

Project Number: EU001

Project Title: New Residential Electric Services and Metering

Department Name: Electric

Asset Type: Electric Utility

CIP Status: Recurring

Project Category: Capital Upgrade

Budget Year: 2020

Category Code: A

Sector: Various

**Project Purpose:**

This project provides electric service to residential electric utility customers.

**Project Narrative:**

This project provides customers the means for receiving electrical service from the City. It 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:**

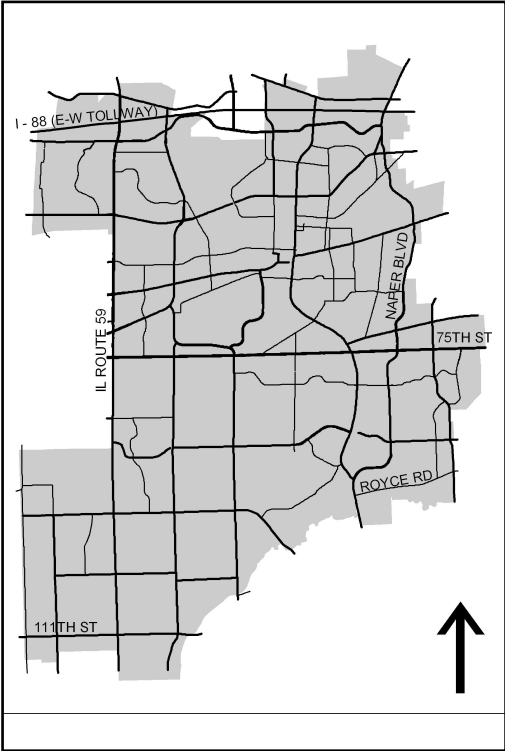
This project will require no additional staffing or resources. There will be no impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Developer Contribution	250,000	204,000	208,080	212,242	216,486	1,090,808
Totals	250,000	204,000	208,080	212,242	216,486	1,090,808

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	250,000	250,000	204,000	208,080	212,242	216,486	1,090,808
Totals	250,000	250,000	204,000	208,080	212,242	216,486	1,090,808



**Project Number:** EU001a  
**Project Title:** Residential Electric Services  
**Department Name:** Electric

**Project Purpose:**

**Project Narrative:**

**External Funding Sources Available:**

**Projected Timetable:**

**Impact on Operating Budget:**

<b>Asset Type:</b>	Electric Utility
<b>CIP Status:</b>	Dropped
<b>Project Category:</b>	Capital Upgrade

**Budget Year:** 2020  
**Category Code:**  
**Sector:**

Project Number:

EU002

Project Title:

Existing Residential Electric Services

Department Name:

Electric

Asset Type:

Electric Utility

CIP Status:

Recurring

Project Category:

Capital Maintenance

Budget Year:

2020

Category Code:

A

Sector:

Various

**Project Purpose:**

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

**Project Narrative:**

This project provides customers the means for upgrading or relocating their electrical service from the City. It 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:**

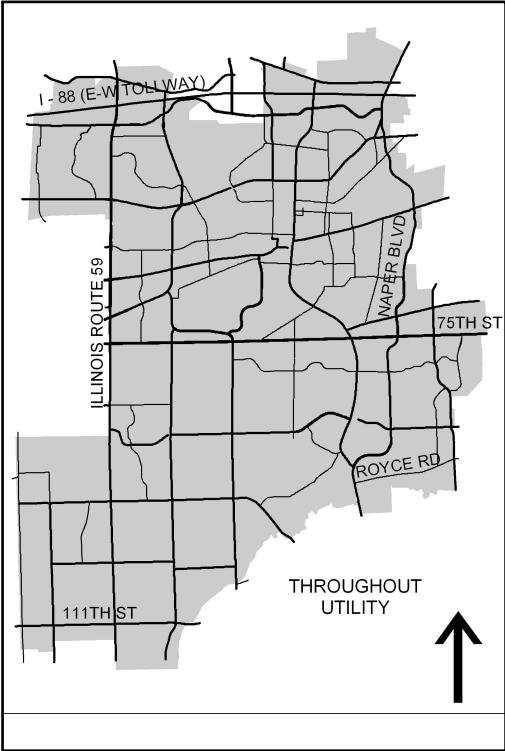
This project will require no additional staffing or resources. There will be no impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	300,000	255,000	260,100	265,302	270,608	1,351,010
Totals	300,000	255,000	260,100	265,302	270,608	1,351,010

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	250,000	300,000	255,000	260,100	265,302	270,608	1,351,010
Totals	250,000	300,000	255,000	260,100	265,302	270,608	1,351,010



**Project Number:**

EU003

**Project Title:**

New Electric System Installations

**Department Name:**

Electric

**Asset Type:**

Electric Utility

**CIP Status:**

Recurring

**Project Category:**

Capital Upgrade

**Budget Year:**

2020

**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:**

This project includes the installation of conductors, switch modules, transformers, pedestals, and associated equipment for electric service to new customers.

**External Funding Sources Available:**

Funded by Developer.

**Projected Timetable:**

Systematically throughout the fiscal year as necessitated by new customers.

**Impact on Operating Budget:**

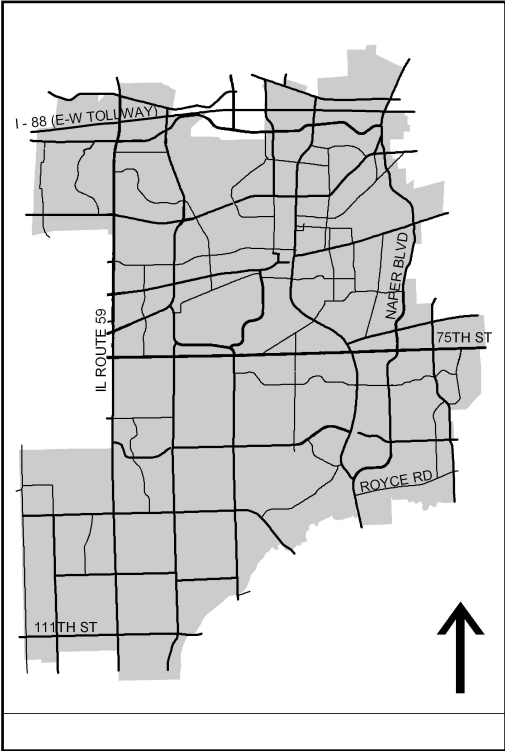
This project will require no additional staffing or resources. There will be no impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Developer Contribution	2,000,000	943,500	520,200	530,604	541,216	4,535,520
Totals	2,000,000	943,500	520,200	530,604	541,216	4,535,520

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	500,000	2,000,000	943,500	520,200	530,604	541,216	4,535,520
Totals	500,000	2,000,000	943,500	520,200	530,604	541,216	4,535,520



Project Number:

EU005

Project Title:

Overhead Transmission & Distribution

Department Name:

Electric

Asset Type:

Electric Utility

CIP Status:

Recurring

Project Category:

Capital Maintenance

Budget Year:

