COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF MORGAN COUNTY WATER DISTRICT FOR RATE ADJUSTMENT	))	CASE NO. 2016-00068

NOTICE OF FILING OF COMMISSION STAFF REPORT

Notice is hereby given that, in accordance with the Commission's Order of May 5, 2016, the attached report containing the findings of Commission Staff regarding the Applicant's proposed rate adjustment has been filed in the record of the above-styled proceeding. Pursuant to the Commission's May 5, 2016 Order, Morgan County Water District is required to file written comments regarding the findings of Commission Staff no later than 14 days from the date of this report.

Aaron D. Greenwell

Aaron D. Greenwell
Acting Executive Director
Public Service Commission
P.O. Box 615
Frankfort, KY 40602

DATED JUL 11 2016

cc: Parties of Record

STAFF REPORT

ON

MORGAN COUNTY WATER DISTRICT

CASE NO. 2016-00068

Morgan County Water District ("Morgan District") is a water district organized pursuant to KRS Chapter 74 that owns and operates a water distribution system through which it provides retail water service to approximately 2,650 customers in Morgan County, Kentucky.[1] On April 21, 2016, the Commission accepted for filing Morgan District's application ("Application") to increase its water service rates pursuant to 807 KAR 5:076. To ensure the orderly review of the Application, the Commission established a procedural schedule by Order dated May 5, 2016.

Morgan District based its requested rates on a historical test period that coincides with the reporting period shown in its most recent Annual Report on file with the Commission at the time it filed the Application, the calendar year ending December 31, 2014, as required by 807 KAR 5:076, Section 9.

The rates requested by Morgan District would increase the monthly bill of a typical residential customer[2] by $6.85, from $45.75 to $52.60, or 14.97 percent, and would generate $167,121 in additional annual water sales revenues, a 14.97 percent increase. In support of the requested rates, Morgan District presented financial exhibits in the Application which show that its adjusted test-year operations support a 29.42

---

[1] *Annual Report of Morgan County Water District to the Public Service Commission for the Calendar Year Ended December 31, 2014* ("*Annual Report*") at 14 and 53.

[2] A typical residential customer purchases 5,000 gallons of water per month through a 5/8-inch x 3/4-inch meter.

percent revenue increase. In response to the Commission's February 23, 2016 deficiency letter, Morgan District amended the financial exhibits to show that a 35.24 percent revenue increase is warranted. Morgan District did not explain why it requested rates that will not generate the revenue increase that it determined is warranted.

To determine the reasonableness of the water service rates requested by Morgan District, Staff performed a limited financial review of Morgan District's test-year operations. The scope of Staff's review was limited to determining whether operations reported for the test year were representative of normal operations. Known and measurable changes to test-year operations were identified and adjustments were made when their effects were deemed to be material. Staff did not necessarily pursue or address discrepancies that it deemed insignificant and immaterial.

Staff's findings are summarized in this report. Jack Scott Lawless reviewed the calculation of Morgan District's Overall Revenue Requirement. Eddie Beavers reviewed Morgan District's reported revenues and rate design.

<u>Summary of Findings</u>

1. <u>Overall Revenue Requirement and Required Revenue Increase</u>. By applying the Debt Service Coverage ("DSC") method, as generally accepted by the Commission, Staff found that Morgan District's Overall Revenue Requirement is $1,444,537 and that a $293,189, or 26.56 percent, revenue increase to pro forma present rate revenues is necessary to generate the Overall Revenue Requirement.

2. <u>Water Service Rates</u>. Morgan District proposes an approximate 15 percent across-the-board increase to its current water service rates. Morgan District has not performed a cost-of-service study. The Commission has previously found that

an across-the-board increase is an appropriate and equitable method of cost allocation in the absence of a cost-of-service study. Staff finds that an across-the-board increase is the appropriate means to allocate the increase to revenues Staff found appropriate.

The rates set forth in the Attachment to this report are based upon the revenue requirement as calculated by Staff and will produce sufficient revenues from water sales to recover the $1,397,128 determined by Staff, an approximate 26.56 percent increase over normalized water sales. These rates will increase a typical residential customer's monthly water bill from $45.75 to $57.92, an increase of $12.17, or 26.6 percent.

3. Bulk Loading Station Rate Not Shown in Tariff. Morgan District operates two bulk loading stations where customers can buy water currently for a rate of $5.00 per thousand gallons. The rate does not appear in Morgan District's current tariff that is on file with the Commission. Morgan District should include the Bulk Loading Station Rate in the revised tariff that the Commission will require Morgan District to file at the conclusion of this proceeding. Morgan District may contact the Commission's Tariff Branch with any questions regarding the revised tariff. The rate as stated in the Attachment to this order is calculated to the nearest $0.25, as the bulk loading stations accept payment in $0.25 increments.

4. Depreciable Lives. On page 14 of this report, Staff finds that the current depreciable lives assigned to Morgan District's assets should be revised for ratemaking purposes. Any depreciable lives approved by the Commission in this proceeding for ratemaking purposes should also be used by Morgan District for all future accounting and reporting purposes. No adjustment to accumulated depreciation or retained earnings should be made to account for the effect of this change in accounting estimate.

