Grayson Rural Electric Cooperative Corporation
2018 Load Forecast

Prepared by

East Kentucky Power Cooperative

Load Forecasting Department

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Touchstone Energy® Cooperatives

The power of human connections

Table of Contents

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 2007 through 2038.

Table 1-1
Grayson RECC
2018 Load Forecast
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)
2007	192,737	0	59,181	0	16,264	84	268,267	0	4.9	282,214
2008	194,355	0	59,492	0	16,288	81	270,216	0	5.4	285,707
2009	184,913	0	56,889	0	18,883	33	260,718	0	5.3	275,446
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	165,805	0	41,449	0	31,053	44	238,351	0	5.0	250,858
2018	171,693	0	44,990	0	31,097	51	247,831	0	5.7	262,680
2019	173,325	0	45,466	0	31,462	51	250,303	0	5.7	265,300
2020	174,278	0	45,849	0	31,685	51	251,863	0	5.7	266,954
2021	175,682	0	45,917	0	31,908	51	253,558	0	5.7	268,750
2022	175,758	0	46,145	0	32,131	51	254,085	0	5.7	269,309
2023	175,836	0	46,384	0	32,354	51	254,626	0	5.7	269,882
2024	176,854	0	46,763	0	32,577	51	256,246	0	5.7	271,599
2025	177,739	0	46,914	0	32,801	51	257,505	0	5.7	272,933
2026	178,627	0	47,232	0	33,024	52	258,935	0	5.7	274,449
2027	179,520	0	47,602	0	33,247	52	260,421	0	5.7	276,024
2028	179,655	0	48,139	0	33,470	52	261,316	0	5.7	276,973
2029	179,790	0	48,456	0	33,693	52	261,991	0	5.7	277,688
2030	180,149	0	48,814	0	33,916	52	262,932	0	5.7	278,685
2031	180,641	0	49,178	0	34,139	52	264,010	0	5.7	279,829
2032	181,183	0	49,700	0	34,363	52	265,298	0	5.7	281,193
2033	182,022	0	49,987	0	34,586	52	266,647	0	5.7	282,624
2034	183,118	0	50,391	0	34,809	52	268,371	0	5.7	284,450
2035	184,276	0	50,785	0	35,032	52	270,146	0	5.7	286,332
2036	186,209	0	51,315	0	35,255	52	272,831	0	5.7	289,178
2037	186,662	0	51,603	0	43,519	52	281,838	0	5.7	298,724
2038	187,735	0	52,012	0	43,824	52	283,624	0	5.7	300,617

Table 1-1 Continued
Grayson RECC
2018 Load Forecast
Peaks Summary

	Winter		Summer					Temperature at time of Winter Peak	Temperature at time of Summer Peak
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
2006 - 07	79.1	2007	58.3	2007	282,214	40.7%		7° F	98° F
2007 - 08	76.8	2008	54.5	2008	285,707	42.4%		4° F	90° F
2008 - 09	80.3	2009	52.6	2009	275,446	39.2%		0° F	87° F
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	56.3	2018	262,680	40.2%		-1° F	
2018 - 19	76.4	2019	56.5	2019	265,300	39.6%			
2019 - 20	76.5	2020	56.5	2020	266,954	39.7%			
2020 - 21	77.4	2021	56.6	2021	268,750	39.6%			
2021 - 22	77.4	2022	57.0	2022	269,309	39.7%			
2022 - 23	77.4	2023	57.1	2023	269,882	39.8%			
2023 - 24	77.7	2024	57.1	2024	271,599	39.8%			
2024 - 25	77.7	2025	57.4	2025	272,933	40.1%			
2025 - 26	77.8	2026	57.5	2026	274,449	40.2%			
2026 - 27	77.9	2027	57.7	2027	276,024	40.4%			
2027 - 28	78.2	2028	58.1	2028	276,973	40.3%			
2028 - 29	78.8	2029	58.5	2029	277,688	40.2%			
2029 - 30	79.0	2030	58.8	2030	278,685	40.3%			
2030 - 31	79.0	2031	59.0	2031	279,829	40.4%			
2031 - 32	79.1	2032	59.3	2032	281,193	40.6%			
2032 - 33	79.6	2033	59.7	2033	282,624	40.5%			
2033 - 34	79.6	2034	60.0	2034	284,450	40.8%			
2034 - 35	79.8	2035	60.3	2035	286,332	40.9%			
2035 - 36	80.1	2036	60.7	2036	289,178	41.2%			
2036 - 37	80.7	2037	61.2	2037	298,724	42.2%			
2037 - 38	81.9	2038	63.1	2038	300,617	41.9%			