2020

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:**

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

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

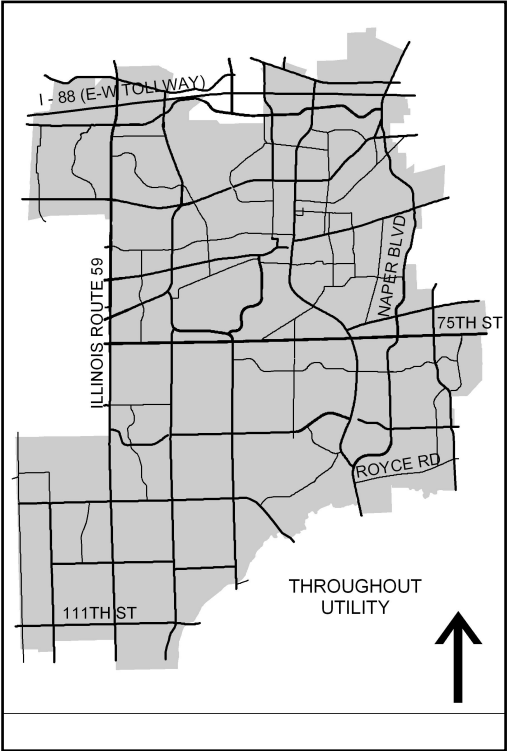
This project will require no additional staffing or resources. There will be no impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	300,000	306,000	312,120	318,362	324,730	1,561,212
Totals	300,000	306,000	312,120	318,362	324,730	1,561,212

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	300,000	300,000	306,000	312,120	318,362	324,730	1,561,212
Totals	300,000	300,000	306,000	312,120	318,362	324,730	1,561,212



Project Number:

EU006

Project Title:

Underground Transmission & Distribution

Department Name:

Electric

Asset Type:

Electric Utility

CIP Status:

Recurring

Project Category:

Capital Maintenance

Budget Year:

2020

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:**

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

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

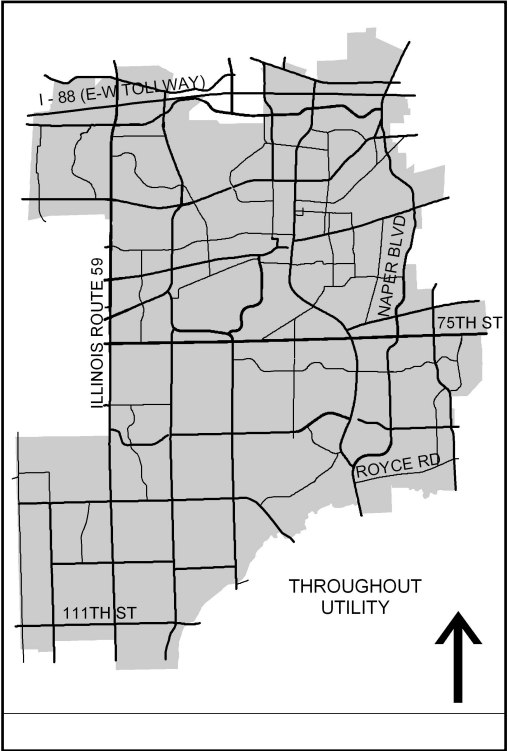
This project will require no additional staffing or resources. There will be no impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	1,000,000	1,020,000	1,040,400	1,061,208	1,082,432	5,204,040
Totals	1,000,000	1,020,000	1,040,400	1,061,208	1,082,432	5,204,040

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	1,000,000	1,000,000	1,020,000	1,040,400	1,061,208	1,082,432	5,204,040
Totals	1,000,000	1,000,000	1,020,000	1,040,400	1,061,208	1,082,432	5,204,040



**Project Number:** EU007  
**Project Title:** Underground Transmission & Distribution - Replacements  
**Department Name:** Electric

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

**Budget Year:** 2020  
**Category Code:** A  
**Sector:** Various

**Project Purpose:**

This project provides essential and reliable services while maintaining the infrastructure by replacing or upgrading aged underground electrical transmission or distribution facilities.

**Project Narrative:**

This project includes replacement/upgrade of off-site underground transmission and distribution facilities as necessary to maintain reliable electric utility service to existing customers and meet load growth caused by new development.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

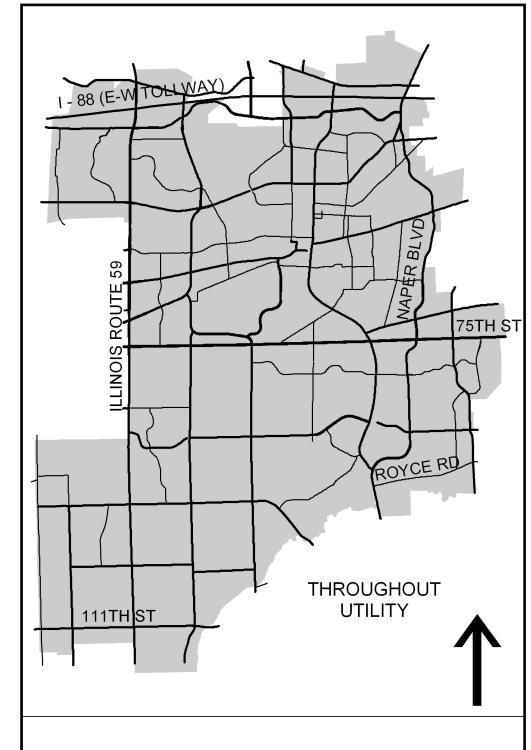
This project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2020	2021	2022	2023	2024	Total Source
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Project Cost Summary**

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



**Project Number:**

EU012

**Project Title:**

Government Required Electric System Relocations

**Department Name:**

Electric

**Asset Type:**

Electric Utility

**CIP Status:**

Recurring

**Project Category:**

Capital Maintenance

**Budget Year:**

2020

**Category Code:**

LR

**Sector:**

Various

**Project Purpose:**

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

**Project Narrative:**

Project provides for the relocation of overhead and underground transmission and distribution electrical facilities in the public way that are required to be relocated to remove a conflict and to facilitate and accommodate improvements to the infrastructure. Projects include North Aurora Road Widening Project, and other locations as required.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

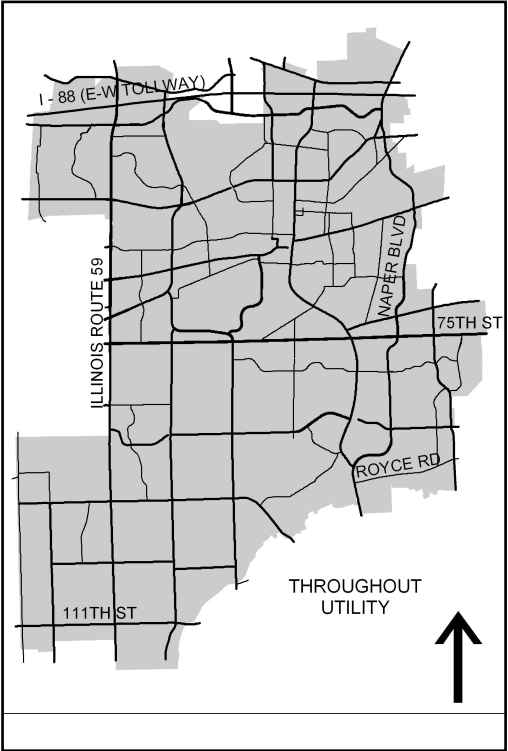
This project will require no additional staffing. There will be no impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	550,000	734,400	520,200	1,400,795	108,243	3,313,638
Totals	550,000	734,400	520,200	1,400,795	108,243	3,313,638

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	960,000	550,000	734,400	520,200	1,400,795	108,243	3,313,638
Totals	960,000	550,000	734,400	520,200	1,400,795	108,243	3,313,638





Project Number:

EU013

Project Title:

Underground Conduit (Duct Banks)

Department Name:

Electric

Asset Type:

Electric Utility

CIP Status:

Recurring

Project Category:

Capital Maintenance

Budget Year:

2020

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:**

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.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