Pro Forma Operating Statement

Morgan District's Pro Forma Operating Statement for the test-year ended December 31, 2014, as determined by Staff, appears below:

	Test Year	Adjustments	(Ref.)	Pro Forma
Operating Revenues				
Water Sales Revenue	$1,116,685	$ (22,942)	(A)	
		5,675	(B)	
		9,446	(C)	
		(4,925)	(D)	$1,103,939
Other Operating Revenue	226,751	22,942	(A)	
		(5,675)	(B)	
		(196,956)	(E)	47,062
Total Operating Revenues	1,343,436	(192,435)		1,151,001
Operating Expenses				
Operation and Maintenance				
Salaries and Wages - Employees	166,679			166,679
Employee Pension and Benefits	66,603			66,603
Purchased Water	557,322	(128,221)	(F)	429,101
Materials and Supplies	79,937			79,937
Contractual Services	22,985			22,985
Transportation	16,379			16,379
Insurance	20,361			20,361
Advertising	736			736
Miscellaneous Expenses				
Purchased Power	27,364	(6,522)	(G)	20,842
Water Main Relocation Project	196,956	(196,956)	(E)	
Pump Repair	708			708
Other Transportation	5,380			5,380
Licenses, Dues, Fees	2,354			2,354
Communication	8,616			8,616
Office Supplies	16,161			16,161
Uniforms	1,999			1,999
Other	3,804			3,804
Meter Connection Costs		(53,250)	(H)	(53,250)
Total Operation and Maintenance	1,194,343	(384,949)		809,394
Depreciation	436,533	(93,784)	(I)	342,749
Taxes Other Than Income	12,328			12,328
Total Operating Expenses	1,643,204	(478,733)		1,164,471
Net Operating Income	(299,768)	286,298		(13,470)
Plus: Interest Income	347			347
Contracting Revenue	37,578	(37,578)	(J)	-
Income Available to Service Debt	$ (261,843)	$ 248,720		$ (13,123)

(A) Late Payment Penalties. During the test year, Morgan District collected revenues in the amount of $22,942 for late-payment penalties. It reported this revenue as Water Sales Revenue instead of in the appropriate account, Other Operating Revenues. Staff decreased Water Sales Revenue by $22,942 and increased Other Operating Revenues by the same amount to properly classify the late-payment penalty revenue.

(B) Miscellaneous Service Revenues. On April 4, 2014, Morgan District incorrectly posted water sales revenue in the amount of $5,675 to the Other Operating Revenue account. Staff corrected this posting error by decreasing test-year Other Operating Revenue by $5,675 and increasing Water Sales Revenues by the same amount.

(C) Purchased Water Adjustment. Morgan District purchases water from the city of West Liberty ("West Liberty"). Effective April 1, 2014, West Liberty increased its wholesale water rate. Morgan District increased its water service rates to pass the wholesale rate increase through to its customers pursuant to 807 KAR 5:068, Purchased Water Adjustment ("PWA").[3] Staff determined that the PWA rates would have produced $9,446 in additional revenues if they had been in effect for the entire test year. To annualize test-year revenues, Staff increased Water Sales Revenue by $9,446.

(D) Billing Analysis Adjustment. Morgan District provided a billing analysis with the Application that determined normalized test-year revenues from water sales from all customers to be $1,109,874. Because the billing analysis was produced from

---

[3] Case No. 2014-00075, *Purchased Water Adjustment Filing of Morgan County Water District* (Ky. PSC Apr. 11, 2014).

test-year customer data using an averaging method, the Commission found the Application deficient. A deficiency letter was issued to Morgan District on February 23, 2016. In response to the deficiency letter, Morgan District filed a revised billing analysis on April 21, 2016, that demonstrated normalized test-year Water Sales Revenues should be stated at $1,068,643.

During its field review, Staff questioned the billing determinants included in the revised billing analysis. In response, Morgan District provided another billing analysis that was generated by Morgan District's computer software programmer. This analysis appears to be an accurate accounting of Morgan District's test-year billing determinants. It demonstrates that normalized test-year Water Sales Revenues should be stated at $1,103,939, or $4,925 less than the adjusted test-year Water Sales Revenues after accounting for the aforementioned revenue adjustments. Accordingly, Staff reduced Water Sales Revenues by $4,925 to match the amount of pro forma present rate revenues to the amount of revenue shown in the billing analysis.

(E) Water Main Relocation. During the test year, Morgan District completed a water main relocation project that cost $196,956 for which it received full reimbursement. It reported the project's cost as a test-year Miscellaneous Expense and the reimbursement proceeds as a test-year Other Operating Revenue. Instead, these items should have been reported as Utility Plant in Service and Donated Capital, respectively. Staff reduced test-year Other Operating Revenues and Miscellaneous Expenses by $196,956.

(F) Purchased Water. During the test year, Morgan District reported $557,322 for the cost of wholesale water that it purchased from Cave Run Water

Commission ("Cave Run") and West Liberty to distribute to its customers. In its *2014 Annual Report*, Morgan District reported that 39.3 percent of the test-year purchased water was lost. Recognizing that 807 KAR 5:066, Section 6(3), limits water loss to 15 percent for ratemaking purposes, Morgan District reduced the test-year purchased water expense by 24.3 percent (39.3 percent – 15 percent), or $135,406, to remove the cost of purchasing the excess water loss from test-year expenses.

As shown below, Staff calculated Morgan District's test-year water loss for ratemaking purposes to be 36.89 percent, or 21.89 percent above the maximum allowed.[4]

[4] Staff's calculation includes an 874,000-gallon adjustment to test-year sales to account for the reprogramming of a commercial meter. During Staff's review, Morgan District explained that subsequent to the test year, it discovered that a 2-inch commercial meter that had been in service for approximately three years, including the test-year, was not properly programmed and synchronized to Morgan District's automated meter reading and billing software. The programming error caused the last digit of the monthly meter readings to be omitted from the customer's billed usage. For example, in a month that the metered registered 90,000 gallons of water usage, the billing software calculated the customer's bill for 9,000 gallons. Morgan District estimated that the programming error resulted in 874,000 gallons of water passing through the meter during the test year that was not included in test-year sales. Staff added these sales to its calculation of Morgan District's pro forma water loss.

