on the documentation provided by the Utility, as well as witness testimony, we find that $97,662 ($37,340 + $59,847 + $475) is reasonable for the project. UIF recorded a cost of $98,145 for PCF-35 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-35 by $483.

36. PCF-36 UIF – Orangewood Well 1 Improvements

Similar to PCF-35, UIF requested cost recovery for well improvements at its Orangewood WTP, specifically for the replacement of the well pump assembly, well head, and discharge piping, as well as the replacement of the hydropneumatic tank and emergency generator. The Well 1 pump had been in service for over 30 years and was found to be operating below its design output. The hydropneumatic tank was inspected and found to need internal sandblasting and coating. During the sandblasting process, a hole appeared in the tank wall, requiring the replacement of the entire tank. The existing emergency generator was installed in 1989 and was at the end of its useful life. Additionally, the existing generator operated on propane gas, which presented delivery challenges during storm events.

In UIF witness Flynn's direct testimony, the requested amount for this project was $165,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $184,672, which included IDC and cap time. OPC witness Radigan did not address the Orangewood Well 1 Improvements project or the costs in his testimony. The Utility obtained bids from two contractors for the well improvements, and the contractor with the lowest bid of $32,408 was selected. Two bids at a cost of $67,315 and $65,717 were obtained for the hydropneumatic tank replacement, and the contractor that would be completing the well improvements was selected for the tank replacement at a cost of $67,315. UIF also provided two bids for the new generator, and the contractor with the lowest bid of $42,848 was selected.

In response to discovery, the Utility provided invoices for the well, hydropneumatic tank, and generator totaling $156,298. UIF also provided invoices for engineering services at a cost of $9,000 related to the installation of the hydropneumatic tank. Witness Flynn testified that the Orangewood Well 1 Improvements project was completed in September 2020, and included a cost of $2,477 for cap time. Based on the documentation provided by the Utility, as well as witness testimony, we find that $167,775 ($156,298 + $9,000 + $2,477) is reasonable for the project. UIF recorded a cost of $170,453 for PCF-36 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-36 by $2,678.

37. PCF-37 UIF – Seminole County SCADA Installation

In its filing, UIF requested cost recovery to install remote telemetry units at 10 lift stations in the Weathersfield and Ravenna Park collection systems. The 10 lift stations were being monitored with the use of alarm systems; however, the Utility began implementing SCADA in other systems in 2016. With the use of SCADA, lift stations can be monitored remotely by operators, which can reduce the lag time between an alarm event and notification. It also provides technicians with the ability to pull reports for lift stations to prioritize work activities and the SCADA system can be used for tracking purposes, such as logging pump replacements or electrical issues.

In UIF witness Flynn's direct testimony, the requested amount for this project was $94,476. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $96,664, which included IDC and cap time. OPC witness Radigan did not address the Seminole County SCADA Installation project or the costs in his testimony. UIF only obtained one bid for this project, as the contractor being utilized for PCF-7 and PCF-20 was also selected for PCF-37. The Utility stated that the selected contractor "offered consistent pricing for similar work as well as the ability to maintain safety and security protocols that are critically necessary when installing or modifying any cloud-based technology." Additionally, UIF indicated that the selected contractor offered equipment equal to the SCADA equipment that had been installed at other locations, thus simplifying repairs and maintenance, as well as equipment technical support.

In response to discovery, the Utility provided invoices for the SCADA installation totaling $93,876. Witness Flynn testified that the Seminole County SCADA Installation project was completed in January 2020, and included a cost of $100 for cap time. Based on the documentation provided by the Utility, as well as witness testimony, we find that $93,976 ($93,876 + $100) is reasonable for the project. UIF recorded a cost of $96,664 for PCF-37 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-37 by $2,688.

38. PCF-38 Summertree Chlorine Dioxide Pilot Study

UIF requested cost recovery for a chlorine dioxide pilot study for its Summertree system. The purpose of the pilot would be to determine the effectiveness of using chlorine dioxide as a post-treatment method for reducing the accumulation of nitrogen compounds in the Summertree water distribution system. Water is supplied to the Summertree system by Pasco County through a bulk water agreement. The Utility estimated that once the water enters the Summertree system, it is typically four days old and the chloramination that is used to treat the water results in a combined chlorine residual which varies and decreases over time. In order to maintain the required chlorine residual in the system, the Utility had implemented flushing procedures to reduce the age of the water. The use of chlorine dioxide as a secondary disinfectant could potentially stabilize the chlorine residual and greatly reduce the amount of flushing, thus resulting in lower O&M costs that would otherwise be passed on to customers. It would also eliminate the cost of a semi-annual chlorine burn, which requires notifying customers before and after the burn event occurs.

In UIF witness Flynn's direct testimony, the requested amount for this project was $52,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $92,000, which also included the chemical feed equipment needed to carry out the pilot study. Witness Flynn's projected costs related to IDC and cap time, bring the total project cost to $98,036. OPC witness Radigan did not address the Summertree Chlorine Dioxide Pilot Study project or the costs in his testimony. The engineering services for this project were sole sourced to Kimley-Horn at a cost of $52,000. For the chemical feed equipment, the Utility stated that Kimley-Horn solicited bids from various contractors and vendors, and only one contractor met all of the requirements of both the pilot study and the permanent installation of the equipment.

In response to discovery, UIF provided invoices for the project totaling $52,000 for engineering services and $37,890 for the chemical equipment and a 90-day chemical supply. Witness Flynn testified that the Summertree Chlorine Dioxide Pilot Study project was estimated to be completed in March or April 2021, and included a cost of $1,411 for cap time. Based on the documentation provided by the Utility, as well as witness testimony, we find that $91,301 ($52,000 + $37,890 + $1,411) is reasonable for the project. UIF recorded a cost of $52,000 for PCF-38 in its MFRs as working capital; therefore, we find that an adjustment shall be made to increase the cost of PCF-38 by $39,301 and the amount shall be included in plant-in-service.

39. PCF-39 Summertree I&I Investigation

UIF requested cost recovery to clean, video inspect, and smoke test 9,400 linear feet of gravity wastewater mains and manholes in Pointe West, the oldest section of its Summertree system. A report of any deficiencies requiring repairs would be generated following the inspection. However, a separate capital project would be developed to address the deficiencies identified in the I&I investigation.

In UIF witness Flynn's direct testimony, the requested amount for this project was $27,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $378,227, which included $28,620 for the initial cleaning and video inspection, as well as $335,859 for capital improvements related to the I&I investigation. OPC witness Radigan testified that there were no plant addition costs associated with the Summertree I&I Investigation project. Instead, this project was CWIP and should not be considered plant-in-service. Furthermore, witness Radigan stated that once the project was complete, "the expenditures to date will be added to the construction costs and the project could then be eligible for inclusion in the calculation of revenue requirement at some future time."

Bids were obtained from three contractors for the cleaning and video inspection of the system, and the contractor with the lowest bid of $28,620 was selected. As an exhibit to his rebuttal testimony, witness Flynn provided a bid for $320,859 to address the pipe deficiencies that had been identified during the I&I investigation. The Utility stated it solicited bids from three contractors in total to address the pipe deficiencies; however, the selected contractor was the only one of the three that submitted a bid.

Witness Flynn provided documentation related to the I&I investigation totaling $28,620. No additional documentation was provided to support the work to correct the deficiencies identified in the I&I investigation, aside from the single bid offered in witness Flynn's rebuttal testimony. For instance, UIF did not produce a signed contract or any documents supporting a completion date within the required 24 months for PCF-39. Witness Flynn testified that the Summertree I&I Investigation project was estimated to be completed in March 2021, and projected a cost of $7,500 for cap time. Considering that witness Flynn's Exhibit PCF-39 indicated that any corrections related to the I&I investigation would be captured under a separate capital project, and that the Utility did not supply sufficient documentation to support the corrections, we find that those costs shall be included at this time. Regarding the concerns raised by witness Radigan, we agree that there were no plant addition costs associated with PCF-39. Based on the documentation provided by UIF, as well as witness testimony, we find that $28,620 is reasonable for the project. The Utility recorded a cost of $27,481 for PCF-39 in its MFRs as working capital; therefore, we find that an adjustment shall be made to increase the cost of PCF-39 by $1,139. The appropriate working capital allowance is discussed further in Section XVI below.

40. PCF-40 UIF – Golden Hills Galvanized Pipe Replacement

UIF requested cost recovery to remove and replace approximately 2,000 linear feet of WMs and two fire hydrants. The WMs had been in service for over 50 years and had become tuberculated and prone to leaks. The two original fire hydrants had begun to leak, and repair parts were no longer available due to their age. Additionally, 18 service lines and some isolation valves would also be replaced as part of this project.

In UIF witness Flynn's direct testimony, the requested amount for this project was $75,160. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $80,004, which included IDC and cap time. OPC witness Radigan did not address the Golden Hills Galvanized Pipe Replacement project or the costs in his testimony. The Utility obtained multiple bids for the project from one contractor totaling $75,160. UIF stated that bids were not solicited from additional contractors as the selected contractor was familiar with the Golden Hills system, had produced very satisfactory results for similar work, and was available to schedule the work. Furthermore, the Utility had not expected the total construction cost to exceed the $75,000 threshold for soliciting multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases.

In response to discovery, UIF provided estimates and invoices for the project totaling $75,160. Witness Flynn testified that the Golden Hills Galvanized Pipe Replacement project was completed in December 2020, and included a cost of $4,393 for cap time. Based on the documentation provided by the Utility, as well as witness testimony, we find that $79,553 ($75,160 + $4,393) is reasonable for the project. UIF recorded a cost of $77,743 for PCF-40 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-40 by $1,810.

41. PCF-41 UIF – Golden Hills Water Main Relocation

In its filing, UIF requested cost recovery to replace 1,350 linear feet of a WM and one fire hydrant located in the Golden Hills service territory. The locations of the WM and fire hydrant were in conflict with a Marion County stormwater improvement project and required relocation. The facilities were located within the Marion County right-of-way and needed to be relocated under the terms and conditions of the existing right-of-way permit.

In UIF witness Flynn's direct testimony, the requested amount for this project was $154,764. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $170,810, which included IDC and cap time. OPC witness Radigan did not address the Golden Hills Water Main Relocation project or the costs in his testimony. In response to discovery, the Utility indicated that due to the time constraint imposed by Marion County, only one bid was solicited totaling $141,913. UIF also stated that the "contractor's unit prices were in line with similar recent project costs with a similar scope of work."

The Utility provided invoices for a total project cost of $156,764. This total also contained additional work that was completed and is related to PCF-41, including the costs for a main tap and road boring, as well as engineering services. Witness Flynn testified that the Golden Hills Water Main Relocation project was completed in January 2020, and included a cost of $12,918 for cap time. Based on the documentation provided by the UIF, as well as witness testimony, we find that $169,682 ($156,764 + $12,918) is reasonable for the project. The Utility recorded a cost of $170,810 for PCF-41 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-41 by $1,128.

42. PCF-42 UIF – Little Wekiva Generator

UIF requested cost recovery for an emergency generator and automatic transfer switch at the Little Wekiva WTP. The Little Wekiva system is not interconnected with any other water supply source; therefore, the Utility had placed a portable generator at the WTP as an interim solution in the event of a power outage. However, the portable generator required personnel to manually start the generator on-site and then transfer the load. The new 40 kW generator has an automatic transfer switch and is adequately sized to start and run the treatment plant in the event of a power outage. The new generator also offers a diesel fuel tank capable of 72 hours of continuous run time under load, along with a weatherproof, sound-reducing enclosure.

In UIF witness Flynn's direct testimony, the requested amount for this project was $94,437. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $100,618, which included IDC and cap time. OPC witness Radigan did not address the Little Wekiva Generator project or the costs in his testimony. The Utility obtained bids from two contractors for the new generator, and the lowest bid of $86,837 was selected.

In response to discovery, UIF provided invoices for the generator totaling $86,837. Additionally, invoices for engineering services related to the design and installation of the generator were provided at a cost of $7,600. Witness Flynn testified that the Little Wekiva Generator project was completed in June 2020, and included a cost of $2,616 for cap time. Based on the documentation provided by the Utility, as well as witness testimony, we find that $97,053 ($86,837 + $7,600 + $2,616) is reasonable for the project. UIF recorded a cost of $100,256 for PCF-42 in its MFRs; therefore, we find an adjustment shall be made to decrease the cost of PCF-42 by $3,203.

43. PCF-43 UIF – Park Ridge Generator

Similar to PCF-42, UIF requested cost recovery for an emergency generator and automatic transfer switch at the Park Ridge WTP. As with Little Wekiva, the Park Ridge system is not interconnected with any other water supply source, and there was no existing permanent generator on-site to provide back-up power. The new generator has an automatic transfer switch and is adequately sized to start and run the treatment plant in the event of a power outage. The new 60 kW generator also has a diesel fuel tank capable of 72 hours of continuous run time under load, along with a weatherproof, sound reducing enclosure.

In UIF witness Flynn's direct testimony, the requested amount for this project was $99,137. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of $103,489, which included IDC and cap time. OPC witness Radigan did not address the Park Ridge Generator project or the costs in his testimony. Bids from two contractors at a cost of $91,537 and $79,615 were obtained for a 60 kW generator, and the Utility indicated that it had selected the same contractor that was selected for the Little Wekiva project, which provided the higher bid at a cost of $91,537.

In response to discovery, UIF provided invoices for the generator totaling $91,537. Additionally, invoices for engineering services related to the design and installation of the generator were provided at a cost of $7,600. Witness Flynn testified that the Park Ridge Generator project was completed in June 2020, and included a cost of $1,491 for cap time. We agree with the engineering costs included for PCF-43 but do not believe that the Utility provided adequate justification for selecting the higher generator bid at a cost of $91,537. Therefore, we find that the cost of the generator shall be limited to the cost of the lower bid at $79,615. Based on the documentation provided by the Utility, as well as witness testimony, we find that $88,706 ($79,615 + $7,600 + $1,491) is reasonable for the project. UIF recorded a cost of $104,292 for PCF-43 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-43 by $15,586.

44. PCF-44 Ravenna Park I&I Remediation

UIF requested cost recovery for the video inspection of 11,600 linear feet of a gravity wastewater main and manholes in the Ravenna Park and Lincoln Heights systems. The project also incorporated the costs to remediate the identified pipe deficiencies by utilizing cured-in-place pipes, sectional liners, and open cut methods. Also included in this project were the costs for reinstating 87 service laterals, root removal, and restoring sections of the gravity main at several locations in the system.

In UIF witness Flynn's direct testimony, the requested amount for this project was $651,568. In UIF witness Flynn's rebuttal testimony, he testified that the project budget was expanded to $853,310 as additional failed pipes had been identified which required replacement. Therefore, the total project cost was updated to $876,921, which included IDC and cap time. OPC witness Radigan did not address the Ravenna Park I&I Remediation project or the costs in his testimony. Bids were obtained from four contractors for the digging and repair of the mains, and the contractor with the lowest bid of $409,137 was selected. Three bids were also solicited for the linings, and the contractor with the lowest bid of $199,133 was selected.

In response to discovery, the Utility provided invoices for the project totaling $810,012. This total included three change orders for multiple repairs, cleanouts, and pipe replacements totaling $201,471. Witness Flynn testified that the Ravenna Park I&I Remediation project was completed in December 2020, and included a cost of $11,348 for cap time. Based on the documentation provided by UIF, as well as witness testimony, we find that $821,360 ($810,012 + $11,348) is reasonable for the project. The Utility recorded a cost of $678,829 for PCF-44 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-44 by $142,531.

45. PCF-45 Weathersfield Northwestern Bridge Crossing

UIF requested cost recovery for the design, permitting, and bidding services related to replacement of a WM in coordination with a Seminole County's bridge replacement project. The project initially involved the design and permit for an interconnect assembly, construction of the interconnect assembly, and removal and temporarily capping of the WM on the Northwestern

Avenue bridge. Once the bridge replacement project was completed, a new WM would be installed across the bridge.

In witness Flynn's rebuttal testimony, he testified that Seminole County had informed the Utility in November 2020 that demolition of the bridge would begin in January 2021. Therefore, UIF opted to construct a temporary aerial river crossing to maintain water service to its customers and would forego the interconnect with the City of Altamonte Springs. Witness Flynn testified that DEP had issued a construction permit for the temporary bypass, and the contractor would mobilize at the beginning of January 2021 to construct the bypass. Once the new bridge was completed, the contractor would install a WM attached to the bridge and the temporary bypass would be removed.

In UIF witness Flynn's direct testimony, the requested amount for this project was $22,000. In UIF witness Flynn's rebuttal testimony, he updated the project cost to include the costs for the engineering services, construction of the temporary bypass, and construction of the new WM totaling $147,054, including cap time and IDC. OPC witness Radigan testified that there were no plant addition costs associated with the Weathersfield Northwestern Bridge Crossing project. Instead this project was CWIP and should not be considered plant-in-service. Furthermore, witness Radigan stated that once the project was complete, "the expenditures to date will be added to the construction costs and the project could then be eligible for inclusion in the calculation of revenue requirement at some future time."

The engineering services for this project were sole sourced to Kimley-Horn at a cost of $7,065 for the initial temporary interconnection, and then $6,000 for the temporary aerial river crossing main. The Utility stated that it only solicited bids from Kimley-Horn for engineering services because of "their comprehensive knowledge and familiarity with the Utility's system, facilities, processes, and requirements and at a quoted amount commensurate with similar previous work product." Additionally, the amount fell below the $75,000 threshold that UIF utilizes for soliciting multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases.

A bid was also provided from a contractor at a cost of $127,101 for the construction of the bridge bypass and reconnection of the WM once the bridge project was completed. The Utility stated that the construction portion of the project was sole sourced to the contractor due to the time constraints imposed by Seminole County. The change in schedule had required UIF to change the project scope and design, as well as re-evaluate the timing of the project. This had required the Utility to promptly design a solution to meet the County's schedule, obtain a DEP construction permit, and prepare for the construction of the temporary bypass.

In response to discovery, UIF provided invoices for the engineering services totaling $12,005. Witness Flynn identified that the Weathersfield Northwestern Bridge Crossing project would be completed in August 2021, and projected a cost of $1,140 for cap time. Regarding the concerns raised by witness Radigan, plant additions associated with PCF-45 were included in witness Flynn's rebuttal testimony, as well as documents supporting the plant additions and timing. Based on the documentation provided by the Utility, as well as witness testimony, we find that $140,246 ($127,101 + $12,005, + $1,140) is reasonable for the project. UIF recorded a cost of $22,000 for PCF-45 in its MFRs; therefore, we find an adjustment shall be made to increase the cost of PCF-45 by $118,246.

C. Conclusion

Pro forma plant additions shall be decreased by $150,054 for water and $1,276,038 for wastewater. Corresponding adjustments shall also be made to decrease accumulated depreciation and depreciation expense by $1,861 for water and $67,329 for wastewater. Additionally, property taxes shall be decreased by $2,328 for water and $7,778 for wastewater. Adjustments to pro forma plant retirements shall be made as set forth below in Section IV.

IV. Plant Retirements

A. Parties' Arguments

1. UIF

UIF stated that adjustments for plant retirements should be made based on the approved amounts for pro forma projects which were discussed in Section III.

2. OPC

OPC argued that pro forma projects PCF-14, PCF-17, PCF-18, PCF-23, PCF-28 and PCF-33 should be disallowed. OPC also stated that the appropriate plant retirements should be tied to pro forma projects that are approved by this Commission in Section III.

B. Analysis

In its initial filing, UIF reflected pro forma retirements to plant and accumulated depreciation of $679,801 for water and $8,212,442 for wastewater. The Utility also identified contributed plant included in the pro forma retirements and included adjustments to retire associated contributions in aid of construction (CIAC) in the amount of $87,827 for water and $753,220 for wastewater.

For its pro forma plant retirements, UIF stated the Handy Whitman Index was utilized to determine the retirement percentages for the pro forma projects in this proceeding. The current project cost was multiplied by the retirement percentages to calculate the retirement amount. OPC witness Crane did not dispute this method for determining the pro forma retirements in her testimony. Instead, OPC witness Crane testified that for each pro forma project that OPC witness Radigan identified for exclusion in his testimony, a retirement was not needed. UIF witness Crane stated that for those identified projects, retirements should not be made "since those retirements would presumably not take place until and unless the associated plant addition is completed and placed into service."

Taking into account the supporting documentation provided by the Utility and considering that OPC did not object to the methodology used, we find that UIF's utilization of the Handy Whitman Index to determine plant retirements is reasonable. We applied the retirement percentages from the Handy Whitman Index to our approved pro forma project costs, as discussed in Section III, to determine the appropriate plant retirements. Table 3 summarizes our adjustments to the pro forma plant retirements. In fact, if the original cost of retired plant is not known, but the year it is placed into service is known, the Handy Whitman Index has been approved by this Commission to determine the appropriate retirement percentage to apply to the cost of the replaced plant.[24]

Table 3
Pro Forma Plant Addition Retirements-Water

System	**MFR – Pro Forma Plant Retirement**	**Commission Approved – Pro Forma Plant Retirement**
PCF-2 Eagle Ridge - Wastewater	$39,190	$32,211
PCF-5 Eagle Ridge - Wastewater	$247,401	$211,230
PCF-10 LUSI - Water	$27,307	$24,714
PCF-12 LUSI - Wastewater	$23,024	$21,774
PCF-14 Mid-County - Wastewater	$606,625	$722,016
PCF-17 Mid-County - Wastewater	$1,558,186	$1,240,605
PCF-18 Mid-County - Wastewater	$20,063	$19,973
PCF-19 Pennbrooke - Wastewater	$17,396	$14,981
PCF-22 Sanlando - Water	$21,781	$21,948
PCF-22 Sanlando - Wastewater	$2,876,520	$3,052,611
PCF-23 Sanlando - Wastewater	$1,406,998	$1,416,631
PCF-24 Sanlando - Water	$36,560	$36,560
PCF-25 Sanlando - Water	$354,033	$382,828
PCF-25 Sanlando - Wastewater	$691,829	$685,241
PCF-28 Sanlando - Water	$71,685	$23,891
PCF-28 Sanlando - Wastewater	$39,777	$119,310
PCF-29 Sanlando - Wastewater	$211,628	$204,635
PCF-33 Tierra Verde - Wastewater	$168,170	$165,565
PCF-34 Tierra Verde - Wastewater	$301,553	$336,282
PCF-35 Buena Vista - Water	$46,408	$47,694
PCF-36 Orangewood - Water	$63,394	$66,955
PCF-40 Golden Hills - Water	$16,142	$16,176
PCF-41 Golden Hills - Water	$33,309	$33,739
PCF-45 Weathersfield - Water	$4,735	$29,939

[24] Order Nos. PSC-04-0363-PAA-SU, p. 11, issued April 5, 2004, in Docket No. 020408-SU, *In re: Application for rate increase in Seminole County by Alafaya Utilities, Inc.*; PSC-00-1528-PAA-WU, p. 9, issue August 23, 2000, in Docket No. 991437-WU, *In re: Application for increase in water rates in Orange County by Wedgefield Utilities, Inc.*; PSC-2017-0209-PAA-WU, issued May 30, 2017, in Docket No. 20160065-WU*, In re: Application for increase in water rates in Charlotte County by Bocilla Utilities, Inc.;* and PSC-2016-0169-PAA-WU, issued April 28, 2016, in Docket No. 20150166-WU, *In re: Application for transfer of water system and Certificate No. 654-W in Lake County from Black Bear Reserve Water Corporation to Black Bear Waterworks, Inc.*

Based on our approved pro forma plant retirements, CIAC retirements shall be $40,067 for water and $858,004 for wastewater. To reflect our approved retirements, plant and accumulated depreciation shall be decreased by $9,090 for water and $34,706 for wastewater. CIAC and accumulated amortization of CIAC shall be increased by $23,857 for water and decreased by $104,784 for wastewater.

Additionally, UIF's initial filing reflected corresponding adjustments to remove depreciation expense and CIAC amortization associated with its proposed pro forma retirements. The Utility decreased depreciation expense by $19,921 for water and $397,889 for wastewater. It also decreased CIAC amortization by $2,042 for water and $42,818 for wastewater. Using Rule 25-30.140, F.A.C., we recalculated the corresponding adjustments to depreciation expense and CIAC amortization. Based on the approved pro forma retirements discussed above, depreciation expense shall be increased by $976 for water and $1,657 for wastewater. CIAC amortization shall be increased by $1,111 for water and $14,061 for wastewater. Although our approved retirements result in further reductions to plant, accumulated depreciation, wastewater CIAC, and wastewater accumulated amortization of CIAC, the corresponding adjustments to depreciation expense and wastewater CIAC amortization are an increase due to errors in UIF's calculation of its proposed adjustments to these components, causing them to be overstated.

C. Conclusion

We hereby approve plant retirements associated with pro forma additions in the amount of $688,891 for water and $8,247,148 for wastewater. As such, plant and accumulated depreciation shall be decreased by $9,090 for water and $34,706 for wastewater, along with the following corresponding adjustments. CIAC and accumulated amortization of CIAC shall be increased by $976 for water and $1,657 for wastewater. CIAC amortization shall be increased by $1,111 for water and $14,061 for wastewater.

V. <u>STIPULATED—Excessive Unaccounted for Water</u>

We approved a Type II stipulation addressing whether any water systems have excessive unaccounted for water and, if so, what systems and what adjustments are necessary, as follows:

Lake Placid – 10.00%; LUSI (Four Lakes) – 1.90%; Golden Hills – 8.80%; Sanlando 2.10% and Little Wekiva 5.50%. Adjustments shall be made to purchased power, chemicals and purchased water/wastewater as appropriate.

VI. <u>STIPULATED—Excessive Infiltration and Inflow</u>

We approved a Type II stipulation addressing whether any wastewater systems have excessive infiltration and/or inflow and, if so, what systems and what adjustments are necessary, as follows:

Summertree – 2.14%; Orangewood – 5.72% and Ravenna Park – 11.25%. Adjustments should be made to purchased power, chemicals and purchased water/wastewater as appropriate.

VII. STIPULATED—Used and Useful (U&U) for Water Treatment

We approved a Type II stipulation addressing what the appropriate used and useful percentages for the water treatment and related facilities of each water system are, as follows:

All water treatment and related facilities are 100% used and useful.

VIII. STIPULATED—Used and Useful for Water Storage

We approved a Type II stipulation addressing what the appropriate used and useful percentages for the water storage and related facilities of each water system are, as follows:

All water storage and related facilities are 100% used and useful.

IX. Used and Useful for Wastewater Treatment

A. Parties' Arguments

1. UIF

With respect to Mid-County, UIF argued that OPC witness Radigan assumed that 2019 being a wet year is an anomaly, but data shows that heavy rainfall is common. UIF contended that UIF witness Seidman demonstrated that witness Radigan did not understand the consideration of I&I when calculating U&U, and that witness Radigan appeared to be in agreement with witness Seidman's calculations. UIF maintained that the Mid-County WWTP is clearly fully utilized and should be considered 100 percent U&U.

Regarding Labrador, UIF argued that the developer of the parcel that prevented a built out determination in the last rate case has signed an agreement with UIF that establishes that the parcel will be built to its full potential within the next five years. UIF affirmed that UIF witness Seidman rejected as unprecedented OPC witness Radigan's suggestion that this Commission should consider land outside of the certificated territory to determine U&U. UIF maintained that the plant is properly sized to serve the community and that the Labrador service area is built out. Therefore, UIF attested that the Labrador WWTP should be considered 100 percent U&U.

As it relates to Lake Placid, UIF argued that the system is built out due to a portion of the service area, originally intended for future development, being designated as a protected scrub jay habitat after construction, permanently eliminating future customer growth in that area. UIF asserted that we recognized that the system was built out in 1996 due to these environmental limitations. UIF contended that assigning the Lake Placid system the calculated WWTP U&U value severely hampers UIF's ability to earn on the improvements necessary to maintain the plant. Therefore, UIF maintained that the Lake Placid WWTP should be considered 100 percent U&U.

With respect to LUSI Lake Groves, UIF contended that UIF witness Seidman addressed OPC witness Radigan's conclusion that the U&U for this system was overstated due to inclusion of future prepaid lots resulting in double counting. However, UIF asserted that following witness Radigan's criticisms, witness Seidman revised the U&U calculation for LUSI Lake Groves to account for the five percent per year growth limit for equivalent residential connections (ERCs) as required under Section 367.081(2)(a)2.b., F.S. With this revision, UIF contended that the LUSI Lake Groves WWTP should be considered 70 percent U&U. UIF averred that all other WWTP are 100 percent U&U.

2. OPC

OPC noted that the parties agree on the U&U percentage for UIF-Marion, but disagree with respect to Mid-County, Labrador, Lake Placid, and LUSI Lake Groves. With regard to Mid-County, OPC acknowledged that using test year flows results in a U&U over 100 percent for Mid-County, but argues that the system's test year flows were unusually high. OPC asserted that UIF witness Seidman acknowledged that the test year was a very wet year, and that UIF also indicated that "this facility had regulatory violations in 2019 related to excess I&I" as justification for certain pro forma projects for Mid-County. OPC argued that Mid-County should not be rewarded with a higher U&U nor punished with a lower U&U because rainfall did or did not favor the system in a particular year. OPC opined that we should evaluate average flows for Mid-County and use that data to calculate U&U, and that the WWTP U&U should remain at 93.67 percent, as set in the last rate case, until that is accomplished.

With respect to Labrador, OPC argued that UIF lacks sufficient proof with regard to the timing of completion of the parcel that is now being developed that prevented a built out determination for Labrador in the last rate case. Therefore, OPC asserted that UIF failed to support its claim, and that the WWTP U&U should remain at 79.94 percent as set in the previous rate case.

Regarding Lake Placid, OPC noted that although UIF mentioned that the system was determined to be built out in 1996 by this Commission, UIF failed to mention that in the 2016 rate case, and we agreed with OPC that the U&U for Lake Placid was 29.79 percent. OPC asserted that UIF made the same arguments about environmental regulation in that rate case, and that we rejected this due to the argument not being any different from the one made previously.[25] OPC argued that UIF has not presented any evidence that is any different than what was provided in the 2016 rate case, and that the WWTP U&U for Lake Placid should remain at 29.79 percent as set in that case.

Concerning LUSI Lake Groves, OPC noted that in the last rate case, we revised the U&U calculation for the system to remove prepaid connections as capacity devoted to prepaid connections does not qualify as property used and useful in the public service under Section 367.081(2)(a)2.b., F.S. Since the system has growth, OPC asserted that the WWTP U&U for LUSI Lake Groves is 65 percent.

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[25] Order No. PSC-2017-0361-FOF-WS, pp. 93, 97.

B. Analysis

Rules 25-30.431 and 25-30.432, F.A.C., is followed for evaluation of WWTP U&U. The rules set forth provisions for flow data and capacity to be used in the equation, and other factors for consideration such as I&I, growth, the extent to which the service area is built out, and decrease in flow due to conservation or reduction in customers.

1. U&U for WWTP

Table 4 is a summary of the WWTP U&U percentages as proposed by UIF and OPC, along with our approved values for UIF's wastewater systems. As shown, OPC did not dispute UIF's WWTP U&U values for Cypress Lakes, Eagle Ridge, Pennbrooke, Sandalhaven-Transmission, and Sanlando. As we previously determined the WWTP U&U to be 100 percent for these systems, and there is no dispute regarding the flow data, capacity, and other factors for consideration pursuant to Rules 25-30.431 and 25-30.432, F.A.C., for these systems. We find that the WWTP U&U for these systems is 100 percent.

Table 4
UIF, OPC, and Commission Approved WWTP U&U Percent Value

WWTP System	UIF	OPC	Commission Approved
Cypress Lakes	100.00	No Dispute	100.00
Eagle Ridge	100.00	No Dispute	100.00
Labrador	100.00	79.94	100.00
Lake Placid	100.00	29.79	29.79
LUSI Barrington	100.00	No Dispute	100.00
LUSI Lake Groves	70.00	65.00	65.00
Mid-County	100.00	93.67	100.00
Pennbrooke	100.00	No Dispute	100.00
Sandalhaven-EWD	51.62	No Dispute	42.24
Sandalhaven-Transmission	100.00	No Dispute	100.00
Sanlando	100.00	No Dispute	100.00
UIF-Marion	78.44	No Dispute	74.78

Regarding the WWTP U&U of the three remaining systems that OPC does not dispute, LUSI Barrington, Sandalhaven-EWD, and UIF-Marion, we find the following. For LUSI Barrington, U&U values have not previously been established as this system was acquired by UIF in 2019.[26] UIF requested that the WWTP be considered 100 percent U&U for this system. We have reviewed the documentation provided for this system, and as the LUSI Barrington WWTP is serving all of the lots in its service area, thus using the WWTP to its current full

[26] Order No. PSC-2019-0071-PAA-SU, issued on February 25, 2019, in Docket No. 20170174-SU, *In re: Application for transfer of assets of exempt utility, amendment of Certificate No. 465-S, and petition for partial variance or waiver of Rule 25-30.030(5)(b), F.A.C., by Utilities, Inc. of Florida.*

potential, we find that this system is built out. Therefore, we find that the LUSI Barrington WWTP is 100 percent U&U.

With respect to Sandalhaven-EWD, UIF requested that the WWTP U&U be considered 51.62 percent for this system. UIF calculated this value by imputing flows in addition to the 2019 test year flows in order to achieve flows experienced by the system in 2010. UIF explained that this was done because this Commission typically defaults to a U&U based on higher flows experienced in previous test years so as not to penalize a utility for providing capacity previously needed. While it is true that we do typically default to the previously approved U&U if the updated U&U calculation is lower, this is not done by inserting a previous test year's flow data in the calculation with the current test year's values, but by simply defaulting to the previously approved U&U. With that being said, we reevaluated the WWTP U&U for Sandalhaven-EWD, removing the additional flows associated with the 2010 test year and only accounting for the 2019 test year flows. This resulted in a WWTP U&U of 36.97 percent. As the WWTP U&U approved in the last rate case was 42.24 percent, we find that the WWTP U&U for Sandalhaven-EWD is 42.24 percent as is Commission practice.

As it refers to UIF-Marion, UIF and OPC agreed that the WWTP U&U for this system should be considered 78.44 percent. However, upon reviewing the provided documentation, we found that UIF used a simple average growth calculation due to a weak coefficient of determination instead of the traditional five-year growth per the regression equation as required by Rule 25-30.431(2)(b)-(c), F.A.C.[27] We are not aware of any cases where the regression equation was not used to calculate the five-year growth. Therefore, we reevaluated the WWTP U&U for UIF-Marion using the traditional five-year growth per the regression equation. This resulted in a WWTP U&U of 74.78 percent, which is our finding for the WWTP U&U for UIF-Marion. Of the remaining four systems in dispute, the differences can be attributed to the treatment of built out status, prepaid connections, and excessive test year flows.

a. System Built Out Status

UIF's position that the Labrador WWTP is 100 percent U&U is based on the contention that the 11.6 acre parcel that prevented a built out determination in the last rate case is now being developed for 36 manufactured homes which will use the whole parcel. OPC witness Radigan argued that it is an assumption that the vacant area will be built out as it has not occurred yet. Witness Radigan further argued that there is land adjacent to Labrador's service area and that Labrador could expand its service area to serve new customers. Thus, witness Radigan recommended that Labrador maintain the 79.94 percent U&U approved in the last rate case.

In response to discovery, UIF provided a signed agreement with the developer to support the claim that the parcel is being developed. UIF also provided an email from the developer stating that approximately seven lots per year could be expected to be developed over the next five years. In addition, UIF indicated that the parcel has already been cleared, and that construction of the underground water and sewer infrastructure was to begin in January 2021 or

[27] The coefficient of determination is the R squared value which describes how good of a fit the linear regression curve is to the variability of historic ERC growth.

sooner. With regard to the service area, Labrador does not currently have any vacant lots, and there is only one lot it is unable to serve due to the lot being used for a park. We are not aware of any cases where we considered land outside of a utility's certificated service territory as part of its U&U consideration and thus, we do not believe that is appropriate. Therefore, because UIF has presented evidence that the parcel is being developed, and all lots capable of being served in Labrador's service territory are being served, we agree with UIF and hereby find that the Labrador WWTP is 100 percent U&U.

UIF's position that the Lake Placid WWTP is 100 percent U&U was initially based on the Utility's claim that growth was negative. Following a correction to Schedule F-10, growth was no longer negative for this system. OPC witness Radigan argued that UIF gave no firm evidence that the system is actually built out to use the design capacity of the plant, and that UIF indicated that there are still vacant lots in the service area in response to discovery. In his rebuttal, UIF witness Seidman expanded UIF's argument to include that the system is built out because of the designated scrub jay habitat located within the service area which has prevented customer growth. Witness Seidman further argued that we recognized Lake Placid's built out status due to environmental limitations in the 1996 rate case order (1996 Order).[28]

We reviewed the 1996 Order referenced by UIF, discovery responses, and the calculated WWTP U&U for Lake Placid. With respect to the 1996 Order, we found that the water distribution and wastewater collection systems were built out. We did not make a similar finding for the WWTP in the 1996 Order. In response to discovery, UIF indicated that there were 12 vacant lots in the Lake Placid service area, but also indicated that these lots were not located in the protected scrub jay habitat. The calculated WWTP U&U for Lake Placid was 15.83 percent. Because UIF has not provided evidence that the built out argument for Lake Placid is any different than that considered by us in previous orders, we agree with OPC and hereby find that the Lake Placid WWTP is 29.79 percent U&U, as approved in the last rate case.

b. Prepaid Connections

UIF requested that the LUSI Lake Groves WWTP be considered 70 percent U&U which includes future prepaid connections, as well as consideration of the five percent per year growth limit for ERCs as mandated by the statute. UIF argued that 967 prepaid lots had not been connected at the end of 2019; therefore, the regression analyses did not accurately reflect new growth. UIF stated that LUSI Lake Groves averaged 30 new taps per month in 2020, which is consistent with the past year's growth. Thus, UIF updated its growth calculation to account for future prepaid connections.

OPC witness Radigan argued that UIF's addition of prepaid connections on top of historic growth results in double counting, and recommended that the prepaid connections be removed. This resulted in a recommendation of 65 percent WWTP U&U for LUSI Lake Groves by OPC. UIF witness Seidman rebutted this argument by indicating that the additional

[28] Order No. PSC 96-0910-FOF-WS, issued July 15, 1996, in Docket No. 951027-WS, *In re: Application for a rate increase in Highland County by Lake Placid Utilities, Inc.*

connections are from a new area that had not previously been served; therefore, these connections could not result in double counting as they were not connected during the test year.

Prepaid connections for LUSI Lake Groves had been specifically disallowed in the amended order following the appeal in the last rate case because these connections did not qualify as property that was used and useful in the public service, as required under Section 367.081(2)(a)2.b., F.S.[29] For property to be considered used and useful in the public service under the statute, it must be shown to be "needed to serve customers five years after the end of the test year." As in that case, UIF has not provided evidence that these prepaid connections will be made within the next five years. Therefore, we removed these future prepaid connections and reevaluated the WWTP U&U. This resulted in a WWTP U&U of 65 percent which is our finding for the LUSI Lake Groves WWTP, consistent with OPC's recommendation.

c. Excessive Test Year Flows

While the UIF WWTP U&U calculation for Mid-County was 105.42 percent, OPC witness Radigan argued that high test year flows and I&I are the reason for this calculation. Witness Radigan opined that in dry years, the U&U equation would unreasonably penalize a utility, and in wet years, it would reward a utility. He recommended that we consider and adjust the WWTP U&U calculation for the effects of I&I for Mid-County, and that until this was done, Mid-County's WWTP U&U should remain at 93.67 percent as approved in the last rate case.

UIF witness Seidman rebutted OPC witness Radigan's argument by stating that experiencing high flows is not uncommon for the Mid-County system, and that we already consider the impact of I&I and have done so for many years. Witness Seidman argued that his analysis shows that Mid-County's I&I is not excessive for the test year, and that witness Radigan has reviewed and agreed with witness Seidman's calculations. Thus, witness Seidman concluded that the Mid-County WWTP is clearly fully utilized and should be considered 100 percent U&U.

We agree with UIF and note that I&I has been and continues to be considered in the calculation of WWTP U&U. We have reviewed the documentation provided for Mid-County and as stated by UIF witness Seidman, Mid-County does not have any excessive I&I for the test year, regardless of the high test year flows experienced by the system as contemplated by OPC witness Radigan. Therefore, we agree with UIF and hereby find that the Mid-County WWTP is 100 percent U&U.

C. Conclusion

In its filing, UIF made non-U&U adjustments to decrease rate base by $928,928, depreciation expense by $83,244, and property tax expense by $21,302. The appropriate used and useful percentages for UIF's wastewater systems are shown in the table below. To reflect the appropriate non-U&U percentages applied to all components of rate base, we find that a further decrease of $284,620 to rate base, $28,459 to depreciation expense, and $9,743 to property tax expense shall be made.

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[29] Order No. PSC-2019-0363-PAA-WS.

Table 5
Appropriate Used and Useful Percentages for UIF's Wastewater Systems

System	Facilities	U&U (Percent)
Cypress Lakes	WWTP	100.00
Eagle Ridge	WWTP	100.00
Labrador	WWTP	100.00
Lake Placid	WWTP	29.79
LUSI Barrington	WWTP	100.00
LUSI Lake Groves	WWTP	65.00
Mid-County	WWTP	100.00
Pennbrooke	WWTP	100.00
Sandalhaven	EWD Capacity	42.24
Sandalhaven	Transmission	100.00
Sanlando	WWTP	100.00
UIF-Marion	WWTP	74.78

X. STIPULATED—Used and Useful for Water Distribution

We approved a Type II Stipulation addressing what are the appropriate U&U percentages for the water distribution and related facilities of each water system, as follows:

All water distribution and related facilities are 100% used and useful.

XI. STIPULATED—Used and Useful for Collection Lines

We approved a Type II Stipulation addressing what the appropriate U&U percentages are for the collection lines and related facilities of each wastewater system, as follows:

All collection lines are 100% used and useful.

XII. Test Year Accumulated Depreciation Adjustments

A. Parties' Arguments

1. UIF

In its brief, the Utility stated that the adjustments to test year accumulated depreciation were due to the allocation of common plant between water and wastewater and to correct the over-amortization of Sandalhaven intangible plant. In addition, UIF made adjustments to annualize accumulated depreciation for test year additions. The Utility asserted that OPC did not dispute any test year changes.

2. OPC

In its brief, OPC discussed adjustments related to pro forma plant projects; these are discussed in Section III.