Executive Summary *(continued)*
Overall Results

- Total sales are projected to grow by 0.7 percent a year for the period 2018-2038, compared to a 0.6 percent growth projected in the 2016 load forecast for the period 2016-2036. Results shown in Table 1-2.

- Winter and summer peak demands for 2018-2038 indicate an annual growth of 0.4 percent and 0.6 percent, respectively.

- Load factor increases from 40.2% to 41.9% for the forecast period.

Executive Summary *(continued)*

Overall Results - Energy Sales Growth
Table 1-2

|	Time Period	Residential	Small Commercial	Large Commercial	Public Street / Highway Lighting	Total Sales
5-Year	2012-2017	-0.8%	-0.6%	1.4%	-2.7%	-0.5%
	2018-2023	0.5%	0.6%	0.8%	0.0%	0.5%
10-Year	2007-2017	-1.5%	-3.5%	6.7%	-6.2%	-1.2%
	2018-2028	0.5%	0.7%	0.7%	0.1%	0.5%
15-Year	2002-2017	-0.4%	-1.0%	3.5%	-3.7%	-0.1%
	2018-2033	0.4%	0.7%	0.7%	0.1%	0.5%
20-Year	1997-2017	0.8%	0.8%	2.7%	-2.5%	1.0%
	2018-2038	0.4%	0.7%	1.7%	0.1%	0.7%

Narrative
Territory

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 2.37 people; approximately 73 percent of all homes are headed by someone age 55 or greater.

