

**Project Number:** EU01  
**Project Title:** New Residential Electric Services and Metering  
**Department Name:** Electric

**Asset Type:** Electric Utility  
**CIP Status:** Recurring  
**Project Category:** Capital Upgrade

**Budget Year:** 2017  
**Category Code:** A  
**Sector:** Various

**Project Purpose:**

This project provides electric service to residential electric utility customers.

**Project Narrative:**

This project provides customers means for receiving electrical service from the City and includes installation of underground electrical cable and metering for services to new residential dwelling units.

**External Funding Sources Available:**

Projects are funded by developer.

**Projected Timetable:**

Systematically throughout the fiscal year as necessitated by new customers.

**Impact on Operating Budget:**

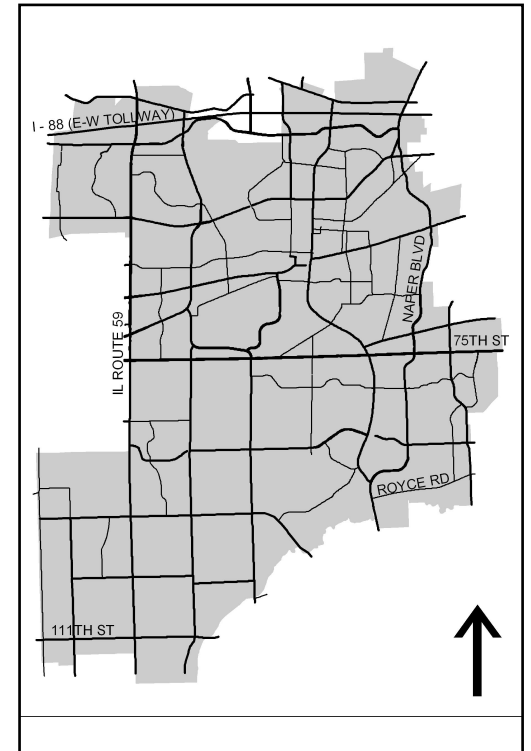
The project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2017	2018	2019	2020	2021	Total Source
Developer Contribution	400,000	357,000	260,100	265,302	216,486	<b>1,498,888</b>
<b>Totals</b>	<b>400,000</b>	<b>357,000</b>	<b>260,100</b>	<b>265,302</b>	<b>216,486</b>	<b>1,498,888</b>

**Project Cost Summary**

Expense Category	2016 Budget	2017	2018	2019	2020	2021	Total CIP
Construction	500,000	400,000	357,000	260,100	265,302	216,486	<b>1,498,888</b>
<b>Totals</b>	<b>500,000</b>	<b>400,000</b>	<b>357,000</b>	<b>260,100</b>	<b>265,302</b>	<b>216,486</b>	<b>1,498,888</b>



**Project Number:** EU02  
**Project Title:** Existing Residential Electric Services and Metering  
**Department Name:** Electric

**Asset Type:** Electric Utility  
**CIP Status:** Recurring  
**Project Category:** Capital Maintenance

**Budget Year:** 2017  
**Category Code:** A  
**Sector:** Various

**Project Purpose:**

This project provides upgrades and relocation of electric service to existing residential electric utility customers.

**Project Narrative:**

The project provides customers means for upgrading or relocating their electrical service from the City and includes installation of underground electrical cable and metering for services to existing residential dwelling units.

**External Funding Sources Available:**

Projects are funded partially by customer.

