



DEPARTMENT OF PUBLIC WORKS
Engineering Division
100 North Appleton Street
Appleton, WI 54911
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To: Municipal Services Committee and Common Council
From: Danielle Block, Director of Public Works
Date: September 27, 2023
Re: Resolution #10-R-22 Lawe Street Truck Route Analysis - **AMENDED**

10-R-22 Amendment Considerations

Proposed Research

Timeline

Portions of the requested research would need to be outsourced. Through the solicitation and selection process, discussions with the consultants would need to include the feasibility of completing the analysis by March 2024. The scope of services and proposals would likely include additional fees to complete the work at an expedited schedule. It is worth considering extending the deadline to avoid such fees. Of note, the process to complete a traffic origin destination study and environmental impact assessment related to truck particulate matter emissions and heavy metal deposition would likely extend past the March 2024 deadline.

Note the proposed additional research is not a requirement of the State & Federal Funding, there is no air quality analysis or noise analysis requirement under the environmental documentation based on the project type (reconstruction). However, Environmental Document items that are required by Federal and State agreement and already included in the consultant contract are as follows:

- Disclosure Statement as required by 40 CRFR 1506.5(c)
- Categorical Exclusion Checklist Environmental Document as specified in Trans 400, Wisconsin Administrative Code
- Historical and Archaeological Reviews: Area of Potential Effect identification - an archaeological and historical reconnaissance and evaluation study
- Hazardous Materials/Contamination Assessments, a Phase 1 investigation
- Native American Coordination
- Section 401 and 402 Certifications in accordance with the Clean Water Act
- US Fish and Wildlife Service for potential impacts to endangered and threatened species
- Soil and Subsurface investigation to include 8 borings to a depth of 10 feet below the existing grade to determine existing pavement structure, including base courses.

Cost Benefit Analysis – Roadway Construction

For cost estimating purposes there are no basic design elements that will change based on the designation of truck route. The following elements will remain the same:

- Pavement Thickness
- Lane Width
- Pedestrian Accommodations
- Streetscape Elements

There are traffic calming features that would likely be eliminated based on the traffic volumes and truck route designation:

- Raised Crosswalks
- Raised Intersections

Safety

Safety was referenced in the resolution and community listening session feedback. The Traffic Engineering Division prepared the following crash history information comparing similar corridors and all crashes versus crashes involving a commercial motor vehicle.

A commercial motor vehicle (CMV) means a motor vehicle having one or more the following characteristics:

1. The vehicle over 26,000 pounds.
2. The vehicle is over 26,000 pounds inclusive of a towed unit or actual gross weight of more than 10,000 pounds.
3. The vehicle is designed to transport the driver and 15 or more passengers.
4. The vehicle is transporting hazardous materials.

In short, the Commercial Motor Vehicle crash and safety information is specific to heavy trucks in excess of 26,000 pounds.

A corridor crash rate analysis is included with this memo. Crash data records were gathered from the WisPortal System, through the Wisconsin Traffic Operations and Safety Laboratory. Crashes are documented using the KABCO scale, as defined by the guidelines established by the Model Minimum Uniform Crash Criteria and is a functional measure of the injury severity for any person involved in the crash. When reading the attached crash information, the scale abbreviations as follows:

K = Fatal Injury

A = Suspected Serious Injury

B = Suspected Minor Injury

C = Possible Injury

O = No Apparent Injury

This analysis includes data from 2018-2022 using WisDOT Facilities Design Manual (FDM) standards. The data compares Lawe Street versus similar truck routes within the City of Appleton. **See Exhibit 1.**

Visual representations of the data within the table on Exhibit 1 is included within the pages of **Exhibit 2.**

The data illustrates there have been zero KAB CMV Crashes, or serious injury crashes involving a commercial motor vehicle.

STP-Urban BIL Funding Requirements

It is most important to note the following items regarding the consideration of amended 10-R-22. These items relate to the WisDOT grant funding applied for and awarded to the City of Appleton. Deviation from representations made in the application process put the City at risk of losing the STP-Urban Funding. Total grant funding for the Lawe Street project is \$2.8M, keep in mind the total City Capital Infrastructure Projects budget is \$4M annually.