Thousand Gallons of Water Purchased:	
Cave Run from 12/23/2013 to 12/22/2014	80,689
West Liberty from 12/16/2013 to 12/15/2014	118,729
Total Thousand Gallons Purchased	199,418
Less Thousand Gallons:	
Sold to Customers from 12/16/2013 to 12/15/2014	(108,263)
Adjustment to Sales for Commercial Meter Reprogramming	(874)
System Flushing	(12,508)
Fire Department	(332)
Lost Water, Thousand Gallons	77,441
Lost Water, Percent of Purchases	38.83%
Less: Allowed Water Loss Percent	-15.00%
Excess Water Loss	23.83%

Before applying the excess water loss percentage to the test-year purchased water expense, Staff increased the test-year expense to account for an increase to the wholesale water rate charged to Morgan District by West Liberty from $2.79 per thousand gallons to $3.08 per thousand gallons that became effective in April 2014. As shown in the calculations below, Staff found that Morgan District's pro forma purchased water expense is $563,373 and that Morgan District may recover $429,101 of this expense through rates. Accordingly, Staff decreased test-year Purchased Water expense by $128,221 rather than $135,406 as Morgan District had done.

	Thousand Gallons Purchased	Rate Per Thousand Gallons	Pro Forma
West Liberty	118,729	$ 3.08	$ 365,685
Cave Run	80,689	2.45	197,688
Pro forma Purchased Water Expense			563,373
Less: Cost of Excess Water Loss ($563,373 x 23.83%)			(134,273)
Amount to be Recovered through Rates			429,101
Less: Test Year			(557,322)
Decrease			$ (128,221)

(G) Purchased Power. In addition to removing the cost of purchasing the excess water loss from Morgan District's test-year expenses, Staff removed the cost of electricity purchased to pump the excess water loss. As shown below, Staff calculated this cost to be $6,522.

Test Year	$ 27,364
Times: Excess Water Loss Percentage	-23.83%
Cost of Electricity to Pump Excess Water Loss	$ (6,522)

(H) Meter Installations. During the test year, Morgan District constructed 71 new residential meter connections that were not a part of the Phase 13 and Phase 14 water main extension projects, which were under construction during the test year. Morgan District reported the estimated cost to construct the 71 new meter connections in the amount of $53,250[5] as part of operating expenses. Their cost should have been reported to the Meters and Meter Installations account[6] and depreciated over their estimated useful lives. Staff removed their costs from test-year operating expenses and included them in the calculation of pro forma depreciation expense shown in Ref. Item (l).

(l) Depreciation. Morgan District reported test-year depreciation expense in the amount of $436,533. It calculated the amount using the whole-life, straight-line method, pursuant to which an asset's depreciable basis is divided by its estimated useful life. In support of its test-year depreciation, Morgan District provided with the Application a copy of its plant ledger as of December 31, 2015.

Classification of Assets and Accumulated Depreciation. The water assets upon which test-year depreciation accrued include seven water storage tanks, five pumping stations, two bulk loading stations, a telemetry system, and approximately 340 miles of water transmission and distribution mains, 2,650 meter installations, 500 valves, and 100 hydrants. The vast majority of these assets were placed into service as part of major construction projects that were completed in the years 1989, 1993, 1996, 1998, 1999, 2000, 2002, 2003, 2006, 2008, and 2010. The assets' original costs total $20,439,536 and are separated on Morgan District's plant ledger by the year they were placed into service except for the 1989 and 1993 assets. From review of bond

---

[5] During the test year, Morgan District did not use a work order system or other method to identify the actual construction costs of the new meter connections. Absent the actual costs, Staff estimated their cost to be $53.250 by multiplying the number of test-year meter connections constructed, 71, times the average cost of a 5/8-inch x 3/4-inch meter connection, $750, as accepted by the Commission as the basis for Morgan District's current tap-on fee. *See* Case No. 2014-00373, *Tariff Filing of Morgan County Water District to Revise Its Meter Connection Charges* (Ky. PSC Jan. 22, 2015).

[6] Uniform System of Accounts for Class A/B Water Districts and Associations ("USoA") at 74.

documents, it appears to Staff that the 1989 assets, with a total cost of $1,060,000, are mistakenly reported on the plant ledger as the 1993 assets and that the 1993 assets, with a total cost of $772,997, are mistakenly reported on the plant ledger as part of the 1996 assets that have a cost of $1,274,068. Except for the telemetry system that was part of the 2010 project, the cost of all depreciable assets is reported in the plant ledger as "Water Lines" and are depreciated using a 50-year life.

Staff sought construction contracts, work orders, cancelled checks, or other construction documents from Morgan District that could be used to separate and record the cost of each project's assets into the proper utility plant subsidiary account as required by the USoA.[7] Morgan District could not provide these documents. Its representatives believe that they were destroyed by the March 2, 2012 tornado that struck the city of West Liberty.

Staff made informal requests for similar documents from Morgan District's current contracted engineer (Can-Tech, LLC), its previous contracted engineers (HMB Professional Engineers, Inc. and Summit Engineering, Inc.) and the United States Department of Agriculture Rural Development ("RD").[8] In return, Staff received copies of the contractor bids that were submitted to Morgan District for the projects listed in the plant ledger as 1996, 1998, 1999, 2000, 2002, 2006, 2008 and 2010. No information was received for the 1989 and 2003 projects.

