Grayson Rural Electric Cooperative Corporation

2020 Load Forecast
November 2020
Prepared by: EKPC's Load Forecasting Department

Grayson Rural Electric
A Touchstone Energy® Cooperative
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EAST KENTUCKY POWER COOPERATIVE
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Introduction
Executive Summary

Grayson Rural Electric Cooperative Corporation (Grayson RECC), located in Grayson, Kentucky, is an electric distribution cooperative that serves members in six counties in Kentucky. This load forecast report contains Grayson RECC's long-range forecast of energy and peak demand.

Grayson RECC and its power supplier, East Kentucky Power Cooperative (EKPC), worked jointly to prepare the load forecast. Factors considered in preparing the forecast include the national and local economy, population and housing trends, service area industrial development, electric price, household income, weather, and appliance efficiency changes.

EKPC prepared a preliminary load forecast, which was reviewed by Grayson RECC for reasonability. Final projects reflect a rigorous analysis of historical data combined with the experience and judgment of the President/CEO and staff of Grayson RECC. Key assumptions are reported beginning on page 11.

Executive Summary *(continued)*

The load forecast is prepared every two years as part of the overall planning cycle at EKPC and Grayson RECC. Cooperation helps to ensure that the forecast meets both parties' needs. Grayson RECC uses the forecast in developing three-year work plans, long-range work plans, and financial forecasts. EKPC uses the forecast in areas of marketing analysis, transmission planning, generation planning, demand-side planning, and financial forecasting.

The complete load forecast for Grayson RECC is reported in Table 1-1 on pages 5 and 6. Residential and commercial sales, total purchases, winter and summer peak demands, and load factor are presented for the years 2010 through 2040.

Table 1-1
MWh Summary

Year	Residential Sales (MWh)	Seasonal Sales (MWh)	Small Comm. Sales (MWh)	Public Buildings (MWh)	Large Comm. Sales (MWh)	Public Street / Highway Lighting Sales (MWh)	Total Sales (MWh)	Office Use (MWh)	% Loss	Purchased Power (MWh)
2010	192,055	0	58,685	0	18,569	54	269,363	0	6.3	287,466
2011	177,675	0	53,818	0	19,513	50	251,055	0	6.7	269,142
2012	173,010	0	42,679	0	28,995	51	244,734	0	5.9	260,204
2013	182,764	0	45,314	0	29,469	51	257,599	0	4.4	269,549
2014	180,714	0	44,930	0	29,123	51	254,818	0	5.7	270,187
2015	171,911	0	44,957	0	31,012	51	247,931	0	5.8	263,079
2016	169,779	0	44,032	0	31,215	50	245,077	0	6.4	261,944
2017	150,817	0	41,449	0	31,053	44	223,363	0	11.0	250,858
2018	177,905	0	47,566	0	30,367	47	255,884	0	5.3	270,302
2019	170,095	0	46,500	0	29,821	44	246,459	0	5.1	259,793
2020	172,776	0	44,402	0	29,791	43	247,013	0	5.2	260,562
2021	171,555	0	45,645	0	30,446	43	247,690	0	5.2	261,276
2022	171,946	0	45,690	0	30,568	44	248,247	0	5.2	261,864
2023	171,657	0	45,736	0	30,690	44	248,127	0	5.2	261,737
2024	171,621	0	45,782	0	30,813	44	248,259	0	5.2	261,877
2025	170,921	0	45,828	0	30,936	44	247,728	0	5.2	261,316
2026	171,377	0	47,081	0	31,060	44	249,561	0	5.2	263,251
2027	172,425	0	47,128	0	31,184	44	250,780	0	5.2	264,536
2028	174,158	0	47,175	0	31,309	44	252,685	0	5.2	266,546
2029	174,858	0	47,222	0	31,434	44	253,558	0	5.2	267,466
2030	175,392	0	47,269	0	31,560	44	254,265	0	5.2	268,212
2031	176,096	0	47,316	0	31,686	44	255,142	0	5.2	269,137
2032	177,376	0	47,364	0	31,813	44	256,597	0	5.2	270,672
2033	178,293	0	47,411	0	31,940	44	257,688	0	5.2	271,823
2034	179,558	0	47,459	0	32,068	44	259,128	0	5.2	273,342
2035	180,475	0	48,724	0	32,196	44	261,439	0	5.2	275,780
2036	181,732	0	48,773	0	32,325	44	262,874	0	5.2	277,293
2037	183,151	0	48,822	0	32,454	44	264,471	0	5.2	278,978
2038	184,407	0	48,870	0	32,584	44	265,906	0	5.2	280,491
2039	185,660	0	48,919	0	40,979	44	275,602	0	5.2	290,720
2040	186,571	0	48,968	0	41,143	44	276,726	0	5.2	291,905