Roadway Classification

STP-Urban Funding must be awarded to highways within urban areas on roads functionally classified as major collector or higher, not a local residential street. Major collectors circulate traffic and provide access to local businesses or homes. They distribute trips between local roads and arterials over greater distances than minor collectors. Lawe Street is classified by the Wisconsin Department of Transportation (WisDOT) as a minor arterial roadway. Minor arterials connect and support the system of Principal Arterials, serving trips of moderate length. In urban areas minor arterials often support transportation modes such as bus travel. All minor arterials provide opportunities for direct access to adjacent land uses. A modification in the truck route designation along Lawe Street could have consequences on the functional classification of the roadway resulting in the loss of funding. The current funding grant is \$364,907 (80%) for the design of Lawe Street and \$2,454,193 (65%) for the reconstruction of Lawe Street.

More information regarding WisDOT Functional Classification along with Criteria and Procedures can be found here: <https://wisconsindot.gov/Pages/projects/data-plan/plan-res/function.aspx#urban>

Sunset Date

The project is currently scheduled for construction during State Fiscal Year 2026. The sunset date, or expiration date, is June 30, 2031. The sunset date is determined based on the date a project is scheduled to be authorized. Sunset date is calculated as six years from the beginning of the state fiscal year in which the project is initially scheduled. A modification in the construction date due to design delays could result in the loss of funding as well. Additionally, delays in the design of the Lawe Street roadway would likely result in construction price escalation. Funding on the project is capped per the State Municipal Agreement and would not be adjusted due to inflation. Funding allocation each fiscal year is dependent upon approval of the State budget, delay of the project is not recommended.

Exhibit 1

Corridor Crash Rate

2018-2022

FDM Methodology

On	From	To	Length	ADT	Mi Traveled	100M Mi Traveled	All Reportable Crashes		KAB Crashes		All CMV Crashes		CMV KAB Crashes	
							Crashes	Crashes/HMVMT	Crashes	Crashes/HMVMT	Crashes	Crashes/HMVMT	Crashes	Crashes/HMVMT
Lawe	Washington	Summer	0.77	6650	9,398,698	0.094	41	436	3	32	1	11	0	0
Badger	College	Wisconsin	0.92	5600	9,410,917	0.094	43	457	7	74	3	32	0	0
Newberry/Walter	College	STH 441	1.57	5250	15,042,563	0.150	25	166	2	13	3	20	0	0
John	College	Calumet	1.31	7250	17,332,938	0.173	42	242	4	23	1	6	0	0
WisDOT 2-Lane ≤40mph								290		35				

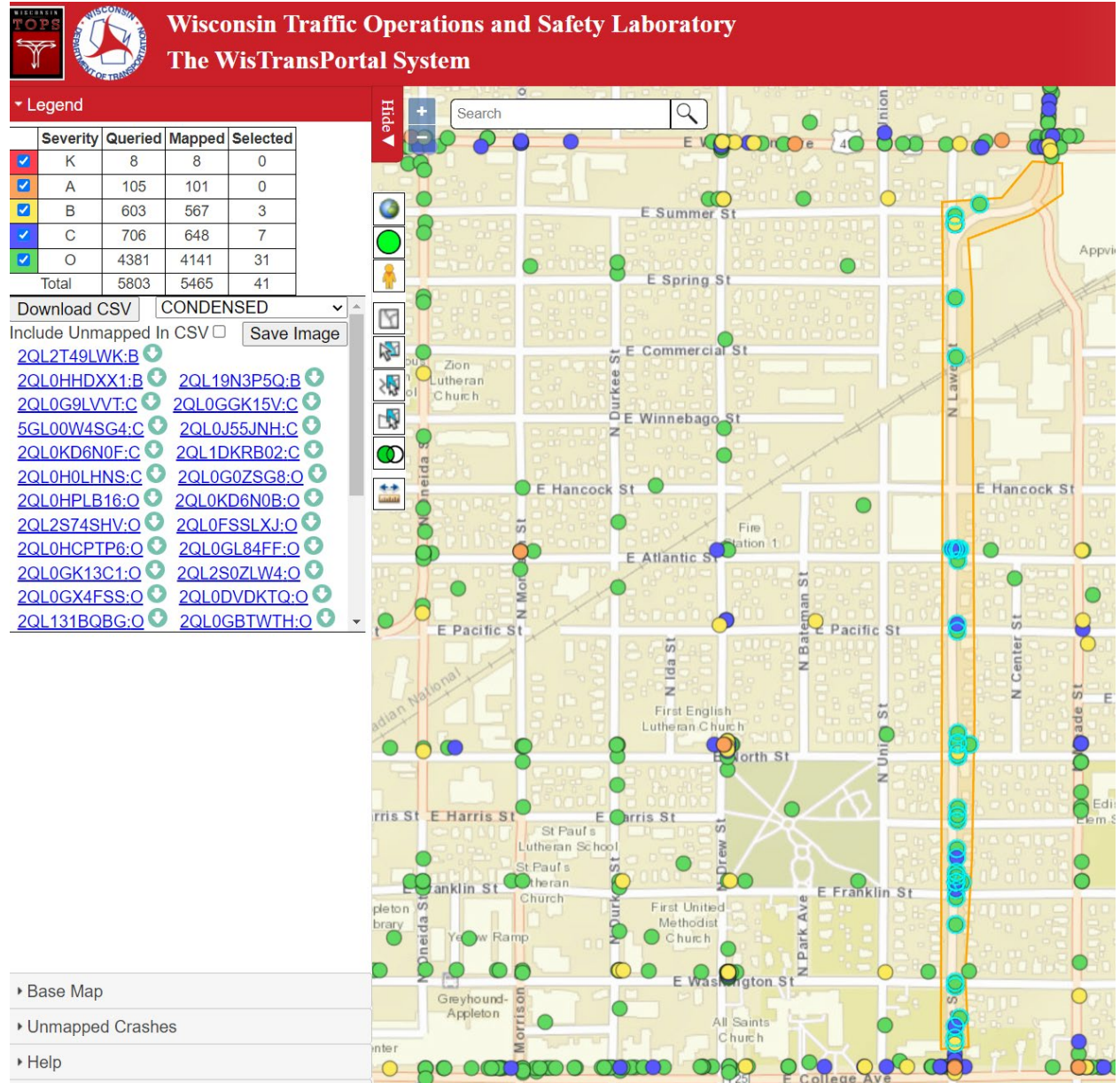
Table 1: 2016-2020 Statewide Average Crash Rates, KAB Crash Rates, and UCLs for State Highways

