

**Mansfield Municipal Electric Department (MMED)**  
**Capital Work Plan**  
**(FY 2020) July 2019 – June 2020**

---

- I. Executive Summary
  
- II. Capital Work Plan Summary (FY20)
  
- III. Capital Work Project Description
  
- IV. Projected 5 Year Capital Work Plan Summary (FY20-FY25)

Appendix A: MMED Employee Hours for Capital Work Plan

Appendix B: MMED Vehicle List – Expense & Replacement Plan

Map: Jewell Street Manhole and Conduit Project

**Mansfield Municipal Electric Department (MMED)**  
**Capital Work Plan**  
**(FY 2020) July 2019 – June 2020**

---

**I. Executive Summary**

Each year MMED establishes a 'Capital Work Plan' to invest ratepayer funds to improve system infrastructure and solidify Mansfield Electric's position as an industry leader in providing safe, reliable, and affordable electric energy to all its customers.

MMED has consistently had four primary objectives:

- I. Maintain a safe working environment for its employees.
- II. Invest in a strong system reliability performance.
- III. Provide affordable and competitive electric rates to its ratepayers.
- IV. Provide financial benefits to the Town of Mansfield that is consistent with sound financial management of the utility.

Each year the Engineering and Operations staff of MMED spend considerable time identifying critical infrastructure improvements and overall MMED operational needs to improve system operations. After defining each project along with stating its intended goal, each investment is estimated by the following breakdown;

- Labor Expenses (MMED)
- Expenses for outside resources (Contractor, Police Details, etc.)
- Vehicle hours
- Timeline to complete
- Total Cost estimate

Finally, each investment in the 'Capital Work Plan' is classified in one of four type of projects:

1. One Time Projects - are to be completed in the Fiscal Year
2. Recurring Projects - with a period of two or more years
3. Billable Projects (ex. State Funded projects)
4. General Plant Improvements

From the analysis above, the MMED staff has identified (22) new capital project investments equal to \$3,888,085 for the fiscal year 2020. This includes \$1,922,885 carried over from FY 2019.

A summary breakdown of each is identified in the following chart:

**Mansfield Municipal Electric Department (MMED)**  
**Capital Work Plan**  
**(FY 2020) July 2019 – June 2020**

**II. Capital Work Plan Summary:**

<i>Project #</i>	<i>G/L</i>	<i>Project</i>	<i>Contract Services</i>	<i>MMED Labor</i>	<i>MMED Materials</i>	<i>Trucks</i>	<i>Details</i>	<i>Total</i>	<i>MMED Hours</i>
<i>FY 19 Projects to be Carried Over</i>									
FY 19-1	183	Jewell Street Manhole and Conduit						\$375,000	
FY19-2	392	Vehicle - truck 25 replacement						\$297,885	
FY 19-3	362	Gilbert Street Transformer Replacement						<u>\$1,250,000</u>	
<b>Subtotal FY 19 Carryover</b>								<b>\$1,922,885</b>	
<i>FY 20 Projects</i>									
FY 20-1	365	Recloser Replacement Project		\$26,000	\$160,000	\$4,500	\$15,000	\$192,500	306
FY 20-2	370	Advanced Metering Infrastructure (phase 1 of 2)	\$200,000	\$15,000		\$2,500	\$5,000	\$222,500	176
FY 20-3	397	Radio System replacement - base station and vehicles						\$145,000	
FY 20-4	390	Replace automatic gates at Gilbert and pole yard						\$33,000	
FY 20-5	398	Extend fiber optic system to field devices in order to improve communications.						\$35,000	
FY 20-6	715	Pole Replacements		\$34,500	\$26,700	\$2,400	\$3,600	\$67,200	431
FY 20-7		Reimbursable Projects							750
FY 20-8	364/365	Additional overhead conductors necessitated by field conditions, including repair of outages.		\$25,000	\$39,000		\$3,000	\$70,000	294
FY 20-9	366/367	Additional underground cable and conduit necessitated by field conditions, including repair of outages.	\$20,000	\$20,000	\$20,000	\$2,500	\$2,500	\$65,000	235
FY 20-10	368	Purchase of new transformers for installation, labor included in specific projects and additional work.			\$30,000			\$30,000	
FY 20-11	369	Installation of new/upgraded electric services required.		\$15,000	\$3,000			\$18,000	176
FY 20-12	370	Purchase of new metering equipment for new and existing customers. Not including remote reading meters.		\$3,000	\$12,000			\$15,000	
FY 20-13	373	Install new streetlights as required.		\$5,000	\$15,000			\$20,000	59
FY 20-14	391	Purchase of new office equipment.			\$40,000			\$40,000	
FY 20-15	390	Structures and Improvements			\$10,000			\$10,000	
FY 20-16A	392	Vehicles - office vehicle			\$35,000			\$35,000	
FY 20-16B	392	Vehicles - small pickup			\$27,500			\$27,500	
FY 20-16C	392	Vehicles - truck 20			\$285,000			\$285,000	
FY 20-17	394	Purchase of new tools for vehicles			\$15,000			\$15,000	
FY 20-18	395	New laboratory equip.			\$9,500			\$9,500	
FY 20-19	397	Contingency for purchase of miscellaneous equipment.			\$10,000			\$10,000	
FY 20-20	399	Purchase of computer hardware and software for MMED PC's and network.			\$20,000			\$20,000	
FY 20-21	390	Pole Yard Storage Lean-To (phase 1 of 2)						\$350,000	
FY 20-22	363	Engineering and Operations Management		\$250,000				<u>\$250,000</u>	
<b>Subtotal FY 20</b>								<b>\$1,965,200</b>	
<b>Grand Total</b>			<b>\$220,000</b>	<b>\$393,500</b>	<b>\$757,700</b>	<b>\$14,900</b>	<b>\$29,100</b>	<b>\$3,888,085</b>	<b>2,428</b>