B. Analysis

UIF witness Swain made test year adjustments to the accumulated depreciation balance to correct the allocation of common plant between water and wastewater and to correct the over-amortization of Sandalhaven intangible plant. The Utility also made adjustments to annualize accumulated depreciation for test year plant additions. Although it addressed adjustments corresponding to pro forma plant, OPC did not dispute these adjustments. Further, Commission staff witness Dobiac's testimony did not reflect any audit adjustments to the test year accumulated depreciation balances.

C. Conclusion

Based on the above, we hereby find no further adjustments are appropriate to the adjusted test year accumulated depreciation balances. All necessary adjustments to accumulated depreciation associated with pro forma additions shall be made as set forth and discussed in Sections III and IV above.

XIII. Test Year CIAC Adjustments

A. Parties' Arguments

1. UIF

In its brief, UIF stated this issue is a fall out from the determination of Section III.

2. OPC

In its brief, OPC discussed adjustments related to pro forma retirements; these are discussed in Section IV. OPC maintained that these adjustments should be made to adjust the CIAC balance for projected plant retirements based on its recommended adjustments to pro forma plant.

B. Analysis

In its initial filing, the Utility's only adjustments to CIAC are retirements associated with certain pro forma plant projects. Further, Commission staff witness Dobiac's testimony did not reflect any audit adjustments to test year CIAC balances. Pro forma adjustments to accumulated amortization of CIAC are addressed in Section IV.

C. Conclusion

Based on the above, we hereby find no further adjustments are appropriate to the adjusted test year CIAC balances. All necessary adjustments to CIAC associated with pro forma additions shall be made as set forth and discussed in Section IV above.

XIV. Test Year Accumulated Amortization of CIAC Adjustments

A. Parties' Arguments

1. UIF

In its brief, UIF stated that this is a fallout from the determination of Section III.

2. OPC

In its brief, OPC stated adjustments should be made consistent with the adjustment of CIAC balances discussed in Section XIII.

B. Analysis

In its initial filing, the Utility's only test year adjustment to the accumulated amortization of CIAC balance was to correct the over amortization of CIAC. This adjustment was made to the same three systems in UIF's last rate case.[30] Further, Commission staff witness Dobiac's testimony did not reflect any adjustments to test year accumulated amortization of CIAC balances. The remaining adjustments to accumulated amortization of CIAC in UIF's initial filing are related to retirements associated with pro forma plant projects.

C. Conclusion

Based on the above, we hereby approve no further adjustments to the adjusted test year accumulated amortization of CIAC balances. All necessary adjustments to accumulated amortization of CIAC associated with pro forma additions shall be made as set forth and discussed in Section IV.

XV. DROPPED[31]

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[30] Order No. PSC-2017-0361-FOF-WS, issued September 25, 2017, in Docket No. 20160101-WS, *In re: Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties by Utilities, Inc. of Florida.*

[31] The parties agreed to drop this issue prior to the prehearing.

XVI. Working Capital Allowance

A. Parties' Arguments

1. UIF

In its brief, UIF stated that the presumed cash balance included in working capital is a reasonable substitute for actual intercompany receivables and payables. The cash balance of 2 percent of rate base proposed by UIF witness Swain was based upon the ratio of allowed cash to gross plant allowed in our prior cases. Witness Swain explained that UIF could have included the full intercompany receivable and payable balances in working capital since they meet the requirements of inclusion in working capital, as they are not interest bearing, and not otherwise included in rate base. Instead, UIF proposed a more conservative approach by estimating what it presumed to be a reasonable cash balance. Lastly, UIF stated in its brief that it should be clear that for a company the size of UIF, with substantial ongoing capital projects, that a reasonable cash requirement would be greater than the $3,000 of petty cash currently included on UIF's books.

UIF also stated in its brief that the studies related to pro forma projects should be included as adjustments to working capital. Further, UIF maintained that OPC witness Crane's recommendation to remove the studies from working capital and classify the studies as CWIP is not consistent with our practice. UIF stated that in its last rate case, all pro forma studies were included in rate base after adjustments to update costs, with OPC agreeing to the accounting treatment.[32] UIF witness Flynn suggested that another alternative to including the studies in working capital would be to amortize the expense over a reasonable time frame, such as five years.

2. OPC

In its brief, OPC asserted that UIF failed to meet its burden to support its requested level of cash, specifically how its requested level of cash is necessary for the provision of safe and reliable utility service. While acknowledging cash can be a component in determining rate base, OPC witness Crane also specified that a valid basis is necessary for supporting the level of cash. OPC further argued that the two Commission orders UIF used to develop its imputed cash value are not applicable, as this Commission did not use a ratio of gross plant as a methodology for deciding the appropriate level of cash. OPC maintained that the estimate UIF proposed in this case is arbitrary and not reasonably related to the company's day-to-day operational requirements.

B. Analysis

Rule 25-30.433(2), F.A.C., requires that Class A Utilities use the balance sheet method to calculate the working capital allowance. In its MFRs, UIF requested a total working capital

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[32] Order No. PSC-2017-0361-FOF-WS.

allowance of $4,151,132 for water and $5,551,167 for wastewater. We hereby find that additional adjustments are necessary.

1. Imputed Cash Balance

In her direct testimony, UIF witness Swain stated that UIF does not maintain its own unique bank accounts, but instead records cash transactions through intercompany accounts. Witness Swain stated that the overall magnitude of the balance in these accounts as compared to rate base was very large and that she was not able to isolate a specific account that would be appropriate to include in working capital. As an alternative, she reviewed other utilities and cases to develop a presumed cash balance. To derive the presumed cash value, witness Swain used the Commission-approved cash and rate base balances from KW Resorts Utilities Corp.'s (KWRU) 2015 and 2017 rate cases to calculate a percentage representing the ratio of working capital to rate base.[33] In the KWRU 2015 rate case, the cash balance represented approximately two percent of approved rate base, and in the KWRU 2017 rate case, the cash balance represented approximately 1.65 percent of approved rate base. Based on those percentages of gross plant, witness Swain made an adjustment to impute UIF's cash balance based on two percent of requested rate base, resulting in a pro forma increase of $2,355,199 and $3,061,123 to water and wastewater working capital, respectively.

OPC witness Crane recommended completely removing the Utility's adjustment to its cash balance. In her direct testimony, she outlined several reasons to support her assertion that UIF has not demonstrated a valid basis or need for the level of cash requested, specifically as it pertains to the provision of safe and reliable utility service. She first highlighted and questioned the applicability of the KWRU rate cases due to the large difference in levels of actual cash maintained by the two utilities, with KWRU reflecting a cash balance of nearly $900,000 in its 2017 Rate Case prior to us approving nearly a third of that amount. Witness Crane also expressed her concern with witness Swain's inability to identify specific intercompany accounts to attribute to working capital, though she relied on the accounts as a basis to impute presumed cash. She further stated that the total balance of working capital allowances for water and wastewater, excluding the Utility's adjustments to cash, are in line with the Commission-approved balances, $1,130,422 for water and $3,030,342 for wastewater, from UIF's last rate case.

In response to witness Crane, witness Swain stated that under the balance sheet method of working capital, the entire net balance of intercompany accounts is eligible for inclusion in working capital, as it is not interest bearing or included in rate base or capital structure. She explained that she proposed her methodology to develop a reasonable cash balance in lieu of the large intercompany account balances and chose the KWRU rate cases because we considered and determined the appropriate level of cash in both cases. Witness Swain also pointed out that the working capital balances approved in UIF's last case are comparable because they did not include a cash balance or intercompany accounts as well.

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[33] Order No. PSC-17-0091-FOF-SU, issued March 13, 2017, in Docket No. 150071-SU, *In re: Application for increase in wastewater rates in Monroe County by K W Resort Utilities Corp.;* Order No. PSC-2018-0446-FOF-SU, issued September 4, 2018, in Docket No. 20170141-SU, *In re: Application for increase in wastewater rates in Monroe County by K W Resort Utilities Corp.*

We agree with OPC and hereby find that removing the Utility's adjustment to increase cash in working capital. In so finding, "it is the [Commission's] prerogative to evaluate the testimony of competing experts and accord whatever weight to the conflicting opinions it deems necessary."[34] Ultimately, it is a utility's burden of proof to support its requested rate increase before this Commission.[35] UIF has not provided a sound basis for imputing its requested cash balance, or a sound basis for the methodology it proposed.

In regards to the Utility's proposed methodology, the KWRU rate cases used by witness Swain to derive a cash value are not applicable to this case. In the KWRU 2015 rate case, there was one specific adjustment to cash to reflect a more recent 13-month average cash balance for the Utility, as the test year represented an anomaly.[36] In the KWRU 2017 rate case, the cash balance was adjusted to equal the balance in the previous rate case. However, this adjustment was made after we identified a specific account lending to the excessive balance that was more representative of capital expenditures, not day-to-day operations. Upon consideration of the remaining balance left after excluding the account, we decided it was reasonable to hold the balance to the amount approved in the previous case. We did not use any percent of rate base to determine a reasonable level of cash for either of these cases.[37] Witness Swain's methodology does not line up with our basis for making adjustments in either case. Nor did she provide any further support for using KWRU as a proxy to develop the level of cash to impute for UIF. Thus, we hereby find that using two percent of rate base is an arbitrary methodology.

When asked if she thought the ratio of cash to rate base was an appropriate indicator to derive a presumed cash balance, witness Crane stated she did not think a ratio of cash to rate base was appropriate, and that a ratio of operating expenses would be more appropriate. As further explained by witness Crane, working capital represents the short-term liabilities and assets that are needed to operate. In the KWRU 2017 rate case, we agreed that the working capital allowance should reflect day-to-day operations. This concept is further supported by Rule 25-30.433(2), F.A.C., which requires Class B and C utilities to use the formula method to calculate working capital by taking one eighth of operation and maintenance (O&M) expense. When asked to explain how the ratio of cash to total rate base was an appropriate indicator of an appropriate level of cash, the Utility brought up the fact that other components of working capital can be allocated between water and wastewater based on various factors that include gross plant. Although that is true, deriving an allocation of a known value in working capital is not comparable to estimating the appropriate level of a component of working capital.

When asked if the Utility considered other alternatives to calculate a presumed cash balance, witness Swain stated that it considered including the net balance of all intercompany receivables and payables in their entirety. UIF's initial basis for making an adjustment to increase cash in working capital stems from the Utility's intercompany accounts that are used for cash transactions in lieu of specific bank accounts and therefore not reflected in its cash balance. However, the details provided about the intercompany accounts were sparse and not entirely

[34] See *Gulf Power Co. v. FPSC*, 453 So. 2d 799, 805 (Fla. 1984).
[35] See *Florida Power Corp. v. Cresse,* 412 So. 2d 1187 (Fla. 1982).
[36] Order No. PSC-17-0091-FOF-SU.
[37] Order No. PSC-2018-0446-FOF-SU.

clear. This made it difficult to assess the Utility's original request and basis for imputing cash, as well as to evaluate the reasonableness of the requested level of cash. Of the various accounts that comprise the net balance, specific account detail was not available for the Utility's witness to determine if a particular intercompany receivable or payable could be included in the working capital calculation prior to developing her alternative methodology. The balances were characterized as significant in size. However, in response to our staff's discovery requests, the Utility never quantified or provided support for the accounts. One of the responses stated that "it is not possible to determine the amount of cash included in the intercompany accounts. Over many years the intercompany accounts have been used to record obligations to and from the related companies." Other discovery responses stated that the accounts are only representative of UIF transactions.

UIF maintained that the accounts are not interest bearing or reflected in rate base or capital structure, thus making them eligible to be included in working capital under the balance sheet method. The lack of clear detail and support documentation provided in relation to the accounts made it difficult to evaluate the Utility's original request, much less support the inclusion of the entire balance. Further, even if we were able to ascertain the magnitude of the net balance, the level of the balance would still be evaluated and subject to adjustments, just as we did in the KWRU rate cases cited. While the Utility's proposal is not altogether unreasonable, it ultimately failed to support its request. As such, we hereby approve a decrease in working capital of $2,355,199 for water and $3,061,123 for wastewater to remove the Utility's requested presumed cash balance.

2. Pilot Studies and Investigations

In its initial filing, UIF included an adjustment to increase working capital for wastewater to reflect studies and preliminary investigations for pro forma projects yet to be completed. The Utility's MFRs listed a Chlorine Dioxide Pilot Study for Summertree and two separate investigations related to I&I and smoke testing for Cypress Lakes. As explained by witness Crane, the Chlorine Dioxide Pilot Study relates to the water system instead of wastewater, and one of the Smoke Testing/I&I Investigations labelled as Cypress Lakes, in the amount of $89,328, should actually reflect two separate investigations—one for Sandalhaven in the amount of $$61,847 and one for Summertree in the amount of $27,481. Additionally, the Utility's "Total Pro Forma Adjustments to Working Capital" in the amount of $3,202,451 for wastewater, Line 17, does not include the $45,000 listed for Cypress Lakes' I&I Investigation. Before making corrections for the errors listed above, we evaluated each pro forma project using the same process used to evaluate costs and the prudence of pro forma plant projects.

Additionally, we evaluated the circumstances of each project to determine if it was appropriate to include in working capital. We, in Order No. PSC-01-1374-PAA-WS, cited the NARUC USOA accounting instructions for Account 183 – Preliminary Survey and Investigation, as stated below:[38]

[38] Order No. PSC-01-1374-PAA-WS, issued June 27, 2001, in Docket No. 010518-WS, *In re: Notice of intent to increase water and wastewater rates in Pasco County, based upon application of provisions of Section 367.081(4)(a) & (b), F.S., by Aloha Utilities, Inc.*

> This account shall be charged with all expenditures for preliminary surveys, plans, investigations, etc., made for the purpose of determining the feasibility of projects under contemplation. If construction results, this account shall be credited and the appropriate utility plant account charged. If the work is abandoned, the charge shall be to account 426 - Miscellaneous Nonutility Expenses, or to the appropriate operating expense account unless otherwise ordered by the Commission (See account 675 - Miscellaneous Expenses).[39]

Our order further explained that because the results of the pilot project in question were not yet completed, it was appropriate to recognize the costs in working capital in that rate proceeding and address the appropriate final treatment for the costs in a future rate proceeding. According to the Utility, as referenced in Table 6 below, future projects stemming from the results of the I&I investigations are probable. Therefore, we hereby find that inclusion of the updated total amount for each project in working capital. As discussed in Section III, the Chlorine Dioxide Pilot Study has already resulted in a capital project, and we find that those costs shall be capitalized to plant. As such, the costs associated with the study shall be removed from working capital. In total, we hereby approve a decrease to wastewater working capital of $4,453 to reflect the appropriate amount of pro forma studies and preliminary investigations, as shown in Table 6 below.

Table 6
Working Capital Adjustments for Pilot Study and I&I Investigations

PCF No.	Description	Status	MFR Amt	Commission Approved Total	Adjust-ment
1	I&I Investigation-Cypress Lakes	Future project probable.	$0	$42,500	$42,500
21	I&I Investigation-Sandalhaven	Future project probable.	61,847	58,255	(3,592)
38	Chlorine Dioxide Pilot Study	Capitalizing to completed capital project.	52,000	0	(52,000)
39	I&I Investigation-Summertree	Project commencing.*	27,481	36,120	8,639
		Total	$141,328	$136,875	$4,453

*Not being recovered in the instant docket.

3. Miscellaneous Deferred Debits

The final adjustment to working capital is a corresponding adjustment to miscellaneous deferred debits. Based on our findings to amortize pro forma O&M expenses discussed in Sections III and XXVI, miscellaneous deferred debits shall be increased to reflect the

[39] Pursuant to Rule 25-30.115, F.A.C., water and wastewater utilities must maintain their accounts and records in conformity with the 1996 NARUC USOA.

unamortized portion of each expense. As such, wastewater working capital shall be increased by $91,863 to reflect the unamortized balance, total expense less a year of amortization, of the amortized expenses associated with WWTP permitting in PCF-8 and I&I inspection in PCF-32.

C. Conclusion

The appropriate working capital balance is $1,795,933 for water and $2,577,454 for wastewater. Thus we hereby approve a decrease in working capital of $2,355,199 for water and $2,973,713 (-$3,061,123 - $4,453 + $91,863) for wastewater.

XVII. Test Year Rate Base

A. Parties' Arguments

1. UIF

In its brief, UIF stated this is a fallout determination.

2. OPC

In its brief, OPC stated the appropriate rate base for the December 31, 2019 test year is $54,066,409 for water and $75,375,380 for wastewater.

B. Analysis

This is a fallout issue. Based upon the Utility's adjusted 13-month average test year balances and our approved adjustments, the appropriate 13-month average rate base is $54,410,589 for water and $85,280,139 for wastewater. Schedule Nos. 1-A and 1-B reflect our approved rate base calculations for each system. Our approved adjustments to rate base for each system are shown on Schedule No. 1-C.

XVIII. Accumulated Deferred Taxes

A. Parties' Arguments

1. UIF

The appropriate amount of accumulated deferred income taxes is presented in MFR Schedule D-1. The amount includes $7,156,450 of regular accumulated deferred income taxes, and $5,353,825 of protected accumulated deferred income taxes as a result of the TCJA, for a total of $12,510,275.

2. OPC

The capital structure should reflect 4.88 percent accumulated deferred income taxes, which is the percentage of accumulated deferred taxes reflected in the capital structure proposed by UIF.

B. Analysis

The appropriate amount of accumulated deferred income taxes (ADITs) was not a disputed issue is this case. UIF proposed a capital structure that included an accumulated deferred income tax ratio of 4.88 percent, not including the protected amounts as a result of the TCJA. OPC agreed that the capital structure should reflect 4.88 percent of ADITs. OPC witness Crane explained that deferred income taxes are taxes that have been collected from ratepayers but have not yet been paid by the utility due to differences in the tax treatment utilized by regulatory commissions and taxing authorities, including the Internal Revenue Service (IRS).

The ADITs balance for the historic test year ended December 31, 2019, as reflected on MFR Schedule D-1, was $7,156,450. UIF also included an additional amount of $5,353,825 to reflect the protected ADITs that were created as a result of the TCJA. Witness Crane explained the TCJA reduced the federal income tax rate from 35 percent to 21 percent thereby creating excess deferred income taxes on the Utility's books. The protected excess ADITs are associated with plant-related balances primarily related to accelerated depreciation methodologies (including bonus depreciation) that were permissible for tax purposes, but which were not reflected for ratemaking purposes. Protected excess deferred income taxes are required to be returned to ratepayers using the Average Rate Assumption Method (ARAM) or an alternate method such as the Reverse South Georgia Method (RSGM), which generally provides that the excess deferred income taxes cannot be flowed-through to ratepayers more rapidly than the average remaining life of the underlying property that gave rise to the deferred taxes. Witness Swain explained that UIF performed an analysis to record an adjustment to the deferred tax balance as a result of the reduced tax rate as required by the TCJA, creating a new liability account of protected ADITs. The protected ADIT balance of $5,353,825 would be amortized over a 21.51-year period reflecting the remaining depreciation life of the associated assets.

C. Conclusion

Based on record evidence, the appropriate amount of accumulated deferred income taxes to include in the capital structure is $12,510,275. This amount includes $7,156,450 shown on UIF's balance sheet, as well as $5,353,825 related to the flow back of protected accumulated deferred income taxes associated with the Tax Cut and Jobs Act, amortized over 21.51 years.

XIX. <u>STIPULATED—Customer Deposits</u>

We approved a Type II Stipulation addressing the appropriate amount of customer deposits to include in the capital structure:

$248,501 (0.18% of the capital structure).

XX. STIPULATED—Cost Rate for Short-Term Debt

We approved a Type II Stipulation addressing the appropriate cost rate for short-term debt for the test year:

4.04%.

XXI. STIPULATED—Cost Rate of Long-Term Debt

We approved a Type II Stipulation addressing the appropriate cost rate for long-term debt for the test year:

5.78%.

XXII. Return on Equity

A. Parties' Arguments

1. UIF

UIF argued that the return on equity of 9.69 percent produced by this Commission's leverage formula understates the investor required return on equity for UIF. Witness D'Ascendis argued the indicated common equity cost rate for UIF is 10.75 percent based on the results of multiple financial models applied to a Utility Proxy Group. Witness D'Ascendis argued this cost rate must be adjusted upward by 100 basis points to reflect UIF's unique business and financial risks relative to his Utility Proxy Group. Witness D'Ascendis contended that his recommended authorized ROE of 11.75 percent is consistent with the *Hope* and *Bluefield* standard of just and reasonable rates of return and balances the interests of both customers and UIF. UIF argued that an ROE of 11.75 percent would provide UIF with sufficient earnings to enable the Company to attract necessary new capital efficiently and at a reasonable cost.

2. OPC

OPC argued that UIF's requested 11.75 percent ROE is excessive and unreasonable. OPC argued that the awarded ROE should be based on the cost of equity capital as set forth in the *Hope* and *Bluefield* Supreme Court Decisions. Witness Garrett contended that UIF's awarded ROE should be based on its estimated cost of equity of 6.00 percent. OPC argued that witness Garrett's ROE analysis properly took into account the historically low interest rates and that utility stocks are less risky than average stocks in the marketplace, and thus, have a lower cost of equity. OPC argued that consistent with the U.S. Supreme Court finding in the *Federal Power Commission v. Hope Natural Gas Co.* case,[40] the awarded ROE should also be fair and reasonable. Witness Garrett opined that while an ROE of 6.00 percent is accurate from a technical analysis standpoint, he recommended this Commission award an ROE of 9.50 percent.

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[40] *See Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

Witness Garrett argued that an awarded ROE of 9.50 percent represents a good balance between the Supreme Court's decision in the *Hope* case that awarded ROEs should be based on cost, while recognizing the end result must be reasonable. OPC argued that OPC witness Garrett's recommended ROE of 9.50 percent is closest to the result of 9.69 percent from this Commission's leverage formula.

B. Analysis

1. Cost of Equity Models

The ROE is the allowed cost of common equity included in a utility's regulatory capital structure to determine the overall rate of return used to establish a revenue requirement. UIF's common equity is not publicly traded, and as such, a market-based cost rate for the Utility cannot be directly observed. Consequently, both OPC witness Garrett and UIF witness D'Ascendis applied cost of equity financial models to a proxy group of publicly traded companies with similar risk to UIF to derive approximations of the required ROE. OPC witness Garrett used the same proxy group of publicly traded water utilities as that of UIF witness D'Ascendis.

Both OPC and UIF witnesses used the Discounted Cash Flow (DCF) model and the Capital Asset Pricing Model (CAPM) to estimate the cost of equity. In addition, UIF witness D'Ascendis employed two risk premium methods, the PRPM (predicted risk premium model) and the adjusted total market approach RPM (risk premium model) to estimate the cost of equity. Neither OPC witness Garrett nor UIF witness D'Ascendis believe our Leverage Formula approved by Order No. PSC-2020-0222-PAA-WS[41] is appropriate for setting the allowed ROE in this case. Witness Garrett argued the result from our Leverage Formula is too high and doesn't have an input for market risk and witness D'Ascendis contended it is too low and doesn't meet the *Hope* and *Bluefield*[42] standard.

The DCF model is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its basic form, the DCF model is expressed as the dividend yield of a stock plus the expected long-term growth rate.

ROE = (dividend ÷ stock price) + growth rate

The CAPM is a risk premium method that estimates the cost of equity for a stock as a function of a risk-free return plus a risk premium. The market risk premium is defined as the incremental return of the stock market as a whole less the risk-free rate multiplied by the beta for the individual security. The beta is expressed as the volatility or expected return of an individual security compared against the stock market as a whole. A beta value of 1.0 indicates the individual security has the same volatility or expected return as the stock market. A beta value of

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[41] Order No. PSC-2020-0222-PAA-WS, Issued June 29, 2020, in Docket No. 20200006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*

[42] *See Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia, 262 U.S. 679, 692-93 (1923),* and *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

less than 1.0 is considered less risky than the stock market as a whole and a beta value greater than 1.0 is considered more risky.

ROE = risk-free rate + Beta (expected market return – risk-free rate)

The risk premium approach is based on the principle that an investment in equity securities is more risky than an investment in bond securities and equity investors require a higher return than debt investors to compensate equity investors for bearing greater risk. In the risk premium approach, the cost of equity is derived from the sum of the estimated equity risk premium and the expected yield on a particular class of bonds.

ROE = risk premium + bond yield

2. UIF

Witness D'Ascendis recommended that we authorize a return on common equity of 11.75 percent. In support of his recommendation, witness D'Ascendis applied several cost of equity models to a proxy group of regulated water companies and a second proxy group of non-regulated companies. Those models included the DCF, CAPM, and two Risk Premium Models; a Predictive RPM and a RPM using an adjusted total market approach. In addition, witness D'Ascendis argued that an upward adjustment of 100 basis points is necessary to compensate UIF for its unique business risk and smaller size as compared to his Utility Proxy Group. Table 7 summarizes the results from witness D'Ascendis' cost of equity models and recommendation.

Table 7
UIF Witness D'Ascendis' ROE Model Results

Common Equity Cost Rate Model	**Results**
Discounted Cash Flow Model (DCF)	9.07%
Risk Premium Model (RPM)	10.91%
Capital Asset Pricing Model (CAPM)	10.90%
Cost of Equity Models Applied to Non-Price Regulated Proxy Group	11.48%
Indicated ROE from model results	**10.75% (Avg. of Mean and Median)**
Business Risk Adjustment	1.00%
Recommended ROE	**11.75% (10.75% + 1.00%)**

Witness D'Ascendis selected seven publicly traded water companies for his Utility Proxy Group. The most recent five-year average common equity ratio (including short-term debt) for the Utility Proxy Group is 51.09 percent. That is comparable to UIF's common equity ratio of 49.39 percent. The seven companies are listed below.

- American States Water Company
- American Water Works Co., Inc.
- California Water Service Corp.
- Essential Utilities, Inc.
- Middlesex Water Co.
- SJW Corporation
- York Water Co.

Witness D'Ascendis applied the single-stage constant growth DCF model to his Utility Proxy Group as one method to estimate the ROE. He adjusted the dividend yield in the formula to account for quarterly dividend payments to reflect the actual payout frequency of the companies. Witness D'Ascendis relied on security analysts' five-year forecasts of earnings per share for the growth estimate in his application of the DCF. The average result of the DCF analyses of the seven water companies in the proxy group was 8.70 percent. The median result was 9.44 percent. Witness D'Ascendis then averaged the mean and median results to arrive at his recommended DCF result of 9.07 percent for the Utility Proxy Group.

Witness D'Ascendis applied both the traditional CAPM and the Empirical CAPM (ECAPM) to the companies in his Utility Proxy Group. The ECAPM, unlike the traditional CAPM, includes an algebraic adjustment to increase the Beta value in the equation to reflect the assumption that empirical studies demonstrate low beta securities earn returns somewhat higher than the traditional CAPM predicts. The CAPM and ECAPM require three inputs, the Beta coefficient, the risk-free rate, and the return on the stock market. For the Beta coefficient, witness D'Ascendis relied on an average of the adjusted Beta coefficient published by Value Line and provided by Bloomberg Professional Services. For the risk-free interest rate, witness D'Ascendis used the Blue Chip Financial Forecast (Blue Chip) to estimate the projected 30-year U.S. Treasury Bond Yield rate. He used the consensus forecast from the most future six annual quarters ending with the third quarter in 2021 as published in the May 1, 2020 Blue Chip. He averaged the more recent forecast with the long-range five-year forecasts for 2021 – 2025 and 2026 – 2030, as published in the December 1, 2019 Blue Chip. Witness D'Ascendis did not calculate an implied market return, but instead determined the expected equity risk premium for the market using six estimated market returns from three different sources: three from Ibbotson historical data, two from Value Line, and one from Bloomberg. In his CAPM, witness D'Ascendis used a risk-free rate of 2.03 percent, an estimated equity risk premium of 11.94 percent (indicating the expected return on the market is 14 percent), and an average beta for the Utility Proxy Group of 0.71. The CAPM results are summarized in Table 8.

Table 8
Summary of Witness D'Ascendis' CAPM Results

	Average Beta	Risk-Free Rate	Market Equity Risk Premium	Traditional CAPM	Empirical CAPM	Average of CAPM and ECAPM
Mean	0.69	2.03%	11.94%	10.29%	11.21%	10.75%
Median	0.72	2.03%	11.94%	10.63%	11.46%	11.05%
Average of Mean and Median	0.71	2.03%	11.94%	10.46%	11.34%	10.90%

Witness D'Ascendis also relied on two risk premium methods to support his recommended ROE for UIF. The first method is a Predictive Risk Premium Model (PRPM) and the second method is a risk premium method (RPM) using an adjusted total market approach. Witness D'Ascendis obtained a result of 11.31 percent and 10.50 percent, respectively, for his PRPM and RPM approaches. Witness D'Ascendis averaged the results of his two risk premium methods to arrive at an overall result of 10.91 percent for his risk premium models.

Witness D'Ascendis explained the PRPM estimates the risk/return relationship directly as the predicted equity risk premium is generated by the predictability of volatility using autoregressive conditional heteroskedasticity (ARCH). The inputs to the models are the historical returns on the common equity of each company in the Utility Proxy Group, minus the monthly yield on long-term U.S. Treasury securities through April 2020. Witness D'Ascendis used a generalized form of ARCH (or GARCH) to determine each utility's projected equity risk premium using Eviews statistical software. The mean and median results from witness D'Ascendis application of his PRPM to the Utility Proxy Group were 11.66 percent and 10.96 percent, respectively. Witness D'Ascendis then averaged the mean and median results to arrive at his final result of 11.31 percent for the PRPM.

Witness D'Ascendis' second RPM, an adjusted total market approach, added a prospective public utility bond yield to the average of an equity risk premium derived from a beta-adjusted total market equity risk premium and an equity risk premium based on the S&P Utility Index. First, witness D'Ascendis calculated a prospective Moody's A-rated public utility bond yield of 3.82 percent for the Utility Proxy Group based on the group's average Moody's issuer rating of A2/A3. Next, witness D'Ascendis used a derivation of a beta-derived RPM by determining a market risk premium of 10.71 percent based on an average result from six different methodologies, and multiplying the result by an adjusted beta of 0.71. The forecasted equity risk premium from witness D'Ascendis' beta-adjusted derivation was 7.60 percent (10.71% x 0.71 = 7.60%). The results are summarized in Table 9.

Table 9
Witness D'Ascendis' Beta-Adjusted RPM Derivation Results

	Equity Risk Premium Methodology	Utility Proxy Group
1.	Ibbotson Equity Risk Premium	5.78%
2.	Regression on Ibbotson RPM data	9.12%
3.	Ibbotson Equity Risk Premium based on PRPM	11.95%
4.	Equity Risk Premium based on Value Line Summary and Index	15.50%
5.	Equity Risk Premium based on Value Line S&P 500 Companies	11.58%
6.	Equity Risk Premium based on Bloomberg S&P 500 Companies	10.32%
	Average of RPM results	10.71%
	Adjusted Beta	0.71
	Forecasted Equity Risk Premium	**7.60%**

Witness D'Ascendis also derived the equity risk premium based on three RPMs using the S&P Utility Index holding period returns, and two RPMs using expected returns of the S&P Utility Index using Value Line and Bloomberg data. For the three RPMs using historical returns, witness D'Ascendis relied on a traditional RPM, a regression based RPM, and the PRPM. For the two RPMs using expected returns, witness D'Ascendis relied on the expected total returns on the S&P Utility Index using forecasted data from Value Line and Bloomberg Professional Services. Witness D'Ascendis averaged the results for an Implied Equity Risk Premium of 5.76 percent. Witness D'Ascendis' results using RPM on the S&P Utility Index is summarized in Table 10.

Table 10
Witness D'Ascendis' RPM results for the S&P Utility Index

RPM Methodology	S&P Utility Index Total	A-rated public utility bonds	Implied Equity Risk
Historical Equity Risk Premium	10.74%	6.53%	4.21%
Regression of Historical Equity Risk Premium	6.68%	n/a	6.68%
Forecasted Equity Risk Premium using PRPM	5.95%	n/a	5.95%
Forecasted Equity Risk Premium using Value Line Data	10.50%	3.74%	6.76%
Forecasted Equity Risk Premium using Bloomberg Data	8.97%	3.74%	5.23%
Average Equity Risk Premium			**5.76%**

Witness D'Ascendis averaged the results from his RPM based on the total market using his beta adjusted approach (7.60 percent) with the results using the holding period returns of the

S&P Utility Index with A-rated utility bonds (5.76 percent). The equity risk premium applicable to the Utility Proxy Group was 6.68 percent. Witness D'Ascendis then added his RPM result of 6.68 percent to his adjusted prospective bond yield of 3.82 percent to derive the final result of 10.50 percent for his estimate of an equity risk premium through the use of an adjusted total market approach.

Witness D'Ascendis also applied cost of equity models to a proxy group of domestic, non-price regulated companies. Witness D'Ascendis explained that the Supreme Court, in the *Hope* and *Bluefield*[43] cases, did not specify that comparable risk companies had to be utilities. He argued that non-price regulated companies make an excellent proxy if they are comparable in total risk to the Utility Proxy Group and are appropriate because all of the companies compete for capital in the same markets. Witness D'Ascendis selected twelve companies comparable in total risk to the Utility Proxy Group. Witness D'Ascendis explained the total risk can be determined by the measurement of the variance of returns as measured by the companies' beta coefficients. Companies that have similar betas and standard errors of regression are similar in total risk. The twelve non-price regulated companies selected by witness D'Ascendis are Casey's General Stores, Cboe Global Markets, Cracker Barrel, Campbell Soup, Dunkin' Brands Group, Darden Restaurants, Hormel Foods, Lancaster Colony, Eli Lilly, Lamb Weston Holdings, Altria Group, and Valvoline Inc.

Witness D'Ascendis applied the DCF, RPM, and CAPM to the non-price regulated proxy group in an identical manner as he did the Utility Proxy Group except for the PRPM. The average of the mean and median of his results were 11.48 percent for the twelve company non-price regulated proxy group. The results are summarized in Table 11.

Table 11
Witness D'Ascendis' ROE estimate for a
non-price regulated proxy group of companies

Cost of Equity Models	**Indicated ROE**
DCF	8.41%
RPM	13.12%
CAPM	11.83%
Mean	11.12%
Median	11.83%
Average of Mean and Median	**11.48%**

Witness D'Ascendis contended that due to its small size relative to the companies in the Utility Proxy Group, UIF has greater business risk which should be reflected in its awarded ROE. As such, witness D'Ascendis opined that 100 basis points should be added to his ROE

[43] *See Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia, 262 U.S. 679, 692-93 (1923),* and *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

estimate of 10.75 percent for a final recommended ROE of 11.75 percent. Witness D'Ascendis explained that smaller companies are less able to cope with risk exposure to negative business cycles and economic downturns. Investors require higher returns from riskier companies to compensate for less marketability and liquidity of small company stocks. Witness D'Ascendis cited several well-known articles in support of his testimony. Witness D'Ascendis argued that consistent with financial principles of risk and return, increased risk due to small size must be considered in the allowed rate of return on common equity. UIF's market capitalization is $196 million as compared to the $5.66 billion average market capitalization of the Utility Proxy Group; a difference of almost 29 times that of UIF. Witness D'Ascendis also testified that our leverage formula recognizes a size adjustment by adding a 50-basis point private placement premium and a 50-basis point small utility risk premium to the results of cost of capital models used in its derivation of the annual leverage formula. Additionally, the long-term debt of UIF's parent company, Corix Regulated Utilities (US), Inc. (CRU-US), is privately placed debt. Therefore, witness D'Ascendis argued, a size premium is necessary to reflect UIF's greater risk due to their smaller size relative to the Utility Proxy Group.

3. OPC

OPC witness Garrett also used versions of the CAPM and DCF model to calculate the cost of equity and determined the market cost of equity derived from his models indicated an ROE of 6.00 percent. Nonetheless, witness Garrett recognized that in the *Hope*[44] case, the U.S. Supreme Court found that although the awarded ROE should be based on the utility's cost of capital, the Supreme Court also indicated that the end result should be just and reasonable. Therefore, witness Garrett recommended UIF's allowed mid-point ROE should be 9.50 percent. Witness Garrett opined that while an awarded ROE of 6.00 percent would be technically accurate, an allowed ROE of 9.50 percent is a good balance between the Supreme Court's "end result" doctrine that the awarded ROE be based on the actual cost of equity and be reasonable.

Witness Garrett argued that allowed ROEs for utilities have been above the average required market return for two decades. Witness Garrett contended that because utility stocks are less risky than the average stock in the market, the cost of equity for utilities is below the market cost of equity. Witness Garrett recognized that an awarded ROE of 6.00 percent would be a substantial change from prior awarded ROEs and suggested the ratemaking concept of gradualism, which is usually applied to ratepayers to avoid rate shock, could be applied to shareholders and slowly reduce awarded ROEs towards their true market-based cost of equity. Witness Garrett explained if we suddenly changed the awarded ROE anticipated by regulatory stakeholders, it could have the undesirable effect of increasing the utility's risk profile and would be at odds with the Supreme Court's "end result" doctrine. Witness Garrett argued that an awarded ROE of 9.50 percent represents a gradual move toward UIF's market-based cost of equity, and would be fair to UIF's shareholders because 9.50 percent is over 300 basis points above the Company's market-based cost of equity.

OPC witness Garrett testified that the cost of capital should be evaluated objectively and closely tied to economic realities based on stock prices, dividends, growth rates and, most

[44] *See Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

importantly, risk. Witness Garrett opined that utility stocks are less risky than the average stock in the market and the cost of equity for utilities is below that of the market cost of equity. Witness Garrett opined that like regulated electric and gas utilities, water utilities' risk can be objectively measured through beta coefficients. Witness Garrett explained:

> Beta represents the sensitivity of a given security to the market as a whole. The market portfolio of all stocks has a beta equal to one. Stocks with betas greater than one are relatively more sensitive to market risk than the average stock. For example, if the market increases (decreases) by 1.0%, a stock with a beta of 1.5 will, on average, increase (decrease) by 1.5%. In contrast, stocks with betas of less than one are less sensitive to market risk, such that if the market increases (decreases) by 1.0%, a stock with a beta of 0.5 will, on average, only increase (decrease) by 0.5%. Thus, stocks with low betas are relatively insulated from market conditions.

Witness Garrett opined that firms with high betas are affected more than firms with low betas, which is why firms with high betas are riskier. Stocks with betas greater than one are generally known as cyclical stocks. Firms in cyclical industries are sensitive to recurring patterns of recession and recovery known as the business cycle. Thus, cyclical firms are exposed to a greater level of market risk. Securities with betas less than one, on the other hand, are known as defensive stocks. Companies in defensive industries, such as public utility companies, will have low betas and performance that is comparatively unaffected by overall market conditions. Therefore, witness Garrett argued, since utilities are defensive firms that experience little market risk and are relatively insulated from market conditions, that fact should be appropriately reflected in UIF's awarded ROE.

Witness Garrett applied the single stage quarterly compounding DCF model and the CAPM to the same Utility Proxy Group used by witness D'Ascendis. In his DCF application, witness Garrett obtained the current 30-day average of reported dividend and stock prices for the Utility Proxy Group to determine the dividend yield, then added a long-term terminal growth rate representing the U.S. nominal gross domestic product (GDP) of 3.90 percent. The result of his DCF model was 6.00 percent. Witness Garrett argued that the terminal growth rate used in the DCF model should not exceed the aggregate economic growth rate. According to the Congressional Budget Office, the U.S. GDP is 3.90 percent which includes an inflation rate of 2.0 percent. Witness Garrett argued that utilities are in the maturity stage of the business life cycle and their real growth opportunities are limited to the population growth within their defined service territory. For mature companies such as regulated utilities, witness Garrett argued, the terminal growth rate will likely fall between the expected rate of inflation and the expected nominal GDP.

Applying the CAPM to the Utility Proxy Group, witness Garrett obtained a result of 6.00 percent. In his CAPM derivation, witness Garrett used a risk-free rate of 1.51 percent which was based on the then current 30-day average of daily 30-year U.S. Treasury Bond Yield rate. Witness Garrett used the Utility Proxy Group average beta of 0.76 as published by Value Line Investment Survey even though there is evidence suggesting that betas published by sources like Value Line may overestimate the risk of utilities. For his equity risk premium (ERP), witness

Garrett relied primarily on the ERP reported in published expert surveys, and an implied ERP which he calculated. Witness Garrett explained his implied ERP relied on the Gordon Growth Model version of the DCF model to calculate the implied market return using the companies in the S&P 500. Witness Garrett obtained a result of 7.50 percent for the S&P 500 market return and subtracted the risk-free rate of 1.51 percent to obtain an ERP result of 6.00 percent. For his final ERP estimate, witness Garrett considered six ERP results ranging from 4.40 percent to 6.00 percent and conservatively selected the highest estimate of 6.00 percent. The final result of witness Garrett's CAPM yielded a result of 6.00 percent. The CAPM equation is presented here: $K = Rf + B(ERP)$ or $6.07\% = 1.51\% + 0.76(6.00\%)$.

To test the reasonableness of his cost of equity estimate, witness Garrett used the same methods as he did to derive the ERP and risk-free rate in his CAPM. Witness Garett opined that the risk-free rate plus the ERP is equal to the required return on the stock market. Witness Garrett contended that the cost of equity of utility stocks must be less than the total market cost of equity as indicated by the average utility company beta of less than 1.0. Using the same expert surveys and implied ERP calculations, witness Garrett concluded that the average market cost of equity is 7.00 percent which provides an upper limit to UIF's actual cost of equity.

Witness Garrett also recommended we increase the long-term debt ratio in UIF's capital structure used for setting rates from approximately 45 percent to 50 percent. Witness Garrett opined that UIF's proposed capital structure consists of an insufficient amount of debt, especially since UIF's awarded ROE will certainly be above the market-based cost of equity. Witness Garrett explained that equity capital has a higher cost than debt capital and companies can reduce their weighted average cost of capital (WACC) by increasing their debt financing. Witness Garrett argued that while competitive firms maximize their value by minimizing their WACC, regulated utilities can increase their revenue requirement by increasing their WACC. Comparatively, the Utility Proxy Group has an average debt ratio of 50 percent. The higher proportion of debt in the capital structure, the higher the financial risk which must be factored into the common equity cost rate.