Meta-Manager Peer Group	Total Crash Rate (crashes per HMVMT)			KAB Crash Rate (crashes per HMVMT)		
	Average	UCL		Average	UCL	
110 6-lane Freeways with AADT ≤ 90,300 vpd	69.89	= 69.89 + 523.42	$\sqrt{\frac{69.89}{AADT * L * Y}}$	8.64	= 8.64 + 523.42	$\sqrt{\frac{8.64}{AADT * L * Y}}$
120 6-lane Freeways with AADT > 90,300 vpd	100.33	= 100.33 + 523.42	$\sqrt{\frac{100.33}{AADT * L * Y}}$	9.42	= 9.42 + 523.42	$\sqrt{\frac{9.42}{AADT * L * Y}}$
130 4-lane Freeways	52.11	= 52.11 + 523.42	$\sqrt{\frac{52.11}{AADT * L * Y}}$	7.15	= 7.15 + 523.42	$\sqrt{\frac{7.15}{AADT * L * Y}}$
210 65 mph Expressways*	46.59	= 46.59 + 523.42	$\sqrt{\frac{46.59}{AADT * L * Y}}$	9.75	= 9.75 + 523.42	$\sqrt{\frac{9.75}{AADT * L * Y}}$
220 55 mph Expressways*	71.81	= 71.81 + 523.42	$\sqrt{\frac{71.81}{AADT * L * Y}}$	12.25	= 12.25 + 523.42	$\sqrt{\frac{12.25}{AADT * L * Y}}$
310 Multilane Divided Highways Posted at 45 mph or higher	204.68	= 204.68 + 523.42	$\sqrt{\frac{204.68}{AADT * L * Y}}$	26.15	= 26.15 + 523.42	$\sqrt{\frac{26.15}{AADT * L * Y}}$
320 Multilane Divided Highways Posted at 40 mph or lower	432.91	= 432.91 + 523.42	$\sqrt{\frac{432.91}{AADT * L * Y}}$	54.47	= 54.47 + 523.42	$\sqrt{\frac{54.47}{AADT * L * Y}}$
330 Multilane Undivided and One-Way Highways	465.24	= 465.24 + 523.42	$\sqrt{\frac{465.24}{AADT * L * Y}}$	59.5	= 59.5 + 523.42	$\sqrt{\frac{59.5}{AADT * L * Y}}$
410 Rural 2-lane Highways with AADT ≤ 2,000	98.89	= 98.89 + 523.42	$\sqrt{\frac{98.89}{AADT * L * Y}}$	24.86	= 24.86 + 523.42	$\sqrt{\frac{24.86}{AADT * L * Y}}$
420 Rural 2-lane Highways with 2,000 < AADT < 7,000	77.35	= 77.35 + 523.42	$\sqrt{\frac{77.35}{AADT * L * Y}}$	18.24	= 18.24 + 523.42	$\sqrt{\frac{18.24}{AADT * L * Y}}$
430 Rural 2-lane Highways with AADT ≥ 7,000	90.98	= 90.98 + 523.42	$\sqrt{\frac{90.98}{AADT * L * Y}}$	19.23	= 19.23 + 523.42	$\sqrt{\frac{19.23}{AADT * L * Y}}$
440 2-Lane Highways Posted at 40 mph or lower	290.29	= 290.29 + 523.42	$\sqrt{\frac{290.29}{AADT * L * Y}}$	35.07	= 35.07 + 523.42	$\sqrt{\frac{35.07}{AADT * L * Y}}$

