



Denton Municipal Electric

FY 2017-18 Budget Presentation



Denton Municipal Electric

- Rates
- Reliability
- Renewables



Denton Municipal Electric Goals

- Maintain competitive rates with the capability to provide reliable electric service for all present and future customers
- Ensure safety for DME employees and general public
- Ensure DME is compliant with state and federal regulations
- Manage DME infrastructure needs for future growth and development plans
- Maximize use of Renewable Energy



Denton Municipal Electric Goals for FY 2017-2018

- Execute Wind & Solar Purchased Power Agreement (PPA) to reach 70% Renewable in 2019 (currently 42-48%)
- Stay on track for trial operations of Denton Energy Center by Fall 2018
- Complete upgrade of Supervisory Control and Data Acquisition (SCADA) Hardware and Software
- Complete construction and energize new North Lakes and Locust Substations
- File a wholesale transmission rate change request in the Fall of 2017 with the Public Utility Commission that should result in a net change in wholesale transmission costs of approximately \$6.4 million



Denton Municipal Electric Accomplishments

- Paid off approximately \$33 Million of TMPA debt over the last two years with no overall rate increase
- FY 2016 net savings budgeted at \$5.24 million
 - Initial estimate of 12-month savings compared to an extended NRG contract: \$10 million
 - Savings have been earmarked to pay \$12 million to fund capital projects or pay down TMPA debt
- Energy Cost Adjustment (ECA) Rate Reduction of \$0.003 (7%) effective October 1, 2016, which is estimated to reduce ratepayer expense by \$3.8 million through the end of FY16-17



Denton Municipal Electric Accomplishments

- Complete the 69 kV conversion to 138 kV from Denton North Interchange to North Lakes Substation by July 2017
- Replacement of 8 miles of underground direct buried cable change out in Southridge Subdivision (DME's largest underground subdivision)
- For fifth consecutive year, DME exceeded national average in system reliability
- Passed a NERC Audit which included review of more than 250 rules
- Continued installation of street lights with decorative poles in Historic District Neighborhood – Sixth Phase approved
- Completed Woodrow Substation conversion from 69 kV to 138 kV (first ever substation conversion in Denton)
- Completed construction of ARCO, Kings Row and McKinney substations



Denton Municipal Electric Accomplishments

- Installed 7.7 miles of overhead (OH) and 21 miles of underground (UG) distribution lines
- Completed analysis, preparation and submittal of DME's seventh annual Transmission Load Flow Report (FERC 715 Report)
- Placed outage map on City of Denton website (December 2016)
- Added 308 electric meters
- Completed Technology Services Disaster Recovery installation for mission critical applications
- Received approval of interim wholesale transmission rate increase from the Public Utility Commission that resulted in a net change in wholesale transmission costs of approximately \$7.2 million



Denton Municipal Electric Performance Measures

Metric	Definition	Why is this important
ASAI- The Average Service Availability Index (ASAI),	The ratio of total number of customer hours that service was available	Increasing the number of hours the electric system is available to customers/benchmark with other utilities both regionally and nationally
SAIDI-The System Average Interruption Duration Index (SAIDI)	The average outage duration for each customer served	Reducing customer outage durations/benchmark with other utilities both regionally and nationally
SAIFI- The System Average Interruption Frequency Index (SAIFI) AIFI	The average number of interruptions that a customer would experience	Reducing the number of outages on the system/benchmark with other utilities
Number of outages due to vegetation	Electrical outages due to vegetation touching or knocking down electrical lines	Properly trimmed vegetation reduces these types of outages
Percentage of UG cables installed on Distribution System.	Percentage of total electrical line that is under ground as compared to overhead line installed	Underground lines are less subject to damage and weather and less visible to customers/citizens
System Capacity	Illustrates the highest point of electrical demand during the year	The total amount of electricity required by our customers and the amount DME must have available to serve the load
System Load Factor	Shows steadiness of electric load over time	Shows changes in customers usage patterns
Renewable Energy	Percentage of renewable energy	Community has requested higher percentage of renewable energy
Energy Management Organization (EMO) Savings	Show EMO performance	More savings reflects lower rates to customers



Denton Municipal Electric Cost Containment Strategies

- Filling five existing vacancies in Engineering with Engineering Consultants
- Eliminated two management positions
- Increased budget for Salary Savings to \$308,000 to recognize position vacancies and turnover potential
- Reduced Debt Service \$1.2 million in FY 2017-18 as a result of lower interest rates
- Internally developed four software packages for improved EMO operations
- Implementation of Workforce Management System to facilitate move to paperless environment



