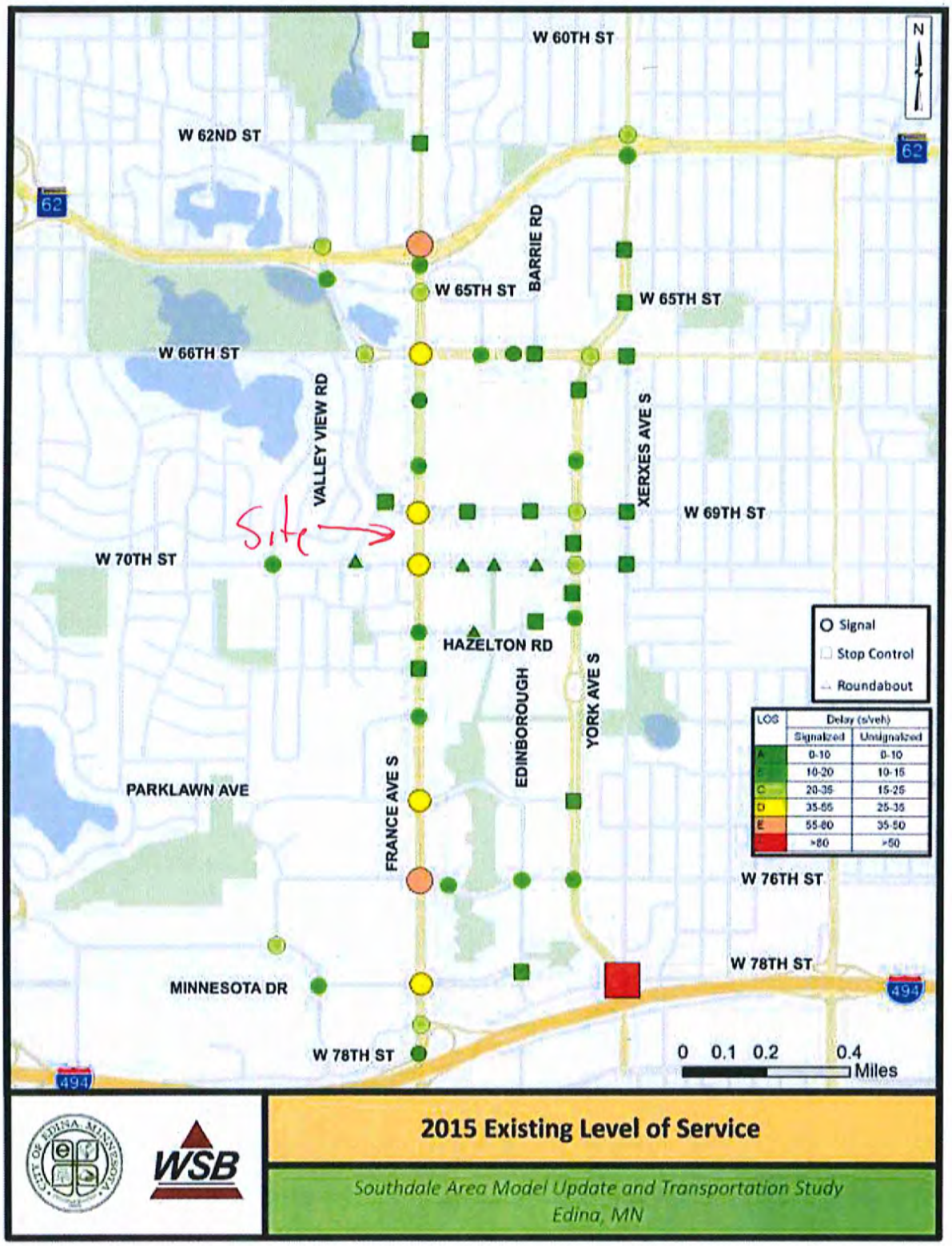
Figure 4: Existing Level of Service



FORECASTED 2040 CONDITIONS

The regional Travel Demand Model developed by Metropolitan Council and used for the City's current (2008) Transportation Plan, was utilized to obtain base 2040 forecasts for traffic growth in the area. The models were updated with projected traffic and the forecasted 2040 level of service was determined at the study area intersections. Subsequently, an alternative analysis was conducted with updated information on development density in the City's Transportation Analysis Zones (TAZs) in the Southdale area. The regional Travel Demand Model was rerun with the higher density conditions and traffic growth rates were estimated for the year 2040 with the higher density developments in place. Using the growth rates obtained from this alternative, the Synchro/SimTraffic model was updated to reflect higher traffic forecasts and the Level of Service under this scenario. Areas of concern were highlighted.

Proposed Development Density Scenario's

In order to understand the impacts of increasing the density of development in the Southdale Area, an alternative was analyzed which involved increasing the development density in future leading to higher number of trips. ***Table 1*** below shows the assumptions used in this alternative. The increased density was assumed to be in form of number of households

Table 1: Population and Households Assumptions

TAZ	2040 Population - Base Scenario	2040 Number of Households - Base Scenario	Comp Plan Average Density (Units/Acre)	High Density Assumption (Units/Acre)	Increase Factor	2040 Population - High Density Scenario	2040 Number Of Households - High Density Scenario
512	2170	1130	21.00	50.00	2.4	5167	2690
513	5060	2610	19.75	48.00	2.4	12298	6343
514	280	130	43.50	100.00	2.3	644	299
515	3110	1550	33.50	65.00	1.9	6034	3007
517	1560	680	22.80	50.00	2.2	3421	1491
518	6470	2910	9.55	14.25	1.5	9654	4342
519	1930	880	10.35	13.25	1.3	2471	1127
Total	20580	9890	N/A			39689	19299

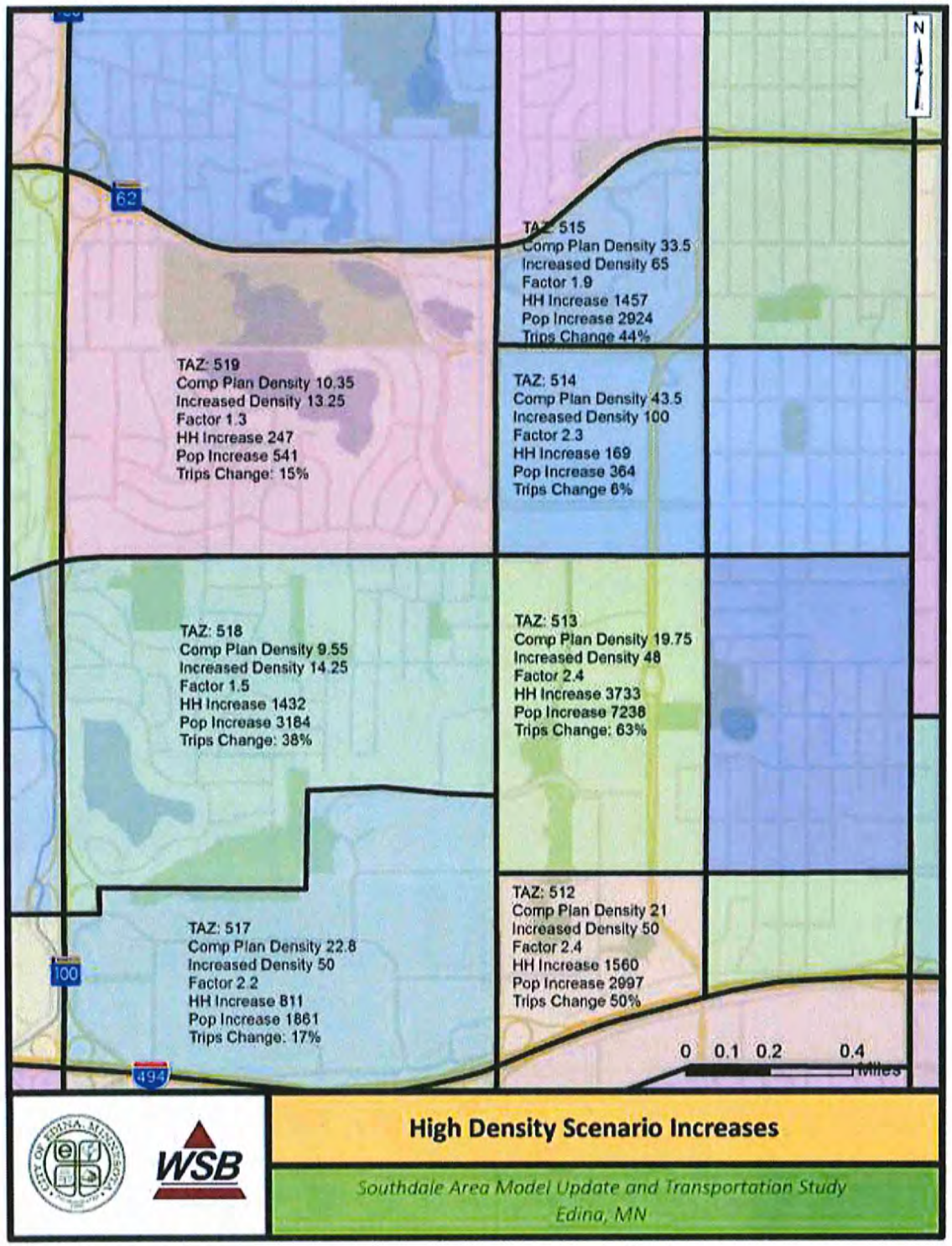
These assumptions correspond to trip generation numbers from each zone as shown in ***Table 2*** below.

Table 2: Change in Number of Trips

	2040 Base Scenario			2040 High Density Scenario			Total Change	
TAZ	Productions	Attractions	Total	Productions	Attractions	Total	Absolute Change	Percent Change
512	11340	18641	29981	20810	24249	45059	15078	50%
513	25413	32107	57520	47950	45611	93561	36041	63%
514	9836	23915	33751	11116	24632	35749	1998	6%
515	14735	19284	34019	24425	24633	49059	15040	44%
517	15669	40355	56024	22234	43488	65722	9698	17%
518	25110	19261	44371	36392	24980	61372	17001	38%
519	9106	11176	20282	11053	12177	23230	2948	15%

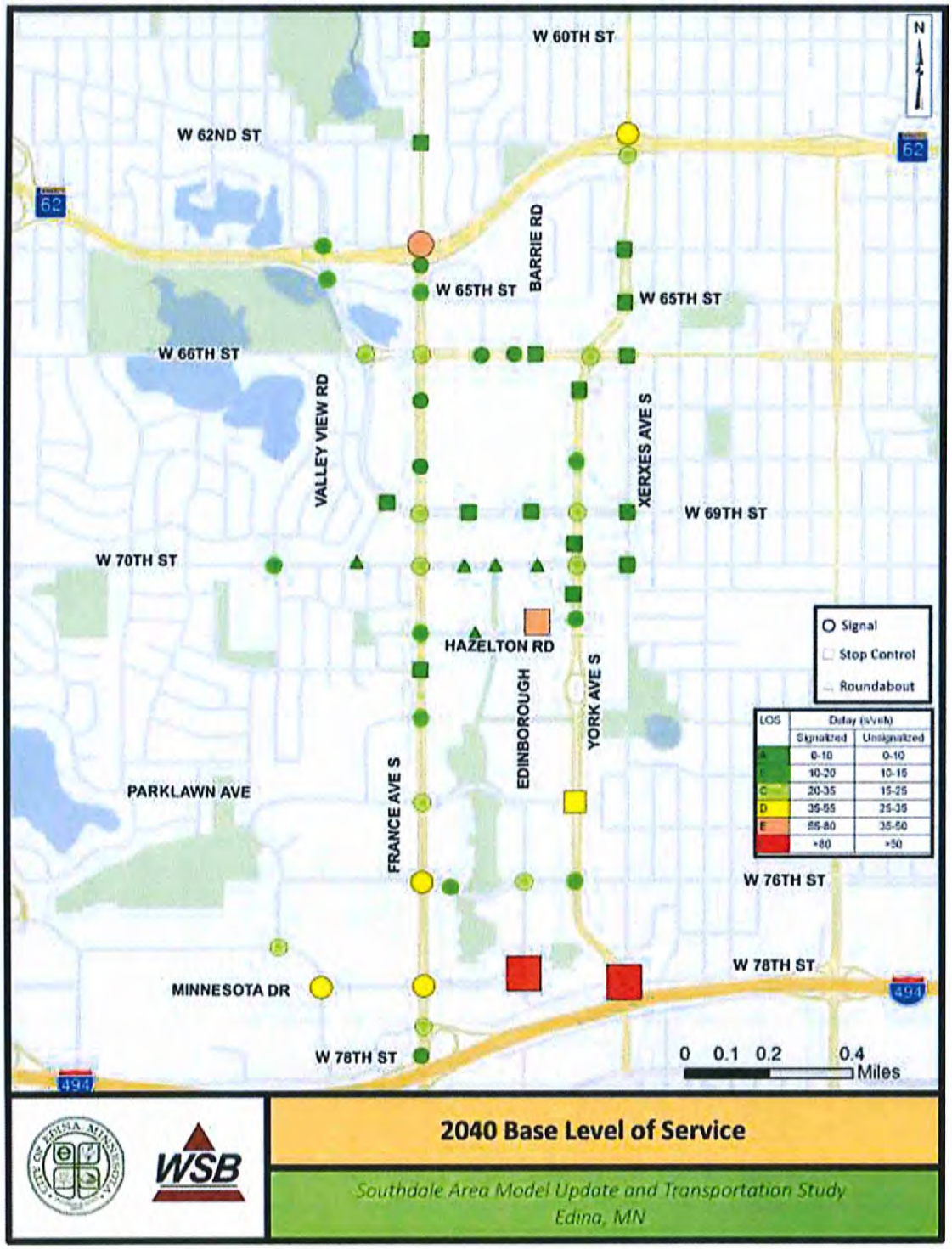
Figure 5 shows the increase in households and population along with resulting trip increases from each Transportation Analysis Zone (TAZ).