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

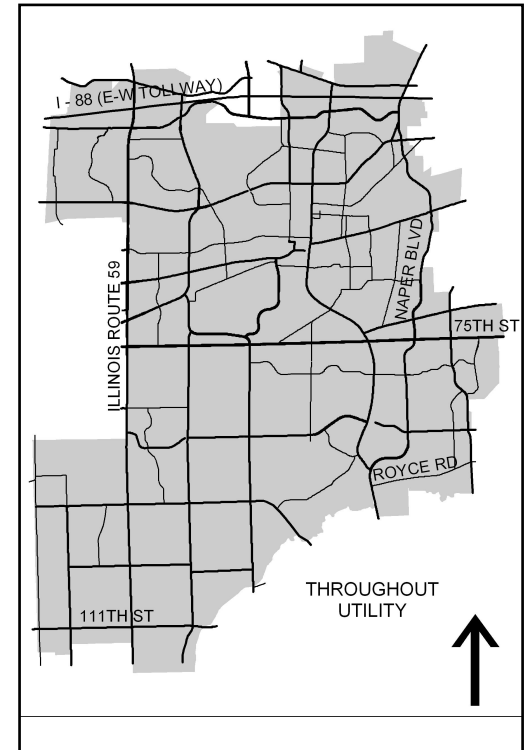
The project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2017	2018	2019	2020	2021	Total Source
Developer Contribution	100,000	102,000	104,040	106,121	108,243	<b>520,404</b>
<b>Totals</b>	<b>100,000</b>	<b>102,000</b>	<b>104,040</b>	<b>106,121</b>	<b>108,243</b>	<b>520,404</b>

**Project Cost Summary**

Expense Category	2016 Budget	2017	2018	2019	2020	2021	Total CIP
Construction	0	100,000	102,000	104,040	106,121	108,243	<b>520,404</b>
<b>Totals</b>	<b>75,000</b>	<b>100,000</b>	<b>102,000</b>	<b>104,040</b>	<b>106,121</b>	<b>108,243</b>	<b>520,404</b>



**Project Number:** EU03  
**Project Title:** New Electric System Installations  
**Department Name:** Electric

**Asset Type:** Electric Utility  
**CIP Status:** Recurring  
**Project Category:** Capital Upgrade

**Budget Year:** 2017  
**Category Code:** LR  
**Sector:** Various

**Project Purpose:**

This project provides infrastructure additions to the electrical system to facilitate new commercial and residential development.

**Project Narrative:**

The project includes installation of conductors, switch modules, transformers, pedestals and associated equipment for electric service to new customers. Main residential development includes the area west of 248th Street, along Fairway Drive, and spot development throughout the city. Commercial development is expected throughout the City.

**External Funding Sources Available:**

Projects are funded by developer.

**Projected Timetable:**

Systematically throughout the fiscal year as necessitated by new customers.

**Impact on Operating Budget:**

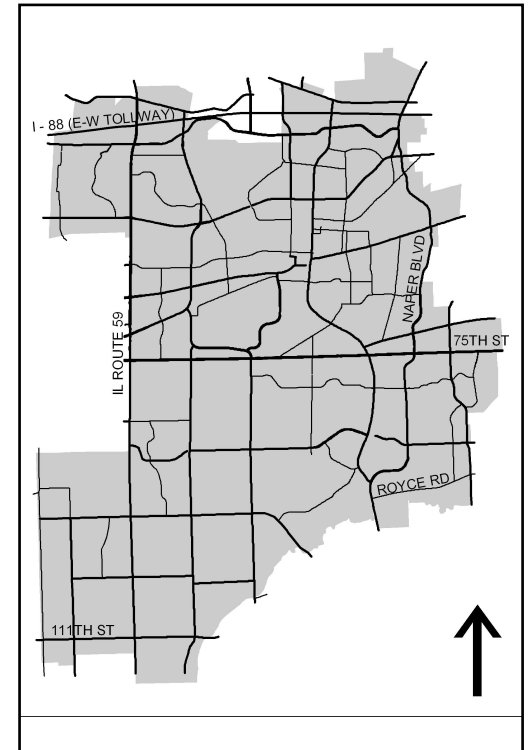
The project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2017	2018	2019	2020	2021	Total Source
Developer Contribution	1,800,000	510,000	520,200	530,604	541,216	<b>3,902,020</b>
<b>Totals</b>	<b>1,800,000</b>	<b>510,000</b>	<b>520,200</b>	<b>530,604</b>	<b>541,216</b>	<b>3,902,020</b>

**Project Cost Summary**

Expense Category	2016 Budget	2017	2018	2019	2020	2021	Total CIP
Construction	550,000	1,800,000	510,000	520,200	530,604	541,216	<b>3,902,020</b>
<b>Totals</b>	<b>550,000</b>	<b>1,800,000</b>	<b>510,000</b>	<b>520,200</b>	<b>530,604</b>	<b>541,216</b>	<b>3,902,020</b>



**Project Number:** EU05  
**Project Title:** Overhead Transmission & Distribution  
**Department Name:** Electric

**Asset Type:** Electric Utility  
**CIP Status:** Recurring  
**Project Category:** Capital Maintenance

**Budget Year:** 2017  
**Category Code:** A  
**Sector:** Various

**Project Purpose:**

This project sustains essential and reliable infrastructure by replacing or upgrading aged overhead electrical transmission or distribution facilities.