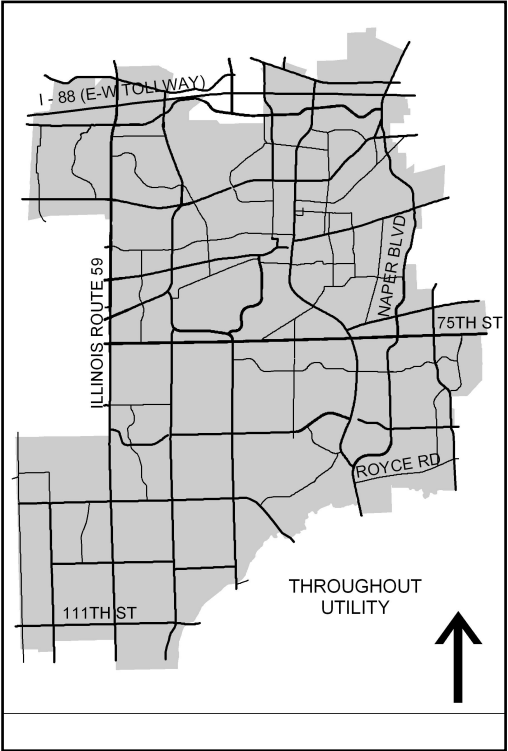
This project will require no additional staffing or resources. There will be no impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	1,000,000	1,122,000	832,320	848,966	1,082,432	4,885,719
Totals	1,000,000	1,122,000	832,320	848,966	1,082,432	4,885,719

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	850,000	1,000,000	1,122,000	832,320	848,966	1,082,432	4,885,719
Totals	850,000	1,000,000	1,122,000	832,320	848,966	1,082,432	4,885,719



**Project Number:**

EU014

**Project Title:**

Underground Cable (Feeders) & Equipment

**Department Name:**

Electric

**Asset Type:**

Electric Utility

**CIP Status:**

Recurring

**Project Category:**

Capital Maintenance

**Budget Year:**

2020

**Category Code:**

B

**Sector:**

Various

**Project Purpose:**

Projects designed to install and replace 12 kV feeder systems for the electrical distribution system.

**Project Narrative:**

Sections of feeders that have 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:**

None

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

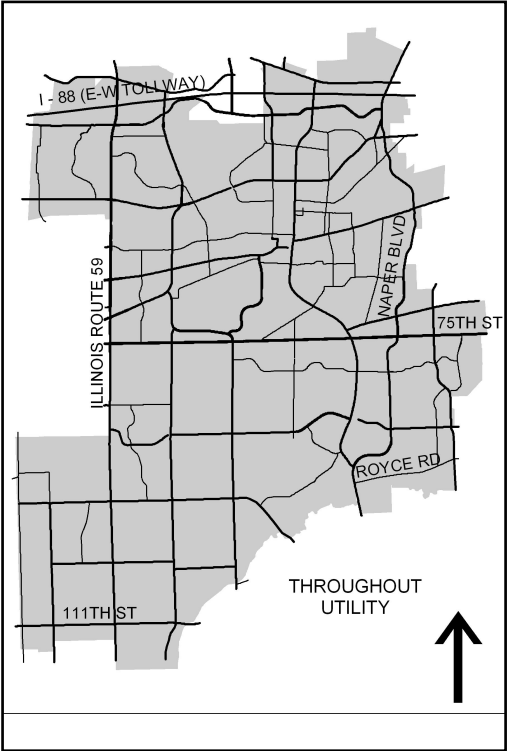
This project will require no additional staffing or resources. There will be no impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	600,000	561,000	520,200	530,604	541,216	2,753,020
Totals	600,000	561,000	520,200	530,604	541,216	2,753,020

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	670,000	600,000	561,000	520,200	530,604	541,216	2,753,020
Totals	670,000	600,000	561,000	520,200	530,604	541,216	2,753,020



**Project Number:**

EU022

**Project Title:**

Substation Emergency Repair/Replacement Items

**Department Name:**

Electric

**Asset Type:**

Electric Utility

**CIP Status:**

Recurring

**Project Category:**

Capital Maintenance

**Budget Year:**

2020

**Category Code:**

A

**Sector:**

Various

**Project Purpose:**

This project supports emergency replacement of capital equipment to maintain the reliability of the power delivery system at the substation.

**Project Narrative:**

These funds are required for emergency replacement of damaged or malfunctioning equipment due to weather (flooding, ice, lightning, etc.), accelerated aging, and/or manufacturer defect.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout the fiscal year to meet emergency repairs.

**Impact on Operating Budget:**

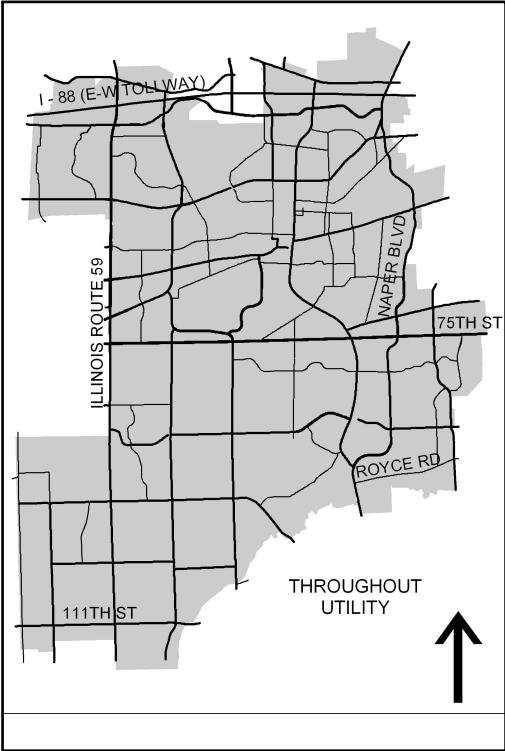
This project will require no additional staffing or resources. There will be no impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	150,000	153,000	156,060	159,181	162,365	780,606
Totals	150,000	153,000	156,060	159,181	162,365	780,606

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	150,000	150,000	153,000	156,060	159,181	162,365	780,606
Totals	150,000	150,000	153,000	156,060	159,181	162,365	780,606



**Project Number:**

EU029

**Project Title:**

Sub-transmission Circuits

**Department Name:**

Electric

**Asset Type:**

Electric Utility

**CIP Status:**

Recurring

**Project Category:**

Capital Maintenance

**Budget Year:**

2020

**Category Code:**

B

**Sector:**

Various

**Project Purpose:**

The projects include the 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 the customers' demands throughout the City at an efficient cost. The work is required throughout the system to meet system load growth and maintain high levels of reliability.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

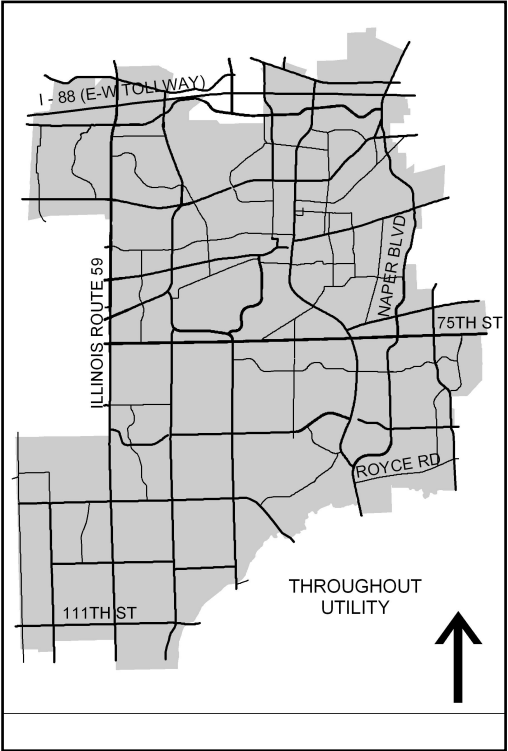
This project will require no additional staffing or resources. There will be no impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Totals	0	0	0	0	0	0

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Totals	0	0	0	0	0	0	0



**Project Number:** EU044  
**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:** 2020  
**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 (alarms, CCTV cameras, etc.).

