

2015 PEDESTRIAN FACILITIES STUDY
GLENVIEW AND WILMETTE, ILLINOIS

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Prepared for:

**The Villages of
Glenview and Wilmette**

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A. INTRODUCTION

Recently residents in the vicinity of the common boundary between Glenview and Wilmette have voiced a number of concerns pertaining to pedestrian facilities and access. Avoca School District 37 residents have expressed concern about vehicular congestion on the local streets approaching and leaving the Avoca West Elementary School campus. It is claimed this vehicular congestion is inversely impacting with pedestrian traffic. Also recently residents south of and along Illinois Road west of Hibbard Road have asked for improved pedestrian access to Edens Plaza near Skokie Boulevard. Finally, there have been concerns expressed about bicycle access along the bridge carrying East Lake Avenue over the Edens Expressway (I-94) and requests for additional crossings of East Lake Avenue in the vicinity of Manor Drive.

In response to all these concerns, the Villages of Glenview and Wilmette retained James J. Benes and Associates Inc. to perform a pedestrian facilities study. Assigned tasks include:

- a. Analyze existing pedestrian and vehicular traffic patterns in the area.
- b. Identify possible improvements to the traffic patterns including new multimodal links. These links include new pedestrian crossings and designated routes, new sidewalks, possible bicycling routes, revised school and bus practices.
- c. Consider possible vehicular traffic operational changes that impact pedestrian movements.

The study area was divided into three subsections to be considered separately and as part of the overall study. Each subsection has its own issues of special concern. See Exhibit 1, Study Area Map in the Appendix.

The first area will be called the Avoca West Neighborhood study area. It is bounded by Harms Road on the west, East Lake Avenue on the north, the I-94 on the east and Wilmette Avenue on the south. Most of our analysis is for the section west of the Com Ed/UPRR Rights-of-Ways, although connections to the east section were also studied. The major interests are:

- a. Pedestrian access and safety to and from the school
- b. Vehicular traffic congestion as it inversely affects pedestrian safety

The second study area is the East Lake Avenue corridor which extends from the intersections of Harms to Hibbard Road inclusive. East Lake Avenue is a minor arterial route under the jurisdiction of the Cook County Department of Transportation and Highways (CCDOH). Pedestrians have been observed crossing East Lake Avenue at all signalized intersections except at the Edens Plaza crosswalk. The major interests are:

- a. Identify any additional appropriate pedestrian crossings of East Lake Street, especially at Sherwood Road.
- b. Sidewalk improvements to the pedestrian route over the Edens Expressway along East Lake Avenue.

The third study area will be called the Northeast Area, located north of East Lake Avenue and is bounded by Skokie Boulevard on the east, Illinois Road on the north and Hibbard Road on the east. One concern is the Hibbard-Illinois intersection. Since IDOT is in the middle of Phase 1 study of this intersection, this is not part of our analysis. The other major concerns are:

- a. Improved pedestrian access to Edens Plaza
- b. Possible sidewalk along Illinois Road

This report documents the data collected, the results of the analyses and recommendations for actions to address any identified problems. Vehicular and pedestrian traffic movements are related. Vehicular congestion can make walking more difficult. As pedestrian movements become perceived as more difficult, the more attractive vehicular movements become.

B. DATA COLLECTION

The Villages provided James J. Benes and Associates with copies of various correspondence and petitions from area residents, as well as from the School District. Additional data was also provided by the Glenview and Wilmette Police Departments, and was obtained from the Illinois Department of Transportation. This data was supplemented by our own observations of traffic operations on a typical school day and with the collection of specific traffic data.

That data was used to identify neighborhood access problems and needs, to compare existing traffic conditions to local residential neighborhood norms, to perform technical analyses, and to provide an engineering basis for any action that may be taken. The following details the data collection activities performed by James J. Benes and Associates.

- a. A field reconnaissance of the three study areas was performed on Wednesday, April 15, 2015 from 7:30 am until late afternoon well past the end of the school day. The field reconnaissance included visual observation of vehicular and pedestrian operations and travel patterns throughout all three study areas. Study area streets were monitored through the day, with extra emphasis during the start and end of the school day for Avoca West Elementary School, Loyola Academy and Marie Murphy School.
- b. An inventory was performed of existing traffic control devices, speed limits, parking restrictions, pavement widths and sidewalk locations within the Avoca West neighborhood. Existing traffic control devices/signage, sidewalk locations and parking restrictions are shown on Exhibits 2A and 2B in the Appendix.
- c. Twenty four-hour vehicular traffic data was collected on the five primary Avoca West neighborhood streets using automatic traffic recorders on April 29 and 30, 2015. The traffic recorders also collected vehicular speed data. This information was supplemented with 24-hour traffic volume data collected in 2014 on East Lake Avenue and Harms Road obtained from the Illinois Department of Transportation. Total (two-way) daily traffic volume data is shown on Exhibit 3 in the Appendix.



- d. A field review of sight lines at the intersections within the Avoca West neighborhood was performed and at the neighborhood streets' intersections with Harms Road and East Lake Avenue.
- e. Recorded crash data for the past five complete years (2010 through 2014) were obtained from the Villages of Glenview and Wilmette. Reports were provided for all streets and intersections within the Avoca West neighborhood and also for the Sherwood Road intersection with East Lake Avenue and the Harms Road intersections with Wilmette Avenue and Ferndale Road.
- f. Existing ComEd and Union Pacific Railroad (UPRR) rights-of-ways abut the east boundary of the Avoca West School campus. We spoke to the UPRR Director of Public Affairs to determine possible crossing configurations of the UPRR and the procedures in gaining approvals. Internal UPRR departments must review requests for crossings and the process takes several months. We understand any crossing would be leased and subject to termination if a change in use comes to pass. We also understand a vehicular crossing would be considered a public crossing, would require full ICC compliance, and is unlikely to be approved by the Real Estate Section.

We also spoke to ComEd Real Estate Specialist about possibilities of crossing their rights-of-ways. ComEd also has a multi-departmental review which takes some time. Any crossing would be subject to a lease lasting no more than five years. Receiving a determination if any crossing is possible would require payment of a \$1,500 fee. Approval of a vehicular crossing in close proximity to the towers is not likely.

C. AVOCA WEST NEIGHBORHOOD

Avoca School District 37 draws its 425 students from a large area within the Villages of Glenview and Wilmette and Northfield. South of East Lake Avenue, the school district boundaries are bounded on the south by Wilmette Avenue, on the west by Harms Road, on the north by East Lake Avenue and on the east by Hibbard Road. The School District does not provide free school bussing for residences less than 1.5 miles from the school, but fee-based student busing is available.

1. EXISTING CONDITIONS

a. Roadway Summary –

All streets within the Avoca West neighborhood including Wilmette Avenue have a posted speed limit of 20 mph. East Lake Avenue and Harms Road both have posted speed limits of 35 mph adjacent to the Avoca West neighborhood.

There is a posted School Speed Limit of 20 mph on East Lake Avenue from 120 feet west of Sherwood Road to Cariann Lane. The school speed limit is in effect on school days when children are present. There is a signed School Zone on Sherwood Road from 170 feet north to 200 feet south of Beech Drive.



The existing neighborhood street widths on non-cul-de-sac streets are about 25 feet wide from face-to-face (f-f) of curb. Wilmette Avenue is about 27 feet f-f of curb.

Parking is unrestricted on the majority of streets in the neighborhood. Parking is prohibited at the following locations:

- Beech Drive, both sides from Sherwood Road to 127 feet east of Sherwood
- Cariann Lane, both sides from East Lake Avenue to 250 feet south of East Lake
- Cariann Lane, north side posted at the fire hydrant at the southwest corner of the Cariann/Mark Drive loop. This sign reinforces the standard statutory prohibition of parking within 15 feet of a fire hydrant.
- Sherwood Road, both sides from East Lake Avenue to 100 feet south of East Lake.
- Sherwood Road, between signs on the west side on the approach to Beech Drive and between signs on the east side on the approach to Beech Drive. These signs reinforce the standard statutory prohibition of parking within 30 feet in advance of the stop signs at Beech Drive.

Not all streets in the neighborhood have sidewalk. The location of existing sidewalks is shown on Exhibits 2A and 2B in the Appendix.

The Avoca West campus is east of Sherwood Road at the east terminus of Beech Drive. Abutting the east side of the campus is a 25' wide railroad ROW owned and operated by the Union Pacific Railroad (UPRR), sandwiched by a 12' ComEd ROW to the west and a 95' ComEd ROW to the east. The ComEd ROWs have overhead power transmission lines supported by towers. The UPRR ROW tracks are abandoned but not decommissioned.

Park Drive abuts the east ComEd ROW south of East Lake Street, terminating at the southwest corner of the Wilmette Park District facility, about 15 feet north of the Avoca West School north property line extended. Pavement extends south through the Wilmette Public Works facility property. The public works land is fenced. Two overhead line towers are less than 50' north of the school campus.

The ComEd and UPRR ROWs have been discussed as the site of the future Skokie Valley Trail, a multiuse path not yet designed or financed. The Skokie Valley Trail extends over eight miles, but its route through this study area is not clear. The 2008 study identified challenges crossing East Lake Avenue and recommended relocating the trail to Laramie Avenue between Illinois Road and Wilmette Avenue over a grade-separated crossing of East Lake at the ROWs.

b. Intersection Traffic Control -

The internal neighborhood intersections include 12 with no posted intersection control signage, two Yield sign controlled intersections, one minor approach Stop sign controlled intersection, and two multi-way Stop sign controlled intersections. All neighborhood street intersections with external perimeter streets have Stop sign control on the neighborhood street only. See Exhibits 2A and 2B in the Appendix.

c. Traffic Volumes -

East Lake Avenue is a designated Minor Arterial route that interconnects and augments the Principal Arterial and Expressway system and provides intra-community continuity. The daily traffic volume of almost 33,000 vehicles per day (vpd) reflects the function of the roadway and connectivity provided to I-94.

Harms Road is a designated Major Collector road serving to transport traffic between local roadways and arterials. It has a moderate daily traffic volume of just less than 6,500 vpd.

All of the streets within the Avoca West neighborhood are classified as Local Streets, whose function is to provide access to local properties and connect with higher classified routes. Traffic data was collected on the primary internal streets; Sherwood Road, Wilmette Avenue, Ferndale Road, Hunter Road and Heatherfield Lane. Daily traffic volumes on these streets ranged from 380 vpd to 1,900 vpd. See Exhibit 3 in the Appendix.

d. Vehicular Speeds –

The average and 85th percentile speeds recorded on the neighborhood streets are provided in the following table.

RECORDED VEHICULAR SPEEDS		
Street	Average Speed	85th Percentile Speed*
Sherwood Road	17 mph	23 mph
Heatherfield Lane	25 mph	31 mph
Ferndale Road	25 mph	30 mph
Hunter Road	23 mph	28 mph
Wilmette Avenue	27 mph	32 mph

** The speed at or below which 85% of recorded vehicles traveled.*

The traffic recorders were typically located at midblock locations to capture the highest speeds on a street segment. The traffic recorders on Sherwood Road were located north of Heatherfield Lane in order to capture the traffic volume passing through the Sherwood Road traffic approaching the East Lake intersection.

e. Crash History -

The Glenview and Wilmette Police Departments provided copies of crash records for all reported crashes that occurred within the Avoca West neighborhood and at the neighborhood street intersections with Harms Road and East Lake Avenue during the past five years (2010 through 2014).

No crashes were reported within the neighborhood during the five year period. A total of 12 crashes occurred at the neighborhood perimeter street intersections during the same period.

There was one crash at Cariann Lane and East Lake Avenue, two crashes at Wilmette Avenue and Harms Road, and nine crashes at Sherwood Road and East Lake Avenue. Diagrams of the reported crashes are provided on Exhibits 4A through 4C in the Appendix.

2. ANALYSIS

The foremost issue raised by area residents was a concern about safety of pedestrians walking to and from Avoca West Elementary School. A related concern is the traffic congestion that occurs on Sherwood Road during drop-off and pick-up operations at the school. Other concerns included the ability to turn to and from Sherwood Road at East Lake Avenue, vehicular speeds within the neighborhood and appropriateness of existing intersection traffic control signage in the neighborhood. The following sections detail the analyses of the aforementioned topics.

- a. Pedestrians** - Based on public comments and field observations, the number of children that walk to school is very low. Less than 10 children were observed walking to school, including those escorted by parents. A considerable number of parents choose to drive their children to and from school rather than sending them on buses. Factors that influence parental choice of the mode of transporting their children to school and contribute to the low number of children walking to school include:
- i. **Location of the school:** Avoca West Elementary School is located in the southwest corner of the school service area. About 85 percent of residential areas within the school service boundaries are located east of the Edens and north of East Lake Avenue. Parents are uncomfortable allowing young children to cross East Lake Avenue or to cross the Edens interchange due to the high traffic volumes and free flow ramps. There was no evidence of elementary school children crossing East Lake Avenue or the interchange.
 - ii. **Limited sidewalks:** There are no sidewalks along many streets within the Avoca West neighborhood, including Sherwood Road, the primary access route to the school. In the absence of sidewalk, the only available hard surface to walk on is the street. Sherwood Road is busy at the start and end of school with bus and automobile traffic.