Table 1-1 *(continued)*

Peaks Summary

Winter		Summer					
Season	Non-Coincident Peak Demand (MW)	Year	Non-Coincident Peak Demand (MW)	Year	Purchased Power (MWh)	Load Factor (%)	Temperature at time of Winter Peak	Temperature at time of Summer Peak
2009 - 10	69.6	2010	58.3	2010	287,466	47.1%	8° F	96° F
2010 - 11	70.2	2011	56.5	2011	269,142	43.8%	11° F	95° F
2011 - 12	59.7	2012	57.1	2012	260,204	49.6%	18° F	100° F
2012 - 13	63.3	2013	52.6	2013	269,549	48.6%	11° F	94° F
2013 - 14	81.7	2014	51.2	2014	270,187	37.7%	-4° F	93° F
2014 - 15	86.0	2015	52.3	2015	263,079	34.9%	-16° F	93° F
2015 - 16	65.5	2016	53.9	2016	261,944	45.5%	0° F	95° F
2016 - 17	60.6	2017	52.3	2017	250,858	47.3%	8° F	92° F
2017 - 18	74.5	2018	54.7	2018	270,302	41.4%	-1° F	93° F
2018 - 19	72.6	2019	53.4	2019	259,793	40.8%	6° F	91° F
2019 - 20	58.5	2020	53.7	2020	260,562	50.7%	15° F	91° F
2020 - 21	76.1	2021	57.9	2021	261,276	39.2%		
2021 - 22	76.8	2022	58.4	2022	261,864	38.9%		
2022 - 23	76.1	2023	58.6	2023	261,737	39.3%		
2023 - 24	76.2	2024	58.7	2024	261,877	39.1%		
2024 - 25	76.1	2025	58.1	2025	261,316	39.2%		
2025 - 26	76.2	2026	57.9	2026	263,251	39.4%		
2026 - 27	76.4	2027	57.8	2027	264,536	39.5%		
2027 - 28	76.7	2028	57.9	2028	266,546	39.6%		
2028 - 29	76.8	2029	57.6	2029	267,466	39.7%		
2029 - 30	77.0	2030	57.3	2030	268,212	39.8%		
2030 - 31	77.3	2031	57.1	2031	269,137	39.8%		
2031 - 32	77.7	2032	57.3	2032	270,672	39.7%		
2032 - 33	77.9	2033	57.2	2033	271,823	39.8%		
2033 - 34	78.3	2034	57.3	2034	273,342	39.9%		
2034 - 35	78.7	2035	57.4	2035	275,780	40.0%		
2035 - 36	79.2	2036	57.9	2036	277,293	39.8%		
2036 - 37	79.6	2037	57.9	2037	278,978	40.0%		
2037 - 38	80.0	2038	58.1	2038	280,491	40.0%		
2038 - 39	81.4	2039	59.7	2039	290,720	40.8%		
2039 - 40	81.9	2040	60.1	2040	291,905	40.6%		

Executive Summary *(continued)*

Overall Results

- Total sales are projected to grow by 0.6 percent a year for the period 2020-2040, compared to a 0.7 percent growth projected in the 2018 load forecast for the period 2018-2038. Results shown in Table 1-2.

- Winter peak demands are projected to increase 0.4 percent over the 19 year forecast (2021-2040). Summer peak demands for the same period indicate growth of 0.2 percent.

- Load factor decreases from 39.2% to 40.6% through the forecast period.