Figure 5: TAZ Trip Increase Assumptions



The turning movement volumes for the PM peak hour in 2040 were estimated based on the ADT growth percentages derived from the model for various links. The turning movements were then simulated in the Synchro/SimTraffic network. ***Figure 11*** shows the 2040 Level of Service assuming growth levels consistent with the 2040 regional Travel Demand model.

Figure 11: 2040 Base Condition Level of Service



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Projected 2040 Conditions Analysis

The turning movement volumes for the PM peak hour were adjusted from the base condition based on the ADT growth percentages derived from the high density scenario model. ***Figure 12*** shows the Level of Service at the study intersections in the High Density Scenario assuming no significant improvements to the intersections from current conditions. The results indicate that in general most intersections with either the 2040 Base conditions or 2040 High Density conditions would continue to operate at an overall Level of Service (LOS) D or better, with the exception of:

2040 Base Condition:

1. York Avenue at W. 78th Street = LOS F
2. Minnesota Drive at Edinborough Way = LOS F
3. France Avenue at TH 62 North Ramp = LOS E
4. France Avenue at W. 76th Street = LOS E
5. Hazelton Road at Target Access = LOS E

2040 High Density Condition:

1. York Avenue at W. 78th Street = LOS F
2. Minnesota Drive at Edinborough Way = LOS F
3. York Avenue at Parklawn Avenue = LOS F
4. France Avenue at TH 62 North Ramp = LOS E
5. Xerxes Avenue at TH 62 North Ramp = LOS E
6. France Avenue at Parklawn Avenue = LOS E
7. France Avenue at W. 76th Street = LOS E
8. Hazelton Road at Target Access = LOS E
9. France Avenue at Minnesota Drive = LOS E

It should be noted that at some intersections which are not operating at an overall LOS E or F, may still be individual movements that are at LOS E or F. ***Figure 13*** shows individual movements that are at LOS E or F at the study intersections.

In addition to the intersections listed above, as development continues to occur in the Southdale area particular attention should be given to the following intersections as part of any traffic analysis prepared, which could be operating at LOS F:

1. France Avenue at W. 66th Street – Westbound approach
2. France Avenue at W. 65th Street – Southbound left turn
3. France Avenue at W. 69th Street – Westbound approach, Southbound left turn
4. France Avenue at W. 70th Street – Westbound left turn
5. France Avenue at Hazelton Road – Westbound approach, Northbound and Southbound left turns
6. France Avenue at Gallagher Drive – Westbound approach, Eastbound left turn
7. Valley View Road at W. 69th Street – Southbound approach
8. Minnesota Drive at W. 77th Street – Southbound left turn
9. York Avenue at W. 69th Street – Westbound approach
10. York Avenue at Hazelton Road – Westbound approach, Northbound left turn
11. Edinborough Way at W. 76th Street – Northbound approach

Figure 12: 2040 High Density Scenario Level of Service

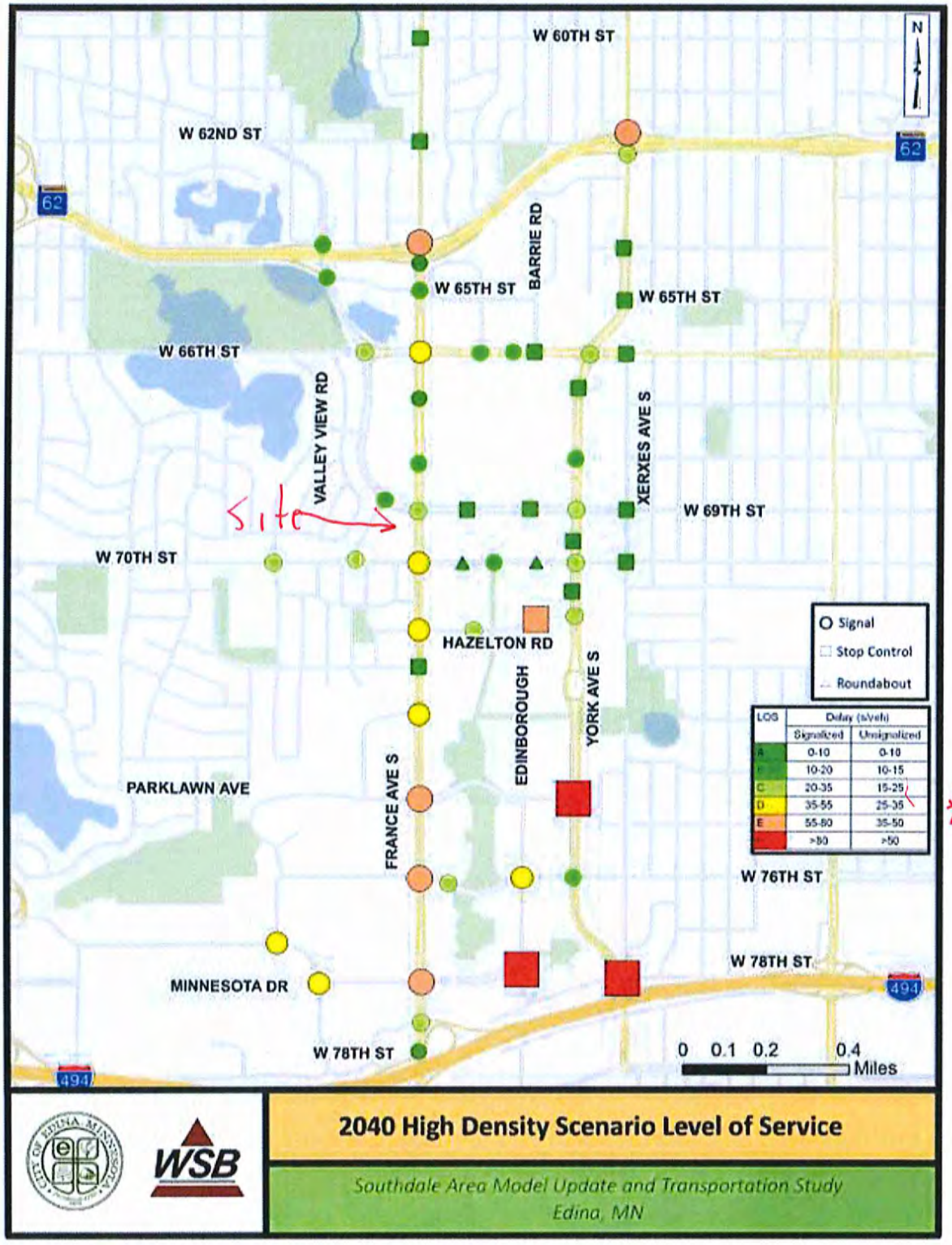

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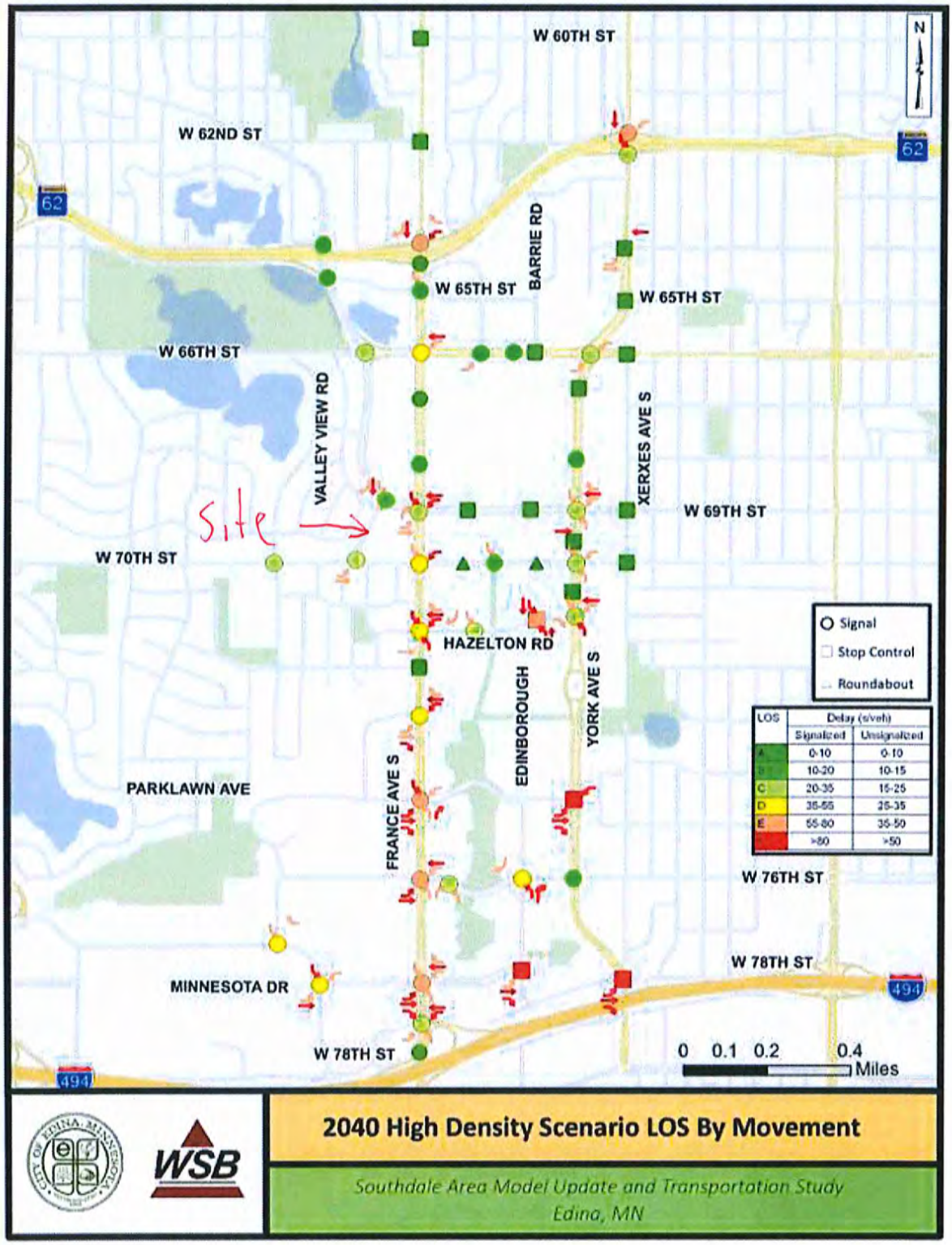
Figure 13: 2040 High Density Scenario LOS By Movement



Southdale Area Transportation Study

For:

City of Edina
4801 W. 50th Street
Edina, MN 55024

July 22, 2016

Prepared By:

WSB & Associates, Inc.
701 Xenia Avenue South
Minneapolis, MN 55416

CERTIFICATION

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the State of Minnesota.