4. OPC Critique of UIF Testimony

Witness Garrett testified to four main disagreements with and critiques of witness D'Ascendis' ROE testimony and quantitative analyses. First, witness Garrett argued that witness D'Ascendis used short-term, quantitative growth estimates published by analysts that resulted in high long-term growth rates in his DCF model analysis. Second, that witness D'Ascendis' market equity risk premium estimate of 11.94 percent used in his CAPM derivation was overstated and unsupported. Third, witness D'Ascendis' use of a non-price regulated proxy group is unnecessary, and the risk inherent in the non-regulated proxy group is greater than that of the Utility Proxy Group. Fourth, witness Garrett disagreed with witness D'Ascendis that a 100-basis point upward adjustment to the ROE is necessary to account for UIF's small-size risk.

a. DCF

Witness D'Ascendis used short-term growth rate estimates from analysts as high as 14 percent in his DCF model analysis. Witness Garrett explained that analysts' growth rates are based on short-term projections of earnings growth rates published by institutional research analysts such as Value Line and Bloomberg. Analysts' earnings growth rate estimates range from three to ten years and many ROE analysts inappropriately use them as long-term growth projections in the single-stage constant growth DCF model as witness D'Ascendis did in his analysis. Witness Garrett argued that a growth rate of 14 percent for one of the companies in witness D'Ascendis' DCF model is more than three times the projected U.S. GDP growth rate of 3.9 percent, which makes the results of witness D'Ascendis' DCF model upwardly biased and not reflective of current market conditions.

b. CAPM

Witness Garrett argued that witness D'Ascendis' market equity risk premium estimate of 11.94 percent used in his CAPM derivation was overstated and unsupported. Witness Garret pointed out that witness D'Ascendis' market equity risk premium estimate of 11.94 percent is significantly higher than the average estimates reported by 2,156 responses from people and entities in the U.S.A. to a 2020 IESE Business School survey. The average estimates for the market risk premium as reported by the 2020 IESE Business School survey was 5.60 percent with a maximum estimate of 13.40 percent. Witness Garrett compared witness D'Ascendis' equity risk premium estimate with three other independent sources ranging from 4.40 percent to 6.00 percent. Witness D'Ascendis' equity risk premium is twice that of the other independent sources for the ERP and clearly not within the range of reasonableness.

c. Non-Price Regulated Proxy Group

Witness Garrett argued that there is no marginal benefit from applying the same CAPM and DCF model to a group of non-price regulated, non-utility companies in this case. Witness Garrett contended that using a group of non-regulated, non-utility companies will not indicate a required return commensurate with returns of investments of corresponding risk. Also, witness D'Acsendis' application of CAPM suffers from the same overestimated equity risk premium used in the analysis of the Utility Proxy Group.

d. Small Size Premium

Witness Garrett disagreed with witness D'Ascendis that a 100-basis point upward adjustment to the ROE is necessary to account for UIF's small size risk. Witness Garrett argued that small-cap stocks do not consistently outperform large-cap stocks. Witness Garrett testified that the small size premium was short-lived from 1936-1975, and more recent studies demonstrated that after 1983, U.S. small-cap stocks underperformed relative to large-cap stocks. Witness Garrett opined that in a 2002 study by Elroy Dimson, Paul Marsh & Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns*, the authors found that after the size effect phenomenon was discovered in 1981, it disappeared in a few years. Witness Garrett argued that utility witnesses often use the term "size effect" to imply there should be a small-size premium to artificially inflate the cost of equity.

5. Business Risk

Business risk refers to the viability of a business and the ability to generate sufficient revenue to cover its operational expenses and cost of capital. Some examples of business risk facing water companies are the legal and regulatory environment, customer growth, declining customer water consumption, water supply restrictions, and significant water quality requirements. Witness D'Ascendis opined that because water utility companies have the obligation to provide safe, adequate, and reliable water service at all times, they do not have the option to delay capital-intensive investments in infrastructure. Witness D'Ascendis testified that increasingly stringent environmental standards from regulatory agencies such as the U.S. Environmental Protection Agency, state and county health agencies, and water management districts require additional investment in infrastructure to comply with new health and consumption standards. Because water utilities invest in capital-intensive long-lived assets, long-term business risks are of considerable concern to investors. Witness D'Ascendis testified that the capital intensity of the water utility industry, that is, the capital investment required to produce one dollar of revenue, is greater than in other industries including gas and electric utilities. Witness D'Ascendis explained that in 2019, it required $4.70 of net water utility plant to produce $1.00 in operating revenue, while for the Gas and Electric Industries, it required net plant of $2.33 and $2.93, respectively. Witness D'Ascendis also mentioned water utility companies have risk associated with their long-lived assets through low depreciation rates. Lower depreciation rates mean water utilities have lower depreciation expense and cannot rely on depreciation as a source of cash flow as much as other regulated industries. For example, witness D'Ascendis testified that water utilities' average depreciation rates in 2019 were 2.59 percent as compared to the natural gas and electric utilities that averaged depreciation rates of 3.35 percent and 3.64 percent, respectively. Witness D'Ascendis concluded that, ". . . the water utility industry's high degree of capital intensity and low depreciation rates, coupled with the need for capital spending to replace aging and failing water infrastructure, makes the need to maintain financial integrity and the ability to attract needed new capital through the allowance of a sufficient rate of return, increasingly important in order for water utilities to be able to successfully meet the challenges and investment needs they face."

6. Financial Risk

Financial risk is the additional risk that a company may not have sufficient cash flow to meet its financial obligations. The higher proportion of debt in the capital structure, the higher the financial risk which must be factored into the ROE. Witness Garrett explained the more risk an investor assumes the larger return the investor will demand. UIF proposed to use a capital structure consisting of 50.61 percent debt and 49.39 percent equity. The range of equity ratios for the Utility Proxy Group is between 38.48 percent and 57.05 percent, with an average of 49.34 percent. Witness Garrett argued that because regulated utilities have large amounts of fixed assets, stable earnings, and low risk relative to other industries, they can afford to have relatively higher debt ratios for leverage. Competitive firms can minimize their cost of capital by including a sufficient amount of debt in their capital structures. Witness Garrett opined that the average debt ratios of a utility proxy group will likely be lower than what would be observed in a pure competitive environment.

7. UIF Critique of OPC Testimony

Witness D'Ascendis disagreed with seven recommendations and assumptions in witness Garrett's testimony. First, witness Garrett's recommendation to increase the debt ratio in the capital structure from 50 percent to 55 percent is unreasonable because it is based on the debt ratios of non-utility industries. Second, witness Garrett's recommended ROE of 9.50 percent was not supported by the results of his cost of equity models. Third, witness Garrett confused the relationship between the allowed ROE, the required ROE, the expected return, and the cost of equity. Fourth, witness Garrett incorrectly concluded that allowed returns for utility companies exceed the required return on the market. Fifth, witness Garrett did not apply the DCF model appropriately. Sixth, witness Garrett did not apply the CAPM appropriately. Seventh, witness Garrett did not consider using a small size premium for UIF in his ROE recommendation.

a. Capital Structure

Witness D'Ascendis rebutted witness Garrett's recommendation to increase UIF's debt ratio in its capital structure from 50 percent to 55 percent and explained the CRRA (Certified Rate of Return Analyst) Guide recommends using a hypothetical capital structure when 1.) the utility's capital structure is deemed to be substantially different from the typical or proper capital structure, or 2.) the utility's capital structure is funded as part of a diversified organization whose overall capital structure reflects its diversified nature rather than its utility operations only.[45] Further, witness D'Ascendis pointed out that UIF's parent capital structure is in line with the capital structures of the companies in the Utility Proxy Group and UIF's parent, Corix Regulated Utilities, Inc., which solely operates regulated water utilities and is not diversified. UIF's proposed capital structure consisting of a common equity ratio of 49.39 percent compares very closely with that of the Utility Proxy Group's average capital structure consisting of 49.34 percent.

b. Lack of Empirical Basis for 9.50 percent ROE

Witness D'Ascendis argued that witness Garrett's recommended ROE of 9.50 percent is fundamentally disconnected from his analytical model results of 6.00 percent and far removed from observable and relevant data. Witness D'Ascendis disagreed with witness Garrett's application of the concept of gradualism to this case and pointed out that gradualism is usually applied from the ratepayers' viewpoint as a method to avoid rate shock and is not applicable to the awarded ROE. In rebuttal, witness D'Ascendis stated, "Given that Mr. Garrett's analyses in this case point to a lower return of 6.00%, but he recommended a 9.50% return, it is unclear to the extent that Mr. Garrett finds the analyses he presents to be reliable, as they clearly have no correlation with his recommendation." Witness D'Ascendis opined that witness Garrett's recommendation is without merit or empirical support, and should be given no weight by this Commission.

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[45] See, David C. Parcell, *The Cost of Capital – A Practitioner's Guide*, Prepared for the Society of Utility and Regulatory Financial Analysts, 2010 Edition, at 47.

c. Relationship between various types of returns and ROE

In his rebuttal testimony, witness D'Ascendis opined that witness Garrett's explanation of the relationship between the allowed ROE and investor-required ROE changed throughout his testimony. On page 5 of his testimony, witness Garrett stated, "While cost of equity, required ROE, earned ROE and awarded ROE are interrelated factors and concepts, they are all technically different from each other." Witness D'Ascendis then claimed witness Garrett contradicted his prior statement on page 14 by stating that awarded ROEs and cost of equity are very different concepts. Witness D'Ascendis contended that witness Garrett continued to change his position regarding the equivalency, or non-equivalency of the allowed and required ROE. Witness D'Ascendis rebutted witness Garrett by explaining "For regulated utilities, the ROE equals the investor-required return on equity which equals the allowed ROE, as reflected in the *Hope* and *Bluefield* Supreme Court decisions cited in both my Direct Testimony and Mr. Garrett's testimony."

d. Allowed ROEs Exceed the Investor-required return on the market

Witness D'Ascendis argued that witness Garrett's conclusion that allowed ROEs have exceeded the investor-required return on the market is his own opinion and misplaced. Witness D'Ascendis disagreed with witness Garrett's methodology used to calculate the market cost of equity which ranged from a high of 11.96 percent in 1990 to 7.12 percent in 2019, with the lowest result of 6.91 percent in 1998. In rebuttal, witness D'Ascendis calculated the market cost of equity for the same period using his PRPM methodology which ranged from approximately 19 percent in 1990 to 13.50 percent in 2019. Witness D'Ascendis opined that his results made intuitive sense as the ratio of allowed ROEs versus the required market return averages about 0.70, which is consistent with utility betas over the same period.

e. Misapplication of the DCF Model

Witness D'Ascendis argued that witness Garrett's use of a 3.90 percent growth rate in his DCF model is not based on any measure of company-specific growth. Witness Garrett's assumption that one growth rate applies to all companies in the Utility Proxy Group has no basis in theory or practice. Further, GDP is not an upper limit for terminal growth in the DCF model as witness Garrett contends. GDP is not a market measure, but rather a measure of the value of the total output of goods and services, excluding inflation, in an economy. Witness D'Ascendis argued that while projected growth in earnings per share (EPS) is not a market measure, it is well established in financial literature that EPS is the superior measure of dividend growth in a DCF model. Since the utility industry is in its mature phase of the company life cycle, which is characterized by limited investment opportunities and steady earnings growth, the company-specific projected EPS growth rate, not the projected GDP growth rate, is the appropriate measure for growth in the DCF model.

f. Misapplication of the CAPM

Witness D'Ascendis disagreed with witness Garrett's use of the average 30-year U.S. Treasury Yields to estimate his risk-free rate and the various methods he used to estimate the

MRP (market return less the risk-free rate). Witness Garrett's risk-free rate is not based on prospective estimates in contradiction to his testimony that a forward looking risk premium should be used in the CAPM. The MRP surveys used by witness Garrett, such as the Duff and Phelps survey, are based on an expected return on the market which has no relevance to the investor-required return. Further, the Graham and Harvey survey did not provide a reasonable prospective market return estimate. Witness D'Ascendis demonstrated that the Graham and Harvey survey respondents have provided forecasts that significantly underestimated actual market returns. From 2012 through 2019 the Graham and Harvey Survey averaged an expected market return of 5.30 percent while the actual average market return was 15.55 percent. Witness D'Ascendis opined witness Garrett's implied MRP using the Constant Growth DCF methodology is based on a series of questionable assumptions, to which a small set of very reasonable adjustments produces a higher market return estimate. Witness Garrett argued witness Garrett's growth rate of 5.37 percent is too low and he should have used the arithmetic mean which would have equated to a growth rate of 7.35 percent and an estimated market return of 7.98 percent. Witness Garrett's CAPM analysis is flawed because it uses a historical risk-free rate and MRPs based on expected returns.

g. Lack of a Small Size Premium

Witness D'Ascendis took issue with witness Garrett's position that a small size premium is not necessary as studies have shown that small-cap stocks do not consistently outperform large-cap stocks, and therefore, a small size premium is not appropriate. Witness D'Ascendis argued that witness Garrett's position focuses only on the returns of small companies versus large companies. Smaller companies face greater risk than larger companies as they are less able to overcome significant events that affect business operations. As quoted by witness D'Ascendis, Duff & Phelps indicated that the size of a company is one of the most important risk elements to consider when developing cost of equity estimates. Duff & Phelps' *2017 Valuation Handbook – U.S. Guide to Cost of Capital: Cost of Capital Navigator* states:

> The size of a company is one of the most important risk elements to consider when developing cost of equity estimates for use in valuing a firm. Traditionally, researchers have used market value of equity (i.e., "market capitalization" or simply "market cap") as a measure of size in conducting historical rate of return research. For example, the Center for Research in Security Prices (CRSP) "deciles" are developed by sorting U.S. companies by market capitalization. Another example is the Fama-French "Small minus Big" (SMB) series, which is the difference in return of "small" stocks minus "big" (i.e., large) stocks, as defined by market capitalization.

Witness D'Ascendis pointed to additional articles supporting the applicability of a size premium making clear that size is a risk factor that must be taken into account when setting the cost of capital. Further, our annual leverage formula allows for a 0.50 percent private placement premium and a 0.50 percent small size premium to recognize smaller companies are considered by investors to be more risky than larger companies.

8. Commission's Leverage Formula

Both witness D'Ascendis and witness Garrett discussed our leverage formula in their respective testimonies. Using UIF's equity ratio in our leverage formula yielded a result of 9.69 percent. UIF witness D'Ascendis argued that the leverage formula result of 9.69 percent underestimated the current investor-required return for UIF. OPC witness Garrett testified that his results from the CAPM and DCF model indicate UIF's cost of equity is much lower than our leverage formula result of 9.69 percent. Witness Garrett further testified that he believed our leverage formula did not add any marginal value to the analytical process beyond the CAPM and DCF Model. Further, witness Garrett questioned whether our leverage formula met the Supreme Court's *Hope* and *Bluefield* standard because the leverage formula did not measure the cost of equity and there is no input to account for market risk, or the effect of market risk on UIF. In deposition, witness Garrett admitted he was not intimately familiar with the theory behind our leverage formula and was not sure how the formula is calculated or derived. Neither witness provided convincing testimony that our annual leverage formula was inaccurate or inappropriate for setting a ROE for small Florida water and wastewater utilities.

9. Declining Authorized ROEs

As presented in witness Garrett's testimony, according to Regulatory Research Associates (RRA) the average authorized ROEs for water utilities in the U.S. have declined from approximately 10.25 percent in 2006 to approximately 9.40 percent in 2017. In his deposition, witness D'Ascendis confirmed that according to RRA the annual average allowed return on equity for water utilities has been below 10 percent since 2012; however, he also stated that the below 10 percent rate was the average and not all of the allowed ROEs were below 10 percent, and a few were 10.50 percent.

10. Summary

In general, UIF witness D'Ascendis used cost of equity models and assumptions that produced a high ROE estimate, while OPC witness Garrett used cost of equity models and assumptions that produced a low ROE estimate. The appropriate ROE is greater than OPC's recommended ROE of 9.50 percent and lower than UIF's recommended ROE of 11.75 percent. The range of results of the witnesses' cost of equity models is 6.00 percent to 11.66 percent.

The only cost of equity model analysis that supports a 10.75 percent ROE is UIF witness D'Ascendis' Predictive Risk Premium Model (PRPM) with an average result of 11.66 percent. However, the record showed that the PRPM is based on the GARCH model, which used Eviews statistical software to derive a predictive equity risk premium, which is added to a projected risk-free rate. This method is akin to a black box calculation where the inputs were entered and a result was produced using statistical software. Witness D'Ascendis and his colleagues developed the PRPM method and admitted that it is used primarily by himself and other colleagues familiar with the methodology. The record failed to support that witness D'Ascendis' PRPM methodology is widely accepted by other jurisdictions as a method to estimate the equity risk premium. Therefore, we find that the cost of equity models using the PRPM shall be discounted in this case.

Witness D'Ascendis also used a proxy group of twelve competitive unregulated companies of statistically equal risk to the Utility Proxy Group to derive a cost of equity of 11.48 percent. Witness D'Ascendis included the derived cost of equity of 11.48 percent for his non-price regulated company proxy group in his overall average for the individual cost of equity models for the Utility Proxy Group. This practice inflated the overall results of witness D'Ascendis' cost of equity models by 30 basis points. We agree with OPC witness Garrett that there is no marginal benefit in this case from applying the same CAPM and DCF models to a group of non-price regulated, non-utility companies.

We agrees with UIF witness D'Ascendis that OPC witness Garrett's cost of equity model results of 6.00 percent has no correlation to, and does not provide any empirical support for, his recommended ROE of 9.50 percent. Further, a cost of equity of 6.00 percent is unreasonable considering that investors require a higher return on equity over debt and the cost of long-term debt for UIF is 5.78 percent. Therefore, witness D'Ascendis' traditional forms of the CAPM and DCF models shall be given more weight than witness Garrett's CAPM and DCF models.

We place greater weight on the traditional forms of the CAPM and DCF models applied to a comparable Utility Proxy Group. Witness D'Ascendis' DCF model average result for the Utility Proxy Group was 8.70 percent using an average growth estimate of approximately 6.88 percent. In comparison, OPC witness Garrett's DCF model result was 6.00 percent, using a growth rate of 3.90 percent. We agree with witness D'Ascendis that using an estimate for GDP of 3.90 percent as the growth rate in the DCF model for calculating the cost of equity using the Utility Proxy Group is inappropriate because it is not based on any measure of growth in the utility industry.

Witness D'Ascendis routinely used assumptions and estimates towards the high end of the range of reasonableness in his cost of equity models. In his CAPM and ECAPM analyses, witness D'Ascendis used estimates for the return on the total market of 18.71 percent, 14.79 percent, and 13.53 percent, which translated into equity risk premiums of 15.50 percent, 11.95 percent, and 11.58 percent. Additionally, in one of his risk premium derivations, witness D'Ascendis calculated an average equity risk premium of 6.68 percent using a total market approach and added the result to an adjusted prospective bond yield for the Utility Proxy Group of 3.82 percent. The result was 10.50 percent. This result is higher than UIF's current allowed ROE of 10.40 percent.

In his deposition, witness D'Ascendis confirmed that his cost of equity models reflect a return on the total market of approximately 14 percent. However, witness D'Ascendis admitted that the historical return on the U.S. stock market has averaged 12.10 percent. Witness D'Ascendis opined that, statistically, the difference between 12 and 14 percent is indistinguishable. However, by using the higher estimated return on the market, witness D'Ascendis' results from his cost of equity models were inflated.

In his traditional CAPM derivation, witness D'Ascendis obtained a result for the Utility Proxy Group of 10.46 percent using a return on the market of approximately 14 percent. However, if witness D'Ascendis used the average market return of 12.10 percent in his traditional CAPM derivation, along with his estimated average Beta coefficient of 0.69 and his projected risk-free rate of 2.00 percent, the result would be 9.17 percent [12.10% = 2.00% + 0.71(12.10% - 2.00%)]. Consequently, using a bullish estimated market return of 14 percent yielded an estimated cost of equity 136 basis points. The higher ROE estimate, based on the highest market return projection, is significant when applying the result to the overall cost of capital used to set the rates UIF charges to its ratepayers.

Averaging the result of 8.70 percent from UIF witness D'Ascendis' DCF model with the result of 9.17 percent from his traditional CAPM model using an average market return of 12.10 percent, yields an estimated cost of equity of 8.94 percent. Recognizing that UIF's small size relative to the companies included in the Utility Proxy Group contributes to additional business and financial risk for UIF as compared to the companies in the Utility Proxy Group, we hereby find that the record reasonably supports an ROE of 9.90 percent.

C. Conclusion

Based on the aforementioned, the record does not reliably support an ROE of 11.75 percent. The traditional CAPM and DCF models presented in the record, when simplified, more reliably support an indicated cost of equity of 8.94 percent. Recognizing UIF's smaller size as compared to the companies in the Utility Proxy Group contributes to additional risk, we find that the record reasonably supports an ROE of 9.90 percent. UIF's current allowed ROE is 10.40 percent. The record indicates that allowed ROEs across the country have been trending downward to an average of below 10.00 percent. Further, our annual leverage formula reflected an estimated allowed ROE of 9.70 percent based on UIF's equity ratio of 49.39 percent. Moreover, we determined that UIF's quality of service is unsatisfactory and imposed a 15 basis point reduction to the ROE as a penalty. Therefore, we find that the appropriate ROE for UIF is 9.75 percent, which includes a 15 basis point penalty for unsatisfactory service quality, with a range of plus or minus 100 basis points.

XXIII. Weighted Average Cost of Capital

A. Parties' Arguments

1. UIF

UIF argued that the weighted average cost of capital (WACC) is a fallout from the determinations of Sections XVIII through XXI. Witness D'Ascendis argued that UIF's proposed capital structure is reasonable as compared with the range of equity ratios maintained by the Utility Proxy Group from which he derived his recommended common equity cost rate in Section XXII. Witness D'Ascendis also argued that UIF's proposed capital structure consisting of a common equity ratio of 49.39 percent compares very closely with that of the Utility Proxy Group's average capital structure consisting of 49.34 percent.

2. OPC

OPC argued the appropriate WACC based on OPC's proposed capital structure is 6.73 percent. Witness Garrett recommended we increase the long-term debt ratio in UIF's capital structure used for setting rates from approximately 45 percent to 50 percent. Witness Garrett opined that, comparatively, the Utility Proxy Group has an average debt ratio of 50 percent. Witness Garrett argued that UIF's proposed capital structure consists of an insufficient amount of debt, especially since UIF's awarded ROE will certainly be above its market-based cost of equity. Witness Garrett explained that equity capital has a higher cost than debt capital and companies can reduce their weighted average cost of capital (WACC) by increasing their debt financing. Witness Garrett argued that while competitive firms maximize their value by minimizing their WACC, regulated utilities increase their revenue requirement by increasing their WACC.

B. Analysis

In its MFRs, UIF requested a capital structure based on a 13-month average as of December 31, 2019, consisting of common equity in the amount of $66,098,114 (49.39 percent), long-term debt in the amount of $60,999,232 (45.58 percent) and short-term debt in the amount of $6,731,596 (5.03 percent) as a percentage of investor supplied capital. The ratios of UIF's investor supplied capital is based on the actual capital structure of the Utility's parent company, Corix Regulated Utilities, Inc. The Utility appropriately used the 13-month average to determine the capital structure for Class A utilities as required by Rule 25-30.433(4), F.A.C. UIF reconciled the capital structure to the UIF rate base using only its investor sources of capital. When reconciled to the UIF rate base, the ratios are reduced to 44.85 percent for common equity, 41.39 percent for long-term debt, and 4.57 percent for short-term debt.

1. UIF

Witness D'Ascendis argued that UIF's common equity ratio of 49.39 percent is reasonable and consistent with the range of common equity ratios maintained by the companies in the Utility Proxy Group. The range of common equity ratios for the Utility Proxy Group is between 38.48 parent and 57.05 percent, with an average of 49.34 percent. Witness D'Ascendis maintained that a long-term debt cost rate of 5.78 percent and a short-term debt cost rate of 4.04 percent are appropriate as they are the actual 13-month average debt cost rates for UIF's parent company.

Table 12
UIF Requested Weighted Average Cost of Capital

Capital Component	Amount	Percentage	Cost Rate	Weighted Cost
Long-Term Debt	$60,999,232	41.59%	5.78%	2.40%
Short-Term Debt	$6,731,596	4.59%	4.04%	0.19%
Common Equity	$66,098,114	45.07%	11.75%	5.30%
Customer Deposits	$248,501	0.17%	2.00%	0.003%
Tax Credits – Zero Cost	$73,443	0.05%		
ADITs	$7,156,450	4.88%		
ADITs - TCJA	$5,353,825	3.65%		
Total Weighted Average Cost of Capital		**100%**		**7.89%**

2. OPC

Witness Garrett argued that UIF's proposed capital structure consists of an insufficient amount of debt, especially since UIF's awarded ROE will certainly be above its market-based cost of equity. Accordingly, witness Garrett recommended we apply a capital structure consisting of 45 percent common equity, 50 percent long-term debt, and 5 percent short-term debt. Witness Garrett argued that under the rate base rate of return model, a higher WACC results in higher rates, all else held constant. Witness Garrett argued UIF's proposed debt ratio is far too low, and if adopted, would result in a reasonably high WACC for shareholders. OPC witness Crane testified to the WACC recommended by OPC as presented in Table 13.

Table 13
OPC Recommended Weighted Average Cost of Capital

Capital Component	Amount	Percentage	Cost Rate	Weighted Cost
Long-Term Debt		45.63%	5.78%	2.64%
Short-Term Debt		4.56%	4.04%	0.184%
Common Equity		41.06%	9.50%	3.90%
Customer Deposits		0.17%	2.00%	0.003%
Tax Credits – Zero Cost		0.05%		
ADITs		4.88%		
ADITs - TCJA		3.65%		
Total Weighted Average Cost of Capital		**100%**		**6.73%**

The weighted average cost of capital is a fallout issue that combines the cost rates and amounts of the capital components into a final rate of return. As discussed in Issue 18, the appropriate total amount of ADITs is $12,510,275. For Section XIX through XXI, the cost rates for long-term debt (5.78 percent), short-term debt (4.04 percent), and customer deposits (2.00 percent) are stipulated. As we found in Section XXII, the appropriate ROE is 9.75 percent. Record evidence indicates that using the capital structure of UIF's parent, Corix Regulated Utilities, Inc., is reasonable and is comparable with the equity ratios of other regulated water utility companies in the Utility Proxy Group. Therefore, we agree with UIF that appropriate capital structure consists of 49.39 percent common equity, 45.58 percent long-term debt, and

5.03 percent short-term debt as a percentage of investor sources. The appropriate WACC is presented in Schedule No. 2 and in Table 14.

Table 14
Commission Approved Weighted Average Cost of Capital

Capital Component	Amount	Percentage	Cost Rate	Weighted Cost
Long-Term Debt	$57,822,168	41.39%	5.78%	2.39%
Short-Term Debt	$6,382,518	4.57%	4.04%	0.18%
Common Equity	$62,653,823	44.85%	9.75%	4.37%
Customer Deposits	$248,501	0.17%	2.00%	0.00%
Tax Credits – Zero Cost	$73,443	0.05%		
ADITs	$7,156,450	5.12%		
ADITs - TCJA	$5,353,825	3.83%		
Total Weighted Average Cost of Capital		**100%**		**6.95%**

C. Conclusion

The appropriate capital structure consists of 49.39 percent common equity, 45.58 percent long-term debt, and 5.03 percent short-term debt as a percentage of investor sources. Based on the proper components, amounts, and cost rates associated with the capital structure for the 13-month average test year ended December 31, 2019, as discussed in Sections XVIII through XXII, the appropriate weighted average cost of capital for UIF for purposes of setting rates in this proceeding is 6.95 percent.

XXIV. Test Year Revenues

A. Parties' Arguments

1. UIF

UIF argued the appropriate test year revenues are $16,603,928 for water and $20,305,882 for wastewater, as set forth in the Utility's MFRs.

2. OPC

OPC did not propose any adjustments to the Utility's adjusted test year revenues. However, OPC argued there should be adjustments of $1,693,982 to UIF's claimed water revenue deficiency of $2,823,848, as shown on Exhibit ACC-2, Schedule 1, which results in an overall water revenue increase of no more than approximately 6.8 percent. For wastewater, OPC argued that the adjustments indicate a revenue deficiency of no more than $2,720,043, which reflects revenue requirements of $3,809,340 to the Utility's revenue deficiency of $6,529,383. This would result in an overall wastewater increase of no more than approximately 13.4 percent.

B. Analysis

In its MFRs, the Utility reflected test year revenues of $16,603,928 for water and $20,305,882 for wastewater. UIF contended that its MFR schedules reflect the appropriate amount of test year revenues. The test year revenues consist of service revenues of $16,243,430 and miscellaneous revenues of $360,497 for water. For wastewater, test year revenues consist of service revenues of $19,974,976 and miscellaneous revenues of $330,906. Pursuant to the audit report, the Utility understated the number of water residential bills by 1,323 in its MFR Schedule E-2, which results in the understatement of water test year revenues by $14,923.

In addition, the Utility had a price index adjustment during the test year resulting in an increase to service rates and miscellaneous service charges. However, in its MFRs, the Utility annualized services revenues, but it did not annualize miscellaneous revenues. Annualizing for the increase in miscellaneous service charges results in miscellaneous revenues of $363,563 for water and $333,719 for wastewater. As a result, test year revenues shall be increased by $3,066 ($363,563 - $360,497) for water and $2,813 ($333,719 - $330,906) for wastewater. OPC's arguments pertain to UIF's requested revenue increase rather than the test year revenues.

Based on the above, the appropriate test year revenues for UIF's water and wastewater systems are $16,621,916 and $20,308,695, respectively. UIF's test year revenues shall be increased by $17,989 ($14,923 + $3,066) for water and $2,813 for wastewater.

XXV. STIPULATED—Rate Case Expense

We approved a Type II Stipulation addressing the appropriate amount of rate case expense, as follows:

The appropriate amount of rate case expense is $743,084. This shall be amortized over four years for an annual expense of $185,771. Based on the Utility's original request for amortization of rate case expense of $197,144, annual amortization of rate case expense shall be decreased by $11,373. Pursuant to Order No. PSC-2019-0363-PAA-WS, $39,727 of the total rate case expense is appellate and remand rate case expense related to Docket No. 20160101-WS.

XXVI. Pro Forma Expense

A. Parties' Arguments

1. UIF

UIF argued that adjustments to chemical expense related to its Lake Groves facilities were needed, as well as adjustments to telephone expense related to the new employees requested in this proceeding. However, no adjustment to telephone expense was required for the full-time position that UIF had requested be converted from a current part-time position to full-time. The Utility stated that two adjustments should be made to salaries, consisting of annualizing the three-percent salary increase so that a full year of salary expense was included, and to increase the salaries another three percent for the annualized salary increase that would take place in 2020. UIF stated that OPC witness Crane testified that it was not appropriate to include new post-test year employees; however, the Utility argued that witness Crane "overlooked the fact that the Commission approved new but not yet hired employees as a pro forma adjustment in UIF's last rate case."

2. OPC

OPC argued that it was the Utility's burden to prove that the additional employees it requested were needed. OPC also stated that UIF had admitted that it had not yet hired any of the additional employees; therefore, O&M expense should be reduced by $107,421 for water and $98,602 for wastewater.

B. Analysis

UIF requested several pro forma expense adjustments in its MFRs. OPC witness Crane testified that for the requested pro forma expense adjustments, the Utility had not provided a description of the adjustments or why the adjustments were necessary. Witness Crane stated supporting workpapers and calculations were requested from UIF for these adjustments; however, the information provided was inadequate in many cases. Witness Crane only included adjustments to the Utility's requested salaries and benefits, telephone, and truck fleet expenses as she recommended denial of the new employees. Witness Crane did not recommend an adjustment to any other pro forma expense discussed in this issue.

1. Amortized O&M Expense

As discussed in Section III, we approved the reclassification of costs associated with two pro forma plant projects (PCF-8, PCF-32) as amortized O&M expense. As such, wastewater miscellaneous expense shall be increased by $10,250 to amortize the WWTP permitting expenses in PCF-8 and $15,278 to amortize the I&I inspection expenses in PCF-32.

2. Capitalized Labor

In response to discovery, UIF indicated that capitalized labor expense was recorded for many of the pro forma projects as of October 1, 2020. The capitalized labor is included in our approved pro forma plant additions in Section III. As the labor expense is being recovered through the pro forma plant projects, a corresponding adjustment shall be made to reduce test year salaries and wages expense. Although the Utility did not make this corresponding adjustment to its instant filing, capitalized Water Services Corporation (WSC) labor has been an issue previously addressed in several rate cases involving the former sister companies prior to its reorganization. We allowed the inclusion of capitalized WSC labor expenses in rate case expense as long as the utility demonstrated that a corresponding reduction was made to test year salaries to remove the capitalized labor.[46] Our decision was based on the principal of avoiding double

[46] Order Nos. PSC-14-0025-PAA-WS, issued January 10, 2014, in Docket No. 120209-WS, *In re: Application for increase in water and wastewater rates in Marion, Orange, Pasco, Pinellas, and Seminole Counties by Utilities, Inc. of Florida*; and PSC-14-0283-PAA-WS, issued May 30, 2014, in Docket No. 130212-WS, *In re: Application for increase in water and wastewater rates in Polk County by Cypress Lakes Utilities, Inc.*

recovery. We have also previously approved this adjustment to capitalize labor associated with plant projects.[47] As such, we hereby decrease salaries and wages expense by $61,245 for water and $353,675 for wastewater. A corresponding adjustment shall be made to decrease payroll tax expense by $4,685 for water and $27,056 for wastewater.

3. New Employee Positions

UIF requested the addition of four new employee positions as pro forma expense adjustments. The Utility also requested adjustments to telephone expense and truck fleet expense related to the new employees, which will be discussed in more detail below. The four requested positions included a meter reader, a meter technician, a full-time water/wastewater operator, and a part-time water/wastewater operator being converted to full-time. For the requested meter reader position, UIF did not provide any description or information supporting the need for the position in its MFRs, witness testimony, or through discovery. The Utility also stated that none of the additional employees it requested had been hired.

Table 15
UIF Requested Salary Adjustments for New Employees

Position	**Requested Salary Adjustment**
Meter Reader	$29,000
Meter Technician	$40,956
Water/Wastewater Operator	$52,000
Water/Wastewater Operator	$18,400

In response to discovery, UIF stated that the meter technician would test, calibrate, repair, and/or replace water meters in the Sanlando system. During the test year, Sanlando had experienced excessive unaccounted for water and the Utility indicated additional support was needed to flow test the large meters in the system. Sanlando has over 300 large meters in use which, due to the age of the meters, may be under-recording water use. UIF also stated that the current field staff was barely able to test ten percent of its meters annually, as required by this Commission, as well as fulfill the meter tests requested by customers and required by the water management district. The Utility listed that a single meter technician was employed by UIF; however, it also staffed nearly 30 field technicians, who also perform some meter related tasks.

An additional full-time water/wastewater operator was requested primarily in support of the Lake Groves WTP and WWTP, and occasionally for the Barrington WWTP. The Utility stated that this new full-time operator was needed to operate, maintain, manage, and monitor the Lake Groves WTP following the addition of chlorine dioxide to its treatment process. The position would also provide additional support at the Lake Groves WWTP, where plant flows

[47] Order Nos. PSC-99-1399-PAA-WU, issued July 21, 1999, in Docket No. 981663-WU, *In re: Application for staff-assisted rate case in Orange County by Tangerine Water Company, Inc.*; PSC-17-0209-PAA-WU, issued May 30, 2017, in Docket No. 160065-WU, *In re: Application for increase in water rates in Charlotte County by Bocilla Utilities, Inc.*

have continued to increase due to customer growth in the service area, and the employee would help with the daily reclaimed water volume delivered to reuse customers. When needed, the new employee would also assist with monitoring, operating, and managing of the Barrington WWTP, which was acquired in 2019, and provide additional support during preparation and recovery from storms. As with the Eagle Ridge and Cross Creek WWTPs discussed below, the Lake Groves WWTP must be staffed by a certified operator for a minimum of six hours per day, seven days a week. For Barrington and Lake Groves, UIF indicated it had a combined total of five water/wastewater operators assigned to the two systems.

The conversion of a part-time water/wastewater operator position to a full-time position would be in support of the Eagle Ridge, Cross Creek, Sandalhaven, and Lake Placid systems. The Utility stated that the Eagle Ridge and Cross Creek WWTPs must be staffed a minimum of six hours per day, seven days a week to meet DEP Part III public access reclaimed water requirements. The conversion to a full-time position would provide an increase of 16 hours per week of available man-hours to staff the Cross Creek WWTP, particularly on weekends. Furthermore, the full-time position would allow for staffing at either of the Eagle Ridge or Cross Creek WWTPs in the event one of the other three plant operators was on leave or in training. UIF stated that based on recent storm events, additional manpower was needed to prepare for and recover from storms impacting its systems. For the Eagle Ridge, Cross Creek, and Lake Placid WWTPs, UIF specified that it had a combined total of four operators assigned to the three systems.

OPC witness Crane testified that it was inappropriate to include additional employees unless other corresponding adjustments were also made. Witness Crane argued that the costs the Utility incurred during the test year were the costs required to provide water and wastewater service, which included its employee base at the time. UIF's request for additional employees did not also include an adjustment to its water or wastewater sales to reflect post-test year growth. Witness Crane testified that the Utility had experienced customer growth over the period from December 2016 to the end of the test year, which included approximately 4 percent for water and 4.6 percent for wastewater. Specific to the test year, witness Crane stated that UIF experienced growth "of approximately 1.7 percent in the water utility and of 2.3 percent in the sewer utility." Therefore, witness Crane recommended that if the costs for the additional employees were included, a corresponding adjustment should be made to reflect additional revenues related to customer growth or, at a minimum, the actual growth that occurred during the test year should be annualized.

For the new meter technician and the part-time position moving to full-time, UIF did not indicate customer growth as a factor in the need for the additional employees. Instead, the two new positions would be to support existing operations, which require additional manpower to meet the necessary meter testing and DEP staffing requirements. For the new full-time operator position, the Utility stated that in addition to increased plant flows, an additional operator was needed due to the treatment change at Lake Groves and due to the recent acquisition of the Barrington system. Taking into account the information provided by UIF for the additional employees and the argument presented by witness Crane, customer growth does not appear to be the primary driver for the requested positions.

Considering the size of the Sanlando system, that only one meter technician is currently employed, and the Utility is attempting to address the issue of unaccounted for water, the addition of a new meter technician position for Sanlando appears reasonable. We find that moving a part-time operator position to full-time is reasonable in order to ensure DEP staffing requirements are met for the Eagle Ridge, Cross Creek, Sandalhaven, and Lake Placid systems. Furthermore, accounting for the recent addition of the Barrington WWTP and the new treatment system at the Lake Groves WTP, we find that the addition of a new operator position to support those systems is also reasonable. Finally, due to a lack of support, we do not approve of the meter reader position requested by UIF.

UIF allocated salary and wages and pensions and benefits expense for the requested meter reader based on ERCs. As such, we approve decreasing UIF's requested salary and wages expense by $15,121 ($29,000 x 52.14%) for water and $13,879 ($29,000 x 47.86%) for wastewater. Additionally, we approve a corresponding adjustment to decrease UIF's requested pensions and benefits expense by $7,830 ($15,017 x 52.14%) for water and $7,187 ($15,017 x 47.86%) for wastewater. There shall also be a corresponding adjustment to decrease payroll tax expense by $1,287 for water and $1,181 for wastewater.

4. Labor Escalator

The Utility requested an adjustment to increase salary and wages and pensions and benefits expense by 3.75 percent. This includes two parts: (1) a 3.00 percent pro forma increase for the year after the test year, and (2) a 0.75 percent increase to annualize test year salaries that were increased by three percent in April of the test year. OPC witness Crane recommended limiting this adjustment to 3.0 percent due to her belief that any further increase would essentially reflect costs in 2021. However, as UIF witness Swain indicated in her rebuttal testimony, the extra 0.75 percent increase is used to annualized the test year increase, not to move the increase beyond 2020. Further, the same 3.75 percent labor escalator was allowed in UIF's prior rate case in Order No. PSC-2017-0361-FOF-WS.[48] Therefore, we approve no adjustment.

5. Chemicals Expense

UIF requested a $71,653 adjustment to chemicals expense for the Lake Groves and Summertree systems. For the Lake Groves system, UIF requested an increase of $66,653 to annualize hydrochloric acid and sulfuric acid chemical costs. The Utility stated the Lake Groves water treatment process was upgraded in June 2019, which uses hydrochloric acid to maintain the level of disinfection byproducts below the required amount. For its Lake Groves system, UIF indicated that a six-month supply of hydrochloric acid is $1,121, which results in an annual cost of $2,242.

Further, the Utility stated that sulfuric acid is used to pretreat the raw water from Lake Groves Well 3. However, Well 3 could not be used for the first six months of 2019 while

[48] Order No. PSC-2017-0361-FOF-WS, issued September 25, 2017, in Docket No. 20160101-WS, *In re: Application for rate increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties by Utilities, Inc. of Florida*.

upgrades were being completed; therefore, no sulfuric acid was purchased during those months. In response to discovery, UIF indicated that a six-month supply of sulfuric acid is $37,205, which results in an annual cost of $74,410. This results in an annual chemical cost of $76,652 ($74,410 + $2,242) for hydrochloric acid and sulfuric acid for the Lake Groves system. However, UIF included $38,914 for sulfuric acid and hydrochloric acid chemicals in its MFRs for the test year. Therefore, we find that an adjustment be made to reduce pro forma chemicals expense for Lake Groves by $28,914 ($76,652 - $38,914 - $66,653).

For the Summertree system, UIF requested a $5,000 adjustment for chlorine dioxide chemicals as part of a pilot study performed under project PCF-38. The Utility stated that the study was initiated to reduce chlorine demand in the piping system. Witness Flynn stated that DEP approved the pilot study on August 8, 2020, and the pilot study will continue at least through January 19, 2021 or longer. In addition, witness Flynn stated the required amount of chlorine dioxide is expected to decrease over time as the system reaches equilibrium over the course of the study. Therefore, we find that the $5,000 adjustment for chlorine dioxide shall be removed, as the study is still ongoing, and the required amount of chlorine dioxide is unknown. Based on the above, we hereby find that a total reduction of $33,914 ($28,914 + $5,000) shall be made to chemicals expense.

6. Contractual Services - Testing Expense

UIF requested a $24,500 adjustment to Contractual Services – Testing, indicating that the adjustment was related to polyfluoroalkyl substances (PFAS) testing for the Summertree system. In response to discovery, the Utility stated that in 2020, it had “sampled and analyzed each water system’s point of entry for the presence of PFAS constituents, specifically PFAS and PFOA (Perfluorooctanoic acid).” We requested documentation supporting the amount of $24,500, and UIF provided an invoice totaling $2,850 for testing related to its Orangewood system. However, the invoice provided was billed to the Utility’s parent company and no specific system name was indicated on the document. No other documentation or justification was provided to support the $24,500 adjustment. Therefore, we hereby remove $24,500 from Contractual Services - Testing due to a lack of documentation and justification to support the adjustment.