Executive Summary *(continued)*

Overall Results – Table 1-2

	Time Period	Residential	Small Commercial	Large Commercial	Public Street / Highway Lighting	Total Sales
5-Year	2014-2019	-1.2%	0.7%	0.5%	-2.7%	-0.7%
	2020-2025	-0.2%	0.6%	0.8%	0.1%	0.1%
10-Year	2009-2019	-0.8%	-2.0%	4.7%	3.1%	-0.6%
	2020-2030	0.2%	0.6%	0.6%	0.1%	0.3%
15-Year	2004-2019	-0.2%	-0.7%	3.3%	-3.9%	0.0%
	2020-2035	0.3%	0.6%	0.5%	0.1%	0.4%
20-Year	1999-2019	0.6%	0.9%	2.4%	-2.7%	0.8%
	2020-2040	0.4%	0.5%	1.6%	0.1%	0.6%

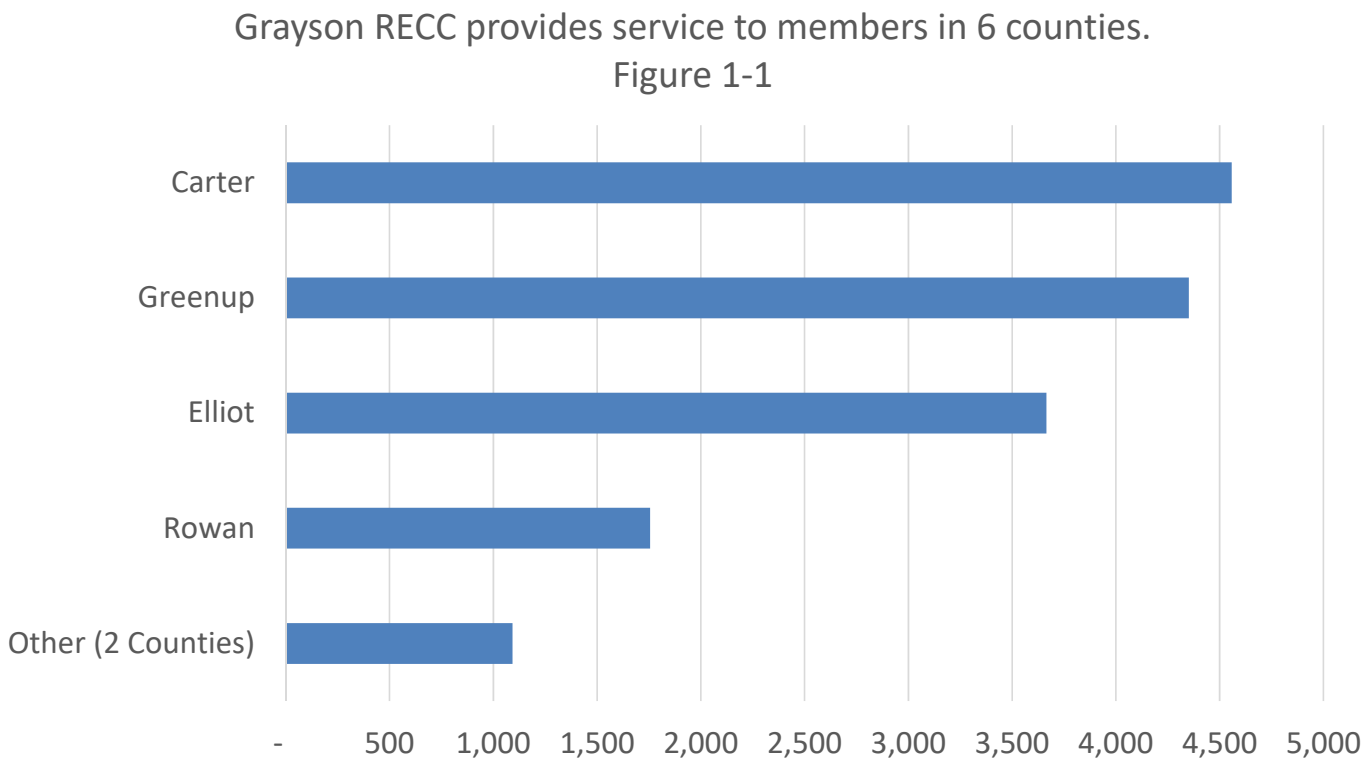
Narrative

The service area of Grayson RECC is located in the eastern Kentucky Counties of Carter, Elliott, Greenup, Lawrence, Lewis and Rowan.

