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**To:** Municipal Services Committee  
**From:** Eric S. Lom, City Traffic Engineer  
**Date:** December 3, 2013  
**Re:** Midway Road Safety Review (*Resolution #16-R-13/Jirschele*)

This memo is in response to Resolution #16-R-13/Jirschele: “Whereas Midway Road from Oneida Street to Lake Park Road has become a major and highly trafficked thoroughfare for Appleton, Menasha and Calumet County, and winds through residential areas, and Whereas Residents are concerned about vehicle speeds, pedestrian safety and property configurations along this route, and Whereas Ordinance design and application may not have kept pace with the growth of residential areas, traffic volume and type, and pedestrian uses, Be It Resolved That the City of Appleton lead a comprehensive review of the Midway Road corridor, to be accomplished by ~~September 1~~ December 10, 2013, and suspend property-related, roadway-ordinance enforcement along the corridor pending the results of the review”

### **General**

In response to the resolution, the Traffic Section initiated a safety/operations review of the Midway Road (CTH AP) corridor between Oneida St (USH 10) and Plank Road (see Figure 1), with particular attention paid to pedestrian safety concerns.

This portion of Midway Road (CTH AP) is a critical link in the region’s transportation infrastructure. It is located within the City of Appleton and the City of Menasha, but is under the jurisdictional control of Calumet County because of its county highway designation. While it currently handles 7,000 to 9,000 vehicles per day, Midway Road is designed to handle over 20,000 vehicles per day. Incremental increases in traffic volume are anticipated over time as development occurs in the region.

### **Sight Line Issues**

The horizontal alignment of the roadway includes a number of curves which, in combination with adjacent development (including vegetation, fences and berms), creates a number of challenges for pedestrians and motorists as they attempt to turn onto and/or cross Midway Road. Specifically, our analysis identified the following concerns (see Figure 2):

#### **1. Intersection Sight Lines (aka Vision Triangles)**

Drivers and pedestrians have inadequate lines of sight in order to safely interact with each other at intersections: In many cases, these issues could be corrected by enforcement of the City’s existing vision corner ordinance (Section 10-10 of the City’s Municipal Code), which limits the types of vegetation and structures that can be located within the established 25’ x 25’ vision triangle at intersections (see Figure 3).

#### **2. Pedestrian Sight Lines at Intersections**

Based on a particular roadway’s characteristics (such as width and prevailing traffic speed), pedestrians require a certain gap in traffic in order to safely cross. In order for this to be possible, pedestrians must be able to spot oncoming traffic from a certain minimum distance (referred to as their “line of sight”). Some pedestrian sight lines at three of the Midway Road intersections are far below minimum standards. There are several techniques that could be used to improve the pedestrian sight lines at these locations, including: 1)

removal of vegetation and improvements in the vision areas, 2) reduction of prevailing vehicle speeds (we believe this to be impractical based on the results of speed studies that have been conducted), 3) elimination of certain pedestrian crossings, and/or 4) reducing the length of the pedestrian crossing.

3. Sight Lines for Drivers Crossing or Turning onto Midway Road

Based on a particular roadway's characteristics, drivers on side streets require a certain gap in traffic in order to safely cross or turn onto the main street. In order for this to be possible, drivers must be able to spot oncoming traffic from a certain minimum distance (referred to as their "line of sight"). Some Midway Road side street sight lines are slightly below minimum standards. There are two primary techniques that could be used to improve driver sight lines at these locations, including: 1) removal of vegetation and improvements in the vision areas, or 2) reduction of prevailing vehicle speeds (again, we believe this to be impractical based on the results of speed studies that have been conducted).