Denton Municipal Electric Process Improvements

- Implemented MyDME.com Application in February for ratepayers to view their electric usage details the next day – Accessed 13,993 times as of April 2017
- Began utilizing Electric system data to coordinate and implement distribution switching schemes to automate power restoration activities, which will shorten the duration of outages
- Began process to implement Asset Management and Radio Frequency Identification Device (RFID) or Tag
- Standardized PC Models for entire department; simplified support, troubleshooting and procurement

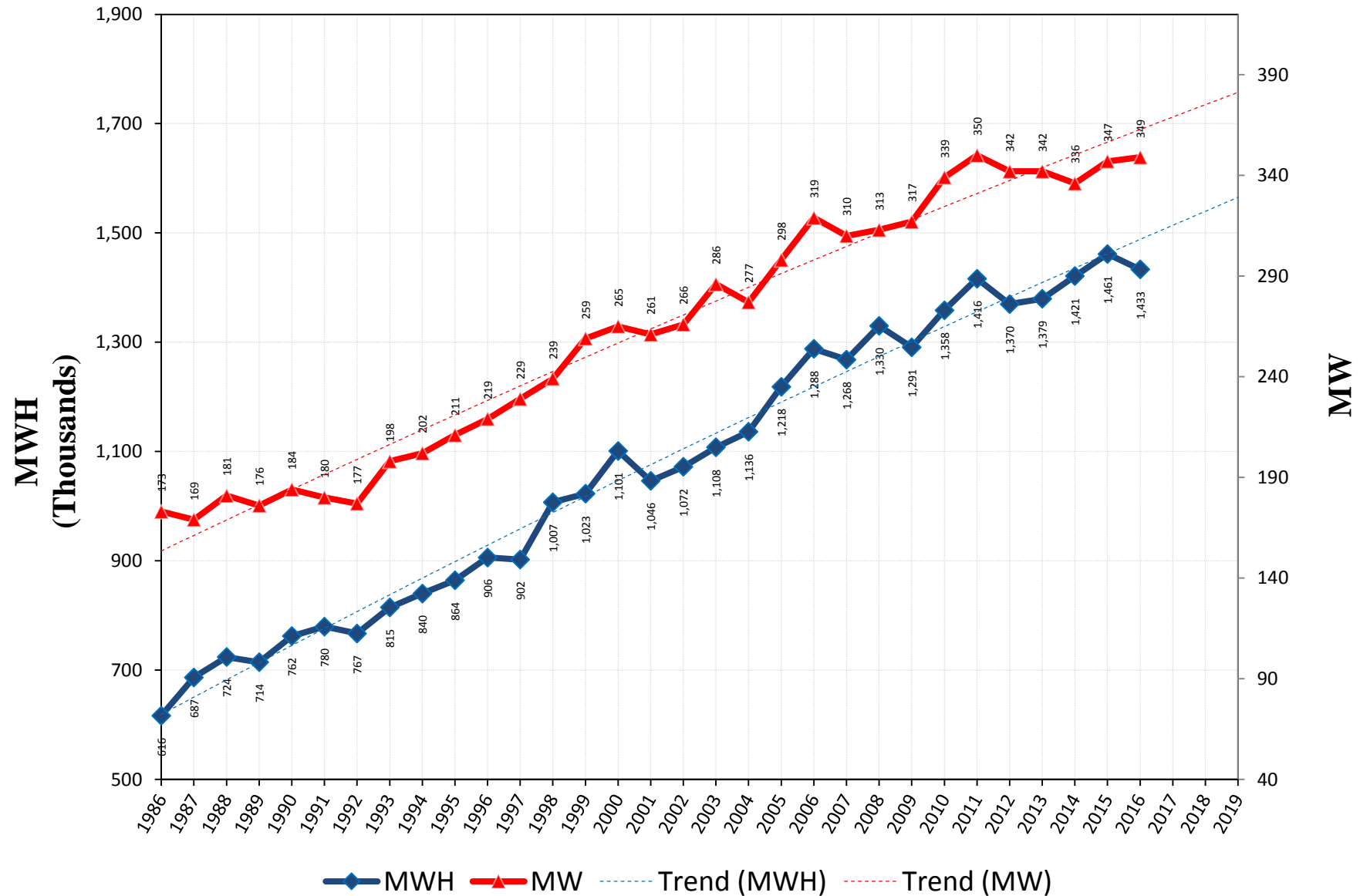


Denton Municipal Electric Process Improvements

- Conducted Kaizen event which resulted in revamping the meter-to-billing process
- Utilizing temporary interns and programmers to supplement staff instead of hiring new permanent employees
- Converting an EMO operator position to an Energy Trading and Risk Management (ETRM) analyst position, which will save an FTE, and continuing to improve the database for increased access by entire EMO team
- Replacing current ETRM system with a more robust system that can be utilized with portfolio migration to renewable energy sources