The average household has 2.30 people; approximately 71 percent of all homes are headed by someone age 55 or greater.

Narrative *(continued)*

Counties Served



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Key Assumptions

Economic History and Forecast
Table 1-3

	Time Period	Population	Households	Total Employment	Total Real Personal Income
5 Year Growth Rates	2014-2019	-0.4%	-0.3%	0.0%	2.3%
	2020-2025	0.0%	0.3%	2.1%	2.1%
10 Year Growth Rates	2009-2019	-0.3%	-0.2%	-0.3%	2.4%
	2020-2030	0.1%	0.4%	1.4%	3.2%
15 Year Growth Rates	2004-2019	0.0%	0.1%	-0.1%	3.1%
	2020-2035	0.1%	0.4%	1.2%	3.4%
20 Year Growth Rates	1999-2019	0.0%	0.1%	0.5%	3.6%
	2020-2040	0.1%	0.4%	1.0%	3.5%

- *EKPC's source for economic forecasts is IHS Global Insight. Total Real Personal Income is reported in millions of 2005 dollars. Growth rates shown are Compound Annual Growth Rates.*

Key Assumptions *(continued)*
Appliance Saturations

- 46% of customers use electric as a primary fuel for heating, while 22% use it as a secondary fuel.
  - 11% use electric furnaces and 62% use electric heat pumps.
- 66% of customers use central air and 33% use electric/window units.
- 94% of customers use electric water heaters.
- These saturations are not expected to change significantly by 2040.

Key Assumptions *(continued)*

Saturation Rates – Percent of Homes with One or More Non-HVAC Appliances

- Electric Range 90%
- Freezer 65%
- Smart TV 73%

Appliance Efficiency Projections

- Energy Information Association (EIA) projects appliance efficiencies each year.
- Similar to last year's projections, heating and cooling equipment show slow but steady increase.
- Water heater efficiency is remaining relatively flat.

Key Assumptions *(continued)*

Weather

- Weather data is from the Huntington weather station.

- Normal weather, a 20-year average of historical temperatures, is assumed for the forecast years.

Methodology and Results

Introduction

This section briefly describes the methodology used to develop the load forecast and presents results in tabular form for residential and commercial classifications. Table 1-4 reports historical data for Grayson RECC as reported on RUS 7.

Typically, a preliminary forecast is prepared during the first quarter depending on when Grayson RECC experiences its winter peak. The first step is modeling the regional economy. Employment and real gross county product are among the areas analyzed. The regional model results are used in combination with the historical billing information, appliance saturation data, appliance efficiency data, and weather data to develop the long range forecast.

Table 1-4 Grayson RECC Comparative Annual Operating Data

Year	kWh Purchased And Generated	Change	kWh Sold	Change	kWh Loss	% Loss	Billing Peak Demand (MW)	Average Number Of Consumers	Miles Of Line	Consumers Per Mile	Cost Of Purchased Power	Cents / kWh
2010	287,466,017	4.4%	269,363,286	3.3%	18,102,731	6.3%	69.3	15,533	2,483	6.3	$18,758,497	6.5
2011	269,141,703	-6.4%	251,055,413	-6.8%	18,086,290	6.7%	54.2	15,470	2,486	6.2	$19,235,241	7.1
2012	260,203,922	-3.3%	244,734,260	-2.5%	15,469,662	5.9%	52.1	15,389	2,485	6.2	$18,938,586	7.3
2013	269,548,753	3.6%	257,598,620	5.3%	11,950,133	4.4%	56.5	15,391	2,478	6.2	$19,639,851	7.3
2014	270,186,693	0.2%	254,818,330	-1.1%	15,368,363	5.7%	50.9	15,338	2,470	6.2	$19,923,071	7.4
2015	263,079,445	-2.6%	247,930,543	-2.7%	15,148,902	5.8%	46.3	15,344	2,465	6.2	$18,455,285	7.0
2016	261,944,284	-0.4%	245,076,512	-1.2%	16,867,772	6.4%	54.9	15,366	2,473	6.2	$17,917,378	6.8
2017	250,857,783	-4.2%	223,362,793	-8.9%	27,494,990	11.0%	59.7	14,158	2,477	5.7	$17,151,603	6.8
2018	270,301,596	7.8%	255,884,096	14.6%	14,417,500	5.3%	55.3	15,380	2,477	6.2	$18,299,724	6.8
2019	259,792,804	-3.9%	246,459,441	-3.7%	13,333,363	5.1%	56.1	15,320	2,480	6.2	$17,601,579	6.8
Average						6.3%						6.6