**Project Narrative:**

The project includes overhead work necessitated by new development to maintain service and reliability and increase load capacity to serve customers.

**External Funding Sources Available:**

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

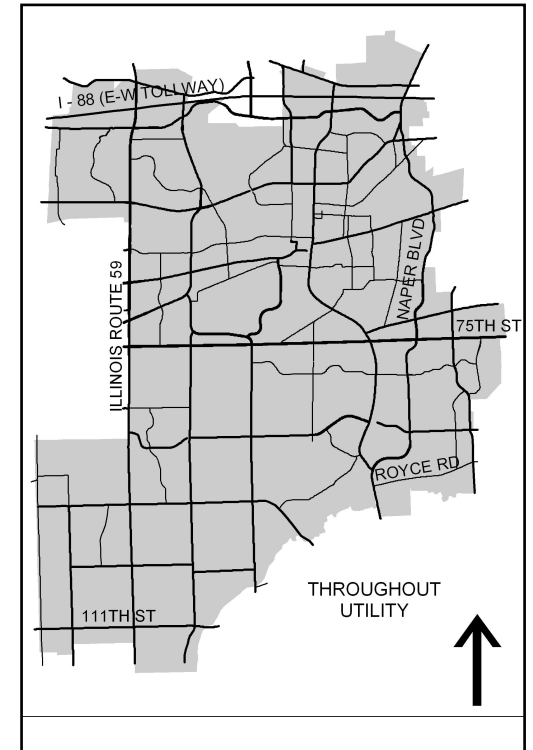
The project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2017	2018	2019	2020	2021	Total Source
Electric Utility	300,000	306,000	312,120	318,362	324,730	<b>1,561,212</b>
<b>Totals</b>	<b>300,000</b>	<b>306,000</b>	<b>312,120</b>	<b>318,362</b>	<b>324,730</b>	<b>1,561,212</b>

**Project Cost Summary**

Expense Category	2016 Budget	2017	2018	2019	2020	2021	Total CIP
Construction	100,000	300,000	306,000	312,120	318,362	324,730	<b>1,561,212</b>
<b>Totals</b>	<b>100,000</b>	<b>300,000</b>	<b>306,000</b>	<b>312,120</b>	<b>318,362</b>	<b>324,730</b>	<b>1,561,212</b>



**Project Number:** EU06  
**Project Title:** Underground Transmission & Distribution  
**Department Name:** Electric

**Asset Type:** Electric Utility  
**CIP Status:** Recurring  
**Project Category:** Capital Maintenance

**Budget Year:** 2017  
**Category Code:** A  
**Sector:** Various

**Project Purpose:**

This project sustains essential and reliable infrastructure by replacing or upgrading aged underground electrical transmission or distribution facilities.

**Project Narrative:**

The project includes underground work necessitated by new development to maintain service and reliability and increase load capacity to serve customers.