- iii. Availability of busing: Approximately 22% of the residential areas in the school service area are eligible for free busing. Students in the remaining areas either pay a fee to be bused, walk to school or are driven by parents.
- iv. Limited pedestrian connectivity to the east: The school grounds and Avoca West neighborhood are separated from the residential area east of the school by Com Ed and UPRR rights-of-ways (ROWs). Fencing along the east and large portions of the north and south edges of the school grounds discourage children residing east of the school from walking. The only pedestrian access to east of the school is the sidewalk along the south side of East Lake Avenue.

After review of the available data, several potential measures were identified to enhancing pedestrian safety, connectivity and walkability for the neighborhood.

- i. Construct Sidewalk in the Avoca West neighborhood: The neighborhood is identified as a “priority sidewalk neighborhood” in the Glenview Bicycle and Sidewalk Master Plan, approved by the Village Board in 2007. Addition of sidewalk where none currently exists will provide separation between vehicular and pedestrian traffic.

Proponents of sidewalk have cited vehicular traffic and a lack of a separate hard walking surface from the street pavement as reasons to install sidewalk. Data collection for this determined that:

- Traffic volumes on Sherwood Road are heavy at the start and end of the school when many parents drop off and pick up their children, and low during the remainder of the day.
- There were no recorded crashes of any type within the Avoca West neighborhood during the past five years.
- Very few children were observed walking to or from school.
- District 37 busing policy may encourage parents to drive their children to and from school (described in more detail later in this report).

Since adoption of Glenview’s Bicycle and Sidewalk Master Plan, in “priority sidewalk neighborhoods” the Village has worked with adjacent residents to develop concept plans when requested (typically by petition). After working to develop plans in concert with the neighbors, a balloting process of directly adjacent neighbors is used to gauge support. A 2/3 majority vote in support of sidewalk installation has been used as the threshold to show strong local support in changing the characteristics of an existing neighborhood prior to utilizing Village resources to construct new infrastructure.

- ii. Signalized Crossing of East Lake at Sherwood Road: High traffic volumes, the number of lanes to cross, and vehicular speeds on East Lake Avenue discourage crossings by pedestrians. A striped crosswalk across East Lake Avenue without traffic signal control is not recommended, and would likely not be allowed by the CCDOTH, who has jurisdiction over the roadway. A Traffic Signal Warrant study was performed to determine if existing conditions

justify the installation of a traffic control signal. The analysis considered existing and potential pedestrian crossing volumes, crash history and vehicular traffic volumes. *The Warrant study determined that installation of a traffic signal is not justified at this intersection.* A complete discussion of the Warrant study is provided later in this report.

- iii. Vehicular and/or Pedestrian Crossing of the Com Ed/UPRR ROWs: Any new access route across the ROWs must have reasonable and safe termini. The northeast corner of the existing Avoca West parking lot is a logical west end of a new crossing. Parking spaces may be lost for vehicular access. Green space north of the school building may be lost to provide pedestrian access to the front of the school and beyond.

East of the ROWs, the Park District uses the west parkway of West Park Drive for dumpster storage. Exhibit 5A in the Appendix shows a possible crossing terminating north of the dumpsters. This route extends between two towers. Exhibit 5B shows a more direct crossing south of the towers and terminating north of the Public Works fence. In both cases some accommodation of pedestrian traffic must be provided along West Park Drive to separate walkers from commercial traffic. The west side of the pavement is shown to reduce conflicts with existing land uses.

Exhibits 5A and 5B also extend the possible sidewalk link to Laramie Avenue and the rest of the existing sidewalk network. The route shown is north of the tennis courts, using some lengths of existing sidewalk within West Park.

An east vehicular connection could reduce traffic volumes and pedestrian exposure to vehicular traffic within the Avoca West neighborhood, however Com Ed Real Estate has indicated approval of a vehicular crossing in close proximity to the power transmission towers is not likely. Relocation of school traffic from Sherwood Road to West Park Drive would further reduce the likelihood of a traffic signal being warranted at Sherwood and East Lake. The addition of Avoca West School traffic to West Park Drive is not expected to be sufficient to warrant a traffic signal at East Lake Avenue.

A pedestrian crossing of the rights-of-ways would improve walkability between the neighborhoods to the east and west of the Com Ed/UPRR ROWs, and potentially may contribute to a decrease in vehicular school trips. The unknown alignment of the future Skokie Trail path on the Com Ed/UPRR ROWs will affect any east-west pedestrian crossing.

Given the significant procedural and financial impediments to the larger Skokie Valley Trail project, consideration should be given to a new eastern connection now. Conversations with ComEd, UPRR and the Wilmette Park District should proceed to pursue the concept as it may contribute reducing congestion on Sherwood Road.

b. School Vehicular Traffic – Congestion and its impact on walkability was identified as an area of concern within the Avoca West neighborhood. Delay and safety concerns about the Sherwood Road intersection with East Lake Avenue were also raised. Detailed observations made within the neighborhood provide some insight on how traffic is operating and why.

- The school day for grades 1 through 5 begins at 8:20 AM and ends at 3:00 PM. Kindergarten begins at 9:20 AM and ends at 2:00 PM at Avoca West Elementary school. Vehicular access to the school is via Beech Drive off of Sherwood Road. Traffic flow on the school site is organized so that school buses load/unload on the west side of the school and the north and east sides are used for drop-off/pick-up by parents. No traffic issues were observed during kindergarten drop-offs and pick-ups.

Grades 1 through 5 drop-offs and pick-ups primarily occurred via Beech Drive. Cariann Lane has a direct sidewalk to the school grounds and is used by some for school drop-off/pick-up. One student pick-up was observed at the corner of Ferndale Road and Hunter Road which is accessible via a pathway on school grounds and partially via a driveway. Juniper Terrace has a direct sidewalk connection to the school grounds; however it is inconvenient for drivers from north and east of the school.

- During morning drop-offs no traffic backups were observed on Sherwood from Beech Drive. Traffic on Sherwood was heavy for fifteen minutes at the start of school, with the majority of vehicles traveling north of Beech. Traffic traveling south of Beech was considerably lighter. Northbound traffic on Sherwood Road backed-up from East Lake Avenue to just south of Heatherfield Lane shortly before the start of classes. A surge of parents dropping off children just before first bell was the primary cause of the back-up. Within 5 minutes the backup was reduced by half, and 5 minutes later there was minimal queuing on Sherwood Road.

Recorded traffic volumes leaving Sherwood to East Lake during the 7:00 AM hour when residents are leaving for work, were a little lower than the 8:00 AM school surge hour. Extended queuing on northbound Sherwood was not evident during our observations before 8:00 AM, likely a result of more dispersed traffic flows.

- Parents arriving early for after-school pick-up, queue on school grounds. Once queuing space on school grounds is full, most parents wait along the Sherwood west curb line north of Beech, and along the east curb line south of Beech. Most cars along the west curb drove onto school grounds once the queue on school grounds started moving after dismissal. Those waiting along the east curb sometimes moved up with the queue, and sometimes parked. If they parked, child walked to the car either alone or escorted by the parent.

Some parents were observed to park on the east side of Sherwood north of Beech and on the west side south of Beech, and either escort or wait for the

child to come to the car. When cars were stopped on both sides of the street as single lane roughly 9 feet wide remained for traffic movement, impeding traffic flow.

At about 3:10 PM just after the buses were released and parents continued to depart school, queuing on northbound Sherwood extended from East Lake Avenue to about half way between Heatherfield Lane and Beech Drive. Within five minutes the queue had reduced by half to just south of Heatherfield. It took about another 5 to 10 minutes for the end of school traffic surge to dissipate, a total of about 25 minutes from start to end of after school traffic surge.

- During the Avoca West dismissal period, eastbound traffic on East Lake Avenue was observed to back up from Laramie Avenue west to near Harms Road. The closely spaced dismissal times for Loyola Academy at 2:57 PM and the New Trier High School Northfield Campus at 3:05, result in a high volume of traffic on southbound Laramie at East Lake. This appears to contribute to congestion on East Lake Avenue and increase delay for northbound vehicles attempting to exit from Sherwood Avenue.

- Outside of the start and end of the Avoca school day, traffic volumes within the Avoca West neighborhood were generally observed to be low, as confirmed by the 24-hour traffic count data. During off peak traffic periods several pedestrians were observed freely strolling or walking their dogs on the neighborhood streets without any vehicular traffic concerns.

In summary, two primary traffic congestion concerns were identified in the Avoca West neighborhood:

- i. On street congestion on Sherwood Road primarily during the end of school period due queuing and parking of vehicles on both sides of the street and impeding traffic flow.
- ii. Difficulty turning to East Lake Avenue from Sherwood Road and safety concerns related to performing the turns.

The following measures were identified as potential methods of reducing congestion and improving safety and performance at the Sherwood Road/East Lake intersection.

- i. **Parking Prohibitions:** Southbound vehicles queue north of and northbound vehicles queue south of Beech while waiting to enter the school site at the start and end of school when on-site stacking space is full. Additional vehicles often park on Sherwood opposite of the on-street queuing impeding flow of traffic on Sherwood Road. *Prohibition of parking along the east curb line from Beech Drive to 200 feet north, and along the west curb line from Beech to 200 feet south at the start and end of school on school days will prevent two side parking and provide more street width for vehicles to pass during the busiest periods.*

If implemented, it is suggested that the prohibitions be from 7:45 to 8:45 AM and from 2:30 to 3:30 PM on School Days.

- ii. Close the Beech Drive Access to Sherwood Road and Build a New Vehicular Connection to West Park Drive: This concept was discussed as a part of the Pedestrians Analysis. Diverting vehicular traffic to West Park Drive would relieve school traffic congestion on Sherwood Road and at the Sherwood/East Lake intersection; however pursuit of this modification will be an extended process. Preliminary feedback from Com Ed and the UPRR suggest that obtaining approval for a vehicular crossing from those parties and the Illinois Commerce Commission due to railroad involvement is unlikely. Leases would be required from both property owners for use of their land. The process is further complicated by the potential Skokie Valley Trail extension, for which an at-grade vehicular crossing would be undesirable. *The implementation of the Skokie Valley Trail may present opportunities for connection one day. We recommend the Villages wait until the design of the Skokie Valley Trail commences.*
- iii. Encourage Carpooling and School Bus Usage: Assuming the geographic distribution of students attending Avoca West School is proportional to the geographical location and sizes of residential neighborhoods in the district, about 84% of District residences are east of I-94 or north of East Lake Avenue, both significant barriers to walking to school, but busing ridership is low. Many parents in the 62% of homes eligible for fee based busing opt to drive instead, increasing traffic volumes on Sherwood Road

We understand the School District is working on encouraging carpooling and the use of existing bus routes. We support the effort. A 40 student increase in ridership can reduce traffic volumes on Sherwood Road by up to about 80 trips (40 round trips) each during the start and end of school day; a 30% decrease in traffic on Sherwood during each peak traffic period.

We also understand the District will investigate the possibility of routing those buses that currently turn left from Sherwood Road to East Lake Avenue to turn left from Harms Road instead at the existing traffic signal. If possible, this reroute could help reduce delay and queuing on northbound Sherwood Road.

- iv. Install a Traffic Signal at East Lake Avenue and Sherwood Road: A traffic signal may facilitate turns to and from Sherwood at East Lake; however existing traffic conditions do not meet the Warrants to justify installation. A complete discussion of the Warrant study is provided later in this report.

Only one crash that occurred over the past five years was of a type susceptible to correction by a traffic signal installation. Several were rear end collisions. Installation of a traffic signal often increases the number of crashes occurring at an intersection, particularly rear end collisions. The 32,900 daily vehicles

driving along East Lake Avenue would have to stop much more frequently than under current traffic control, increasing the likelihood of rear end collisions.

Potential alternatives to address intersection operations and safety include:

- *Widen East Lake Avenue at Sherwood and Cariann to provide a center left turn lane.* The existing crash patterns on East Lake Avenue at Sherwood Road and Cariann Lane show that 60% of crashes were related to vehicles stopping in through lanes waiting to turn left from East Lake. Installation of a center left turn lane on East Lake Avenue is a typical countermeasure to reduce the incidence of rear end and sideswipe crashes by providing a location to stop outside of through traffic lanes while waiting to turn left.
- *Adjust the Avoca West Elementary School end of school dismissal time to increase separation from Loyola Academy and New Trier Northfield Campus dismissal times.* The three schools currently dismiss at 2:57 (Loyola), 3:05 (New Trier) and 3:10 PM (Avoca). Allowing the high school's traffic to dissipate before releasing Avoca students may facilitate exists from Sherwood Road by avoiding the peak high school congestion on East Lake Avenue.

c. **Neighborhood Traffic Operations** – An overall technical review of Avoca West neighborhood traffic, intersection traffic control and vehicular speeds was requested by the Village of Glenview. The following is a summary of the findings of the analyses.