---

[7] USoA at 64–79.

[8] RD filed information with the Commission on May 18, 2016, which was placed into the record of this proceeding. Information provided by Can-Tech, LLC and HMB Professional Engineers, Inc. was delivered directly to Staff as part of its field review. This information was not filed into the record. No information was provided by Summit Engineering.

Staff used the lowest contract bid for each project to allocate the project's recorded cost and its accumulated depreciation to each asset that was constructed as part of the project. To make the allocations, Staff calculated each asset's percentage of its project's total bid price and then applied the percentage to the project's recorded cost and accumulated depreciation. The allocations are shown in Attachment B, pages 3–6. A summary of each project's allocated costs and Staff's calculation of pro forma depreciation expense accrued thereon is shown in Attachment B, pages 1–2. Note that the costs recorded for the 1989 and 2003 projects were not allocated. All of their costs remain recorded as Transmission and Distribution Mains.

Morgan District should record adjusting entries to its plant ledger to reclassify each asset's cost and accumulated depreciation from the Transmission and Distribution Main account to the plant subsidiary accounts shown in Attachment B unless Morgan District can provide a more appropriate method of reclassification in its response to this report. The reclassifications should be reflected in Morgan District's Annual Financial and Statistical Report that will be filed with the Commission for the calendar year ending December 31, 2016.

Depreciable Lives. Staff finds that, after Morgan District reclassifies its assets, each asset account group should be depreciated using useful lives that are consistent with the Commission's practices. Generally, to establish the depreciable lives used by a water district or water association, the Commission uses as its guide the National Association of Regulatory Utility Commissioners' ("NARUC") study titled Depreciation

Practices for Small Water Utilities" ("NARUC Study").[9] The NARUC Study provides life ranges for each water asset account group. Unless there is evidence presented in a case supporting a depreciable life that is outside the NARUC ranges, the Commission assigns a life that falls within the range.

When determining the appropriate life within the NARUC range for an asset account group, the Commission considers the assets' construction materials, condition, and other factors. In Case No. 2012-00309,[10] the Commission found that Southern Water and Sewer District's ("Southern") water transmission and distribution mains should be depreciated using a 50-year life, the shortest life within the NARUC range. In that case, Southern stated in its application that the majority, approximately 65 percent, of its mains was constructed of asbestos cement and was installed in the 1960s and 1970s. Southern explained that its mains had deteriorated more rapidly than expected and were close to the end of their useful lives due to their close proximity to major construction projects and roadways and due to the high pressures necessary to move water over the extreme elevation changes that exist throughout its service territory. It stated that this deterioration is evident by its excessive water loss,[11] which was 44.35 percent.[12] The Commission determined that these conditions warranted the 50-year life.

---

[9] Case No. 2006-00398, *Application of Northern Kentucky Water District for Approval of Depreciation Study* (Ky. PSC Nov. 21, 2007), and Case No. 2012-00278, *Application of Graves County Water District for an Adjustment in Rates Pursuant to the Alternative Rate Filing Procedure for Small Utilities* (Ky. PSC Sept. 5, 2012).

[10] Case No. 2012-00309, *Application of Southern Water and Sewer District for an Adjustment in Rates Pursuant to the Alternative Rate Filing Procedure for Small Utilities* (Ky. PSC July 12, 2013).

[11] *Id.*, Application, Attachment C at 19–20.

[12] *Id.* at 13.

In Case No. 2012-00413, the Commission accepted[13] Staff's finding that the depreciable life assigned to Pendleton County Water District's ("Pendleton") water transmission and distribution mains should be 75 years. Staff supported its position by noting that Pendleton's mains were constructed of polyvinyl chloride, which are materials that are very durable and can maintain their structural integrity for more than 100 years. Staff continued by stating that Pendleton's mains were thought to be free of material decay and that this was supported by Pendleton's low water loss percentage.[14]

Based on discussions with Morgan District's general manager ("GM"), Staff finds that Morgan District's asset account groups should be depreciated using the longest lives shown in the NARUC Study. During Staff's field review, the GM explained that, based on his knowledge of the system, he believes that all of Morgan District's assets have been properly installed and maintained and are in satisfactory condition. He attributed a large portion of the excess water loss that has occurred in recent years, including the test year, to water main breaks created by road construction crews digging into water main. He stated that the high water loss is not necessarily an indication that Morgan District's water mains, the majority of which are constructed of polyvinyl chloride, will require replacement at an accelerated rate. He further explained that Morgan District's storage tanks were inspected in 2015 and found to be in good condition.

As shown in Attachment B, pages 1–2, by applying the longest lives shown in the NARUC Study to Morgan District's assets, Staff calculated Morgan District's pro forma

---

[13] Case No. 2012-00413, *Application of Pendleton County Water District for an Adjustment in Rates Pursuant to the Alternative Rate Filing Procedure for Small Utilities* (Ky. PSC Dec. 20, 2012) at 8.

[14] *Id.*, Commission Staff Report on Pendleton County Water District (filed Oct. 29, 2012) at 10.

depreciation and amortization expense to be $342,749. Staff reduced test-year depreciation by $93,784.