Narrative
Counties Served

Grayson RECC provides service to members in 6 counties.
Figure 1-1
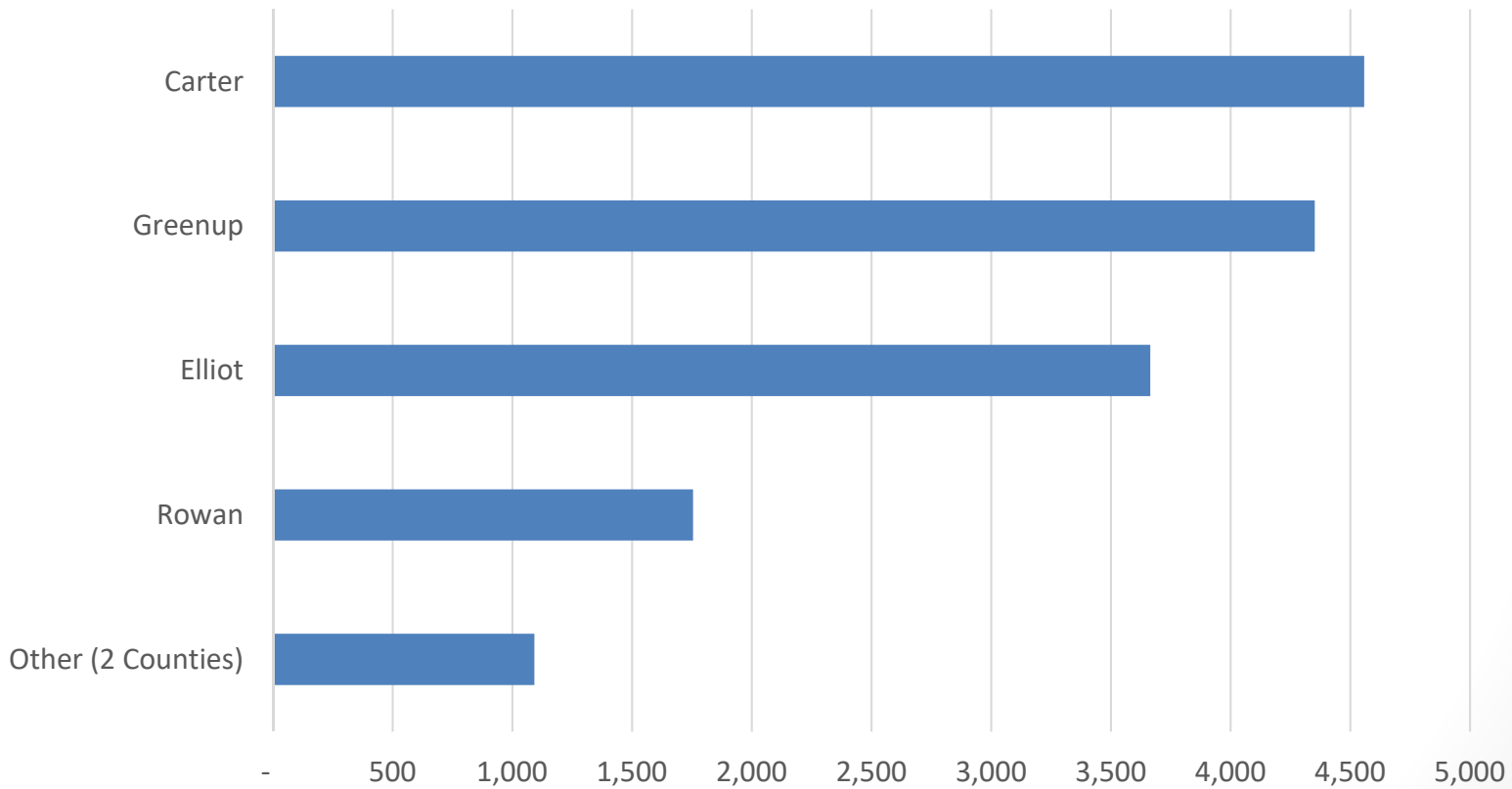
Key Assumptions
Power Cost and Rates

- EKPC's wholesale power cost forecast used in this load forecast comes from the 2015 Board Approved Rate Forecast which was revised to include the acquisition of Blue Grass Generating Station.

- Average residential rates will change from 13.561 cents/kWh in 2018 to 21.251 cents/kWh in 2038.

Key Assumptions *(continued)*
North Eastern Economic Region History and Forecast
Table 1-3

	Time Period	Population	Households	Total Employment	Total Real Personal Income
5 Year Growth Rates	2012-2017	-0.3%	-0.3%	0.0%	1.7%
	2018-2023	0.2%	0.6%	0.9%	4.2%
10 Year Growth Rates	2007-2017	-0.1%	0.1%	-0.8%	2.4%
	2018-2028	0.3%	0.6%	0.7%	3.9%
15 Year Growth Rates	2002-2017	0.1%	0.1%	-0.2%	3.3%
	2018-2033	0.3%	0.6%	0.7%	3.9%
20 Year Growth Rates	1997-2017	0.1%	0.2%	0.7%	3.6%
	2018-2038	0.2%	0.5%	0.7%	3.9%

EKPC's source for economic forecasts is IHS Global Insight. Total Real Personal Income is reported in millions of 2005 dollars. Growth rates are compound annual growth rates.

Key Assumptions *(continued)*
Appliance Saturations

- 53% of customers use electric as a primary fuel for heating, while 15% use it as a secondary fuel.
  - 18% use electric furnaces and 44% use electric heat pumps.
- 75% of customers use central air and 28% use electric/window units.
- 95% of customers use electric water heaters.
- These saturations are not expected to change significantly by 2038.

Key Assumptions *(continued)*

Saturation Rates
Non HVAC Appliances

- Electric Range   89%

- Freezer   59%

- PCs/Laptops/Tablets   65%

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.