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout fiscal year.

**Impact on Operating Budget:**

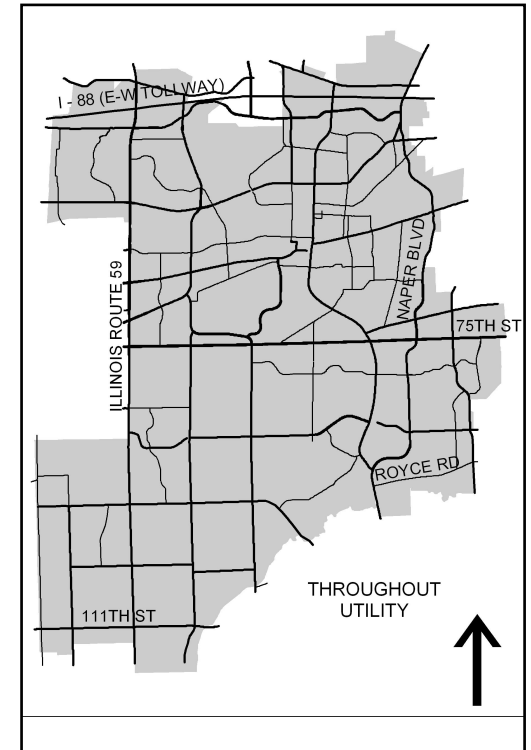
This project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	1,085,000	1,657,500	1,659,438	1,658,668	1,136,554	7,197,160
<b>Totals</b>	<b>1,085,000</b>	<b>1,657,500</b>	<b>1,659,438</b>	<b>1,658,668</b>	<b>1,136,554</b>	<b>7,197,160</b>

**Project Cost Summary**

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	904,000	1,085,000	1,657,500	1,659,438	1,658,668	1,136,554	7,197,160
<b>Totals</b>	<b>904,000</b>	<b>1,085,000</b>	<b>1,657,500</b>	<b>1,659,438</b>	<b>1,658,668</b>	<b>1,136,554</b>	<b>7,197,160</b>



Project Number:

EU047

Project Title:

34 and 138 KV Relay Improvements

Department Name:

Electric

Asset Type:

Electric Utility

CIP Status:

Recurring

Project Category:

Capital Maintenance

Budget Year:

2020

Category Code:

B

Sector:

Various

**Project Purpose:**

This project includes strategic, system-wide improvements to protective relay systems to reduce outages, enhance system reliability and ensure compliance with North American Electric Reliability Corporation Standards.

**Project Narrative:**

This project improves reliability of service to all customers by replacing and coordinating relays that protect transmission lines, transformers, and distribution feeders. Projects include the upgrade of electromechanical relay protection to microprocessor based relays to enhance reliability and comply with NERC testing requirements.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

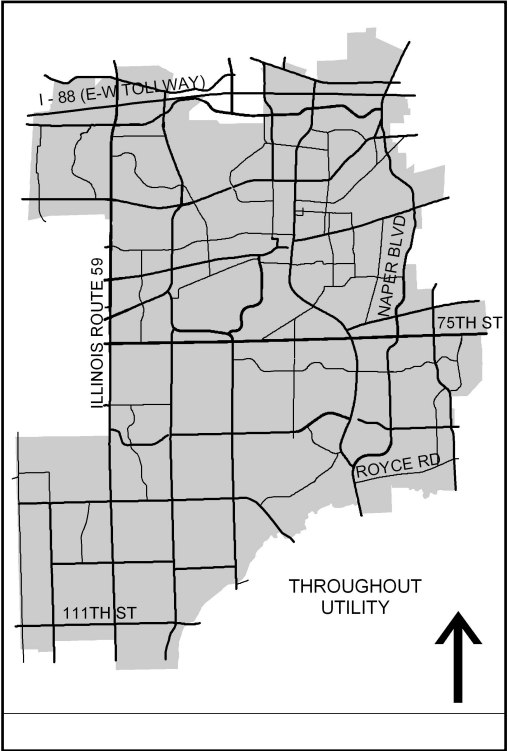
This project will have a very minor impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	275,000	280,500	806,310	1,061,208	378,851	2,801,869
Totals	275,000	280,500	806,310	1,061,208	378,851	2,801,869

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	425,000	275,000	280,500	806,310	1,061,208	378,851	2,801,869
Totals	425,000	275,000	280,500	806,310	1,061,208	378,851	2,801,869



Project Number:

EU049

Project Title:

Distribution Automation

Department Name:

Electric

Asset Type:

Electric Utility

CIP Status:

Recurring

Project Category:

Capital Maintenance

Budget Year:

2020

Category Code:

B

Sector:

Various

**Project Purpose:**

This project involves design, installation and relocation of Distribution Automation (DA) Sectionalizing units at various points on the electric system.

**Project Narrative:**

Project provides automatic 12.5kV feeder reconfiguration after a power line disturbance has occurred by isolating a faulted section of the feeder reducing downtime and minimizes the number of affected customers.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout fiscal year.

**Impact on Operating Budget:**

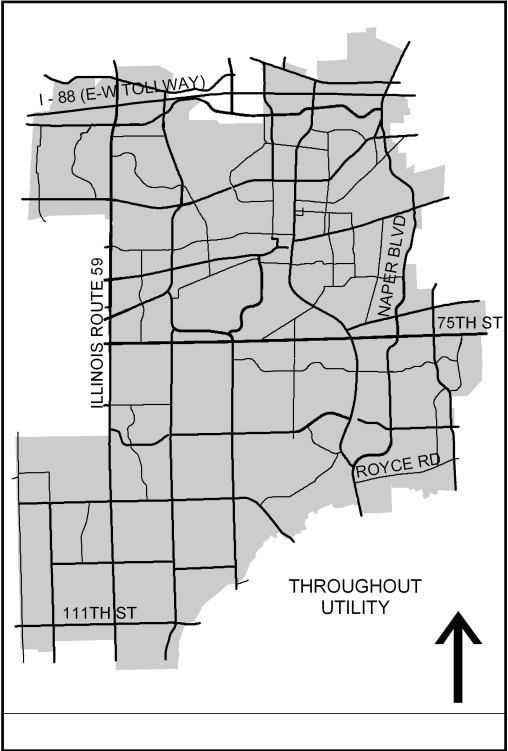
This project will require no additional staffing or resources. There will be no impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	375,000	382,500	390,150	397,953	405,912	1,951,515
Totals	375,000	382,500	390,150	397,953	405,912	1,951,515

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	375,000	375,000	382,500	390,150	397,953	405,912	1,951,515
Totals	375,000	375,000	382,500	390,150	397,953	405,912	1,951,515



**Project Number:** EU052  
**Project Title:** Cable Replacement Program  
**Department Name:** Electric

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

**Budget Year:** 2020  
**Category Code:** B  
**Sector:** Various

**Project Purpose:**

This project includes refurbishing aging single and three-phase feeder cables and equipment through boring, cable replacement 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 refurbishment program. Significant portions of cable will be refurbished via cable injection, extending cable life for up to 30 years with minimal landscaping disturbance. For CY 2020, subdivisions slated for improvement include portions of University Heights, Impressions of Laurel Glen, High Oaks, Green Ridge Estates, Meadow Glens, Hidden Valley Lake Estates, Walnut Hill, and will continue in Meadows, Maplebrook East, Baileywood, Orleans, Naper Carriage Hill, and others. Cable replacement will be performed in the Pembroke Greens and Hobson Willage subdivisions and will continue in the Buttonwood and Countryside subdivisions.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