**Recommendation**

Our review identified a number of deficiencies that should eventually be addressed in an effort to improve safety and walkability. They are as follows:

1. Enforce the City's existing vision corner ordinance (Section 10-10 of the City's Municipal Code) at all intersections along the corridor as a means of providing a minimal sight distance for drivers and bikers/pedestrians to safely interact with one another. In addition, work with the City of Menasha to address vision corner obstructions within their corporate limits as necessary.
2. Narrow the Midway Road traffic lanes and install raised pedestrian refuge islands at the Hemlock/Southfield and Barker intersections. This improvement would provide pedestrians with adequate sight lines by reducing the effective crossing widths. The cost associated with this work would range from \$150k to 250k and could be coordinated with upcoming projects in the area. We would anticipate working with Calumet County and the City of Menasha to develop a cost sharing agreement.
3. Prohibit Midway Road pedestrian crossings at the Woodcrest Dr intersection. While little benefit is gained by allowing pedestrians to cross at this intersection (pedestrians can easily cross at nearby intersections without going much out of their way), the costs associated with up fitting this intersection with pedestrian refuge islands would be extremely high due to its proximity to adjacent intersections (in effect, a raised median island would need to be installed along the entire length of Midway Road from Hemlock/Southfield to Barker).
4. While intersection crash rates are currently at acceptable levels in the area in question, we recommend the City consider purchasing a small amount of right-of-way in certain areas in order to allow for adequate sight distances (these areas are identified in red on Figure 4) in anticipation of increased traffic volumes in the future. Once purchased, any fences or other obstructions within the areas in question would need to be removed or relocated.