- i. **Intersection Traffic Control:** Intersection traffic control was reviewed for all internal intersections within the Avoca West neighborhood as well as the East Lake Avenue intersection with Sherwood Road, and the Harms Road intersections with Wilmette Avenue and with Ferndale Road. The review was conducted following the current edition of the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD), and in accordance with current IDOT District 1 policies. Existing traffic control devices are shown on Exhibits 2A and 2B in the Appendix.

Crash frequency, recorded vehicular traffic volumes, observed pedestrian volumes and sight distance were all considered as a part of intersection traffic control review. Based on the collected data and MUTCD criteria, *a change in intersection traffic control is not required at any intersection.*

There are opportunities to improve sight lines at some intersections.

- **Indian Road and Wilmette Avenue** –An existing pine tree on the northwest corner has low hanging branches. *Trimming the tree limbs up to a minimum clear distance of 7.5 feet from ground surface to lowest limb will improve intersection sight lines.*

- Heatherfield Lane and Heatherfield Court cul-de-sacs – A pine tree is located at the back of east side curb on Heatherfield Lane just south of the east cul-de-sac. *Trimming the tree limbs up to a minimum clear distance of 7.5 feet from ground surface to lowest limb will improve intersection sight lines.*
 - Hunter Road and Wilmette Avenue – Existing vegetation at the northwest corner was recently trimmed back to improve sight lines. *Ongoing monitoring and maintenance will be necessary to maintain sight lines at this intersection.*
- ii. Sherwood Road and East Lake Avenue Traffic Signal Warrants: Due to concerns voiced about safety and delay experienced by vehicles turning at the intersection of Sherwood Road and East Lake Avenue, a traffic signal control warrant study was performed for the intersection. The study was performed in accordance with MUTCD Traffic Signal Control Warrants and IDOT District 1 signal warrant policy. There are a total of 9 Warrants of which 3 are not applicable to the conditions at the Sherwood/East Lake intersection. The following summarizes the remaining Warrants
- Warrant 1 – Eight-Hour Vehicular Volumes: For eight hours of the day, the high minor street approach (Sherwood Road) volumes must meet a specific threshold based on the total major street (East Lake Avenue) volume. Existing traffic volumes do not meet the specified criteria for eight hours of the day. *Warrant 1 is not met.*
 - Warrant 2 – 4-Hour Vehicular Volumes: A minimum minor approach volume must be met for four hours of the day based on the total major street volume. The minimum volume criteria were not met for four hours of the day. *Warrant 2 is not met.*
 - Warrant 3 – Peak Hour Vehicular Volumes: A minimum minor approach volume must be met for one hour of the day based on the total major street volume. The MUTCD states, “This signal warrant *shall be applied only in unusual cases*, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.” The minimum volume criterion was met, however the Avoca West residential neighborhood, including elementary school, does not fall within the MUTCD definition of an “*unusual case*”. *Warrant 3 is not met.*
 - Warrant 4 – Pedestrian Volume: The pedestrian volume warrant can be met either by meeting a minimum pedestrian crossing volume threshold for four hours of the day or a higher threshold for one hour of the day, both based on the total major street volume. The minimum volume criteria for this intersection are 107 pedestrian crossings for each of four hours, or 133 crossings in one hour. During the day long observation of the study area, not a single pedestrian was observed to cross East Lake Avenue west of Laramie Avenue. Considering the area land uses along East Lake Avenue,

latent pedestrian demand to cross East Lake Avenue is likely to be very low at Sherwood Road. *It is our opinion that Warrant 4 is not met.*

It should be noted that the Skokie Valley Trail Study Report does not recommend providing an at-grade crossing of East Lake Avenue aligned with the proposed trail. The report recommended either a trail bridge over East Lake or re-routing the trail away crossing from the Com Ed/UPRR rights-of-way to the existing signalized crossing at Laramie Avenue.

- Warrant 5 – School Crossing: This warrant considers the frequency and adequacy of gaps in traffic and well as requiring a minimum of 20 schoolchildren crossing during the highest crossing hours. There are 19 homes along the north side of East Lake Avenue between Harms Road and Cariann Lane. It is unlikely that those homes will generate the minimum 20 schoolchild crossing trips required to meet Warrant 5. East Lake Avenue with its four travel lanes, daily traffic volumes in excess of 30,000 vehicles, and posted speed limit of 35 mph is an imposing barrier that most parents would be very reluctant to let their children cross, even with a signalized crosswalk. *In our opinion Warrant 5 is not met.*
- Warrant 7 – Crash Experience: This warrant has three required criteria that all must be met. The two criteria most easily checked are: five or more reported crashes, of a type susceptible to correction by a traffic control signal, have occurred within a 12 month period; and 80% of the Warrant 1 Combination A/B criteria be met. In the past five years, only one crash of a type susceptible to correction by a traffic control signal occurred. Additionally, the 80% of Warrant 1 Combination A/B is not met. *Warrant 7 is not met.*

In conclusion, based on all of the collected data, *installation of a traffic control signal at the intersection of Sherwood Road and East Lake Avenue is not justified.* East Lake Avenue is under the jurisdiction of the CCDOTH, so a request to install a traffic signal must be reviewed and approved by them. In addition to traffic signal warrants, CCDOTH likely would consider possible impacts to traffic flow and progression along the arterial route East Lake Avenue.

- iii. Traffic Volumes: The existing traffic volumes on the neighborhood streets reflect the relative hierarchy of the streets within the neighborhood. The main neighborhood access roads, Sherwood Road and Wilmette Avenue, carry the highest traffic volumes, 1,900 and 1,550 vpd respectively. The remaining neighborhood streets, whose purpose is to provide direct access to the neighborhood land uses, carry from 550 to less than vpd. Streets with daily traffic volumes under 1,000 vpd are considered low volume streets. Streets with daily traffic below 400 vpd are defined by the American Association of State Highway and Transportation Officials (AASHTO) as very low volume streets.

The existing traffic volumes within the Avoca West neighborhood are normal and consistent with similar character streets throughout the Village of Glenview.

- iv. Vehicular Speeds: The 85th percentile speed is the speed at or below which 85 percent of vehicles on a street are traveling. Historically, 85th percentile speeds on Glenview residential neighborhood streets have averaged about 30 miles per hour. With the exception of Sherwood Road, the recorded 85th percentile speeds ranged from 28 to 32 mph, and were recorded mid-block. The 85th percentile speed on Sherwood Road was lower 23 mph, which was due to the data collection location near East Lake Avenue. During free flow conditions outside of the start and end of school periods, it is likely that the midblock 85th percentile speed on Sherwood is no higher than 30 mph due to existing roadway conditions.

The existing 20 mph speed limit is posted on every entry point to the neighborhood, including every entry from Wilmette Avenue. Additional speed limit signs are posted on Sherwood Road, Ferndale Road, Heatherfield Lane, Arbor Lane and Juniper Terrace. *The posting more speed limit signs is not recommended.*

The 28 to 32 mph range of mid-block 85th percentile speeds in the neighborhood exceeds the posted speed limit but is consistent with speeds recorded in other residential streets in Glenview. Village of Glenview traffic calming policy does not allow installation of speed humps or stop signs to control speeds. Options available to mitigate speeds include:

- *Speed enforcement targeted to the times of the day when speeds and traffic volumes are highest.*
 - *Place “20 MPH” pavement markings on the streets entering the neighborhood as reinforcement of the neighborhood speed limit.*
 - *Public relations effort targeted to both the general public and Avoca West parents specifically to remind drivers to drive responsibly. These can include –*
 - Providing take home flyers or email broadcasts to parents of Avoca West students.
 - Posting a message on the Village and School websites.
 - Posting yard signs asking drivers to Slow Down. The Village of Glenview is in the process of rebranding the yard sign campaign. The Avoca West neighborhood has the opportunity to become the first targeted neighborhood.
- v. Crash History: There were no reported crashes within the neighborhood over the past five years. A lack of crashes in an entire neighborhood over a five year period is unusual. The crash history provides no evidence of crash patterns that would be indicative of a particular safety problem within the neighborhood. See Exhibits 4A through 4C in the Appendix.

Twelve crashes occurred at the neighborhood perimeter street intersections during the five year review period. These crashes included three in which an involved person reported an injury, but there were either no visible signs of injury or declined treatment of a visible injury. There were no reported serious injuries or fatalities.

With the exception of the Sherwood Road intersection with East Lake Avenue, all intersections experienced an average of less than 1 reported crash per year over the five year period. Nine crashes were reported at the Sherwood – East Lake intersection during the five year period. Only one crash was of a type susceptible to correction by traffic signal control, an insufficient amount to warrant installation of a traffic signal at the intersection.

As discussed earlier in this report, 60 percent of the crashes at the Sherwood – East Lake intersection were related to vehicles stopping in through lanes waiting to turn left from East Lake. *Installation of a center left turn lane on East Lake Avenue is a typical countermeasure to reduce the incidence of rear end and sideswipe crashes by providing a location to stop outside of through traffic lanes while waiting to turn left.*

D. EAST LAKE AVENUE CORRIDOR

The portion of East Lake Avenue from Harms Road to Hibbard Avenue has been identified as an area in need of pedestrian improvements by citizens of both Wilmette and Glenview. Specific areas of concern identified from public comments consist of:

- A need for a marked crosswalk across East Lake Avenue at Manor Drive and at West Park Drive.
- A need to widen the East Lake Avenue overpass over the I-94 to accommodate two-way bicycle traffic.

1. EXISTING CONDITIONS

East Lake Avenue is designated a Minor Arterial route that interconnects Principal Arterial and Expressway system with lower function streets including collector and local streets. Within the study corridor abutting land uses include residential, commercial and institutional (Loyola Academy High School). The daily traffic volume on the street is 32,900 vpd, and a posted speed limit of 35 mph from west of Harms Road to Skokie Boulevard where it reduces to 30 mph.

East Lake has four through traffic lanes, two in each direction. On its westbound approach to Harms Road it widens to five lanes, providing a separate center left turn lane. On its eastbound approach to Laramie Avenue east Lake Avenue again widens to provide a center left turn lane. The five lane cross section continues to east of Hibbard Road, where it returns to a four lane cross section. At the bridge over I-94, the center lane becomes a westbound

through lane and the northernmost lane serves as a weaving lane on the interchange bridge.

Within the study section there is continuous sidewalk along the south side of East Lake Avenue. There is a short section of sidewalk on the north side from Fairway Drive to the existing signalized crosswalk on the east leg at Harms Road. There is no sidewalk on the north side from the Harms Road crosswalk to West Park Drive, at which point sidewalk begins and continues to beyond the east study limit.

Sidewalks along East Lake Avenue are typically 5 feet wide, but on the bridge over I-94 the sidewalk varied from about 4.2 to 4.8 feet wide from face of curb to face of bridge parapet.

Marked pedestrian crosswalks are provided on East Lake Avenue at five locations; Harms Road, Laramie Avenue, the Edens Plaza shopping center south entrance, Skokie Boulevard and Hibbard Road. All crosswalks are at traffic signal controlled intersections equipped with push button activated pedestrian signals.

2. ANALYSIS

a. Pedestrian Crosswalk - Pedestrians crossing East Lake Avenue west of Laramie Avenue cross a multi-lane, wide arterial with heavy traffic volumes. The following pedestrian activity and travel patterns were observed during the day long field reconnaissance:

- i. All pedestrians observed crossing East Lake Avenue did so at signalized pedestrian crosswalks.
- ii. Pedestrian activity along East Lake Avenue was low. The greatest pedestrian activity occurred shortly before the start and after the end of Loyola Academy classes. Less than 20 pedestrians were observed at the intersection of East Lake and Laramie Avenue shortly before school and about 25 pedestrians were observed shortly after school.

The majority of pedestrians crossing East Lake Avenue were Loyola Academy students. Some traveled to or from the residential neighborhood south along Laramie Avenue, and some traveled between Loyola Academy and the bus stop at the southeast corner of East Lake. Observed non-Loyola pedestrians numbered less than 5.

Several students walked to the Starbuck's coffee shop, crossing Laramie Avenue. Observed student crossings of Laramie occurred either at the East Lake signal or at the marked school crossing/Pace bus stop north of Greenwood Avenue.

- iii. There was minimal pedestrian activity outside of the section of East Lake Avenue from Manor Drive to Laramie Avenue. One student was observed walking west along the north side of East Lake to his car parked in a small

parking area in front of the self-storage facility, and one student was observed walking west on the sidewalk along the south side of East Lake.

- iv. The existing non-residential land uses along East Lake Avenue west of Laramie include two automobile repair shops, two dry cleaners, a building materials supplier, a tavern, a self-storage facility a Com Ed substation, a small medical office, a small general office building, a record store, a convenience market, financial advisor office, a Starbucks, a Jimmy Johns, a Dairy Queen and a gas station. The majority of these land uses generate minimal to no walk-in traffic, including most of the businesses in the vicinity of Manor Drive. The businesses most likely to generate walk up business are all located 300 feet or less from the existing signalized crosswalks at Laramie Avenue a reasonable distance to access a signalized crossing.