7. Contractual Services - Other Expense

UIF requested an increase of $33,600 to Contractual Services - Other, indicating that the adjustment was related to increased ground maintenance costs for the Sandalhaven and Eagle Ridge systems. For the Eagle Ridge system, UIF requested a $22,800 adjustment for the increased cost to maintain new sod and native plant species. As part of project PCF-5, the Utility stated these items were required to be installed by Lee County to establish a visual buffer for a new field office and surge tank. In response to discovery, UIF provided a monthly contract price for the groundwork totaling $2,500. This results in an annual contract service cost of $30,000 for the Eagle Ridge system. Therefore, we find that an adjustment shall be made to increase contract services by $7,200 ($30,000 - $22,800) for the Eagle Ridge system.

For the Sandalhaven system, UIF requested a $10,800 adjustment for ground maintenance costs. In response to discovery, the Utility indicated it replaced the previous ground maintenance contractor for the Sandalhaven system because they did not adequately maintain the property or provide maintenance at any of the 13 lift stations. In response to discovery, UIF provided a monthly contract for the new ground maintenance contractor totaling $900. This results in an annual contract service cost of $10,800 for the Sandalhaven system. However, since the contract started in July 2019, UIF included $5,400 in its MFRs for the test year. Therefore, we find that an adjustment shall be made to decrease contractual services by $5,400 ($10,800 - $5,400) for the Sandalhaven system to account for the six months of the annual contract service already included. Based on the above, we hereby find that a total adjustment shall be made to increase Contractual Services - Other by $1,800 ($7,200 - $5,400).

8. Telephone Expense

As discussed above, UIF requested the addition of four new employees and the costs associated with those positions. One of the requested adjustments related to the new employees was an increase to telephone expense of $1,917 for water and $1,759 for wastewater. In response to discovery, the Utility indicated that these adjustments were originally for four new employees; however, the new positions included a current part-time employee moving to full-time. Therefore, only three of the new positions would require a phone and UIF decreased its requested adjustments to $1,437 for water and $1,320 for wastewater. As discussed above, we hereby approve three of the requested employees, including the conversion of the part-time position to full-time. Based on the documentation and justification provided by the Utility, we find that the appropriate telephone expense shall be $958 for water and $880 for wastewater for the two new positions requiring phones. Therefore, we hereby decrease UIF’s requested telephone expense adjustments by $959 for water and $879 for wastewater.

9. Truck Fleet Expense

UIF requested an adjustment to truck fleet expense of $6,931 for water and $6,362 for wastewater. The Utility indicated that these adjustments were for three new vehicles, which would be needed for the new employees. UIF stated that it currently has “79 vehicles assigned to Utility employees. The adjustment in fleet expense reflects the increase to 82 assigned vehicles and thus a pro rata increase of 3.8 percent in fleet expense in the test year.” We updated the requested truck fleet expense amounts to $4,615 for water and $4,236 for wastewater to reflect our disallowance of one new employee. Therefore, we hereby decrease UIF’s requested truck fleet expense adjustments by $2,316 for water and $2,126 for wastewater.

C. Conclusion

Based on the above, we hereby find that pro forma expense shall be decreased by $145,884 for water and $350,418 for wastewater.

XXVII. Test Year O&M Expense Adjustments

A. Parties' Arguments

1. UIF

In its brief, UIF argued that we should allow for the recovery of lobbying expenses that are for the benefit of customers through rates. UIF claimed that lobbying activities related to Fair Market Value (FMV) legislation would reduce the cost for current customers "by allowing UIF to spread individual system costs over a larger customer base" and would benefit new customers by "achieving economies of scale for the systems acquired." Given the "unique nature" of the lobbying, UIF stated that it is appropriate for these costs to be recovered through rates.

Additionally, UIF argued that we have frequently approved the recovery of costs associated with Incentive Compensation Plans (ICP) through rates. UIF contended that OPC witness Crane's recommendation to disallow 50-percent of the expense was arbitrary. UIF further stated that arbitrary action, such as that recommended by OPC, has previously been struck down in court.[49] UIF also stated that unlike the Florida Power & Light Company (FPL) case that OPC relied upon in its argument to disallow, witness Crane made no attempt to evaluate whether total compensation to employees was unnecessary or unreasonable, nor did the witness argue such.[50] UIF further highlighted the testimony of UIF witness Elicegui which presented results of a study in order to demonstrate that total compensation is reasonable and concluded that "compensation amounts compared favorably to the market."

In its brief, UIF also argued that we recognize that "a utility may legitimately include severance payments to employees as part of its base rate calculation."[51] UIF contended that OPC witness Crane's testimony stating that UIF did not provide detail for this expense was false and that details were provided in a discovery request response. UIF also stated that while this Commission usually adopts the three-year average when determining the appropriate amount for variable expenses, the Utility did not request an adjustment to the test year, as the test year amount was less than the three-year average approach.

2. OPC

In its brief, OPC asserted that this Commission has a policy of disallowing lobbying expenses. OPC argued that UIF did not present evidence of any benefit received by customers for its lobbying related to its Fair Market Value (FMV) legislation and as such any recovery through rates would be inappropriate. Furthermore, OPC claimed that the bill would have benefited shareholders instead of customers. Additionally, OPC stated that while UIF claimed both customers and shareholders would have benefited from the legislation, this Commission should disallow the entire cost because the Utility failed to present evidence that it attempted to

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[49] *Florida Bridge Company v. Bevis*, 363 So. 2d 799 (Fla. 1978).
[50] Order No. PSC-10-0153-FOF-EI, issued March 17, 2010, in Docket No. 080677-EI, *In re: Petition for increase in rates by Florida Power & Light Company.*
[51] Order No. PSC-92-0708-FOC-TL, issued July 24, 1992, in Docket No. 910980-TL, *In re: Application for a rate increase by United Telephone Company of Florida.*

quantify the actual benefit to customers or apportion the costs between customers and shareholders. OPC concluded that since UIF's FMV bill did not pass the 2020 legislature it could not have benefited the Utility's customers and is therefore reason alone to disallow the recovery of related expenses through rates.

In its brief, OPC argued that the recovery of costs through rates related to the Employee Deferred Incentive Compensation Program (EIP) should be disallowed, as it was designed to primarily benefit shareholders. OPC maintained that all costs of the EIP that are tied to financial metrics should be recovered from shareholders and not customers as the recovery of costs through rates would be inconsistent with a utility's mandate to provide safe and reliable utility service at the lowest reasonable cost. OPC reiterated this point by contending that this Commission has frequently disallowed the recovery of costs associated with EIPs that are determined by financial metrics. OPC further stated that UIF failed to perform a study comparing its EIP to other EIPs in which this Commission allowed for the recovery of costs through rates. Additionally, OPC stated that this Commission has found that incentive compensation tied to earning per share could have consequences contrary to customer welfare and safety. While witness Crane recommended only a 50-percent disallowance of costs associated with incentive compensation in her testimony, OPC contended that because UIF failed to meet its burden of proof to justify the costs of the Long-Term Incentive Plan (LTIP), this Commission should disallow 100 percent of costs related specifically to the LTIP.

In its brief, OPC argued that non-qualified retirement benefit plans should not receive favorable treatment by this Commission, just like they do not receive favorable treatment by the Internal Revenue Service (IRS). OPC stated that these expenses are not under the same scrutiny as qualified retirement benefit plans. Under the Employee Retirement Income Security Act (ERISA), OPC claimed, qualified plans must adhere to strict requirements including a $285,000 compensation cap and the prohibition of discrimination among employees regarding retirement benefits. OPC continued that non-qualified plans do not fall under the purview of ERISA and by offering these plans, a company is able to provide additional benefits to highly paid officers and executives. OPC contended that shareholders, not ratepayers, should fund these benefits.

In its brief, OPC argued that all of UIF's parent company's severance costs should be disallowed because UIF did not show that these costs are necessary to provide safe and reliable utility service. OPC stated that UIF failed to meet its burden of proof by providing details regarding the reason for the costs, the recurring nature of the costs, the number of employees involved, and the underlying factors that resulted in these severance payments. OPC also added that while the needed detail was not provided, including any non-recurring costs in ongoing rates by itself would be inappropriate.

B. Analysis

1. Incentive Compensation

UIF witness Deason testified that the Utility's EIP is a short-term incentive plan for the executive management team and select senior leaders at the parent company level. The only person in Florida who is subject to the EIP is the president of UIF, Gary Rudkin. All other employees under this plan are at the parent company level. The largest weighting factor in this plan is financial performance.

OPC witness Crane testified that in order for any award to be made under the EIP, the company must achieve a targeted level of return on investment and must be free from any code red safety or environmental incidents. Seventy percent of the company performance metric is based on financial performance measures. OPC witness Crane is recommending that the incentive compensation award costs that are tied to financial metrics be recovered from the Utility's shareholders, and denied for recovery in this case. Given the overall EIP's objective to maximize shareholder value and the overall requirement that certain financial metrics must be achieved prior to any awards being made, OPC witness Crane recommended an adjustment to eliminate 50 percent of the incentive compensation costs identified by UIF.

In rebuttal testimony, UIF witness Deason argued that OPC witness Crane made no allegations or presented any evidence that the total compensation paid to employees at UIF, or its parent company CORIX, is unnecessary or unreasonable. UIF witness Deason referenced past Commission orders that allowed recovery for incentive plans tied to the achievement of corporate goals because they provide an incentive to control costs.[52] We also allowed incentive compensation when a utility's total compensation package was set near the median level of benchmarked compensation. UIF witness Elicegui testified that charges included in the revenue requirement reflect shared and Corporate Services provided from the parent company at cost with no mark-up or profit. To compare with outside providers, adjusted shared and Corporate Service costs were reduced to an hourly rate and compared to market benchmarks. According to these benchmarks for Management Consultants, UIF's costs were less than half of what the costs would have been from an outside provider.

As referenced in earlier orders, our practice has been to allow incentive compensation in rates if the total compensation is at or below median market benchmarks. All of the employees included in the EIP, with the exception of the President of UIF, are at the parent company level. Based on UIF witness Elicegui's analysis of corporate service costs, we find that the total compensation package of employees at the parent company level are reasonable for recovery. Therefore, we make no adjustment. In so finding, "it is the [Commission's] prerogative to evaluate the testimony of competing experts and accord whatever weight to the conflicting opinions it deems necessary."[53]

2. Severance Pay

During the test year, UIF incurred approximately $57,000 in severance expense, all of which was allocated down from the parent company level which totaled $748,552, in Canadian dollars, prior to allocation. OPC witness Crane recommended removing this expense for two reasons. First, OPC witness Crane asserted that UIF provided no details regarding these severance costs and, therefore, has not met its burden of proof to demonstrate that these costs are

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[52] Order Nos. PSC-92-1197-FOF-EI, issued October 22, 1992, in Docket No. 910890-EI, *In re: Petition for a rate increase by Florida Power Corporation*; PSC-09-0283-FOF-EI, issued April 30, 2009, in Docket No. 20080317-EI, *In re: Petition for rate increase by Tampa Electric Company.*
[53] See *Gulf Power Co. v. FPSC*, 453 So. 2d 799, 805 (Fla. 1984)

necessary to the provision of safe and reliable utility service. Second, she pointed out that we do not know if these are recurring costs.

In rebuttal testimony, UIF witness Deason argued that OPC witness Crane was mistaken in both of her arguments. He first explained that detail for the test year was in fact provided in response to OPC discovery. He also stated that the amount of severance expense is recurring, but varies from year to year. He pointed to recent fluctuations in the expense to illustrate his point. In 2017, the parent company recorded $0 in severance expense, but then recorded $4,415,800, in Canadian dollars, in 2018. For variable expenses such as this, UIF witness Deason argued that it is common regulatory practice to take a three-year average for rate setting purposes. In this case, UIF reflected the test year amount, which is significantly less than the three-year average.

All of the severance expense incurred in this case comes from the parent company level. As discussed above, for incentive compensation, the overall compensation package for employees at the parent company level is well below the level UIF would incur if they outsourced management services. We find that, although severance pay is a variable expense, it is reasonable to expect some level of severance expense in any given year. Therefore, we shall make no adjustment.

3. Non-Qualified Retirement Benefits

OPC witness Crane testified that UIF included non-qualified retirement benefits to its employees in the test year and recommended the removal of this expense. These non-qualified plans provide supplemental retirement benefits for key executives that are in addition to the normal retirement programs provided by the Utility. "Qualified" plans limit the amount of compensation that can be considered for purposes of determining pension benefits. In addition, non-qualified plans allow a company to avoid rules and regulations that apply to qualified plans, such as requirements of the Employee Retirement Income Security Act. Non-qualified plans also do not qualify for the more favorable tax treatment that is available to qualified retirement plans under the Internal Revenue Service (IRS) Tax Code. These benefits are available to a very small group of officers and other executives that also receive the normal retirement plan benefits offered by UIF.

UIF witness Deason argued that OPC witness Crane's recommended adjustment to remove non-qualified retirement expense from the test year is inconsistent with prudent regulatory policy. He once again maintained that her analysis focused entirely on how certain employees are compensated, not on how much they are compensated, and that she provided no analysis demonstrating that the total amount of compensation is excessive to the marketplace for these employees. He asserted that UIF and CORIX have designed its compensation packages in order to be competitive in attracting and retaining well qualified and effective employees, so that it will achieve its mandate of providing safe and reliable service.

Although we agree with UIF's focus on evaluating total compensation, we find that the distinguishing factor that requires further consideration is OPC's point that non-qualified plans allow a utility to avoid certain rules and regulations, while also receiving less favorable tax treatment from the IRS. We agree that these expenses shall not be borne by the customers. UIF directly incurred non-qualified retirement plan costs of $26,853 in the test year. The Utility was also allocated approximately 22 percent of WSC's total costs, resulting in an allocation of $27,985 ($127,203 x 22%). The total amount of the expense, $54,838 ($26,853 + $27,985), was allocated to water and wastewater based on ERCs. Therefore, we hereby decrease pensions and benefits expense by $28,592 ($54,837 x 52.14%) for water and $26,245 ($54,837 x 47.86%) for wastewater.

4. Lobbying Expense

In OPC's first set of interrogatories to UIF, OPC asked for expenses included in the filing that were directed toward lobbying activities by the organization. In response to OPC's discovery, UIF provided a spreadsheet showing about $76,000 included in expense paid to several companies for lobbing. In response to follow up discovery from OPC, UIF indicated $45,827 paid to Gunster was to monitor legislative activity on the issue of Fair Market Valuation (FMV) with respect to water and wastewater acquisitions. The remaining expenses were utilized for regulatory assistance. UIF witness Snow suggested that passage of the FMV legislation would not only benefit UIF but also the customers due to increasing UIF's ability to acquire underfunded systems and offer robust financial and operational resources as well as allowing the Utility to spread individual system costs across an even larger customer base thus achieving economies of scale. OPC witness Crane testified that lobbying costs are not necessary for the provision of safe and adequate utility service and that lobbying activities of a regulated utility may be focused on policies and positions that enhance shareholders but may not benefit, and may even harm, ratepayers. It was indicated in UIF witness Snow's testimony that the FMV legislation that Gunster was monitoring for UIF did not pass the Legislature. We agree with witness Crane that it has been our practice to disallow lobbying expense.[54] Therefore, we hereby decrease O&M expenses by $23,894 ($45,827 x 52.14%) for water and $21,933 ($45,827 x 47.86%) for wastewater.

5. Holiday Party

In response to OPC's discovery, UIF indicated that the Utility has one office holiday social event each year. During the test year, the event was held at a restaurant in Orlando at a cost of $5,079. This amount was allocated between water and wastewater based on ERCs or $2,648 for water and $2,431 for wastewater. OPC witness Crane recommended that costs for the annual holiday social event be borne by shareholders instead of ratepayers. UIF provided no testimony opposing OPC witness Crane's recommendation to remove these costs from expenses. We agree that these social costs shall not be borne by ratepayers and shall be removed. Therefore, we hereby decrease O&M expense by $2,648 for water and $2,431 for wastewater.

[54] Order Nos. PSC-11-05470-FOF-EI, issued November 23, 2011, in Docket No. 110009-EI, *In re: Nuclear cost recovery clause*; and PSC-14-0025-PAA-WS, issued January 10, 2014, in Docket No. 120209-WS, *In re: Application for increase in water and wastewater rates in Marion, Orange, Pasco, Pinellas, and Seminole Counties by Utilities, Inc. of Florida.*; and PSC-14-07140-FOF-EI, issued December 31, 2014, in Docket No. 140007-EI, *In re: Environmental cost recovery clause.*

6. Infiltration & Inflow

This is a fall out to Section VI, which is a Type II stipulated issue. In its original filing, UIF included O&M expense adjustments to reflect I&I in Lincoln Heights and Orangewood. However, the Utility's filing should have also included O&M adjustments to reflect I&I in Summertree. UIF witness Swain provided these corrections to her testimony. As such, we hereby decrease purchased wastewater expense by $4,901 and purchased power expense by $107 for wastewater to reflect her corrections.

7. Sludge Removal Expense

The Utility recorded sludge removal expense of $639,081 for wastewater. This is an increase of $199,434 from the prior rate case test year. UIF stated that DEP has severely restricted the volume of biosolids that can be land applied to agricultural properties located in the Lake Okeechobee basin. This has caused an increase in prices for sludge hauling contractors. We make no adjustments, and therefore approve sludge removal expense of $639,081 for wastewater. OPC did not made a recommendation on sludge removal expense.

8. Chemicals

The Utility recorded chemical expense of $457,621 for water and $420,056 for wastewater for a total of $877,677. We reviewed UIF's chemical expenses from the prior rate case test year which were $367,915 for water and $453,080 for wastewater for a total of $820,995. We calculated an increase in chemical expense of $56,682 from the prior rate case test year. The Utility made a negative $40,974 adjustment to water chemicals expense and a positive $102,121 adjustment to wastewater chemical expense. These adjustments include the annualization of test year chemical expenses, due to DEP regulations, as well as corrections to allocations made at some facilities. We make no additional adjustments, and therefore approve a chemicals expense of $416,646 for water and $522,177 for wastewater. OPC did not made a recommendation on either water or wastewater chemical expenses.

C. Conclusion

Based on the above, we find that test year O&M expenses shall be decreased by $55,135 (-$28,592 - $23,894 - $2,648) for water and $55,617 (-$26,245 - $21,933 - $2,431 - $4,901 - $107) for wastewater.

XXVIII. STIPULATED—Operating Expense Amortization

We approved a Type II stipulation addressing whether any adjustments should be made to operating expense amortizations, as follows:

Pursuant to Order No. PSC-2017-0361-FOF-WS, the amortization expense associated with early retirements is $46,750 for the Summertree water system, $193,294 for the Longwood wastewater system, and $30,511 for the Sandalhaven wastewater system. Therefore, amortization expense shall be increased by $46 and $121,916 for water and wastewater, respectively.

XXIX. Taxes Other Than Income (TOTI)

A. Parties' Arguments

1. UIF

UIF argued that TOTI is a fallout adjustment determined by Sections III, XVI, and XXVII.

2. OPC

OPC reflected adjustments related to pro forma plant projects; these are discussed in Sections III, IX, XXVI, and XXVII. OPC argued that a fallout adjustment should be made to payroll tax expense to reflect the impact of OPC's recommended adjustments to eliminate cost for new employee positions, reduce the annual labor cost escalator, eliminate severance costs, and reduce incentive compensation award costs. OPC also stated that fallout adjustments should be made to property tax expense to reflect reductions associated with its recommended adjustments to pro forma plant projects and non-U&U adjustments to rate base for wastewater.

B. Analysis

This is a fall out issue. Based on our approved adjustments to test year revenues and to remove the Utility's requested increase, regulatory assessment fees (RAFs) shall be reduced by $125,751 for water and $293,349 for wastewater. To reflect our approved adjustment to remove capitalized labor from salaries and wages expenses, payroll taxes shall be reduced by $4,685 for water and $27,056 for wastewater. To reflect our approved adjustment to pro forma salaries, payroll taxes shall be reduced by $1,287 for water and $1,181 for wastewater. To reflect our approved adjustments to pro forma plant, property taxes shall be reduced by $2,328 for water and $7,778 for wastewater. Lastly, to reflect our approved non-U&U adjustment to rate base, property taxes shall be reduced by $9,743 for wastewater. In total, test year TOTI shall be decreased by $134,050 (-$125,751 - $4,685 - $1,287 - $2,328) for water and $339,107 (-$293,349 - $27,056 - $1,181 - $7,778 + $9,743) for wastewater.

XXX. Test Year Depreciation Expense

A. Parties' Arguments

1. UIF

UIF argued that the test year depreciation expense is a fall out adjustment from determinations made in Sections II, III, and XVI.

2. OPC

In its brief, OPC reflected adjustments related to pro forma plant projects; these are discussed in Sections III, IV, and IX. OPC argued that a reduction should be made to water and wastewater depreciation expense of $11,914 and $300,001, respectively, based on its pro forma plant recommendations. OPC also stated that a reduction of $101,214 should be made to wastewater to reflect non-U&U rate base adjustments.

B. Analysis

UIF witness Swain made test year adjustments to reclassify the amortization of early retirements and to correct the over-amortization of Sandalhaven intangible plant. The Utility also made adjustments to annualize depreciation expense for test year plant additions. Although it addressed adjustments corresponding to pro forma plant and non-U&U rate base, OPC did not dispute the Utility's other adjustments to depreciation expense. Further, Commission staff witness Dobiac's testimony did not reflect any audit adjustments to the test year depreciation expense. As such, we find that the Utility's adjustments are appropriate.

The remaining adjustments to depreciation expense in UIF's initial filing are related to a non-U&U adjustment to rate base and pro forma plant projects. Pro forma and non-U&U adjustments to depreciation expense are addressed in Sections III, IV, and IX.

C. Conclusion

We hereby make no further adjustments to the adjusted test year depreciation expense. All necessary adjustments to depreciation expense shall be made as set forth and discussed in Sections III, IV, and IX.

XXXI. Test Year CIAC Amortization Expense

A. Parties' Arguments

1. UIF

In its brief, UIF stated that this is a fall out issue from the determination of Section III.

2. OPC

In its brief, OPC reflected adjustments related to pro forma plant projects; these are discussed in Sections III, IV, and IX. OPC stated that water and wastewater CIAC amortization expense should be reduced by $1,667 and $6,555, respectively, in relation to its adjustments to plant additions. OPC also stated that CIAC amortization expense should be increased by $24,123 should be made to reflect non-U&U rate base adjustments.

B. Analysis

In its initial filing, the Utility's only test year adjustment to CIAC amortization was to correct the over-amortization of CIAC. This adjustment was made to the same three systems in UIF's last rate case.[55] Further, Commission staff witness Dobiac's testimony did not reflect any audit adjustments to test year amortization of CIAC expense. The remaining adjustments to CIAC amortization in UIF's initial filing are related to a non-U&U adjustment to rate base and retirements associated with pro forma plant projects. Pro forma and non-U&U adjustments to CIAC amortization are addressed in Sections IV and IX. As such, we hereby make no further adjustments to the adjusted test year CIAC amortization. All necessary adjustments to CIAC amortization shall be made as set forth and discussed in Sections IV and IX.

C. Conclusion

We hereby make no further adjustments to the adjusted test year CIAC amortization. All necessary adjustments to CIAC amortization shall be made as set forth and discussed in Sections IV and IX.

XXXII. <u>Test Year Income Taxes</u>

A. Parties' Arguments

1. UIF

Income tax expense is a fallout of the specific revenues and expenses requested. Regarding the amortization of unprotected excess deferred income taxes, UIF argued they should be flowed back to customers over ten years, consistent with our prior decisions. Regarding the state corporate income tax rate, the rate will revert back to 5.5 percent on January 1, 2022. UIF argued this is a known and measurable change and as such should be applied to UIF's income in this case.

2. OPC

Income taxes depend on the specific level of revenues authorized by this Commission. Regarding the flow back of unprotected excess deferred income taxes, OPC argued UIF should return unprotected excess deferred income taxes to customers over five years. OPC witness Crane testified that, given the pandemic and financial difficulties of Floridians, a five-year versus ten-year amortization will provide needed relief to customers. Regarding the state corporate income tax rate, OPC argued that income taxes should reflect a rate of 4.458 percent. OPC argued that on September 12, 2019, the Florida Department of Revenue announced a reduction in the rate from 5.5 percent to 4.458 percent for tax years 2019, 2020, and 2021. For the historical test year of 2019, the rate was 4.458 percent. OPC argued that we should set rates to collect the

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[55] Order No. PSC-2017-0361-FOF-WS, issued September 25, 2017, in Docket No. 20160101-WS, *In re: Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties by Utilities, Inc. of Florida.*

rate in effect at the time of setting rates and during the test year, as this is the only equitable, known and measurable tax rate.

B. Analysis

1. Income Taxes

As a result of our approved adjustments, the appropriate amount of test year income taxes is $375,393 for water and $111,993 for wastewater. In addition, as discussed in Section XXXIII below, we have calculated a revenue increase of $1,696,108 for water and $4,635,151 for wastewater. As a result, income taxes shall be increased by $408,589 for water and $1,116,599 for wastewater to reflect the change in revenues.

2. Amortization of Unprotected Excess Deferred Income Taxes

We have discretion regarding the period over which to amortize unprotected excess deferred income taxes. In the recent past, we have approved amortization periods of as much as 10 years and in one instance, a settlement agreement, an amortization period of 1 year.

As pointed out by OPC witness Crane, unprotected excess deferred income taxes represent money that is owed to customers. We find that it is appropriate to return excess deferred income taxes to customers as quickly as possible as long as it does not create a cash flow problem for the Utility, i.e. a liquidity problem with regard to operations. OPC witness Crane testified that UIF has not provided any evidence that a five-year amortization period would create a cash flow problem for UIF. When UIF witness Deason was asked at hearing if he could provide any analysis that indicated a five-year amortization would cause a cash flow problem for UIF, he could not. Consequently, we find that a five-year amortization period is reasonable and hereby approve a five-year amortization for unprotected excess deferred income taxes.

3. State Corporate Income Tax Rate

In 2019, the Florida Department of Revenue announced a reduction in the state corporate income tax rate from 5.5 percent to 4.458 percent for tax years 2019, 2020, and 2021. As shown on Exhibit 186, the state corporate income tax rate is expected to revert to 5.5 percent on January 1, 2022. UIF argued that this is a known and measurable change and as such should be applied to UIF's income in this case. However, that change will occur seven months after UIF's rates are to go into effect.

OPC argued that the rate for the historical test year was 4.458 percent and that rate should be applied. Furthermore, OPC argued, that UIF witness Deason agreed that if the rate is set at 5.5 percent, there would be a period of over-collection throughout 2021.

At hearing, our staff asked UIF witnesses Deason and Swain if a composite state corporate income tax rate was developed, using a four-year period that incorporated a 4.458 percent rate for the seven months of 2021 and a 5.5 percent rate for the remainder of the 4-year period, whether that would allow UIF the opportunity to earn its expected amount of state corporate income taxes over the 4-year period. Both witnesses answered yes, it would. However, both witnesses qualified their answers by indicating that if UIF did not seek a rate case for new rates becoming effective by the beginning of year five, that the allowance for income tax expense would be insufficient after year four.

A composite state corporate tax rate that incorporates a 4.458 percent rate for the seven months of 2021 and a 5.5 percent rate for the remainder of the four-year period will allow UIF the opportunity to earn its expected amount of state corporate income taxes over the next four years. UIF has filed rate cases in 2012, 2016, and 2020. Consequently, we find that using a four-year period to develop a composite rate is reasonable. It should be noted, when asked about how long UIF would agree to stay-out if the Sewer and Water Infrastructure Mechanism (SWIM) program were approved, witness Deason indicated two years. Using a four-year composite tax rate, and all other things being equal, if UIF were to file a rate case for new rates becoming effective by the beginning of year five, UIF would actually recover more than its expected income tax expense. That is because 5.5 percent would represent a greater percent of actual income tax expense than the percentage of 4.458 percent used in the composite rate.

C. Conclusion

As a result of our approved adjustments, the appropriate amount of test year income taxes is $375,393 for water and $111,993 for wastewater. In addition, as discussed in Section XXXIII below, we have calculated a revenue increase of $1,696,108 for water and $4,635,151 for wastewater. As a result, income taxes shall be increased by $408,589 for water and $1,116,599 for wastewater to reflect the change in revenues.

We have discretion regarding the period over which to amortize unprotected excess deferred income taxes. We find that a five-year amortization period is reasonable and hereby approve a five-year amortization.

We find that a composite state corporate income tax rate of 5.348 percent, as opposed to 4.458 percent or 5.5 percent, is reasonable and represents an equitable balancing of interests between customers and shareholders. Consequently, we hereby approve a state corporate income tax rate of 5.348 percent.

XXXIII. Revenue Requirement

A. Parties' Arguments

In its brief, UIF argued that this issue is a fall out based on the determination of all other issues. In its brief, OPC argued that the appropriate revenue requirement should be calculated using a base revenue increase of $1,129,866 and $2,720,043 for water and wastewater, respectively.

B. Analysis

This is a fall out issue. In its filing, UIF requested a revenue requirement to generate annual revenue of $19,416,372, representing a revenue increase of $2,812,445, or 16.94 percent, for water and $26,827,568, representing a revenue increase of $6,521,686, or 32.12 percent, for wastewater. Consistent with our findings regarding rate base, cost of capital, and operating income issues, the appropriate revenue requirement is $18,318,024 for water and $24,943,846 for wastewater. Our approved revenue requirement for water is $1,696,108 greater than our approved test year revenues of $16,621,916, or an increase of 10.20 percent. Our approved revenue requirement for wastewater is $4,635,151 greater than our approved test year revenues of $20,308,695, or an increase of 22.82 percent. Our approved revenue requirement will allow the Utility the opportunity to recover its expenses and earn a 6.95 percent return on its investment in rate base. Schedule Nos. 3-A and 3-B reflect our approved net operating income and resulting revenue requirement. Our approved adjustments to net operating income are shown on Schedule No. 3-C.

XXXIV. STIPULATED (FALLOUT)—Rate Structures and Rates

We approved a Type II Stipulation addressing the appropriate rate structures and rates for the water systems, as follows:

The appropriate rate structure is a continuation of the existing rate structure and the percentage increase shall be applied as an across-the-board increase to service rates at the time of filing. To determine the appropriate percentage increase to apply to the service rates, miscellaneous revenues of $363,563 shall be removed from the test year revenues.

The fall out percentage increase to service rates is as follows:

Table 16
Percentage Service Rate Increase – Water

	Water
1 Total Test Year Revenues	$16,621,916
2 Less: Miscellaneous Revenues	$363,563
3 Test Year Revenues from Service Rates	$16,258,353
4 Revenue Increase	$1,696,108
5 Percentage Service Rate Increase (Line 4 / Line 3)	10.43%

XXXV. STIPULATED—Private Fire Protection Charges

We approved a Type II Stipulation addressing the appropriate private fire protection charges, as follows:

The appropriate private fire protection charges for UIF shall be calculated based on one-twelfth of the respective base facility charge pursuant to Rule 25-30.465, F.A.C.

XXXVI. STIPULATED (FALL OUT)—Wastewater Rates and Rate Structures

We approved a Type II Stipulation addressing the appropriate rate structures and rates for the wastewater systems, as follows:

The appropriate rate structure is a continuation of the existing rate structure and the percentage increase shall be applied as an across-the-board increase to service rates at the time of filing. To determine the appropriate percentage increase to apply to the service rates, miscellaneous revenues of $333,719 shall be removed from the test year revenues.

The fall out percentage increase to service rates is as follows:

Table 17
Percentage Service Rate Increase – Wastewater

	Wastewater
1 Total Test Year Revenues	$20,308,695
2 Less: Miscellaneous Revenues	$333,719
3 Test Year Revenues from Service Rates	$19,974,976
4 Revenue Increase	$4,635,151
5 Percentage Service Rate Increase (Line 4 / Line 3)	23.20%

XXXVII. STIPULATED (FALL OUT)—Reuse Rates

We approved a Type II Stipulation addressing the appropriate reuse rates, as follows:

The appropriate rate structure is a continuation of the existing rate structure and the percentage increase shall be applied as an across-the-board increase to service rates at the time of filing. To determine the appropriate percentage increase to apply to the service rates, miscellaneous revenues of $333,719 shall be removed from the test year revenues.

The fall out percentage increase to service rates is as follows:

Table 18
Percentage Service Rate Increase – Wastewater

	Wastewater
1 Total Test Year Revenues	$20,308,695
2 Less: Miscellaneous Revenues	$333,719
3 Test Year Revenues from Service Rates	$19,974,976
4 Revenue Increase	$4,635,151
5 Percentage Service Rate Increase (Line 4 / Line 3)	23.20%

XXXVIII. STIPULATED—Customer Deposits

We approved a Type II Stipulation addressing the appropriate customer deposits, as follows:

The appropriate customer deposits for UIF shall reflect an average of two months service for residential customers with a 5/8" x 3/4" meter and two times the average customer bill for all other meter sizes.

XXXIX. STIPULATED—Guaranteed Revenue Charges

We approved a Type II Stipulation addressing the appropriate guaranteed revenue charges, as follows:

The guaranteed revenue charges shall remain unchanged.

XL. Allowance for Funds Used During Construction

A. Parties' Arguments

1. UIF

UIF argued that over the years the cost of capital, which is used to establish the AFUDC rate, has varied above and below the current AFUDC rate. Since the cost of capital varies from year-to-year, UIF contends it is not necessary to change the AFUDC rate. UIF witness Swain argued that UIF's current AFUDC rate of 9.03 percent is in compliance with Commission Order No. PSC-2004-0262-PAA-WS, when the Utility previously petitioned this Commission for an AFUDC rate. UIF argued that if the AFUDC rate is changed, it must be based on a cost of capital rate of 7.889 percent.

2. OPC

OPC argued UIF has not updated its AFUDC rate since 2004, despite the fact that interest rates have declined since 2004. OPC argued that UIF's current AFUDC rate of 9.03 percent is excessive, has been in place for 18 years, and negatively impacts Florida customers by unduly causing current customers to pay higher rates than necessary. OPC witness Crane argued that this Commission should authorize a prospective AFUDC rate of 6.73 percent.

B. Analysis

UIF did not request to revise its AFUDC rate in this proceeding and proposed to maintain its current AFUDC rate of 9.03 percent. OPC witness Crane proposed this Commission authorize a prospective AFUDC rate of 6.73 percent. UIF's current AFUDC rate of 9.03 percent is based on the cost of capital for the 12-month period ended December 31, 2002, which includes an ROE of 11.32 percent. Since that time, UIF's cost of capital has decreased by 201 basis points. Witness Crane testified that the debt rate reflected in the 9.03 percent AFUDC rate is based on a long-term debt of 7.82 percent and zero short-term debt. Witness Crane opined that in spite of the significant decline in capital costs, UIF has continued to accrue AFUDC at the same rate of 9.03 percent. Based on the record evidence, UIF's current AFUDC rate no longer reflects its current cost of capital and should be revised to reflect UIF's most recent 12-month embedded cost of capital.

Pursuant to Rule 25-30.116(3), F.A.C., the applicable AFUDC rate shall be determined as follows:

> (a) The most recent 12-month average embedded cost of capital, except as noted below, shall be derived using all sources of capital and adjusted using adjustments consistent with those used by the Commission in the Company's last rate case.
>
> (b) The cost rates for the components in the capital structure shall be the midpoint of the last allowed return on common equity, the most recent 12-month average cost of short-term debt and customer deposits and a zero cost rate for deferred taxes and all investment tax credits. The cost of long-term debt and preferred stock shall be based on end of period cost. The annual percentage rate shall be calculated to two decimal places.
>
> (c) A company that has not had its equity return set in a rate case must calculate its return on common equity by applying the most recent water and wastewater equity leverage formula.

The embedded cost of capital in the record does not comport with the requirements of Rule 25-30.116, F.A.C. The record does not include the most recent 12-month embedded cost of capital since the approved test year in this case is the 13-month average test year ended December 31, 2019. Further, the cost rates of short-term debt and customer deposits in this case are based on a 13-month average whereas the AFUDC rule requires the use the most recent 12-month average. In addition, the AFUDC rate requires the cost of long-term debt be based on end of period cost, which is not the case in this docket. Because the cost rates and methods to determine the embedded cost of capital filed in the instant docket do not comport with Rule 25-30.116, F.A.C., we find it is more appropriate to determine the AFUDC rate in a separate docket at the conclusion of the instant rate case proceeding. Further, the AFUDC rate established in a new docket would be based on a more recent test year ended December 31, 2020, and be effective January 1, 2021.

C. Conclusion

UIF's AFUDC rate shall not be revised in this proceeding. UIF shall be required to file with this Commission a request to revise its AFUDC rate pursuant to Rule 25-30.116, F.A.C., within 30 days after the issuance of this Final Order in this docket.

XLI. Sewer and Water Improvement Mechanism

A. UIF's Swim Proposal

As part of its request in this proceeding, UIF petitioned this Commission for approval of a Sewer and Water Improvement Mechanism (SWIM), to allow UIF to recover the revenue requirement on capital expenditures for the replacement of aging infrastructure through an annual increase to base rates. UIF's initial plan for the recovery of SWIM-related costs was described in witness Deason's direct testimony, to be recovered through an annual filing in conjunction with UIF's annual index and pass through filings. The testimony provided an outline of how the SWIM program might work, but provided very little substantive detail.

UIF first altered its initial SWIM proposal in response to our staff's discovery, when UIF stated that it was acceptable for the filing to be handled as a docketed case before this Commission, such as a tariff filing. UIF went further in witness Deason's rebuttal testimony and explained that it would be amenable to a process that allows for our review of the costs for prudence and agreed to apply SWIM only to linear infrastructure. He further proffered that UIF would be willing to cap the annual SWIM-related increase in base rates, provided the rate increase was reasonable. He further testified that if SWIM were approved, UIF would agree to a stay-out provision, provided the stay-out timeframe was reasonable. The witness did not provide any testimony as to what would constitute a "reasonable" cap or stay-out timeframe, however. Witness Deason also analogized UIF's proposed SWIM program to the Commission-approved Gas Reliability Infrastructure Program (GRIP), which was initially approved by Order No. PSC-2012-0490-TRF-GU, discussed briefly below.[56]

On cross examination, UIF further modified its proposal to gravitate toward and then to embrace GRIP, with witness Deason testifying that UIF's SWIM proposal was like GRIP; that UIF was not opposed to handling recovery as a separate tariff filing; that UIF would agree to a $10 million dollar annual cap on expenditures; that GRIP is valid precedent for UIF's SWIM proposal; and UIF would further limit the replacement of linear assets to those that were at or beyond useful life. In its post-hearing brief, UIF further refined its proposal and offered to limit the SWIM program to coincide with UIF's 5-year planning horizon for capital improvements.

As discussed above, UIF witness Deason discussed the natural gas GRIP program as precedent and support for UIF's SWIM proposal. GRIP was designed to accelerate the replacement of cast iron and bare steel pipelines, in order to proactively respond to public concerns regarding aging gas infrastructure reliability and safety. The natural gas utilities who sought approval for GRIP cited to the Pipeline and Hazardous Safety Administration's (PHMSA) amended Federal Pipeline Safety Regulations that required natural gas distribution pipeline operators to develop and implement Distribution Integrity Management Plans (DIMPs). Changes to the Natural Gas Pipeline Safety Act required the Secretary of the Department of

[56] Issued September 24, 2012, in Docket No. 20120036-GU, *In re: Joint petition for approval of Gas Reliability Infrastructure Program (GRIP) by Florida Public Utilities Company and the Florida Division of Chesapeake Utilities Corporation.* There are three different Commission-approved natural gas utility programs that address the replacement of cast iron and bare steel pipelines, all of which all have a similar process for truing-up the costs associated with those programs. For ease of reference, the term "GRIP" is used throughout this issue.

Transportation (DOT) to review the DIMPs to evaluate the continuing priority to enhance protections for public safety and to reduce risk in high consequence areas. At the time we considered the initial GRIP petition, twenty-four states had established programs for the replacement of cast iron and bare steel pipelines, and several other states had pending programs.

B. Parties' Arguments

1. UIF

a. Justifications for SWIM

UIF asserted that the objective of the SWIM program is the same as that of the GRIP program: to proactively respond to concerns over the reliability and safety of aging infrastructure. Witness Deason testified as to the benefits that would accrue from UIF's proposal, which he asserted would reduce the need for costlier rate proceedings, have positive impacts on economic development, help prioritize capital replacements, and provide improved opportunity for oversight.

UIF argued that the proposed SWIM program is designed to reduce the regulatory lag associated with traditional base rate proceedings through the inclusion of Commission-approved capital expenditures in rates on an annual basis, thus also reducing the Utility's need and frequency for filing rate cases. He stated that this mechanism would benefit customers in the form of reduced rate case expense passed on to the customers, less rate shock, better unit pricing for the investments reflected in rates, along with fewer impacts to UIF's customers and communities through the anticipated replacement schedule. The Utility added that, although the majority of the SWIM projects are related to operational assets (including buildings and other structures for treating and pumping water and wastewater), it would be willing to limit the scope of the projects to the replacement of linear infrastructure (mains and pipes for water and wastewater), if this Commission believes this will optimize the value to the customers.

UIF also stated that not only is SWIM modeled after GRIP, but like GRIP, the SWIM program is authorized pursuant to this Commission's broad ratemaking authority. The Utility maintained that Sections 367.011(2) & (3), 367.081, and 367.121(1)(a) & (d) provide a legal basis for implementing the SWIM program. UIF highlighted in particular Section 367.121(1)(d), F.S., which authorizes this Commission to require repairs and improvements if reasonably necessary to provide adequate and proper service. UIF stated that the objective of the SWIM program is to replace aging water and wastewater infrastructure, and that this Commission addressed much the same need within the gas industry through its approval of the GRIP programs.