DME Annual Peak Demands and Energy with Trends, 1986 to 2016



Denton Municipal Electric Growth Factors

	2010	2016	Growth
Customers	45,174	51,085	13.1%
Annual Rate Revenue (\$000)	110,757	144,487	30.5%
Active Substations	14	17	21.4%
Feeders	86	112	30.2%
Outage Events	714	590	-17.4%
Transmission & Distribution Capital Projects (\$000)	\$30,739	\$112,118	274.1%



Denton Municipal Electric CIP Definitions

In addition to DME's governance structure, the utility is regulated by these state and federal agencies. FERC, NERC, and TRE ensure compliance of utilities (such as DME) that own and operate transmission systems. ERCOT and the PUCT are responsible for the integrity of the state-wide power grid.

- FERC – Federal Energy Regulatory Commission – Requires DME to conduct the 715 study, which helps direct DME's efforts related to the reliability of its transmission system.
- NERC – North American Electric Reliability Corporation – Responsible for the enforcement of reliability standards set by FERC.
- TRE – Texas Reliability Entity – Has delegated authority from NERC to monitor compliance with reliability standards.
- PUCT – Public Utility Commission of Texas – Has the authority to review and approve rate of return for transmission projects.
- ERCOT – Electric Reliability Council of Texas – Manages the flow of electric power to 24 million Texas customers representing approximately 90% of the state's electric load and about 75% of the Texas land area.



DME Capital Improvement Plan Budget by Fiscal Year (In Millions)

	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	Total
Distribution NEW	\$15.5	\$15.9	\$15.9	\$8.0	\$10.5	\$65.9
Distribution Replacement	\$27.1	\$30.5	\$21.5	\$17.9	\$15.4	\$112.5
Transmission NEW	\$30.4	\$34.0	\$13.3	\$17.6	\$28.3	\$123.6
Transmission Replacement	\$27.7	\$13.7	\$4.9	\$10.2	\$10.3	\$66.8
Distribution Total	\$42.7	\$46.5	\$37.4	\$25.9	\$25.9	\$178.4
Transmission Total	\$58.1	\$47.7	\$18.2	\$27.8	\$38.6	\$190.4
Grand Total	\$100.8	\$94.2	\$55.6	\$53.7	\$64.5	\$368.8

DME CIP Budget & Actual Expenditures by Fiscal Year (In Millions)

Fiscal Year	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Total
FY 2011-12	\$49.9	\$33.1	\$27.3	\$33.2	\$28.5							\$171.8
FY 2012-13		84.6	84.9	59.4	42.1	31.2						302.2
FY 2013-14			113.5	88.9	77.7	47.0	38.8					365.9
FY 2014-15				105.4	92.3	86.3	57.0	45.0				385.9
FY 2015-16					105.3	89.3	85.8	68.0	54.4			402.8
FY 2016-17*						204.1	215.1	81.0	84.7	62.8		647.7
FY 2017-18							100.8	94.2	55.6	53.7	64.5	368.8

Actual Spent Per Year	\$19.4	\$31.8	\$47.5	\$64.1	\$65.2							\$228.0
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*Includes \$92 Million and \$128 Million for DEC in FY 2016-17 and FY 2017-18, respectively