Charles T. Rickart, P.E.

Date: July 22, 2016 Reg. No. 26082

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INTRODUCTION / BACKGROUND

In 2008 WSB assisted the City in the development of a traffic model using the Synchro/SimTraffic modeling software for the Southeast area (Southdale) of the City. The study area was bounded by TH 62 (Crosstown) on the north, the Richfield/Edina border on the east, the Bloomington/Edina border on the south and TH 100 on the west. The model included 40 signalized intersections, 20 un-signalized intersections, and three roundabouts.

The purpose in developing the model was to provide a consistent baseline for traffic analysis and to provide continuously updated results to help gauge the compound effect of multiple developments in the Southdale area. Since the model was completed, it has been used by several developers and the City in reviewing the area traffic impacts of proposed development. Although, the model has been continually updated with traffic characteristics from approved developments the original traffic conditions were based on 2007 traffic counts. It is now in need of updating and recalibration with new traffic counts.

Also in 2008 WSB assisted the City in preparation of the Transportation Plan in conjunction with the Comprehensive Plan update. As part of the Transportation Plan a city wide transportation planning model was developed for the existing and future land use projections. Since the preparation of the land use projections in the Transportation Plan density changes have occurred in the Southdale area. In addition questions of the appropriate density have been asked for the area specifically on the west side of France Avenue.

In March of 2015 the City Council appointed a working group that developed the Working Principles for the France Avenue Southdale Area. These principals will serve as a tool to guide the development process for the whole Southdale area, and demonstrate methods that might be used during the Comprehensive Plan update in 2018. In order to provide data to assist in moving this process to the next stages, development of transportation forecasts should be completed.

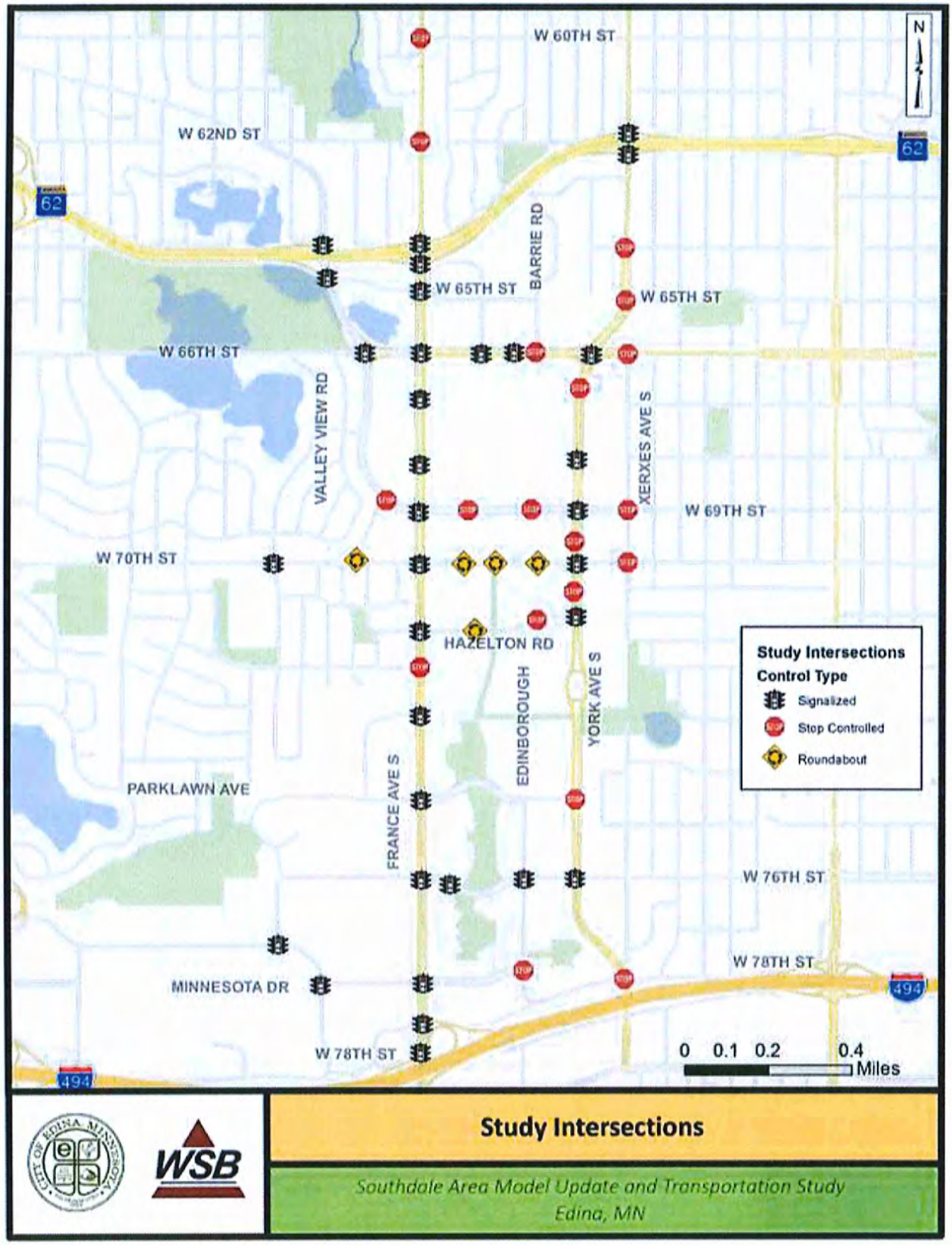
The purpose of this Study is to:

1. Update the existing Synchro/SimTraffic traffic model in the Southdale area, Including expanding the study area to north of TH 62 to W. 60th Street;
2. Updating the CUBE transportation planning Regional Travel Demand model for the entire City, and;
3. Preparation of a transportation analysis for two land use density scenarios for the Southdale area.
4. Review and analysis of pedestrian/bicycle connections and conflicts in the Southdale area in relation to the local/regional system.

Figure 1 shows the study area and intersections included with the analysis.

The following sections of this memorandum provide an update on the data collection and preliminary study results.

Figure 1: Study Area Intersections



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EXISTING CONDITIONS

WSB collected traffic counts at 20 intersections and 20 roadway segments in the study area. These counts together with traffic counts provided by Hennepin County and the City of Edina were used to update the Synchro/SimTraffic models.

Traffic signal timing information was updated based on information provided by Hennepin County. Lane geometry, new intersections, changes of intersection control, pedestrian timing and other information like speed limits were updated based on field visit to all the study intersections. ***Figure 2*** shows the existing Average Daily Traffic volumes on the adjacent roadways.

Traffic Analysis Methodology

The traffic operations analysis is derived from established methodologies documented in the *Highway Capacity Manual 2000* (HCM). The HCM provides a series of analysis techniques that are used to evaluate traffic operations.

Intersections are given a Level of Service (LOS) grade from "A" to "F" to describe the average amount of control delay per vehicle as defined in the HCM. The LOS is primarily a function of peak traffic hour turning movement volumes, intersection lane configuration, and the traffic controls at the intersection. LOS A is the best traffic operating condition, and drivers experience minimal delay at an intersection operating at that level. LOS E represents the condition where the intersection is at capacity, and some drivers may have to wait through more than one green phase to make it through an intersection controlled by traffic signals. LOS F represents a condition where there is more traffic than can be handled by the intersection, and many vehicle operators may have to wait through more than one green phase to make it through the intersection. At a stop sign-controlled intersection, LOS F would be characterized by exceptionally long vehicle queues on each approach at an all-way stop, or long queues and/or great difficulty in finding an acceptable gap for drivers on the minor legs at a through-street intersection.

The LOS ranges for both signalized and un-signalized intersections are shown in ***Figure 3***. The threshold LOS values for un-signalized intersections are slightly less than for signalized intersections. This variance was instituted because drivers' expectations at intersections differ with the type of traffic control. A given LOS can be altered by increasing (or decreasing) the number of lanes, changing traffic control arrangements, adjusting the timing at signalized intersections, or other lesser geometric improvements. LOS also changes as traffic volumes increase or decrease.

LOS, as described, can also be determined for the individual legs (sometimes referred to as "approaches") or lanes (turn lanes in particular) of an intersection. It should be noted that a LOS E or F might be acceptable or justified in those cases where a leg(s) or lane(s) has a very low traffic volume as compared to the volume on the other legs. For example, improving LOS on such low-volume legs by converting a two-way stop condition to an all-way stop, or adjusting timing at a signalized intersection, could result in a significant penalty for the many drivers on the major road while benefiting the few on the minor road. Also, geometric improvements on minor legs, such as additional lanes or longer turn lanes, could have limited positive effects and might be prohibitive in terms of benefit to cost.