**External Funding Sources Available:**

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

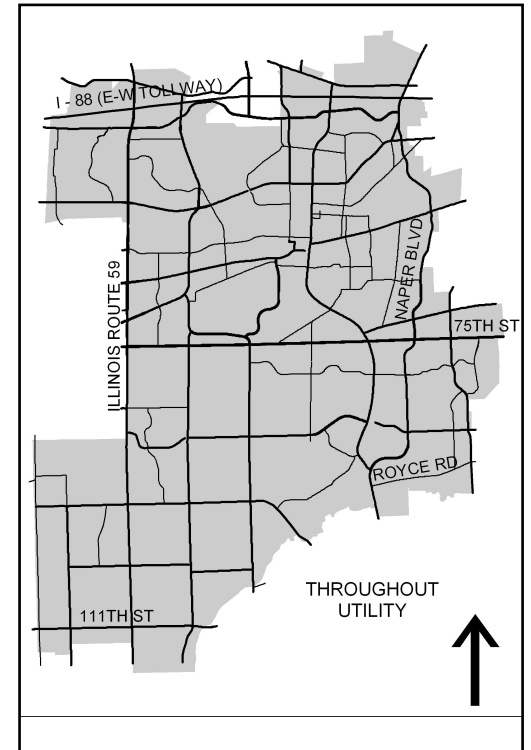
The project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2017	2018	2019	2020	2021	Total Source
Electric Utility	600,000	1,224,000	1,196,460	1,220,389	974,189	<b>5,215,038</b>
<b>Totals</b>	<b>600,000</b>	<b>1,224,000</b>	<b>1,196,460</b>	<b>1,220,389</b>	<b>974,189</b>	<b>5,215,038</b>

**Project Cost Summary**

Expense Category	2016 Budget	2017	2018	2019	2020	2021	Total CIP
Construction	250,000	600,000	1,224,000	1,196,460	1,220,389	974,189	<b>5,215,038</b>
<b>Totals</b>	<b>250,000</b>	<b>600,000</b>	<b>1,224,000</b>	<b>1,196,460</b>	<b>1,220,389</b>	<b>974,189</b>	<b>5,215,038</b>



**Project Number:** EU12  
**Project Title:** Government Required Electric System Relocations  
**Department Name:** Electric

**Asset Type:** Electric Utility  
**CIP Status:** Recurring  
**Project Category:** Capital Maintenance

**Budget Year:** 2017  
**Category Code:** LR  
**Sector:** Various

**Project Purpose:**

This project supports coordination of intergovernmental projects in joint efforts with the City, County and State (bridges, highways, flood control, storm and sewer projects) in order to make improvements to infrastructure and minimize the impact on the electrical facilities that are to be relocated.

**Project Narrative:**

The project provides for relocation of overhead and underground transmission and distribution electrical facilities in the public way that are required to be relocated by other government entities so that a roadway improvement or other project can proceed and accommodate improvements to the infrastructure. Projects include 95th Street/Plainfield-Naperville Road, Ogden/Columbia Intersection Improvements, Clow Creek Drainage Improvements, Hobson Mill Culvert and other locations as required.

**External Funding Sources Available:**

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

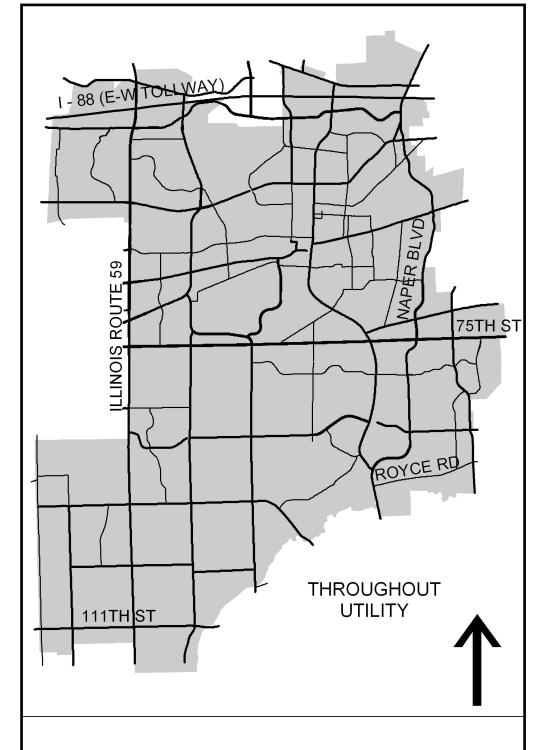
The project will require no additional staffing. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2017	2018	2019	2020	2021	Total Source
Electric Utility	700,000	765,000	1,456,560	689,785	920,067	<b>4,531,413</b>
<b>Totals</b>	<b>700,000</b>	<b>765,000</b>	<b>1,456,560</b>	<b>689,785</b>	<b>920,067</b>	<b>4,531,413</b>