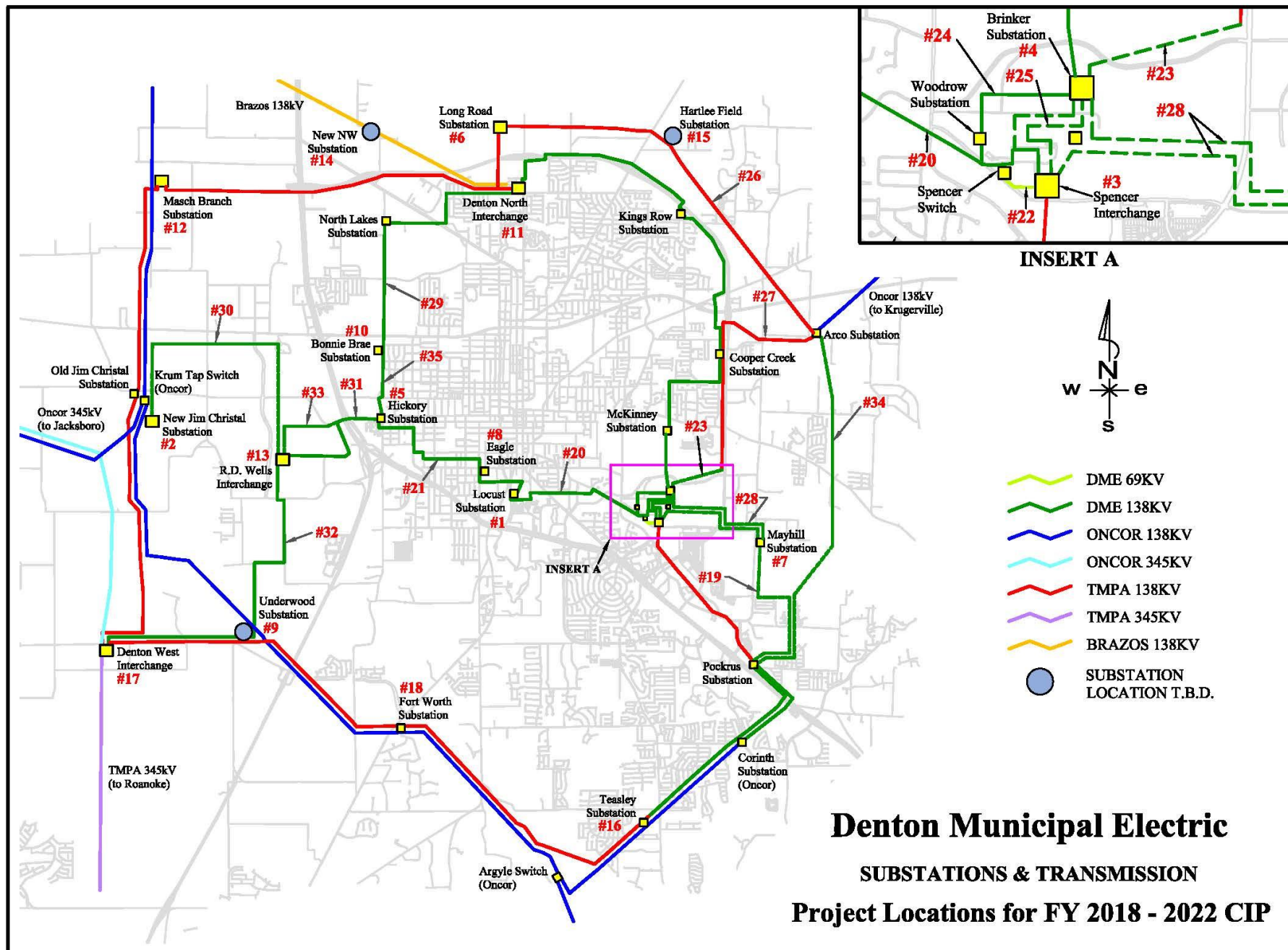
DME CIP Budget & Actual Expenditures by Fiscal Year Without Denton Energy Center (In Millions)

Fiscal Year	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Total
FY 2011-12	\$49.9	\$33.1	\$27.3	\$33.2	\$28.5							\$171.8
FY 2012-13		84.6	84.9	59.4	42.1	31.2						302.2
FY 2013-14			113.5	88.9	77.7	47.0	38.8					365.9
FY 2014-15				105.4	92.3	86.3	57.0	45.0				385.9
FY 2015-16					105.3	89.3	85.8	68.0	54.4			402.8
FY 2016-17						112.1	87.1	81.0	84.7	62.8		427.7
FY 2017-18							100.8	94.2	55.6	53.7	64.5	368.8