**Mansfield Municipal Electric Department (MMED)**  
**Capital Work Plan**  
**(FY 2020) July 2019 – June 2020**

---

### **III. Capital Work Project Descriptions**

#### FY19 Carry Over Projects:

- FY19-1: Jewell Street Manhole and Conduit Installation – two part project to underground one of the three overhead distribution circuits on Jewell Street. This budget includes the manholes and conduit. The FY21 budget will have cabling and splicing. See map on page 10.
- FY19-2: Vehicle Replacement (#25) - replace 2006 aerial device a new aerial device.
- FY19-3: Gilbert Street Transformer Replacement – replace two 1974 vintage substation transformers at Gilbert Street Substation.

#### FY20 Projects:

- FY20-1: Recloser Replacement Project – replace all 7 field reclosers (including controls) and one spare. Existing reclosers are 20+ years old and parts are no longer available for the controls or reclosing mechanism.
- FY20-2: Advanced Metering Infrastructure - purchase of ITRON Choice Connect system or equivalent which will collect meter reads by radio collection directly to office computer. This is a two part project with an additional \$150,000 to be budgeted in FY21.
- FY20-3: Radio System Replacement: replace two way radio system to improve vehicle radio communications. Existing radio system is 20 plus years old and parts are no longer available.
- FY20-4: Replace Automatic Gates at Gilbert and Pole Yard – replace automatic gates at Gilbert Street substation and the automatic gate at the pole yard.
- FY20-5: Extend Fiber Optic System – extend fiber optic system to field devices to improve SCADA communication.
- FY20-6: Pole Replacements – increase system reliability by replacing deteriorated poles. MMED maintains a list of poles that need to be replaced.
- FY20-7: Reimbursable Customer Projects – work needed to meet new customer service deadlines. All costs reimbursed by the customer.
- FY20-8: Overhead Emergency Repair Contingency – increase system reliability by addressing unforeseen problems as they arise. This is for unforeseen overhead pole work that must be performed based on customer complaints, system conditions, or storm repair.

**Mansfield Municipal Electric Department (MMED)**  
**Capital Work Plan**  
**(FY 2020) July 2019 – June 2020**

---

FY20-9: Underground Cable Repair Contingency – increase system reliability by addressing unforeseen problems as they arise. This is for unforeseen underground cable work that must be performed based on customer complaints, system conditions, or storm repair.

FY20-10: New Transformers as Required – meet new customer service deadlines by maintaining an adequate stock of transformers.

FY20-11: New Electric Services – meet customer demands with the timely installation of new services. This is for the replacement of electric services that fail and the installation of new services.