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Methodology and Results *(continued)*

Introduction

The preliminary forecast was presented to Grayson RECC staff. Changes were made to the forecast as needed based on new information, such as new large loads or subdivisions. In some cases, other assumptions were based on insights from Grayson RECC staff.

Methodology and Results *(continued)*

Residential Forecast

Residential customers are analyzed by means of regression analysis with resulting coefficients used to prepare customer projections. Regressions for residential customers are typically a function of regional economic and demographic variables. Two variables that are very significant are the numbers of households by county and the percent of total households served by the member cooperative. Table 1-5 reports Grayson RECC's customer forecast.

The residential energy sales were analyzed by means of regression analysis, as a function of residential customers, base 60 heating degree days, base 65 cooling degree days and projected residential rates. Table 1-5 reports Grayson RECC's energy forecast.

Table 1-5
Residential Summary

	Customers			*Use Per Customer*			*Class Sales*		
	Annual Average	Annual Change	% Change	Monthly Average (kWh)	Change (kWh)	% Change	Total (MWh)	Annual Change (MWh)	% Change
2010	14,260	-126	-0.9	1,122	51	4.8	192,055	7,142	3.9
2011	14,225	-35	-0.2	1,041	-81	-7.3	177,675	-14,380	-7.5
2012	14,197	-28	-0.2	1,016	-25	-2.4	173,010	-4,665	-2.6
2013	14,180	-17	-0.1	1,074	59	5.8	182,764	9,754	5.6
2014	14,113	-67	-0.5	1,067	-7	-0.7	180,714	-2,051	-1.1
2015	14,117	4	0.0	1,015	-52	-4.9	171,911	-8,803	-4.9
2016	14,166	49	0.3	999	-16	-1.6	169,779	-2,132	-1.2
2017	13,061	-1,105	-7.8	962	-36	-3.7	150,817	-18,962	-11.2
2018	14,185	1,124	8.6	1,045	83	8.6	177,905	27,088	18.0
2019	14,121	-64	-0.5	1,004	-41	-4.0	170,095	-7,811	-4.4
2020	14,088	-33	-0.2	1,022	18	1.8	172,776	2,682	1.6
2021	14,078	-10	-0.1	1,016	-7	-0.6	171,555	-1,221	-0.7
2022	14,085	7	0.0	1,017	2	0.2	171,946	390	0.2
2023	14,094	9	0.1	1,015	-2	-0.2	171,657	-289	-0.2
2024	14,102	8	0.1	1,014	-1	-0.1	171,621	-36	0.0
2025	14,112	10	0.1	1,009	-5	-0.5	170,921	-700	-0.4
2026	14,123	11	0.1	1,011	2	0.2	171,377	457	0.3
2027	14,135	12	0.1	1,017	5	0.5	172,425	1,047	0.6
2028	14,146	11	0.1	1,026	9	0.9	174,158	1,733	1.0
2029	14,158	12	0.1	1,029	3	0.3	174,858	700	0.4
2030	14,169	11	0.1	1,032	2	0.2	175,392	534	0.3
2031	14,177	8	0.1	1,035	4	0.3	176,096	704	0.4
2032	14,184	7	0.0	1,042	7	0.7	177,376	1,281	0.7
2033	14,191	7	0.0	1,047	5	0.5	178,293	917	0.5
2034	14,197	6	0.0	1,054	7	0.7	179,558	1,265	0.7
2035	14,202	5	0.0	1,059	5	0.5	180,475	917	0.5
2036	14,207	5	0.0	1,066	7	0.7	181,732	1,257	0.7
2037	14,212	5	0.0	1,074	8	0.7	183,151	1,420	0.8
2038	14,216	4	0.0	1,081	7	0.7	184,407	1,255	0.7
2039	14,221	5	0.0	1,088	7	0.6	185,660	1,253	0.7
2040	14,225	4	0.0	1,093	5	0.5	186,571	910	0.5