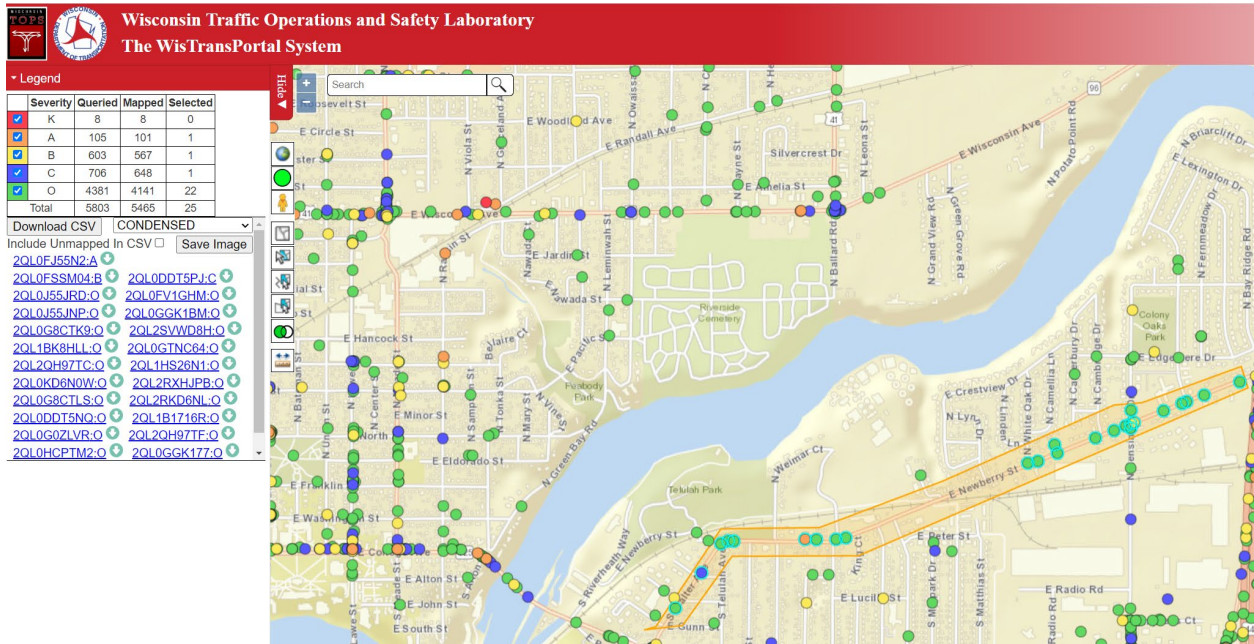
AADT = Average Annual Daily Traffic (vehicles per day) L = Segment Length (miles) Y = Years
 HMVMT = 100 million vehicle miles traveled