14

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
2003	252,309,335		241,913,737		10,395,598	4.1%	61.9	14,827	2,377	6.2	$10,147,008	4.0
2004	263,552,482	4.5%	246,214,313	1.8%	17,338,169	6.6%	67.7	15,113	2,400	6.3	$11,697,993	4.4
2005	277,814,556	5.4%	261,432,545	6.2%	16,382,011	5.9%	64.3	15,302	2,416	6.3	$14,441,797	5.2
2006	265,607,453	-4.4%	250,083,354	-4.3%	15,524,099	5.8%	64.9	15,517	2,437	6.4	$14,834,604	5.6
2007	282,214,145	6.3%	268,266,972	7.3%	13,947,173	4.9%	61.2	15,631	2,453	6.4	$16,786,116	5.9
2008	285,706,749	1.2%	270,216,453	0.7%	15,490,296	5.4%	70.7	15,722	2,466	6.4	$18,338,038	6.4
2009	275,446,485	-3.6%	260,717,915	-3.5%	14,728,570	5.3%	61.9	15,678	2,474	6.3	$17,711,230	6.4
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%*	59.7	14,158	2,477	5.7	$17,151,603	6.8
Average						5.7%						6.7

* Billing cycle adjustment occurred in September 2017, excluded from average.

Methodology and Results *(continued)*

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
Grayson RECC
2018 Load Forecast
Residential Summary

	Customers			Use Per Customer			Class Sales		
				Monthly				Annual	
	Annual	Annual	%	Average	Change	%	Total	Change	%
	Average	Change	Change	(kWh)	(kWh)	Change	(MWh)	(MWh)	Change
2007	14,342	103	0.7	1,120	77	7.4	192,737	14,531	8.2
2008	14,422	80	0.6	1,123	3	0.3	194,355	1,617	0.8
2009	14,386	-36	-0.2	1,071	-52	-4.6	184,913	-9,441	-4.9
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	*14,222*	*56*	*0.4*	*972*	*-27*	*-2.7*	*165,805*	*-3,974*	*-2.3*
2018	14,246	24	0.2	1,004	33	3.4	171,693	5,888	3.6
2019	14,264	18	0.1	1,013	8	0.8	173,325	1,632	1.0
2020	14,284	20	0.1	1,017	4	0.4	174,278	953	0.5
2021	14,304	20	0.1	1,023	7	0.7	175,682	1,403	0.8
2022	14,327	23	0.2	1,022	-1	-0.1	175,758	77	0.0
2023	14,353	26	0.2	1,021	-1	-0.1	175,836	78	0.0
2024	14,382	29	0.2	1,025	4	0.4	176,854	1,018	0.6
2025	14,414	32	0.2	1,028	3	0.3	177,739	884	0.5
2026	14,448	34	0.2	1,030	3	0.3	178,627	889	0.5
2027	14,484	36	0.2	1,033	3	0.3	179,520	893	0.5
2028	14,519	35	0.2	1,031	-2	-0.2	179,655	135	0.1
2029	14,554	35	0.2	1,029	-2	-0.2	179,790	135	0.1
2030	14,586	32	0.2	1,029	0	0.0	180,149	360	0.2
2031	14,617	31	0.2	1,030	1	0.1	180,641	492	0.3
2032	14,641	24	0.2	1,031	1	0.1	181,183	542	0.3
2033	14,661	20	0.1	1,035	3	0.3	182,022	839	0.5
2034	14,679	18	0.1	1,040	5	0.5	183,118	1,096	0.6
2035	14,698	19	0.1	1,045	5	0.5	184,276	1,158	0.6
2036	14,717	19	0.1	1,054	10	0.9	186,209	1,933	1.0
2037	14,736	19	0.1	1,056	1	0.1	186,662	454	0.2
2038	14,752	16	0.1	1,061	5	0.5	187,735	1,073	0.6