FY20-12: New Metering Equipment – meet new customer deadlines by maintaining a stock of metering equipment required to properly meter customer loads. This is for the purchase and installation of metering equipment such as current transformers and potential transformers and related equipment.

FY20-13: Install New Street Lights as Required – meet customer service standards by the timely repair of street light outages. This is for the replacement of street light components that have failed.

FY20-14: New Office Equipment – This is for the purchase of new office equipment.

FY20-15: Structures and Improvements – unanticipated work on exterior or interior of a building.

FY20-16A: Vehicle Replacement – Office vehicle - replace 2005 Ford Five Hundred sedan that has 79,000 miles with hybrid SUV.

FY20-16B: Vehicle Replacement truck 15 - replace 2009 ford ranger with 88,000 miles on it with new Ford Ranger.

FY20-16C: Vehicle Replacement truck 20 – replace 2003 bucket truck with 51,250 miles on it with a new bucket truck.

FY20-17: Purchase of New Tools for Vehicles and Shop – This is for the purchase of new tools.

FY20-18: New Laboratory Equipment – This is for the purchase of new laboratory equipment as needed.

FY20-19: Contingency for Miscellaneous Equipment – This is for the purchase of new equipment as needed.

FY20-20: Computer hardware and software: purchase of new computers and software

**Mansfield Municipal Electric Department (MMED)**  
**Capital Work Plan**  
**(FY 2020) July 2019 – June 2020**

---

FY20-21: Pole Yard Storage Lean-To – Lean-To to store equipment, material and vehicles at the pole yard on West Church Street. This is a two phase project with the second phase coming in the FY21 budget.

FY20-22: Engineering and Operations Management – increase system reliability by planning, designing and implementing the capital plan.

**Mansfield Municipal Electric Department (MMED)  
Capital Work Plan  
(FY 2020) July 2019 – June 2020**

**IV. Projected 5 Year Capital Work Plan Summary (FY20-FY24)**

<b>Mansfield Municipal Electric Department Projected Five Year Plan April 2019 Capital Budget</b>						
<b>Description</b>	<b>FY20 Proposed</b>	<b>FY21 Projected</b>	<b>FY22 Projected</b>	<b>FY23 Projected</b>	<b>FY24 Projected</b>	<b>FY25 Projected</b>
<b>Ongoing Annual Capital Requirements</b>	\$ 922,700	\$ 968,835	\$ 1,017,277	\$ 1,068,141	\$ 1,121,548	\$ 1,177,625
<b>Jewell Street Underground Circuit Project</b>	<b>\$ 375,000</b>	\$ 325,000				
<b>Replace Transformers T1 and T2 at Gilbert Street Substation</b>	<b>\$1,250,000</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Advanced Metering Infrastructure</b>	\$ 200,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -
<b>W. Church St Yard Storage Structure</b>	\$ 350,000	\$ 300,000				
<b>Upgrade Operations Radio System</b>	\$ 145,000					
<b>Fiber Commercialization Project</b>	\$ -	\$ -	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000
<b>Distribution (Auto) Switches</b>	\$ -	\$ -	\$ 300,000	\$ 300,000	\$ 300,000	
<b>New Vehicles</b>	\$ 347,500	\$ 300,000	\$ 150,000	\$ 300,000	\$ 350,000	\$ 300,000
<b>FY19 Vehicle</b>	<b>\$ 297,885</b>					
<b>Total Projected Annual Capital Budget</b>	<b>\$3,888,085</b>	<b>\$2,043,835</b>	<b>\$ 1,867,277</b>	<b>\$ 2,068,141</b>	<b>\$ 2,171,548</b>	<b>\$ 1,877,625</b>
<b>NOTES:</b>						

\* *Proposed FY20 capital budget has a carryover from FY19 of approximately \$ 1,922,885*

(1) Ongoing Capital Budget projections based on projected proposed budget with 5% adder through FY24

