

# CRASH & SAFETY ANALYSIS

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**Subject:** **Urban Middle School – Mill Road Crash & Safety Study  
City and Town of Sheboygan, Sheboygan County, WI**

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TADI was tasked with reviewing and plotting the most recent five years of crashes on Mill Road between and including the intersections of STH 42 and Najacht Road utilizing detailed collision diagrams. The collision diagrams are attached to this memorandum and the summary of the crashes and potential safety improvements are detailed below.

## **CRASH HISTORY (2019 thru 2013) - Mill Road Corridor**

Ten crashes occurred along the Mill Road corridor between STH 42 and Najacht Road during the five-year period from 2019 through 2023. No crash patterns were identified; however, there were 2 locations that had 2 crashes each, where typically 3 or more crashes indicate a pattern.

The first location with 2 crashes was on the westbound approach to STH 42. Two rear-end crashes occurred on the east stop-controlled approach on Mill Road. One driver was simply not paying attention while the other involved a driver that pulled ahead and stopped. The second driver thought the first driver was moving into the intersection and completed their turn, so they were looking at traffic and did not see the first driver stopping. There is an existing “Stop Ahead” warning sign located at the location; however, consideration may be given to adding red retro-reflective tape on the signpost and potentially replacing the sign with a larger sign. A traffic signal, as recommended in the Urban Middle School traffic study report, may provide better visibility to drivers on the Mill Road approach as well as giving drivers definitive direction on when to enter the intersection.

The second location with 2 crashes was on the eastbound approach to Schaefer Road which splits off from Mill Road continuing due east while Mill Road curves to the north. A ravine exists at the point of the curve, between these two roads. There are two warning signs (arrows) indicating that the driver should follow the curve to the north and an additional dead-end sign on the entrance to Schaefer Road. One of the crashes involved an eastbound vehicle on snowy

pavement, speeding while trying to negotiate the curve. The driver hit one of the arrow signs and then a tree. The crash resulted in a B-level injury. The second crash also involved an eastbound vehicle trying to negotiate the curve. For this crash, the driver managed to miss the sign while still hitting the tree. This crash was reported as occurring under icy snowy conditions, but speeding was not mentioned in the crash report. The driver was uninjured and able to exit the vehicle even though the vehicle tipped on its side. Both crashes occurred during the day under poor roadway conditions. Although there was not a pattern of crashes at this location and modifications are not typical when a pattern isn't identified, the following mitigation techniques could be considered.

1. On the eastbound approach, adding a curve ahead warning sign similar to the one shown below:



2. Installing a guardrail, as shown below, could prevent vehicles from hitting the arrow signs as well as entering the ravine or overturning or striking trees. Should crashes occur, however, maintenance costs of repairing and/or replacing the guardrail should be considered when contemplating this safety enhancement.



3. A dynamic speed feedback sign could be installed prior to the eastbound approach to this curve to make drivers aware of their speed as they enter the curve.

Including all crashes, two of the 10 crashes along the Mill Road corridor were considered B-level injury crashes. One of these injury crashes was described above at the Schaefer Road curve and

the other involved a medical issue that caused the crash. Typically, a crash involving a medical issue is removed from a safety study because there is not an engineering solution for someone experiencing a medical issue. This crash was discussed for information purposes only.

In addition, based on comments received from concerned citizens that a fatality occurred along the corridor, additional analysis beyond the typical most recent 5 years was also researched. It was determined that a fatal crash occurred along the corridor in December of 2014 and involved a single female occupant. The driver was westbound on Mill Road approximately 500 feet west of Lisa Avenue. The driver failed to negotiate the curve, crossed the centerline, entering the eastbound lanes into the south ditch, hit a mound of dirt and went airborne, then struck a 3-foot tree stump causing the vehicle to overturn and strike a large tree west of the tree stump. There is an S-curve warning sign 400 feet east of Lisa Avenue with an advisory speed of 15 mph. The roadway speed is 25 mph. Even though not typical for a single crash, the traffic safety countermeasures that could be considered at this spot location include:

1. Adding a speed feedback sign prior to the westbound approach to this curve.

### **CRASH HISTORY (2019 thru 2013) - Mill Road at STH 42 Intersection**

Crashes investigated at this intersection occurred between 2019 and 2023 and were located on STH 42. Crashes on the Mill Road approach to this intersection were included in the corridor crash study listed above. There were six crashes that remained after reviewing the crash reports. One crash that occurred north of the intersection outside of the intersection influence area and one crash that involved a mechanical issue were removed from the safety analysis and were not included in the statistics. The remaining six crashes included two crashes occurring north of the intersection and within the 250-foot area of influence of the intersection. The remaining four crashes were right angle crashes where the westbound vehicle failed to yield to either northbound or southbound vehicles. Three of these crashes occurred in 2019. A traffic signal, as recommended in the Urban Middle School traffic study report, could help to mitigate right-angle crashes like these in the future.