**Project Cost Summary**

Expense Category	2016 Budget	2017	2018	2019	2020	2021	Total CIP
Construction	1,450,000	700,000	765,000	1,456,560	689,785	920,067	<b>4,531,413</b>
<b>Totals</b>	<b>1,450,000</b>	<b>700,000</b>	<b>765,000</b>	<b>1,456,560</b>	<b>689,785</b>	<b>920,067</b>	<b>4,531,413</b>



**Project Number:** EU13  
**Project Title:** Underground Conduit (Duct Banks)  
**Department Name:** Electric

**Asset Type:** Electric Utility  
**CIP Status:** Recurring  
**Project Category:** Capital Maintenance

**Budget Year:** 2017  
**Category Code:** A  
**Sector:** Various

**Project Purpose:**

This project is to install and maintain duct bank systems for the electrical and communication infrastructure.

**Project Narrative:**

The projects provide routing for new and replaced feeders in order to provide for load growth, improved distribution of existing load and replacement of aged and failing cables. The KMart duct bank will allow replacement of aged and failing feeders and a switch gear that serves a large area.

**External Funding Sources Available:**

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

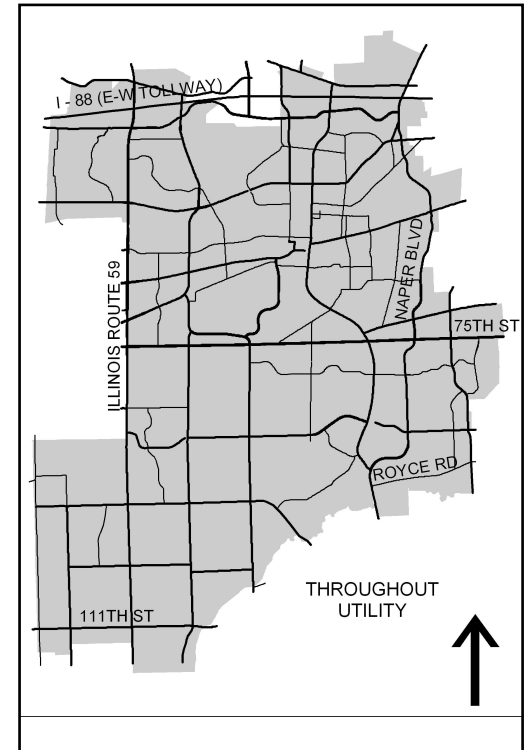
The project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2017	2018	2019	2020	2021	Total Source
Electric Utility	0	1,402,500	1,066,410	530,604	1,082,432	<b>4,081,946</b>
<b>Totals</b>	<b>0</b>	<b>1,402,500</b>	<b>1,066,410</b>	<b>530,604</b>	<b>1,082,432</b>	<b>4,081,946</b>

**Project Cost Summary**

Expense Category	2016 Budget	2017	2018	2019	2020	2021	Total CIP
Construction	900,000	0	1,402,500	1,066,410	530,604	1,082,432	<b>4,081,946</b>
<b>Totals</b>	<b>900,000</b>	<b>0</b>	<b>1,402,500</b>	<b>1,066,410</b>	<b>530,604</b>	<b>1,082,432</b>	<b>4,081,946</b>



**Project Number:** EU14  
**Project Title:** Underground Cable (Feeders) & Equipment  
**Department Name:** Electric

**Asset Type:** Electric Utility  
**CIP Status:** Recurring  
**Project Category:** Capital Maintenance

**Budget Year:** 2017  
**Category Code:** B  
**Sector:** Various

**Project Purpose:**

The projects install and replace 12 kV feeder systems for the electrical distribution system.

**Project Narrative:**

Sections of feeders with multiple outages will be replaced to maintain reliability of service to customers. In future years, additional feeders will be planned in anticipation of load growth and improved distribution of existing load.