As further precedent for its SWIM proposal, UIF relied on our broad ratemaking powers in Sections 366.04, 366.05, and 366.06, F.S. For example, in *Action Group v. Deason*, 615 So. 2d 683 (Fla. 1993), the Florida Supreme Court upheld approval of a 15-year rate rider charged to customers in a specific service area to retire the existing debt of a financially distressed system that Florida Power Corporation had purchased. The Court stated that this Commission had authority under Section 366.04(1), F.S., to fix "just, reasonable, and compensatory rates, charges, fares, tolls, or rentals" and under Section 366.05(1), F.S., to prescribe "fair and reasonable rates and charges [and] classifications." The Court stated this authority was to be construed liberally. See also Section 366.041(2), F.S., which provides that the "power and authority herein conferred upon the commission shall . . . be construed liberally to further the legislative intent that adequate service be rendered by public utilities." UIF also relied on this Commission's broad ratemaking authority in approving surcharges for Florida Power & Light Company (FPL)[57] and Progress Energy Florida, Inc. (Progress)[58] for the recovery of costs incurred after an unusually heavy series of storms. In response to OPC's arguments, detailed below, UIF argued that a full rate case is not required to change base rates, citing to other "analogous" investment recovery mechanisms approved by this Commission, such as the GRIP and storm surcharges.

b. SWIM's Cost Recovery Method

UIF's initial plan for recovery of SWIM related costs was to establish an administrative mechanism similar to the Utility's annual index and pass through filings pursuant to Section 367.081(4), F.S. Witness Deason explained that under an annual administrative SWIM program, the additional revenue collected would be limited to the return on the investment using the equity and debt components of the weighted average cost of capital from UIF's prior rate case along with the corresponding depreciation expense pursuant to Rule 25.30-140, F.A.C., grossed up for income taxes. He stated that the Utility was also proposing to combine the recovery of the additional SWIM revenue with its annual index filing, thus merging the two revenue requirements to calculate a combined percentage increase in base rates. As described by witness Deason, the annual administrative SWIM filing would detail this calculation along with the corresponding investments. The filing would also have a projection of scheduled investments for the subsequent two years, along with the estimated corresponding revenue requirements. After the first year of implementation, the Utility would annually file a true-up prior to April 30th for the previous 12-month historical period ending December 31 demonstrating the actual replacement costs, actual index revenue, and any resulting over or under recovery. The timing of the true-up would be such that any over or under recovery amounts could be included in the current year's SWIM calculation.

Beginning first with responses to discovery requests and then with its rebuttal testimony, UIF modified its initial recovery proposal to adopt a GRIP-like annual tariff filing and to accept a cap of the amount of the annual increase in base rates associated with SWIM projects. UIF also suggested a prudency and cost review process, and to limit recovery under SWIM only to linear infrastructure projects. Witness Deason stated that UIF was not opposed to handling recovery as a separate tariff filing as is done with GRIP. Witness Deason also stated that UIF would agree to a $10 million annual cap on capital expenditures, and that SWIM projects could be limited to those linear assets at or beyond their useful life. Finally, in its post-hearing brief, UIF discussed all of the above, and concluded by agreeing to a limited initial implementation period of 5 years, which was consistent with UIF's planning horizon.

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[57] Docket No. 041291-EI, *In re: Petition for authority to recover prudently incurred storm restoration costs related to 2004 storm season that exceed storm reserve balance, by Florida Power & Light Co.*
[58] Docket No. 041272-EI, *In re: Petition for approval of storm cost recovery clause for recovery of extraordinary expenditures related to Hurricanes Charley, Frances, Jeanne, and Ivan, by Progress Energy Florida, Inc.*

2. OPC

OPC described UIF's proposal for a new sewer and water cost recovery mechanism as unnecessary and stated that the ratemaking process already provides ample opportunities for utilities to conduct prudent maintenance. OPC identified what it deemed as the "fundamental drawback" of UIF's proposal—the lack of substance provided in its initial proposal and the shortcomings of its subsequent efforts to supplement information in rebuttal. OPC argued that this left the Utility's proposal deficient in several aspects, and that UIF has failed to provide support for our approval of the SWIM concept. OPC also objected to UIF's shifting position on how SWIM would be implemented: first in its initial filing as being taken up administratively along with UIF's annual index and pass-through filing, then evolving into a GRIP-like annual filing. OPC objected to the evolution of UIF's proposal taking place so late in the course of the litigation, such that the final approach UIF ultimately endorsed first appeared in UIF's rebuttal testimony and "ad hoc colloquies on re-direct."

OPC further argued that Section 367.081, F.S., was the exclusive means by which Class A water and wastewater utilities could fix or change their rates outside of annual index and pass-through filings. OPC argued that this Commission lacks the authority to create alternative ratemaking methods for Class A water and wastewater utilities based on the specific and limited authority set forth in Section 367.081, F.S. To support its assertion, OPC cited Section 367.0814, F.S., which addresses Commission staff assistance in setting rates for primarily Class C utilities. It explained that the statute contains a specific provision granting this Commission the authority to establish criteria and procedures, by rule, that deviate from the rate setting requirements of Section 367.081, F.S. OPC concluded with the assertion that the elements of due process and protection of the customers' substantial interests are preserved in rate cases, which are required to be conducted pursuant to traditional ratemaking procedures (specifically, pursuant to Sections 367.081, 120.57, and 120.569, F.S.). OPC argued that UIF expects to be given an exemption from statutory requirements, due process requirements, and long-standing Commission prudence-determination policy, supporting such deviation through the filing of a mere eight sentences of direct testimony.

OPC also asserted that SWIM, if adopted, would be subject to reversal "…due to a clear lack of authority to depart from the mandatory statutory method for establishing the prudence of, and method for recovering the cost of, plant additions, and the Commission has no record basis to explain such a departure." OPC argued that UIF failed to meet its burden of proof, provided vague responses on cross-examination, and provided a number of bold claims (including the assertion that SWIM would save customers money on rate case expense) with absolutely no support.

Significantly, according to OPC, GRIP cannot be relied upon to provide precedent for SWIM. OPC pointed out that GRIP is a highly specific, unique approach to a highly specific and well documented problem. Unlike UIF's SWIM proposal, the cast iron and bare steel rider and GRIP cost recovery mechanisms were a specific response to an imminent safety risk in the transportation of a highly combustible product that was subject to a concrete federal requirement and program DIMP. No such circumstances exist or were demonstrated in evidence by UIF. OPC criticized UIF's late attempt to shore up its SWIM proposal by offering to limit recovery to "linear infrastructure," noting that the term lacked specifics other than "linear infrastructure" referring to a catch-all generalization encompassing "things that are below ground."

OPC cited to UIF witness Deason's rebuttal, in which he noted that in the GRIP order we said, "[h]ere we are approving a similar surcharge, for a *discreet period*, due to *unusual circumstances*."[59] OPC also noted that we emphasized in the GRIP order that "[i]t is clear that we have the authority under our broad ratemaking powers found in Sections 366.04, 366.05 and 366.06, F.S., to establish this type of surcharge to recover a discreet set of costs incurred in response to unusual urgent circumstances."[60] OPC stated that the terms "surcharge," "unusual," and "urgent" are each materially significant in GRIP and do not apply to SWIM. OPC also argued that in approving the GRIP surcharge, we expressly noted the "urgency related to deaths and explosions and the exigency behind the actions of the Federal regulators." OPC concluded that "For SWIM, there is neither urgency nor regulation nor a regulatory agency that has identified an imminent harm or risk of immediate death or injury if so-called linear facilities are not modernized at UIF's unbridled whim. GRIP does not justify SWIM."

OPC also took exception to the reference by witness Deason, made for the first time in rebuttal, to recent sewage spills in Ft. Lauderdale (unrelated to a UIF system), in order to promote the idea that SWIM could proactively prevent such events. On cross-examination, OPC pointed out that witness Deason was unable to identify the cause of the Ft. Lauderdale wastewater spills, or draw a connection between these coastal spills and UIF's freshwater wastewater systems, or with UIF's own experience with spills beyond the statement that wastewater spills present health hazards. OPC asserted that in contrast to the detailed, specific projects discussed in the GRIP proposal, UIF would be "looking into" the useful life of facilities that would be subject to SWIM, and later stated that such a process has been ongoing "for several years." OPC stated that it views UIF's claim, that SWIM would support economic development at a time when the State is recovering from the economic fallout of the pandemic, as not nearly enough to remedy the complete absence of evidence to support approval of SWIM. OPC concluded that for all these reasons, SWIM is unlawful, unsubstantiated, and should be denied.

C. Analysis

UIF's initial proposal, briefly outlined in witness Deason's direct testimony, was to recover SWIM-related costs administratively through an annual filing in conjunction with UIF's annual index and pass through filings. Minimal detail was provided explaining the need for the program or the benefits to the customers of approving such a program. As the docket progressed, UIF's request evolved to propose recovery of costs via GRIP-like tariff filings, which would establish a surcharge to be trued-up annually based upon actual and projected costs. OPC noted that when witness Deason was asked to explain why the SWIM program wasn't more fully developed, he responded that he intended to do so in response to our staff and OPC's inquiries in the course of the docket. OPC contends – and we agree – that it is not the burden of this Commission, our staff, or OPC to extract details from the Utility to support its request. OPC

[59] Order No. PSC-2012-0490-TRF-GU, at 11. (Emphasis added in OPC's brief)
[60] *Id.* at 10

argued that the ad hoc process by which UIF has attempted to shore-up support for its SWIM proposal does not provide the other participants in the docket, or this Commission, with a meaningful opportunity to examine the program. OPC witness Crane characterized the details of UIF's SWIM program as "vague, incomplete, and inadequate for purposes of a thorough analysis." We agree with witness Crane's assessment.

As a possible benefit of UIF's proposal, witness Flynn stated that local and state economies are positively impacted by the capital investment needed to replace and repair failing infrastructure. However, he did not distinguish between the benefit of the replacement of aging water and wastewater infrastructure recovered through a SWIM program and the replacement of infrastructure that would be completed in the normal course of business and recovered through a rate case or limited proceeding. Indeed, it appears that these capital investments are actually part of an ongoing, routine, and significant component of cost for the water and wastewater utility, rather than required to abate a certain hazard or immediate public safety concern.

Witness Flynn also characterized the issues pertaining to aging water and wastewater infrastructure as a nationwide problem jeopardizing reliable access to safe water, and described the potential negative economic impacts of failing essential infrastructure at a macro level, such as business failure and costs associated with lost water and leaks. Witness Flynn stated that UIF has invested more than $90 million in its Florida systems over the past 10 years to better serve its customers in a safe and reliable manner. However, he failed to provide evidence concerning how SWIM would significantly improve UIF's ability to make similar capital investments in the future. Witness Flynn also explained that PCF-46, a 5-year capital improvement plan (CIP) developed by Kimley-Horn and Associates, was developed as part of the Utility's plan to replace assets that have exceeded or are approaching the end of their service lives. In Exhibit PCF-46, UIF provided detail and estimates for each project in the CIP, as well as a general summary of the recommended projects and the associated total costs for each of the 5 years. Witness Flynn's statement that these planned projects were primarily related to linear assets, with some vertical assets as well, became more relevant when UIF later conceded that it would be willing to limit SWIM recovery to the replacement of linear infrastructure.

While UIF witness Deason analogized the replacement of cast iron and bare steel pipe under GRIP as "very similar" to the issue of replacing aging water and wastewater infrastructure, he admitted to not researching the facts and circumstances leading to the GRIP order. The proposed SWIM program responds to no federal or state legislation or regulatory mandates, and fails to identify specific assets which, barring accelerated replacement via SWIM, pose a risk of injury or death.

Despite UIF's contention that it modelled SWIM after GRIP, UIF failed to provide justification for either the replacement of linear infrastructure or the accelerated recoupment of its costs. GRIP was predicated upon a federally mandated program to identify known hazardous gas pipes for remediation. Natural gas utilities were required by law to develop DIMPs, and then use those plans to enhance safety and reduce risks to their systems.[61] Changes to the Natural Gas Pipeline Safety Act required DOT to review the DIMPs to evaluate the continuing priority to

[61] Order No. PSC-2012-0490-TRF-GU, at 1-2.

enhance protections for public safety and to reduce risk in high consequence areas. For example, the companies' DIMPs identified specific assets as risks, such as bare steel pipes. The installation of these pipes had been prohibited since the early 1970s and are vulnerable to leaks, which can result in catastrophic injury, death, or destruction of property in the event of failure. In support of GRIP, the natural gas companies asserted that the federal regulatory findings compelled them to conduct an evaluation and abate the hazards associated with cast iron and bare steel mains and services that would ultimately fail due to age, leak history, soil conditions, and other pertinent criteria, and stated that these concerns ranked highest in "threats and risks to its gas distribution pipeline."[62]

We agree with OPC that the Utility has provided very little evidence to support a finding that SWIM should be approved for the same reasons GRIP was approved. We have not approved any similar program for a regulated water or wastewater utility, and UIF has provided no persuasive evidence to support the cost recovery of large capital projects for water and wastewater utilities via its SWIM proposal. As UIF's concept of its proposed SWIM program has evolved, it appears that the intention of the program is to accelerate recovery of routine and unremarkable capital investment, rather than accelerate the replacement of aging infrastructure due to safety concerns.

Other examples cited by UIF in support of its SWIM proposal involved our approval of a surcharge to Florida Power Corporation's customers associated with the purchase of Sebring Utilities Commission's system,[63] and two storm cost recovery surcharges by FPL[64] and Progress.[65] However, in each of these instances, the surcharges in question were created to address cost recovery associated with unique and exigent circumstances, after being fully vetted in a Commission proceeding. As noted above, UIF invites a comparison to this Commission's precedent for the recovery of extraordinary expenditures incurred after an unusually heavy series of storms, but provided no evidence of "extraordinary circumstances" or "unusually heavy series of storms" or other unique events that were central to these Commission-approved precedents.[66]

Finally, in support of our authority to approve the proposed SWIM program, UIF highlighted Section 367.121(1)(d), F.S., which authorizes us to require repairs and improvements if reasonably necessary to provide adequate and proper service. Based on our review, it appears that our only utilization of this authority was for Aloha Utilities, Inc., whose customers had been experiencing "black water" problems for years. Specifically, we required the utility to make improvements to Wells Nos. 8 and 9, and then to all its wells, to implement a treatment process designed to remove at least 98 percent of the hydrogen sulfide in its raw water.[67] Aloha Utilities,

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[62] *Id.*
[63] *Action Group v. Deason,* 615 So. 2d 683 (Fla. 1993).
[64] Order No. PSC-06-1062-TRF-EI, issued December 26, 2006, in Docket No. 041291-EI, *In re: Petition for authority to recover prudently incurred storm restoration costs related to 2004 storm season that exceed storm reserve balance, by Florida Power & Light Co.*
[65] Order No. PSC-06-0772-PAA-EI, issued September 18, 2006, in Docket No. 041272-EI, *In re: Petition for approval of storm cost recovery clause for recovery of extraordinary expenditures related to Hurricanes Charley, Frances, Jeanne, and Ivan, by Progress Energy Florida, Inc.*
[66] *Id.*
[67] Order No. PSC-02-0593-FOF-WU, issued April 30, 2002, in Docket No. 010503-WU, *In re: Application for increase in water rates for Seven Springs System in Pasco County by Aloha Utilities, Inc.*

Inc. appealed our final decision requiring these improvements, but the First District Court of Appeals affirmed our Final Order on May 6, 2003.[68]

D. Conclusion

We have broad ratemaking authority under Chapter 367, F.S. Notwithstanding that broad authority, we find that UIF has failed to meet its burden of proof to support the utility's requested SWIM program. It is well established in case and statutory law that the utility has the burden of proof to demonstrate the reasonableness and prudence of the costs for which it seeks recovery. *Florida Power Corp. v. Cresse*, 413 So. 2d 1187 (1982), at 1191. Therefore, for the reasons discussed above, we hereby deny UIF's SWIM program request.

XLII. Interim Refunds

A. Parties' Arguments

1. UIF

In its brief, UIF cited the requirements contained in Section 367.082, F.S., for calculating refunds. It further cited Rule 25-30.360(4),(7), and (8), F.A.C., for implementing refunds, and stated that the Corporate Undertaking of UIF and the Corporate Guarantee of Utilities, Inc. should be released upon the verification of any required refunds by the Commission staff, or, if no refund is required, upon the issuance of the Final Order.

2. OPC

In its brief, OPC stated that refunds should be calculated in accordance with this Commission's findings and the rates established in this case.

B. Analysis

We authorized UIF to collect interim water and wastewater rates, subject to refund, pursuant to Section 367.082, F.S. The approved interim revenue requirement for water of $17,217,167 represented an increase of $918,223, or 5.63 percent. The approved interim revenue requirement for wastewater of $20,988,143 represented an increase of $1,051,222, or 5.27 percent.[69]

According to Section 367.082(4), F.S., any refund shall be calculated to reduce the rate of return of the Utility during the pendency of the proceeding to the same level within the range of the newly authorized rate of return. Adjustments made in the rate case test period that do not

[68] Aloha Utilities, Inc. v. Florida Public Service Commission, 848 So. 2d 307 (Fla. 1st DCA 2003); see also Order No. PSC-03-1157-PCO-WU, issued October 20, 2003, in Docket No. 010503-WU, *In re: Application for increase in water rates for Seven Springs System in Pasco County by Aloha Utilities, Inc.*
[69] Order No. PSC-2020-0322-PCO-WS, issued September 21, 2020, in Docket No. 20200139-WS, *In re: Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties, by Utilities, Inc. of Florida.*

relate to the period that interim rates are in effect shall be removed. Rate case expense is an example of an adjustment which is recovered only after final rates are established.

To establish the proper refund amounts, we calculated interim period revenue requirements by utilizing the same data used to establish final rates. Current rate case expense and incomplete pro forma projects were removed because these items are prospective in nature and did not occur during the interim collection period. Using the principles discussed above, the granted interim test year revenue requirements are less than the calculated interim period revenue requirement.

C. Conclusion

No interim refund shall be required because the total interim collection period revenue requirement calculated is greater than the total interim revenue requirement that was granted. As a result, the corporate undertaking amount of $1,810,655 shall be released.

XLIII. Removal of Current Rate Case Expense

A. Parties' Arguments

1. UIF

Pursuant to Section 367.081(8), F.S., rate case expense is recovered over four years unless a longer period is justified and is in the public interest. UIF asserted that there was no evidence presented to warrant a variance of the four-year amortization period. Based on the stipulation of total rate case expense in Issue 25, UIF contends rates should be reduced after four years to reflect an annual decrease in revenues of $185,771.

2. OPC

No argument was provided in OPC's brief.

B. Analysis

Section 367.081(8), F.S., requires that rates be reduced immediately following the expiration of the determined amortization period by the amount of the rate case expense previously included in rates. After weighing the evidence put forth in the record, we find that a four-year amortization period is appropriate. The reduction in revenues will result in the rate decrease as shown on Schedule Nos. 4-A and 4-B, which will remove rate case expense grossed-up for RAFs of $101,427 for water and $93,098 for wastewater.

C. Conclusion

UIF's water and wastewater rates shall be reduced as shown on Schedule Nos. 4-A and 4-B, respectively. This is to remove rate case expense, grossed up for RAFs, which is being amortized over a four-year period and will result in a reduction of $101,427 for water and $93,098 for wastewater. The decrease in rates shall become effective immediately following the expiration of the four-year rate case expense recovery period pursuant to Section 367.081(8), F.S. UIF shall be required to file revised tariff sheets no later than one month prior to the actual date of the required rate reduction. The Utility shall also be required to file a proposed customer notice of the lower rates and the reason for the reduction. If UIF files this reduction in conjunction with a price index or pass-through rate adjustment, separate data shall be filed for the price index and/or pass-through increase, and the reduction in the rates due to the amortized rate case expense.

XLIV. Commission Ordered Adjustments

A. Parties' Arguments

In its brief, UIF stated "Consistent with Commission policy, UIF should make the Commission approved adjustments and advise the Commission accordingly within 90 days of the Final Order being effective." No argument was provided in OPC's brief.

B. Analysis

The Utility shall be required to notify this Commission, in writing, that it has adjusted its books in accordance with any Commission ordered adjustments. UIF shall submit a letter within 90 days of the final order in this docket, confirming that the adjustments to all the applicable NARUC USOA accounts have been made to the Utility's books and records. In the event the Utility needs additional time to complete the adjustments, notice shall be provided within seven days prior to the deadline. Upon providing good cause, our staff shall be given administrative authority to grant an extension of up to 60 days.

C. Conclusion

UIF The Utility shall be required to notify this Commission, in writing, that it has adjusted its books in accordance with any Commission ordered adjustments. UIF shall submit a letter within 90 days of the final order in this docket, confirming that the adjustments to all the applicable NARUC USOA accounts have been made to the Utility's books and records. In the event the Utility needs additional time to complete the adjustments, notice shall be provided within seven days prior to the deadline. Upon providing good cause, our staff shall be given administrative authority to grant an extension of up to 60 days.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties, by Utilities, Inc. of Florida, is hereby approved as set forth in the body of this Order. It is further

ORDERED that all matters contained in the attached schedules and appendices are incorporated herein by reference. It is further

ORDERED that UIF is hereby authorized to charge the new rates and charges as approved in the body of this Order. It is further

ORDERED that the rates and charges approved herein shall be effective for service rendered on or after the stamped approval date on the tariff sheet, pursuant to Rule 25-30.475(1), F.A.C. The rates and charges shall not be implemented until Commission staff has approved the proposed customer notice and the notice has been received by the customers. It is further

ORDERED that UIF shall provide proof of the date notice was given no less than 10 days after the date of the notice. It is further

ORDERED that the quality of service for all UIF systems is satisfactory with the exclusion of the Pennbrooke water, Sanlando (Wekiva Hunt Club) wastewater, and Mid-County wastewater systems, which are unsatisfactory, as shown in Table 1. All existing ROE penalties associated with prior quality of service determinations shall be removed and a reduction of 15 basis points to the Utility's overall ROE shall be implemented due to the unsatisfactory quality of service of the three aforementioned systems. However, the secondary water quality reporting and testing requirements, pursuant to Order No. PSC-16-0505-PAA-WS for Summertree shall be continued, but shall now be conducted on an annual basis, instead of a semi-annual basis. It is further

ORDERED that the appropriate ROE for the test year ended December 31, 2019 is 9.75 percent, which includes a 15 basis point penalty for unsatisfactory service quality, with a range of plus or minus 100 basis points. It is further

ORDERED that a new Allowance for Funds Used During Construction (AFUDC) rate shall not be established in this docket. The Utility shall be required to file with the Commission a request to revise its AFUDC rate pursuant to Rule 25-30.116, F.A.C., within 30 days after the issuance of this Final Order. It is further

ORDERED that Utilities, Inc. of Florida's request for a Sewer and Water Improvement Mechanism shall be denied. It is further

ORDERED that no interim refund is required, and the corporate undertaking amount of $1,810,655 shall be released. It is further

ORDERED that Utilities, Inc. of Florida's water and wastewater rates shall be reduced as shown on Schedule Nos. 4-A and 4-B, respectively, to remove rate case expense, grossed up for RAFs, which is being amortized over a four-year period and shall result in a reduction of $101,427 for water and $93,098 for wastewater. The decrease in rates shall become effective immediately following the expiration of the four-year rate case expense recovery period pursuant to Section 367.081(8), F.S. The Utility shall file revised tariff sheets no later than one month prior to the actual date of the required rate reduction. The Utility shall also be required to file a proposed customer notice of the lower rates and the reason for the reduction. If the Utility files this reduction in conjunction with a price index or pass-through rate adjustment, separate data shall be filed for the price index and/or pass-through increase, and the reduction in the rates due to the amortized rate case expense. It is further

ORDERED that the Utility shall be required to notify this Commission, in writing that it has adjusted its books in accordance with any Commission ordered adjustments. Utilities, Inc. of Florida shall submit a letter within 90 days of the final order in this docket confirming that the adjustments to all applicable NARUC USOA accounts have been made to the Utility's books and records. In the event that the Utility needs additional time to complete the adjustments, notice shall be provided within seven days prior to the deadline. Upon providing good cause, Commission staff shall be given administrative authority to grant an extension of up to 60 days. It is further

ORDERED that this docket shall remain open for Commission staff's verification that the Utility has filed the revised tariff sheets, customer notices have been filed, and that the Utility has notified the Commission in writing that the adjustments for all applicable NARUC USOA primary accounts have been made. Once these actions are complete, this docket shall be closed administratively.

By ORDER of the Florida Public Service Commission this 4th day of June, 2021.

ADAM J. TEITZMAN
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399
(850) 413-6770
www.floridapsc.com

Copies furnished: A copy of this document is provided to the parties of record at the time of issuance and, if applicable, interested persons.

BYL, WLT

NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.569(1), Florida Statutes, to notify parties of any administrative hearing or judicial review of Commission orders that is available under Sections 120.57 or 120.68, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

Any party adversely affected by the Commission's final action in this matter may request: 1) reconsideration of the decision by filing a motion for reconsideration with the Office of Commission Clerk, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, within fifteen (15) days of the issuance of this order in the form prescribed by Rule 25-22.060, Florida Administrative Code; or 2) judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water and/or wastewater utility by filing a notice of appeal with the Office of Commission Clerk, and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days after the issuance of this order, pursuant to Rule 9.110, Florida Rules of Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.

Schedule No. 1-A

Utilities, Inc. of Florida — **Schedule No. 1-A**
Schedule of Water Rate Base — **Docket No. 20200139-WS**
Test Year Ended 12/31/19

	Description	Test Year Per Utility	Utility Adjust-ments	Adjusted Test Year Per Utility	Commission Adjust-ments	Commission Adjusted Test Year
1	Plant in Service	$121,858,071	($2,795,312)	$119,062,759	($159,144)	$118,903,615
2	Land and Land Rights	296,859	0	296,859	0	296,859
3	Non-used and Useful Components	0	0	0	0	0
4	Accumulated Depreciation	(51,397,784)	5,249,620	(46,148,164)	10,950	(46,137,214)
5	CIAC	(41,304,592)	87,827	(41,216,765)	(23,857)	(41,240,622)
6	Accumulated Amortization of CIAC	20,893,605	(88,677)	20,804,928	23,857	20,828,785
7	Construction Work in Progress	2,628,722	(2,628,722)	0	0	0
8	Advances for Construction	(36,767)	0	(36,767)	0	(36,767)
9	Acquisition Adjustments	56,355	(56,355)	0	0	0
10	Accumulated Amortization of Acq. Adj.	192,642	(192,642)	0	0	0
11	Working Capital Allowance	0	4,151,132	4,151,132	(2,355,199)	1,795,933
12	**Rate Base**	$53,187,111	$3,726,871	$56,913,982	($2,503,393)	$54,410,589

Schedule No. 1-B

Utilities, Inc. of Florida **Schedule No. 1-B**
Schedule of Wastewater Rate Base **Docket No. 20200139-WS**
Test Year Ended 12/31/19

	Description	Test Year Per Utility	Utility Adjust-ments	Adjusted Test Year Per Utility	Commission Adjust-ments	Commission Adjusted Test Year
1	Plant in Service	$131,296,074	$23,256,173	$154,552,247	($1,310,743)	$153,241,504
2	Land and Land Rights	583,041	0	583,041	0	583,041
3	Non-used and Useful Components	0	(928,928)	(928,928)	(284,620)	(1,213,548)
4	Accumulated Depreciation	(57,140,576)	2,869,610	(54,270,966)	102,035	(54,168,931)
5	CIAC	(44,997,031)	753,220	(44,243,811)	104,784	(44,139,027)
6	Accumulated Amortization of CIAC	30,720,963	(2,217,848)	28,503,115	(104,784)	28,398,331
7	CWIP	(605,083)	605,083	0	0	0
8	Advances for Construction	1,315	0	1,315	0	1,315
9	Acquisition Adjustment	1,238,784	(1,238,784)	0	0	0
10	Accumulated Amortization of Acq. Adj.	(163,693)	163,693	0	0	0
11	Working Capital Allowance	0	5,551,167	5,551,167	(2,973,713)	2,577,454
12	**Rate Base**	$60,933,794	$28,813,386	$89,747,180	($4,467,041)	$85,280,139

Utilities, Inc. of Florida **Schedule No. 1-C**
Adjustments to Rate Base **Docket No. 20200139-WS**
Test Year Ended 12/31/19

	Explanation	Water	Wastewater
	Plant In Service		
1	Pro Forma Plant Additions (I-3)	($150,054)	($1,276,038)
2	Pro Forma Plant Retirements (I-4)	(9,090)	(34,706)
	Total	($159,144)	($1,310,743)
	Non-used and Useful		
	Non-Used and Useful Adjustments (I-9)	$0	($284,620)
	Accumulated Depreciation		
1	Pro Forma Plant Additions (I-3)	$1,861	$67,329
2	Pro Forma Plant Retirements (I-4)	9,090	34,706
	Total	$10,950	102,035
	CIAC		
	Pro Forma Plant Retirements (I-4)	($23,857)	$104,784
	Accumulated Amortization of CIAC		
	Pro Forma Plant Retirements (I-4)	$23,857	($104,784)
	Working Capital		
1	Pro Forma Cash Adjustment (I-16)	($2,355,199)	($3,061,123)
2	Pro Forma Studies and Preliminary Investigations Adjustment (I-16)	0	(4,453)
3	Miscellaneous Deferred Debits Adjustment (I-16)	0	91,863
		($2,355,199)	($2,973,713)

Utilities, Inc. of Florida **Schedule No. 2**
Capital Structure-13-Month Average **Docket No. 20200139-WS**
Test Year Ended 12/31/19

	Description	Total Capital	Specific Adjust-ments	Subtotal Adjusted Capital	Prorata Adjust-ments	Capital Reconciled to Rate Base	Ratio	Cost Rate	Weighted Cost
Per Utility									
1	Long-term Debt	$257,846,154	$0	$257,846,154	($196,846,833)	$60,999,321	41.59%	5.78%	2.40%
2	Short-term Debt	28,461,538	0	28,461,538	(21,729,943)	6,731,595	4.59%	4.04%	0.19%
3	Preferred Stock	0	0	0	0	0	0.00%	0.00%	0.00%
4	Common Equity	279,391,931	0	279,391,931	(213,293,817)	66,098,114	45.07%	11.75%	5.30%
5	Customer Deposits	248,501	0	248,501	0	248,501	0.17%	2.00%	0.00%
6	Tax Credits-Zero cost	73,443	0	73,443	0	73,443	0.05%	0.00%	0.00%
7	Deferred Income Taxes	7,143,896	12,554	7,156,450	0	7,156,450	4.88%	0.00%	0.00%
8	Excess Deferred Tax Liability	5,647,645	(293,820)	5,353,825	0	5,353,825	3.65%	0.00%	0.00%
9	**Total Capital**	**$578,813,108**	**($281,266)**	**$578,531,842**	**($431,870,593)**	**$146,661,249**	**100.00%**		**7.89%**
Per Commission									
10	Long-term Debt	$257,846,154	$0	$257,846,154	($200,023,986)	$57,822,168	41.39%	5.78%	2.39%
11	Short-term Debt	28,461,538	0	28,461,538	(22,079,020)	6,382,518	4.57%	4.04%	0.18%
12	Preferred Stock	0	0	0	0	0	0.00%	0.00%	0.00%
13	Common Equity	279,391,931	0	279,391,931	(216,738,108)	62,653,823	44.85%	9.75%	4.37%
14	Customer Deposits	248,501	0	248,501	0	248,501	0.18%	2.00%	0.00%
15	Tax Credits-Zero cost	73,443	0	73,443	0	73,443	0.05%	0.00%	0.00%
16	Deferred Income Taxes	7,156,450	0	7,156,450	0	7,156,450	5.13%	0.00%	0.00%
17	Excess Deferred Tax Liability	5,353,825	0	5,353,825	0	5,353,825	3.83%	0.00%	0.00%
18	**Total Capital**	**$578,531,842**	**$0**	**$578,531,842**	**($438,841,114)**	**$139,690,728**	**100.00%**		**6.95%**

	LOW	HIGH
RETURN ON EQUITY	8.75%	10.75%
OVERALL RATE OF RETURN	6.51%	7.40%

Schedule No. 3-A

Utilities, Inc. of Florida | **Schedule No. 3-A**
Statement of Water Operations | **Docket No. 20200139-WS**
Test Year Ended 12/31/19

	Description	Test Year Per Utility	Utility Adjust-ments	Adjusted Test Year Per Utility	Commission Adjust-ments	Commission Adjusted Test Year	Revenue Increase	Revenue Requirement
1	**Operating Revenues:**	$16,396,327	$3,020,045	$19,416,372	($2,794,456)	$16,621,916	$1,696,108	$18,318,024
							10.20%	
	Operating Expenses							
2	Operation & Maintenance	$8,659,460	$373,246	$9,032,706	($206,949)	$8,825,757		$8,825,757
3	Depreciation	2,885,066	192,476	3,077,542	(1,995)	3,075,547		3,075,547
4	Amortization	0	50,263	50,263	46	50,309		50,309
5	Taxes Other Than Income	1,653,481	203,117	1,856,598	(134,050)	1,722,548	76,325	1,798,873
6	Income Taxes	(528,046)	1,437,320	909,274	(533,881)	375,393	408,589	783,983
7	**Total Operating Expense**	12,669,961	2,256,422	14,926,383	(876,829)	14,049,554	484,914	14,534,468
8	**Operating Income**	$3,726,366	$763,623	$4,489,989	($1,917,627)	$2,572,362	$1,211,194	$3,783,556
9	**Rate Base**	$53,187,111		$56,913,982		$54,410,589		$54,410,589
10	**Rate of Return**	7.01%		7.89%		4.73%		6.95%

Schedule No. 3-B

Utilities, Inc. of Florida **Schedule No. 3-B**
Statement of Wastewater Operations **Docket No. 20200139-WS**
Test Year Ended 12/31/19

	Description	Test Year Per Utility	Utility Adjust-ments	Adjusted Test Year Per Utility	Commission Adjust-ments	Commission Adjusted Test Year	Revenue Increase	Revenue Requirement
1	**Operating Revenues:**	$20,840,529	$5,987,039	$26,827,568	($6,518,873)	$20,308,695	$4,635,151	$24,943,846
							22.82%	
	Operating Expenses							
2	Operation & Maintenance	$10,494,286	$575,233	$11,069,519	($411,479)	$10,658,040		$10,658,040
3	Depreciation	3,773,374	870,142	4,643,516	(108,192)	4,535,324		4,535,324
4	Amortization	0	110,166	110,166	121,916	232,082		232,082
5	Taxes Other Than Income	1,872,394	617,804	2,490,198	(339,107)	2,151,091	208,582	2,359,673
6	Income Taxes	(484,700)	1,918,645	1,433,945	(1,321,952)	111,993	1,116,599	1,228,591
7	**Total Operating Expense**	15,655,354	4,091,990	19,747,344	(2,058,814)	17,688,530	1,325,180	19,013,710
8	**Operating Income**	$5,185,175	$1,895,049	$7,080,224	($4,460,059)	$2,620,165	$3,309,971	$5,930,136
9	**Rate Base**	$60,933,794		$89,747,180		$85,280,139		$85,280,139
10	**Rate of Return**	8.51%		7.89%		3.07%		6.95%

Schedule No. 3-C
Page 1 of 2

Utilities, Inc. of Florida **Schedule 3-C**
Adjustment to Operating Income **Docket No. 20200139-WS**
Test Year Ended 12/31/19 **Page 1 of 2**

	Explanation	Water	Wastewater
	Operating Revenues		
1	Remove requested final revenue increase or decrease.	($2,823,848)	($6,529,383)
2	Test Year Revenues (I-24)	17,989	2,813
	Total	($2,794,456)	($6,518,873)
	Operation and Maintenance Expense		
1	Stipulated Rate Case Expense (I-25)	($5,930)	($5,443)
2	Pro Forma WWTP Permitting Expense (I-26)	0	10,250
3	Pro Forma I&I Inspection Expense (I-26)	0	15,278
4	Pro Forma Capitalized Labor (I-26)	(61,245)	(353,675)
5	Pro Forma Positions - Salaries & Wages Expense (I-26)	(15,121)	(13,879)
6	Pro Forma Positions - Pensions & Benefits Expense (I-26)	(7,830)	(7,187)
7	Pro Forma Positions - Telephone Expense (I-26)	(959)	(879)
8	Pro Forma Transportation Expense - New Positions (I-26)	(2,316)	(2,126)
9	Pro Forma Chemicals Expense - Lake Groves (I-26)	(28,914)	0
10	Pro Forma Chemicals Expense - Summertree (I-26)	(5,000)	0
11	Pro Forma Contractual Services - Testing Expense - Summertree (I-26)	(24,500)	0
12	Pro Forma Contractual Services - Other Expense - Summertree (I-26)	0	(5,400)
13	Pro Forma Contractual Services - Other Expense - Eagle Ridge (I-26)	0	7,200
14	Non-Qualified Retirement Expense (I-27)	(28,592)	(26,245)
15	Lobbying Expense (I-27)	(23,894)	(21,933)
16	Holiday Party Expense (I-27)	(2,648)	(2,431)
17	Infiltration & Inflow - Purchased Wastewater (I-27)	0	(4,901)
18	Infiltration & Inflow - Purchased Power (I-27)	0	(107)
	Total	($206,949)	($411,479)
	Depreciation Expense - Net		
1	Pro Forma Plant Additions (I-3)	($1,861)	($67,329)
2	Pro Forma Plant Retirements - Depreciation Expense (I-4)	976	1,657
3	Pro Forma Plant Retirements - CIAC Amortization (I-4)	(1,111)	(14,061)
4	Non-Used and Useful Adjustments (I-9)	0	(28,459)
	Total	$1,995	($108,192)
	Amortization-Other Expense		
	Stipulated Amortization Expense (I-28)	$46	$121,916

Utilities, Inc. of Florida | **Schedule 3-C**
Adjustment to Operating Income | **Docket No. 20200139-WS**
Test Year Ended 12/31/19 | **Page 2 of 2**

	Explanation	Water	Wastewater
	Taxes Other Than Income		
1	RAFs on revenue adjustments above.	($125,751)	($293,349)
2	Pro Forma Plant Additions (I-3)	(2,328)	(7,778)
3	Non-Used and Useful Adjustments (I-9)	0	(9,743)
4	Pro Forma Capitalized Labor (I-26)	(4,685)	(27,056)
5	Pro Forma Positions - Payroll Taxes (I-26)	(1,287)	(1,181)
	Total	($134,050)	($339,107)

Schedule No. 4-A

Utilities Inc. of Florida — **Schedule No. 4-A**
Test Year Ended 12/31/19 — **Docket No. 20200139-WS**
Water Rates

	Utility's Existing Rates	Commission Approved Interim Rates	Utility's Proposed Final Rates	Commission Approved Rates	Four Year Rate Reduction
Residential and General Service					
Base Facility Charge by Meter Size					
5/8" x 3/4"	$11.28	$11.71	$13.23	$12.46	$0.07
3/4"	$16.92	$17.57	$19.85	$18.69	$0.11
1"	$28.20	$29.28	$33.08	$31.15	$0.18
1-1/2"	$56.40	$58.55	$66.17	$62.30	$0.35
2"	$90.24	$93.68	$105.86	$99.68	$0.56
3"	$180.48	$187.36	$211.73	$199.36	$1.12
4"	$282.00	$292.75	$330.83	$311.50	$1.75
6"	$564.00	$585.50	$661.65	$623.00	$3.50
8"	$902.40	$936.80	$1,058.64	$996.80	$5.60
10"	$1,635.60	$1,697.95	$1,918.79	$1,806.70	$10.15
Charge per 1,000 gallons - Residential Service					
0-4,000 gallons	$1.59	$1.65	$1.87	$1.76	$0.01
4,001-12,000 gallons	$2.37	$2.46	$2.78	$2.62	$0.01
Over 12,000 gallons	$3.96	$4.11	$4.65	$4.37	$0.02
Charge per 1,000 gallons - General Service	$2.68	$2.78	$3.14	$2.96	$0.02
Private Fire Protection Service					
1 1/2"	$4.70	$4.88	$5.51	$5.19	$0.03
2"	$7.52	$7.81	$8.82	$8.31	$0.05
3"	$15.04	$15.61	$17.64	$16.61	$0.09
4"	$23.50	$24.40	$27.57	$25.96	$0.15
6"	$47.00	$48.79	$55.14	$51.92	$0.29
8"	$75.20	$78.07	$88.22	$83.07	$0.47
10"	$136.30	$141.50	$159.90	$150.56	$0.85
Typical Residential 5/8" x 3/4" Meter Bill Comparison					
3,000 Gallons	$16.05	$16.66	$18.84	$17.74	
6,000 Gallons	$22.38	$23.23	$26.27	$24.74	
8,000 Gallons	$27.12	$28.15	$31.83	$29.98	

Schedule No. 4-B
Page 1 of 2

Utilities Inc. of Florida Test Year Ended 12/31/19 Wastewater Rates					Schedule No. 4-B Docket No. 20200139-WS Page 1 of 2
	Utility's Existing Rates	Commission Approved Interim Rates	Utility's Proposed Final Rates	Commisson Approved Rates	Four Year Rate Reduction
Residential Service (RS1)					
All Meter Sizes	$26.72	$27.63	$35.44	$32.92	$0.13
Charge per 1,000 gallons (8,000 gallon cap)	$4.27	$4.42	$5.66	$5.26	$0.02
Residential Service (RS2)					
All Meter Sizes	$53.44	$55.26	$70.89	$65.84	$0.25
Charge per 1,000 gallons (16,000 gallon cap)	$4.27	$4.42	$5.66	$5.26	$0.02
Residential Service (RS3)					
Flat Rate	$48.06	$49.70	$63.75	$59.21	$0.22
Residential Service (RS4)					
Flat Rate	$96.13	$99.40	$127.52	$118.42	$0.45
Residential Reuse Service (RSS1)					
All Meter Sizes	$7.92	$7.92	$10.51	$9.76	$0.04
Charge per 1,000 Gallons	$1.50	$1.50	$1.99	$1.85	$0.01
General Service (GS1)					
Base Facility Charge by Meter Size					
5/8" x 3/4"	$26.72	$27.63	$35.44	$32.92	$0.13
3/4"	$40.08	$41.45	$53.17	$49.38	$0.20
1"	$66.80	$69.08	$88.61	$82.30	$0.33
1-1/2"	$133.60	$138.15	$177.22	$164.60	$0.65
2"	$213.76	$221.04	$283.55	$263.36	$1.04
3"	$427.52	$442.08	$567.10	$526.72	$2.08
4"	$668.00	$690.75	$886.10	$823.00	$3.25
6"	$1,336.00	$1,381.50	$1,772.19	$1,646.00	$6.50
8"	$2,137.60	$2,210.40	$2,835.51	$2,633.60	$10.40
10"	$3,874.40	$4,006.35	$5,139.36	$4,773.40	$18.85
Charge per 1,000 gallons	$5.11	$5.29	$6.78	$6.30	$0.02

Schedule No. 4-B
Page 2 of 2

Utilities Inc. of Florida | **Schedule No. 4-B**
Test Year Ended 12/31/19 | **Docket No. 20200139-WS**
Wastewater Rates | **Page 2 of 2**

	Utility's Existing Rates	Commission Approved Interim Rates	Utility's Proposed Final Rates	Commission Approved Rates	Four Year Rate Reduction
General Service (GS2)					
5/8" x 3/4"	$53.44	$55.26	$70.89	$65.84	$0.25
3/4"	$80.16	$82.89	$106.33	$98.76	$0.38
1"	$133.60	$138.15	$177.22	$164.60	$0.63
1 1/2"	$267.20	$276.30	$354.44	$329.20	$1.25
2"	$427.52	$442.08	$567.10	$526.72	$2.00
3"	$855.04	$884.16	$1,134.20	$1,053.44	$4.00
4"	$1,336.00	$1,381.50	$1,772.19	$1,646.00	$6.25
6"	$2,672.00	$2,763.00	$3,544.39	$3,292.00	$12.50
8"	$4,275.20	$4,420.80	$5,671.02	$5,267.20	$20.00
10"	$7,748.80	$8,012.70	$10,278.73	$9,546.80	$36.25
Charge per 1,000 gallons	$5.11	$5.29	$6.78	$6.30	$0.02
General Service (GS3)					
Flat Rate	$48.06	$49.70	$63.75	$59.21	$0.22
General Service (GS4)					
Flat rate (905 ERCs)	$43,494.30	$44,978.50	$57,694.88	$53,585.05	$203.62
Bulk Service (BS1)					
All Meter Sizes (58 ERCs)	$1,549.76	$1,602.54	$2,055.75	$1,909.36	$7.26
Charge per 1,000 gallons	$4.27	$4.42	$5.66	$5.26	$0.02
General Reuse Service (GRS1)					
All Meter Sizes	$0.00	$0.00	$0.00	$0.00	$0.00
Charge per 1,000 gallons	$0.00	$0.00	$0.00	$0.00	$0.00
Typical Residential 5/8" x 3/4" Meter Bill Comparison (RS1)					
3,000 Gallons	$39.53	$40.89	$52.42	$48.70	
6,000 Gallons	$52.34	$54.15	$69.40	$64.48	
8,000 Gallons	$60.88	$62.99	$80.72	$75.00	

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF ATMOS ENERGY CORPORATION FOR AN ADJUSTMENT OF RATES	)))	CASE NO. 2021-00214

O R D E R

Atmos Energy Corporation (Atmos Energy) is a utility that delivers natural gas to approximately three million ratepayers in eight states. Atmos Energy has six gas utility operating divisions located in Denver, Colorado (Colorado/Kansas Division); Baton Rouge, Louisiana (Louisiana Division); Flowood, Mississippi (Mississippi Division); Lubbock, Texas (West Texas Division); Dallas, Texas (Mid-Tex Division); and Franklin, Tennessee (Kentucky/Mid-States Division). Atmos Energy's corporate offices are in Dallas, Texas and provide services to its operating divisions such as accounting, legal, human resources, rate administration, procurement, information technology, and customer service organizations. Atmos Energy also has two customer contact centers located in Amarillo and Waco, Texas. The costs of these centralized services are shared with the other Atmos Energy operating divisions, including the Kentucky/Mid-States division. Atmos Energy's regulated gas distribution operation in Kentucky (Atmos Kentucky) serves approximately 179,900 residential, commercial, and industrial customers in central and western Kentucky, with 159,800 of those being residential class customers.[1] Atmos Kentucky last filed for an adjustment of its gas rates in Case No. 2018-00281, which had a final order issued on May 8, 2019.[2]

BACKGROUND

Atmos Kentucky filed an application for an adjustment of rates on June 30, 2021. The application requested an overall rate increase of 9.4 percent or approximately $16.390 million in annual revenue and an increase of 9.6 percent for the average residential customer. Following discovery, the requested increase was reduced to $15.131 million or an 8.8 percent increase on rebuttal. Atmos Kentucky's application was initially rejected due to a filing deficiency, which was cured on July 20, 2021. Pursuant to an Order issued on July 23, 2020, the Commission found that an investigation would be necessary to determine the reasonableness of Atmos Kentucky's proposed rates and suspended the proposed rates for a period of six months, from August 19, 2021, up to and including February 18, 2021, pursuant to KRS 278.190(2). The Attorney General of the Commonwealth of Kentucky, by and through the Office of Rate Intervention (Attorney General) is an intervenor in this proceeding. Pursuant to a procedural schedule established on July 23, 2021 and amended July 30, 2021, Atmos Kentucky filed direct and rebuttal testimony, and responded to multiple rounds of discovery. The Attorney General filed direct testimony and responded to one round of discovery. A three-day hearing was scheduled for December 14-16, 2021. The hearing was canceled due to an emergency created by tornados in the utility's service territory. The parties submitted

[1] Application at 3.

