

Monroe County Traffic Signal/Sign Pole Asset Management

UPWP 7950

Scope of Work

A. Objective

This project will conduct a complete inventory of all 2000 vehicle traffic signal poles and overhead sign structure poles and all 900 pedestrian poles under Monroe County's jurisdiction, including the City of Rochester. The result will be a system-wide inventory of poles in GIS format which can be used to identify pole types, general conditions, and help to plan where traffic signal and overhead sign pole replacements may be needed in the future. Other surface features related to the traffic signal system (pullboxes and cabinets) will also be inventoried so that their locations and general conditions are also captured in GIS format; their condition is also indicative of the need for upgrades/replacements on a systemwide basis.

B. Background

This project represents a vulnerability assessment of critical transportation facilities that overhang and lie along roadways. Traffic signal poles and arms in particular have become increasingly loaded due to stricter requirements such as adding more signal heads per direction, requiring 12 inch heads instead of 8 inch heads, larger overhead street name signs, moving No Turn on Red signs overhead, and supporting ITS devices such as cameras and radios. Backplates are also becoming a standard provision. These extra loads are putting more stress on this aspect of the transportation system. We need to be able to manage these resources more closely by having an inventory of their location, pole type, general condition, and types of loading.

As the system of traffic signal and overhead sign poles ages, a system wide assessment is needed to inventory the poles and identify potential vulnerabilities. Pole replacement projects are costly and involve long lead times. A planning tool is needed to identify a strategy for managing our poles into the future. The results can also be used to identify where a more thorough structural inspection may be needed to confirm the structural soundness of the pole.

While Monroe County's GIS system shows the general location of each traffic signal, it does not include the pole locations and other surface attributes such as pullbox and cabinet locations. While these are not subject to loading concerns, their general condition is also indicative of the need for traffic signal upgrades. There also is no existing inventory of overhead sign poles.

C. Tasks

A consultant will be selected to perform the project tasks. An inventory of pole locations in GIS format will be developed that identifies all traffic signal and overhead sign poles under Monroe County's jurisdiction, including the City of Rochester.

Approximately 2,000 vehicle poles and 900 pedestrian poles will be inventoried and assessed. Each vehicle pole and arm will be identified as to its pole type and visually checked for condition of the connections and attachment points. Specific problems that can be found by this method include pole dents, evidence of corrosion, foundation cracks or spalling, missing covers, and/or loose nuts. Span wire poles can also be checked for leaning. A table of the general loads attached to each vehicle mast arm and span wire will be included, along with the span distance and mast arm lengths. Vehicle poles will be inventoried and their general condition noted. An inventory of the associated surface features for the traffic signal (pullboxes and cabinets) will be performed to document their location and general condition. This work will be performed by a consultant that has expertise in pole assessment and inventory management. Monroe County will administer the project, overseeing the consultant's performance and providing guidance.

The stakeholders for this project include Monroe County and the City of Rochester. We will work with the City as their Traffic Engineers to advise of any identified needs and concerns within the City. We will also work with the New York State Department of Transportation as an interested stakeholder. These three entities will be represented on a steering/advisory committee for the project.

D. Products

The deliverables will be a GIS based database that includes the pole locations, types of poles, overall pole conditions, and a table listing the loading on each vehicle mast arm and span wire. The GIS database will also include the locations and general conditions of the associated surface features (pullboxes and cabinets). A final report will be provided identifying any vulnerabilities that were found, either by individual location or by trend such as a combination of pole type and age. This information will be used to create a prioritized signal pole/sign pole replacement program that will focus first on rectifying more immediate replacement needs, and then on longer term needs where poles/arms are either near the end of their useful life or need to be upgraded to provide higher loading capacity due to current and anticipated loading demands. This planning effort will also provide us with an asset structure allowing for the efficient tracking in a data warehouse that can readily be kept updated as future changes occur. A photocopy-ready executive summary of the project report and its findings will be provided for purposes of GTC Planning Committee and Board agenda item transmittal.

E. Public Participation Plan

This type of project is intended to preserve existing facilities and as such, no public participation is anticipated. However, broadband business providers have been increasingly requesting the use of our traffic signal poles for deploying their equipment. This project will help to identify the feasibility of such applications for future decision making.

F. Schedule

Project consultant selection will begin upon approval of the Scope of Work, which is anticipated in May 2019. The consultant contract is anticipated to be awarded in the fall of 2019. Field work will be continued into mid 2020, with a completed project and final report anticipated to be ready for GTC approval by the end of 2020.

G. Project Budget

Sources of Funds		Uses of Funds	
	<u>FY 2019-20</u>		<u>FY 2019-20</u>
<u>Federal Funds</u>		<u>GTC</u>	
FHWA	\$135,000	Staff	\$0
FTA	0	Contractual	0
Subtotal	\$135,000	Subtotal	\$0
<u>Matching Funds</u>		<u>Other Agency</u>	
State (In-kind)	\$0	Staff	\$0
Local (In-kind)	\$15,000	Contractual	\$135,000
Local (Cash)	\$0	In-kind Exp.	\$15,000
Subtotal	\$15,000	Subtotal	\$150,000
<u>Total</u>	<u>\$150,000</u>	<u>Total</u>	<u>\$150,000</u>