

Traffic Signal Identification Project Update December 2, 2020

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Project Goals

- Find the number of local agency signalized intersection
- Estimate cost per intersection
- Estimate total value of local agency signals in Michigan



Why Not A Survey?

- Traffic signal vs flashing beacon
- Signalized intersection vs signal head vs signalized location under a controller
- Owned vs maintained
- Not easily repeatable



Crash Data

- Consensus of repeated measure of “traffic control” field
- Aggregated crashes at public road to road intersections
- Last 3 years of crash data
- 50’ from an intersection

- Optimized for two metrics
 - Accuracy of population estimate (raw number of signals)
 - Location precision (how many ground truth signals were identified)



Ground Truth Testing

Consensus Percentage

52

Missed Signals

133

False Positives

121

Signals Detected

1249

Ground Truth

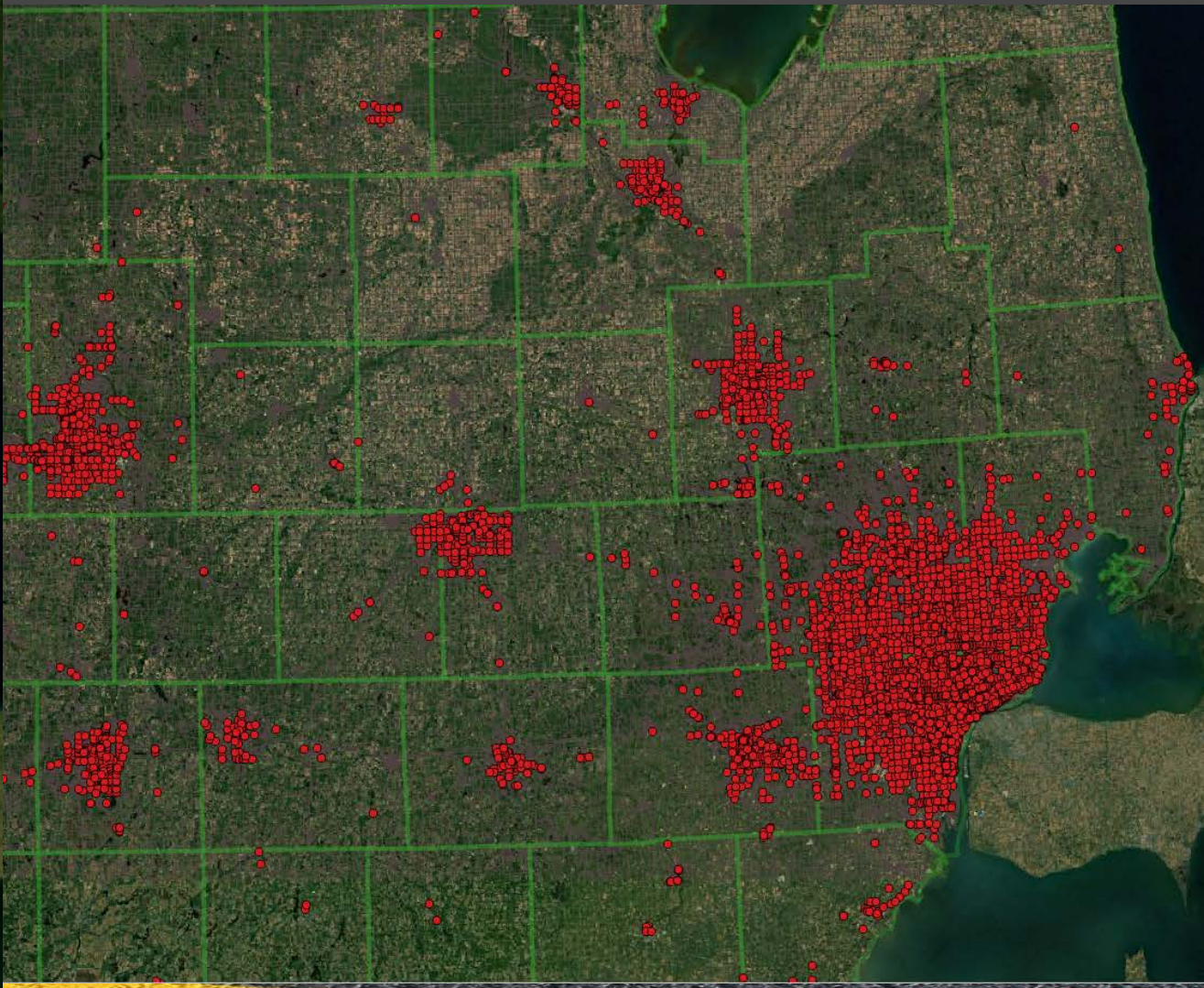
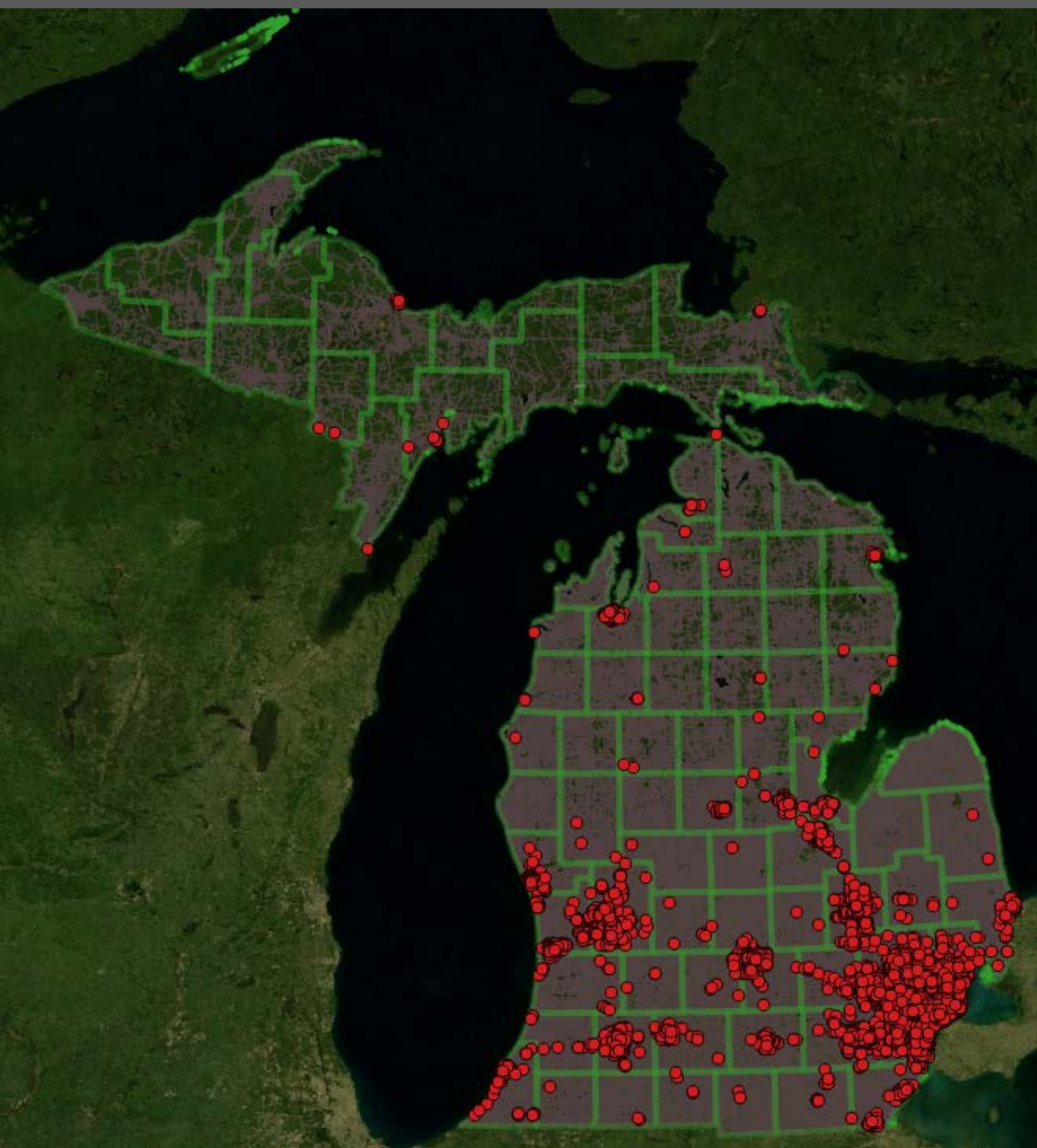
1261