[2] Case No. 2018-00281, *Electronic Application of Atmos Energy Corporation for an Adjustment in Rates* (Ky. PSC June 12, 2019).

briefs to the Commission for consideration on January 14, 2022. This mater now stands submitted for a decision based upon the written record.

LEGAL STANDARD

The Commission's statutory obligation when reviewing a rate application is to determine whether the proposed rates are "fair, just and reasonable."[3] Applying that standard, the Commission has held that cost-based rates for investor-owned utilities should be set at a level to allow the utility to recover its reasonable expenses and provide its shareholders an opportunity to earn a fair return on invested capital.[4] However, when a utility proposes a rate increase, "the burden of proof to show that the increased rate or charge is just and reasonable shall be upon the utility."[5] The Commission must review the record in its entirety and apply its expertise to make an independent decision as to the level of rates that should be approved, including terms and conditions of service.

TEST PERIOD

Atmos Kentucky proposed the 12 months ending December 31, 2022, as its forecasted test period to determine the reasonableness of its proposed rates.[6] The

[3] *See Kentucky Pub. Serv. Comm'n v. Com. ex rel. Conway*, 324 S.W.3d 373, 377 (Ky.2010) ("Because utilities are allowed to charge consumers only 'fair, just, and reasonable rates' under KRS 278.030(1), the [Commission] must ensure that utility rates are fair, just, and reasonable to discharge its duty under KRS 278.040 to ensure that utilities comply with state law.").

[4] Case No. 2017-00481, *An Investigation of the Impact of the Tax Cuts and Job Act on the Rates of Atmos Energy Corporation, Delta Natural Gas Company, Inc., Columbia Gas of Kentucky, Inc., Kentucky-American Water Company, and Water Service Corporation of Kentucky* (Ky. PSC Dec. 27, 2017), Order at 1-2; *see also Com. ex. rel. Stephens v. South Central Bell Tel. Co.*, 545 S.W.2d 927, 931 (Ky. 1976) ("Rates are non-confiscatory, just and reasonable so long as they enable the utility to operate successfully, to maintain its financial integrity, to attract capital and to compensate its investors for the risks assumed.").

[5] KRS 278.190(3); *see also* KRS 278.2209 ("In any formal commission proceeding in which cost allocation is at issue, a utility shall provide sufficient information to document that its cost allocation procedures and affiliate transaction pricing are consistent with the provisions of this chapter.").

[6] Application at 4.

Attorney General did not object to the proposed test period or suggest an alternative test period; it did, however, criticize Atmos Kentucky's development of certain items contained in the proposed test period, as discussed herein. The Commission finds Atmos Kentucky's forecasted test period to be reasonable and consistent with the provisions of KRS 278.192 and 807 KAR5:001, Section 16(6), (7), and (8). Therefore, the Commission accepts the forecasted test period proposed by Atmos Kentucky for use in this proceeding.

VALUATION

Rate Base

Atmos Kentucky proposed a net investment rate base for its forecasted test period of $596.130 million, based on the 13-month average for that period.[7] In response to errors identified in discovery, Atmos Kentucky revised this amount to $583.089 million.[8] In its rebuttal testimony, Atmos Kentucky further revised its proposed rate base to $581.184 million.[9]

The Attorney General proposed to reduce Atmos Kentucky's rate base to $563.372 million.[10] The Attorney General proposed to (1) remove asset net operating loss (NOL) accumulated deferred income taxes (ADIT) due to Winter Storm Uri;[11] (2) reduce asset

[7] Application, Schedule A.

[8] Atmos Kentucky's Supplemental Response to Commission Staff's First Request for Information (filed Aug. 23, 2021), (Staff's First Request), Item 55.

[9] Corrected Rebuttal Testimony of Joe T. Christian (Christian Rebuttal Testimony), Exhibit JTC-R-1 Revised.

[10] Attorney General's Post-Hearing Brief (filed Jan. 14, 2022) (Attorney General's Brief), Atmos_Rev_Req_-_AG_Recommendation-Addtl_Brief_Quantifications.xlsx, Tab Rate Base.

[11] Attorney General's Brief at 5.

NOL ADIT to reflect taxable income from April 2021 through December 2021;[12] (3) include Shared Service Unit (SSU) Division 002 T-Lock Adjustment - Unrealized Gains liability ADIT;[13] (4) remove other SSU division 002 ADIT;[14] (4) remove Accounts Payable – Construction;[15] (5) remove regulatory assets for rate case expenses;[16] (6) adjust depreciation expense lag days in cash working capital (CWC) and remove noncash items;[17] (7) adjust CWC to reflect changes in expenses;[18] and (8) reflect effects from amortization of unprotected excess deferred income taxes (EDIT) over three years.[19]

As discussed later in this Order, the Commission has determined that Atmos Kentucky's net investment rate base for ratemaking purposes is $568.506 million, as shown below.

	Amount
Rate Base per Application	$ 596,130,007
August 23, 2021 Supplemental Filing - Revisions	$ (13,040,183)
Revised Rate Base	$ 583,089,824
Adjustments:	
Include SSU Division 002 T-Lock Adjustment-Unrealized Gains Liability ADIT	$ (3,229,413)
Remove Other SSU Division 002 ADIT	$ (1,218,640)
Remove Accounts Payable - Construction	$ (5,174,457)
Remove Regulatory Asset for Rate Case Expenses	$ (365,168)
Remove Noncash Items from CWC	$ (6,314,237)
Reflect Effects from Amortization of Unprotected EDIT Over Three Years	$ 1,717,920
Net Change in Rate Base	$ (14,583,995)
Adjusted Rate Base	$ 568,505,829

12 Attorney General's Brief at 6.

13 Attorney General's Brief at 12.

14 Attorney General's Brief at 12.

15 Attorney General's Brief at 13.

16 Attorney General's Brief at 14.

17 Attorney General's Brief at 19.

18 Attorney General's Brief at 19.

19 Attorney General's Brief at 21.

Capitalization

Atmos Energy conducts utility operations in eight states through unincorporated operating divisions, which are not separate legal entities. All debt or equity funding of each division is issued by Atmos Energy.[20] Atmos Kentucky stated that this consolidated capital structure is appropriate for ratemaking in Kentucky because Atmos Energy provides the debt and equity capital that supports the assets serving Kentucky customers.[21] Atmos Kentucky proposed to update its total capitalization for the forecasted test period to $13,499,336,801 to reflect finance activity and the impact of interest rate swaps.[22] The Attorney General recommended adjustments to the proposed capitalization, as discussed below. The Commission accepts Atmos Kentucky's proposed capitalization amount for ratemaking but, as discussed below, modifies the inherent capital structure.

REVENUE REQUIREMENT ADJUSTMENTS

Atmos Kentucky developed an operating statement for its forecasted test period based on its budgets for the 2022 and 2023 fiscal years, excluding the Pipeline Replacement Program (PRP) expenditure after September 30, 2022.[23] As required by 807 KAR 5:001, Section 16(6)(a), the financial data for the forecasted test period was presented by Atmos Kentucky in the form of pro forma adjustments to its base period, with the 12 months ending September 30, 2021.[24] Based on the assumptions built into

[20] Direct Testimony of Joe T. Christian (Christian Testimony) at 52.

[21] Christian Testimony at 52-53.

[22] Christian Rebuttal Testimony, Exhibit JTC-R-1.

[23] Christian Testimony at 13. Atmos Kentucky's fiscal year ends September 30.

[24] Application at 4.

its budgets, Atmos Kentucky calculated its test year revenues and operating and maintenance (O&M) expenses to be $173.467 million and $144.049 million, respectively.[25] Based on these adjusted revenues and O&M expenses, Atmos Kentucky's test period operating income was $29.418 million, which based on its proposed rate base, results in a 4.93 percent overall rate of return.[26] Based on a proposed ROE of 10.35 percent, Atmos Kentucky determined that it required a revenue increase of $6.527 million, which includes the amortization of regulatory liabilities of $9.862 million and would produce an overall return on rate base of 7.66 percent.[27]

The Attorney General, based on a number of proposed adjustments to Atmos Kentucky's test period results and a 9.10 percent ROE, recommended an increase in revenues of $0, with a maximum increase of $1.540 million after regulatory liabilities are exhausted.[28]

The Commission will accept components of Atmos Kentucky's test period and certain proposed adjustments but will also accept some of the Attorney General's proposed adjustments. A discussion of the individual adjustments accepted, modified, or rejected by the Commission, and the impact of those adjustments on Atmos Kentucky's revenue requirement follows.

[25] Application, Schedule C-1.

[26] Application, Schedule A and Schedule C-1.

[27] Application, Schedule A.

[28] Attorney General’s Brief at 38.

Rate Base Adjustments

Remove Asset NOL ADIT due to Winter Storm Uri

Atmos Energy tracks its NOL ADIT, which is a deferred tax asset that increases rate base, on a consolidated company basis for Atmos Energy's utility divisions. Atmos Energy records that deferred tax asset in Division 2, Account 190 and then allocates a share of that NOL ADIT to its Kentucky operations using a cost allocation percentage.[29] A large portion of the NOL ADIT in the base period and forecasted period as originally filed is directly tied to costs from other states arising from Winter Storm Uri. The Attorney General's witness, Lane Kollen, proposed to remove that NOL ADIT before the total was allocated to Kentucky using the allocation percentage,[30] and Atmos Kentucky agreed to the adjustment.[31] The Commission finds that this adjustment is reasonable and is accepted.

Reduction of NOL ADIT from April 2021 through December 2021:

Atmos Energy maintains separate accounting records for each temporary difference and the related deferred tax asset and liability amounts except for deferred tax assets arising from net operating loss carryforwards, or NOL ADIT.[32] Atmos Energy aggregates the NOLs for all divisions and records NOL ADIT at the corporate level in the

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[29] Direct Testimony of Lane Kollen (Kollen Testimony) at 7-8.

[30] Kollen Testimony at 9.

[31] Christian Rebuttal Testimony at 4.

[32] Atmos Kentucky's Response to the Attorney General's First Request for Information (filed Aug. 23, 2022) (Attorney General's First Request), Item 20(a).

SSU Division 002.[33] At the corporate level, Atmos Energy generally only divides NOL ADIT between those that arose from regulated and unregulated operations.[34]

In its revenue model filed with the application, Atmos Kentucky reflected approximately $608.54 million in regulated, or utility, NOL ADIT as of September 30, 2020; $598.05 million in utility NOL ADIT as of December 31, 2021, and $977.07 million in utility NOL ADIT as of March 31, 2021.[35] Upon questioning from the Attorney General, Atmos Kentucky acknowledged that the significant increase in its NOL ADIT balance at the end of March 2021 arose from expenses incurred by rate divisions in Texas, Oklahoma, and Kansas arising from Winter Storm Uri. As noted above, Atmos Kentucky acknowledged NOL ADIT arising from Winter Strom Uri should not be included in rate base for Kentucky customers and, therefore, updated its revenue model to remove those items,[36] which resulted in the utility NOL ADIT being reduced to $537.24 million as of March 31, 2021.[37]

Atmos Kentucky did not reflect any change in its utility NOL ADIT after March 31, 2021. Rather, Atmos Kentucky simply carried the $537.24 million balance forward to the forecasted test year and then allocated it to Kentucky operations using the same sharing

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[33] Kollen Testimony at 7.

[34] *See* Atmos Kentucky's Response to Staff's First Request, Item 55, ADIT_for_KY_04-30-21.xlsx, Tab ADIT 002, Rows 58-60.

[35] *See* Atmos Kentucky's Response to Staff's First Request, Item 55, ADIT_for_KY_04-30-21.xlsx, Tab ADIT 002, Row 59.

[36] Atmos Kentucky's Response to the Attorney General's First Request, Item 20(e)-(g).

[37] *See* Atmos Kentucky's Supplemental Response to Staff's First Request (filed Aug. 17, 2021), Item 55, ADIT_for_KY_04-30-21 updated NOL for URI 8-17-21.xlsx, Tab ADIT 002, Row 59.

percentage it uses to allocate SSU's plant and other rate base items,[38] which resulted in $26.72 million of Atmos Energy's utility NOL ADIT being included in rate base for Kentucky operations.[39] Atmos Kentucky then projected the change in the NOL ADIT allocated to Kentucky during the forecasted test year by comparing the projected tax expense during the test year to the ADIT generated to determine whether the NOL ADIT allocated to Kentucky could be utilized to offset tax expense during the test year, which resulted in a $2.986 million reduction in the NOL ADIT allocated to Kentucky.[40]

Kollen noted that the manner in which Atmos calculates the utilization of its NOL ADIT failed to account for potential changes from April 2021 to December 2021.[41] Kollen stated that Atmos Energy had taxable income on its consolidated return in 2020 and, excluding the expenses associated with Winter Storm Uri, in the first part of 2021. Kollen argued that it was unreasonable for Atmos Kentucky to reflect no change in the NOL ADIT in the period from April 2021 to December 2021.[42] Kollen proposed using Atmos Kentucky's utilization of NOL ADIT from October 1, 2020 through March 31, 2021, which was approximately $71.120 million, to project the utilization of the NOL ADIT during the period from April 1, 2021 through December 31, 2021, which would reduce the NOL ADIT

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[38] *See* Atmos Kentucky's Response to Staff's First Request, Item 55, 2021 KY Rev Req Model.xlsx, Tab B.5 F (showing the allocation of Account 190 for Division 002, which included the regulated NOL Assets).

[39] $537,424,569 x 4.97% = $26,717,590.

[40] *See* Atmos Kentucky's Supplemental Response to Staff's First Request (filed Aug. 17, 2021), Item 55, 2021 KY Rev Req Model – Revised 8-17-21.xlsx, Tab ADIT 002, Row 59; *see also* Kollen Testimony at 10 (discussing how Atmos Kentucky calculated the utilization of NOL Assets).

[41] Kollen Testimony at 10.

[42] Kollen Testimony at 11.

by about $106.679 million.[43] Kollen indicated that this would result in a $0.514 million reduction in the revenue requirement.[44]

Atmos Kentucky argued that Kollen's assumption that it would have $106.679 million in tax expense from April 1, 2021, to December 31, 2021, is not reasonable and, therefore, his proposed adjustment is not reasonable. Atmos Kentucky asserted that during the period from April 1, 2021, to September 30, 2021, which represents the end of Atmos Kentucky's most recent fiscal year, the NOL ADIT increased by $34.9 million. Atmos Kentucky argued that with that increase in the NOL ADIT that the net change in the NOL ADIT in the fiscal year ending September 30, 2021, was a decrease of $36.3 million as opposed to the decrease of about $71.120 million reflected in the revenue model. Thus, Atmos Kentucky urged the Commission to reject Kollen's proposed adjustment.[45]

The Commission agrees that the evidence does not currently support reducing the NOL ADIT during the period from April 1, 2021, to December 31, 2021, as proposed by Kollen. While Atmos Kentucky recorded a reduction in its NOL ADIT in fiscal year 2020, the actual reduction in that year was less than the reduction Atmos Kentucky projected in fiscal year 2021, even assuming no change after March 31, 2021. The actual reduction was also significantly lower than Kollen's projection for fiscal year 2021.[46] Atmos Kentucky's testimony regarding the changes in the NOL ADIT from April 1, 2021 to

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[43] Kollen Testimony at 12.

[44] Kollen Testimony at 13.

[45] Rebuttal Testimony of Joey J. Multer (Multer Testimony) at 7-10.

[46] *See* Atmos Kentucky's Response to the Attorney General's First Request, Item 15, AG_1-15_Att1 – NOL Rollforward (CONFIDENTIAL).xlsx.

September 30, 2021 is also credible given that the retail sales of gas distribution companies tend to peak in the winter.[47] Finally, although Atmos Kentucky did not project the utilization of NOL ADIT from October 1, 2021 to December 31, 2021 in either its direct or rebuttal testimony, utilization during that period would not likely exceed the increase in NOL ADIT reflected by Atmos Kentucky from April 1, 2021 to September 30, 2021.[48] Thus, the Commission does not accept Kollen's proposed adjustment to reflect the utilization of additional NOL ADIT during the period from April 1, 2021 to December 31, 2021.

The Commission does question Atmos Kentucky's methodology for tracking and allocating net operating losses. The accumulation and utilization of NOLs should be done on a Kentucky specific basis to the extent possible.[49] Atmos Kentucky has acknowledged that "specific one-off events" resulting in deferred tax liabilities and corresponding NOL ADIT should be assigned to the applicable utility division to the extent they can be identified and the assignment would not violate the consistency rule.[50] Atmos Kentucky even separately tracks and excludes the utilization of NOL ADIT by its non-regulated

[47] The historical portion of the forecasted period reflects this variability in utilization of utility NOL Assets with $10,498,762 being utilized from October 1, 2020, to December 31, 2020, and $60,620,743 being utilized from January 1, 2021, through March 31, 2021. *See* Atmos Kentucky's Supplemental Response to Staff's First Request (filed Aug. 17, 2021), Item 55, ADIT_for_KY_04-30-21 updated NOL for URI 8-17-21.xlsx, Tab ADIT 002, Row 59.

[48] *See* Atmos Kentucky's Supplemental Response to Staff's First Request, Item 55, ADIT_for_KY_04-30-21 updated NOL for URI 8-17-21.xlsx, Tab ADIT 002, Row 59 (reflecting the change in the previous year during the same period).

[49] *See* Case No. 2021-00183, *Electronic Application of Columbia Gas of Kentucky, Inc. for an Adjustment of Rates; Approval of Depreciation Study; Approval of Tariff Revisions; Issuance of a Certificate of Public Convenience and Necessity; and Other Relief* (Ky. PSC Dec. 28, 2021), final Order at 14-20.

[50] Atmos Kentucky's Response to the Attorney General's First Request, Item 17.

divisions, which results in more NOL ADIT being allocated to utility divisions.[51] However, Atmos Energy apparently makes little to no effort to identify and allocate NOLs to the specific utility division that generated them.[52]

Atmos Energy's failure to track and allocate NOLs to specific utility divisions could result in significant NOL ADIT generated by other jurisdictions being included in rate base for Kentucky customers. Further, it could prevent NOL ADIT properly allocated to Kentucky operations from being utilized by positive taxable income in Kentucky. Those effects would be similar to including ADIT or plant in service from other jurisdictions in rate base for Kentucky, which would be improper.[53]

The Commission recognizes that Atmos Energy has been tracking its NOL ADIT on a consolidated basis and then allocating the NOL ADIT to various divisions for some time and that the method could result in a reasonable allocation if the allocation percentage is appropriate. However, Atmos Kentucky's initial inclusion of $439.64 million arising from losses in other jurisdictions in the NOL ADIT to be allocated raises questions about Atmos Kentucky's method for allocating NOL ADIT to Kentucky customers and the

[51] *See* Atmos Kentucky's Supplemental Response to Staff's First Request, Item 55, ADIT_for_KY_04-30-21 updated NOL for URI 8-17-21.xlsx, Tab ADIT 002, Row 58 (showing NOL Assets for nonregulated activity of ($170,609,458) as of March 31, 2021, which indicates that the nonregulated divisions utilized significant amounts of net operating losses generated by utility divisions such that the utility NOL Assets actually would not exist in their entirety if NOL Assets actually were determined on a consolidated basis).

[52] Atmos Kentucky does not reflect any federal NOL Assets in the other Kentucky related divisions about which information was provided herein and the only specific item identified for Division 002 is the NOL Asset associated with Winter Strom Uri. *See* Atmos Kentucky's Supplemental Response to Staff's First Request (filed Aug. 17, 2021), Item 55, 2021 KY Rev Req Model – Revised 8-17-21.xlsx. Moreover, Atmos Kentucky did not identify and carve out the NOL Asset associated with Winter Strom URI until the Attorney General asked about it in requests for information, despite the fact that it increased the total NOL Assets by about 82 percent.

[53] *See* Case No. 2021-00183, *Columbia Gas of Kentucky, Inc.* (Ky. PSC Dec. 28, 2021), final Order at 14-20.

reasonableness of using sharing percentages. Thus, in light of the potentially significant losses being incurred by other divisions that might be assigned to Kentucky customers, the Commission finds that Atmos Kentucky's failure to identify and allocate NOLs to specific utility divisions is unreasonable going forward.

Atmos Kentucky must now track the generation and utilization of NOL ADIT for Kentucky in each fiscal year on a standalone basis based on the expenses incurred and revenue generated from regulated operations in Kentucky, including any revenue from Atmos Kentucky's performance-based rates, without regard to losses incurred by other jurisdictions. In future applications to increase base rates, Atmos Kentucky must file a report showing the generation and utilization of NOL ADIT for Kentucky since this Order based on the expenses incurred and revenue generated from Kentucky operations. If Atmos Kentucky proposes to use a different method to reflect the generation and utilization of NOL ADIT for Kentucky in its revenue model in such cases, Atmos Kentucky must explain in detail why using that method would be reasonable.

SSU Division 002 T-Lock Unrealized Gains Liability ADIT

Kollen proposed adjustments to SSU Division 002 ADIT to be consistent with prior rate cases and match asset and liability balance allocations.[54] Atmos Kentucky excluded liability ADIT related to unrealized gains from treasury lock financial hedges (T-Lock) while including the asset ADIT related to realized gains.[55] Kollen argued that this exclusion inappropriately matched allocated ADIT items and differs from the allocations from prior rate cases. Kollen further argued that these amounts together are proper to

[54] Kollen Testimony at 14.

[55] Kollen Testimony at 13-14.

include in Atmos Kentucky's rate base because the amortization of these unrealized and realized gains are used to calculate the average cost of debt.[56] The proposed revenue requirement reduction is $0.313 million.[57]

Atmos Kentucky argued that neither the unrealized gain nor the associated liability ADIT should be included in rate base but agreed that the unrealized gains are included in the common equity used to calculate the weighted average cost of capital (WACC); Atmos Kentucky agreed to Kollen's adjustment as long as there is no reduction to the common equity component.[58]

While the Commission will adjust Atmos Kentucky's capital structure as described below, the adjustment is unrelated to the inclusion of unrealized gains. Atmos Kentucky also did not rebut Kollen's arguments that Atmos Kentucky's methodology is inconsistent with past rate cases and results oriented. Therefore, the Commission finds that this adjustment is reasonable and is accepted.

Other NOL ADIT Adjustments – SSU Division 002

Kollen recommended removing other SSU Division 002 ADIT that was allocated to the Kentucky division because the underlying temporary differences are not allocated to Kentucky. These ADIT amounts include: (1) asset Self-Insurance Adjustment; (2) asset Rabbi Trust, VEBA Trust Contribution Adjustment, and FAS106 Adjustment; (3) Pension Expense; (4) asset Federal and State Tax Interest; (5) asset FD-NOL Credit

[56] Kollen Testimony at 15.

[57] Kollen Testimony at 16.

[58] Rebuttal Testimony of Joel J. Multer (Multer Rebuttal Testimony) at 5-6.

Carryforward – Other; and (6) asset state Enterprise Zone ITC and related Valuation Allowance.[59] The revenue requirement reduction is $0.118 million.

Atmos Kentucky agreed with the various ADIT adjustments related to allocations from SSU Division 002.[60]

The Commission finds that this adjustment is reasonable and is accepted.

Accounts Payable – Construction

Kollen argued that Atmos Kentucky included, in the test period rate base, working capital allowances for gas stored underground and materials/supplies inventories, but failed to subtract any accounts payable liability balance sheet amounts.[61] Kollen stated that the accounts payable amounts represent temporary vendor financing at 0 percent cost to Atmos Kentucky for both operating expenses and capital expenditures.[62] Kollen proposed to subtract it from rate base through the cash working capital (CWC) calculation using the lead/lag approach. The effect is a reduction in the revenue requirement deficiency and requested base increase of $0.501 million.

Atmos Kentucky disagreed with Kollen's recommendation, stating that Atmos Kentucky has followed the same methodologies as was filed and approved in Case Nos. 2017-00349[63] and 2018-00281. Atmos Kentucky argued that Kollen is introducing a new methodology that has not been included in Atmos Kentucky's previous lead/lag studies

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[59] Kollen Testimony at 16-17.

[60] Multer Rebuttal Testimony at 4.

[61] Kollen Testimony at 19.

[62] Kollen Testimony at 20.

[63] Case No. 2017-00349, *Electronic Application of Atmos Energy Corporation for an Adjustment of Rates and Tariff Modifications* (Ky. PSC May 3, 2018).

and cherry picks one methodological item in the CWC calculation.[64] Atmos Kentucky also stated that although a similar adjustment was accepted by the Commission in Case No. 2020-00174[65] and in a recent settlement, Kollen provided no support for this adjustment.[66]

In a number of recent base rate cases where the revenue requirement is determined using rate base, the Commission has accepted adjustments to remove accounts payable from working capital amounts because the utility does not finance these amounts. The same reasoning exists here. Therefore, the Commission finds that this adjustment is reasonable and is accepted.

Remove Regulatory Asset for Rate Case Expenses

In the Application, Atmos Kentucky proposed an adjustment to include, in rate base, the 13-month average of the projected unamortized balance of two regulatory assets: (a) deferred rate case expenses in Case No. 2018-0281 of $0.063 million; and (b) projected rate case expenses in the instant case of $0.302 million.[67]

Kollen argued that the deferred rate case expenses were and will be incurred to benefit Atmos Kentucky and its shareholders, not customers, and should be removed.[68] Furthermore, Kollen stated that if Atmos Kentucky's base rates are not reset within the next three years, then it will continue to recover the amortization expense. Kollen

[64] Christian Rebuttal Testimony at 21-22.

[65] Case No. 2020-00174, *Electronic Application of Kentucky Power Company for (1) A General Adjustment of Its Rates for Electric Service; (2) Approval of Tariffs and Riders; (3) Approval of Accounting Practices to Establish Regulatory Assets and Liabilities; (4) Approval of a Certificate of Public Convenience and Necessity; and (5) All Other Required Approvals and Relief* (Ky. PSC June 23, 2020).

[66] Christian Rebuttal Testimony at 22.

[67] Application, Schedule F-6.

[68] Kollen Testimony at 21.

recommended allocating the return on the regulatory asset for the deferred rate case expenses to Atmos Kentucky and its shareholders and allocating the amortization expense to the Atmos Kentucky's customers. The effect is a reduction of $0.023 million in the revenue requirement.

Atmos Kentucky argued that customers benefit from just and reasonable rates, and that it would not recover certain assets, such as capital investments, until after a full rate case, so the inclusion of the regulatory asset in rate base would not provide a material benefit to shareholders to delay rate cases in order to collect amortization expense.[69]

The Commission agrees that rate case expense regulatory assets should not be included in rate base, as that would allow a return on the unamortized balance of the expense. The Commission has historically excluded this item from rate base to share the cost of rate proceedings between the stockholders and ratepayers, notwithstanding omissions of this adjustment in recent Atmos Kentucky rate cases. While Kollen stated that the proposed adjustment removed these regulatory assets from rate base, it removed the $0.241 million increase in the 13-month average rate base from the base period, which included the regulatory asset for Case No. 2018-00281. The Commission will remove the 13-month average of both regulatory assets from rate base of $0.365 million, which results in a revenue requirement reduction of $0.035 million.

Cash Working Capital

Atmos Kentucky included CWC in its rate base of negative $3.063 million based on a lead/lag study that included noncash items.[70] Kollen argued that depreciation

[69] Christian Rebuttal Testimony at 25.

[70] Christian Testimony, 2 Exhibit JTC-4 at 2.

expense should not be included in a lead/lag study with 0 lag days.[71] He recommended that either the expense be removed, or the lag days increased to 27.92 days.[72] Kollen proposed to increase the lag days, which results in a revenue requirement reduction of $0.153 million.[73] Kollen also recommended adjusting the CWC to account for the corrections that Atmos Kentucky filed and for the other adjustments recommended by Kollen and Baudino; the effect is a revenue requirement reduction of $0.093 million.[74] The Attorney General included an additional adjustment to remove noncash items, excluding depreciation; the additional adjustment is a revenue requirement reduction of $0.362 million. [75] In response to data requests, Kollen also provided the adjustment necessary to remove noncash items from the lead/lag study, a rate base reduction of $6.314 million, and a revenue requirement reduction of $0.612 million.[76]

Atmos Kentucky argued that Kollen's adjustment incorrectly describes when depreciation expense is recovered from customers and that it is actually recovered after service is provided.[77] Atmos Kentucky agreed that adjustments to expenses should be flowed through the lead/lag study and provided this correction.[78]

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[71] Kollen Testimony at 24.

[72] Kollen Testimony at 26.

[73] Kollen Testimony at 26.

[74] Kollen Testimony at 27.

[75] Attorney General's Brief at 19.

[76] Attorney General's response to Commission Staff's First Request for Information, Item 2.

[77] Christian Rebuttal Testimony at 24.

[78] Christian Rebuttal Testimony at 24.

Noncash expenses are not appropriate to include in the CWC determination. The Commission finds that noncash items should be removed from the lead/lag study and accepts Kollen's calculated adjustment for a revenue requirement reduction of $0.612 million.

Pipeline Replacement Program

Atmos Kentucky proposed to include capital projects for its PRP in base rates and reset its rider to $0 through September 2022, and, as discussed below, to expand its PRP to include the accelerated replacement of Aldyl-A pipe. Atmos's PRP was last rolled into base rates in Case No. 2018-00281. Kollen recommended that the Commission reject the inclusion of Aldyl-A in the PRP.[79]

As discussed below, the Commission finds that Atmos Kentucky provided sufficient information to justify the Aldyl-A replacement projects included in its forecasted test year and the proposal to include these projects in base rates and roll the PRP into base rates through September 2022 is reasonable and is approved. However, in Atmos Kentucky's next base rate case, the Commission will consider the justness of resetting PRP rates. Rolling PRP amounts in rate base and resetting the PRP rider to $0 reduces the transparency of the amounts expended as part of the rider.

Amortize Unprotected Excess Deferred Income Taxes (EDIT)

Atmos Kentucky proposed a five-year amortization of its unprotected EDIT regulatory liability. Kollen recommended a three-year amortization period to return these amounts between rate cases, consistent with the amortization of rate case expenses.[80]

[79] Kollen Testimony at 46-47.

[80] Kollen Testimony at 30.

The effect on rate base is an increase of $1.718 million, because the unprotected EDIT regulatory liability is a reduction to rate base and increasing the amortization will decrease the 13-month average balance deducted from rate base.

Atmos Kentucky did not oppose Kollen's adjustment but stated that a longer amortization period benefits customers for a longer period and recommended using the proposed five-year amortization period.[81]

The Commission finds that Kollen's adjustment to amortize unprotected EDIT over three years is reasonable and is accepted. The rate base increase results in a revenue requirement increase of $0.166 million and the increased amortization, which is discussed below, results in a revenue requirement decrease of $3.460 million. In conjunction with the amortization of regulatory liabilities discussed below, decreasing the amortization period for unprotected EDIT will ameliorate the current rate increase to the benefit of customers.

<u>Operating Income Adjustments</u>

<u>Reduce Outside Services Expense Allocated from Kentucky/Mid-States Division</u>

For both the base period and forecasted test period, Atmos Kentucky included $1.489 million in outside services expense allocated from the Kentucky/Mid-States division,[82] which Kollen argued is excessive compared to historical expenses and driven by increases that did not actually occur in the base period updates.[83] Kollen

[81] Christian Rebuttal at 32.

[82] Christian Testimony, Exhibit JTC-2.

[83] Kollen Testimony at 28-29. *See* also Atmos Kentucky's response to the Attorney General's Second Request for Information, Item 11.

recommended annualizing the actual expenses incurred in the base period for a revenue requirement reduction of $0.405 million.[84]

Atmos Kentucky argued that the now available actual results of the base period do not support Kollen's adjustment.[85] Atmos Kentucky argued that selecting a single expense category was not appropriate because while outside services expense was lower than projected, the total operations and maintenance (O&M) expenses are 2.25 percent higher, including bad debt expense and 0.42 percent lower excluding bad debt.[86]

The Commission finds that Kollen's adjustment is reasonable and is accepted. While the total O&M expenses are relatively close to projections, Atmos Kentucky did not forecast its total O&M expenses by simply carrying over the base period amount. The outside services expenses included in the test-year are not reasonable given the historic amounts and Atmos Kentucky's stated drivers of the increase.

Amortization of EDIT

As discussed above, Kollen recommended a 3-year amortization period for Atmos Kentucky's unprotected EDIT. The effect of increasing the amortization of the regulatory liability is a revenue requirement reduction of $3.460 million.

The Commission finds that this adjustment is reasonable and is accepted.

Amortize Remaining Rate Case Expense from Case No. 2018-00281

Atmos Kentucky proposed a three-year amortization of rate case expenses consistent with the Commission's findings and final Order in Case No. 2018-00281,

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[84] Kollen Testimony at 29.

[85] Christian Rebuttal at 27.

[86] Christian Rebuttal at 27.

resulting in amortization expense of $0.149 million.[87] Kollen proposed and Atmos Kentucky agreed to reset the amortization for the regulatory asset related to Case No. 2018-00281 so that the amortization runs concurrently with the present case, resulting in amortization expense of $0.138 million. This results in a revenue requirement reduction of $0.011 million.

The Commission finds that this adjustment is reasonable and is accepted.

Remove Social Organization/Service Club Dues

In its application, Atmos Kentucky included $0.052 million for American Gas Association (AGA) dues in the test year, after an adjustment to remove $0.003 million for lobbying activities. Kollen argued that AGA dues are like Edison Electric Institute (EEI) dues, which have been disallowed in previous cases.[88] Further, Kollen suggested that Atmos Kentucky has not provided proof that the dues its ratepayers provide toward Atmos Kentucky's membership in AGA are not used for legislative advocacy, regulatory advocacy, or public relations.[89] Kollen recommended removing all AGA dues in the test year.

Atmos Kentucky explained that 6.2 percent of AGA and 15 percent of Kentucky Chamber of Commerce dues related to legislative advocacy were removed from the forecasted test year revenue requirement, based upon amounts identified on invoices as allocable to lobbying activity.[90] Atmos Kentucky argued that its participation in AGA

[87] Application, Schedule F-6.

[88] Kollen Testimony at 35.

[89] Kollen Testimony at 35.

[90] Atmos Kentucky's response to the Attorney General's First Request for Information (Attorney General's First Request), Item 2.

benefits customers in that it enables them to stay aware of changes and implement best practices to provide safe, reliable, and efficient delivery of natural gas to its customers. Atmos Kentucky also provided an explanation of select organizations for which it included dues in base rates and stated that the remaining organizations are local, and state civic organizations engaged in the overall economic development in and around Atmos Kentucky's service area.[91]

As noted in Case Nos. 2020-00350 and 2021-00183, Atmos Kentucky has the burden of establishing that costs it seeks to recover in rates for dues paid to associations like AGA do not include prohibited costs for lobbying and political activity, including costs for legislative lobbying, regulatory advocacy, and public relations.[92] When asked by the Attorney General whether each association for which dues were included in rates engaged in such activity, Atmos Kentucky indicated that it "identified the AGA and Kentucky Chamber of Commerce as organizations that engage, directly or indirectly, in one or more of the listed activities," without indicating whether or not others did.[93] Atmos Kentucky then estimated percentages of the dues related only to lobbying for the AGA and Kentucky Chamber of Commerce without identifying amounts paid for other

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[91] Atmos Kentucky's response to the Attorney General's First Request for Information, Item 2.

[92] Case No. 2020-00350, *Electronic Application of Louisville Gas and Electric Company for an Adjustment of Its Electric and Gas Rates, a Certificate of Public Convenience and Necessity to Deploy Advanced Metering Infrastructure, Approval of Certain Regulatory and Accounting Treatments, and Establishment of a One-Year Surcredit* (Ky. PSC June 30, 2021), final Order 27-30. Case No. 2021-00185, *Electronic Application of Delta Natural Gas Company, Inc. for an Adjustment of Its Rates and a Certificate of Public Convenience and Necessity* (Ky. PSC Jan. 3, 2022), final Order 9-10.

[93] Atmos Kentucky's Response to the Attorney General's First Request, Item 2(d); *see also* Atmos Kentucky's Response to the Attorney General's First Request, Item 2(c), Attachment 2. The provided description for Girls Inc. included "we also advocate for legislation and policies."

prohibited costs.[94] Thus, the Commission finds that Atmos Kentucky has not met its burden of proof that the association and social organization/social club dues are properly recoverable from ratepayers and do not include expenses related to legislative advocacy, regulatory advocacy, or public relations.[95] The Commission will remove all such dues, excluding the Southern Gas Association, because it has been specifically approved in recent gas rate cases.[96] The Commission will also exclude expenses included in error.[97] The resulting revenue requirement reduction is $0.164 million.

<u>Uncollectible Accounts</u>

Atmos Kentucky proposed to establish a regulatory asset that would defer write-offs until the next base rate case to avoid any over or under recovery resulting from the COVID-19 pandemic and requested a baseline/benchmark of $0.363 million. Kollen recommended that the Commission reject the proposal stating that the bad debt reserve already tracks the difference in allowed expense compared to write-offs, net of recoveries and there is no need to overlay another deferral mechanism. Atmos Kentucky argued that it is not able to forecast a reasonable bad debt expense and a tracker would balance the needs of the customer and Atmos Kentucky and maintained that, based upon Kollen's

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[94] Atmos Kentucky's Response to the Attorney General's First Request, Item 2(e).

[95] Case No. 2020-00350, *Louisville Gas and Electric Company* (Ky. PSC June 30, 2021), final Order 27-30 (excluding all costs for dues paid to an association where the utility only identified and excluded a specific category of costs related to legislative lobbying from dues it sought to recover in rates).

[96] Case No. 2021-00183, *Electronic Application of Columbia Gas of Kentucky, Inc. for an Adjustment of Rates; Approval of Depreciation Study; Approval of Tariff Revisions; Issuance of a Certificate of Public Convenience and Necessity; and Other Relief* (Ky. PSC Dec. 28, 2021), Order at 10. Case No. 2021-00185, *Delta* (Ky. PSC Jan. 3, 2022), Order at 8-9.