Actual Spent Per Year	\$19.4	\$31.8	\$47.5	\$64.1	\$65.2							\$228.0
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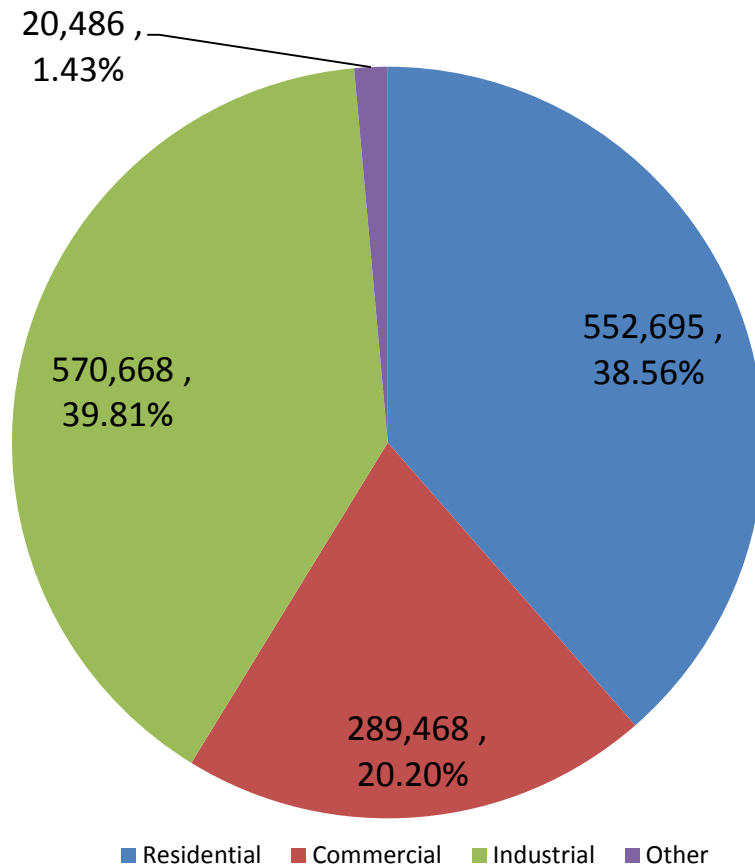
2018-2022 Capital Improvements Plan
Cash Requirements - Electric

Group	Assignment Categories	2018	2019	2020	2021	2022	Total
001	AUTOMATED METER READING	\$ 1,863,414	\$ 1,933,948	\$ 2,007,305	\$ 2,083,448	\$ 2,162,637	\$ 10,050,752
003	BUILDING CONSTRUCTION	300,000	4,080,000	4,125,000	-	-	8,505,000
007	COMMUNICATIONS EQUIPMENT	421,000	335,000	335,000	335,000	335,000	1,761,000
008	CONTINGENCY	600,000	600,000	600,000	600,000	600,000	3,000,000
012	DISTRIBUTION SYSTEM UPGRADE	500,000	-	-	-	-	500,000
013	DISTRIBUTION SUBSTATIONS	11,252,000	11,422,000	3,972,000	2,439,000	2,262,000	31,347,000
014	DISTRIBUTION TRANSFORMERS	3,191,400	3,345,050	3,505,962	3,675,140	3,852,595	17,570,147
019	FEEDER EXTENSIONS & IMPROVEMENTS	15,643,465	14,440,395	12,341,000	7,565,000	7,089,640	57,079,500
025	NEW RESIDENTIAL&COMMERCIAL	6,368,552	6,689,000	7,022,000	7,355,000	7,705,000	35,139,552
027	OFFICE FURN/COMPUTER/EQUIPMENT	50,000	-	-	-	-	50,000
028	OVER TO UNDER CONVERSIONS	350,000	368,000	386,000	405,000	425,000	1,934,000
032	POWER FACTOR IMPROVEMENT	213,395	216,000	227,000	237,000	248,000	1,141,395
040	STREET LIGHTING	408,981	431,000	453,000	476,063	500,213	2,269,257
043	TOOLS & EQUIPMENT	120,000	91,000	92,000	93,000	94,000	490,000
050	VEHICLES	1,388,435	2,527,530	2,315,746	643,000	669,225	7,543,936
	DISTRIBUTION TOTAL	\$ 42,670,642	\$ 46,478,923	\$ 37,382,013	\$ 25,906,651	\$ 25,943,310	\$ 178,381,539
045	TRANSMISSION LINES	27,980,000	19,480,000	10,540,000	17,600,000	23,400,000	99,000,000
046	TRANSMISSION SUBSTATION	30,135,000	28,195,000	7,690,000	10,230,000	15,150,000	91,400,000
	TRANSMISSION TOTAL	\$ 58,115,000	\$ 47,675,000	\$ 18,230,000	\$ 27,830,000	\$ 38,550,000	\$ 190,400,000
Grand Totals		\$ 100,785,642	\$ 94,153,923	\$ 55,612,013	\$ 53,736,651	\$ 64,493,310	\$ 368,781,539
	Aid in Construction	819,000	860,000	903,000	948,000	995,000	4,525,000
	C.O.	97,858,207	90,075,393	51,701,267	51,452,651	62,135,085	371,712,603
	Revenue	2,108,435	3,218,530	3,007,746	1,336,000	1,363,225	11,033,936
	Utility Bonds	-	-	-	-	-	-
Grand Totals		\$ 100,785,642	\$ 94,153,923	\$ 55,612,013	\$ 53,736,651	\$ 64,493,310	\$ 368,781,539
Bond Sale		\$ 54,000,000	\$ 45,000,000	\$ 33,000,000	\$ 35,000,000	\$ 41,000,000	\$ 208,000,000