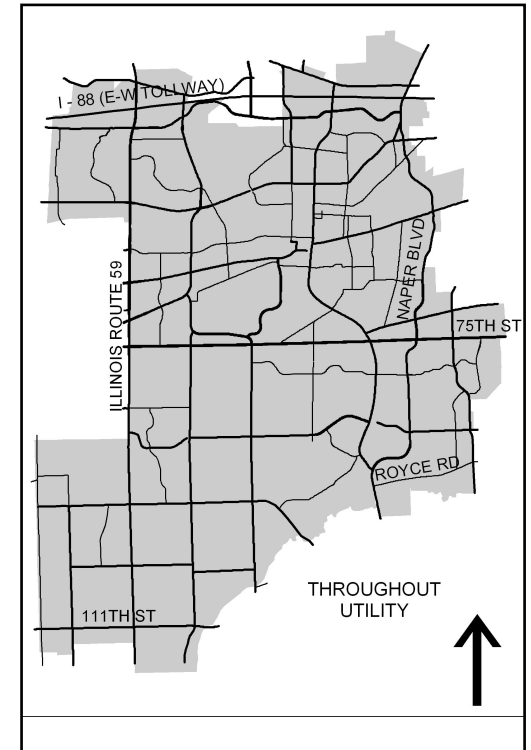
This project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	2,900,000	2,550,000	1,300,500	424,484	1,948,378	9,123,362
<b>Totals</b>	<b>2,900,000</b>	<b>2,550,000</b>	<b>1,300,500</b>	<b>424,484</b>	<b>1,948,378</b>	<b>9,123,362</b>

**Project Cost Summary**

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	2,900,000	2,900,000	2,550,000	1,300,500	424,484	1,948,378	9,123,362
<b>Totals</b>	<b>2,900,000</b>	<b>2,900,000</b>	<b>2,550,000</b>	<b>1,300,500</b>	<b>424,484</b>	<b>1,948,378</b>	<b>9,123,362</b>





**Project Number:**

EU057

**Project Title:**

12 KV and SCADA Substation Automation

**Department Name:**

Electric

**Asset Type:**

Electric Utility

**CIP Status:**

Recurring

**Project Category:**

Capital Maintenance

**Budget Year:**

2020

**Category Code:**

B

**Sector:**

Various

**Project Purpose:**

This project uses technology to integrate all equipment within the substation - providing secure, reliable and accurate information and remote control of substation equipment to system operators and substation field personnel.

**Project Narrative:**

Automation systems installed at DPU-E substations allow various devices within the substation to communicate with each other as well as providing a secure method for system controllers and engineering personnel to access information from relays and other Intelligent Electronic Devices inside the substation.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

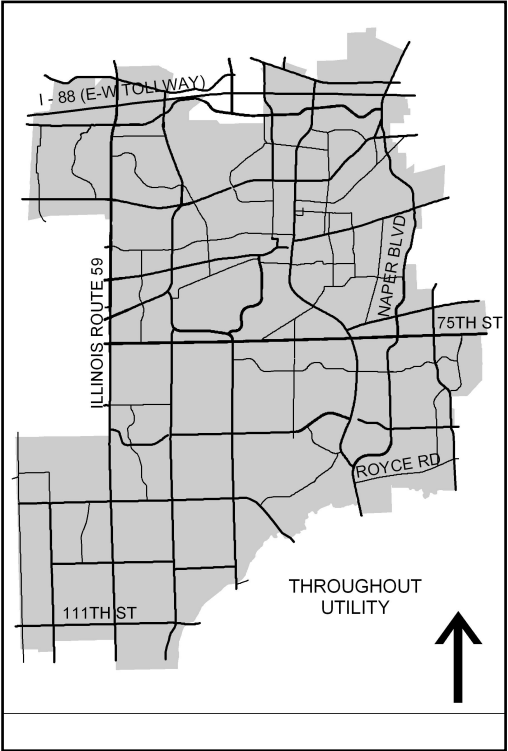
This project will require no additional staffing or resources. There will be no impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	525,000	918,000	520,200	530,604	541,216	3,035,020
Totals	525,000	918,000	520,200	530,604	541,216	3,035,020

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	175,000	525,000	918,000	520,200	530,604	541,216	3,035,020
Totals	175,000	525,000	918,000	520,200	530,604	541,216	3,035,020



Project Number: EU064

Project Title: Substation Oil Spill Protection

Department Name: Electric

Asset Type: Electric Utility

CIP Status: Recurring

Project Category: Capital Maintenance

Budget Year: 2020

Category Code: LR

Sector: Various

**Project Purpose:**

This project will ensure compliance with new Environmental Protection Agency (EPA) standards regarding oil spill containment at electric substations.

**Project Narrative:**

This project funds improvements to the required substation oil spill containment system at Route 59 Substation in CY18, Springbrook Substation in CY19, and Royce Substation CY20.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout fiscal year.

**Impact on Operating Budget:**

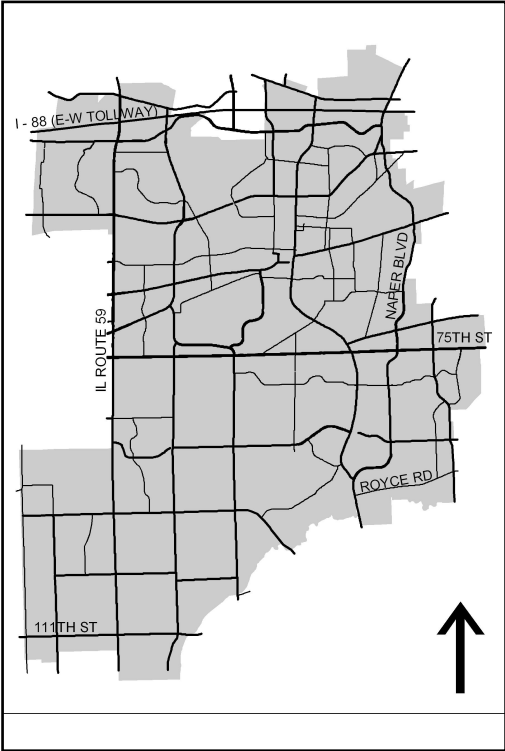
No operating budget impact.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	100,000	51,000	52,020	53,060	54,122	310,202
Totals	100,000	51,000	52,020	53,060	54,122	310,202

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	50,000	100,000	51,000	52,020	53,060	54,122	310,202
Totals	50,000	100,000	51,000	52,020	53,060	54,122	310,202



**Project Number:**

EU065

**Project Title:**

Electric Distribution Transformer Purchases

**Department Name:**

Electric

**Asset Type:**

Electric Utility

**CIP Status:**

Recurring

**Project Category:**

Capital Maintenance

**Budget Year:**

2020

**Category Code:**

A

**Sector:**

Various

**Project Purpose:**

This project provides for the purchase of electric transformers to maintain and expand the electric system.