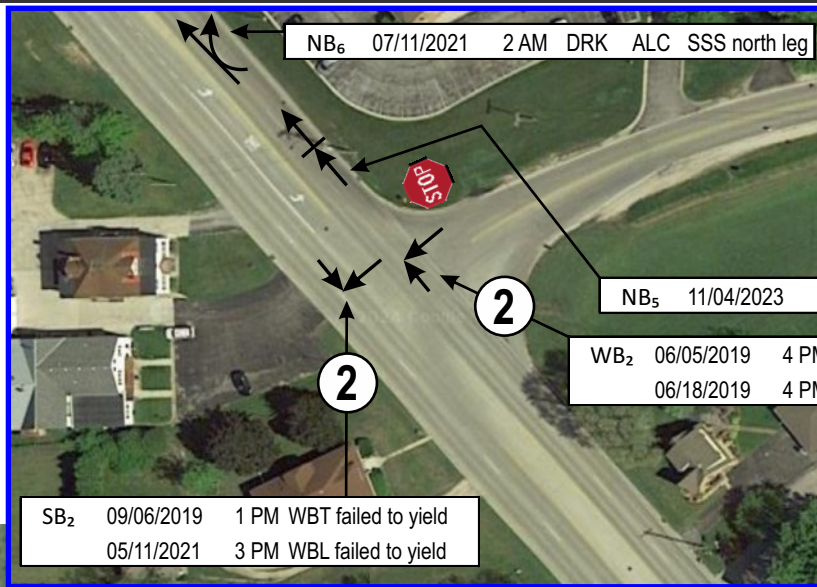
### **CONCLUSIONS**

No crash patterns were identified along the Mill Road corridor during the most recent five years of crash data availability. However, one crash pattern was identified at the Mill Road intersection with STH 42. Minor spot improvement treatments could be considered for some of the crashes along Mill Road; however, modifications are not typical when crash patterns (identified as three crashes at a specific location) aren't identified. Traffic signal control could help to mitigate the right-angle crash pattern identified at the Mill Road intersection with STH 42.