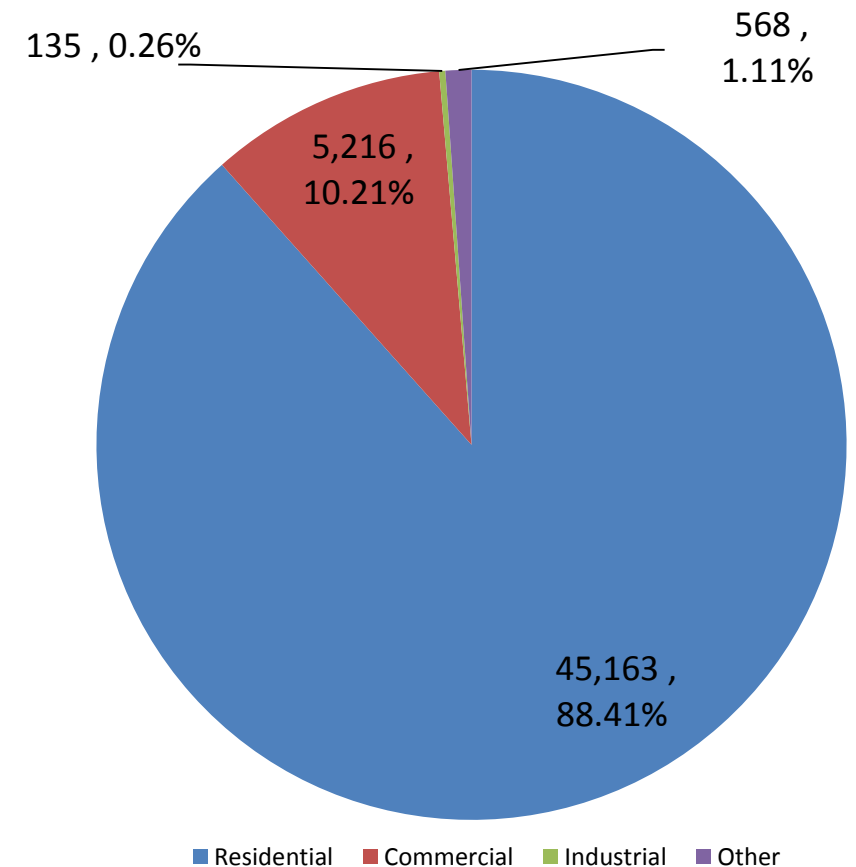


Denton Municipal Electric MWh vs. Meters

FY 15-16 Electric MWh by Category



FY 15-16 Electric Meters by Category



Denton Municipal Electric Revenue / Expenditures

- **1% Rate Decrease**
 - Zero base rate increase
 - Transmission Cost Recovery Factor (TCRF) increasing slightly (0.00067) to cover increase in transmission expenses
 - Energy Cost Adjustment (ECA) decreasing 1%
- Additional ECA reduction possible in the fall of 2018 when Denton Energy Center (DEC) comes on-line
- DME Ten Year Management Study required by City Charter \$500,000



Denton Municipal Electric Revenues Definitions

- “Base rate” refers to the portion of the electric rate that pays for the delivery of power, such as constructing and maintaining the electric system.
- “TCRF” stands for transmission cost of recovery factor, and refers to the portion of the electric rate that pays other entities across Texas for constructing transmission infrastructure.
- “ECA” stands for energy cost adjustment, and refers to the portion of the electric rate that pays for power purchases.
- “TMPA coverage return” refers to the working capital that is provided to and returned from TMPA each year by the four member cities.
- “TCOS” stands for transmission cost of service, and refers to the payment DME receives from other entities across Texas for constructing transmission infrastructure.