* 2017, 2018 billing cycle change

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Methodology and Results *(continued)*

Small Commercial Forecast

Small commercial sales are projected using two equations: a customer equation and a small commercial sales equation. Both are determined through regression analysis and utilize inputs relating to the economy, electric price, and the residential customer forecast. Small commercial projections are reported in Table 1-6.

Table 1-6
Small Commercial Summary

	Customers			*Use Per Customer*			*Class Sales*		
	Annual Average	Annual Change	% Change	Annual Average (MWh)	Change (MWh)	% Change	Total (MWh)	Annual Change (MWh)	% Change
2010	1,271	-19	-1.5	46	2.1	4.7	58,685	1,796	3.2
2011	1,242	-29	-2.3	43	-2.8	-6.2	53,818	-4,867	-8.3
2012	1,189	-53	-4.3	36	-7.4	-17.2	42,679	-11,139	-20.7
2013	1,208	19	1.6	38	1.6	4.5	45,314	2,636	6.2
2014	1,222	14	1.2	37	-0.7	-2.0	44,930	-384	-0.8
2015	1,224	2	0.2	37	0.0	-0.1	44,957	26	0.1
2016	1,197	-27	-2.2	37	0.1	0.2	44,032	-924	-2.1
2017	1,094	-103	-8.6	38	1.1	3.0	41,449	-2,584	-5.9
2018	1,192	98	9.0	40	2.0	5.3	47,566	6,117	14.8
2019	1,196	4	0.3	39	-1.0	-2.6	46,500	-1,066	-2.2
2020	1,200	4	0.3	37	-1.9	-4.8	44,402	-2,098	-4.5
2021	1,201	1	0.1	38	1.0	2.7	45,645	1,242	2.8
2022	1,202	1	0.1	38	0.0	0.0	45,690	46	0.1
2023	1,204	2	0.2	38	0.0	-0.1	45,736	46	0.1
2024	1,205	1	0.1	38	0.0	0.0	45,782	46	0.1
2025	1,206	1	0.1	38	0.0	0.0	45,828	46	0.1
2026	1,207	1	0.1	39	1.0	2.6	47,081	1,253	2.7
2027	1,208	1	0.1	39	0.0	0.0	47,128	47	0.1
2028	1,210	2	0.2	39	0.0	-0.1	47,175	47	0.1
2029	1,211	1	0.1	39	0.0	0.0	47,222	47	0.1
2030	1,212	1	0.1	39	0.0	0.0	47,269	47	0.1
2031	1,213	1	0.1	39	0.0	0.0	47,316	47	0.1
2032	1,214	1	0.1	39	0.0	0.0	47,364	47	0.1
2033	1,216	2	0.2	39	0.0	-0.1	47,411	47	0.1
2034	1,217	1	0.1	39	0.0	0.0	47,459	47	0.1
2035	1,218	1	0.1	40	1.0	2.6	48,724	1,266	2.7
2036	1,219	1	0.1	40	0.0	0.0	48,773	49	0.1
2037	1,221	2	0.2	40	0.0	-0.1	48,822	49	0.1
2038	1,222	1	0.1	40	0.0	0.0	48,870	49	0.1
2039	1,223	1	0.1	40	0.0	0.0	48,919	49	0.1
2040	1,224	1	0.1	40	0.0	0.0	48,968	49	0.1

* 2017, 2018 billing cycle change

Methodology and Results *(continued)*

Large Commercial Forecast

Large commercial customers are those with loads 1 MW or greater. Grayson RECC currently has 2 customers in this class and is projected to increase to 3 by 2040. Large commercial results are reported in Table 1-7.