Figure 1  
Study Area

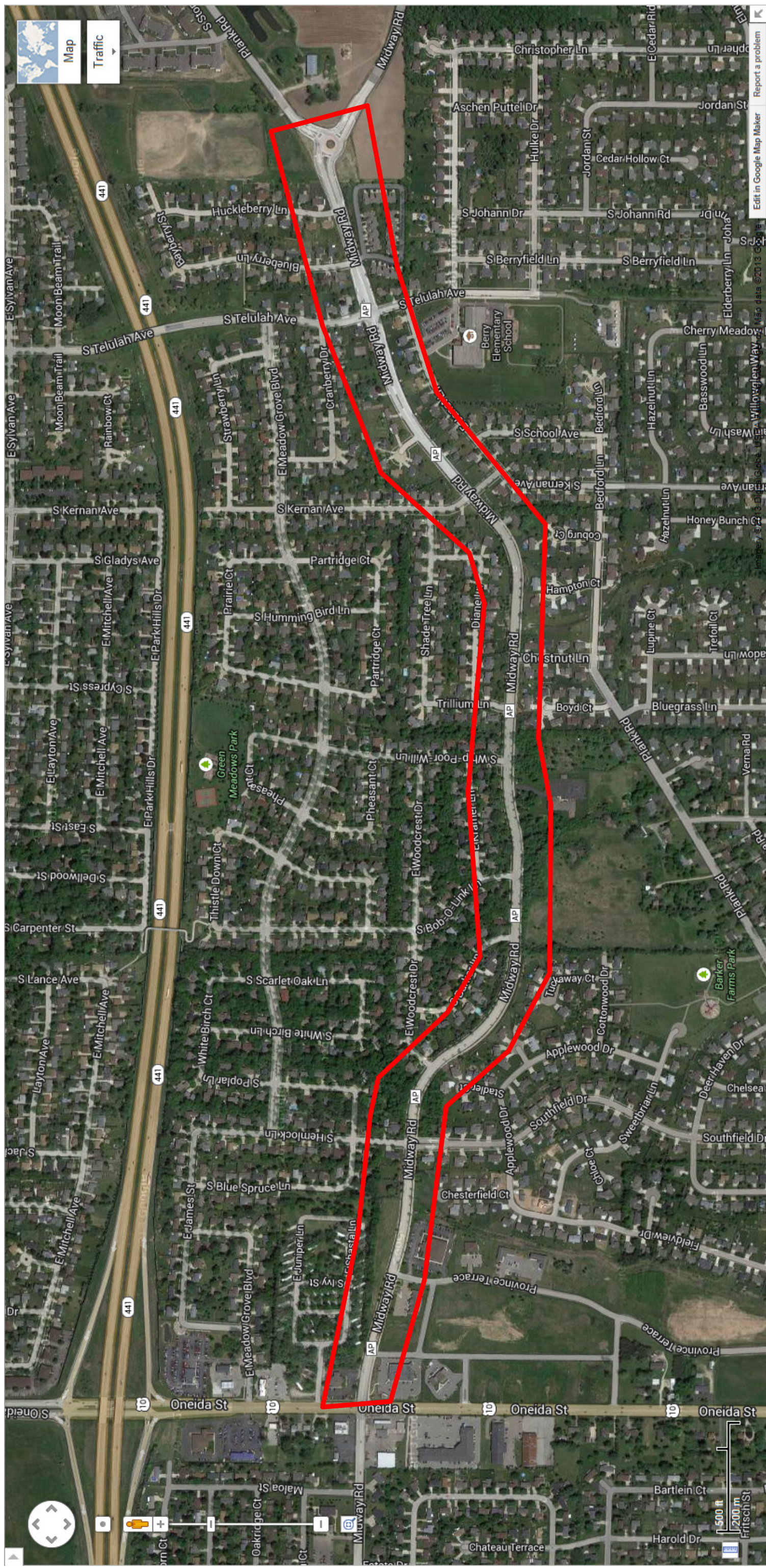
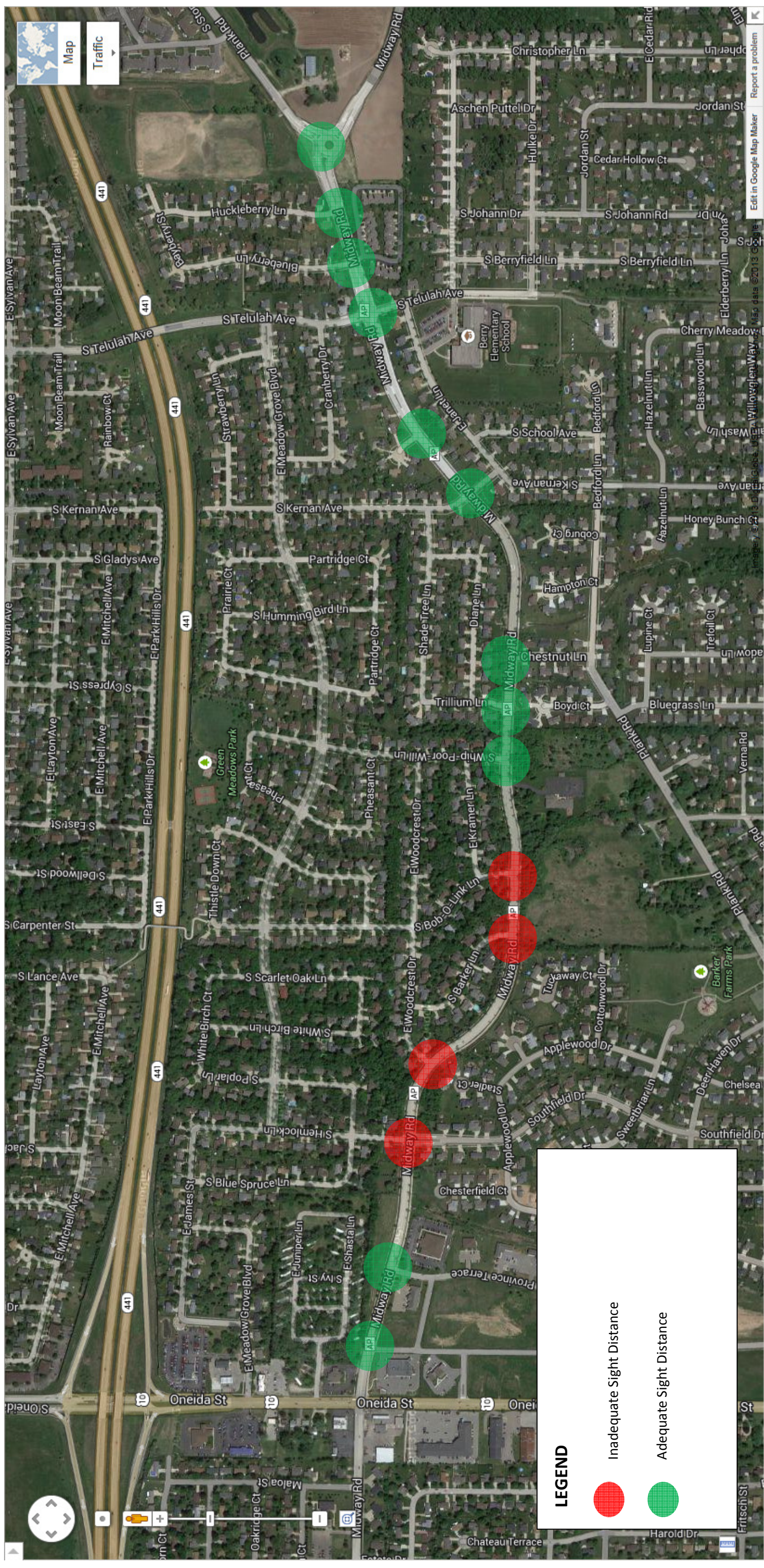