**Project Narrative:**

Annual distribution transformer purchases. Transformers are purchased and stored at the Electric Service Center's warehouse storage yard and installed in the field as the need arises for new and replacement.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

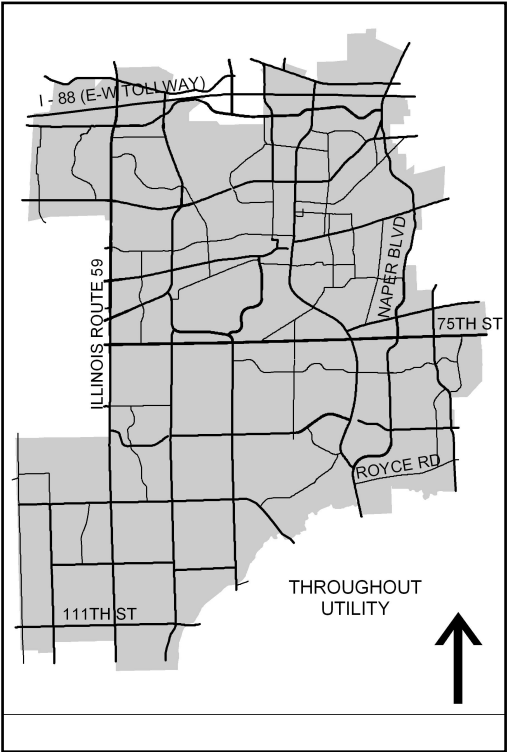
This project will require no additional staffing or resources. There will be no impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	500,000	612,000	624,240	636,725	649,460	3,022,425
Totals	500,000	612,000	624,240	636,725	649,460	3,022,425

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	625,000	500,000	612,000	624,240	636,725	649,460	3,022,425
Totals	625,000	500,000	612,000	624,240	636,725	649,460	3,022,425



**Project Number:**

EU066

**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:**

2020

**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:**

Projects supported by this project include the Metropolitan Area Network (MAN) servicing all City owned and operated buildings including Naper Settlement, Naperville to Aurora Fiber Optic Communications for Radio System support as well as SCADA for Water network which provides a reliable, high speed communication backbone for DPU-W communication to water and waste water sites.

**External Funding Sources Available:**

Projects are funded by Customer.

**Projected Timetable:**

Systematically throughout the fiscal year as necessitated by customers.

**Impact on Operating Budget:**

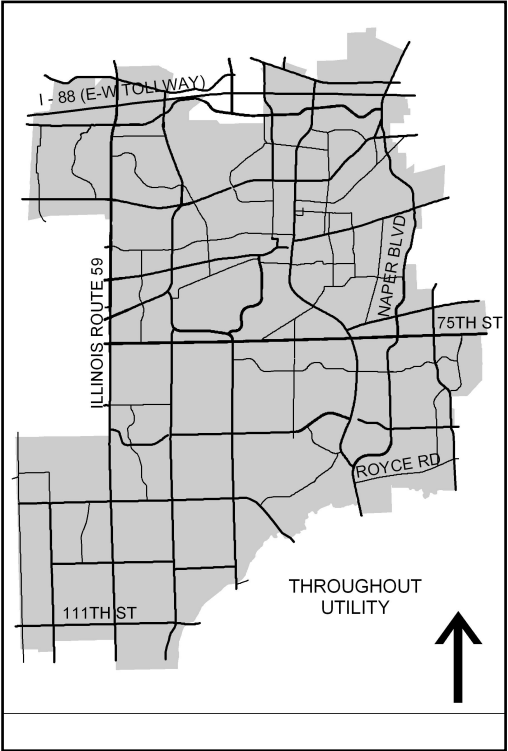
This project will require no additional staffing or resources. There will be no impact on the operating budget.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Developer Contribution	172,000	51,000	52,020	53,060	54,122	382,202
Totals	172,000	51,000	52,020	53,060	54,122	382,202

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	340,000	172,000	51,000	52,020	53,060	54,122	382,202
Totals	340,000	172,000	51,000	52,020	53,060	54,122	382,202



**Project Number:** EU072  
**Project Title:** Asset Management System (AMS)  
**Department Name:** Electric

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

**Budget Year:** 2020  
**Category Code:** A  
**Sector:** Various

**Project Purpose:**

This project supports electrical infrastructure asset management system to maximize asset performance while lowering capital replacement and maintenance costs. A well-executed asset management strategy will reduce unnecessary maintenance and downtime, track causes of failures, identify repeat problems, provide root-cause data and fault diagnosis, and recommend actions.

**Project Narrative:**

The project will leverage the GIS system capability to set up a comprehensive asset inspection, measurement and evaluation strategy. In conjunction with new capabilities of ERP system and work order management system, the cost effective software tool will be developed to maximize asset performance while lowering the costs of maintenance and replacement of electrical assets. It will also detects failure conditions in advance; eliminates manual actions, handoffs and paperwork; and reduces the time between problem identification and resolution.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

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

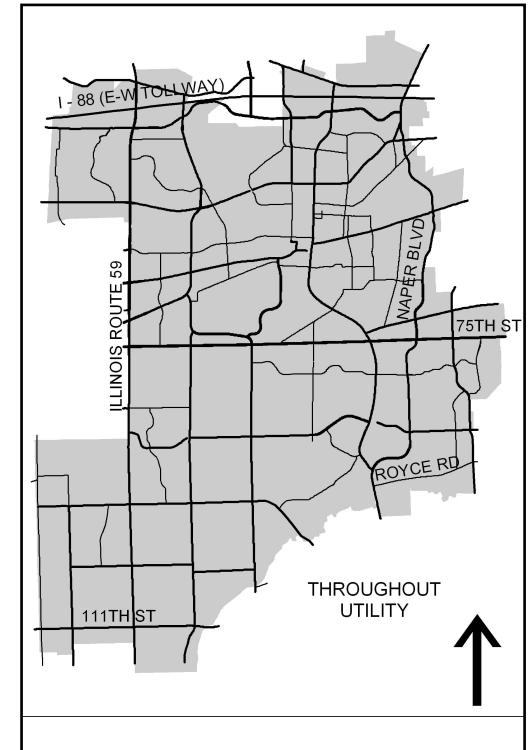
Transferred to CE148 - Cityworks upgrade.

**Funding Source Summary**

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	200,000	204,000	208,080	212,242	216,486	1,040,808
<b>Totals</b>	<b>200,000</b>	<b>204,000</b>	<b>208,080</b>	<b>212,242</b>	<b>216,486</b>	<b>1,040,808</b>

**Project Cost Summary**

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Technology - Hardware/Software	200,000	200,000	204,000	208,080	212,242	216,486	1,040,808
<b>Totals</b>	<b>200,000</b>	<b>200,000</b>	<b>204,000</b>	<b>208,080</b>	<b>212,242</b>	<b>216,486</b>	<b>1,040,808</b>



**Project Number:** EU076  
**Project Title:** Rt. 59: Relocate 138kV Line from Westside Sub. to Aurora Avenue.  
**Department Name:** Electric

**Asset Type:** Electric Utility  
**CIP Status:** Completed  
**Project Category:**

**Budget Year:** 2020  
**Category Code:**  
**Sector:** Northwest

**Project Purpose:**

This project includes design and construction costs of the relocation of the DPU-E transmission line between Westside Substation and Aurora Avenue for the Route 59 roadway widening project.

**Project Narrative:**

This project involved relocating twelve (12) 138kV transmission towers between Westside Substation and Aurora Ave. in conjunction with the widening of State Rt. 59 by I.D.O.T. IDOT construction broken down into several components to be constructed over a few years. Utility relocations anticipated from Fall 2012 to Summer 2014. Electric facilities must be relocated prior to roadway construction. Prior year encumbered PO's include # 121810 for \$1,461,221, Michels Power-Construction: Remove 9 steel poles and install 12 new steel poles; #121819 for \$555,665, Transamerican Power Products- purchase of 12 new steel poles; #111663 for \$220,000, Electrical Consultants, Inc-Engineering Design and Field Services.