Figure 2: Existing Average Daily Traffic Volumes

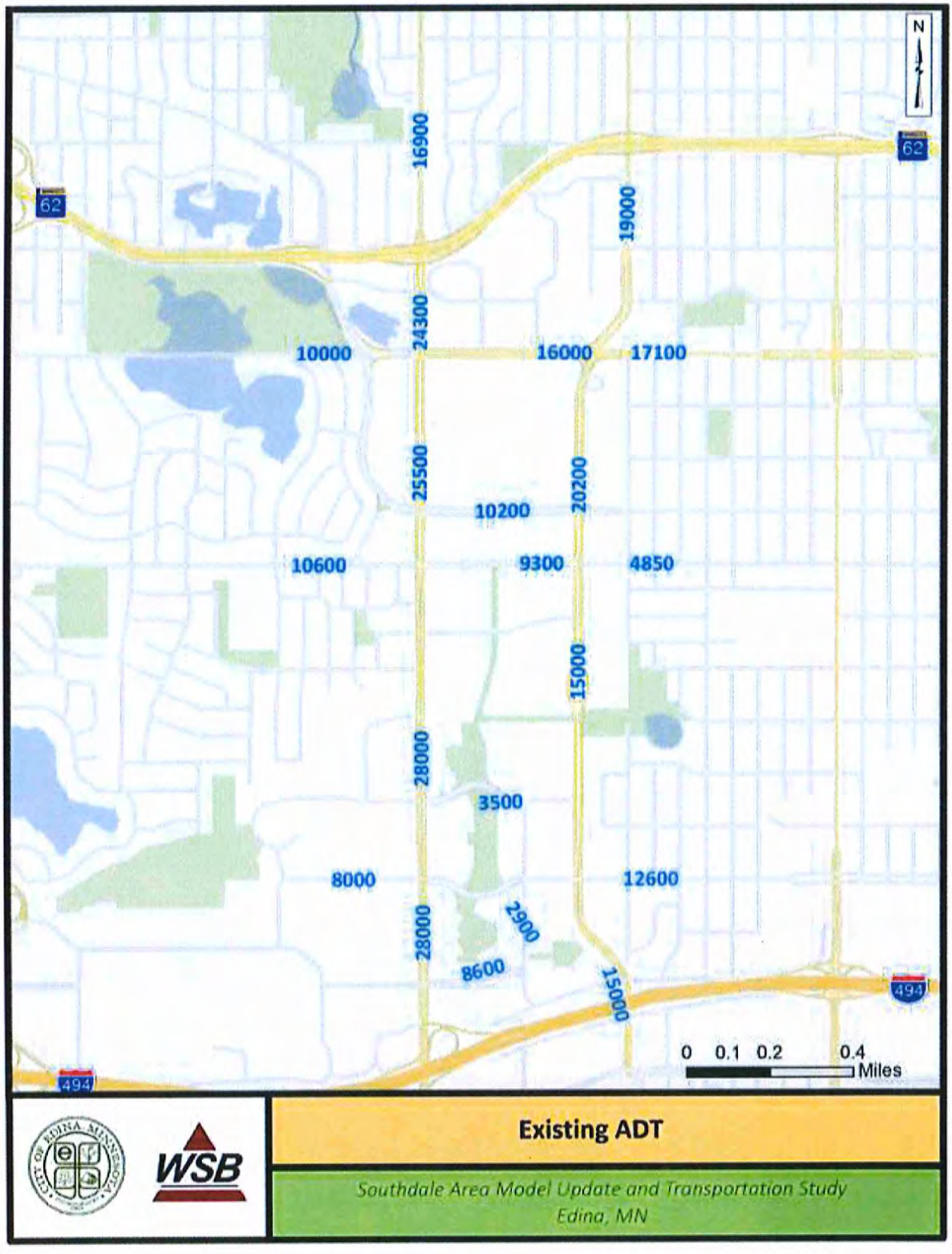

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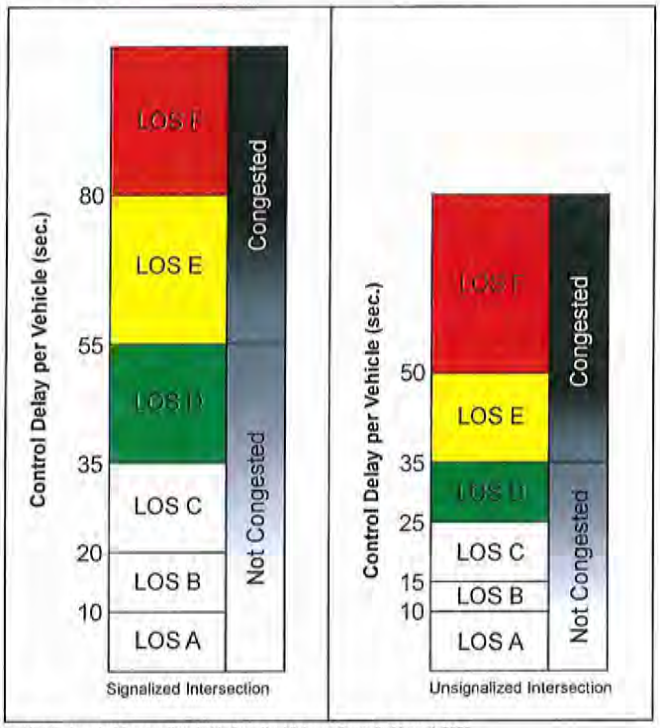
Figure 3 - Level of Service Ranges for Signalized and Un-signalized Intersections



SOURCE: Level of Service thresholds from the Highway Capacity Manual, 2000.

Although LOS A represents the best possible level of traffic flow, the cost to construct roadways and intersection to such a high standard often exceeds the benefit to the user. Funding availability might also lead to acceptance of intersection or roadway designs with a lower LOS. An overall LOS D is generally accepted as the lowest acceptable level in urban areas. LOS C is often considered to be the desirable minimum level for rural areas. LOS D or E may be acceptable for limited durations or distances, or for very low-volume legs of some intersections.

The LOS analysis was performed using Synchro/SimTraffic:

- Synchro, a software package that implements Highway Capacity Manual (HCM) methodologies, was used to build each signalized intersection and provide an input database for turning-movement volumes, lane geometrics, and signal design and timing characteristics. In addition, Synchro was used to optimize signal timing parameters for future conditions. Output from Synchro is transferred to SimTraffic, the traffic simulation model.

- SimTraffic is a micro-simulation computer modeling software that simulates each individual vehicle's characteristics and driver behavior in response to traffic volumes, intersection configuration, and signal operations. The model simulates drivers' behaviors and responses to surrounding traffic flow as well as different vehicle types and speeds. It outputs estimated vehicle delay and queue lengths at each intersection being analyzed.

Existing Conditions Analysis

The turning movement counts obtained from the field counts were input into the Synchro/SimTraffic model using the existing roadway geometrics and intersection control. The SimTraffic model was then run for five replications. The output from the five simulations was then averaged.

It should be noted that Roundabouts and Stop Controlled intersections are classified as un-signalized intersections and have different delay thresholds than signalized intersections according to the Highway Capacity Manual (HCM).

The result of the analysis indicates that in general most intersections are operating at an acceptable overall Level of Service (LOS) D or better, with the exception of:

1. York Avenue at W. 78th Street = LOS F
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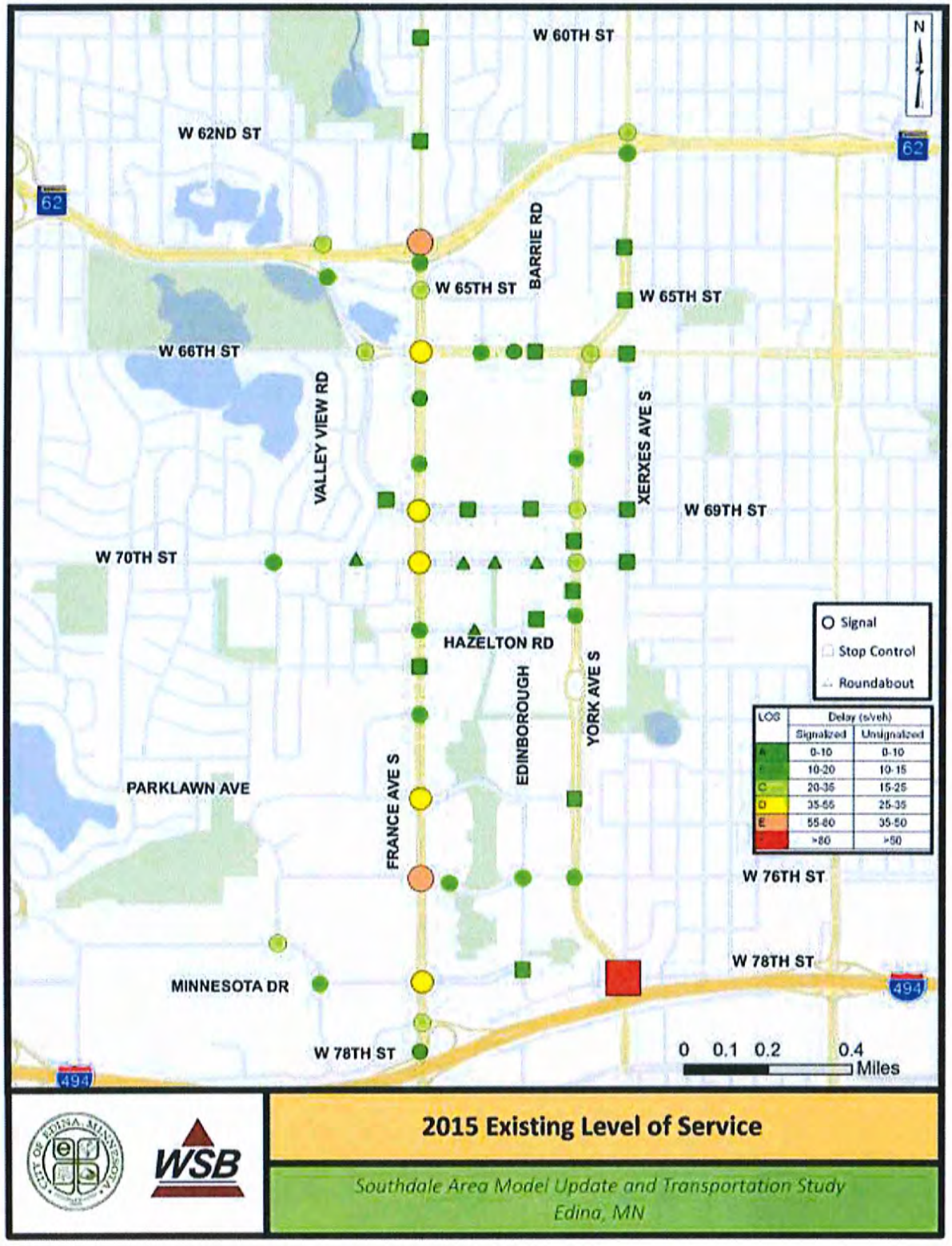
Figure 4 shows the existing Level of Service (LOS) at each of the study area intersections.

Figure 4: Existing Level of Service



FORECASTED 2040 CONDITIONS

The regional Travel Demand Model developed by Metropolitan Council and used for the City's current (2008) Transportation Plan, was utilized to obtain base 2040 forecasts for traffic growth in the area. The models were updated with projected traffic and the forecasted 2040 level of service was determined at the study area intersections. Subsequently, an alternative analysis was conducted with updated information on development density in the City's Transportation Analysis Zones (TAZs) in the Southdale area. The regional Travel Demand Model was rerun with the higher density conditions and traffic growth rates were estimated for the year 2040 with the higher density developments in place. Using the growth rates obtained from this alternative, the Synchro/SimTraffic model was updated to reflect higher traffic forecasts and the Level of Service under this scenario. Areas of concern were highlighted.

Proposed Development Density Scenario's

In order to understand the impacts of increasing the density of development in the Southdale Area, an alternative was analyzed which involved increasing the development density in future leading to higher number of trips. ***Table 1*** below shows the assumptions used in this alternative. The increased density was assumed to be in form of number of households

Table 1: Population and Households Assumptions

TAZ	2040 Population - Base Scenario	2040 Number of Households - Base Scenario	Comp Plan Average Density (Units/Acre)	High Density Assumption (Units/Acre)	Increase Factor	2040 Population - High Density Scenario	2040 Number Of Households - High Density Scenario
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519	1930	880	10.35	13.25	1.3	2471	1127
Total	20580	9890	N/A			39689	19299

These assumptions correspond to trip generation numbers from each zone as shown in ***Table 2*** below.

Table 2: Change in Number of Trips

	2040 Base Scenario			2040 High Density Scenario			Total Change	
TAZ	Productions	Attractions	Total	Productions	Attractions	Total	Absolute Change	Percent Change
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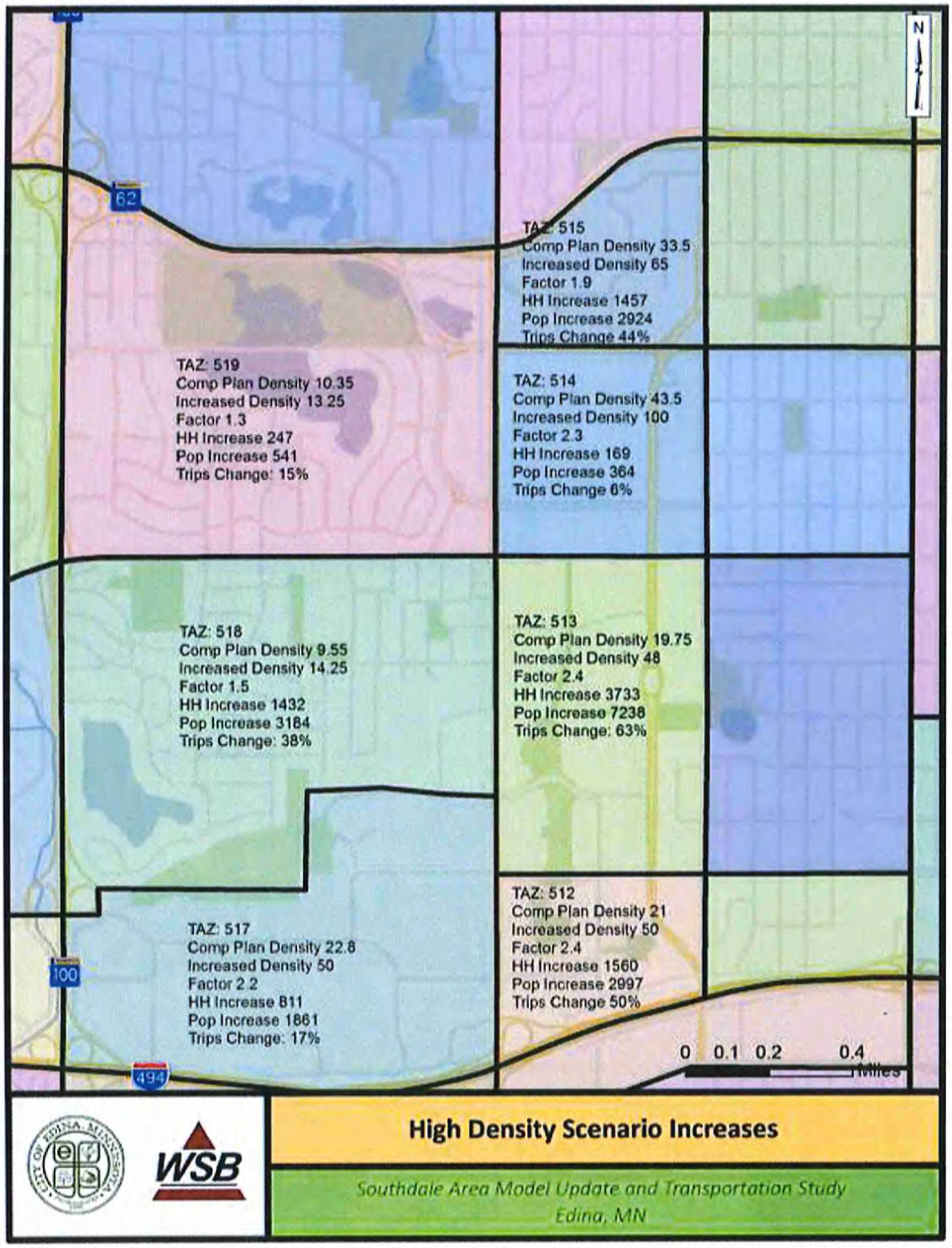
Figure 5 shows the increase in households and population along with resulting trip increases from each Transportation Analysis Zone (TAZ).