Exhibit 2

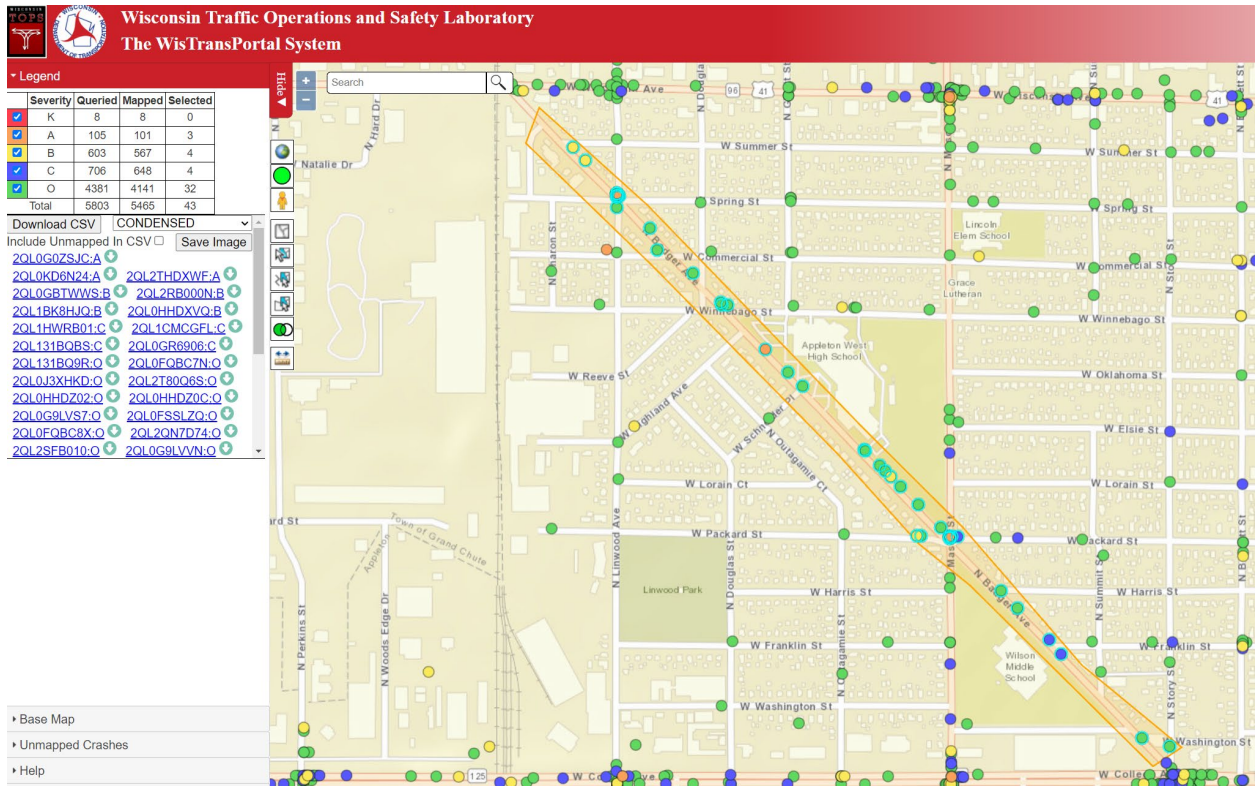
2018-2022 All Reportable Crashes (Lawe St from College Av to Wisconsin Av)



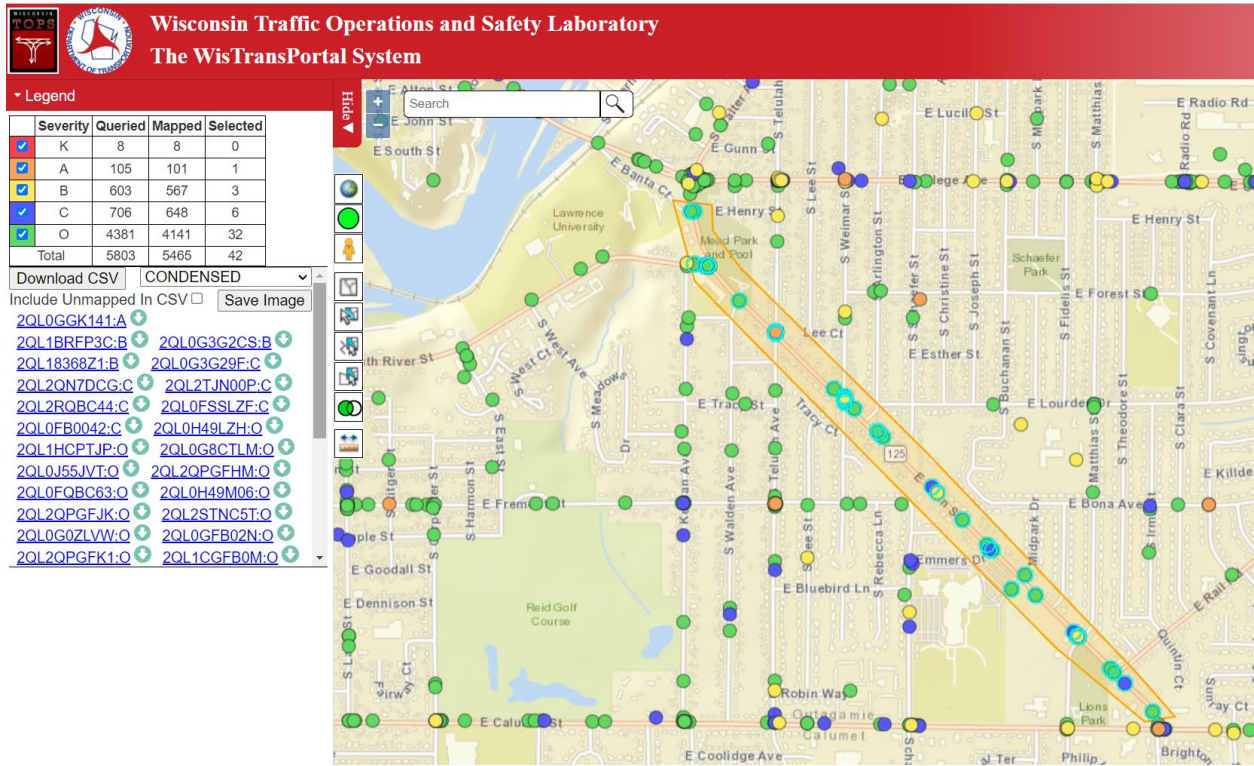
2018-2022 All Reportable Crashes (Newberry St / Walter Av from College Av to STH 441)