**External Funding Sources Available:**

**Projected Timetable:**

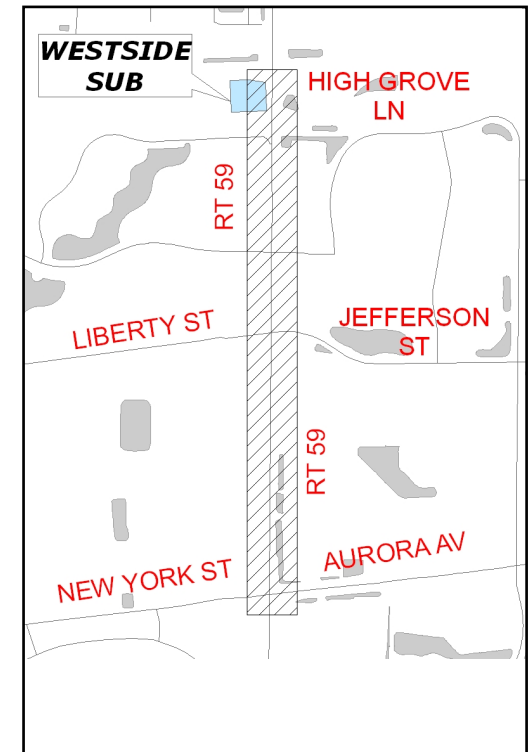
**Impact on Operating Budget:**

**Funding Source Summary**

Funding Source	2020	2021	2022	2023	2024	Total Source
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Project Cost Summary**

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



**Project Number:** EU078  
**Project Title:** Supervisory Control And Data Acquisition  
**Department Name:** Electric

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

**Budget Year:** 2020  
**Category Code:** B  
**Sector:** Various

**Project Purpose:**

This project upgrades and enhances the Supervisory Control and Data Acquisition (SCADA) system that is used to monitor, control, and assess the health of the transmission, sub transmission and distribution system.

**Project Narrative:**

Supervisory Control and Data Acquisition is used to monitor and control various devices located in each substation as well as the Distribution Automation devices located on 12kV feeders. Key components of this system include the master station, workstations, video wall and map board located in the Electric Service Center as well as the Remote Terminal Units (RTUs), transducers, meters and relays located at each of the 16 substations. This project also will ensure the utility's compliance with NERC Critical Infrastructure Protection standards.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout fiscal year.

**Impact on Operating Budget:**

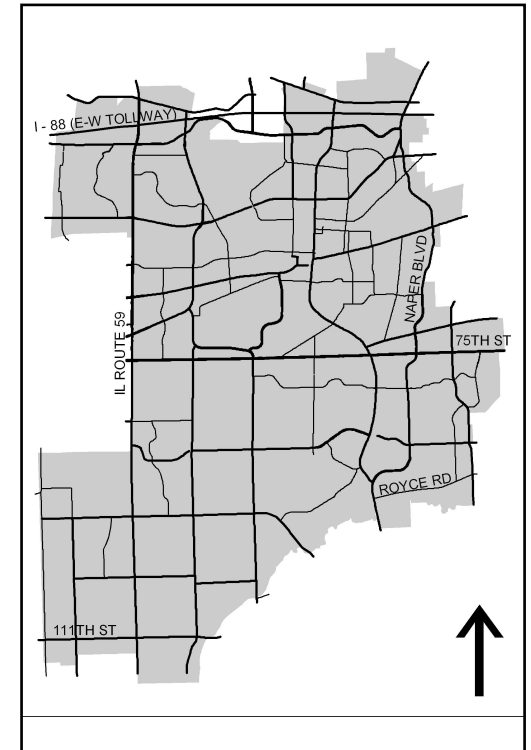
This project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	100,000	204,000	499,392	482,850	432,973	1,719,215
<b>Totals</b>	<b>100,000</b>	<b>204,000</b>	<b>499,392</b>	<b>482,850</b>	<b>432,973</b>	<b>1,719,215</b>

**Project Cost Summary**

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Equip. & Maint.	150,000	100,000	204,000	499,392	482,850	432,973	1,719,215
<b>Totals</b>	<b>150,000</b>	<b>100,000</b>	<b>204,000</b>	<b>499,392</b>	<b>482,850</b>	<b>432,973</b>	<b>1,719,215</b>



**Project Number:** EU079  
**Project Title:** Substation Power Transformer  
**Department Name:** Electric

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

**Budget Year:** 2020  
**Category Code:** A  
**Sector:** Various

**Project Purpose:**

This project improves the reliability of service via replacement of old power transformers that are approaching their end of life to maintain system performance and reliability.

**Project Narrative:**

Naperville has a total of 16 substations with an average of 2 power transformers per station. Some power transformers on the system are 40-50 years old and are approaching the end of their useful life.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

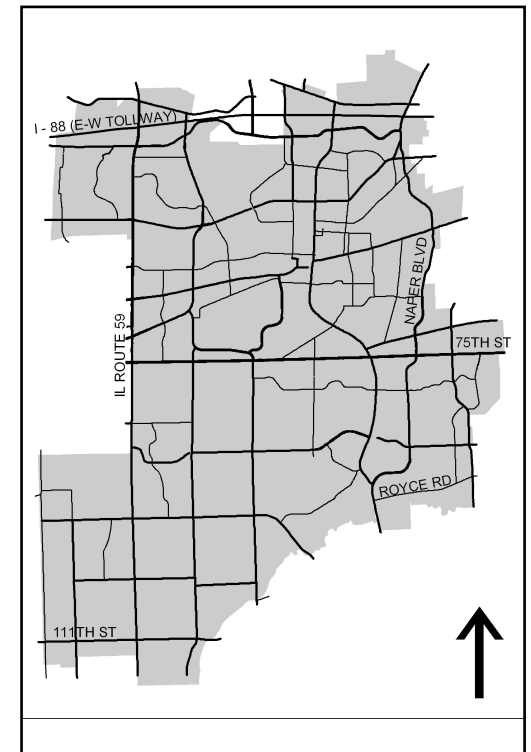
This project will require no additional staffing or resources. There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	0	255,000	0	0	920,067	1,175,067
<b>Totals</b>	<b>0</b>	<b>255,000</b>	<b>0</b>	<b>0</b>	<b>920,067</b>	<b>1,175,067</b>

**Project Cost Summary**

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Equip. & Maint.	0	0	255,000	0	0	920,067	1,175,067
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>255,000</b>	<b>0</b>	<b>0</b>	<b>920,067</b>	<b>1,175,067</b>





**Project Number:** EU080

**Project Title:** Smart Grid Infrastructure Hardware

**Department Name:** Electric

**Asset Type:** Equipment

**CIP Status:** Recurring

**Project Category:** Capital Maintenance

**Budget Year:** 2020

**Category Code:** B

**Sector:** Various

**Project Purpose:**

This project is for the replacement of utility hardware infrastructure supporting metering and billing operations at the Electric Service Center and Municipal Center.

**Project Narrative:**

Utility infrastructure hardware was purchased in 2013 and is reaching end of life/end of support status with various manufacturers. CY18 projects include the replacement Storage Area Network nodes - phase 2 as these will be reaching end of support status in 2018.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout the fiscal year.