Figure 5: TAZ Trip Increase Assumptions



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Transit Model Assumptions

Transit is a key component to the transportation system in the Southdale area. In 2014 Metro Transit opened the Southdale Transit Center and Park & Ride facility. The Transit Center is located southwest of the York Avenue and 66th Street intersection, on the east side of Southdale Center near the entrance to JC Penney. The site includes 70 surface Park & Ride parking spaces, with overflow parking for additional vehicles east of the Southdale Center ring road.

Transit service is provided to the Southdale Center from 8 primary routes including:

- **Route 6** - to Minneapolis (urban local)
- **Route 515** - to Bloomington, 66th Street Richfield, METRO Blue Line (VA Medical Center, Mall of America)
- **Route 537** - to Bloomington, Normandale College
- **Route 538** - to south Bloomington, METRO Blue Line (Mall of America)
- **Route 578** - to Minneapolis (express)
- **Route 579** - to U of M (express)
- **Route 684** - to Minneapolis, Eden Praire, Chanhassen and Chaska (SouthWest Transit)
- **Route 694** - to Eden Praire, Chaska, Normandale College, Richfield (Southwest Transit)

The Metropolitan Council regional Travel Demand Model assumes a Transit mode share for the area when determining the future traffic projection. This percentage for the study area was 3.5% on the average. The transit mode percentage varies by TAZ and the value for each TAZ is shown in ***Figure 6***.

Figure 6: Transit Mode Share Assumptions

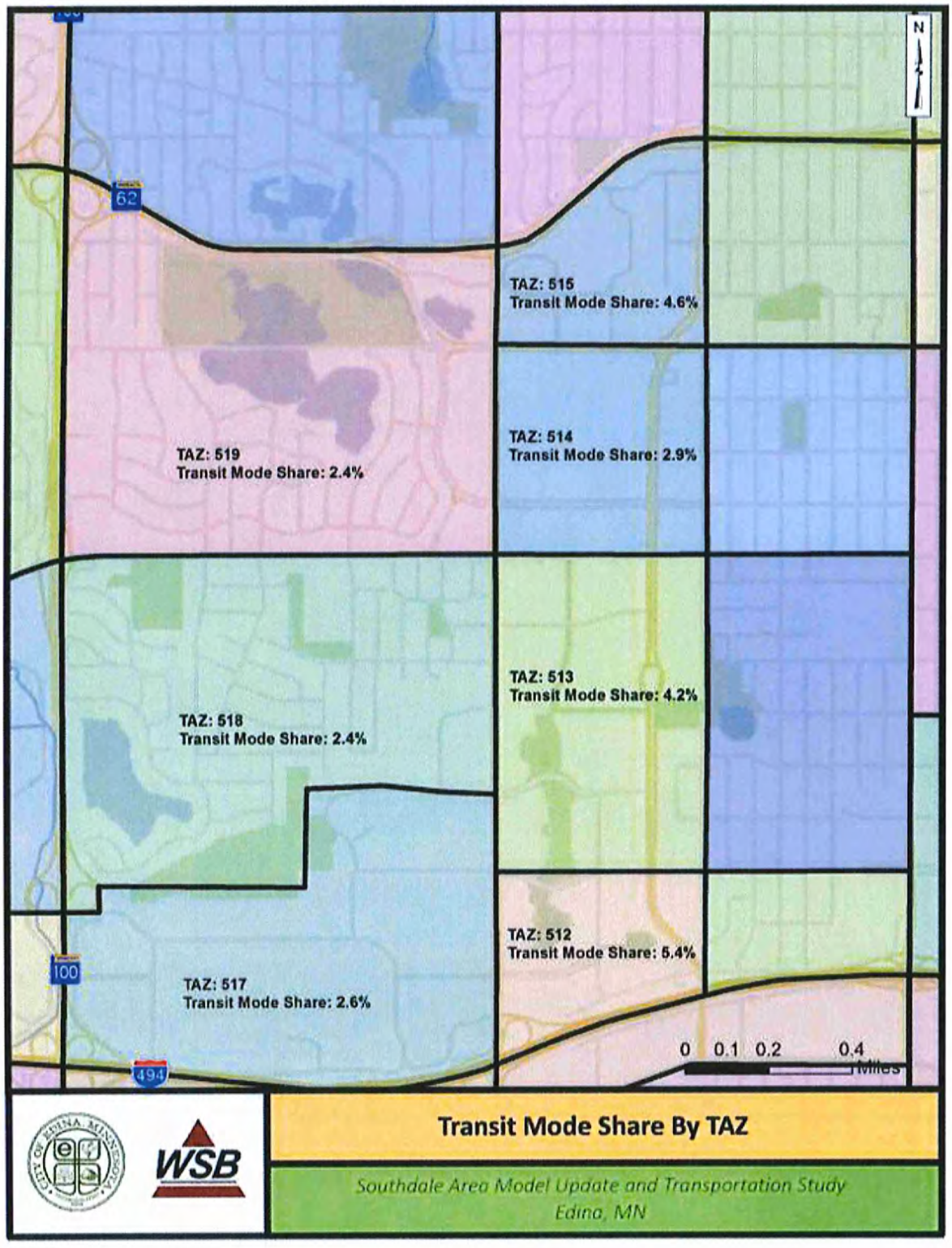

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Figure 7 shows the Average Daily Traffic (ADT) as forecasted by the regional Travel Demand Model for the year 2040 base condition.

Figure 7: 2040 Base Conditions ADT

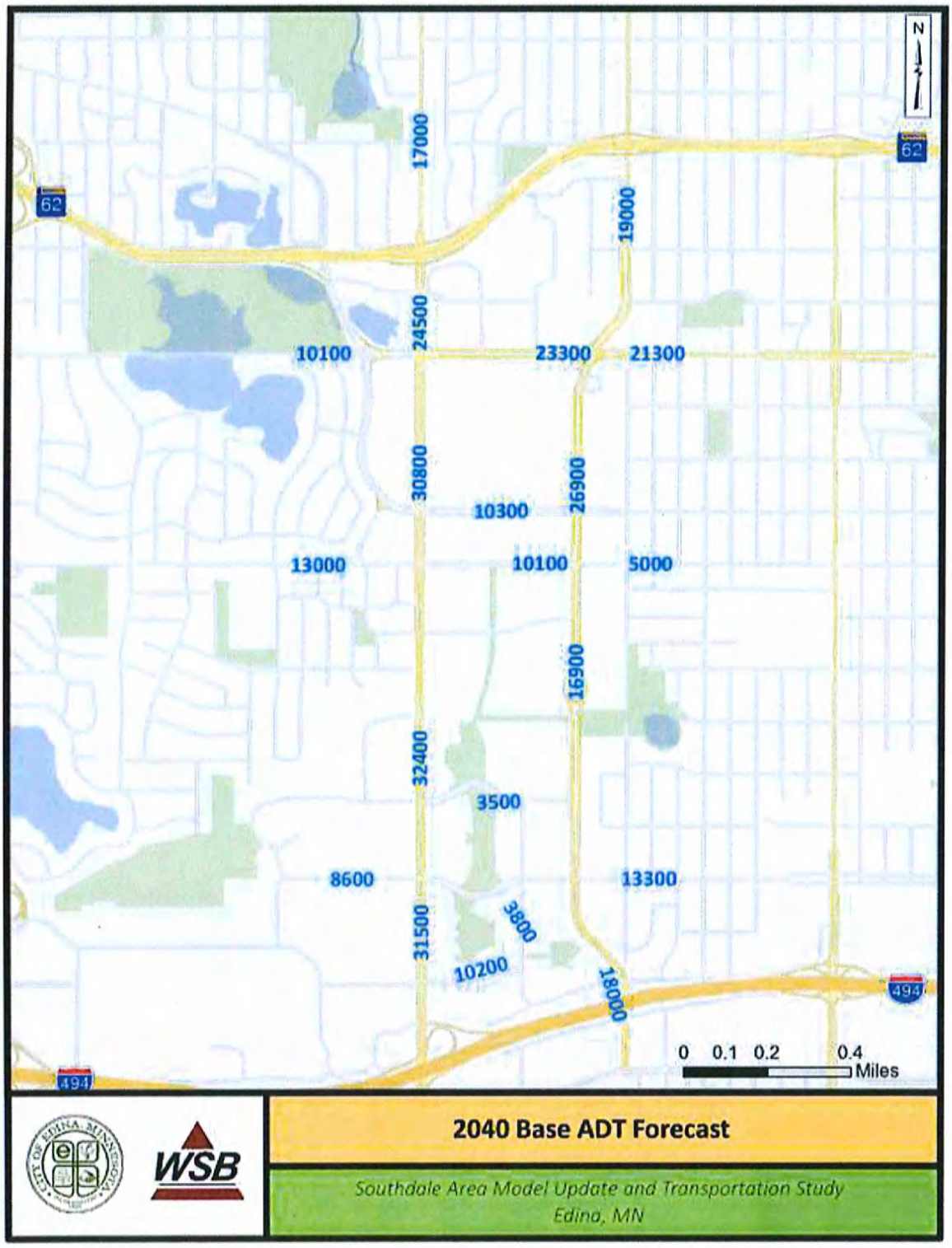

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Figure 8 shows the percentage change in ADT as forecasted by the regional Travel Demand Model between the base model year (2010) and the year 2040.