Due to the high vehicular traffic volume on East Lake Avenue, minimum of four traffic lanes, and a posted speed limit of 35 mph, and the minimal pedestrian crossing demand, it is highly unlikely that the CCDOTH would permit a new crosswalk in the vicinity of Manor Drive with or without a traffic control signal. The existing lands uses in the vicinity of Manor Drive currently generate little to no pedestrian crossing demand. This is not expected to change unless there is a significant land use change in the immediate vicinity.

The potential future Skokie Valley Trail extension could increase the demand for a crossing. The 2008 Skokie Valley Trail study considered various means of crossing East Lake Avenue including an at-grade crossing of East Lake aligned with the UPRR ROW. The study contains the following recommendation for the trail crossing of East Lake Avenue:

“Due to the volume and speed of traffic, it is recommended that the proposed trail directs users along Illinois Road to Laramie Avenue, which runs parallel to the proposed trail in this location. This detour would provide trail users with an on-street route to the signalized intersection of Lake Avenue and Laramie Avenue.”

The study goes on to state regarding maintaining the trail alignment along the UPRR ROW across East Lake Avenue:

“If a trail crossing is desired at its current intersection, it is recommended that a grade-separated crossing be constructed.”

An at-grade pedestrian crossing is not recommended in the vicinity of Manor Drive at this time. If conditions change at some point in the future, the need for an additional crossing can be re-evaluated at that time.

- b. **East Lake Overpass over I-94** - Although CCDOTH has jurisdiction over East Lake Avenue, the I-94 Bridge and interchange ramps fall under the jurisdiction of the Illinois Department of Transportation (IDOT). Any improvements to pedestrian and bicycle access will require IDOT approval and likely CCDOTH approval as well.

According to the IDOT Structure Information Management System Master Structure Report, the existing sidewalks on the bridge are 5 feet wide. There are no clear zone buffers on either the street or bridge parapet side of the sidewalks. This does not meet the IDOT recommended design for a one-way travel off road bikeway.

Despite the attractiveness of retail shopping and restaurants on the east side of the overpass, few pedestrians (less than 10 over the course of the day) and no bicyclists were observed crossing the bridge during the field reconnaissance. The narrow sidewalk and its adjacency to the vehicular way reduce its attractiveness for pedestrians and make it uninviting for bicyclists. The existing at-grade crossings of the free flow interchange ramps may also discourage pedestrians and bicyclists from crossing the bridge

Improved facilities could increase non-motorized crossings of the bridge; but to what magnitude cannot be readily quantified. Should it come to pass, the proposed Skokie Valley Trail extension through Wilmette and Glenview likely will increase pedestrian and bicyclist demand to cross the bridge.

There are several ways to provide a bicycle crossing over the bridge including marking on-street bike lanes, widening of the bridge to provide a two-way mixed use path or constructing a separate two-way mixed-use bridge for pedestrians and bikes. See Exhibits 6A and 6B in the Appendix for bike crossing alternatives.

The scope of this study does not include assessing the feasibility of these options. A feasibility study and identification of a preferred option would require detailed survey and analysis of existing topography, assessment of the structural capacity to widen the bridge, geometric analyses separate bridge alignments, and development of cost estimates.

The cost for a study, engineering and construction of one of the bridge structure options is likely to be in excess \$2,000,000. The following provides a list of pros and cons for each concept. In all cases there is no existing two-way bicycle facility on east or west of the interchange into which to connect a new bridge crossing path.

- i. On-street Bike Lanes: The 63 foot wide bridge pavement could accommodate re-striping to provide four 12-foot travel lanes, a four foot median and a 5.5 foot one-way bike lane on each side. Relocation of the raised median may be necessary.

Pros –

- Likely is the most economical option
- Least construction
- Separate one-way lanes the bikes will be located on the proper side of the street at each terminus

Cons –

- Bike lanes adjacent to moving traffic and crossing free flow ramps will be less attractive to less experienced bicyclists and for young children
- The weaving lane on the bridge would have to be eliminated, which may have unacceptable impacts on interchange traffic operations
- Crossings of the interchange ramps will remain at-grade

ii. Bridge Widening for Two-Way Shared Path:

Pros –

- Separates bike traffic from vehicular traffic
- Could be more economical than constructing a separate bridge

Cons –

- Likely has the largest impact on East Lake Avenue traffic operations during construction
- There is no existing two-way bike path on either side of the bridge at which to terminate the improvement. The two-way path will have to extend to the nearest signalized crossings to allow the contra-flow direction to cross over to the proper side of street
- Crossings of the interchange ramps will remain at-grade
- A barrier must be provided to physically separate two-way bicycle traffic from vehicular traffic

iii. Separate Bridge for Two-Way Shared Path:

Pros –

- The most inviting option for path users
- Separates bike traffic from vehicular traffic
- May allow grade separation of ramp crossings from the bridge

Cons –

- Likely the most expensive alternative
- Alternative most likely to require land acquisition
- There is no existing two-way bike path on either side of the bridge at which to terminate the improvement. The two-way path will have to extend to the nearest signalized crossings to allow the contra-flow direction to cross over to the proper side of street

Should the communities wish to pursue bicycle accommodations through the I-94 and East Lake Avenue interchange, early coordination with IDOT and CCDOTH is recommended. These agencies can provide some preliminary guidance and also assist in identifying potential funding sources. Outside funding potential may be enhanced due to the adjacency of the interchange to the possible future Skokie Valley Trail crossing at Laramie Avenue as proposed in the 2008 Trail Study.

E. NORTHEAST AREA

Edens Plaza on the west side of Skokie Boulevard north of East Lake Avenue is a regional shopping center. It has about 345K square feet of gross retail space over 20 acres. Currently the Plaza is anchored by Carson Pirie Scott, Bed Bath and Beyond, Sports Authority and Walgreens. There are almost 1,400 parking spaces. The only current pedestrian access to and from the east is at the Skokie Blvd/East Lake Ave intersection, where there are striped crosswalks. This study looked if additional pedestrian access is possible and appropriate.

1. EXISTING CONDITIONS

a. Roadway Summary

Skokie Boulevard is classified as an Other Principal Arterial by IDOT who has jurisdiction over the right-of-way. In 2013 there were 9,800 daily vehicles northbound just north of the Plaza entrance and 9,400 daily vehicles southbound. Skokie Boulevard is one lane wide southbound north of the ramp from southbound I-94 and two lanes continuing south past the Plaza entrance. Northbound Skokie Boulevard is two lane wide northbound from East Lake Avenue, past the Plaza entrance to a point near the I-94 ramp where it transitions to a single lane northbound.

The intersection of Skokie Boulevard with the Plaza entrance and the opposite Church entrance is signalized but without pedestrian signal phases or crosswalks. There are left turn lanes to enter the Plaza and the Church.

Hibbard Road is a two lane major collector under IDOT jurisdiction. In 2013 it had a two-way Average Daily Traffic of 6,750 vehicles. It has a signalized intersection at East Lake Avenue and a four-way stop controlled intersection at Illinois Road.

Illinois Road within the study area is a two lane major collector under CCDOTH jurisdiction. In 2013 it had two-way Average Daily Traffic of 1,800 vehicles. The intersections with Hibbard Road and Skokie Boulevard are not signalized. Westbound Illinois widens to separate left and right turn lanes approaching Skokie Boulevard.

Sprucewood Lane and Road are Village of Wilmette streets extending between Illinois Road and Hibbard Road. There are also four Village cul-de-sacs that access Hibbard Road.

b. Sidewalk Summary

Exhibit 7 in the Appendix locates existing sidewalk within the Northeast Area. There is no public sidewalk along Skokie Boulevard, but there is a service walk on the north side of the Plaza entrance that ends at the Skokie Boulevard right-of-way.

There is public sidewalk on each side of East Lake Avenue between Skokie Boulevard and Hibbard Road.

There is continuous sidewalk on the west side of Hibbard Road between East Lake Avenue and Illinois Road.

Sprucewood Lane/Road and Country Lane have sidewalk on the north side of the road abutting the pavement, Walden Lane has sidewalk north and south and separated from the pavement. Cranston Court and Melrose Court have no sidewalk.

There is a continuous gravel shoulder on the north side of Illinois Road which can serve pedestrian movements. Gravel areas on the south side of Illinois Road within the study area are not continuous.

2. ANALYSIS

- a. **Edens Plaza Access** - Pedestrians from the Northeast Area must walk along Hibbard south to East Lake Avenue then west across Skokie Boulevard to enter the south edge of the Plaza. This could be a length of 3,600 feet from the center of Sprucewood Lane. More convenient access to the Plaza is being sought. For this analysis we started at the Plaza

The main Plaza access is the logical terminus for a new access point. There is a sidewalk available on the Plaza site. There is a traffic signal. Ideally, there would be a direct connection from the Skokie Boulevard signal through the Church or commercial properties immediately east and one of the cul-de-sac residential properties to reach a public right-of-way connected to Hibbard Road. This would require the approval and cooperation of those land owners who may hesitate for liability reasons.

In the absence of a direct connection west, the next best connection to the residential areas would be a new sidewalk on the east side of Skokie Boulevard to Illinois Road. This would provide a shorter route for residents north of Country Lane. The same route from midblock Sprucewood Lane could be reduced to 2,100 feet. We did not check right-of-way or utility conflicts but visually there appears to be sufficient room for a public sidewalk. However, installation of a new sidewalk would remove part of the vegetation that serves as a visual and sound barrier from the I-94 ramp and Skokie Boulevard for the properties backing onto the road.

In the absence of a north connection a south connection along Skokie Boulevard from the Plaza entrance to East Lake Road is possible. This corridor poses no buffering sacrifice, but the utility of this route over the existing access via the Plaza property is limited. The length of walk for residents near Illinois Road would not change.

The final route will determine the attractiveness of the new access point. Regardless of the new route, we expect an upgraded traffic signal with a push button-activated pedestrian signal phase at the Plaza entrance. It does not pay to change the signal until an overall pedestrian plan is established.

- b. **Illinois Road Sidewalk** - A review of pedestrian accidents along Illinois Road within the study area was not conducted. Such a review may reveal unusual conditions. In the absence of a compelling accident experience, the value of a new sidewalk is proportional to its connectivity with pedestrian traffic generators. In the case of this corridor, a public sidewalk could provide a hard surface access to Marie Murphy School and the church east of Hibbard. This connectivity is independent of any future sidewalk connection to Edens Plaza.

We observed pedestrians on the south side of Illinois Road which is not surprising considering nearby trip generators (Marie Murphy School to the east and the Edens Plaza to the west) are on the south side. It is possible to create a path separated from the street pavement on the south side. Landscaping and grading changes will be necessary for sidewalk installation.

If consistent with Village of Wilmette policy, installation of sidewalk on the south side of Illinois Road is recommended.

F. OPEN HOUSE COMMENTS

On August 10, 2015 a public information open house was held at Glenview Village Hall. Residents from Glenview and Wilmette were invited. Staff from both Villages attended. Exhibit boards were displayed showing information in this report. An additional exhibit showing potential improvements, Exhibit 9 in the Appendix, was also provided. Verbal and written comments were received. Exhibit 8 is a summary of public comments received the open house.

Three concepts were mentioned by attendees. They are discussed separately.

1. NO LEFT TURNS FROM NORTHBOUND SHERWOOD ONTO EAST LAKE AVENUE

This concept proposes to eliminate a traffic movement that incurs occasional peak hour delays. The duration of the prohibition (all day or during school hours) was not established. We assume motorists wishing to proceed west on East Lake Avenue will use Ferndale Road and Harms Road

Pros –

- Delays caused by left turn movements are eliminated
- Queues for northbound Sherwood would decrease

Cons of an all-day turn restriction –

- Increases the travel distance for some residents by as much as a half mile
- Increases traffic volumes on Ferndale and Harms by as much as 400 vpd, and to a lesser extent on Heatherfield and Sherwood
- Turn restrictions are not needed for most of the day
- May impact school bus routing
- Requires consistent Police enforcement

Cons of a school hour turn restriction –

- Increases the travel distance for some residents by as much as a half mile
- Increases traffic volumes on Ferndale, Heatherfield and Sherwood
- May impact school bus routing
- Requires consistent Police enforcement

2. ONE WAY TRAFFIC ON SHERWOOD

This concept proposes to eliminate one direction of traffic flow near the school. There was no consensus about the duration of the restriction (all day or during school hours) and the north and south limits of the restriction. We assume Sherwood would be northbound between Ferndale Road and Heatherfield Lane. This allows right turns in and out of the school campus while preserving access at Lake Avenue. Visitors to Sherwood properties during restricted times are assumed to travel south on Heatherfield and east on Ferndale.

Pros –

- Lessens school peak congestion on Sherwood caused by a single moving lane of traffic
- Reduces total traffic on Sherwood north of Beech

Cons of an all-day traffic restriction –

- Increases daily traffic on Heatherfield (380 to 950 vpd) and Ferndale (550 to 950 vpd)
- Increases travel distances all day
- On-street school traffic queuing will extend farther south on Sherwood

Cons of a partial-day traffic restriction –

- Increases traffic on Heatherfield and Ferndale
- Increases travel distances
- Requires on-site enforcement
- On-street school traffic queuing will extend farther south on Sherwood

3. SOUTH AVOCA DROP-OFF TO HUNTER

This concept would create a new access to the Avoca campus at the northeast corner of the Ferndale-Hunter intersection. Additional on-site parking could be created west of the school building.