Post-Test-Period Plant Additions. In support of the depreciation expense reported for the 2014 test year, Morgan District provided a copy of its 2015 plant ledger with the Application. Included on the plant ledger is the Phase 14 Water Main Extension Project that was placed into service on August 31, 2015, at a cost of $1,623,704. This project included the construction of a water tank, a pumping station, approximately three miles of water main, and 50 meter connections. The project's cost was funded with an Abandoned Mine Lands grant. Morgan District did not assume any long-term indebtedness to fund the cost of this project. Morgan District did not request to adjust its test-year depreciation expense for depreciation that will accrue on this post-test-year plant addition. Likewise, Staff did not adjust test-year depreciation expense or any other test-year revenue or expense account that may be affected by the construction of this project.

(J) Tap-On Fee Collections. Morgan District reported tap on fees collected during the test year in the amount of $37,578 as Contracting Revenue. The USoA requires that receipts for tap-on fees be reported as Proceeds from Capital Contributions, a revenue account that is closed directly to Donated Capital, a Retained Earnings subsidiary account, without being reported in a district's income that is available to service debt.[15] Staff removed the tap-on fees from the calculation of Morgan District's income.

[15] USoA at 86–87.

Overall Revenue Requirement and Required Revenue Increase

The Commission has historically applied a DSC method to calculate the Overall Revenue Requirement of a water district or a water association that has outstanding long-term indebtedness. The method generally accepted by the Commission allows for recovery of: 1) cash related pro forma operating expenses; 2) recovery of depreciation expense, a non-cash item, to provide working capital;[16] 3) the average annual principal and interest payments on all long-term debts, and 4) working capital that is in addition to depreciation expense.

Morgan District applied the Commission's DSC method to calculate its revenue requirement. Staff agrees that application of this method is consistent with the general practice of the Commission and has also applied this method to calculate Morgan District's Overall Revenue Requirement. A comparison of Morgan District's and Staff's calculation of Morgan District's Overall Revenue Requirement and Required Revenue Increase using the Commission's DSC method is shown below:

[16] The Kentucky Supreme Court has held that the Commission must permit a water district to recover its depreciation expense through its rates for service to provide internal funds for renewing and replacing assets. *See Public Serv. Comm'n of Kentucky v. Dewitt Water Dist.*, 720 S.W.2d 725, 728 (Ky.1986). Although a water district's lenders require that a small portion of the depreciation funds be deposited annually into a debt reserve/depreciation fund until the account's balance accumulates to a required threshold, neither the Commission nor the Court requires that revenues collected for depreciation be accounted for separately from the water district's general funds or that depreciation funds be used only for asset renewal and replacement. The Commission has recognized that the working capital provided through recovery of depreciation expense may be used for purposes other than renewal and replacement of assets. *See* Case No. 2012-00309, *Application of Southern Water and Sewer District for an Adjustment in Rates Pursuant to the Alternative Rate Filing Procedure for Small Utilities* (Ky. PSC Dec. 21, 2012).

	Morgan District	Staff	(Ref.)
Operating Expenses	$1,507,798	$1,164,471	
Plus: Average Annual Debt and Principal Payments	236,949	233,388	(1)
Additional Working Capital	17,820	46,678	(2)
Overall Revenue Requirement	1,762,567	1,444,537	
Less: Other Operating Revenue	(226,751)	(47,062)	
Nonoperating Revenue	(90,282)	-	(3)
Interest Income	(347)	(347)	
Revenue Required from Rates	1,445,187	1,397,128	
Less: Pro Forma Present Rate Revenue	(1,068,643)	(1,103,939)	
Required Revenue Increase	$376,544	$293,189	
Increase Percentage	35.24%	26.56%	

(1) Average Annual Principal and Interest Payments. Morgan District currently has the following bond series outstanding that are payable to RD: 1993A, 1993B, 1995, 1999, 2001, 2002, 2003, 2006, and 2008. Principal and interest payments on all bonds are due on January 1 of each year, while interest payments on Bonds Series 1999–2008 are payable on July 1 of each year. Morgan District requested to include in the calculation of its Overall Revenue Requirement the three-year average of the annual principal and interest payments that are scheduled to be made on all bonds during the years 2015, 2016, and 2017. Morgan District calculated the three-year average using the principal and interest payments shown on the bond amortization schedules that it filed with the Commission on April 21, 2016.

Staff finds that the average annual debt payment to be included in the calculation of Morgan District's Overall Revenue Requirement should be equal to the five-year average payment made for the years 2017–2021 with corrections made to the interest payments shown on the bond amortization schedules for the 1993 A and 1993 B bonds.

Staff anticipates that the water service rates authorized by the Commission in this proceeding will go into effect after the July 1, 2016 bond interest payments, but before the January 1, 2017 bond principal and interest payments. By including the five-year average debt payment in calculation of Morgan District's Overall Revenue Requirement beginning with the payments due on January 1, 2017, Morgan District will recover the principal and interest payments that will be made during the anticipated five-year life of the water service rates authorized by the Commission in this proceeding.[17]

Staff further finds that adjustments are warranted to the interest payments to be made on the 1993 A and 1993 B bonds. As shown on the amortization schedules, Morgan District has been paying 5 percent annual interest on these bonds since they were purchased by RD in 1993 and is currently scheduled to continue paying interest at 5 percent. During its review, Staff noted that the rate of interest stated on the bonds' registered certificates, which was also included in Morgan District's April 21, 2016 filing, is 4.5 percent. To investigate this discrepancy, Staff contacted via telephone Douglas Hoff at RD's regional office in Morehead, Kentucky. Mr. Hoff reviewed RD's internal documents and stated that he believes that the appropriate interest rate is 4.5 percent

---

[17] Generally, the anticipated life of a utility's service rates is based on the frequency of the utility's previous rate case filings, but no longer than five years since rates tend to become obsolete due to changes that will likely occur to the utility's cost of service in a five-year period.

