

<b>Project Title:</b>	Signal Controller Replacement	<b>Project #:</b>	202403
<b>Department:</b>	Public Works - Highways	<b>Project Type:</b>	Equipment Replacement
<b>Phase:</b>	Formation	<b>Road Name:</b>	Various
<b>Budget Action:</b>	Delay                      C - \$ Update                      C - Rev Update	<b>Manager:</b>	Allison Bussler, DPW Director
<b>Date:</b>	July 8, 2024	<b>Map / Image:</b>	<a href="#">Click Here</a>

CAPITAL BUDGET SUMMARY						
Year	2024	2025	2026	2027	2028	Total
Project Phase	Design	Design	Construction	Construction		Project
Expenditure Budget	\$129,000	\$30,000	\$399,500	\$399,500	\$0	\$958,000
Revenue Budget	<u>\$103,200</u>	<u>\$23,800</u>	<u>\$320,000</u>	<u>\$320,000</u>	<u>\$0</u>	<u>\$767,000</u>
Net Costs After Revenues Applied	\$25,800	\$6,200	\$79,500	\$79,500	\$0	\$191,000
<b>COST DOCUMENTATION</b>			<b>REVENUE</b>			
Design	\$149,000		Federal Congestion Management and Air Quality (CMAQ) Anticipated			
WisDOT Design Review	\$10,000		Design			
Construction	\$540,000		Construction			
Construction Management	\$164,000					
WisDOT Construction Review	\$15,000					
Contingency	\$80,000					
Total Project Cost	\$958,000		Total Revenue			
<b>EXPENDITURE BUDGET</b>	<b>\$958,000</b>		<b>REVENUE BUDGET</b>			
			\$767,000			

### **Project Scope & Description**

The purpose of this project is to replace obsolete and inefficient traffic signal controllers throughout Waukesha County. The county maintains 115 signals on highway intersections. The signal equipment is older technology with some being more than 30 years old. Improvements include:

- New traffic signal controllers
- Updated signal timing programs

Waukesha County has been awarded a Congestion Mitigation and Air Quality (CMAQ) grant for this proposed project. This grant covers 80% of eligible costs. Construction is delayed 1-year based on WisDOT grant approval timing and to allow adequate time for design. Construction is being phased over two years.

### **Location**

Throughout Waukesha County

### **Analysis of Need**

The older controllers make the signals less efficient and are not able to implement modern improvements like flashing-yellow-arrows or adaptive control, and upcoming technologies, such as connected vehicles, that can reduce the amount of time a vehicle spends idling at an intersection. New controllers provide better coordination along corridors with multiple traffic signals, so drivers see more green lights and spend less time stopped at red lights. New controllers are also more efficient and use less electricity. Poorly timed traffic signals increase carbon emissions and pollution. Studies show a typical car generates 1 lb of carbon dioxide (CO2) emissions for every 3 minutes of idling. Well-timed signals can have a significant impact on reduction of carbon emissions. This will reduce overall carbon emissions by increasing the efficiency of the highways. The county's traffic signal controller vendor no longer sells the brand that is used at the majority of intersections.

### **Alternatives**

The do nothing alternative leaves the county using aging and unsupported equipment.

### **Ongoing Operating Costs**

It is anticipated that maintenance costs will be reduced in the years immediately after improvements to signal equipment are completed. The energy-efficient equipment is expected to reduce electrical consumption.

### **Previous Action**

Approved as a new project in the 2024-2028 capital plan.