Pros -

- Could reduce on-street stacking by providing on-site drop-off/pick-up storage
- Could provide additional on-site parking for special events
- May encourage some school traffic to use Harms Road

Cons –

- Increases daily traffic on Sherwood south of Beech, Ferndale and Hunter
- Current school layout separates bus and parent traffic. Without a separation, this traffic is mixed.
- School trips from Lake Street are brought deeper into the neighborhood via Sherwood
- Property control of the access route is not clear
- New driveway or parking lot will be located behind existing homes abutting the school grounds
- Removal of mature trees will likely be required

G. SUMMARY OF FINDINGS AND RECOMMENDATIONS

Various concerns about walkability and safety for pedestrians and traffic operations have been expressed within the three areas discussed in this study; the Avoca West neighborhood, the East Lake Corridor between Harms Road and Hibbard Road, and the area bounded by Skokie Boulevard, Illinois Road, Hibbard Road and East Lake Avenue. The primary unifying factor common to the three areas was gaps in the existing pedestrian system and barriers to area walkability presented by the heavily traveled East Lake Avenue and I-94.

Extensive data was collected and analyzed to address the pedestrian access and safety concerns as well as traffic operations concerns. The following summarizes the concerns, findings and recommendations of this study.

1. AVOCA WEST NEIGHBORHOOD

- a. Pedestrian Access and Safety** – Many streets within the neighborhood do not have sidewalk. Sherwood Road, the primary access route to Avoca West Elementary School does not have sidewalk and experiences traffic congestion at the start and end of school. Based on geographic location, about 85 percent of District 37 residents are not eligible for free busing and over 70 percent of those reside on the far side of I-94 and East Lake Avenue which are barriers to children walking to school.

Recommendations to improve walkability by increasing connectivity and reducing traffic congestion include:

- Prohibit parking on the east side of Sherwood Road for 200 feet north of Beech Drive, and on the west side for 200 feet south of Beech Drive during the hours 7:45 to 8:45 AM and 2:30 to 3:30 PM on school days.
- Support District 37 efforts to encourage carpooling and increased bus usage.
- Construction of sidewalk within the neighborhood would separate pedestrian from vehicular traffic and facilitate walking to school. The Village of Glenview currently is engaged in dialog with neighborhood residents on this issue.

- Providing a vehicular or pedestrian connection from Avoca West School to West Park Drive across Com Ed and UPRR rights-of-ways was considered and is not recommended at this time. Preliminary feedback from the UPRR indicates that a vehicular crossing is not likely to be approved by the Illinois Commerce Commission. Any crossing of both rights-of-way will require entering into leases and indemnification of the owners of the properties being crossed. The planned Skokie Valley Trail also may impact cross access options. It is recommended that cross access be considered as a long term project. Preliminary planning and coordination could begin in the near term due to the process required to obtain permits to cross utility and railroad rights-of-way.

b. Neighborhood Traffic Operations – Traffic operation review results are as follows:

- Intersection traffic control was reviewed at all intersections within the Avoca West neighborhood. No changes in intersection traffic control are recommended. It is recommended that vegetation is recommended to be trimmed back at two intersections (Indian Road/Wilmette Avenue, and Heatherfield Lane/Heatherfield Court) and monitored at one intersection (Hunter Road/Wilmette Avenue).
- It is noted that not a single vehicular crash occurred on Avoca West neighborhood internal streets during the five year period from 2010 through 2014.
- Installation of traffic signal control at East Lake Avenue and Sherwood Road was considered and is not recommended. Warrants for signal installation are not met.
- Daily traffic volumes are low on most Avoca West neighborhood streets, ranging from 550 to less than 400 vehicles per day. The two primary access routes into the neighborhood, Wilmette Avenue (1,550 vpd) and Sherwood Road (1,900 vpd) have higher volumes. The traffic volumes are not unusual and all are reasonable for the relative function of the streets.
- Recorded vehicular speeds within the Avoca West neighborhood are consistent with typical speed recorded in several other Glenview residential neighborhoods. Options available in the Village's traffic calming tool box to reduce vehicular speeds under these circumstances include speed enforcement targeted to times when volumes and speeds are highest, public information campaigns to encourage reduced speeds including take home flyers or email broadcasts to parents of Avoca West School students, posting on both Village and School District websites, and yard signs.

- c. **Open Meeting Concepts** – Three concepts presented by attendees of the Open House require further study as they have significant operational advantages and disadvantages throughout the neighborhood. The concepts include:
- Restricting northbound left turns from Sherwood Road onto East Lake Avenue
 - Restricting one-way traffic on Sherwood, probably northbound between Ferndale Road and Heatherfield Lane
 - Creating an additional campus access at the Ferndale/Hunter intersection

2. EAST LAKE AVENUE CORRIDOR

- a. **Pedestrian Crosswalk** – Existing signalized pedestrian crosswalks are provided at 5 intersections within the study area. An additional crosswalk was requested in the vicinity of Manor Drive.

Existing pedestrian volumes along the entire corridor were very low. All pedestrians observed to cross East Lake Avenue, did so at signalized intersections. Pedestrian demand to cross near Manor Drive is minimal and insufficient to warrant installation of a crosswalk, signalized or not. Installation of an additional pedestrian crosswalk is not recommended.

- b. **East Lake Overpass over I-94** – On the bridge over I-94 the existing sidewalks are not wide enough for bicycle traffic. Three alternatives were identified for potential bicycle accommodations over the bridge; on-street bike lanes, widening of the bridge to provide a two-way mixed pedestrian and bicycle path separated from vehicular traffic, and construction of a separate bridge to carry two-way pedestrian and bicycle traffic over I-94. All options are complex and require coordination and approval by IDOT and CCDOTH who have jurisdiction over the bridge and East Lake Avenue respectively. The purview of this study is to identify potential improvements. A feasibility study will be necessary to determine which alternatives are viable. Should the communities wish to pursue bicycle accommodations at the interchange, early coordination with IDOT and CCDOTH is recommended.

3. NORTHEAST AREA

- a. **Edens Plaza Access** – The existing Edens Plaza signalized access to Skokie Boulevard is the logical terminus for a new pedestrian access point serving the residential areas bounded by Illinois Road, East Lake Avenue, Skokie Boulevard and Hibbard Road. Existing sidewalk on the shopping center site leading to the intersection, and the traffic signal provides the opportunity for a protected crossing through the addition of push button actuated pedestrian signals.

Construction of a crosswalk at the Skokie Boulevard access with sidewalk extending directly east to Walden Lane would provide the greatest benefit to the neighborhood as a whole. However this route would cross church property and pass between two single family residences, and would require the cooperation of those land owners.

The remaining alternative is to provide a signalized pedestrian crossing and build new sidewalk along the east side of Skokie Boulevard from the shopping center access to Illinois Road and east to existing sidewalk along Sprucewood Lane.

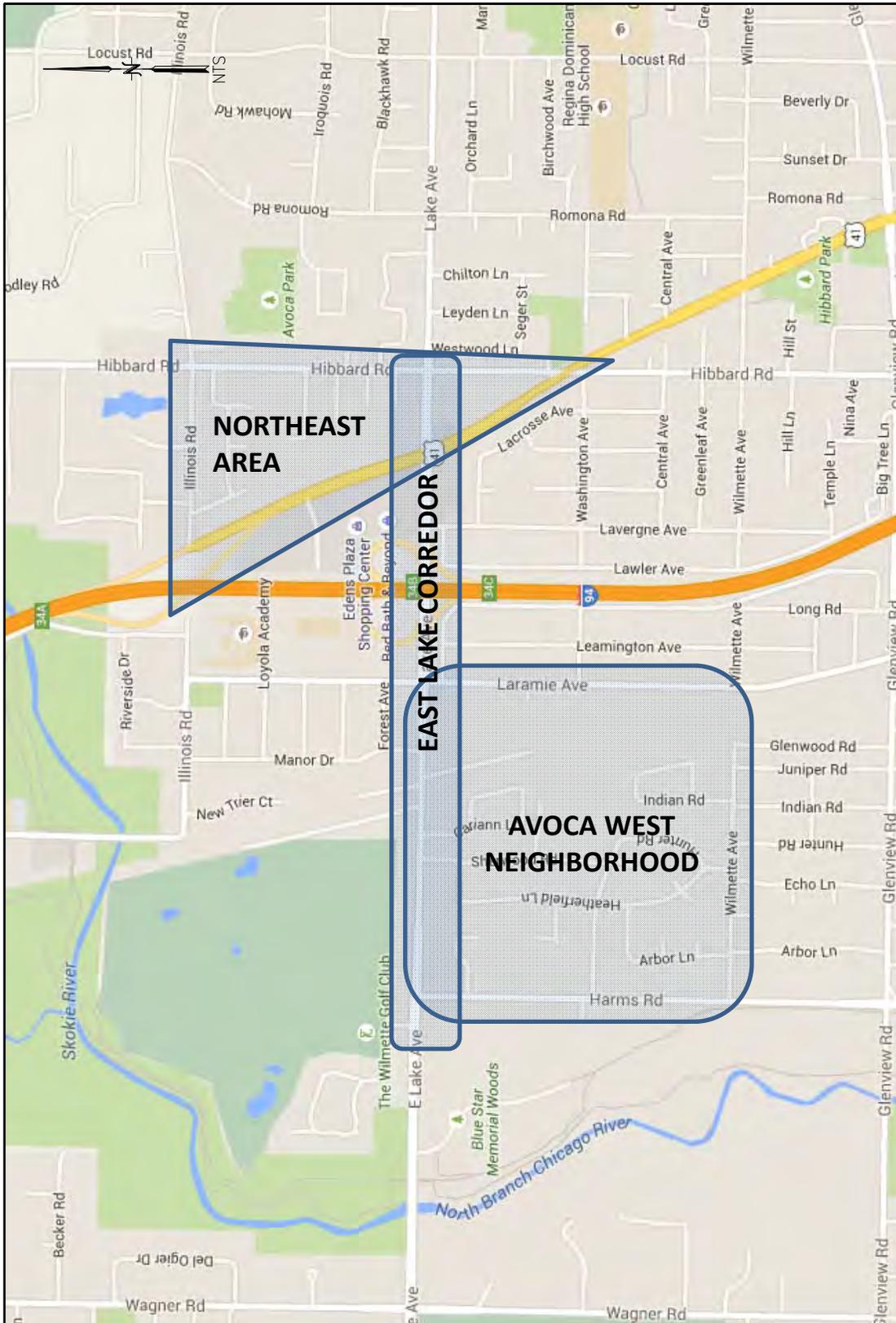
The new sidewalk would involve drainage modifications due to existing drainage swales and ditches, and would require permits from IDOT and CCDOTH for work within their rights-of-way. Additionally, construction of the sidewalk would necessitate removal of existing vegetation within the right-of-way along the east side of Skokie Boulevard. This vegetation provides back yard screening from Skokie Boulevard and I-94 for single family residences along the west side of Sprucewood Lane.

- c. **Illinois Road Sidewalk** – A sidewalk from Skokie Boulevard to Hibbard Road would provide a hard surface pedestrian access to Marie Murphy School and points south and east for those homes fronting Illinois Road. The sidewalk would provide separation of pedestrians from vehicular traffic and reduce risk to pedestrians. This connectivity is independent of any future sidewalk connection to Edens Plaza.

Landscaping and grading changes will be necessary for sidewalk installation. If consistent with Village of Wilmette policy, installation of sidewalk on the south side of Illinois Road is recommended.