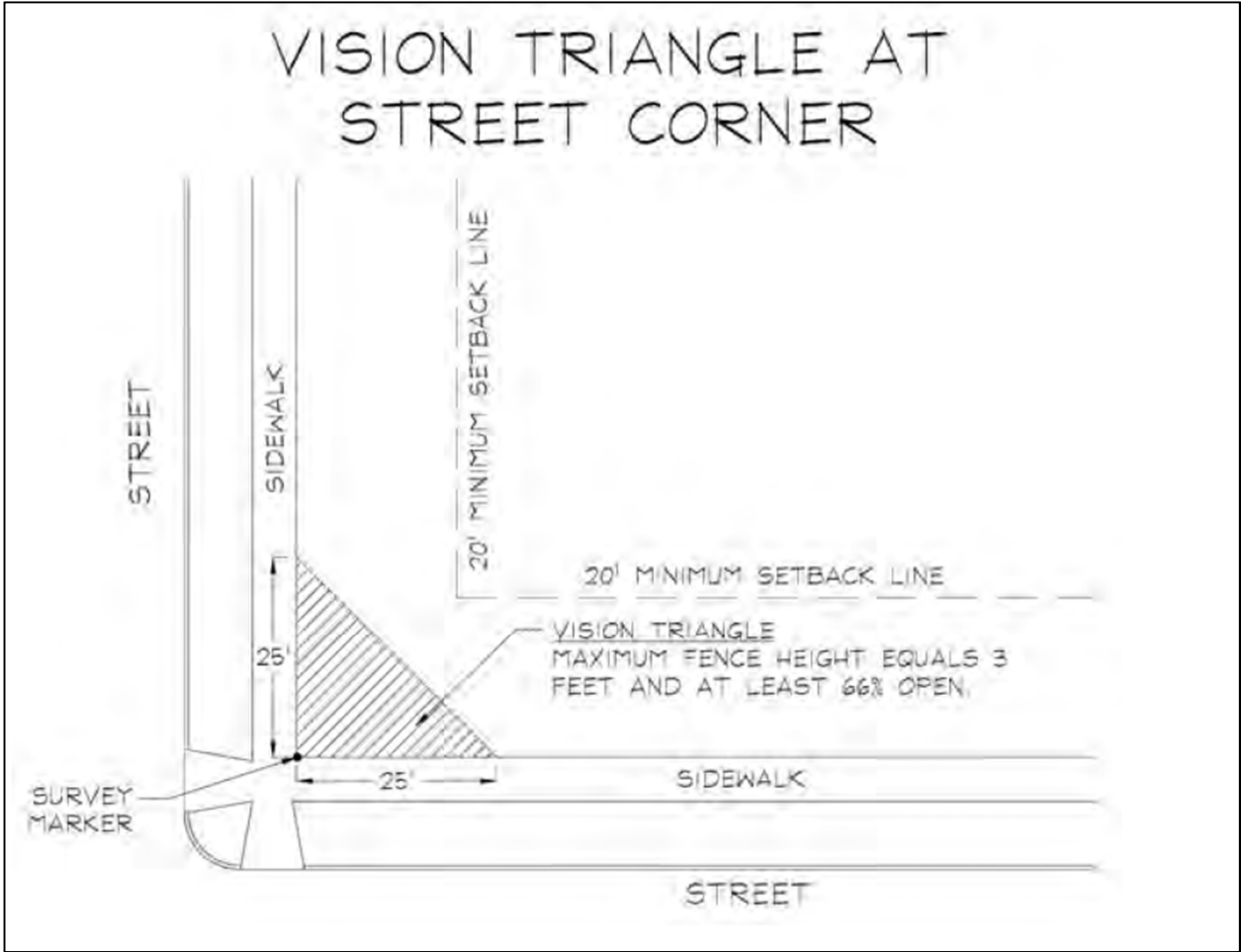
Figure 2  
Pedestrian / Intersection Sight Distance