**Impact on Operating Budget:**

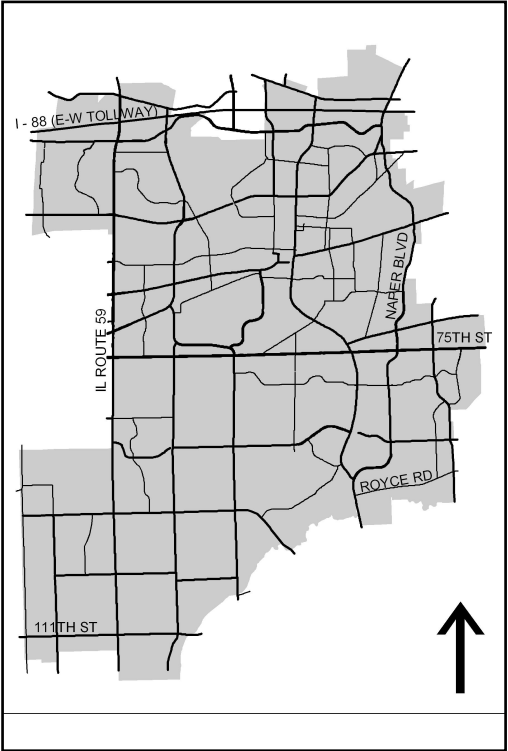
This project will require no additional staffing or resources. There will be impact on the operating budget of \$86,000 for maintenance costs for existing software.

Funding Source Summary

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	450,000	306,000	468,180	318,362	324,730	1,867,272
Totals	450,000	306,000	468,180	318,362	324,730	1,867,272

Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	240,000	450,000	306,000	468,180	318,362	324,730	1,867,272
Totals	240,000	450,000	306,000	468,180	318,362	324,730	1,867,272



**Project Number:** EU083  
**Project Title:** Substation Flood Prevention  
**Department Name:** Electric

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

**Budget Year:** 2020  
**Category Code:** A  
**Sector:** Various

**Project Purpose:**

This project ensures electrical system reliability by installing flood prevention measures at Ogden, Modaff, Route 59 and Springbrook Substations.

**Project Narrative:**

As a result of heavy flooding experienced at Ogden, Modaff, Route 59 and Springbrook Substations during excessive rain in the Spring of 2013; this project will implement remediation efforts at each of these stations, starting in CY20.

**External Funding Sources Available:**

None

**Projected Timetable:**

Systematically throughout fiscal year starting in CY 19. This project will require no additional staffing or resources.

**Impact on Operating Budget:**

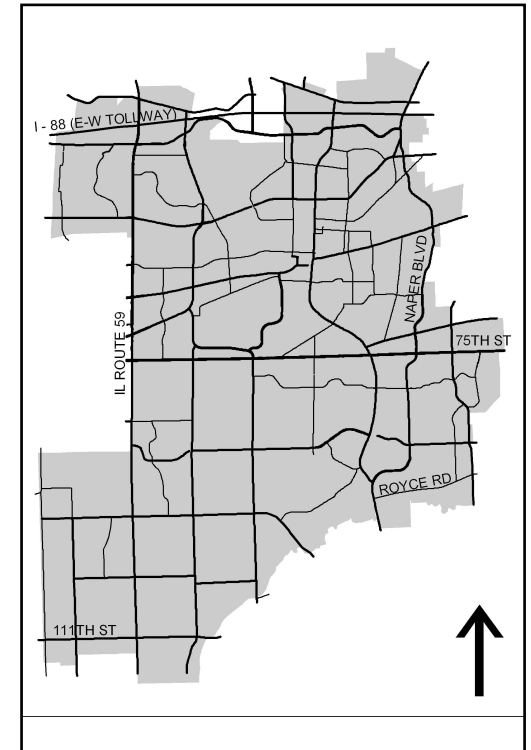
There will be no impact on the operating budget.

**Funding Source Summary**

Funding Source	2020	2021	2022	2023	2024	Total Source
Electric Utility	250,000	255,000	260,100	265,302	270,608	1,301,010
<b>Totals</b>	<b>250,000</b>	<b>255,000</b>	<b>260,100</b>	<b>265,302</b>	<b>270,608</b>	<b>1,301,010</b>

**Project Cost Summary**

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Equip. & Maint.	0	250,000	255,000	260,100	265,302	270,608	1,301,010
<b>Totals</b>	<b>0</b>	<b>250,000</b>	<b>255,000</b>	<b>260,100</b>	<b>265,302</b>	<b>270,608</b>	<b>1,301,010</b>



**Project Number:** EU084  
**Project Title:** ERP Integration with DPU-E specific applications  
**Department Name:** Electric

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

**Budget Year:** 2020  
**Category Code:** B  
**Sector:**

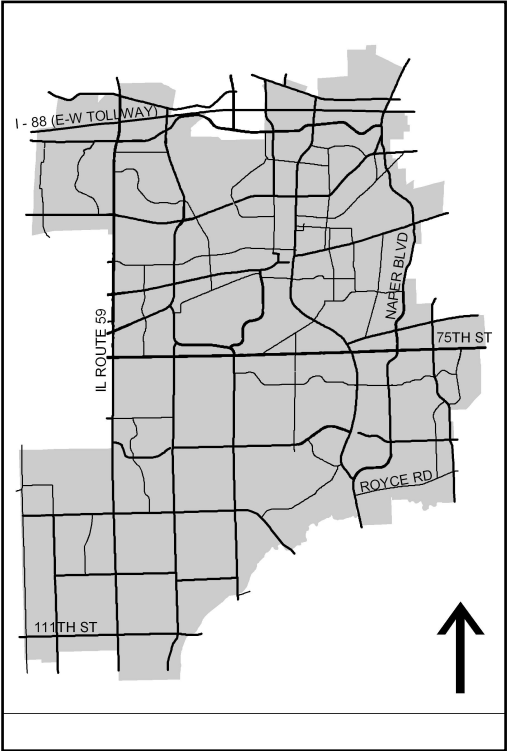
**Project Purpose:**  
Integrate GIS design software with various existing utility systems.

**Project Narrative:**  
This project will integrate the utility's GIS design software with the new ERP solution. Additionally, work will be completed to integrate this GIS design software with existing city owned software to replace the existing work order management system (SunGard).

**External Funding Sources Available:**  
None

**Projected Timetable:**  
Systematically throughout the fiscal year.

**Impact on Operating Budget:**  
This project will require no additional staffing or resources. There will be no impact on the operating budget.



Project Cost Summary

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Totals	0	0	0	0	0	0	0

**Project Number:** EU085  
**Project Title:** Edward Hospital Substation Capacity Expansion  
**Department Name:** Electric

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

**Budget Year:** 2020  
**Category Code:** A  
**Sector:** Northeast

**Project Purpose:**

This project directly supports the expansion of Edward Hospital's inpatient facilities by increasing the capacity of the existing substation.

**Project Narrative:**

This project will be funded by Edward Hospital to increase the capacity of the existing 15MVA substation to 30MVA by adding two 7.5MVA transformers and a control house with indoor 34.5kV switchgear. This project directly supports the expansion of Edward Hospital's inpatient facilities by providing the customer required fully redundant power sources. This project will span three calendar years and the design will begin in 2017.

**External Funding Sources Available:**

This project will be funded by Edward Hospital.

**Projected Timetable:**

This project will span three calendar years and the design will begin in 2017.

**Impact on Operating Budget:**

None. This project will be funded by Edward Hospital.

**Funding Source Summary**

Funding Source	2020	2021	2022	2023	2024	Total Source
Developer Contribution	4,100,000	0	0	0	0	4,100,000
<b>Totals</b>	<b>4,100,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,100,000</b>

**Project Cost Summary**

Expense Category	2019 Budget	2020	2021	2022	2023	2024	Total CIP
Construction	3,100,000	4,100,000	0	0	0	0	4,100,000
<b>Totals</b>	<b>3,100,000</b>	<b>4,100,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,100,000</b>