Figure 8: Base Condition ADT Percentage Change

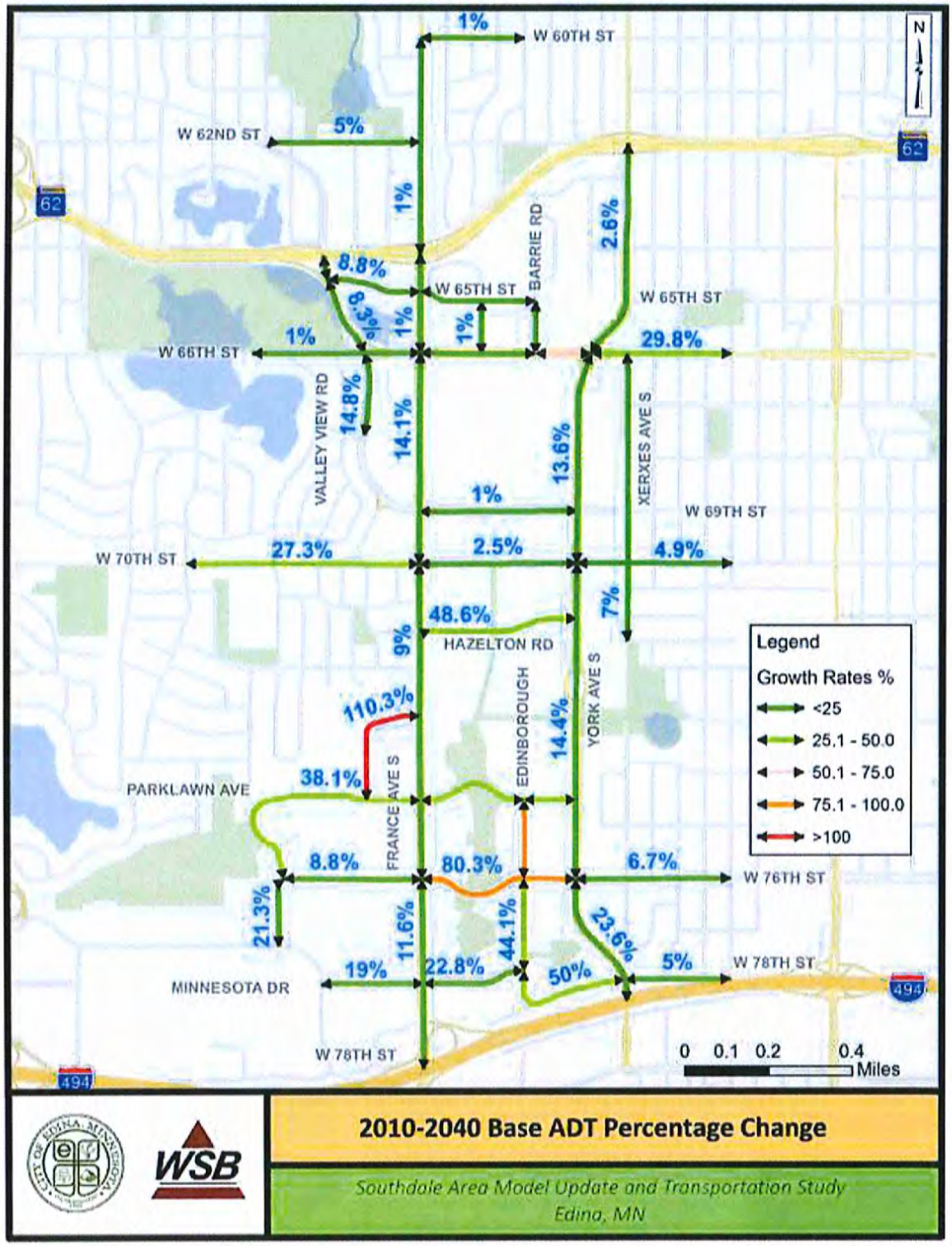

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Figure 9 shows the forecasted 2040 ADT for the high density scenario.

Figure 9: 2040 High Density Scenario ADT

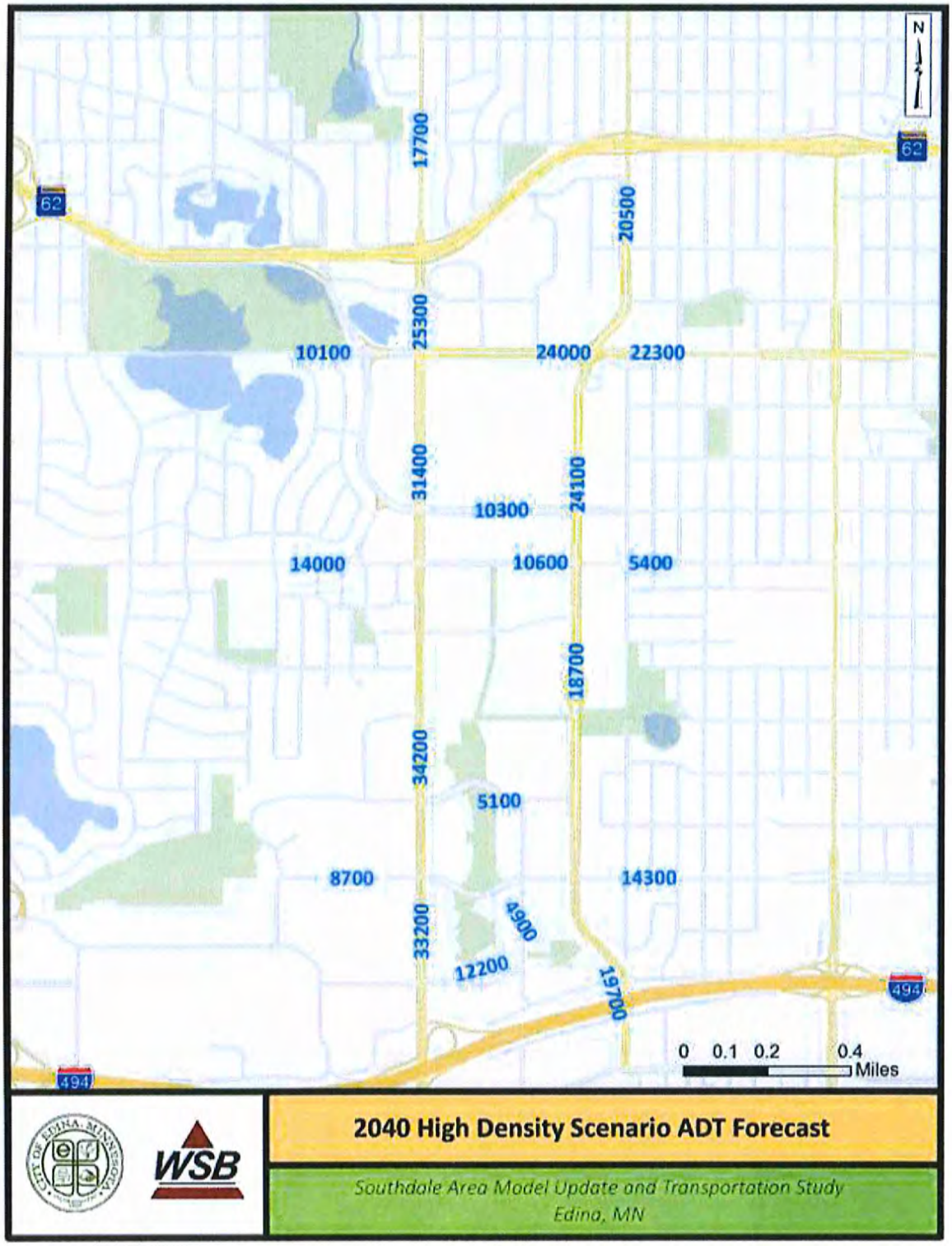
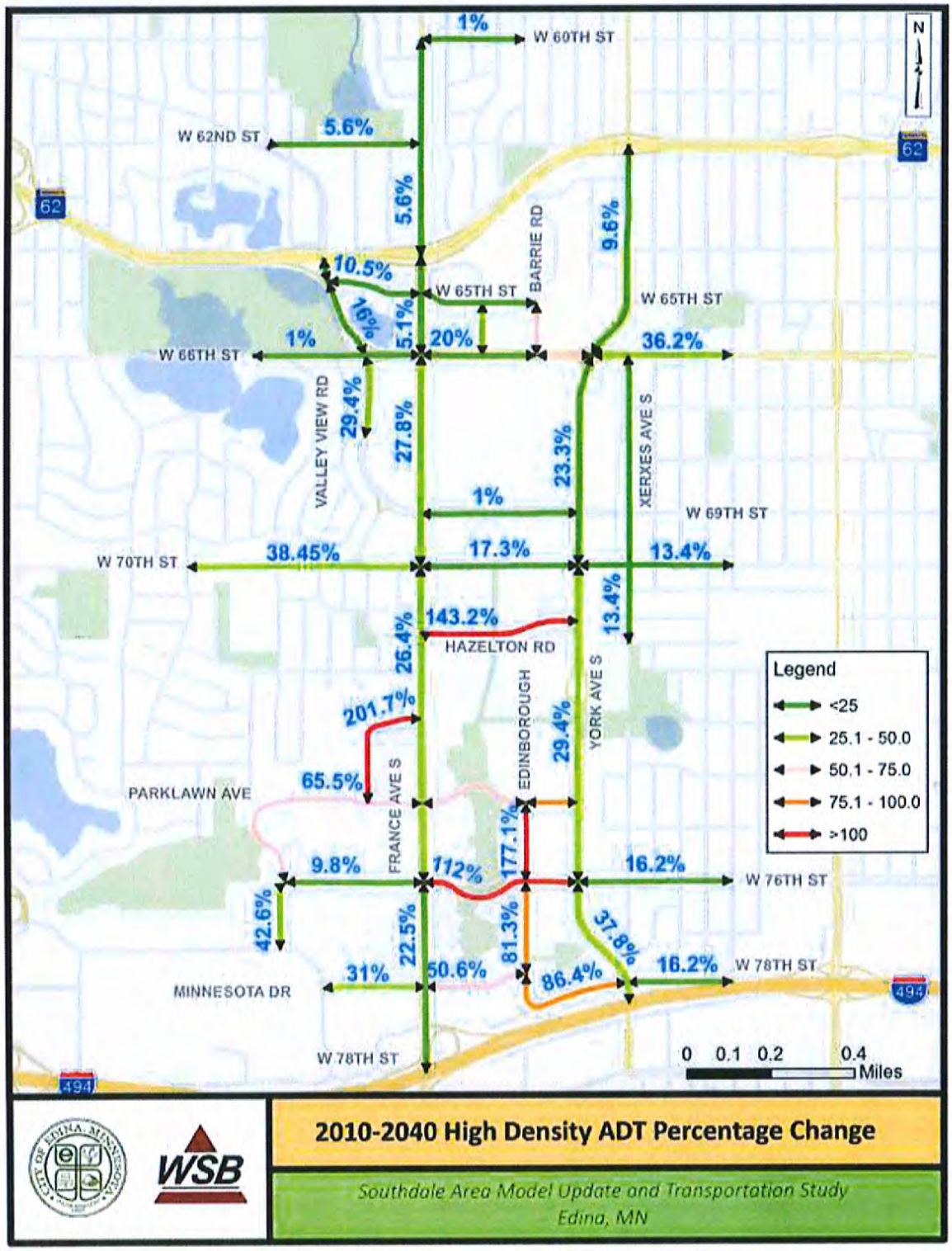


Figure 10 shows the percentage change in ADT for the increased density scenario from year 2040 and the base model year (2010).