[97] Atmos Kentucky's response to the Attorney General's First Request, Item 2(c). Atmos Kentucky identified Sam's Club and One Health dues were recorded as social organization dues. These amounts, $310 and $75, respectively, are excluded for the adjustment.

response to Atmos Kentucky's discovery, there is a misunderstanding of what is included in the revenue requirement for bad debt expense and what is recorded for Generally Accepted Accounting Principles (GAAP) purposes.[98] Atmos Kentucky also argued that the Commission's suspension of collections affected its ability to accurately forecast the uncollectible accounts.[99] The Commission's suspension of late payment fees and disconnection for nonpayment was in effect from March 30, 2020 through December 31, 2020, but Atmos Kentucky did not reinstate disconnections or late fees until June 2, 2021.[100]

While the Commission does not agree with Kollen's description of a bad debt reserve as a deferral mechanism in a similar manner to a regulatory asset or liability, the Commission finds that Atmos Kentucky has not established a need for a deferral mechanism due to its inability to forecast uncollectible accounts. Atmos Kentucky forecasted the uncollectible accounts based on its target percentage of 0.50 percent.[101] Requiring ratepayers to shoulder 100 percent of the risk that Atmos Kentucky will experience higher write-offs, while also raising rates, does not "balance the needs of the customer and the Company."[102]

[98] Christian Rebuttal at 31.

[99] Christian Rebuttal at 31.

[100] Atmos Kentucky's response to Commission Staff's Sixth Request for Information (filed Jan. 6, 2022) (Staff's Sixth Request), Item 6.

[101] Christian Testimony at 36.

[102] Atmos Kentucky's response to Staff's Sixth Request, Item 6(b).

Amortization of Regulatory Liabilities

Atmos Kentucky proposed to temporarily reduce its requested revenue requirement increase by the amortization of regulatory liabilities established in Atmos's last rate case.[103] Atmos Kentucky proposed to return the entirety of the $9.805 million in regulatory liabilities in the first 12 months of the rate increase, for a revenue requirement reduction of $9.862 million.[104] Kollen recommended amortizing the regulatory liabilities to reduce the current increase to $0 until they are exhausted,[105] which at a rate of $1.540 million annually would take approximately 6.4 years.[106]

Out of concern and consideration for increasing energy costs that may exist beyond the short term, the Commission chooses not to amortize the regulatory liabilities to bring the current increase to $0, so that the remaining regulatory asset balances will be available to offset likely or possible increases in energy costs in the foreseeable future, particularly given Atmos Kentucky's history of frequent and periodic rate cases. The Commission finds that a six-year amortization period is reasonable and is approved, which reduces the revenue requirement by $1.644 million. The temporary amortization of regulatory liabilities of $1.644 million shall continue until the regulatory liabilities are exhausted or the effective date of Atmos Kentucky's next base rate case, whichever occurs first.

[103] Christian Testimony at 45.

[104] Christian Testimony at 46.

[105] Kollen Testimony at 4.

[106] Attorney General's Brief at 38. $9.862 / $1.540 = 6.4.

Nonrecurring Charges

As discussed below, the Commission will adjust Atmos Kentucky's nonrecurring charges, which will reduce miscellaneous service charges by $0.126 million and result in a revenue requirement increase of the same amount. The changes to Atmos Kentucky's late payment fees result in an overall reduction in late fee revenue and a revenue requirement increase of $0.997 million.

PRO FORMA ADJUSTMENTS SUMMARY

The effect of the Commission's adjustments on Atmos Kentucky's pro forma test-period operations is as follows:

	Atmos Forecasted Test Period	Commission Accepted Adjustments	Commission Adjusted Test Period
Operating Revenues	$ 173,466,923	$ -	$ 173,466,923
Operating Expenses	144,050,085	(579,584)	143,470,501
Net Operating Income	$ 29,416,838	$ 579,584	$ 29,996,422

RATE OF RETURN

Capital Structure and Cost of Debt

The Kentucky/Mid-States Division of Atmos Energy is not a separate legal entity, and therefore, Atmos Energy issues all debt or equity funding. For ratemaking purposes, the proposed capital structure is equivalent to the Atmos Energy capital structure, excluding the $2.2 billion of financing issued March 2021 due to Winter Storm Uri.[107] The proposed capital structure as of the twelve months ending December 31, 2022, or the end of the forecasted test period, consisted of 42.77 percent long-term debt at a cost of

[107] Christian Testimony, at 54.

4.00 percent; 0.18 percent short-term debt at a cost of 25.17 percent; and 57.05 percent common equity with a proposed ROE of 10.35 percent for a WACC of 7.66 percent.[108] A summary of Atmos Energy's modified cost of capital for Atmos Kentucky follows:

		Percent of Total	Cost Rate	13-month Avg. Cost
Short-Term Debt	$ 21,566,707	0.18%	25.17%	0.05%
Long-Term Debt	$ 5,119,937,524	42.77%	4.00%	1.1%
Common Equity	$ 6,838,047,900	57.05%	10.35%	5.90%
Total Capital	$11,969,542,131			7.66%

In addition to reducing the ROE to 9.10 percent, the Attorney General's witness, Richard A. Baudino, recommended to further modify the capital structure. Regarding the equity ratio of 57.05 percent, Baudino argued that this ratio is unreasonable, unnecessary for the provision of service to its customers, and inflates the revenue requirement and should be rejected.[109] He further noted the Commission's warning in Case No. 2018-00281 about the possibility of reducing the equity ratio if Atmos Kentucky's equity ratio was found to be excessive as compared to that of its peers.[110] Baudino specified that the average equity ratio for the proxy group was 50.30 percent and the common equity ratios requested in recent Kentucky gas rate case filings include 50.695 percent for Duke Kentucky, 52.64 percent for Columbia Gas of Kentucky, and 51.76 percent for Delta Natural Gas.[111] Baudino recommended reducing the equity ratio from 57.05 percent to 53.50 percent, halfway between the proposed amount and the average of the gas proxy

[108] Application, FR_16(8)(j)_Att1_-_Schedule_J.xlsx and Direct Testimony of Dylan W. D'Ascendis (D'Ascendis Testimony), at 3.

[109] Direct Testimony of Richard A Baudino Testimony (Baudino Testimony), at 29.

[110] Baudino Testimony, at 30-31.

[111] Baudino Testimony, at 29 and 30.

group as a first step towards movement to a common equity ratio that is more in line with the proxy groups and, according to Baudino, is more reasonable and affordable for Atmos Kentucky's customers.[112]

For the short-term debt component, the expert witness for the Attorney General, Lane Kollen, averred that the short-term debt capitalization is *de minimis* and unnecessary and yet unreasonably increases the cost of capital and the return on rate base.[113] Kollen maintained that a reasonable level of short-term debt is approximately 2.0 percent of the total capitalization, or at least $240 million, and recommended a transition to the $240 million level by increasing the short-term debt ratio to 1.0 percent, or by $100 million, and to signal an increase to a 2.0 percent short-term debt ratio in the next base rate filing.[114] Kollen also recommended scaling down the commitment fees included in the short-term debt cost rate as the maximum commitment fees for each source of short-term debt is less than half of the fees included in Atmos Kentucky's application, which would result in a lower short-term debt rate.[115]

Finally, regarding the long-term debt component, Kollen proposed to increase the long-term debt component balance by the difference between the decrease in the common equity ratio and the increase in the short-term debt.[116] This shift increases the long-term debt balance $325 million. Kollen further recommended to apply the recent

[112] Baudino Testimony at 31.

[113] Kollen Testimony at 37.

[114] Kollen Testimony at 38.

[115] Kollen Testimony at 38.

[116] Kollen Testimony at 38-39.

cost of new long-term debt of 1.50 percent to this incremental increase.[117] Kollen recognized that his proposed capital structure is hypothetical but averred that the critical factor for the Commission is whether the capital structure is reasonable, not whether it is a forecast or a recent actual capital structure.[118]

Based upon the Attorney General's witnesses' recommendations, the proposed capital structure results in a WACC of 6.65 percent and is as follows:[119]

		Percent of Total	Cost Rate	13-month Avg. Cost
Short-Term Debt	$ 121,556,707	1.02%	2.57%	0.03%
Long-Term Debt	$ 5,444,937,524	45.49%	3.85%	1.75%
Common Equity	$ 6,403,047,900	53.50%	9.10%	4.87%
Total Capital	$11,969,542,131			6.65%

In rebuttal, Atmos Kentucky updated the capital structure through September 2021 to reflect the changes to the balances and cost of debt through the end of the base period. This update included an increase to the common equity ratio from 57.05 percent to 57.59 percent and an increase in the short-term debt rate from 25.17 percent to 80.94 percent. Atmos Kentucky also lowered the short-term debt balance, lowered the long-term debt cost rate to 3.84 percent to reflect recent issuances, and included interest rate swap impacts.[120] The resulting capital structure upon rebuttal is as follows:[121]

[117] Kollen Testimony at 39.

[118] Kollen Testimony at 39-40.

[119] Kollen Testimony at 43.

[120] Atmos Kentucky included interest rate swaps based upon an agreement with the Attorney General for a reduction to rate base for unrealized interest rate swaps if the corresponding adjustment is made to the capital structure. Atmos Kentucky's Response to Staff's Seventh Request for Information (filed Feb. 2, 2022), Item 1.

[121] Christian Rebuttal, Exhibit JTC-R-1-Revised, page 1 of 1.

		Percent of Total	Cost Rate	13-month Avg. Cost
Short-Term Debt	$ 6,704,749	0.05%	80.94%	0.04%
Long-Term Debt	$ 5,717,724,278	42.36%	3.84%	1.63%
Common Equity	$ 7,906,889,837			
Interest Rate Swaps	$ (131,981,063)	57.79%	10.35%	5.96%
Total Capital	$13,499,337,801			7.63%

In response to Baudino's proposed common equity balance, Atmos Kentucky stated that the company uses its actual capital structure as it represents its actual costs and has operated with a capital structure at its current capital structure since Case No. 2018-00281.[122] Atmos Kentucky continued, stating that using the operating subsidiary's capital structure is consistent with the Federal Energy Regulatory Commission's precedent.[123] Atmos Kentucky further argued that to provide safe, reliable, and affordable service to its customers, Atmos Kentucky must meet the needs of its customers, shareholders, and bondholders and safe and reliable service cannot be maintained at a reasonable cost if financial flexibility and strength to access competitive financing markets on reasonable terms does not exist.[124] Atmos Kentucky continued, claiming that a capital structure that understates actual common equity weakens the financial condition of its operation and would have an adverse impact on Atmos Kentucky's ability to address expenses and investment, and it would be a detriment to all stakeholders.[125] Atmos Kentucky stated its capitalization strategy allows Atmos Kentucky the ability to meet its need to accelerate the modernization of its pipeline, which in turn effectively supports the

[122] Christian Rebuttal at 11.

[123] Rebuttal Testimony of Dylan W. D'Ascendis (D'Ascendis Rebuttal) at 55.

[124] D'Ascendis Rebuttal at 55.

[125] D'Ascendis Rebuttal at 55.

long-term safety of its system.[126] Atmos Kentucky further argued that this type of investment is contemplated and encouraged by governing regulation, and thus, results in an increased need to access the capital markets.[127] Further, Atmos Kentucky claimed that in order to maintain Atmos Kentucky's current credit rating, the equity component needs to be in the upper end of the target range for access at the lowest reasonable cost.[128] Atmos Kentucky also argued that although the common equity ratio of 57.59 percent is "somewhat above" the proxy group ratio of 32.15 percent to 52.51 percent, looking at it prospectively, *Value Line Investment Survey's* projected capital structures for the proxy group ranges from 38.50 percent and 57.00 percent for 2024-2026.[129]

Atmos Kentucky argued that both Kollen and Baudino limited their analysis and recommendation to comparison of the proxy group or other recent Commission outcomes and failed to perform an analysis on the financial impact of their recommendations on Atmos Kentucky's own financial metrics.[130] Atmos Kentucky supplied an analysis that key financial indicators are in the Intermediate category, which is the analytical basis for Atmos Kentucky's current debt rating, and both key financial indicators diminish from Intermediate to Significant when Kollen's and Baudino's recommendations are applied.[131] According to Atmos Kentucky, such a change implies that the Kentucky operations would not pull the same weight in the generation of funds from operations or coverage of debt

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[126] Christian Revised Rebuttal at 8-9.

[127] Christian Revised Rebuttal at 8.

[128] Christian Revised Rebuttal at 9.

[129] D'Ascendis Rebuttal at 56-57.

[130] Christian Rebuttal at 9.

[131] Christian Rebuttal, at 10 and Exhibit JTC-R-2.

obligations as other Atmos Energy operations, and if Kentucky represented Atmos Energy on the market, higher financing costs would arise.[132]

Regarding the proposed recommendation to increase the short-term debt ratio to 2.0 percent, Atmos Kentucky disagreed with the recommendation and argued that Kollen applied the inverse of his equity argument and employed zero analysis to the increase in the long-term debt ratio, but rather just applied the balance of the recommended equity increase.[133] Atmos Kentucky noted that the company actively accesses the long-term debt market at the benefit of Atmos Kentucky's customers.[134] Atmos Kentucky averred that this activity is not done to minimize short-term debt but rather to lock in lower interest rates and is the result of balance sheet management. Atmos Kentucky did not address the commitment fees in rebuttal.[135]

In his final brief, the Attorney General reemphasized his opinion that the proposed capital structure should be rejected by the Commission as it is beyond traditional norms, unreasonable, and unnecessarily penalizes ratepayers.[136] The Attorney General argued that the proposed common equity ratio is a continuation of several years of ever increasing equity ratios and the Commission should determine a reasonable capital structure.[137] The Attorney General supported Baudino's testimony that the best evidence of a reasonable capital structure is the average for the gas proxy groups and set an equity

[132] Christian Rebuttal at 10.

[133] Christian Rebuttal at 16

[134] Christian Rebuttal at 17.

[135] Christian Rebuttal at 17.

[136] Attorney General's Brief at 25.

[137] Attorney General's Brief at 26-27.

ratio that represents a two-step transition towards this average.[138] In addition, the Attorney General recommended that the Commission follow Kollen's recommendation regarding the level of short-term and long-term debt balances to further allow for a shift away from the heavily weighted equity component in Atmos Kentucky's capital structure.[139] The Attorney General cautioned the Commission against relying on the exiting capital structure as Atmos Kentucky's choice to utilize common equity financing in lieu of lower cost short-term or long-term financing is not proof that Atmos Kentucky's capital structure is reasonable.[140] Additionally, the Attorney General recommended scaling down the commitment fees, as proposed by Kollen.[141]

Atmos Kentucky noted that a utility's rates should be set to cover operating expenses and the cost of capital.[142] Atmos Kentucky further stated that safety and other infrastructure capital spending is increasing and set by regulatory standards, and, in order to undertake the necessary level of capital investment, Atmos Energy management team, in support of the long-term business strategy to enhance the safety of our customers, has strengthened and maintained Atmos Energy's balance sheet by incorporating a higher level of equity in its capital structure for the benefit of both customers and owners.[143] Atmos Kentucky maintained that the Attorney General has failed to provide any evidence to discredit the use of the current capital structure as he has not put forth any evidence

[138] Attorney General's Brief at 27.

[139] Attorney General's Brief at 28-29.

[140] Attorney General's Brief at 29.

[141] Attorney General's Brief at 30.

[142] Atmos Kentucky's Brief (filed Jan. 14, 2022) at 14.

[143] Atmos Kentucky's Brief at 14-16.

that the management of Atmos Energy has made unsound or imprudent decisions regarding the financing and resulting capital investment, but instead it is a difference in opinion, and thus, the use of the actual capital structure should be allowed.[144] Atmos Kentucky further emphasized the reasonableness of Atmos Kentucky's capital structure, the importance of the relationship between credit metrics and ratings and the cost of capital and cost to Atmos Kentucky's customers, and that the actual capital structure, as filed in Rebuttal, will allow for recovery of all costs during the forecasted test year. Atmos Kentucky noted that the capital structure, as proposed by the Attorney General, is arbitrarily imputed, contains an equity component that is lower than any experienced by Atmos Energy in the recent or forecasted periods, and will result in an under recovery of capital costs during the test year.[145]

Atmos Kentucky admitted to strengthening the equity component and believes that such a strategy benefits Atmos Kentucky's customers, specifically during recent events such as the COVID-19 pandemic, the February 2021 winter event, the implementation of the Tax Cuts and Jobs Act, and the recent tornadoes within Atmos Kentucky's service territory.[146] The table below lists the common equity ratios for Atmos's present and past four rate cases:

[144] Atmos Kentucky's Brief at 16.

[145] Atmos Kentucky's Brief at 17–18.

[146] Atmos Kentucky's Brief at 15–16.

Case No.	Common Equity Ratio
Pending Case	57.79%
Case No. 2018-00281	58.06%
Case No. 2017-00349[147]	52.57%
Case No. 2015-00343[148]	None Specified
Case No. 2013-00148[149]	49.16%

Additionally, *Value Line Investment Survey* estimates Atmos Energy's common equity ratio balance to reach 60.0 percent over the next four years.[150] In the final Order of Case No. 2018-00281, the Commission voiced its concern over the size of Atmos Kentucky's common equity ratio and agreed with the Attorney General that it was excessive compared to its peers and results in an increase in the cost of capital and base revenue requirement. The Commission accepted the filed equity component but cautioned Atmos Kentucky about the high common equity ratio and placed Atmos Kentucky on notice that in a future rate filing, the Commission may make adjustments to Atmos Kentucky's common equity ratio, for ratemaking purposes, to be comparable to its peers.[151]

In this proceeding, the Commission still has concerns regarding the size of the common equity ratio. Although it is smaller than the prior base rate case, the difference is *de minimis*. The Commission also disagrees with Atmos Kentucky's contention that

[147] Case No. 2017-00349, *Electronic Application of Atmos Energy Corporation for an Adjustment of Rates and Tariff Modifications* (Ky. PSC May 3, 2018), Order at 20.

[148] Case No. 2015-00343*, Application of Atmos Energy Corporation for an Adjustment of Rates and Tariff Modifications* (Ky. PSC Aug. 4, 2016).

[149] 7 Case No. 2013-00148, *Application of Atmos Energy Corporation for an Adjustment of Rates and Tariff Modifications* (Ky. PSC Apr. 22, 2014) at 9.

[150] Attorney General's Response to Staff's Second Request for Information (filed Jan. 6, 2022) (Staff's Second Request), Item 4.

[151] Case No. 2018-00281, Order at 34-35.

the equity ratio is within reason of the prospective average for a period of two to four years beyond the end of the forecasted test period.[152] This argument is unsupported as the average for 2022 is expected to be 47.3 percent and 51.9 percent for 2024-2026 projections as compared to 60.0 percent.[153] Additionally, Atmos Kentucky's contention that a high equity component supports government mandates regarding pipe replacement and capital investment is unsupported as its peers who have capital structures containing lower equity components, perform similar capital investments and are required to meet the same safety requirements. Further, Atmos Kentucky's argument that modifying the capital structure applied for ratemaking purposes in Kentucky as proposed by the Attorney General will impact Atmos Energy's debt rates is unsubstantiated. Atmos Kentucky's equity ratio remains significantly higher than its peers for no other reason than for stockholder benefits. The Commission finds that the proposed capital structure as filed and revised upon rebuttal is not reasonable nor does it result in fair and just rates for Kentucky's consumers. The Commission finds Atmos Kentucky's common equity ratio shall be reduced to 54.50 percent. This represents the median for the 2024-2026 prospective period.[154] In addition, in subsequent rate case filings, the Commission will review the proxy group common equity ratios and will further transition down to the average common equity ratio of 50.0 percent or a median or average, whichever the facts merit. The Commission will place the equity balance onto long-term debt at Atmos Kentucky's current average long-term debt rate of 3.84 percent.

[152] D'Ascendis Rebuttal at 59.

[153] Attorney General's Response to Staff's Second Request, Item 4.

[154] Attorney General's Response to Staff's Second Request, Item 4.

Regarding Kollen's proposed adjustment to the short-term debt balance, the Commission finds that the short-term debt as filed on rebuttal, which represents the capital structure at the end of the base period or September 2021[155] to be reasonable and, although it is uncharacteristically low as compared to the rest of the test year, the Commission chooses to not alter the balance at this time.

Return on Equity

Atmos Kentucky developed its proposed ROE of 10.35 percent based upon the Discounted Cash Flow Model (DCF), the Capital Asset Pricing Model (CAPM), and the Risk Premium Model (RPM) (collectively, Models).[156] In its analysis, Atmos Kentucky used a utility proxy group of seven regulated natural gas utilities (Utility Proxy Group), and a proxy group of forty-eight nonprice regulated companies (Nonprice Regulated Proxy Group).[157] The proxy groups were selected on the basis of several risk measures, including both business risk and financial risk. Additionally, the utility proxy group met a set of criteria in order to remain representative of the risks and prospects faced by Atmos Kentucky.[158] The estimated ROE results ranged from 9.58 percent to 12.66 percent after certain risk adjustments were applied including a size adjustment, risk adjustment and a flotation cost adjustment.[159] Atmos Kentucky averred that the proposed ROE is both commensurate with returns in businesses of similar risks, and captures the continued

[155] Christian Rebuttal at 6.

[156] D'Ascendis Testimony at 3.

[157] D'Ascendis Testimony at 3-4.

[158] D'Ascendis Testimony at 9-12, generally; D'Ascendis Testimony at 12-13. *See* also Atmos Kentucky's Responses to Staff's Second Request, item 36c.

[159] D'Ascendis Testimony at 3-4, lines 13-18 and 1-2, respectively, and Table 2 at 4.

uncertainty related to the COVID-19 pandemic and the unknown timeframe for when economic conditions will normalize.[160] Atmos Kentucky maintained that the use of multiple models adds reliability to the estimated common equity cost rate, and is supported in both the financial literature and by regulatory precedent.[161] No reduction to Atmos Kentucky's capital cost recovery rider, the PRP was proposed. The estimated ROE results plus the three adjustments are shown below.[162]

Atmos Kentucky's Cost of Common Equity Rates	
Discounted Cash Flow Model	9.44%
Risk Premium Model	10.96%
Capital Asset Pricing Model	11.75%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Companies	12.42%
Indicated Range	9.44% - 12.42%
Size Adjustment	0.20%
Credit Risk Adjustment	-0.10%
Flotation Cost Adjustment	0.04%
Recommended Range	9.58% - 12.66%
Recommended Cost of Common Equity	10.35%

Direct intervenor testimony and analysis regarding ROE was sponsored by the Attorney General and performed by Richard A. Baudino. Baudino's analysis used the DCF and the CAPM model. Using a proxy group of seven regulated natural gas distribution companies, and the DCF model only, a ROE range of 8.40 percent to 9.40

[160] D'Ascendis Testimony at 4-7.

[161] D'Ascendis Testimony at 42.

[162] D'Ascendis Testimony Table 2 at 4.

percent was obtained.[163] For the CAPM analysis, Baudino evaluated both historical and forecasted risk premiums as an alternative method to calculate ROE stating the belief that the CAPM is less reliable than the DCF because considerable judgement must be employed to determine market returns and expected risk premium elements and analyst's judgement can influence the results significantly.[164] In addition, Baudino recommended that the Commission consider a 10-20 basis point reduction in the allowed ROE for Atmos Kentucky's PRP rider.[165] The following table summarizes the Attorney General's results:[166]

Attorney General Cost of Common Equity Rates	
Discounted Cash Flow Model	
Average Growth Rates	
High	10.81%
Low	8.42%
Average	9.49%
Median Growth Rates	
High	10.60%
Low	8.05%
Average	9.20%
CAPM Methodology	
Forward-looking Market Return	
Current 30-year Treasury	8.69%
D&P Normal Risk-Free Rate	8.73%
Historical Risk Premium	
Current 30-year Treasury	7.56% - 8.73%
D&P Normal Risk-Free Rate	7.90% - 9.07%

[163] Baudino Testimony at 3, 17, and 28.

[164] Baudino Testimony at 3, 15, and 23-24.

[165] Baudino Testimony at 3 and 32-34.

[166] Baudino Testimony at 28.

Baudino argued that his recommended ROE is reasonable given the lower risk of the regulated gas business as compared to the regulated electric business, and that it is consistent with investor expectations and requirements in the current economic environment of low interest rates.[167] In addition, the CAPM ROE estimates are generally below the DCF estimates, which further supports the reasonableness of the recommended ROE.[168] Baudino also referred to *Value Line Investments* statements regarding the natural gas distribution sector indicated that that it was providing a consistent income stream to investors with relatively stable earnings, which indicates that the proxy group had lower risk than the overall stock market.[169]

Baudino took issue with multiple assumptions used in Atmos Kentucky's ROE calculations and concluded that its 10.35 percent recommendation was inconsistent with current financial market evidence and the low interest rate environment.[170] In addition, Baudino argued that D'Ascendis's approach to reach his recommended ROE was unreasonable and stemmed from excessively high ROE results from his risk premium and CAPM analyses as well as the inclusion of an additional proxy group of 48 non-price regulated companies.[171] Baudino also noted that an ROE of 10.35 greatly exceeds recent Commission ROE awards.[172]

[167] Baudino Testimony at 3

[168] Baudino Testimony at 3.

[169] Baudino Testimony at 15.

[170] Baudino Testimony at 11-15 and 35.

[171] Baudino Testimony at 36.

[172] Baudino Testimony at 37.

Regarding D'Ascendis's DCF calculations, Baudino argued that in addition to using earnings growth rates, dividend growth rates should have been included because dividend payments comprise a significant portion of the total return to investors.[173] Regarding the Risk Premium (RP) analyses, Baudino argued that they are too imprecise and should only be used as a guide for estimating ROEs in regulated proceedings.[174] Regarding the Predictive Risk Premium Model (PRPM) and the total market RP approaches, Baudino claimed that D'Ascendis failed to consider current bond yields and interest rates, which led to unrealistically high ROEs.[175] Concerning the PRPM, Baudino argued that it should be rejected because it is unproven, and not widely accepted. Baudino also noted it had been rejected by the Florida Public Service Commission and argued that it produces excessive ROE results.[176] Regarding the CAPM and ECAPM analyses, the Attorney General argued that Atmos's CAPM and ECAPM results, which are based on overstated expected market returns and long-term growth rates, are so overstated for a regulated gas utility that they should be rejected out of hand.[177] In addition, Baudino maintained that the use of the ECAPM to correct for companies with betas less than 1.0 is another indication that the model is not sufficiently accurate and the use of unregulated companies as proxies for a regulated company is inappropriate.[178]

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[173] Baudino Testimony at 37-38.

[174] Baudino Testimony at 38.

[175] Baudino Testimony at 38-42.

[176] Baudino Testimony at 42-44.

[177] Baudino Testimony at 45-48.

[178] Baudino Testimony at 50-51.

Finally, Baudinio argued that the inclusion of size adjustments and flotation cost adjustments is inappropriate and should be rejected.[179]

In rebuttal, Atmos Kentucky argued that Baudino's original ROE recommendation of 10.35 percent for its base rates remains both reasonable and conservative.[180] In addition, Atmos Kentucky provided an updated ROE analysis using the same methods and updated data as of September 30, 2021, which illustrated an even higher ROE range.[181]

Atmos Kentucky discussed several issues found in Baudino's analysis including the exclusive reliance on the constant growth DCF model results to determine his recommended ROE.[182] Atmos Kentucky implied that the absence of multiple models in the Attorney General's analysis reduces the reliability of the estimated common equity cost rate.[183] Further, Atmos Kentucky argued that the DCF assumes a Market-to-Book (M/B) ratio of 1.0 and is prone to either under or over-estimate investors' required returns when a disparity exists.[184] In addition, Atmos Kentucky argued that the use of earnings per share growth rates is more appropriate in DCF analyses than the use of dividends per share growth rates.[185] Atmos Kentucky also found fault with Baudino's CAPM analysis reliance on a recent six month average of the 30-year Treasury bond yield as

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[179] Baudino Testimony at 38-42.

[180] D'Ascendis Rebuttal at 2.

[181] D'Ascendis Rebuttal at 2.

[182] D'Ascendis Rebuttal at 4.

[183] D'Ascendis Rebuttal at 4.

[184] D'Ascendis Rebuttal at 7.

[185] D'Ascendis Rebuttal at 12.

the risk free rate, failure to consider several approaches to calculating the market risk premium, and failure to incorporate the empirical CAPM analysis to correct for low-beta values.[186]

In its brief, Atmos Kentucky reiterated arguments put forth by D'Ascendis that the ROE should be sufficient to support both the business and financial risk of the company on a stand-alone basis.[187] The DCF model, the Risk Premium Method, the PRPM and CAPM models all utilize market data. Atmos Kentucky argued that it is appropriate to rely on multiple model results because reasonable investors use a variety of tools and do not rely exclusively on a single information source or model.[188] Reliance on multiple models adds reliability to estimated common equity rates and is supported by both financial literature and regulatory prudence.[189] Atmos Kentucky argued for and defended its use of size adjustments and flotation costs in arriving at its 10.35 percent recommendation. Critiquing Baudino's analyses, Atmos Kentucky argued that only the DCF and CAPM models were used, the analyses were flawed and only the DCF results were relied upon as the basis for his ROE recommendation.[190] Finally, Baudino failed to use the Empirical CAPM to account for low beta valued securities.[191]

In his brief, the Attorney General argued that Baudino's recommended 9.10 percent ROE is reasonable given the low risk nature of Atmos Kentucky's regulated gas

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[186] D'Ascendis Rebuttal at 23-24.

[187] Atmos Kentucky's Brief at 16.

[188] Atmos Kentucky's Brief at 18-19.

[189] Atmos Kentucky's Brief at 19.

[190] Atmos Kentucky's Brief at 21.

[191] Atmos Kentucky's Brief at 22.

business and it's consistent with investor expectations and requirements in the current economic environment of low interest rates.[192] Baudino utilized both the DCF and CAPM models with both historical and forecasted data from multiple sources and the same utility proxy group as D'Ascendis.[193] The recommendation is based upon the DCF results only because the CAPM results were generally lower than the DCFR results. Further, the CAPM model is a less reliable approach than the DCF model.[194] Based on recent precedent, Baudino recommended a 10-20 basis point ROE reduction for Atmos Kentucky's PRP rider.[195] The Attorney General argued that D'Ascendis' ROE analyses results were so high that they should not be seriously considered for a lower risk regulated gas distribution utility.[196] In addition, there were flaws in the DCF, CAPM and RPM model analyses, the use of ECAPM is suspect, the use of non-price regulated companies as proxies, and the use of the PRPM model is inappropriate. Finally, the use of size adjustments, and financial adjustments are inappropriate and have been rejected by this Commission in recent cases.[197]

[192] Attorney General Brief at 32.

[193] Attorney General Brief at 31.

[194] Attorney General Brief at 31.

[195] Attorney General Brief at 33.

[196] Attorney General Brief at 34.

[197] Attorney General Brief at 34–37.

Most recently in Case Nos. 2021-00183,[198] 2021-00185,[199] and 2021-00190,[200] the Commission explained why it is appropriate for utilities to present, and for the Commission to evaluate, multiple methodologies to estimate ROEs. Each approach has its own strengths and limiting assumptions. As demonstrated in the respective ROE testimonies in this proceeding, there is considerable variation in both data and application within each modeling approach, which can lead to very different results. The Commission's role is to conduct a balanced analysis of all presented models, while giving weight to current economic conditions and trends.

The Commission cautions all parties against unreasonably removing or ignoring "outlier" data due to a subjective perception of being "too high" or "too low." As demonstrated in the case record, there are a number of actions that can be and were taken to account for "outlier" or "unreasonable" data. Result oriented exclusions of data that are not beyond the realm of reasonableness are inappropriate. Results based upon excluded data without adequate support will be given less weight in future Commission determinations.

Even though the Commission supports the use and presentation of multiple modeling approaches, the Commission finds that Atmos Kentucky's use of the Predictive Risk Premium Model (PRPM) should be rejected. Though the PRPM model has been

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[198] *See* generally Case No. 2021-00183, *Electronic Application of Columbia Gas of Kentucky, Inc. for an Adjustment of Rates; Approval of Depreciation Study; Approval of Tariff Revisions; Issuance of a Certificate of Public Convenience and Necessity; And Other Relief* (Ky. PSC Dec. 28, 2021).

[199] *See* generally Case No. 2021-00185, *Electronic Application of Delta Natural Gas Company, Inc. for an Adjustment if Its Rates and a Certificate of Public Convenience and Necessity* (Ky. PSC Jan. 3, 2022).

[200] *See* generally Case No. 2021-00190, *Electronic Application of Duke Energy Kentucky, Inc. for: 1) An Adjustment of the Natural Gas Rates; 2) Approval of New Tariffs, And 3) All Other Required Approvals, Waivers, and Relief* (Ky. PSC Jan. 28, 2021).

published and presented in multiple forums, it has been rejected by this Commission and only been addressed by three other regulatory commissions thus far and is not universally accepted.[201]

The Commission reiterates that it continues to reject the use of flotation cost adjustments, financial risk adjustments, and size adjustments in the ROE analyses. The Commission will evaluate all models but will accord most weight to DCF and CAPM analyses based upon regulated company proxy groups. Both the DCF and CAPM are long standing, well accepted models that model risk and returns both implicitly and explicitly. After consideration of the evidence of record, the Commission finds that an ROE of 9.23 percent for Atmos Kentucky's base rates and an ROE of 9.13 percent for its natural gas capital riders is fair, just and reasonable. An ROE of 9.23 percent is lower than recent Commission awards for gas utilities, but those awards were tied to stay-out provisions or for a utility that is significantly smaller, rural and had not requested a rate increase for over ten years. Additionally, in deciding upon the approved ROE, the Commission is also balancing the recent destruction due to the devastating tornados and customer bill impact during the region's recovery, as well as the still high equity percentage.

Rate-of-Return Summary

Applying the cost rates of 80.94 percent for short-term debt, 3.84 percent for long-term debt, and 9.23 for common equity to the Commission revised capital structure

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[201] *See* the Final Order in Case No. 2021-00183 ((Ky. PSC Dec. 28, 2021) at 14 and Atmos Kentucky's Response to the Attorney General's First Request for Information, Item 66b, filed Aug 23, 2021.

percentages consisting of 0.05 percent, 45.45 percent, and 54.50 percent, respectively, produces and overall weighted cost of capital of 6.82 percent.

		Percent of Total	Cost Rate	13-month Avg. Cost
Short-Term Debt	$ 6,704,749	0.05%	80.94%	0.04%
Long-Term Debt	$ 6,135,493,495	45.45%	3.84%	1.73%
Common Equity	$ 7,489,119,620			
Interest Rate Swaps[202]	$ (131,981,063)	54.50%	9.23%	5.03%
Total Capital	$13,499,337,801			6.82%

REVENUE REQUIREMENTS

Based upon Atmos Kentucky's revised requested increase of $15.052 million and recognizing downward adjustments of $10.796 million found reasonable herein,[203] Atmos Kentucky's revenue deficiency is $4.256 million. As discussed above, temporary amortization of regulatory liabilities of $1.644 million shall continue until the regulatory liabilities are exhausted or the effective date of Atmos Kentucky's next base rate case, whichever comes first. The resulting net increase to base rates is $2.613 million or 1.51 percent.

RATE DESIGN

Cost of Service Study (COSS)

Atmos Kentucky filed three fully allocated cost of service studies (COSS). For all three studies, the demand allocators are based upon the demand to meet the coincident peak. For the allocation of the distribution mains, the Customer/Demand Study, allocated

[202] Atmos Kentucky included interest rate swaps based upon an agreement with the Attorney General for a reduction to rate base for unrealized interest rate swaps if the corresponding adjustment is made to the capital structure. Atmos Kentucky's Response to Staff's Seventh Request for Information, Item 1.

[203] *See* Appendix A to this Order for a summary of adjustments.

the distribution mains between customer and demand costs based upon the minimum system method, as the zero-intercept method failed. For the Demand Only Study, the distribution mains were allocated based upon demand only. Finally, Atmos Kentucky performed a Demand/Commodity Study based upon the average and excess methodology where consideration is focused on volume of use. The Attorney General's Testimony did not address Atmos Kentucky's COSSs and did not propose an alternate COSS.

Revenue Allocation

For the revenue allocation, Atmos Kentucky examined the minimum and maximum subsidy that existed between each class at the proposed rate of return (ROR) from each COSS and roughly allocated the revenue based on the average revenue increase between the three COSSs necessary for an equalized ROR.[204] As a result, the residential class received over 59 percent of the increase. Below illustrates the relative ROR at current rates and at Atmos Kentucky's proposed rates:

	Residential	Non-Res Firm	Non-Res Inter	Trans Firm	Trans Inter
Customer/Demand[205]					
Current	0.74	1.45	1.26	1.65	1.54
Proposed	0.80	1.41	1.43	1.42	1.36
Demand Only[206]					
Current	1.05	1.10	0.42	0.78	0.71
Proposed	1.05	1.11	0.63	0.75	0.71
Demand/Commodity[207]					
Current	1.22	1.24	0.18	0.44	0.22
Proposed	1.19	1.22	0.42	0.49	0.33

[204] Application, Direct Testimony of Paul H. Raab (Raab Testimony) at 20, and Exhibit PHR-5, page 2 of 2.

[205] Raab Testimony, Exhibit PHR-2, page 1 of 75.

[206] Raab Testimony, Exhibit PHR-3, page 1 of 75.

[207] Rabb Testimony, Exhibit PHR-4, page 1 of 75.

The Commission has expressed its concern about the demand/customer expense allocation for distribution plant classification and the Commission's preference for the zero-intercept method.[208] Although this concern has been expressed in electric rate cases, it was also recently expressed for natural gas[209] as the same concept applies to natural gas in that if the zero-intercept analysis does not provide reasonable results, then this indicates little relationship between the amount of costs and the number of customers. The Commission gives substantial weight to the evidence from the COSS that indicates whether certain classes are earning more than other rate classes relative to their cost of service and has required that in instances where the zero-intercept results are not reasonable, it would allocate the costs to 100 percent demand.

For the reasons set forth above regarding the deficiencies of using a minimum system method, the Commission rejects the Customer Demand Study. The Commission approves the use of the Demand Only Study as a guide for revenue allocation and rate design. The results of the Demand Only Study illustrate that the residential class is slightly subsidizing other rate classes. However, due to the tie between the volumetric rates for the G-1 Firm Sales Service and Transportation Service and the G-2 Interruptible Sales Service and T-3 Interruptible Transportation, removing the subsidization in the residential class results in a rate design that diverges far too much from the current rate design. Therefore, the Commission shall allocate the change in revenue as approved herein proportionally, as filed.

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[208] *See*, Case No. 2020-00131, Electronic Application of Meade County Rural Electric Cooperative Corporation for an Adjustment in Rates (Ky. PSC Sept. 16, 2020), Order at 12.

[209] *See*, Case No. 2021-00190, *Electric Application of Duke Energy Kentucky, Inc. for: 1) an Adjustment of Natural Gas Rates; 2) Approval of New Tariffs, and 3) All other Required Approvals, Waivers, and Relief* (Ky. PSC Jan 25, 2022).

Rate Design

Atmos Kentucky proposed no change in rate design, maintaining a monthly base customer charge and declining block volumetric rates for all rate schedules. It proposed to increase the G-1 Firm Sales Service base customer charge to $24.29 for residential customers, revised to $24.00 on rebuttal, and to $66.00 for non-residential customers. In the last five years, the residential customer charge has increased from $16.00 to the current charge of $19.30. The current residential customer charges among Kentucky's large gas utilities include $19.50 for Louisville Gas and Electric,[210] $19.75 for Columbia Gas of Kentucky,[211] and $17.50 for Duke Energy Kentucky.[212]

The Attorney General argued that Atmos Kentucky has not presented any evidence that the current customer charge is insufficient for the company to meet its revenue requirement, nor does the increase support the principles of rate gradualism.[213] He continued stating that this proposed increase comes at a time when customers in Atmos Kentucky's service territory are recovering from a devastating natural disaster as

[210] *See*, Case No. 2020-00350, *Electronic Application of Louisville Gas and Electric Company for an Adjustment of Its Electric and Gas Rages, a Certificate of Public Convenience and Necessity to Deploy Advanced Metering Infrastructure, Approval of Certain Regulatory and Accounting Treatments, and Establishment of a One-Year Surcredit* (Ky. PSC Dec. 6, 2021), Appendix C, page 8 of 10. $0.65*30=$19.50.

[211] *See*, Case No. 2021-00183, Electronic Application of Columbia Gas of Kentucky, Inc. for an Adjustment of Rates; Approval of Depreciation Study; Approval of Tariff Revisions; Issuance of a Certificate of Public Convenience and Necessity; and Other Relief (Ky. PAS Dec. 29, 2021), Appendix B, page 1 of 1.

[212] *See*, Case No. 2021-00190, Dec. 28, 2021 Order, Appendix C, page 1 of 1.

[213] Attorney General's Brief at 43.

well as seeing a 23 percent increase in the gas commodity cost.[214] Therefore, the Attorney General urged the Commission to evaluate the totality of the rate increase.[215]

The proposed residential customer charge increase, if approved, will result in Atmos Kentucky being one of the most expensive customer charges in the Commonwealth. Further, the Commission agrees that given the recent natural disaster and increases in commodity costs, thoughtful consideration needs to be given to the totality of the rate increase. Therefore, the Commission is denying the increase to the Residential Sales monthly customer charge and finds that the monthly charge shall remain at $19.30. The Commission further finds that the proposed customer charges for the remaining rate classes are within the range of reasonableness and are approved.

Nonrecurring Charge Forecast

For the late payment charge revenue forecast, Atmos Kentucky used an average of fiscal years 2017–2019 to determine forecasted late payment charges. For its other nonrecurring charges, Atmos Kentucky used the actual for the 12 months ending March 31, 2021, to forecast its nonrecurring charge revenue.[216] Atmos Kentucky argued that based upon a review of the impacts of COVID-19, it has seen that the reduction in revenue has been offset by a reduction in O&M expenses.[217] Atmos Kentucky stated that due to the uncertainty of when nonrecurring charges will return to a normal level, they chose not to make any changes to other nonrecurring charge revenue and that the reduced revenue

[214] Attorney General's Brief at 43.

[215] Attorney General's Brief at 43.

[216] Atmos Kentucky's response to Commission Staff's Second Request, Item 54(a).