# **CRASH PLOT**





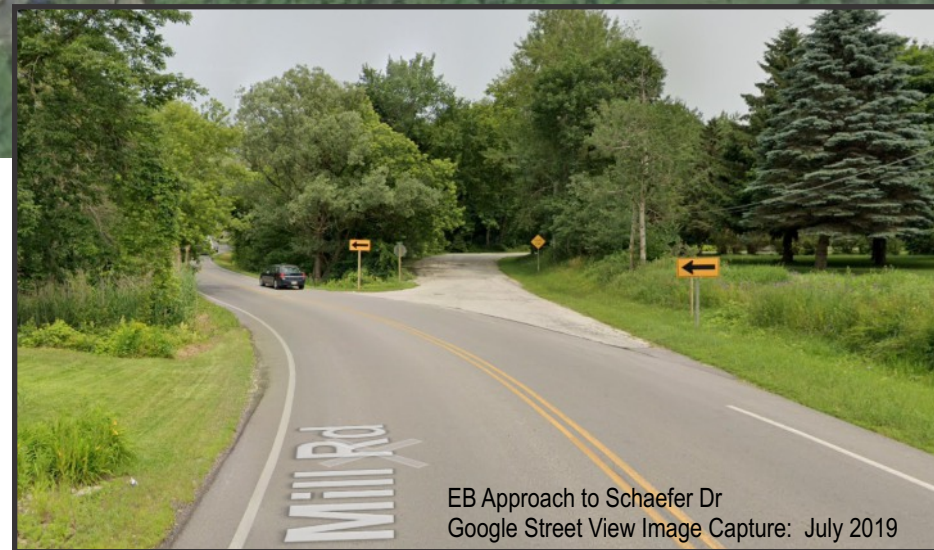
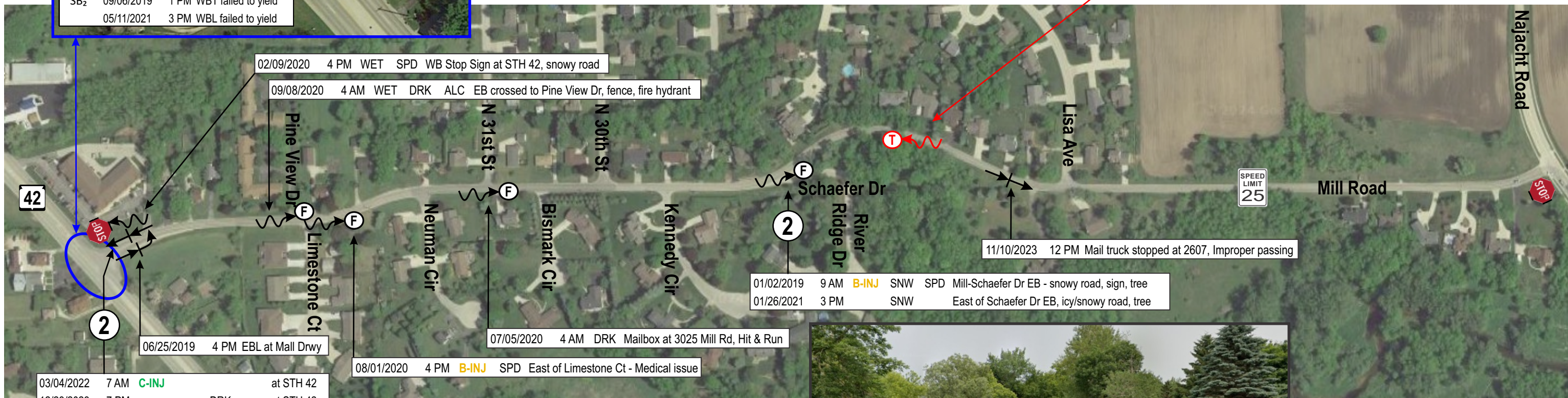


### INTERSECTION CRASH STATISTICS

|  |                              |
|--|------------------------------|
| 6<br>Crashes                               | 0 Fatal Crash (K)            |
|  | 0 Suspected Serious (Type A) |
|  | 1 Suspected Minor (Type B)   |
|  | 2 Possible (Type C)          |
|  | 3 No Apparent Injury         |
| 0.20 Crashes Per Million Entering Vehicles |                              |



12/01/2014 10 PM **FATAL** DRK Fatal crash - ROR, ditch, tree  
This Fatal crash is not included in the statistics and occurred in 2014.



### CORRIDOR CRASH STATISTICS

10 Crashes

201.5 Crashes Per 100 Million Vehicle Miles

|                              |
|------------------------------|
| 0 Fatal Crash (K)            |
| 0 Suspected Serious (Type A) |
| 2 Suspected Minor (Type B)   |
| 1 Possible (Type C)          |
| 7 No Apparent Injury         |

### LEGEND

|                      |                  |                     |                |
|----------------------|------------------|---------------------|----------------|
| FTY Failure to Yield | Traffic Signal   | Angle (Right Angle) | Head-On        |
| Moving Vehicle       | Stop/Yield Sign  | Angle (Left Turn)   | Rear-End       |
| Backing Vehicle      | Tree             | Angle (Right Turn)  | Out of Control |
| Pedestrian           | Fixed Object     | Sideswipe-Same      | Overtake       |
| Bicyclist            | Non-Fixed Object | Sideswipe-Opposite  | Overturn       |
| Parked Vehicle       |                  |                     |                |

# = CRASH FREQUENCY (if > 1 NON-PED/BIKE)

LABEL, DATE OF CRASH, TIME, SEVERITY, ROAD CONDITIONS, LIGHT, ALCOHOL, DRUGS, SPEED-RELATED, NOTES ABOUT CRASH

Note: Deer Crashes Not Included  
\*Economic Loss = \$684k (KA), \$217k (B), \$123k (C), \$10.8k (PDO)

### CRASH SEVERITY DEFINITIONS

K-Inj = Fatal Crash  
A-Inj = Suspected Serious Injury Crash  
B-Inj = Suspected Minor Injury Crash  
C-Inj = Possible Injury Crash  
= No Apparent Injury Crash

### CRASH HISTORY (2019-2023)

## INTERSECTION OF STH 42 & MILL ROAD AND MILL ROAD CORRIDOR (STH 42 TO NAJACHT ROAD) SHEBOYGAN, WISCONSIN