**External Funding Sources Available:**

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

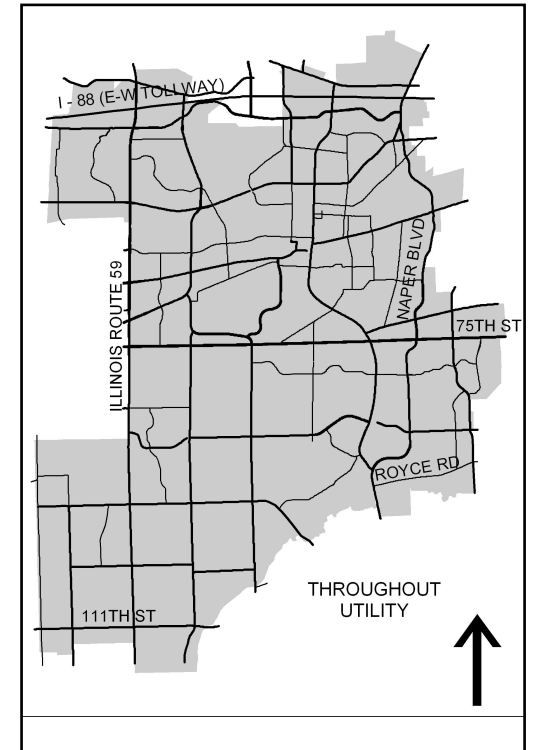
The project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2017	2018	2019	2020	2021	Total Source
Electric Utility	0	510,000	390,150	397,953	1,028,311	<b>2,326,414</b>
<b>Totals</b>	<b>0</b>	<b>510,000</b>	<b>390,150</b>	<b>397,953</b>	<b>1,028,311</b>	<b>2,326,414</b>

**Project Cost Summary**

Expense Category	2016 Budget	2017	2018	2019	2020	2021	Total CIP
Construction	0	0	510,000	390,150	397,953	1,028,311	<b>2,326,414</b>
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>510,000</b>	<b>390,150</b>	<b>397,953</b>	<b>1,028,311</b>	<b>2,326,414</b>





**Project Number:** EU29  
**Project Title:** Sub-transmission Circuits  
**Department Name:** Electric

**Asset Type:** Electric Utility  
**CIP Status:** Recurring  
**Project Category:** Capital Maintenance

**Budget Year:** 2017  
**Category Code:** B  
**Sector:** Various

**Project Purpose:**

The projects include installation and replacement of underground and overhead sub-transmission, 34 kV cable and conductor line capacity for major upgrades and additions to the system with related switching and associated equipment.

**Project Narrative:**

The 34 kV cable system provides a path to move large portions of electrical energy to meet customer demands throughout the City at an efficient cost. Work is required throughout the system to meet system load growth and maintain high levels of reliability. Specific projects include feeders to connect Pebblewood Substation to Westside Substation.

**External Funding Sources Available:**

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

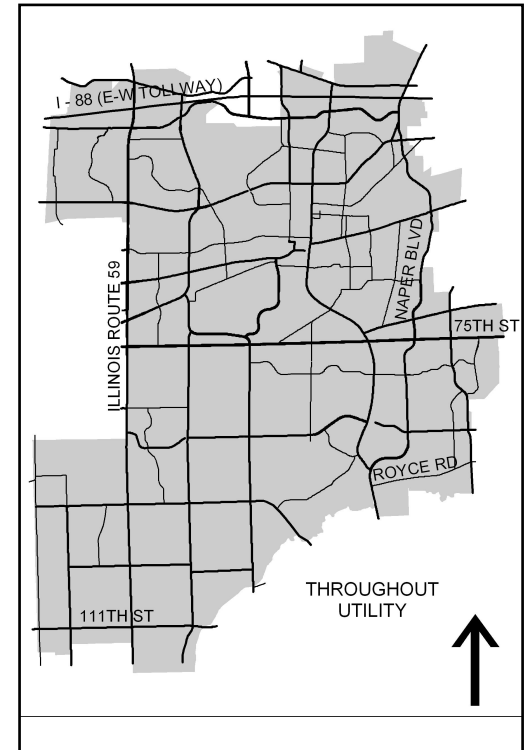
The project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2017	2018	2019	2020	2021	Total Source
Electric Utility	250,000	765,000	1,560,600	2,653,020	0	5,228,620
<b>Totals</b>	<b>250,000</b>	<b>765,000</b>	<b>1,560,600</b>	<b>2,653,020</b>	<b>0</b>	<b>5,228,620</b>