Figure 10: High Density Scenario ADT Percentage Change



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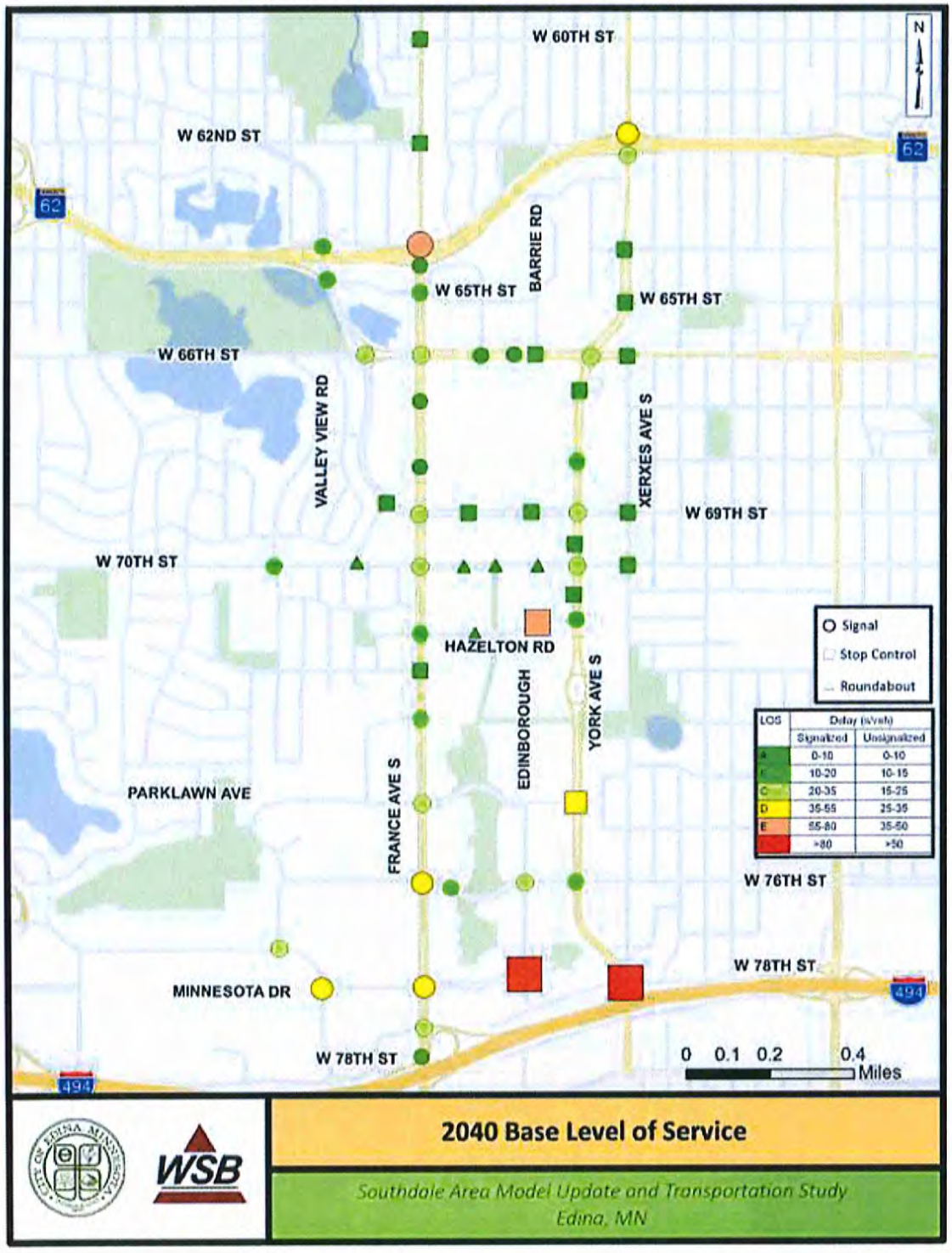
The turning movement volumes for the PM peak hour in 2040 were estimated based on the ADT growth percentages derived from the model for various links. The turning movements were then simulated in the Synchro/SimTraffic network. ***Figure 11*** shows the 2040 Level of Service assuming growth levels consistent with the 2040 regional Travel Demand model.

Figure 11: 2040 Base Condition Level of Service



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Projected 2040 Conditions Analysis

The turning movement volumes for the PM peak hour were adjusted from the base condition based on the ADT growth percentages derived from the high density scenario model. ***Figure 12*** shows the Level of Service at the study intersections in the High Density Scenario assuming no significant improvements to the intersections from current conditions. The results indicate that in general most intersections with either the 2040 Base conditions or 2040 High Density conditions would continue to operate at an overall Level of Service (LOS) D or better, with the exception of:

2040 Base Condition:

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8. Hazelton Road at Target Access = LOS E
9. France Avenue at Minnesota Drive = LOS E

It should be noted that at some intersections which are not operating at an overall LOS E or F, may still be individual movements that are at LOS E or F. ***Figure 13*** shows individual movements that are at LOS E or F at the study intersections.

In addition to the intersections listed above, as development continues to occur in the Southdale area particular attention should be given to the following intersections as part of any traffic analysis prepared, which could be operating at LOS F:

1. France Avenue at W. 66th Street – Westbound approach
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Figure 12: 2040 High Density Scenario Level of Service

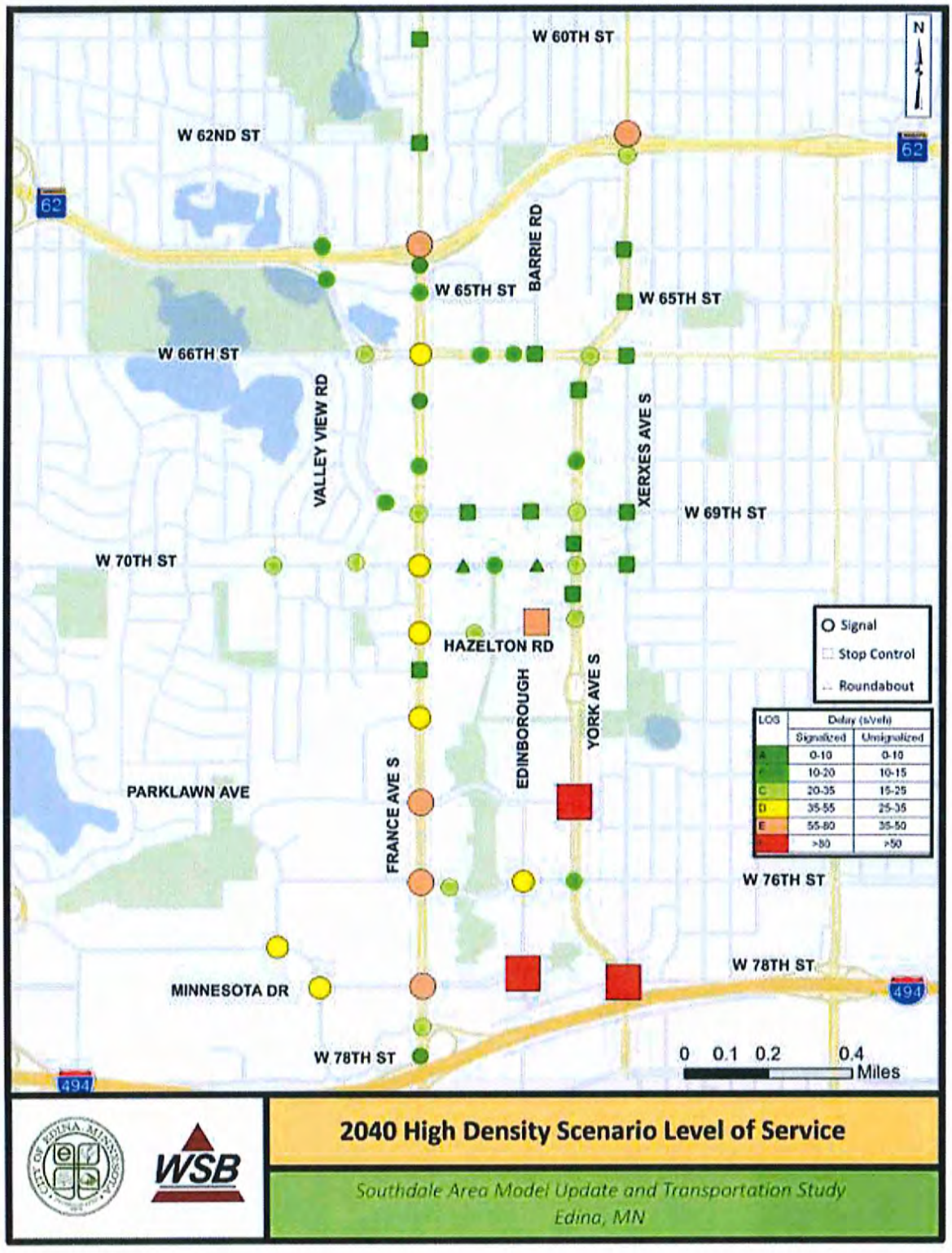
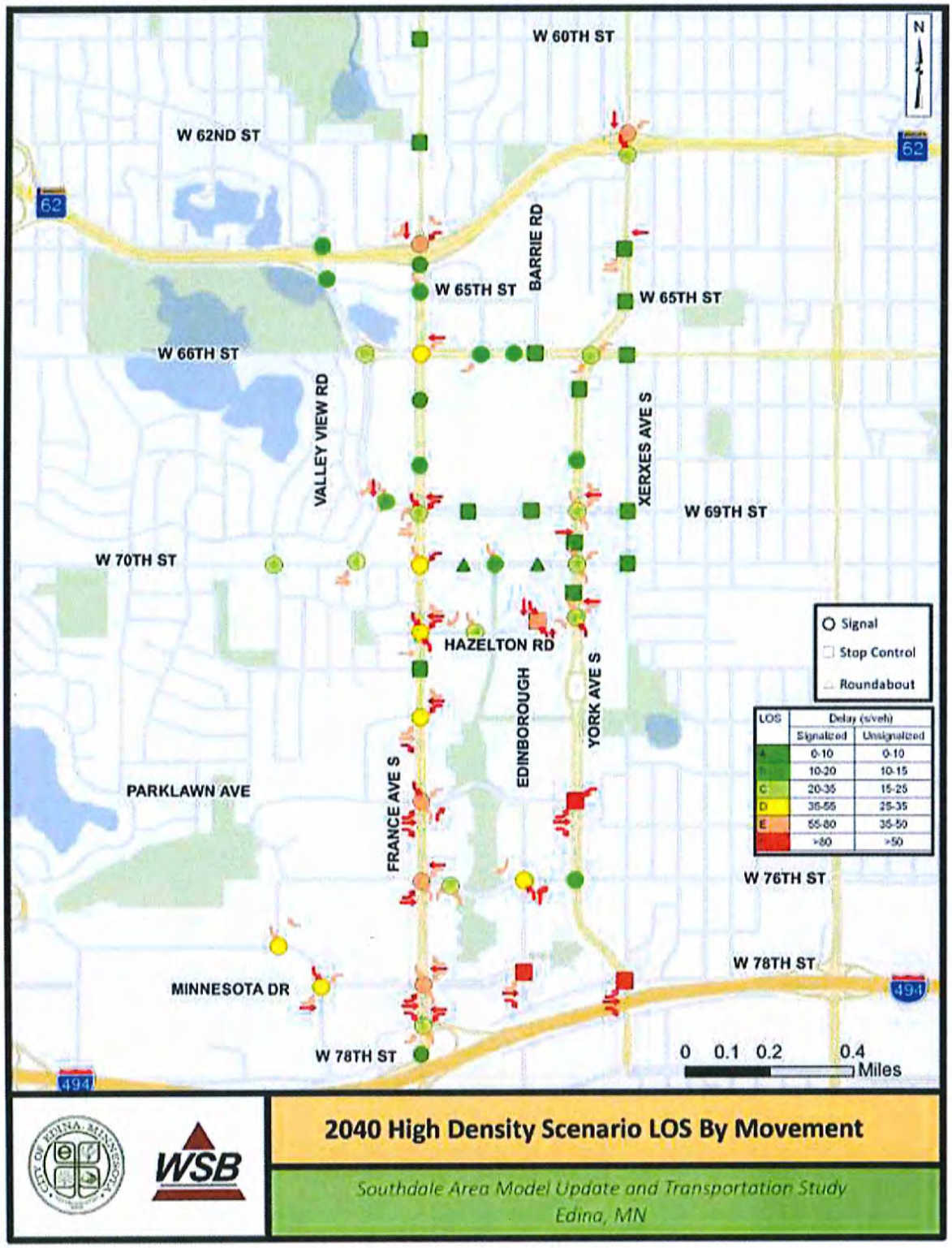


Figure 13: 2040 High Density Scenario LOS By Movement



PEDESTRIAN NETWORK ANALYSIS

The purpose of the pedestrian and bicycle analysis was to highlight existing and potential future pedestrian and bicycle trip generation and needs in the Southdale area. The analysis is separated into five sections. The first section provides documentation of the existing pedestrian and bicycle system in the Southdale Area; the second provides background considerations about pedestrian and bicycle trip generation; the third section describes existing pedestrian and bicycle trip generators; the fourth section identified potential pedestrian and bicycle trip generators based on planned development in the Southdale area, and; the fifth section includes general conclusions for walking and bicycling in the Southdale area.

Existing Pedestrian/Bicycle System

There are some existing pedestrian and bicycle facilities in place in the Southdale area. The existing and planned sidewalk and bicycle networks are shown in ***Figures 14 & 15.*** There are sidewalks in place on many of the streets in the commercial and higher-density residential areas of the study area, including France Avenue, W. 66th Street, W. 70th Street, and York Avenue. In most cases, there are sidewalks along both sides of these roadways.

