I would recommend picking one or multiple representative intersections to represent the 40 locations; multiply and then compare that to the total cost.

Transportation System Management and Operations - Traffic Infrastructure Process

Project Benefits - Intersection Communication Expansion

Design-build and integrate fiber optic links between existing fiber infrastructure and signal systems, or procure and install cellular Ethernet modems.

Region:	
Proposed Project Name:	
Requested By:	

1	What is the anticipated cost of the project?	
2	Indicate the proposed expansion type.	Signal Communications

3 Using each of the following Needs Analysis Tool presets, provide the anticipated level of need in the vicinity of the proposed project:

Needs Tool. →

Default TIP	
Safety	
Mobility (Present)	
Mobility (Future)	
Service	
Freight Performance	

Needs Tool. Consider each of the segments at the intersection within the influence area (in 99% of the cases, this will just be one segment intersecting at the intersection). Guidance varies, but I would recommend using 50 to 100 feet.

4 Note: it is recommended that each intersection communication location be considered separately. However, if multiple locations are included, be sure to provide the cumulative responses to the questions below. Indicate number of intersections this request accounts for:

← 40 or if you determine there are different representative types.

5 Indicate the type of benefit(s) that are expected as a result of this project?

Safety	
Mobility (Reduction of Travel Time Delay or Variability / Increased Throughput)	
Productivity (Improved Maintenance)	

← All likely yes.

enefits

S1. Indicate the total number of collisions, by type, at the proposed coordinated location. If this is an addition to an existing system, indicate those collisions only along the new section of coordinated corridor.

	Fatal Crashes
	Incapacitating Injury Crashes
	Non-incapacitating Injury Crashes
	Possible Injury Crashes
	Property Damage Only Crashes

Estimated Safety Benefit: $0

Needs Tool. Sum the AADT for each entering segment.

enefits

M1. What is the estimated ADT for all vehicles entering the intersection (the Needs Analysis Tool can be used to add the traffic entering the intersection)?

vehicles per day

M2. What is the average Relative Need at this intersection according to the Needs Analysis Tool - Service preset?

Needs Tool.

Estimated Annual Mobility Benefit: $0

Productivity Benefits

P1. It is assumed that productivity benefits will be realized through reduced maintenance efforts. Estimate for how long maintenance efforts have been increasing at this intersection(s).

estimate

P2. How many Cartegraph tickets have been required at this location(s) over the length of time indicated above in P1?

tickets

P3. Based on the nature of the Cartegraph tickets, estimate the percent ticket reduction that will occur after the proposed intersection(s) can be communicated with remotely.

percent ticket reduction

Estimated Annual Productivity Benefit: $0

Energy and Environment Benefits

E1. Energy and Environment benefits are determined based on average travel time reduction.

Estimated Annual Energy and Environment Benefit: $0

Estimated Annual Benefit: $0

Estimated Benefit/Cost Ratio: #DIV/0!