Table 1-7
Large Commercial Summary

	Customers			*Use Per Customer*			*Class Sales*		
	Annual Average	Annual Change	% Change	Annual Average (MWh)	Change (MWh)	% Change	Total (MWh)	Annual Change (MWh)	% Change
2010	1	0	0.0	18,569	-314	-1.7	18,569	-314	-1.7
2011	2	1	100.0	9,756	-8,813	-47.5	19,513	943	5.1
2012	2	0	0.0	14,497	4,741	48.6	28,995	9,482	48.6
2013	2	0	0.0	14,734	237	1.6	29,469	474	1.6
2014	2	0	0.0	14,562	-173	-1.2	29,123	-346	-1.2
2015	2	0	0.0	15,506	944	6.5	31,012	1,889	6.5
2016	2	0	0.0	15,607	101	0.7	31,215	203	0.7
2017	2	0	0.0	15,526	-81	-0.5	31,053	-162	-0.5
2018	2	0	0.0	15,183	-343	-2.2	30,367	-686	-2.2
2019	2	0	0.0	14,910	-273	-1.8	29,821	-546	-1.8
2020	2	0	0.0	14,895	-15	-0.1	29,791	-30	-0.1
2021	2	0	0.0	15,223	328	2.2	30,446	655	2.2
2022	2	0	0.0	15,284	61	0.4	30,568	122	0.4
2023	2	0	0.0	15,345	61	0.4	30,690	122	0.4
2024	2	0	0.0	15,406	61	0.4	30,813	123	0.4
2025	2	0	0.0	15,468	62	0.4	30,936	123	0.4
2026	2	0	0.0	15,530	62	0.4	31,060	124	0.4
2027	2	0	0.0	15,592	62	0.4	31,184	124	0.4
2028	2	0	0.0	15,654	62	0.4	31,309	125	0.4
2029	2	0	0.0	15,717	63	0.4	31,434	125	0.4
2030	2	0	0.0	15,780	63	0.4	31,560	126	0.4
2031	2	0	0.0	15,843	63	0.4	31,686	126	0.4
2032	2	0	0.0	15,906	63	0.4	31,813	127	0.4
2033	2	0	0.0	15,970	64	0.4	31,940	127	0.4
2034	2	0	0.0	16,034	64	0.4	32,068	128	0.4
2035	2	0	0.0	16,098	64	0.4	32,196	128	0.4
2036	2	0	0.0	16,162	64	0.4	32,325	129	0.4
2037	2	0	0.0	16,227	65	0.4	32,454	129	0.4
2038	2	0	0.0	16,292	65	0.4	32,584	130	0.4
2039	3	1	50.0	13,660	-2,633	-16.2	40,979	8,395	25.8
2040	3	0	0.0	13,714	55	0.4	41,143	164	0.4

Methodology and Results *(continued)*

Public Street & Highway Lighting Forecast

Grayson RECC serves street light accounts which are classified in the 'Public Street & Highway Lighting' category. This class is modeled separately. Results are reported in Table 1-8.