[217] Atmos Kentucky's response to Commission Staff's Second Request, Item 54(b).

and O&M expenses will continue to offset each other.[218] As Atmos Kentucky used an average of fiscal years 2017–2019 to forecast its late payment fee revenues, the Commission finds that the same time period should be used to forecast other nonrecurring charge revenues. Based upon the revised period used to forecast revenues and the revisions to nonrecurring charges discussed later in this order, the amount of forecasted nonrecurring charge revenue is reduced from $234,286 to $108,769 as detailed below.

Charge	FY 2017-2019 Avg. Occurrences	Approved Amount	Total Revenue	Forecasted Revenue	Difference
Read (Reg)	13,113	$3.00	$39,339.00	$136,968.00	($97,629.00)
Meter Set (Reg)	2,505	3.00	7,515.00	36,550.00	(29,035.00)
Meter Set (After)	1	44.00	44.00	0.00	44.00
Seasonal (Reg)	282	3.00	846.00	195.00	651.00
Ret. Check	3,126	4.00	12,504.00	54,800.00	(42,296.00)
Rec. Del. (Reg)	3,932	3.00	11,796.00	0.00	11,796.00
Rec. Del. (After)	1	47.00	47.00	0.00	47.00
Turn-On (Reg)	12,170	3.00	36,510.00	5,773.00	30,737.00
Turn-On (After)	6	28.00	168.00	0.00	168.00
			$108,769.00	$234,286.00	($125,517.00)

As a result, an increase to the Revenue Requirement for base rates that corresponds with an equivalent decrease in Nonrecurring Charge Revenue is necessary.

Late Payment Fee Revenue

Information provided by Atmos Kentucky indicated that for fiscal years 2017-2019, the percent of late payment fee revenue to total revenue from Commercial and Public Authority customers was 0.63 percent and 0.55 percent, respectively.[219] To determine the appropriate amount of late payment fee revenue, the Commission determined the

[218] Atmos Kentucky’s response to Commission Staff’s Second Request, Item 54(b).

[219] Atmos Kentucky’s response to Commission Staff’s Second Request, Item 26, Attachment 2.

amount of revenue to be derived from Commercial and Public Authority customers as a result of the revised revenue requirement and multiplied those amounts by 0.63 percent and 0.55 percent. Based on the calculation described above and the removal of the residential late payment fee discussed later in this order, the Commission determined that late payment fee revenue should be reduced by $0.997 million, $0.874 million being attributable to the removal of residential late payment fees and $0.123 million being attributable to the reduction in commercial and public authority late payment fees. As a result, an increase to the Revenue Requirement for base rates that corresponds with an equivalent decrease in late payment fee revenue is necessary. A chart containing a summary of the revenue requirement, as proposed by Atmos Kentucky and as modified herein, is attached to this Order as Appendix A.

PIPE REPLACEMENT PROGRAM

Aldyl-A Replacement Projects

Atmos Kentucky proposed to expand its current PRP to include the accelerated replacement of Aldyl-A pipe. Atmos Kentucky stated that Aldyl-A pipe is made of materials that are considered obsolete and are no longer used and places risks on Atmos Kentucky's distribution system, which contains approximately 205 miles of Aldyl-A pipe.[220] Atmos Kentucky stated that leaks on Aldyl-A average 35 percent higher per 100 miles than leaks on other types of polyethylene pipe and 250 percent higher per 100 mile of pipe when compared with leaks on coated steel pipes.[221] Atmos Kentucky noted that not all Aldyl-A needs to be replaced immediately, and will prioritize replacement based upon

[220] Direct Testimony of T. Ryan Austin (Austin Testimony) at 23.

[221] Austin Testimony at 25-26.

material, location of the pipe in relation to population, and relative risk from third party damage.[222] Atmos Kentucky proposed to target Cadiz, Kentucky (Cadiz Project), first as this portion of the system has had a history of leaks caused by the rocky bedding conditions impinging on the Aldyl-A pipe, at a forecasted test year cost of $2.794 million.[223]

Kollen recommended that the Commission reject the inclusion of Aldyl-A in the PRP because there is no imminent need to replace this material.[224] Kollen argued that Atmos Kentucky's bare steel replacement program will not be complete until 2027, and the accelerated replacement of Aldyl-A would compound the annual rate base increase.[225] Kollen noted that Atmos Kentucky failed to provide a schedule or cost estimate to completely replace all Aldyl-A pipe.[226] Kollen recommended that the Commission allow the proposed incremental accelerated Aldyl-A replacement costs be included in the base revenue requirement, and if Atmos Kentucky does not complete the projects included in the base revenue requirement, apply a clawback of the related base revenues.[227] Additionally, Kollen recommended that Atmos Kentucky be required to file reports with the Commission following project completion, and, if the project was not

[222] Austin Testimony at 27.

[223] Austin Testimony at 28-29.

[224] Kollen Testimony at 44.

[225] Kollen Testimony at 44-45.

[226] Kollen Testimony at 45.

[227] Kollen Testimony at 46.

complete, the clawback revenue total and to record this revenue as a regulatory liability for disposition in the next base rate case.[228]

Atmos Kentucky argued that Kollen's position is inconsistent with the Attorney General's position in Columbia Kentucky's rate case, Case No. 2021-00183,[229] where the Attorney General's witness, David Dittemore, recommended the inclusion of Aldyl-A replacement pipe in Columbia Kentucky's Safety Modification and Replacement Program rider.[230] Atmos Kentucky stated it has identified Aldyl-A projects for replacement for two years and is able to estimate the number of years necessary to replace the Aldyl-A inventory.[231] Atmos Kentucky disagreed with Kollen's proposal to include accelerated Aldyl-A replacement in the base revenue requirement stating it is not a comprehensive solution.[232] Atmos Kentucky stated that Aldyl-A replacement is necessary for safety and reliability and because Atmos's non-PRP capital spend is also subject to an annual cap, such constraints may result in Aldyl-A replacement not occurring outside of the PRP.[233] Atmos Kentucky maintained excluding Aldyl-A from recovery on capital spend constrains investment associated with economic development and growth.[234] Atmos Kentucky argued that since its last rate case, there is a new emphasis by federal regulators to

[228] Kollen Testimony at 46-47.

[229] Case No. 2021-00183, *Electronic Application of Columbia Gas of Kentucky, Inc. for an Adjustment of Rates; Approval of Depreciation Study; Approval of Tariff Revisions; Issuance of a Certificate of Public Convenience and Necessity; and Other Relief* (Ky. PSC Dec. 28, 2021).

[230] Rebuttal Testimony of T. Ryan Austin (Austin Rebuttal) at 3 and Atmos Kentucky's Final Brief at 35.

[231] Austin Rebuttal at 8.

[232] Austin Rebuttal at 9.

[233] Austin Rebuttal at 2, Christian Rebuttal at 35m and Atmos Kentucky's Brief at 34.

[234] Christian Rebuttal at 35 and Atmos Kentucky's Brief at 40.

address pipeline safety, particularly Aldyl-A, and utilities must have appropriate replacement cycles for all pipeline infrastructure.[235] Atmos Kentucky stated that Kollen ignored the need to modify the PRP tariff to enhance safety concerns and instead focused on cost concerns.[236] Atmos Kentucky admitted that the existence of the PRP does reduce lag and supports Atmos Kentucky's credit health, but there are also customer benefits including safer service, more affordable service, and more reliable service thus striking a balance between the customer and Atmos Kentucky.[237]

The Attorney General again reiterated that there is no immediate need to replace the Aldyl-A pipes, and noted that this is something that Atmos Kentucky itself acknowledged.[238] The Attorney General argued that the lack of a schedule, cost estimate, and annual or aggregate cost limits would allow for unchecked spending, which is concerning as the Commission has had to caution Atmos Kentucky about excessive spending in the past.[239] The Attorney General noted that the Commission recently rejected the inclusion of accelerated replacement and cost recovery of Aldyl-A for Columbia Kentucky and should likewise reject Atmos Kentucky's proposal.[240] The Attorney General did recommend the inclusion of Aldyl-A replacement costs in the base

[235] Atmos Kentucky's Brief at 27 and 29.

[236] Atmos Kentucky's Brief at 35.

[237] Atmos Kentucky's Brief at 37.

[238] Attorney General's Brief at 38.

[239] Attorney General's Brief at 39-40.

[240] Attorney General's Brief at 40.

revenue requirement, but reiterated Kollen's suggestion regarding the clawback of any costs not spent.[241]

As required by PRP tariff, the impact of Atmos Kentucky's PRP investment is reflected in the total proposed revenue requirement. Per the PRP tariff, Atmos Kentucky filed Case No. 2021-00304 in August which included Atmos Kentucky's forecasted spend between October 1, 2021, and September 30, 2022, of $27.9 million.[242] Due to the instant case, the Commission suspended Case No. 2021-00304 pending the results of this case. Atmos Kentucky has proposed to include the forecasted spend in base rates and reset the PRP to $0 through September 2022.

Atmos Kentucky's below ground leaks have decreased from 18.83 per 100 miles to 14.11 per 100 miles between 2016 and 2020. However, below ground leaks associated with bare steel has remained rather constant between 2016 and 2020 at 45.76 per 100 miles and 47.69 leaks per 100 miles, respectively, whereas below ground leaks for Aldyl-A pipe has fallen from a high of 35.47 leaks per 100 miles in 2016 to 27.21 leaks per 100 miles in 2020.[243] Although a concern, plastic pipe is not a safety issue that is on the same magnitude as bare steel, which is still on the system to be replaced. Further, although Aldyl-A pipe is a risk, Aldyl-A materials and other industry identified vintage plastics are considered to be a sub-threat and Aldyl-A represents only approximately 5.00 percent of Atmos Kentucky's total system.[244] Therefore, the Commission finds that Atmos

[241] Attorney General's Brief at 40.

[242] Case No. 2021-00304, *Electronic Application of Atmos Energy Corporation to Establish PRP Rider Rates for the Twelve Month Period Beginning October 1, 2021* (Ky. PSC filed July 30, 2021).

[243] Atmos Kentucky's Response to Staff's Second Request, Item 31.

[244]Atmos Kentucky's Response to Staff's Second Request, Items 30 and 31.

Kentucky's proposal to include Aldyl-A pipe in its PRP is denied. The inclusion of future Aldyl-A pipelines will be determined on a case by cases basis and any PRP applications including Aldyl-A projects should at minimum include safety justifications for such projects. The Commission approves of the inclusion of the $2.794 million for the Cadiz Project in the test year revenue requirement.

The Commission reminds Atmos Kentucky that the purpose of a rider tied to capital investment in the natural gas industry is to address specific problems such as bare steel or a section of pipe prone to issues and may be tied to specific directives issued by Pipeline and Hazardous Materials Safety Administration. The Commission also notes that in its application, Atmos Kentucky stated the PRP allows the Company to extend the period between base rate cases yet Atmos has filed 6 rate cases since the PRP was implemented in 2011.[245] Not including certain projects in the PRP nor capping the PRP has not slowed down Atmos's capital investment, as evident in the increase in Atmos Kentucky's rate base of $180.645 million in for the base period ending 2009 when the PRP was first approved[246] to $568.506 million, an almost 215 percent increase, or an average of 14 percent annually over the last 15 years. Of course, this increase in rate base requires higher rates that reflect a return of and on the investment. Essentially, Atmos Kentucky has more than doubled the amount of money it makes from Kentuckians in less than 15 years.

The Commission approves the roll-in of the PRP into base rates in this preceding. However, the Commission instructs Atmos Kentucky to alter the PRP from a per meter

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[245] Direct Testimony of Brannon C. Taylor (Taylor Testimony) at 7.

[246] Case No. 2009-000354, *Application of Atmos Energy Corporation for an Adjustment of Rates* (KY. PSC May 28, 2010), Volume 6, FR 10(10)(b)

charge to a volumetric charge moving forward. The Commission recognizes that capital spending is Atmos Kentucky's greatest expense and believes depicting the PRP and its associated spending as a separate line item on customer bills allows for greater transparency. Therefore, in Atmos Kentucky's next base rate case, Atmos Kentucky is to file testimony demonstrating why the rider should be rolled-in to base rates. The Commission also requests that Atmos Kentucky maintain distinct records where costs are delineated so that the percent resulting from rehabilitation to meet standards established by city and municipal governments and to work with local governments to lower these expenses.

NOL ADIT

Kollen argued that Atmos Energy's NOL position is reversing so it is no longer reasonable to assume that the PRP will generate incremental NOL ADIT to completely offset incremental liability ADIT.[247] Therefore, Kollen recommended modifying the PRP calculation to reflect that asset NOL ADIT is not generated incrementally by the PRP spend or require Atmos Kentucky to include the actual impacts on the NOL ADIT in the PRP.[248]

Atmos Kentucky argued that the amount of asset NOL ADIT included in rate base and the PRP Rider is appropriate and should not be adjusted and the PRP ADIT treatment is reasonable given base period results.[249]

[247] Kollen Testimony at 48.

[248] Kollen Testimony at 48-49.

[249] Rebuttal Testimony of Joel J. Multer at 10-11.

The Attorney General and Kollen's position is that Atmos Kentucky inappropriately offsets and reduces the incremental liability ADIT due to accelerated tax deprecation subtracted from rate base by the incremental asset NOL ADIT.[250]

The Commission agrees, in part, with Kollen's recommendations regarding the treatment of NOL ADIT in the PRP. Specifically, consistent with the Commission's determination above that the generation and utilization of NOL ADIT included in rate base for Kentucky should be based on Kentucky operations, the PRP calculation should only reflect an incremental increase in NOL ADIT if Atmos Kentucky is able to establish that its Kentucky operations and its PRP spend actually generated NOL ADIT during the relevant period. The Commission will not accept the imputation of NOL ADIT where none was generated by Kentucky operations in the PRP period, because it would be inconsistent with ratemaking principles and federal normalization rules.[251] However, Atmos Kentucky's current tariff requires the PRP Revenue Requirement to be calculated using the "PRP-related Plant In-Service not included in base gas rates minus the associated PRP-related accumulated depreciation and accumulated deferred income taxes,"[252] which would not require the Commission to impute NOL ADIT where none

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[250] Attorney General's Brief at 40.

[251] *See Matter of Missouri-American Water Company*, 637 S.W.3d 121, 127-8 (MP App. 2021)(The court rejected Missouri-American Water Company's calculation of NOL ADIT in a pipeline replacement rider based solely on a comparison of the ADIT generated from the pipeline replacement spend and the gross income from the pipeline replacement rider; noted that a pipeline replacement program would always generate NOL ADIT using that method; and found that the calculation of the NOL ADIT generated should be based on the gross income from all operations in the state during the relevant period); *see also* Private Letter Ruling 113227-19, 2020 WL 1071276 (issued Dec. 3, 2019) (finding, among other things, that book-tax timing differences arising from repairs, which now make up the bulk of the book-tax timing differences in Atmos's PRP, are not subject to normalization rules); 26 C.F.R. § 1.167(l)-1(h)(1)(i) (requiring a utility's reserve for deferred taxes to reflect the total amount of the deferral of federal income tax liability resulting from the taxpayer's use of accelerated depreciation).

[252] Application, Attachment 1, PSC KY. No. 2, Fourth Revised SHEET No. 38.

exists.[253] Thus, the Commission finds that it is not necessary to amend the language of the PRP tariff and the specific calculation of NOL ADIT in the PRP, if any, will be addressed in future PRP cases.

TARIFF ISSUES

Weather Normalization Adjustment

Atmos Kentucky proposed to update the period used to weather normalize revenues for the weather normalization adjustment (WNA) rider to the 20-year period ending March 2021. The WNA Rider is only used during the billing months of November-April 30. The Commission finds this update to be reasonable.

Performance Based Rate Mechanism

Atmos Kentucky proposed to remove the experimental designation from its Performance Based Rate Mechanism Tariff as the Commission had already approved the removal of the designation in Case No. 2015-00298.[254] As the Commission has already approved the revision, the Commission finds that the removal of the experimental designation from the Performance Based Rate Mechanism is reasonable and should be approved.

Tax Act Adjustment Factor

Atmos Kentucky proposed to establish a new Tax Act Adjustment Factor tariff to implement the effects of future changes of federal and state income taxes on the most recently approved base rates. The factor under the proposed tariff would be the

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[253] *See Matter of Missouri-American Water Company*, 637 S.W.3d at 127-8 (interpreting a statutory pipeline replacement mechanism that used similar language regarding the use of ADIT to calculate the revenue requirement and finding that it did not permit the imputation of NOL ADIT that did not exist).

[254] Case No. 2015-00298, *Request of Atmos Energy Corporation for Modification and Extension of its Gas Cost Adjustment Performance Based Ratemaking Mechanism* (Ky. PSC Mar. 31, 2016).

difference between the income tax expense included in the revenue requirement from Atmos Kentucky's most recent base rate proceeding and the calculated income tax expense if the change of the federal or state income tax rate had been in effect during the test year after applying the gross conversion factor.[255] The Attorney General recommended that the Commission reject the proposed rider as it is not necessary as the Commission already has the capability to address changes in the federal and state tax codes.[256] Atmos Kentucky argued that the proposed rider is not necessary because it is the only way to address future changes, but because it is the most efficient way.[257] Atmos Kentucky also argued that the Commission can still undertake its own analysis and require additional filings if the rider is approved and that it would save the Commission the need of conducting a proceeding in case of non-controversial tax changes.[258] As the Attorney General argued, there are already multiple processes in place at the Commission's and Atmos Kentucky's disposal to address changes in the federal and state tax codes. Therefore, the Commission finds that the proposed Tax Act Adjustment Factor Rider is unreasonable and should not be approved.

<u>Parking Service</u>.

Atmos Kentucky proposed to remove references to parking service from its tariff and that transportation accounts be fully cashed out for any remaining positive imbalance for the month. Atmos Kentucky claimed that its upstream pipelines do not currently offer

[255] Direct Testimony of Brannon C. Taylor (Taylor Testimony), page 23, lines 14–18.

[256] Kollen Testimony, page 50, lines 8–15.

[257] Rebuttal Testimony of Joel J. Multer, page 12, lines 1–5.

[258] Rebuttal Testimony of Joel J. Multer, page 12, lines 10–19.

parking service[259] and that parking creates an opportunity for transportation customers and their marketers to attempt to engage in price arbitrage in times of rising natural gas prices by intentionally over nominating and over purchasing natural gas for that current month, knowing that 10 percent would be parked to the next month, thus avoiding purchasing natural gas that next month when prices are expected to be higher.[260] Atmos Kentucky indicated that with parking service removed, transportation customer behavior will change such that they will begin proactively resolving more of their daily and monthly imbalances and rely less on Atmos Kentucky's system balancing.[261] Atmos Kentucky claimed that there is no impact on its physical distribution system as a result of parked volumes as it ensures supply to its distribution system is balanced with customer requirements regardless of any volumes parked by transportation customers.[262] As there is no requirement that Atmos Kentucky provide parking service, the Commission finds that Atmos Kentucky's proposal to remove parking service references from its tariff and that transportation accounts be fully cashed out for any remaining positive imbalance for the month is reasonable and should be approved.

Natural Gas Weekly Pricing Index.

Atmos Kentucky proposed to replace references to the Natural Gas Weekly pricing index with the Gas Daily pricing index for imbalance pricing calculations, citing a substantial increase in the subscription price for Natural Gas Weekly and the publisher's

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[259] Taylor Testimony, page 19, lines 8–9.

[260] Atmos Kentucky's response to Commission Staff's Second Request, Item 9(a)

[261] Atmos Kentucky's response to Commission Staff's Second Request, Item 9(d).

[262] Atmos Kentucky's response to Commission Staff's Second Request for Information, Item 8(c).

warnings of general copyright infringement concerns.[263] Atmos Kentucky already subscribes to Platt's Gas Daily publication and has the rights to utilize it in its calculations.[264] Atmos Kentucky also indicated that the change from using Natural Gas Weekly to using Gas Daily would have had no impact on the volumetric imbalance calculations for the past three calendar years and 2021 to date.[265] Atmos Kentucky also claimed that the proposal would have no direct impact on the Atmos Kentucky's Gas Cost Adjustment (GCA).[266] As the proposed revision would have had no impact on imbalance calculation and no direct impact to Atmos Kentucky's GCA, the Commission finds that Atmos Kentucky's proposal to replace references to the Natural Gas Weekly pricing index with the Gas Daily pricing index for imbalance pricing calculations is reasonable and should be approved.

<u>Priorities of Curtailment</u>

Atmos Kentucky proposed to revise the priorities of curtailment in its tariff. The current priorities require Atmos Kentucky to distinguish between certain customers based on their usage in mcf/day, which Atmos Kentucky claimed is a difficult standard to apply in real time in the event of a curtailment situation.[267] In addition, customers under the same rate schedule could be treated different under the current priorities.[268] Atmos Kentucky cited an example of two Rate G-1 customers, one burning 100 mcf/day and one

[263] Taylor Testimony, page 20, lines 9–10.

[264] Taylor Testimony, page 20, lines 16–19.

[265] Atmos Kentucky's response to Commission Staff's Second Request, Item 10(a).

[266] Atmos Kentucky's response to Commission Staff's Second Request, Item 10(c).

[267] Taylor Testimony, page 21, lines 4–6.

[268] Taylor Testimony, page 21, lines 11–13.

burning 49 mcf per day. Under the current curtailment priorities, the customer using 100 mcf/day would be instructed to go to zero before the smaller customer was affected.[269] Atmos Kentucky stated that the new curtailment priorities would operate strictly upon customer class so that customers served under the same class would not be treated differently.[270] The revisions would (1) combine all commercial service under Rate G-2 into Priority Level 2; (2) combine industrial service under Rates G-1 and T-4 to new Priority Level 3; (3) combine service under Rate G-2 and T-3, both interruptible, to new Priority Level 4; and (4) make flex sales transactions new Priority Level 5.[271] The Commission finds that the revisions to the curtailment priorities are reasonable and should be approved as customers under the same rate schedule should not be treated differently when it comes to curtailing service.

Operational Flow Orders.

Atmos Kentucky proposed to add language to its tariff regarding the ability to issue operational flow orders (OFO) to transportation customers and their marketers. The new provisions would require actions by Rate T-3 and T-4 customers to alleviate conditions that, in Atmos Kentucky's judgement, would jeopardize the operational integrity of Atmos Kentucky's system.[272] The proposal would also allow Atmos Kentucky to issue an OFO to an individual customer or marketer using transportation service without issuing an OFO to all transportation customers.[273] Atmos Kentucky explained that its current tariffs

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[269] Taylor Testimony, page 21, lines 7–13.

[270] Taylor Testimony, page 21, lines 6–7.

[271] Taylor Testimony, page 15, lines 14–19.

[272] Taylor Testimony, page 16, lines 2–6.

[273] Taylor Testimony, page 22, lines 7–8.

contain a provision that authorizes curtailing transportation services when Atmos Kentucky is unable to confirm the customer's gas supply is actually being delivered to the system and that it has issued one such restriction over the last four calendar years.[274] Atmos Kentucky explained that it proposed the clarifying language to better describe the restriction as an Operational Flow Order, which is consistent with general pipeline practice and familiar to gas marketers.[275] Given the important purpose operational flow orders serve, the Commission finds that Atmos Kentucky's proposed revisions to its tariff regarding the ability to issue OFOs to transportation customers and their marketers is reasonable and should be approved.

Nonrecurring Charges.

In Case No. 2020-00141,[276] the Commission found that the calculation of nonrecurring charges should be revised because only the marginal costs related to the service should be recovered through special nonrecurring charges for service provided during normal working hours. In reaching that decision, the Commission found that personnel are paid for work during normal business hours regardless of whether they are on a field visit or not, and therefore labor costs included in nonrecurring charges that occur during regular business hours should be eliminated. By reflecting only the marginal cost of the service in nonrecurring charges, Atmos Kentucky's rates will be more in line with the principle of cost causation. Merely allocating a fixed expense of ordinary labor costs in special nonrecurring charges like reconnect and returned check charges creates

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[274] Atmos Kentucky's response to Commission Staff's Second Request, Item 11(a).

[275] Atmos Kentucky's response to Commission Staff's Second Request, Item 11(b).

[276] Case No. 2020-00141, *Electronic Application of Hyden-Leslie County Water District for an Alternative Rate Adjustment* (Ky. PSC Nov. 6, 2020).

a mismatch between how Atmos Kentucky incurs expenses and how it recovers those expenses from customers. Instead of reflecting fixed costs in special nonrecurring charges that a utility incurs regardless of the number or timing of those nonrecurring services, including those fixed costs in rates for gas service more closely aligns those expenses with the actions that drive them. This approach to ratemaking is entirely consistent with the Commission's history of ensuring that rates reflect, to a reasonable degree, the principle of cost causation while simultaneously taking into account the health of the utility and the ability of the utility to provide the adequate, efficient and reasonable provision of service.

As demonstrated by the evidence of record, Atmos Kentucky relies on employee labor to perform its nonrecurring services.[277] Atmos Kentucky indicated that it would consider eliminating nonrecurring charges altogether and to recover the related revenue through base rates.[278] However, there are customer specific costs recovered through nonrecurring charges and the Commission believes that those costs are better recovered from the customers causing such costs. Based on the information above and using the cost support provided in this proceeding, the Commission finds that the following revisions should be made to Atmos Kentucky's nonrecurring charges.

	Current Charge	Revised Charge
Meter Set (Regular Hours)	$34.00	$3.00
Turn-On (Regular Hours)	23.00	3.00
Read (Regular Hours)	12.00	3.00
Reconnect Delinquent Service (Regular Hours)	39.00	3.00
Seasonal Charge (Regular Hours)	65.00	3.00

[277] Atmos Kentucky's response to Commission Staff's Third Request for Information (filed Sep. 16, 2021) (, Item 11(a).

[278] Atmos Kentucky's response to Commission Staff's Sixth Request for Information (filed Jan. 6, 2022), Item 3.

Returned Check Charge.

Atmos Kentucky charges a returned check charge of $25.00 when a payment is not honored by a customer's financial institution. As cost support for the charge, Atmos Kentucky initially provided a survey of returned check charges assessed by five banks that showed an average returned check charge of $35.60.[279] Atmos Kentucky later provided information indicating that it only deposited customer payments at one of the banks included in the survey.[280] Atmos Kentucky indicated that the other bank in which customer payments are deposited does not charge Atmos Kentucky for returned payments.[281] Finally, when asked to provide the amount Atmos Kentucky was charged by its banks for returned payments for calendar years 2016 through 2021, the information Atmos Kentucky provided showed that the average bank fee per returned payment was $3.30 for 2020 and 2021.[282] As a nonrecurring charge is only supposed to recover the costs of performing the service, the Commission finds that Atmos Kentucky's returned check charge should be reduced to $4.00.

Seasonal Charge.

Atmos Kentucky's cost justification for its after-hours seasonal charge indicated that the total cost to perform an after-hours seasonal reconnect was $59.97 while its

[279] Atmos Kentucky's response to Commission Staff's Third Request for Information (filed Sept. 16, 2021), Item 3, Attachment 1.

[280] Atmos Kentucky's response to Commission Staff's Fourth Request for Information (filed Nov. 24, 2021), Item 2.

[281] Atmos Kentucky's response to Commission Staff's Fifth Request for Information (filed Dec. 3, 2021), Item 4(a).

[282] Atmos Kentucky's response to Commission Staff's Seventh Request for Information (filed Feb. 2, 2022), Item 5.

tariffed rate for that service is $73.00.[283] In regards to the tariffed seasonal charge being more than the cost to perform the service, Atmos Kentucky argued that customers who terminate their service in early spring and reconnect in late fall avoid paying four to five months of the tariffed customer charge.[284] Atmos Kentucky also argued that the higher charge provided a level of deterrence to customers that drive costs through voluntary actions.[285]

Regarding nonrecurring charges, 807 KAR 5:006, Section 9(2) states "[a] charge shall relate directly to the service performed or action taken and shall yield only enough revenue to pay the expenses incurred in rendering the service." The regulation is clear that nonrecurring charges must be cost-based. There is nothing in the regulations allowing for a nonrecurring charge to exceed the expenses incurred in rendering the service in order to disincentivize customer conduct. Therefore, the Commission finds that Atmos Kentucky's after-hours seasonal charge should be reduced to $60 to only recover the cost of performing the service. No adjustment is necessary to nonrecurring charge revenue as a result of this change as there were no instances of this charge being assessed during the period used to forecast such revenues.

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[283] Atmos Kentucky's response to Commission Staff's Fifth Request for Information (filed Dec. 3, 2021), Item 3, Attachment 1, page 1 of 7.

[284] Atmos Kentucky's response to Commission Staff's Fourth Request for Information (filed Nov. 24, 2021), Item 1(d).

[285] Atmos Kentucky's response to Commission Staff's Fourth Request for Information (filed Nov. 24, 2021), Item 1(d).

Late Payment Charge.

Evidence collected in Case No. 2020-00085[286] challenged the efficiency of late payment charges to certain customers. Therefore, the Commission has recently reviewed utilities' late payment charges during rate cases. The information provided by Atmos Kentucky in Case No. 2020-00085 showed that the on-time pay percentage for residential customers actually increased while the late payment moratorium was in effect.[287]

Atmos Kentucky argued that its late payment charge is authorized under 807 KAR 5:006, Section 9(3)(h), that it is included in its tariff to encourage the customer to pay promptly, and that it is not based on an underlying cost.[288] Atmos Kentucky also indicated that it would consider eliminating late fees from its tariff altogether and recover the revenue through base rates.[289]

As the evidence indicates, the late payment charge does not appear to have the intended impact on residential customers' behavior. Given that, and the fact that Atmos Kentucky has suggested eliminating late payment fees altogether, the Commission finds that the residential late payment fee should be discontinued. Therefore, the Commission

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[286] Case No. 2020-00085, *Electronic Emergency Docket Related to the Novel Coronavirus COVID-19.*

[287] See No. 2020-00085, *Electronic Emergency Docket Related to the Novel Coronavirus COVID-19,* Atmos's response to Commission Staff's First Request for Information (filed Jul. 17, 2020), Item 9 and Atmos's response to Commission Staff's Second Request for Information (filed Jan. 14, 2021), Item 1.

[288] Atmos Kentucky's response to Commission Staff's Third Request for Information (filed Sept. 16, 2021), Item 11(b).

[289] Atmos Kentucky's response to Commission Staff's Sixth Request for Information (filed Jan. 6, 2022), Item 3.

reduces the test year late payment charge revenue by $0.874 million, which is the amount attributable to residential customers.

Temporary Turn-Off Charge.

Atmos Kentucky has been charging a fee when customers request that their gas service be turned off temporarily to accommodate temporary construction at their premises.[290] The amount of the charge is $20 for business hours and $25 for after normal business hours.[291] This charge has not been included in Atmos Kentucky's tariff. Atmos Kentucky indicated that if the Commission found that the charge should be included in the tariff, it would just stop charging customers for temporary off situations since they are infrequent and not causing a significant amount of costs.[292]

The Commission finds that this charge would meet the definition of a nonrecurring charge found in 807 KAR 5:006, Section 1(6), which defines a nonrecurring charge as:

> a charge or fee assessed to a customer to recover the specific cost of an activity, which:
> (a) Is due to a specific request for a certain type of service activity for which, once the activity is completed, additional charges are not incurred; and
> (b) Is limited to only recover the specific cost of the specific service.

Commission regulation 807 KAR 5:006, Section 9(2), requires nonrecurring charges to be included in a utility's tariff. Therefore, the Commission finds that if Atmos Kentucky is going to charge a temporary turn-off charge, it should be included in the tariff. However,

[290] Atmos Kentucky's response to Commission Staff's Fifth Request for Information (filed Dec. 3, 2021), Item 1(a).

[291] Atmos Kentucky's response to Commission Staff's Fifth Request for Information (filed Dec. 3, 2021), Item 1(a).

[292] Atmos Kentucky's response to Commission Staff's Fifth Request for Information (filed Dec. 3, 2021), Item 1(b).

given that Atmos Kentucky has indicated that it will just stop charging the temporary turn-off charge if the Commission found it had to be included in the tariff, the Commission finds that Atmos Kentucky should stop charging the temporary turn-off charge.

KRS 278.160(2) states that "[n]o utility shall charge, demand, collect or receive from any person a greater or less compensation for any service rendered or to be rendered than that prescribed in its filed schedules, and no person shall receive any service from any utility for a compensation greater or less than that prescribed in such schedules." In addition, 807 KAR 5:006, Section 9(2), requires that any nonrecurring, customer specific charge must be included in the tariff. As Atmos Kentucky's tariff does not currently include the temporary turn-off charge, Atmos Kentucky appears to be in violation of KRS 278.160(2) and 807 KAR 5:006, Section 9(2). The Commission will open a separate proceeding to investigate Atmos Kentucky's alleged violation of KRS 278.160(2) and 807 KAR 5:006, Section 9(2).

IT IS THEREFORE ORDERED that:

1. The rates and charges proposed by Atmos Kentucky are denied.

2. The rates and charges as set forth in Appendix B to this Order are approved as fair, just and reasonable rates for Atmos Kentucky, and these rates and charges are approved for service on and after May 20, 2022.

3. Atmos Kentucky's proposal to remove the experimental designation from its Performance Based Rate Mechanism is approved.

4. Atmos Kentucky's proposed Tax Act Adjustment Factor Rider is denied.

5. Atmos Kentucky's proposal to remove parking service references from its tariff and that transportation accounts be fully cashed out for any remaining positive imbalance for the month is approved.

6. Atmos Kentucky's proposal to replace references to the Natural Gas Weekly pricing index with the Gas Daily pricing index for imbalance pricing calculations is approved.

7. Atmos Kentucky's proposal to revise its curtailment priorities is approved.

8. Atmos Kentucky's proposal to revise its tariff to allow it the ability to issues OFOs to transportation customers and their marketers is approved.

9. Atmos Kentucky's Meter Set Charge (Regular Hours) shall be reduced to $3.00.

10. Atmos Kentucky's Turn-On Charge (Regular Hours) shall be reduced to $3.00.

11. Atmos Kentucky's Read Charge (Regular Hours) shall be reduced to $3.00.

12. Atmos Kentucky's Reconnect Delinquent Service Charge (Regular Hours) shall be reduced to $3.00.

13. Atmos Kentucky's Seasonal Charge (Regular Hours) shall be reduced to $3.00.

14. Atmos Kentucky's Returned Check Charge shall be reduced to $4.00.

15. Atmos Kentucky's Seasonal Charge (After Hours) shall be reduced to $60.00.

16. Atmos Kentucky shall cease charging its residential late payment fee.

17. Atmos Kentucky shall cease charging its Temporary Turn-On Charge.

18. The Demand-Side Management (DSM) Lost Sales Adjustment component of Atmos Kentucky's DSM cost-recovery mechanism shall be reset to zero.

19. Within 20 days of the date of this Order, Atmos Kentucky shall file with the Commission, using the Commission's electronic Tariff Filing System, new tariff sheets setting forth the rates, charges, and modifications approved or as required herein and reflecting their effective date and that they were authorized by this Order.

20. This case is closed and removed from the Commission's docket.

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PUBLIC SERVICE COMMISSION

____
Chairman

____
Vice Chairman

____
Commissioner

ENTERED
MAY 19 2022 bsb
KENTUCKY PUBLIC
SERVICE COMMISSION

ATTEST:

____
Executive Director

APPENDIX A

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE COMMISSION IN CASE NO. 2021-00214 DATED MAY 19 2022

Atmos Energy Corporation - Kentucky Division
Case No. 2021-00214
Test Year Ended December 31, 2022
$ Millions

Atmos Requested Base Revenue Increase		
Atmos Requested Base Rate Increase	$	16.390
Atmos Revision in Calculated Base Revenue Deficiency		(1.338)
Atmos Revised Base Rate Revenue Deficiency	$	15.052
Rate Base Adjustments		
Include SSU Division 002 T-Lock Adjustment-Unrealized Gains Liability ADIT		(0.313)
Remove Other SSU Division 002 ADIT		(0.118)
Remove Accounts Payable - Construction		(0.501)
Remove Regulatory Asset for Rate Case Expenses		(0.035)
Reflect Effects from Amortization of Unprotected EDIT Over Three Years		0.166
Adjust CWC to Remove Non-Cash Items		(0.612)
Operating Income Adjustments		
Reduce Outside Services Expense Allocated from KY/Mid States Division		(0.405)
Amortize Unprotected EDIT Over Three Years Instead of Five Years		(3.460)
Amortize Remaining Rate Case Expense from Case 2018-00281 Over Three Years		(0.011)
Remove Social Organization/Service Club Dues		(0.164)
Reduce Misc. Service Revenues to Remove Labor from Charges		0.126
Reduce Misc. Service Revenues to Remove Residential Late Payment Fees		0.874
Reduce Misc. Service Revenues to Reduce Commercial and Public Authority Late Payment Fees		0.123
Rate of Return Adjustments		
Reflect Changes in Capital Structure		(2.041)
Adjust STD and LDT Rates		0.229
Reduce Return on Equity		(4.653)
Total Adjustments	$	(10.796)
Base Rate Increase before Amortization of Regulatory Liabilities	$	4.256
Less: Temporary Reduction Due to Amortization of COS and Depreciation Regulatory Liabilities	$	(1.644)
Net Increase in First Year	$	2.613

* Temporary reductions will continue until COS and depreciation reserve regulatory liabilities are fully amortized.

APPENDIX B

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE COMMISSION IN CASE NO. 2021-00214 DATED MAY 19 2022

The following rates and charges are prescribed for the customers served by Atmos Energy Corporation. All other rates and charges not specifically mentioned herein shall remain the same as those in effect under the authority of this Commission prior to the effective date of this Order.

RATE G-1
GENERAL FIRM SALES SERVICE

Base Charge

$19.30	per meter per month for residential service
$66.00	per meter per month for non-residential service

Distribution Charge

First	300	Mcf	$ 1.5483 per Mcf
Next	14, 700	Mcf	$ 1.0762 per Mcf
Over	15, 000	Mcf	$ 0.8888 per Mcf

RATE G-2
INTERRUPTIBLE SALES SERVICE

Base Charge

$520.00 per delivery point per month

Distribution Charge

First	15, 000	Mcf	$ 0.9557 per Mcf
Over	15, 000	Mcf	$ 0.7837 per Mcf

RATE T-3
INTERRUPTIBLE TRANSPORTATION SERVICE

Base Charge

$520.00 per delivery point per month

Distribution Charge for Interruptible Service

First	15, 000 Mcf	$ 0.9557 per Mcf
Over	15, 000 Mcf	$ 0.7837 per Mcf

RATE T-4
FIRM TRANSPORTATON SERVICE

Base Charge

$520.00 per delivery point per month

Distribution Charge for Firm Service

First	300 Mcf	$ 1.5483 per Mcf
Next	14, 700 Mcf	$ 1.0762 per Mcf
Over	15, 000 Mcf	$ 0.8888 per Mcf

Pipeline Replacement Program Rider Rates

	Monthly Customer Charge		Distribution Charge per Mcf
Rate G-1 (Residential)	$ 0.00		$0.0000
Rate G-1 (Non-Residential)	$ 0.00		$0.0000
Rate G-2	$ 0.00	1-15,000 Mcf	$0.0000
		Over 15,000 Mcf	$0.0000
Rate T-3	$ 0.00	1-15,000 Mcf	$0.0000
		Over 15,000 Mcf	$0.0000
Rate T-4	$ 0.00	1-300 Mcf	$0.0000
		301-15,000 Mcf	$0.0000
		Over 15,000 Mcf	$0.0000

Nonrecurring Charges

Meter Set (Regular Hours)	$3.00
Meter Set (After Hours)	$44.00
Turn-On (Regular Hours)	$3.00
Turn-On (After Hours)	$28.00
Read (Regular Hours)	$3.00
Read (After Hours)	$14.00
Reconnect Delinquent Service (Regular Hours)	$3.00
Reconnect Delinquent Service (After Hours)	$47.00
Seasonal Charge (Regular Hours)	$3.00
Seasonal Charge (After Hours)	$60.00
Meter Test Charge	$20.00
Returned Check Charge	$4.00
Late Payment Fee (G-1 Residential)	0%
Late Payment Fee (G-1 Commercial and Public Authority)	5%
Optional Facilities Charge for Electronic Flow Measurement Equipment	
Class 1 EFM equipment (<$7,500, including installation costs)	$75.00 per month
Class 2 EFM equipment (>$7,500, including installation costs)	$175.00 per month

*Angela M Goad
Assistant Attorney General
Office of the Attorney General Office of Rate
700 Capitol Avenue
Suite 20
Frankfort, KENTUCKY 40601-8204

*Randy Hutchinson
Wilson, Hutchinson & Littlepage
611 Frederica Street
Owensboro, KENTUCKY 42301

*Atmos Energy Corporation
3275 Highland Pointe Drive
Owensboro, KY 42303

*Eric Wilen
Atmos Energy Corporation
810 Crescent Centre Drive, Suite 600
Franklin, TN 37067

*Brannon Taylor
Atmos Energy Corporation
810 Crescent Centre Drive, Suite 600
Franklin, TN 37067

*Shelly M Bass
Atmos Energy Corporation
5430 LBJ Freeway
1800 Three Lincoln Centre
Dallas, TEXAS 75240

*Honorable John N Hughes
Attorney at Law
124 West Todd Street
Frankfort, KENTUCKY 40601

*John G Horne, II
Office of the Attorney General Office of Rate
700 Capitol Avenue
Suite 20
Frankfort, KENTUCKY 40601-8204

*Larry Cook
Assistant Attorney General
Office of the Attorney General Office of Rate
700 Capitol Avenue
Suite 20
Frankfort, KENTUCKY 40601-8204

*J. Michael West
Office of the Attorney General Office of Rate
700 Capitol Avenue
Suite 20
Frankfort, KENTUCKY 40601-8204

AG DR 1-126:

Refer to the D'Ascendis Testimony, page 47, and his recommended ROE of 10.60%. Given Mr. D'Ascendis' recommended adjusted range of 10.63% - 12.72%, explain in detail how Mr. D'Ascendis arrived at his recommended ROE of 10.60%, which is 3 basis points below the low end of his recommended range.

Response: Mr. D'Ascendis recommends an ROE of 10.60% for WSCK after his review of both the unadjusted and adjusted indicated ranges of ROEs stemming from the application of the cost of common equity models to the Utility Proxy Group and Non-Price Regulated Proxy Group that he discusses on pages 5 and 6 of his Direct Testimony.

Witness: Dylan D'Ascendis

AG DR 1-127:

Did Mr. D'Ascendis exclude any companies from his water proxy group? If so, provide the names of all companies that were excluded and the reasons for exclusion.

Response: No, he did not.

Witness: Dylan D'Ascendis