Detection Accuracy

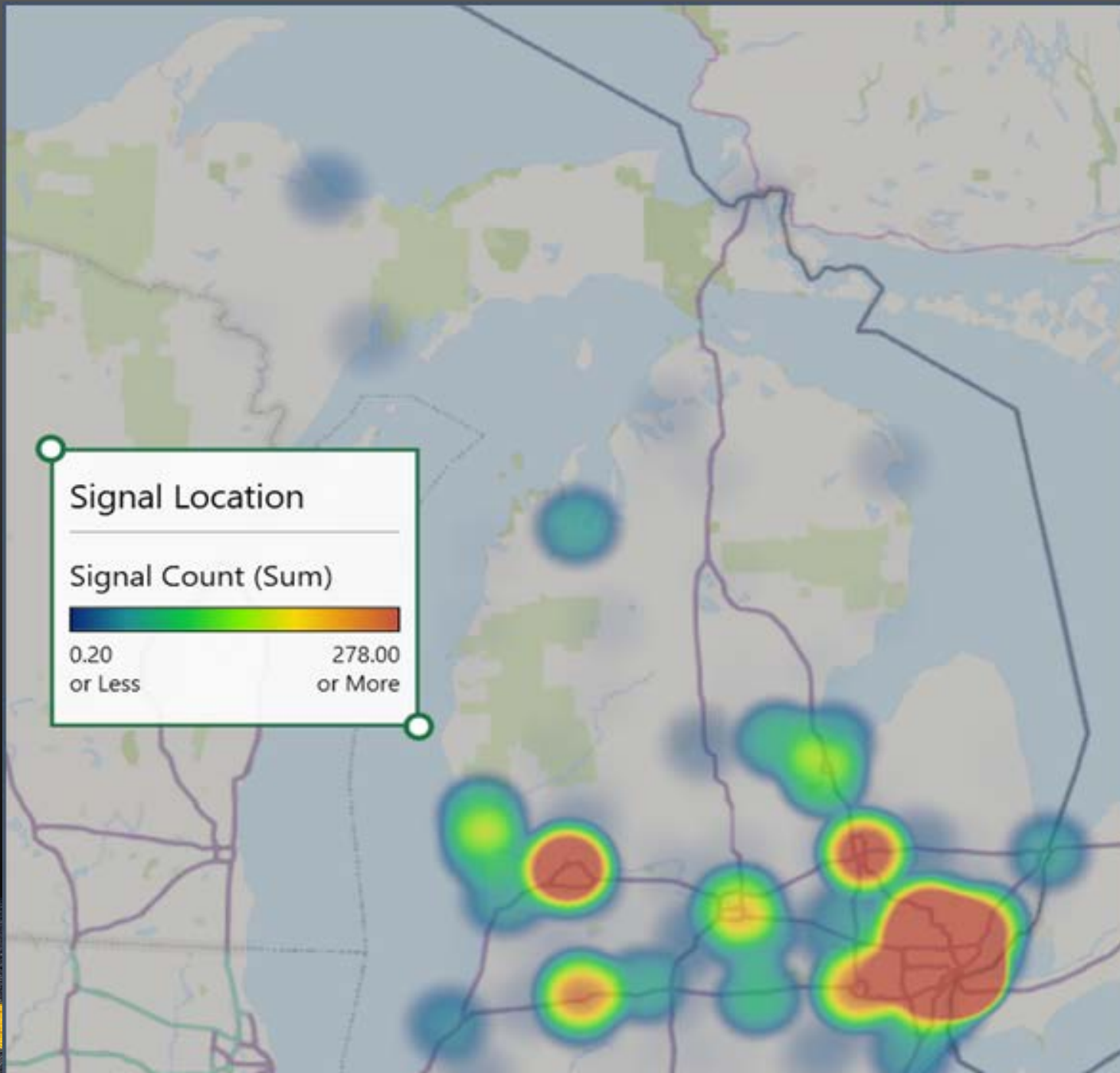
99.0%

Location Precision

89.5%



- 136 Signal North of Mason Huron (2%)
- Wayne, Oakland and Macomb 3,912 signals (58.5% of the state total)
- Wayne, Oakland and Macomb Genesee, Kent and Washtenaw 5091 signals (76% of the state total)



Cost Summary

Traffic Signal Cost Summary	
Average Number of heads	10.3
Average Number of intersections	3.2
Average Price per intersection	\$193,000

Statewide Value

Statewide Traffic Signal Total Value		
Agency	Number of Intersections	Total Value in Billions
Local Agency	6690	\$1.29
MDOT	4050	\$0.78
	10740	\$2.07