Table 1-8

Public Street & Highway Lighting Summary

	Customers			*Use Per Customer*			*Class Sales*		
	Annual Average	Annual Change	% Change	Monthly Average (kWh)	Change (kWh)	% Change	Total (MWh)	Annual Change (MWh)	% Change
2010	1	0	0.0	4,497	1,775	65.2	54	21	65.2
2011	1	0	0.0	4,191	-306	-6.8	50	-4	-6.8
2012	1	0	0.0	4,217	26	0.6	51	0	0.6
2013	1	0	0.0	4,244	27	0.6	51	0	0.6
2014	1	0	0.0	4,246	2	0.0	51	0	0.0
2015	1	0	0.0	4,252	6	0.1	51	0	0.1
2016	1	0	0.0	4,180	-72	-1.7	50	-1	-1.7
2017	1	0	0.0	3,682	-497	-11.9	44	-6	-11.9
2018	1	0	0.0	3,879	197	5.3	47	2	5.3
2019	1	0	0.0	3,697	-182	-4.7	44	-2	-4.7
2020	1	0	0.0	3,620	-77	-2.1	43	-1	-2.1
2021	1	0	0.0	3,624	4	0.1	43	0	0.1
2022	1	0	0.0	3,627	4	0.1	44	0	0.1
2023	1	0	0.0	3,631	4	0.1	44	0	0.1
2024	1	0	0.0	3,635	4	0.1	44	0	0.1
2025	1	0	0.0	3,638	4	0.1	44	0	0.1
2026	1	0	0.0	3,642	4	0.1	44	0	0.1
2027	1	0	0.0	3,645	4	0.1	44	0	0.1
2028	1	0	0.0	3,649	4	0.1	44	0	0.1
2029	1	0	0.0	3,653	4	0.1	44	0	0.1
2030	1	0	0.0	3,656	4	0.1	44	0	0.1
2031	1	0	0.0	3,660	4	0.1	44	0	0.1
2032	1	0	0.0	3,664	4	0.1	44	0	0.1
2033	1	0	0.0	3,667	4	0.1	44	0	0.1
2034	1	0	0.0	3,671	4	0.1	44	0	0.1
2035	1	0	0.0	3,675	4	0.1	44	0	0.1
2036	1	0	0.0	3,678	4	0.1	44	0	0.1
2037	1	0	0.0	3,682	4	0.1	44	0	0.1
2038	1	0	0.0	3,686	4	0.1	44	0	0.1
2039	1	0	0.0	3,689	4	0.1	44	0	0.1
2040	1	0	0.0	3,693	4	0.1	44	0	0.1

Methodology and Results *(continued)*

Peak Day Weather Scenarios

Extreme temperatures can dramatically influence Grayson RECC's peak demands. Table 1-9 reports the impact of extreme weather on system demands.

Table 1-9: Seasonal Peaks by Weather Scenario

Winter Peak Day Minimum Temperatures					
	Mild	Normal		**Extreme**	
Degrees	10	0	-8	-11	-16
Probability	*99%*	*50%*	*20%*	*10%*	*3%*
Occurs Once Every		**2 Years**	**5 Years**	**10 Years**	**30 Years**

Summer Peak Day Maximum Temperatures				
	Normal		**Extreme**	
Degrees	95	98	100	102
Probability	*50%*	*20%*	*10%*	*3%*
	2 Years	**5 Years**	**10 Years**	**30 Years**

Non-Coincident Winter Peak Demand - MW					
Season	Mild	Normal		Extreme	
2020 - 21	69	76	82	84	87
2021 - 22	70	77	82	84	88
2022 - 23	69	76	82	84	87
2023 - 24	69	76	82	84	87
2024 - 25	69	76	82	84	87
2025 - 26	69	76	82	84	87
2026 - 27	70	76	82	84	87
2027 - 28	70	77	82	84	88
2028 - 29	70	77	82	84	88
2029 - 30	70	77	83	85	88
2030 - 31	70	77	83	85	88
2031 - 32	71	78	83	85	89
2032 - 33	71	78	83	86	89
2033 - 34	71	78	84	86	89
2034 - 35	72	79	84	86	90
2035 - 36	72	79	85	87	90
2036 - 37	73	80	85	87	91
2037 - 38	73	80	86	88	91
2038 - 39	74	81	87	89	93
2039 - 40	75	82	87	90	93

Non-Coincident Summer Peak Demand - MW				
Year	Normal		Extreme	
2021	58	61	63	65
2022	58	61	63	65
2023	59	62	64	66
2024	59	62	64	66
2025	58	61	63	65
2026	58	61	63	65
2027	58	61	63	65
2028	58	61	63	65
2029	58	61	63	65
2030	57	60	62	64
2031	57	60	62	64
2032	57	60	62	64
2033	57	60	62	64
2034	57	60	62	64
2035	57	60	63	65
2036	58	61	63	65
2037	58	61	63	65
2038	58	61	63	65
2039	60	63	65	67
2040	60	63	65	67