Note: 2017 Adjusted for billing cycle change

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
Grayson RECC
2018 Load Forecast
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
2007	1,287	11	0.9	46	2.0	4.5	59,181	3,023	5.4
2008	1,298	11	0.9	46	-0.2	-0.3	59,492	311	0.5
2009	1,290	-8	-0.6	44	-1.7	-3.8	56,889	-2,604	-4.4
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	1,194	-3	-0.3	35	-2.1	-5.6	41,449	-2,584	-5.9
2018	1,197	3	0.3	38	2.9	8.3	44,990	3,541	8.5
2019	1,200	3	0.3	38	0.3	0.8	45,466	476	1.1
2020	1,202	2	0.2	38	0.3	0.7	45,849	384	0.8
2021	1,205	3	0.2	38	0.0	-0.1	45,917	68	0.1
2022	1,208	3	0.2	38	0.1	0.2	46,145	228	0.5
2023	1,211	3	0.2	38	0.1	0.3	46,384	239	0.5
2024	1,215	4	0.3	38	0.2	0.5	46,763	379	0.8
2025	1,219	4	0.3	38	0.0	0.0	46,914	151	0.3
2026	1,223	4	0.3	39	0.1	0.3	47,232	318	0.7
2027	1,227	4	0.3	39	0.2	0.5	47,602	369	0.8
2028	1,232	5	0.4	39	0.3	0.7	48,139	537	1.1
2029	1,237	5	0.4	39	0.1	0.3	48,456	317	0.7
2030	1,241	4	0.3	39	0.2	0.4	48,814	358	0.7
2031	1,244	3	0.2	40	0.2	0.5	49,178	364	0.7
2032	1,246	2	0.2	40	0.4	0.9	49,700	522	1.1
2033	1,248	2	0.2	40	0.2	0.4	49,987	288	0.6
2034	1,250	2	0.2	40	0.3	0.6	50,391	404	0.8
2035	1,251	1	0.1	41	0.3	0.7	50,785	394	0.8
2036	1,253	2	0.2	41	0.4	0.9	51,315	529	1.0
2037	1,254	1	0.1	41	0.2	0.5	51,603	289	0.6
2038	1,255	1	0.1	41	0.3	0.7	52,012	409	0.8

Note: 2017 Adjusted for 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 2038. Large commercial results are reported in Table 1-7.

Table 1-7
Grayson RECC
2018 Load Forecast
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
2007	1	0	0.0	16,264	629	4.0	16,264	629	4.0
2008	1	0	0.0	16,288	24	0.1	16,288	24	0.1
2009	1	0	0.0	18,883	2,595	15.9	18,883	2,595	15.9
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	15,548	22	0.1	31,097	44	0.1
2019	2	0	0.0	15,731	182	1.2	31,462	365	1.2
2020	2	0	0.0	15,842	112	0.7	31,685	223	0.7
2021	2	0	0.0	15,954	112	0.7	31,908	223	0.7
2022	2	0	0.0	16,066	112	0.7	32,131	223	0.7
2023	2	0	0.0	16,177	112	0.7	32,354	223	0.7
2024	2	0	0.0	16,289	112	0.7	32,577	223	0.7
2025	2	0	0.0	16,400	112	0.7	32,801	223	0.7
2026	2	0	0.0	16,512	112	0.7	33,024	223	0.7
2027	2	0	0.0	16,623	112	0.7	33,247	223	0.7
2028	2	0	0.0	16,735	112	0.7	33,470	223	0.7
2029	2	0	0.0	16,847	112	0.7	33,693	223	0.7
2030	2	0	0.0	16,958	112	0.7	33,916	223	0.7
2031	2	0	0.0	17,070	112	0.7	34,139	223	0.7
2032	2	0	0.0	17,181	112	0.7	34,363	223	0.7
2033	2	0	0.0	17,293	112	0.6	34,586	223	0.6
2034	2	0	0.0	17,404	112	0.6	34,809	223	0.6
2035	2	0	0.0	17,516	112	0.6	35,032	223	0.6
2036	2	0	0.0	17,628	112	0.6	35,255	223	0.6
2037	3	1	50.0	14,506	-3,121	-17.7	43,519	8,264	23.4
2038	3	0	0.0	14,608	102	0.7	43,824	305	0.7