Morgan District has never sought a general rate adjustment pursuant to the provisions of either 807 KAR 5:001, Section 16, or 807 KAR 5:076. It has adjusted water service rates only pursuant to KRS 278.023 as part of a construction project that was financed, at least in part, by RD. The last adjustment occurred in Case No. 2008-00242. Since the elapsed time between that case and this proceeding is approximately nine years, or four years longer than the five-year maximum, Staff anticipates that the life of the rates approved in this proceeding will be five years.

and that the 5 percent interest rate has been charged in error from the time that RD purchased the bonds. Mr. Hoff stated that he has requested that a review of the interest rates be performed by the proper authorities at RD's central office in St. Louis, Missouri. He stated that RD's formal findings will not likely be known for several months, but he hoped that they would be known prior to the bonds' next scheduled payment date, January 1, 2017. To remedy the error, Mr. Hoff stated that he anticipates RD will consider the excess interest paid by Morgan District as prepayment of the bonds' last scheduled principal payments, and that RD will calculate all future interest on the 1993A and 1993B bonds using the correct 4.5 percent interest rate.

Morgan District's last bond payment was made on January 1, 2016. Including that payment, Staff estimates that Morgan District has paid excess interest on the 1993 A and 1993 B bonds in the amounts of $27,260 and $1,554, respectively. By applying these amounts to the last scheduled bond principal payments and calculating the bonds' remaining annual interest payments at 4.5 percent, Staff determined that the bond amortization schedules should be restated as follows:

Bond Series 1993A

Payment Date	Principal Retirement Original Schedule	Application of Excess Interest Paid	Principal Retirement Revised Schedule	Outstanding Principal Balance After Principal Payment	Annual Interest Payment at 4.5 Percent	Annual Principal and Interest Payment
January 1, 2016	$ 8,000		$ 8,000	$ 169,740		
2017	8,000		8,000	161,740	$ 7,638	$ 15,638
2018	8,000		8,000	153,740	7,278	15,278
2019	9,000		9,000	144,740	6,918	15,918
2020	9,000		9,000	135,740	6,513	15,513
2021	10,000		10,000	125,740	6,108	16,108
2022	10,000		10,000	115,740	5,658	15,658
2023	11,000		11,000	104,740	5,208	16,208
2024	11,000		11,000	93,740	4,713	15,713
2025	12,000		12,000	81,740	4,218	16,218
2026	11,000		11,000	70,740	3,678	14,678
2027	12,000		12,000	58,740	3,183	15,183
2028	13,000		13,000	45,740	2,643	15,643
2029	13,000		13,000	32,740	2,058	15,058
2030	14,000		14,000	18,740	1,473	15,473
2031	15,000		15,000	3,740	843	15,843
2032	15,000	$ (11,260)	3,740	-	168	3,908
2033	16,000	(16,000)	-			

Bond Series 1993B

Payment Date	Principal Payment Original Schedule	Application of Excess Interest Paid	Principal Payment Revised Schedule	Outstanding Principal Balance After Principal Payment	Interest at 4.5 Percent	Annual Principal and Interest Payment
January 1, 2016	$ 420		$ 420	$ 9,796		
2017	440		440	9,356	$ 441	$ 881
2018	460		460	8,896	421	881
2019	480		480	8,416	400	880
2020	510		510	7,906	379	889
2021	530		530	7,376	356	886
2022	530		530	6,846	332	862
2023	590		590	6,256	308	898
2024	620		620	5,636	282	902
2025	650		650	4,986	254	904
2026	680		680	4,306	224	904
2027	720		720	3,586	194	914
2028	750		750	2,836	161	911
2029	790		790	2,046	128	918
2030	830		830	1,216	92	922
2031	870		870	346	55	925
2032	910	$ (564)	346	-	16	362
2033	990	(990)	-			

As shown below, using the principal and interest payments in the adjusted amortization schedules and the principal and interest payments in the amortization schedules provided by Morgan District for its other bonds, Staff determined that Morgan District's five-year average annual bond payment beginning January 1, 2017, is $233,388. Staff included this amount in the calculation of Morgan District's Overall Revenue Requirement.

Bond	Year of Payment					
Series	2017	2018	2019	2020	2021	Total
1993A	$15,638	$15,278	$15,918	$15,513	$16,108	$ 78,457
1993B	881	881	880	889	886	4,417
1995	20,745	20,840	20,913	20,463	21,013	103,973
1999	4,108	4,138	4,066	4,190	4,109	20,610
2001	15,109	15,373	15,129	15,378	15,118	76,106
2002	16,507	16,464	16,510	16,445	16,468	82,394
2003	32,269	32,809	32,328	32,825	32,300	162,531
2006	51,970	52,289	52,568	51,825	52,062	260,714
2008	75,585	75,567	75,552	75,530	75,508	377,741
Five-Year Total						1,166,942
Divide by: 5						5
Five-Year Average						$ 233,388

(2) Additional Working Capital. The DSC method, as historically applied by the Commission, includes an allowance for additional working capital that is equal to the minimum net revenues required by a district's lenders that are above its average annual debt payments. In the Application, Morgan District requested that its additional working capital allowance be set equal to $17,820, the maximum annual amount that Morgan District is required to deposit into its Depreciation Fund as noted in Morgan District's

2014 Audit Report.[18] Following the Commission's historic method, Staff calculated Morgan District's allowance for additional working capital to be $46,678, as shown below:[19]

Five-Year Average Annual Bond Payment	$ 233,388
Times: DSC Ratio	120%
Total Net Revenues Required	280,066
Less: Five-Year Average Annual Bond Payment	(233,388)
Additional Working Capital	$ 46,678

(3) Nonoperating Revenue. Morgan District's comparative Income Statement for the years 2013 and 2014 is shown on page 24 of the Annual Report. Grant receipts

[18] 2014 Audit Report dated March 25, 2015, prepared by Morgan-Franklin, LLC, at 15.