**Project Cost Summary**

Expense Category	2016 Budget	2017	2018	2019	2020	2021	Total CIP
Construction	0	250,000	765,000	1,560,600	2,653,020	0	5,228,620
<b>Totals</b>	<b>0</b>	<b>250,000</b>	<b>765,000</b>	<b>1,560,600</b>	<b>2,653,020</b>	<b>0</b>	<b>5,228,620</b>



**Project Number:** EU44  
**Project Title:** Fiber Optic Cable for Relay Protection and Communication  
**Department Name:** Electric

**Asset Type:** Electric Utility  
**CIP Status:** Recurring  
**Project Category:** Capital Maintenance

**Budget Year:** 2017  
**Category Code:** B  
**Sector:** Various

**Project Purpose:**

Design and installation of fiber optic cable and equipment needed to create communication paths between the Electric Service Center and all electrical substations for protective relay and SCADA communication.

**Project Narrative:**

Fiber optic cable and communication equipment installations will provide a major backbone for all utility communication needs such as relay protection, supervisory control and data acquisition (SCADA), distribution automation (DA), substation automation systems (SAS), advanced metering infrastructure (AMI) and substation/infrastructure security (alarming, CCTV cameras, etc.).

**External Funding Sources Available:**

**Projected Timetable:**

Systematically throughout fiscal year.

**Impact on Operating Budget:**

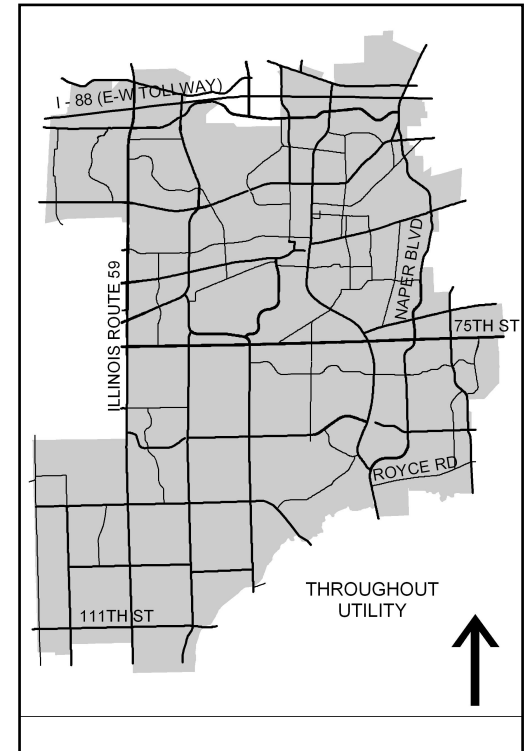
The project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2017	2018	2019	2020	2021	Total Source
Electric Utility	250,000	841,500	816,714	939,169	995,838	<b>3,843,221</b>
<b>Totals</b>	<b>250,000</b>	<b>841,500</b>	<b>816,714</b>	<b>939,169</b>	<b>995,838</b>	<b>3,843,221</b>

**Project Cost Summary**

Expense Category	2016 Budget	2017	2018	2019	2020	2021	Total CIP
Construction	135,000	250,000	841,500	816,714	939,169	995,838	<b>3,843,221</b>
<b>Totals</b>	<b>135,000</b>	<b>250,000</b>	<b>841,500</b>	<b>816,714</b>	<b>939,169</b>	<b>995,838</b>	<b>3,843,221</b>



**Project Number:** EU52  
**Project Title:** Cable Replacement Program  
**Department Name:** Electric

**Asset Type:** Electric Utility  
**CIP Status:** Recurring  
**Project Category:** Capital Maintenance

**Budget Year:** 2017  
**Category Code:** B  
**Sector:** Various

**Project Purpose:**

This project includes replacing aging single and three-phase feeder cables and equipment through boring and cable injection.