--End--

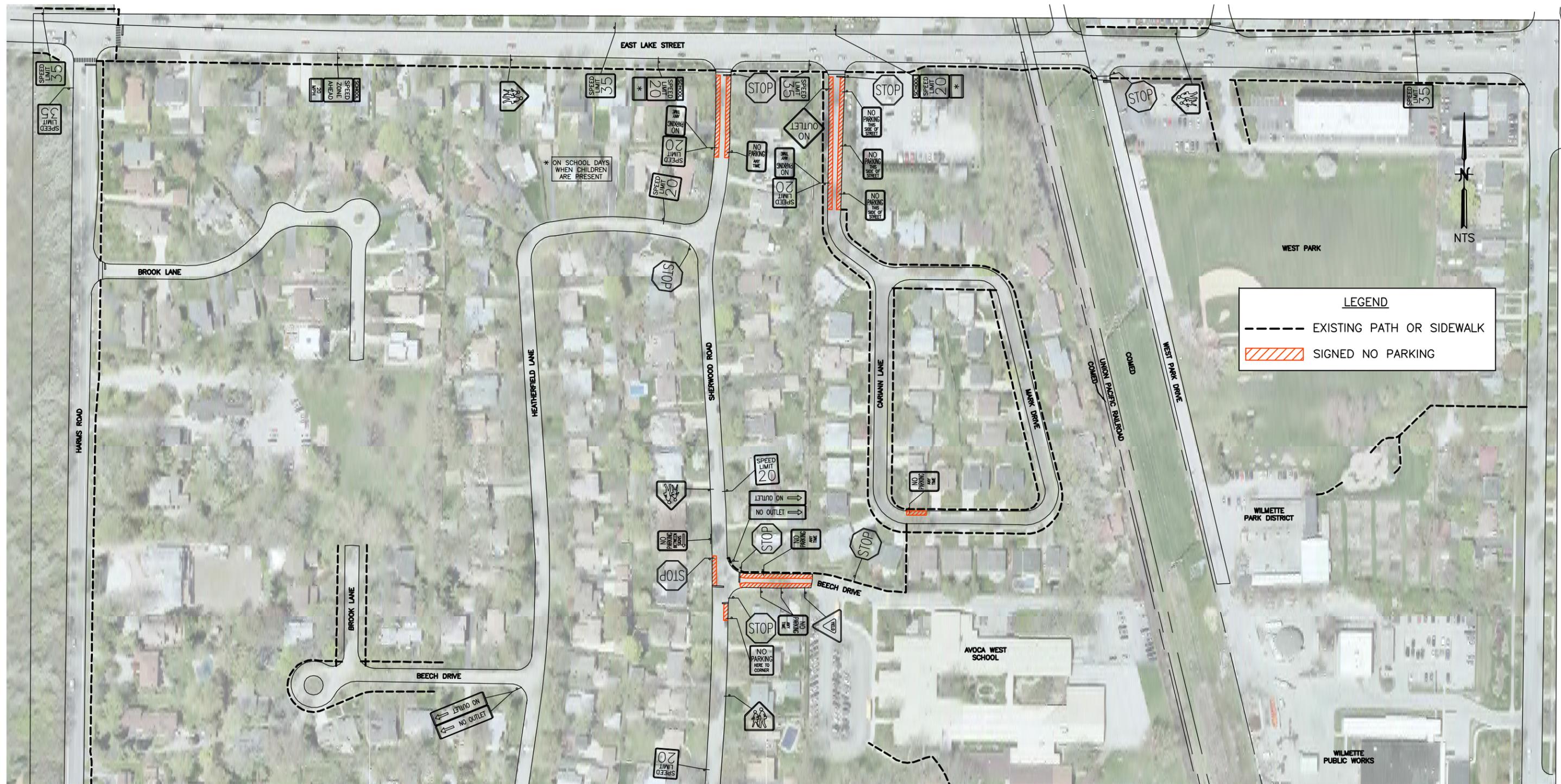
APPENDIX



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**STUDY
 AREA MAP**

EXHIBIT 1



LEGEND

--- EXISTING PATH OR SIDEWALK

▨ SIGNED NO PARKING

MATCHLINE—SEE EXHIBIT 2B



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VILLAGES OF GLENVIEW AND WILMETTE

AVOCA WEST NEIGHBORHOOD
EXISTING SIGNAGE, SIDEWALK
AND PARKING RESTRICTIONS

EXHIBIT 2A

MATCHLINE--SEE EXHIBIT 2A



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VILLAGES OF GLENVIEW AND WILMETTE

AVOCA WEST NEIGHBORHOOD
EXISTING SIGNAGE, SIDEWALK
AND PARKING RESTRICTIONS

EXHIBIT 2B



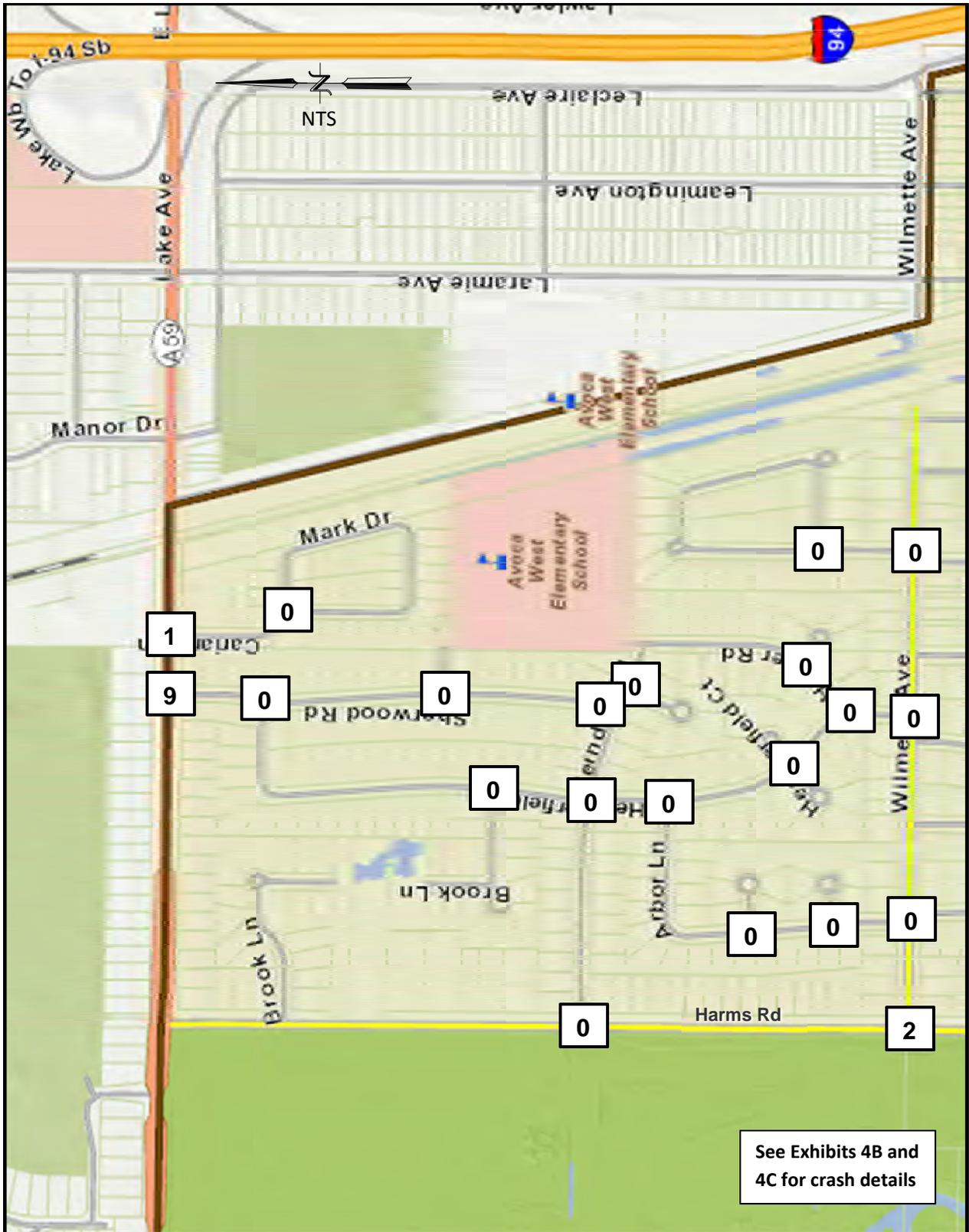
* Source: Illinois Dept. of Transportation



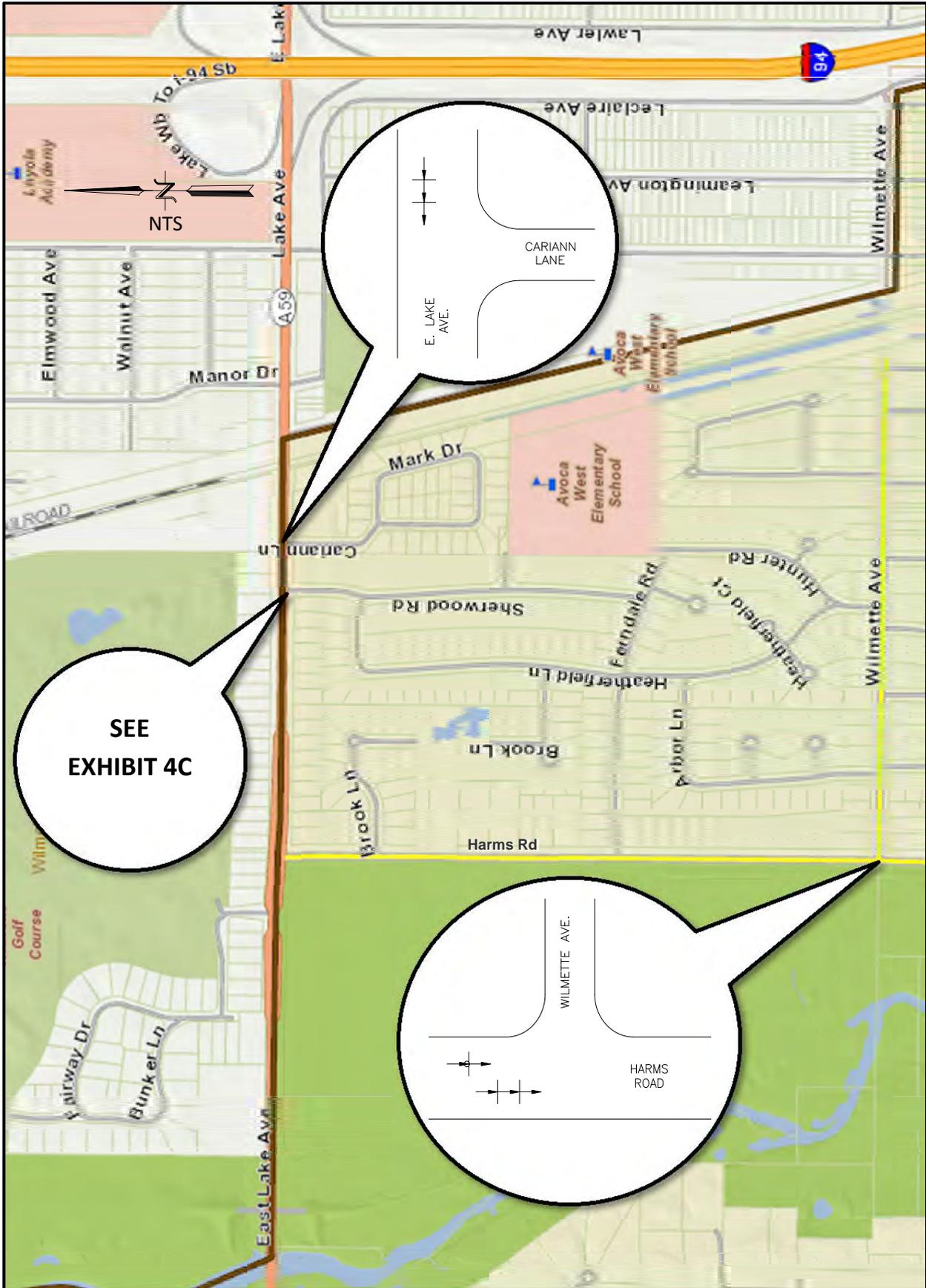
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**AVOCA WEST
 NEIGHBORHOOD DAILY
 TRAFFIC VOLUMES**