[19] The RD bond resolutions require Morgan District to assess rates for water service that produce net revenues that are equal to at least 120 percent of the average annual RD bond principal and interest payments as well as all principal and interest payments on any debts that are on par with the RD bonds. The DSC ratio measures an entity's ability to pay its cash related operating expenses and to pay debt principal and interest. RD calculates the ratio by dividing net revenues by the entity's average annual debt principal and interest payments. Net revenues are equal to total revenues less cash related expenses. Depreciation expense, a noncash operating expense, is excluded from the determination of net revenues. As shown below, the required DSC ratio is met with or without including the additional working capital in Morgan County's overall revenue requirement.

	With Additional Working Capital	Without Additional Working Capital
Overall Revenue Requirement	$ 1,444,537	$ 1,397,859
Less: Pro Forma Operation and Maintenance Expense	(809,394)	(809,394)
Taxes Other Than Income	(12,328)	(12,328)
Excess Water Costs Eliminated for Ratemaking Purposes	(134,743)	(134,743)
Net Revenues	488,072	441,394
Divide by: Average Annual Debt Payment	233,388	233,388
DSC Ratio	209%	189%

for these years in the amounts of $90,282 and $1,436,939, respectively, are incorrectly reported on this statement as Nonoperating Revenues. The USoA requires that these amounts be reported as Proceeds from Capital Contributions, a revenue account that is closed directly to Donated Capital, a Retained Earnings subsidiary account, without being reported in a district's income that is available to service debt.[20] Neither the 2013 nor the 2014 grant proceeds should be included in the determination of Morgan District's required revenue increase in this proceeding; however, Morgan District mistakenly included the grant proceeds reported during 2013.

Signatures

Prepared by: Jack Scott Lawless, CPA
Water and Sewer Revenue
Requirements Branch
Division of Financial Analysis

Prepared by: Eddie Beavers
Water and Sewer Rate Design Branch
Division of Financial Analysis

[20] USoA at 86–87.

ATTACHMENT A

Staff Calculated Monthly Water Rates

5/8-Inch Meter			
First	2,000 gallons	$ 27.53	Minimum bill
Next	3,000 gallons	10.13	per 1,000 gallons
Next	5,000 gallons	9.37	per 1,000 gallons
Next	5,000 gallons	8.61	per 1,000 gallons
Over	100,000 gallons	7.85	per 1,000 gallons
1-Inch Meter			
First	5,000 gallons	$ 57.92	Minimum bill
Next	5,000 gallons	9.37	per 1,000 gallons
Next	5,000 gallons	8.61	per 1,000 gallons
Over	15,000 gallons	7.85	per 1,000 gallons
2-Inch Meter			
First	15,000 gallons	$ 147.82	Minimum bill
Over	15,000 gallons	7.85	per 1,000 gallons
6-Inch Meter			
First	100,000 gallons	$ 815.07	Minimum bill
Over	100,000 gallons	7.85	per 1,000 gallons
Bulk Loading Station		$ 6.25	per 1,000 gallons

ATTACHMENT B

Asset Account Group	Depreciable Basis	Depreciable Life	Pro Forma Depreciation
Structures and Improvements			
1993	$ 36,388	40	$ 910
1996	28,736	40	718
1998	18,000	40	450
1999	31,657	40	791
2000	9,235	40	231
2002	412,022	40	10,301
2006	207,974	40	5,199
2008	231,918	40	5,798
2010	300,789	40	7,520
Total	1,276,719		31,918
Pumping Equipment			
2002	10,049	20	502
Distribution Reservoirs and Standpipes			
1996	218,595	60	3,643
2006	430,826	60	7,180
2010	533,099	60	8,885
	1,182,519		19,709
Transmission and Distributions Mains			
1989	1,060,000	75	14,133
1993	718,872	75	9,585
1996	996,225	75	13,283
1999	224,568	75	2,994
2000	65,509	75	873
2002	1,939,158	75	25,855
2003	1,722,021	75	22,960
2006	3,052,866	75	40,705
2008	3,023,832	75	40,318
2010	2,814,009	75	37,520
2014 Capitalized by Staff	196,956	75	2,626
	15,814,015		210,854

Asset Account Group		Depreciable Basis	Depreciable Life	Pro Forma Depreciation
Meters and Meter Installations				
1993		17,737	50	355
1999		19,501	50	390
2000		5,689	50	114
2002		254,580	50	5,092
2006		514,957	50	10,299
2008		784,648	50	15,693
2010		231,936	50	4,639
2014	Capitalized by Staff	53,250	50	1,065
		1,882,297		37,646
Hydrants				
1999		9,497	60	158
2000		2,770	60	46
2002		38,407	60	640
2006		21,407	60	357
2008		33,210	60	554
2010		69,542	60	1,159
		174,835		2,914
Communication Equipment				
1996		30,513	10	3,051
2002		48,420	10	4,842
2010		270,375	10	27,038
		349,308		34,931
Total Pro Forma Depreciation				338,473
Plus: Amortization of Building Lease				4,276
Total Pro Forma Depreciation and Amortization				342,749
Less: Test Year				(436,533)
Adjustment				$ (93,784)