Denton Municipal Electric Budget Highlights (in Millions)

Revenues	FY 2015-16 Actuals	FY 2016-17 Budget	FY 2016-17 Estimate	FY 2017-18 Proposed
Base Rate Revenues	\$82.7	\$91.5	\$92.2	\$91.0
TCRF Revenues	4.7	4.6	4.2	5.6
ECA Revenues	56.8	54.8	54.8	51.1
Total Rate Revenues	\$144.2	\$150.9	\$151.2	\$147.7
TMPA Coverage Return	7.4	8.6	8.5	0.8
TCOS Revenue	12.0	12.7	16.8	20.2
Other Revenues	11.4	4.8	6.0	5.0
Total	\$175.0	\$177.0	\$182.5	\$173.7



Denton Municipal Electric Expenditures Definitions

“Purchased Power & Fuel” refers to DME’s expenses related to purchasing wholesale electric power and purchasing fuel for the purpose of generating wholesale power. This cost is projected to drop as the Denton Energy Center reallocates costs from this category to personal services and debt service.

“Transmission of Power” refers to the cost of transmitting electricity through transmission lines that are not owned by DME.

“Personal Services” refers to the cost of staffing DME. This cost is projected to rise as some functions (including generating power) are accomplished by DME staff.



Denton Municipal Electric Expenditures Definitions

“Operations & Maintenance” reflects the cost of keeping Denton’s electric system operational. Examples include vegetation management and replacing aging or damaged utility poles.

“Return on Investment & Franchise Fee” are paid to the City of Denton based on a percentage of DME’s revenue.

“Debt Service” refers to the payments DME makes against its debts.

“Interfund Transfers” are payments made by DME to other City of Denton departments for the services those departments provide to the utility.

“Fixed Assets” refer to expenses for tools and equipment above \$5,000 that are used to maintain the electric system.



Denton Municipal Electric Budget Highlights (in Millions)

Expenses	FY 2015-16 Actuals	FY 2016-17 Budget	FY 2016-17 Estimate	FY 2017-18 Proposed
Purchased Power & Fuel*	\$73.9	\$80.9	\$92.9	\$79.0
Transmission of Power	4.1	4.5	4.8	5.6
Personnel Services	15.0	18.5	19.5	19.8
Operations & Maintenance	7.4	14.3	14.0	16.2
ROI & Franchise Fee	12.1	13.4	13.8	14.0
Debt Service	29.1	29.6	29.1	34.4
Interfund Transfers	11.6	11.6	11.7	11.4
Fixed Assets	0	0.7	0.7	0.7
Total	\$153.2	\$173.5	\$186.5	\$181.1

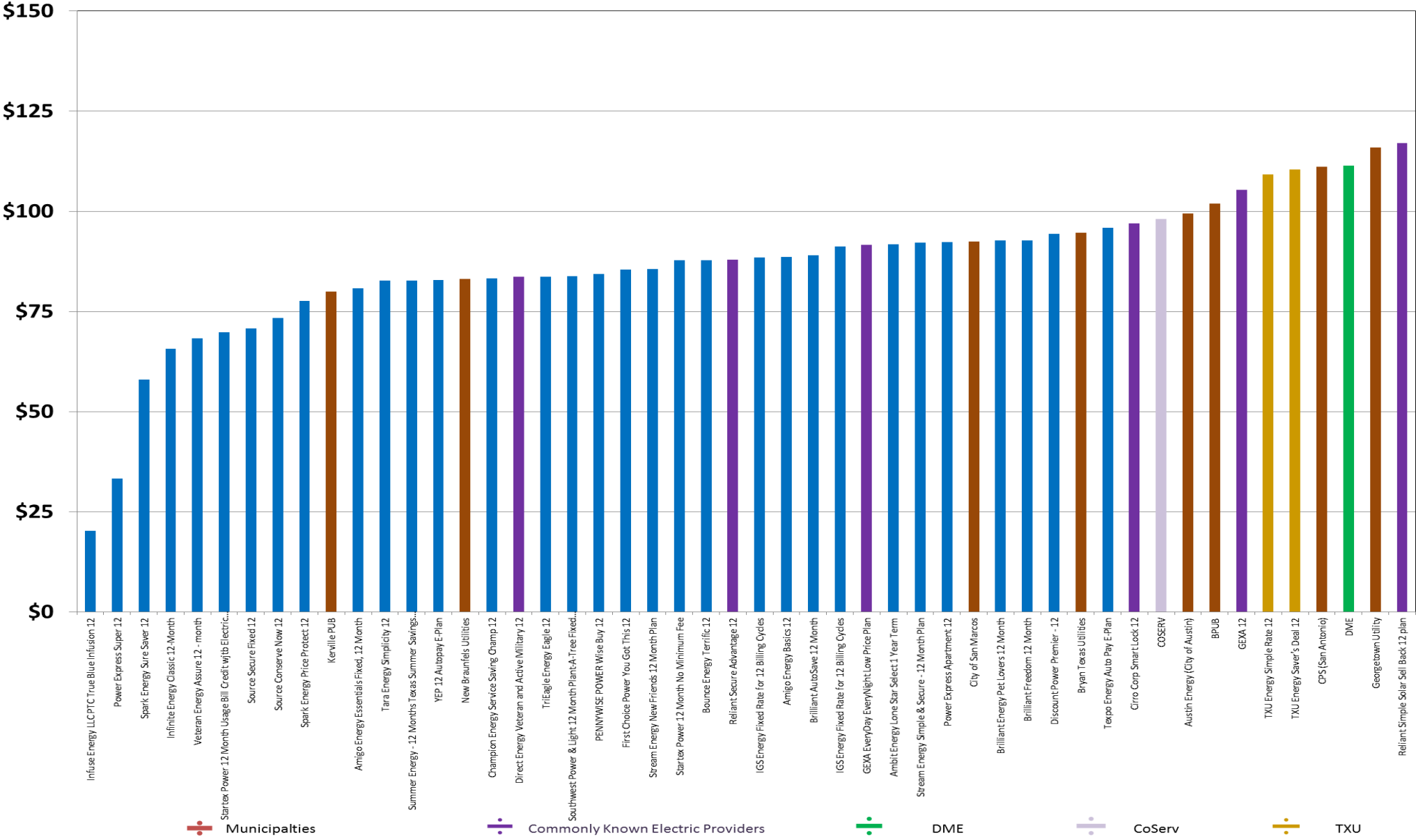
*Projected expenditures could be lower due to possible TMPA Sale and when DEC comes online which could result in lower rate. Will know more in six months.