**Project Narrative:**

Cable meeting the criteria for number of outages in a year and an unacceptable duration time is identified as a likely candidate for the cable replacement program. Significant portions of cable will be refurbished via cable injection, extending cable life for up to 20 years with zero landscaping disturbance. For CY2017, subdivisions slated for improvement include Buttonwood, Countryside, The Fields and Villas of the Fields.

**External Funding Sources Available:**

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

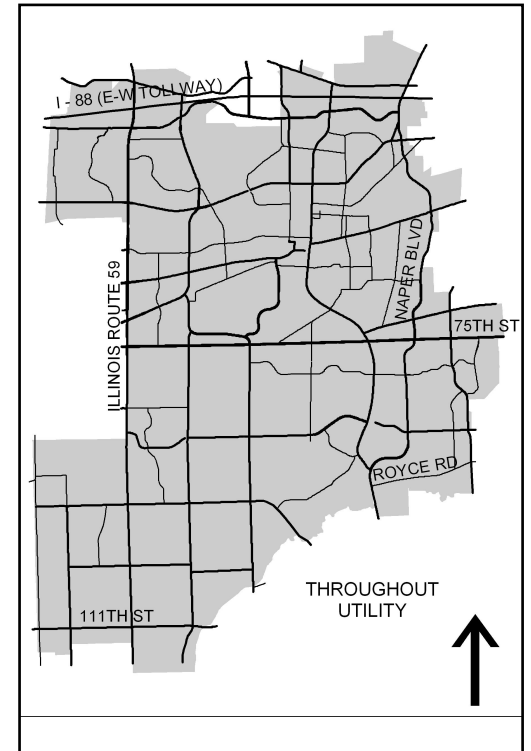
The project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2017	2018	2019	2020	2021	Total Source
Electric Utility	1,550,000	816,000	1,248,480	902,027	838,885	5,355,392
<b>Totals</b>	<b>1,550,000</b>	<b>816,000</b>	<b>1,248,480</b>	<b>902,027</b>	<b>838,885</b>	<b>5,355,392</b>

**Project Cost Summary**

Expense Category	2016 Budget	2017	2018	2019	2020	2021	Total CIP
Construction	1,075,000	1,550,000	816,000	1,248,480	902,027	838,885	5,355,392
<b>Totals</b>	<b>1,075,000</b>	<b>1,550,000</b>	<b>816,000</b>	<b>1,248,480</b>	<b>902,027</b>	<b>838,885</b>	<b>5,355,392</b>



**Project Number:** EU66  
**Project Title:** Fiber Optic Cable for Metropolitan Area Network (MAN)  
**Department Name:** Electric

**Asset Type:** Electric Utility  
**CIP Status:** Recurring  
**Project Category:** Capital Upgrade

**Budget Year:** 2017  
**Category Code:** A  
**Sector:** Northeast

**Project Purpose:**

This project leverages the city's existing electric Metropolitan Area Network (MAN) to provide communication services to other city departments and outside agencies.

**Project Narrative:**

The project provides support for the Metropolitan Area Network (MAN), which serves all City owned and operated buildings including Naper Settlement; Naperville to Aurora Fiber Optic Communications for radio system support; and SCADA for Water Network, which provides a reliable, high-speed communication backbone for DPU-W between water and waste water sites. New installation for Park District Maintenance Facility is planned in CY2017.

Major long term benefits to the Naperville community include: cost sharing and reduction in Internet cost charges; connectivity between City facilities, libraries and universities; and connectivity for emergency management and sharing of resources.

**External Funding Sources Available:**

Projects are funded by Customer.

**Projected Timetable:**

Systematically throughout the fiscal year as necessitated by customers.

**Impact on Operating Budget:**

The project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2017	2018	2019	2020	2021	Total Source
Electric Utility	125,000	0	0	0	0	125,000
<b>Totals</b>	<b>125,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>125,000</b>

**Project Cost Summary**

Expense Category	2016 Budget	2017	2018	2019	2020	2021	Total CIP
Construction	0	125,000	0	0	0	0	125,000
<b>Totals</b>	<b>0</b>	<b>125,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>125,000</b>