Project Year	NARUC Account Title	Lowest Contractor Bid	Allocator	Allocation of Recorded Cost	Allocation of Accumulated Depreciation
1989	Transmission and Distribution Mains	No Allocation		$ 1,060,000	$ 500,993
1993	Total	$ 594,801	100.00%	772,997	301,469
	Allocated to:				
	Structures and Improvements	28,000	4.71%	36,388	14,192
	Transmission and Distribution Mains	553,153	93.00%	718,872	280,360
	Meter Installations	13,648	2.29%	17,737	6,917
1996	Total	862,366	100.00%	1,274,068	496,886
	Allocated to:				
	Structures and Improvements	19,450	2.26%	28,736	11,207
	Reservoirs and Tanks	147,958	17.16%	218,595	85,252
	Transmission and Distribution Mains	674,305	78.19%	996,225	388,528
	Communication Equipment	20,653	2.39%	30,513	11,900
1998	Structures and Improvements	No Allocation		18,000	15,302
1999	Total	225,244	100.00%	285,223	91,747
	Allocated to:				
	Structures and Improvements	25,000	11.10%	31,657	10,183
	Transmission and Distribution Mains	177,344	78.73%	224,568	72,236
	Meter Installations	15,400	6.84%	19,501	6,273
	Hydrants	7,500	3.33%	9,497	3,055

Project Year	NARUC Account Title	Lowest Contractor Bid	Allocator	Allocation of Recorded Cost	Allocation of Accumulated Depreciation
2000	Total	225,244	100.00%	83,203	25,308
	Allocated to:				
	Structures and Improvements	25,000	11.10%	9,235	2,809
	Transmission and Distribution Mains	177,344	78.73%	65,509	19,926
	Meter Installations	15,400	6.84%	5,689	1,730
	Hydrants	7,500	3.33%	2,770	843
2002	Total	1,247,030	100.00%	1,709,559	447,015
	Allocated to:				
	Structures and Improvements	184,761	14.82%	253,290	66,230
	Pumping Equipment	7,330	0.59%	10,049	2,628
	Transmission and Distribution Mains	889,598	71.34%	1,219,554	318,889
	Meter Installations	102,005	8.18%	139,839	36,565
	Hydrants	28,016	2.25%	38,407	10,043
	Communication Equipment	35,320	2.83%	48,420	12,661
2002	Total	667,859	100.00%	993,078	259,669
	Allocated to:				
	Structures and Improvements	106,750	15.98%	158,733	41,505
	Transmission and Distribution Mains	483,944	72.46%	719,604	188,161
	Meter Installations	77,165	11.55%	114,741	30,002
2003	Transmission and Distribution Mains	No Allocation		1,722,021	416,210

Project Year	NARUC Account Title	Lowest Contractor Bid	Allocator	Allocation of Recorded Cost	Allocation of Accumulated Depreciation
2006	Total	1,351,497	100.00%	2,416,017	441,105
	Allocated to:				
	Structures and Improvements	81,000	5.99%	144,800	26,437
	Reservoirs and Tanks	241,000	17.83%	430,826	78,658
	Transmission and Distribution Mains	858,697	63.54%	1,535,058	280,264
	Meter Installations	170,800	12.64%	305,332	55,746
2006	Total	1,138,722	100.00%	1,812,013	330,829
	Allocated to:				
	Structures and Improvements	39,700	3.49%	63,173	11,534
	Transmission and Distribution Mains	953,835	83.76%	1,517,808	277,114
	Meter Installations	131,734	11.57%	209,624	38,272
	Hydrants	13,453	1.18%	21,407	3,908
2008	Total	1,464,825	100.00%	1,985,614	311,297
	Allocated to:				
	Structures and Improvements	112,820	7.70%	152,931	23,976
	Transmission and Distribution Mains	1,044,955	71.34%	1,416,468	222,068
	Meter Installations	301,450	20.58%	408,624	64,063
	Hydrants	5,600	0.38%	7,591	1,190

Project Year	NARUC Account Title	Lowest Contractor Bid	Allocator	Allocation of Recorded Cost	Allocation of Accumulated Depreciation
2008	Total	1,540,353	100.00%	2,087,994	327,347
	Allocated to:				
	Structures and Improvements	58,270	3.78%	78,987	12,383
	Transmission and Distribution Mains	1,185,783	76.98%	1,607,364	251,996
	Meter Installations	277,400	18.01%	376,024	58,952
	Hydrants	18,900	1.23%	25,620	4,017
2010	Total	1,810,138	100.00%	2,632,374	288,191
	Allocated to:				
	Structures and Improvements	40,600	2.24%	59,042	6,464
	Reservoirs and Tanks	207,505	11.46%	301,762	33,037
	Transmission and Distribution Mains	1,429,808	78.99%	2,079,283	227,639
	Meter Installations	115,425	6.38%	167,856	18,377
	Hydrants	16,800	0.93%	24,431	2,675
2010	Total	1,138,600	100.00%	1,317,000	147,937
	Allocated to:				
	Structures and Improvements	209,000	18.36%	241,747	27,155
	Reservoirs and Tanks	200,000	17.57%	231,337	25,986
	Transmission and Distribution Mains	635,200	55.79%	734,725	82,531
	Meter Installations	55,400	4.87%	64,080	7,198
	Hydrants	39,000	3.43%	45,111	5,067

*Morgan County Water District
1009 Hwy 172
West Liberty, KY 41472

*Kyle Risner
General Manager
Morgan County Water District
1009 Hwy 172
West Liberty, KY 41472