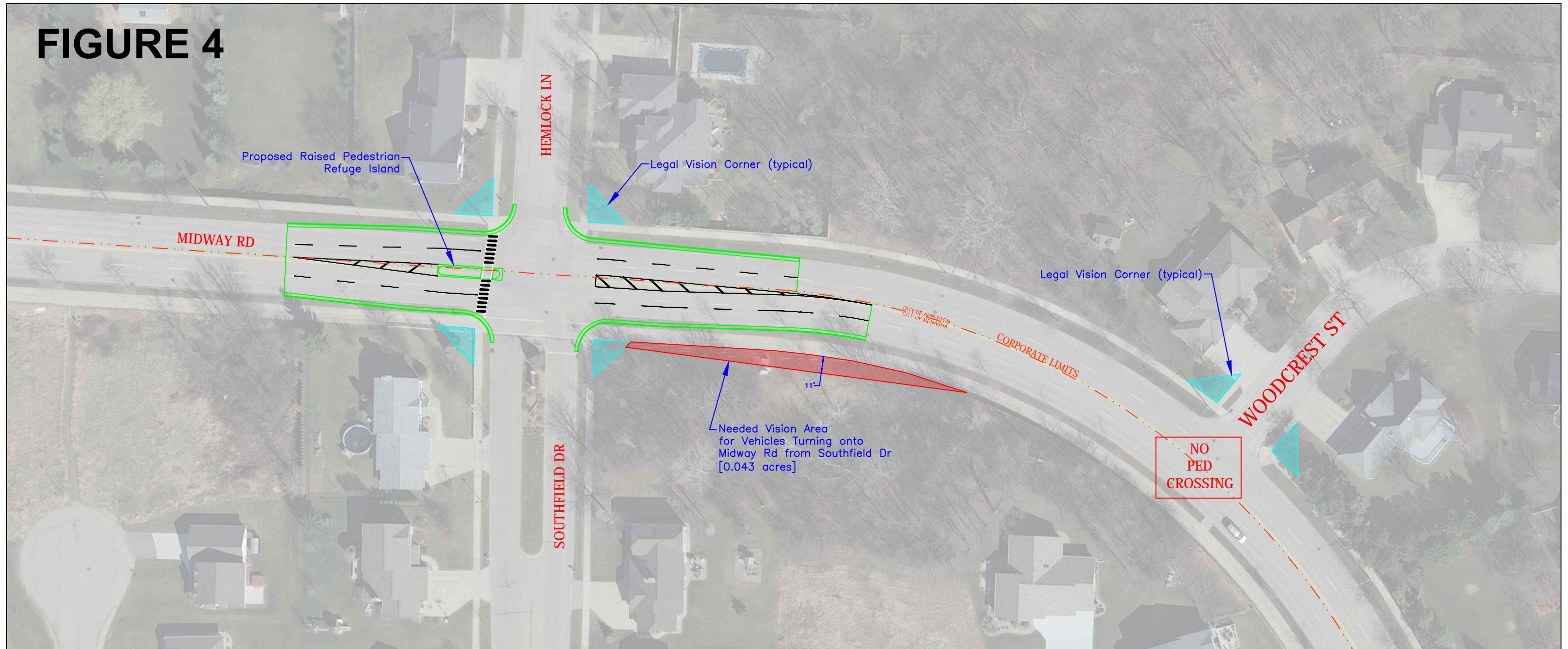


# Figure 3

City of Appleton Vision Corner Requirements (Residential Zoning)



# FIGURE 4





**FIGURE 4**