**Mansfield Municipal Electric Department (MMED)  
Capital Work Plan  
(FY 2020) July 2019 – June 2020**

**Appendix A: MMED Employee Hours for Capital Work Plan**

MMED Personnel Available For Capital Work	Total Work Hours (1)	Weather (2)	Vacation (3)	Sick/ Personal (4)	Holidays (5)	Other Operations and Maintenance (6)	Billable Work (7)	Capital Hours (8)
TRASK, CHRIS	2,216	80	128	64	104	1,393	107	340
BELLA VANCE, RALPH	2,216	80	200	64	104	1,321	107	340
SIMONELLI, MICHAEL	2,216	80	80	64	104	1,441	107	340
WEIR, TOM	2,216	0	200	64	104	924	0	924
DIGGIN, PAUL	2,216	80	200	64	104	1,321	107	340
MILLER, TAYLOR	2,216	80	120	64	104	1,401	107	340
THOMPSON, JAY	2,216	80	200	64	104	1,321	107	340
ROMANKO, DAN	2,216	80	128	64	104	1,393	107	340
CARROLL, PATRICK (10)	2,080	0	200	64	104	1,237	0	475
COX, CHRIS (11)	1,950	0	188	60	98	802	0	802
SOLLECITO, JOSEPH (12)	2,080	0	200	64	104	1,370	0	342
<b>Totals</b>	<b>23,838</b>	<b>560</b>	<b>1,844</b>	<b>700</b>	<b>1,138</b>	<b>13,924</b>	<b>749</b>	<b>4,923</b>

- NOTES:**
- (1) Total hours for line personnel based on all hours worked during July through June (excludes emergency work).  
Available manhours for productive work is total work hours less weather less vacation less sick/personal less holidays.
  - (2) Weather based on historical loss of productivity due to cold and wet weather conditions. Time charged to operations and maintenance.
  - (3) Vacation time based on full use of available vacation hours that each employee earns during the year.
  - (4) Sick and personal time usage based on an average of 5 sick days used per year as well as 3 personal days each year.
  - (5) Holidays based on 13 holidays (12 full days, 2 half days) available to employees during year.
  - (6) Other Operations and Maintenance time detailed in FY15 Operating budget.
  - (7) Billable work is to perform customer related projects, such as residential developments or commercial buildings, generated through Planning Board approval process.
  - (8) Capital hours for Linemen that are available for use in capital work plan is determined in detailed project summaries which accompany this report.  
All other hours in capital work plan based on allocations set forth below.
  - (9) Line Supervisor time allocated 50% to capital, 50% expense for all productive hours worked.
  - (10) Meter Foreman time allocated 10% to capital for installation of new meters and 90% to maintenance for meter repair, meter reading and station operations.  
Meter Foreman also allocated 300 capital hours for advanced radio read meter installation.
  - (11) Electrical Engineer allocated 50% to capital, 50% to expense for normal hours worked. 37.5 hour work week.
  - (12) Director allocated 20% to capital, 80% to expense for normal hours worked. 40 hour work week.