Note: 2017 Adjusted for billing cycle change

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
Grayson RECC
2018 Load Forecast
Public Street & Highway Lighting

	Customers			Use Per Customer			Class Sales		
	Annual Average	Annual Change	% Change	Monthly Average (kWh)	Change (kWh)	% Change	Total (MWh)	Annual Change (MWh)	% Change
2007	1	0	0.0	6,972	72	1.0	84	1	1.0
2008	1	0	0.0	6,741	-231	-3.3	81	-3	-3.3
2009	1	0	0.0	2,722	-4,019	-59.6	33	-48	-59.6
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	4,262	580	15.8	51	7	15.8
2019	1	0	0.0	4,245	-17	-0.4	51	0	-0.4
2020	1	0	0.0	4,250	5	0.1	51	0	0.1
2021	1	0	0.0	4,256	6	0.1	51	0	0.1
2022	1	0	0.0	4,263	7	0.2	51	0	0.2
2023	1	0	0.0	4,271	8	0.2	51	0	0.2
2024	1	0	0.0	4,279	9	0.2	51	0	0.2
2025	1	0	0.0	4,289	9	0.2	51	0	0.2
2026	1	0	0.0	4,299	10	0.2	52	0	0.2
2027	1	0	0.0	4,309	11	0.2	52	0	0.2
2028	1	0	0.0	4,320	10	0.2	52	0	0.2
2029	1	0	0.0	4,331	11	0.2	52	0	0.2
2030	1	0	0.0	4,340	9	0.2	52	0	0.2
2031	1	0	0.0	4,346	6	0.1	52	0	0.1
2032	1	0	0.0	4,351	5	0.1	52	0	0.1
2033	1	0	0.0	4,355	4	0.1	52	0	0.1
2034	1	0	0.0	4,357	3	0.1	52	0	0.1
2035	1	0	0.0	4,360	2	0.0	52	0	0.0
2036	1	0	0.0	4,362	2	0.1	52	0	0.1
2037	1	0	0.0	4,364	2	0.0	52	0	0.0
2038	1	0	0.0	4,366	2	0.0	52	0	0.0

Note: 2017 Adjusted for billing cycle change

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**

Non-Coincident Winter Peak Demand - MW

Season	Mild	Normal		Extreme	
2018 - 19	69	76	82	84	88
2019 - 20	69	76	82	84	88
2020 - 21	70	77	83	85	89
2021 - 22	70	77	83	85	89
2022 - 23	70	77	83	85	89
2023 - 24	71	78	83	86	89
2024 - 25	71	78	83	86	89
2025 - 26	71	78	84	86	89
2026 - 27	71	78	84	86	89
2027 - 28	71	78	84	86	90
2028 - 29	72	79	84	87	90
2029 - 30	72	79	85	87	90
2030 - 31	72	79	85	87	90
2031 - 32	72	79	85	87	91
2032 - 33	72	80	85	88	91
2033 - 34	72	80	85	87	91
2034 - 35	73	80	86	88	91
2035 - 36	73	80	86	88	92
2036 - 37	74	81	87	89	92
2037 - 38	75	82	88	90	94

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 Summer Peak Demand - MW

Year	Normal		Extreme	
2018	56	59	61	64
2019	56	60	62	64
2020	57	60	62	64
2021	57	60	62	64
2022	57	60	62	64
2023	57	60	62	64
2024	57	60	62	64
2025	57	60	63	65
2026	57	61	63	65
2027	58	61	63	65
2028	58	61	63	65
2029	59	62	64	66
2030	59	62	64	66
2031	59	62	64	66
2032	59	62	65	67
2033	60	63	65	67
2034	60	63	65	67
2035	60	63	66	68
2036	61	64	66	68
2037	61	64	67	69
2038	63	66	68	71