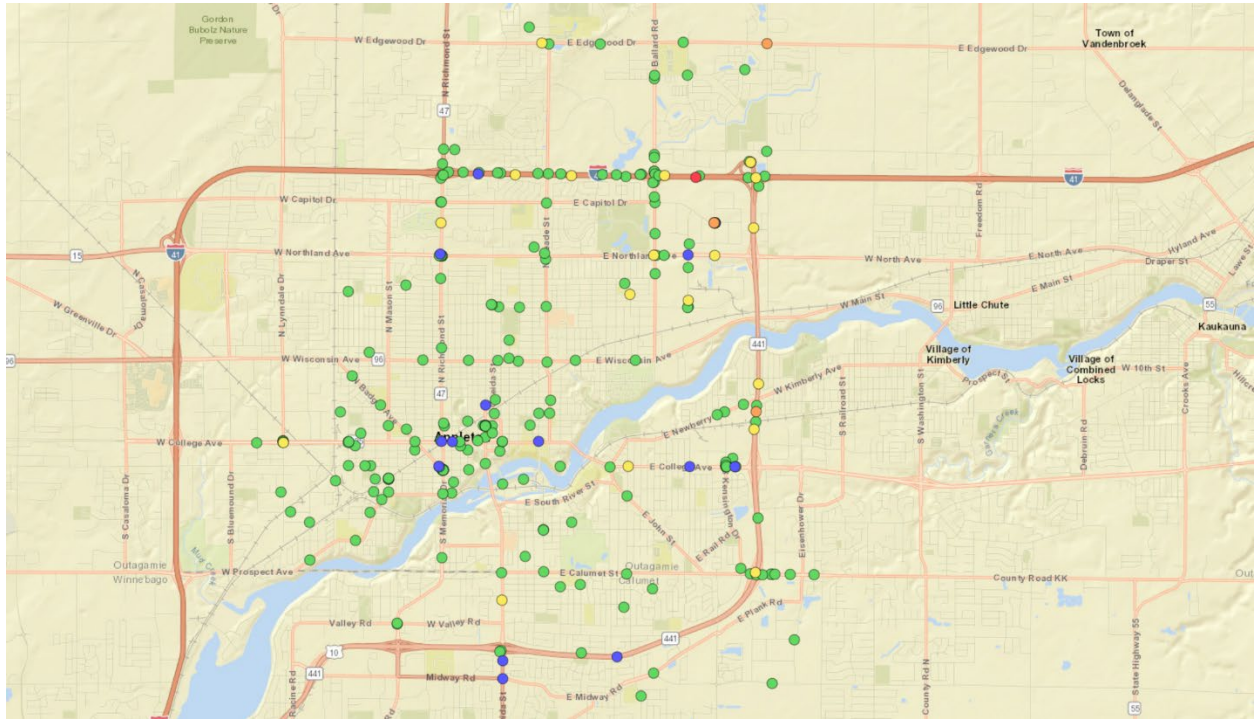
2018-2022 All Reportable Crashes (Badger Av from College Av to Wisconsin Av)



2018-2022 All Reportable Crashes (John St from College Av to Calumet St)



2018-2022 Commercial Motor Vehicle Crashes (citywide)



2018-2022 Commercial Motor Vehicle Crashes involving KAB Injuries (citywide)