**Mansfield Municipal Electric Department (MMED)  
Capital Work Plan  
(FY 2020) July 2019 – June 2020**

**Appendix B: MMED Vehicle List – Expense & Replacement Plan**

MANSFIELD MUNICIPAL ELECTRIC DEPARTMENT VEHICLE EXPENSE LIST											Date:	4/17/2019				
VEH.	YEAR	Years old	MANF.	MODEL	VIN	PLATE #	G.V.W.	FUEL	COST \$	Repair / PM Expenses	Mileage / Hour	Assigned to	VEH.	Replace	To Be Replaced	
501	2005	14	Ford	Five Hundred	1FAHP26135G17278	M71-943	N/A	gas	\$21,218.00	\$6,367.57	78436	Line	501	2020	FY20	
509	2008	11	Ford	Taurus	1FAHP24W68G123951	M79955	N/A	gas	\$18,950.00	\$2,755.75	28602	Office	509	2023	FY23	
510	2012	7	Ford	F250 4X4 P/U	1FT7X2B65CEA43053	M88522	5,080	gas	\$33,849.00	\$3,955.65	26136	Sta Op	510	2024	FY24	
511	2015	4	Ford	F250 4X4 P/U	1FTB7X2B67FEB98501	M93043	8,800	gas	\$38,672.00	\$4,400.02	31233	Stores	511	2027	2027	
512	2017	2	Ford	F550 Dump	1FDUF5HY5HED14499	M99946	19,000	gas	\$72,547.59	\$3,295.00	2994	Line	512	2037	2037	
513	2007	12	Ford	F350 Utility	1FTWF312YX7EA84582	M80-333	10,700	gas	\$34,001.00	\$5,366.52	77402	Line	513	As Req		
515	2009	10	Ford	Ranger R15 P/U	1FTZR15V4YPB97720	M53-630	5,080	gas	\$17,665.00	\$5,475.80	87509	meter	515	2016	FY20	
516	2016	3	Ford	F350 Utility	1FTRF3B64GED28186	M97480	11,000	gas	\$34,247.08	\$3,506.80	13271	meter	516	2028	2028	
517	2019	0	Ford	F350 Utility	1FD8X3B65KEC63135	M1839A	11,000	gas	\$47,824.47		813	Station Op.	517	2031	2031	
518	2011	8	IH	Mat.	1HTMKAAR8BH362390	M84269	35,000	diesel	\$220,229.00	\$30,299.10	31433 / 5430	Line Bucket	518	2026	2026	
519	2003	16	Sterling	Dump	2FZAATAK03AK69243	M84009	40,600	diesel	\$74,988.00	\$48,003.41	15784	Line Dump	519	2023	FY23	
520	2003	16	Ford	F750 Versa-Lift 42	3FDFX75N93MB02579	M69-842	33,000	diesel	\$104,431.00	\$105,977.30	51245	Line Bucket	520	2018	FY20	
521	2012	7	Ford	F250 4X4 P/U	1FTNX21S83EC61722	M69848	8,800	gas	\$28,970.00	\$8,128.00	54116	Line Foreman	521	2024	FY22	
522	2016	3	Ford	Ford F750	1FDYX7DE4GDA02779	M95923	35,000	diesel	\$229,641.00	\$13,893.78	16117 / 1583	Line Bucket	522	2031	2031	
523	2000	19	Sterling	L7501 Digger	2FZHAJBB5YAG46810	M58-142	36,220	diesel	\$144,790.00	\$47,197.20	20593/6540	Line spare Digger	523		FY24	
524	1996	23	JCB	Backhoe 214	SLP214TCTE0444474	M54-511	16,200	diesel	\$48,286.00	\$42,222.86	4587		524	2026	FY22	
525	2006	13	Ford	F750 Altec LM45	3FRXX75T76V360780	M75816	33,000	diesel	\$120,183.56	\$90,196.70	63266	Line Bucket	525	2021	FY19	
526	2015	4	FrtInr	MT55/Utilimaster	4UZAADU4FCGB9088	M89268	25,500	diesel	\$136,938.00	\$8,111.74	2618/731	Line UG splice	526	2030	2030	
527	2006	13	Sterling	Swaploader	2FZACHCS66AM34219	M41-322	35,000	diesel	\$170,788.00	\$137,889.97	17474 / 4280	Line	527	2026	2027	
528	2001	18	IH	4900	1HTSDAAR01H355787	M65557	35,000	diesel	\$129,470.00	\$59,199.19	48801 / 12689	Line Spare Bucke	528	2021	FY21	
529	2016	3	IH	Terex Digger	3HAMMMMR8GL109952	M94817	37,000	diesel	\$249,902.00	\$19,527.79	5063 / 523	Line Digger	529	2031	2031	
									<b>\$1,977,590.70</b>	<b>\$645,770.15</b>						

Vehicle Replacement Guide Lines:

1	Heavy Duty work vehicles (Digger and Bucket trucks) to be replaced	15 years													
2	Small pickups to be replaced every	7 years													
3	Large pickups to be replaced every	12 years									FY 20	Car 1, Truck 15, Truck 20			
4	Pool cars to be replaced every	15 years									FY21	Truck 28			
5	Dump trucks to be replaced every	20 years									FY22	Truck 21, backhoe			
6	Backhoe to be replaced every	30 years									FY23	Car 9, truck 19,			
											FY24	Truck 10, truck 23			
Vehicle replacement is based on the guidelines above as well as the operational evaluation of the vehicle and useful remaining life.															

**Mansfield Municipal Electric Department (MMED)  
Capital Work Plan  
(FY 2020) July 2019 – June 2020**

---

**Jewell Street Manhole and Conduit Project**