EXHIBIT 3



See Exhibits 4B and 4C for crash details



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**AVOCA WEST NEIGHBORHOOD
 CRASH HISTORY
 2010 THROUGH 2014**

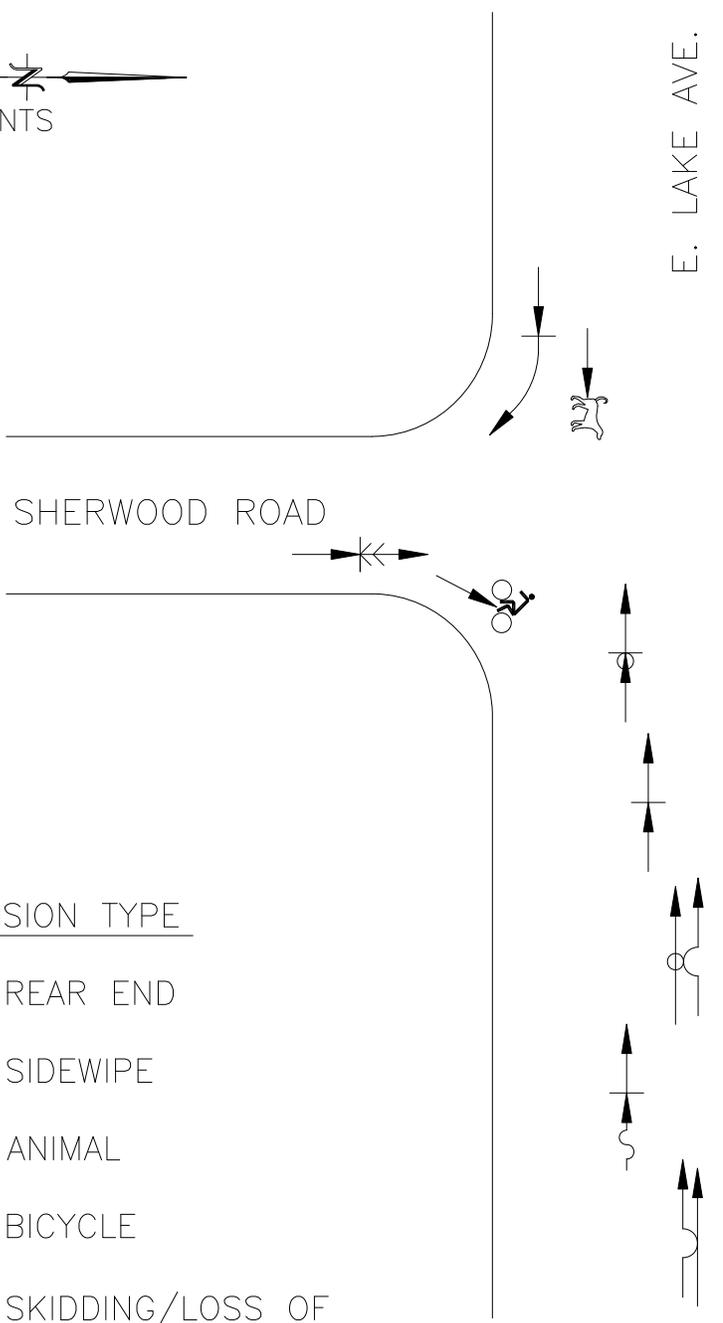
EXHIBIT 4B

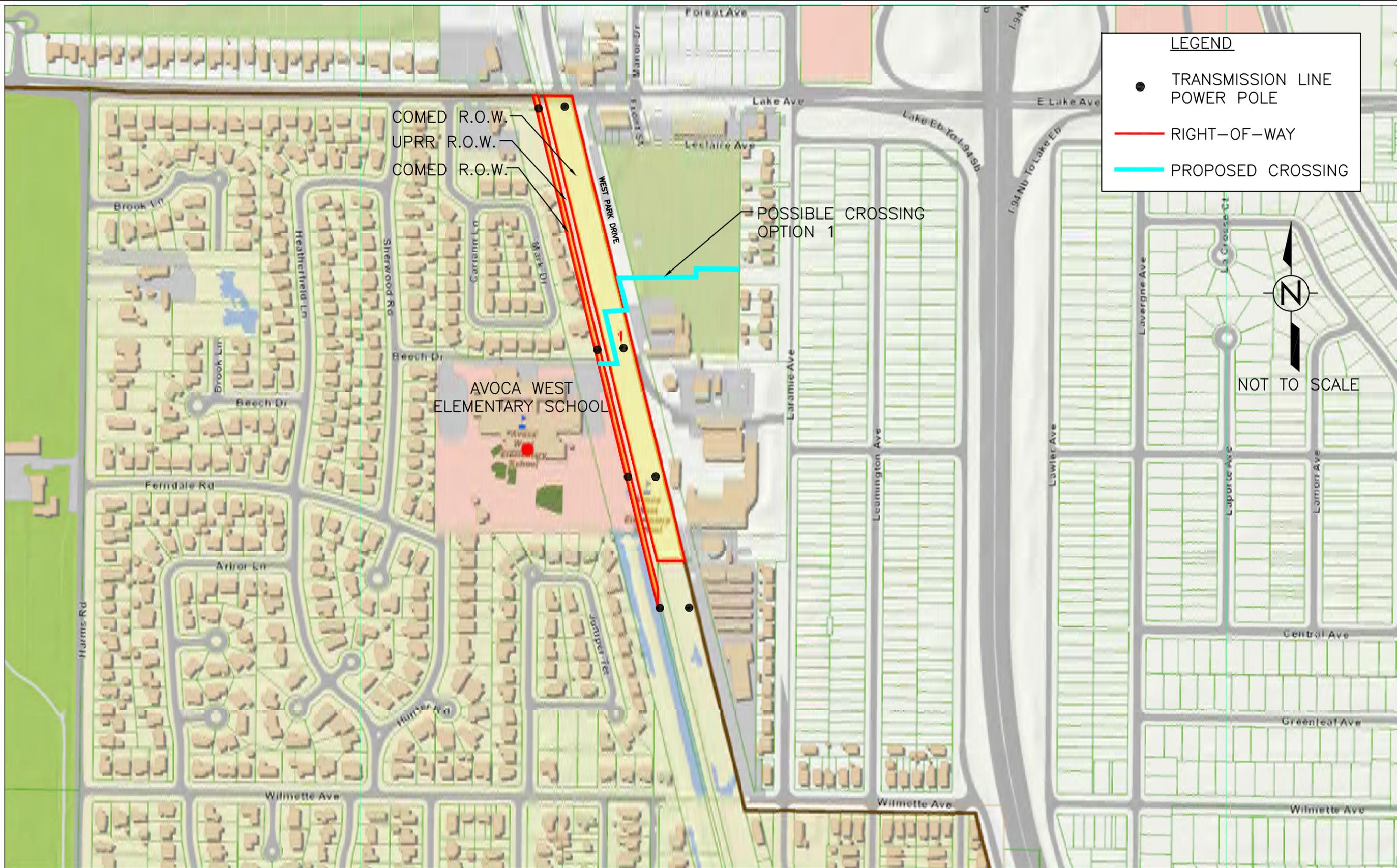


SHERWOOD ROAD

E. LAKE AVE.

- COLLISION TYPE
-  REAR END
 -  SIDEWIPE
 -  ANIMAL
 -  BICYCLE
 -  SKIDDING/LOSS OF CONTROL
 -  BACKING VEHICLE
 -  INJURY COLLISION