DME 5-Year Forecast

	Actual 2016	Budget 2017	Estimate 2017	Proposed 2018	Projected 2019	Projected 2020	Projected 2021	Projected 2022
Revenues								
Base Rate Revenues	\$82.7	\$91.5	\$92.2	\$91.0	\$96.1	\$97.3	\$98.5	\$99.7
TCRF Revenues	4.7	4.6	4.2	5.6	6.5	7.6	8.9	8.9
ECA Revenues	56.8	54.8	54.8	51.1	43.6	40.1	36.4	36.9
Rate Revenues	\$144.2	\$151.0	\$151.2	\$147.7	\$146.2	\$145.0	\$143.8	\$145.5
Non-rate Revenues	30.8	26.0	31.4	26.0	36.2	31.9	34.8	35.9
Subtotal	\$175.0	\$177.0	\$182.5	\$173.7	\$182.4	\$177.0	\$178.6	\$181.3
Planned Use of Reserves	-	-	4.0	7.5	-	-	-	-
Total Revenues	\$175.0	\$177.0	\$186.5	\$181.1	\$182.4	\$177.0	\$178.6	\$181.3
Expenditures								
Purchased Power & Fuel	\$74.0	\$80.8	\$92.9	\$79.0	\$34.0	\$34.4	\$36.0	\$37.2
Transmission of Power	4.1	4.5	4.8	5.6	6.5	7.6	8.9	8.9
Operations & Maintenance	22.3	32.8	33.5	36.0	39.4	41.3	42.9	44.5
Transfers	11.6	11.6	11.7	11.4	11.9	12.3	12.7	13.1
ROI & Franchise Fee	12.1	13.4	13.8	14.0	15.3	14.9	15.0	15.2
Debt Service	29.1	29.6	29.1	34.4	39.0	55.9	57.6	59.2
Debt Defeasance	-	-	-	-	28.6	-	-	-
Fixed Assets	-	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Total Expenditures	\$153.2	\$173.4	\$186.5	\$181.1	\$175.4	\$167.1	\$173.8	\$178.8
Net Income	\$21.8	\$3.6	\$0.0	\$0.0	\$7.0	\$9.9	\$4.8	\$2.6
Total Rate Increase/Decrease	0%	0%	0%	-1%	-2%	-2%	-2%	0%
RESERVE BALANCES								
Working Capital + Operating Reserve + TCRF and ECA Over/Under Collection	\$76.0	\$53.0	\$72.0	\$64.5	\$71.5	\$81.4	\$86.2	\$88.8
Number of Working Days (60-75 days)	181	112	141	130	149	178	181	181
Debt Coverage Ratio	2.17	1.44	1.48	1.19	1.57	1.44	1.34	1.30

Power to Choose April 2017 Average Annual Bill for 1000 kWh





Denton Municipal Electric

Questions / Comments