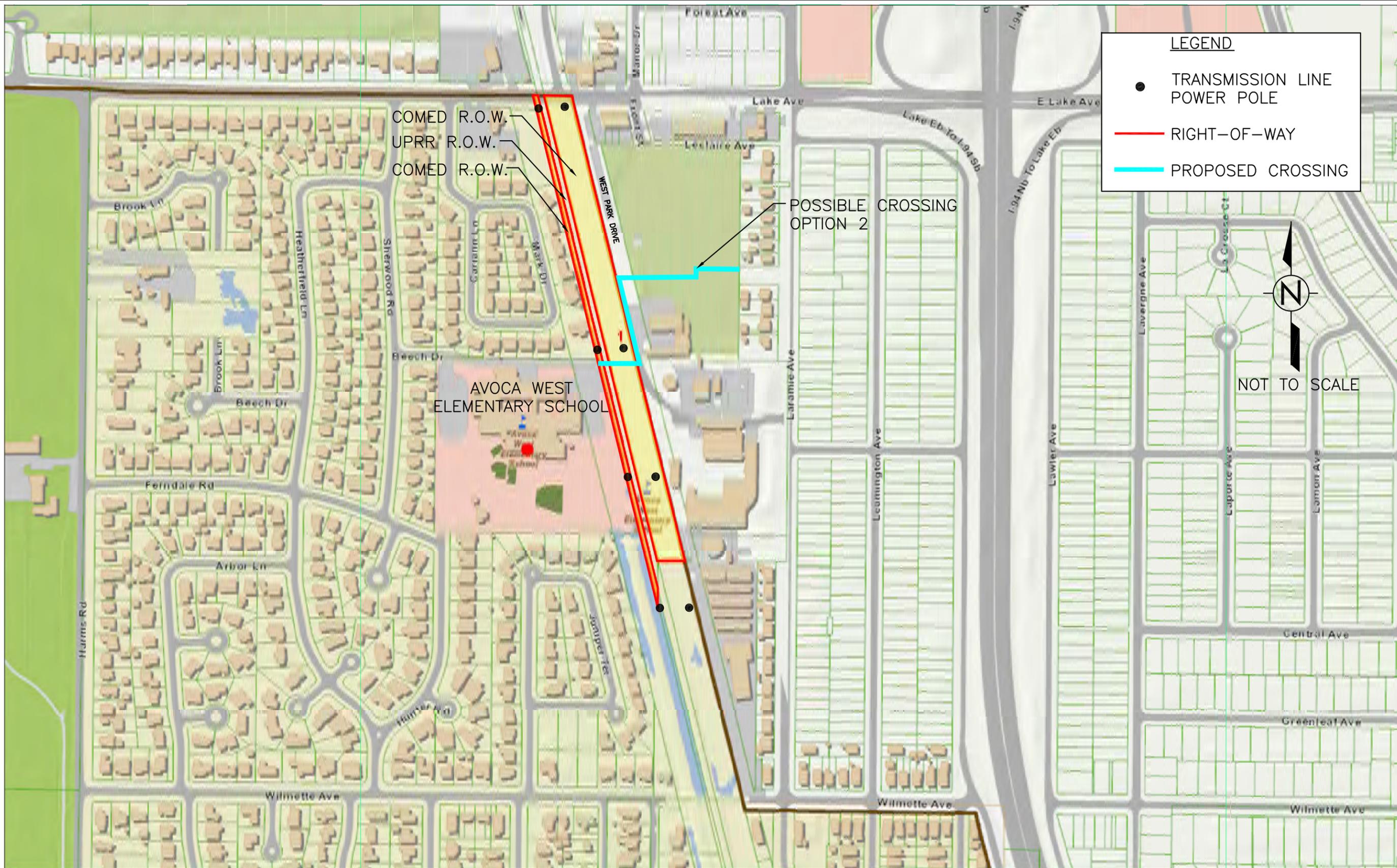


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VILLAGE OF GLENVIEW

**AVOCA WEST ELEMENTARY SCHOOL
 CROSSING OPTION 1**

EXHIBIT 5A

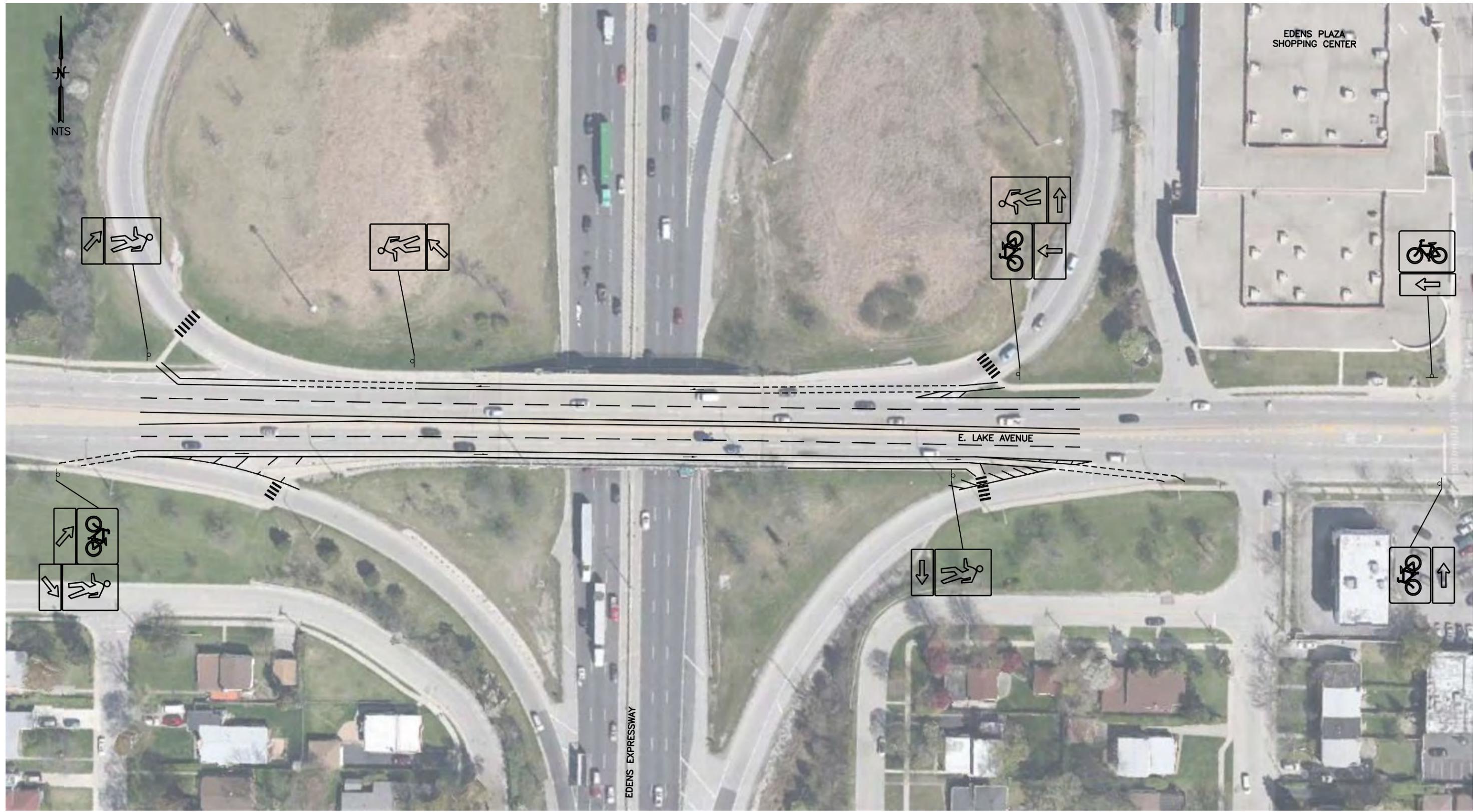


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VILLAGE OF GLENVIEW

**AVOCA WEST ELEMENTARY SCHOOL
 CROSSING OPTION 2**

EXHIBIT 5B

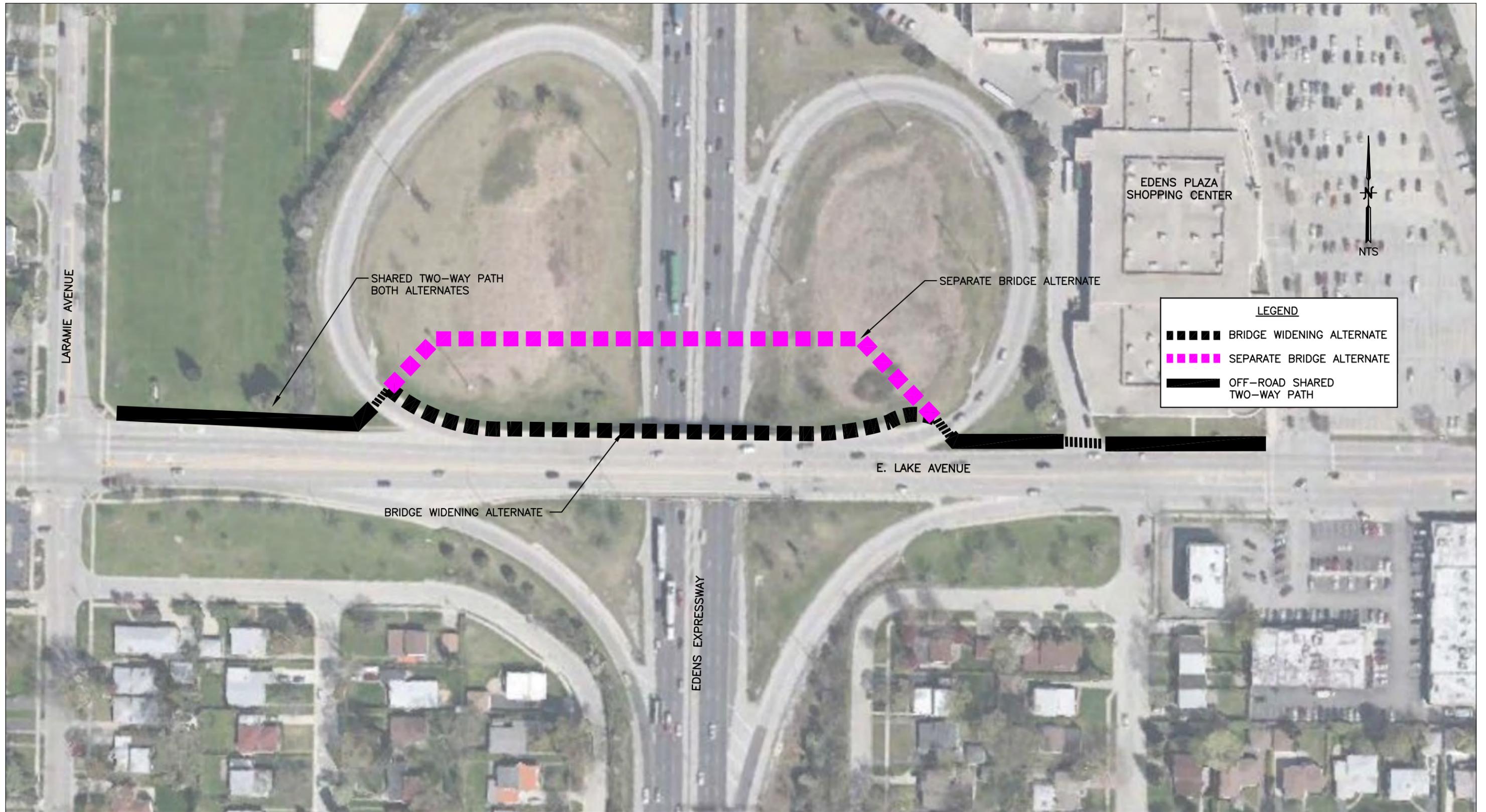


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**VILLAGES OF GLENVIEW
 AND WILMETTE**

**ON-STREET BIKE
 LANE ALTERNATE**

EXHIBIT 6A



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VILLAGES OF GLENVIEW
 AND WILMETTE

TWO-WAY SHARED PATH
 BRIDGE ALTERNATES

EXHIBIT 6B



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VILLAGES OF GLENVIEW
 AND WILMETTE

NORTHEAST AREA
 EXISTING & POTENTIAL SIDEWALK

EXHIBIT 7

Summary of Open House Comments

Background:

On August 10, 2015 Villages of Glenview and Wilmette, in conjunction with James J. Benes and Associates (traffic engineer), hosted an open house for residents to review, provide comments and ask questions regarding the Glenview/Wilmette *Draft* Traffic Study.

Twenty Glenview, seven Wilmette and one Northfield resident (28 total residents) attended the Open House.

Feedback was requested on the recommendations that would require additional Glenview (or Wilmette) resources or advocacy. In total, twenty-two feedback forms were provided at the meeting providing input on the recommendations and also providing other comments/input. After the meeting, two additional emails were also received and added to the comments summary noted below:

Resident Responses:			
Action Items	Support	Does Not Support	No Opinion
Install local traffic calming signage and pavement markings	21	0	1
Establish “no parking” restrictions on Sherwood 200 feet north and south of Beech (7:45-8:45AM and 2:30-3:30PM)	21	0	1
Work with Cook County Highway Department to install a separate left turn lane from East Lake Ave to Sherwood	20	1	1
Complete additional Police Department selective enforcements during peak volume times and with start of school	21	0	1
Work with Wilmette, ComEd, and Union Pacific to establish a new pedestrian access from the east	22	0	0
Pursue a long-term bike and pedestrian crossing of the Edens Expressway (I-94)	18	0	4

Other Glenview resident comments:

- Extension of Avoca School Parking lot to add more parking
- Add a new Crossing guard at Beech and Sherwood
- No left turn from Sherwood to East Lake Ave at all times
- No left turn from Sherwood to Beech at school times (7:45-8:45AM and 2:45-3:00PM)
- Route all traffic down Heatherfield and out Sherwood (creating neighborhood one-way traffic)
- No left turn out of Beech to Sherwood at school times
- Trim bushes at southwest corner of Lake and Sherwood
- Build a new one-way “U” of cars for drop off and pick up
- Build sidewalks in Avoca West neighborhoods
- Add one lane south bound exit from the school parking lot to Hunter to the south

- Make Sherwood one-way during school hours
- Re-route all buses onto Harms Road using traffic signal
- A letter from four properties on Heatherfield and Ferndale was provided in favor of sidewalks
- An email requested the sidewalk balloting practice be changed to allow 1/3 adjacent resident support be the trigger to install a new sidewalk in areas they do not exist; create and provide additional advocacy materials to better explain the benefits of sidewalks and that they are built in public right-of-way (not on private property); and, establish a “Walk Glenview” program

Other Wilmette resident comments:

Glenview-related-

- Sherwood from Lake to Beech needs to be a one-way street during school hours
- No left turn onto East Lake Ave from Sherwood
- Ability to walk to school safely should be a priority
- Inquired on Police Department traffic plan in case of emergency
- Add a digital sign (speed board) showing driver’s their speed
- Provide a new access point from Hunter to Avoca West
- Trim bushes at Beech and Sherwood
- Install sidewalks on Sherwood

Wilmette-related-

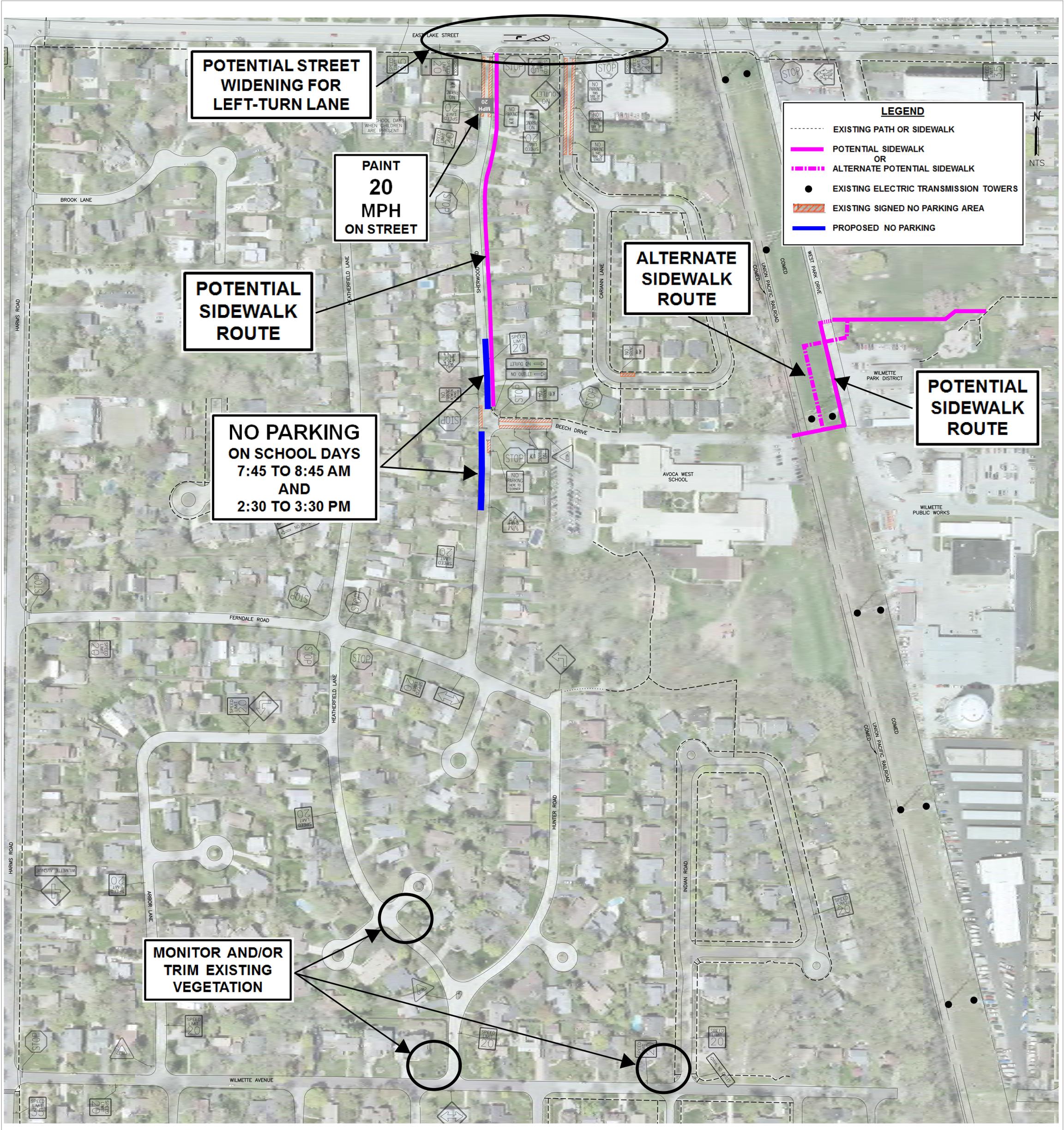
- Intersection at Hibbard and Illinois needs a painted crosswalk and signage and remove the heavy hanging light in the center of the intersection
- Install a new sidewalk from Skokie to Hibbard
- Install a new sidewalk from Skokie to Edens
- Improve pedestrian crosswalks at each intersection
- Restrict left turns onto Hibbard headed westbound on Lake Ave
- Install new sidewalk on Indianwood and Hibbard
- Add painted school crosswalks
- Speeding on Hibbard between Illinois and Lake Ave is a concern

Other Northfield resident comments (by email):

- Install sidewalks in the Avoca West neighborhood
- Install new flashing speed signs (speed boards)
- Limit parking on Sherwood to only one side of the street
- Add crosswalks in the neighborhood
- Review and advocate for Safe Routes to School to encourage more walking

Other Anonymous resident comments:

- Install sidewalks
- Establish no parking restrictions on Sherwood from Beech to Lake Ave
- Post new signage on Lake Ave showing school zone area and 20mph
- Add automatic speed monitoring
- Establish Sherwood as a one-way street (North to South) at peak times



**POTENTIAL STREET
WIDENING FOR
LEFT-TURN LANE**

**PAINT
20
MPH
ON STREET**

**POTENTIAL
SIDEWALK
ROUTE**

**NO PARKING
ON SCHOOL DAYS
7:45 TO 8:45 AM
AND
2:30 TO 3:30 PM**

**ALTERNATE
SIDEWALK
ROUTE**

**POTENTIAL
SIDEWALK
ROUTE**

**MONITOR AND/OR
TRIM EXISTING
VEGETATION**

LEGEND

- EXISTING PATH OR SIDEWALK
- POTENTIAL SIDEWALK
OR
- - - ALTERNATE POTENTIAL SIDEWALK
- EXISTING ELECTRIC TRANSMISSION TOWERS
- ▨ EXISTING SIGNED NO PARKING AREA
- ▬ PROPOSED NO PARKING