While there are sidewalks in place along many of the busier streets in the study area, there are some challenges for pedestrians. In some locations there are narrow sidewalks at the back of the curb. Many pedestrians feel uncomfortable walking close to busy roadways, and it can be a challenge to keep back-of-curb sidewalks clear of snow and ice in the winter. Additionally, it can be uncomfortable for pedestrians to cross four- and six-lane roadways within the study area. Crossing distances can be long due to the number of through and turn lanes. The City of Edina has begun to address these challenges in some locations, including France Avenue. The sidewalks and intersections along France Avenue have recently been upgraded to provide a more comfortable pedestrian experience for people walking along and across France Avenue. There is a very limited sidewalk network in the residential areas west of France Avenue, and within large commercial developments such as Southdale Center.

There is a limited bicycle network in place within the study area. The Edina Promenade is an off-street shared use path that extends from W. 70th Street through Centennial Lakes Park. There is also an off-street path along Parklawn Avenue. There are bike lanes and shared lane markings in place along W. 70th Street west of France Avenue. Cornelia Drive is also a bicycle boulevard.

The lack of dedicated bicycle facilities creates challenges for people bicycling within the study area. West of France Avenue, many of the low-volume local streets are comfortable for bicycling without dedicated bicycle facilities. However, the street grid is interrupted in this area and many of the low-traffic local streets do not provide direct connections. There are very few bicycle facilities within the commercial and high-density residential areas in the eastern half of the study area.

The street network in this area is not conducive to on-street bicycling without dedicated bicycle facilities. Many of the streets in this area are high-volume, multilane roadways. Most people do not feel comfortable sharing a lane with motorists under these conditions.

Figure 14 – Existing Comprehensive Plan Sidewalk System

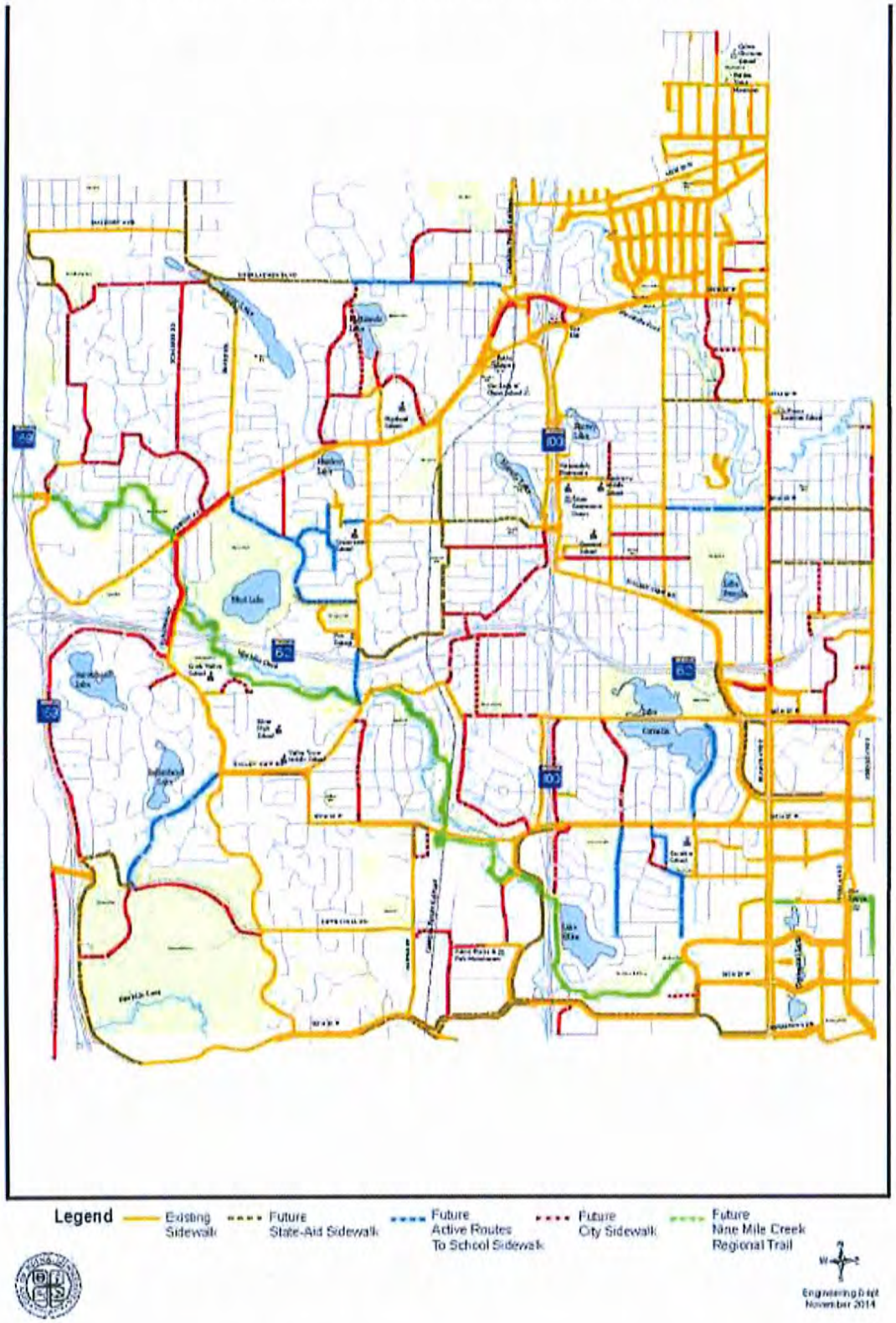
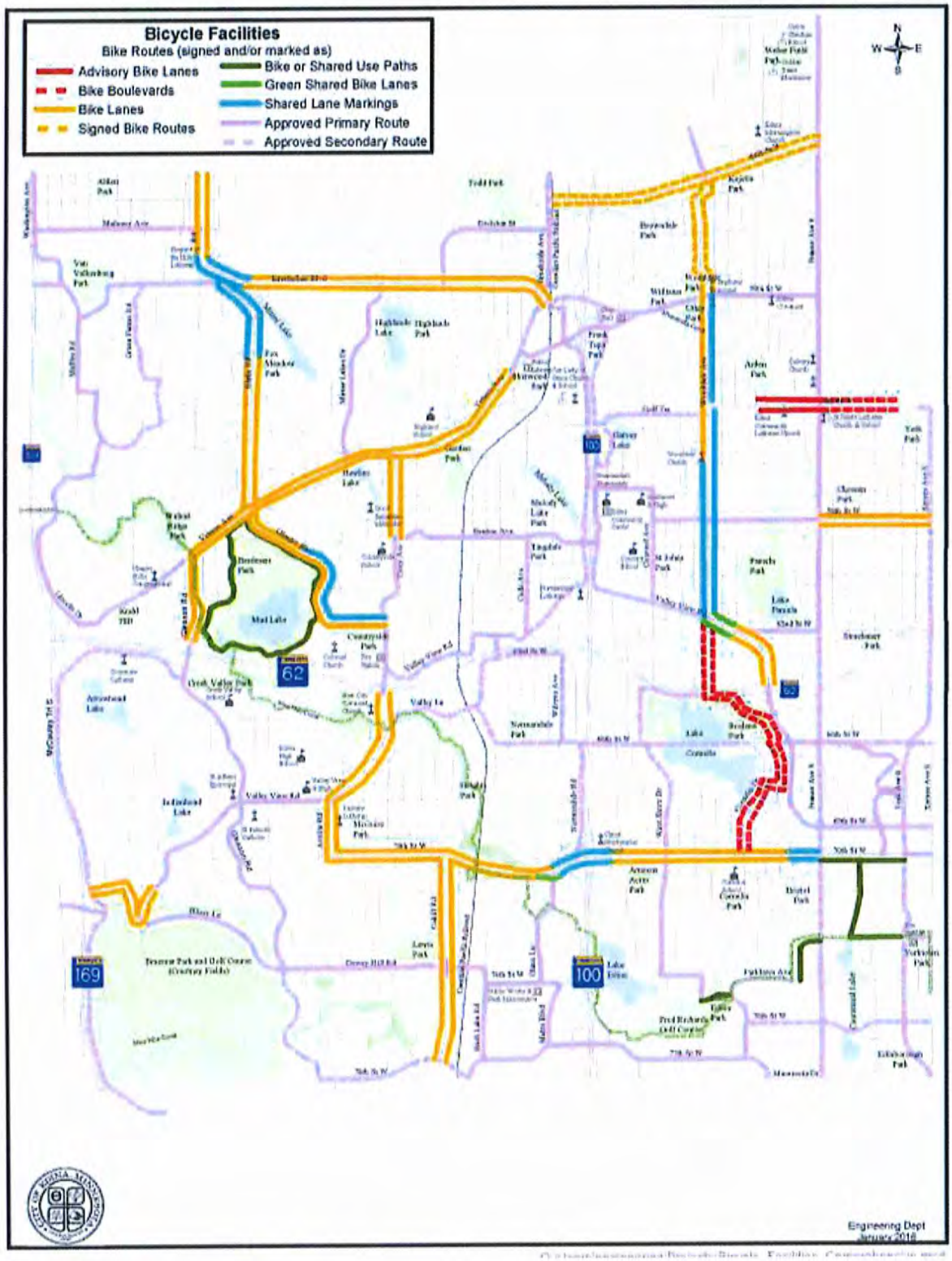


Figure 15 – Existing Comprehensive Plan Bicycle System



Pedestrian and Bicycle Trip Generation Background

Unlike motor vehicle trip generation, there are not established methods for estimating bicycle and pedestrian trip generation. Rates of walking and bicycling vary throughout the U.S. and even within the same metro area. For that reason, it is not possible to make clear forecasts of pedestrian and bicycle trip generation. Specific land uses cannot be considered in isolation. There are number of factors that influence rates of pedestrian and bicycle trip generation, including:

- **Residential proximity to retail/office land uses:** Walking and bicycle use are typically higher in mixed-use areas or areas where residential land uses are in close proximity to retail/office land use. Retail, office, and recreational land uses tend to attract the most bicycle and pedestrian trips.

- **Residential density:** Areas with higher density residential land use tend to see more walking and bicycling than lower density areas.

- **Scale of land use and building design:** People tend to prefer to walk and bike in areas where the land use and building design are at a pedestrian scale, including smaller building footprint, active uses on ground floors, visually interesting buildings, and concealed parking.

- **Road network:** Small block sizes and narrow streets are associated with more pedestrian and bicycle activity. In areas with large blocks and large-scale development, people often have to walk or bike out of their way to reach their destination. Wide streets tend to be difficult for people to cross on foot or bike.

- **Pedestrian and bicycle network:** People tend to walk and bicycle more in areas with continuous and comfortable pedestrian and bicycle facilities. Areas with higher quality facilities (wide sidewalks with separation from the roadway and/or physically separated bicycle facilities) often see more pedestrian and bicycle use.

- **Transit network:** People tend to walk and bike more in areas with frequent public transit service.

- **Ease or difficulty of vehicle use in an area:** Areas with traffic congestion, lack of parking, and/or parking fees tend to generate more bicycle and pedestrian trips as vehicle trips can be more costly or frustrating.

There are certainly other factors that influence rates of walking and bicycling in an area. Weather, personal preference, access to a personal vehicle (or lack thereof), income, physical ability, and other factors influence whether people walk or bike to a destination. However, the factors listed above are those that a city has the strongest potential to influence. With this information in mind, the sections below identify assumed pedestrian and bicycle generators based on current and future land uses.

Existing Pedestrian and Bicycle Trip Generators

Commercial retail and office development has been in place for a long time in the Southdale area. However, there is limited bicycling and walking in the area due to auto-oriented development, large block sizes, wide roadways with high traffic volumes, gaps in pedestrian and bicycle network, and separation between commercial and residential land uses. The sections below describe different types of pedestrian and bicycle trip generators in the study area. Many of these destinations may not attract significant bicycle and pedestrian traffic today; however, they have the potential to be generators as residential density increases and new pedestrian/bicycle infrastructure is constructed.

Office Land Uses: Within suburban contexts, office land uses are less of a pedestrian generator than other commercial land uses. Most people do not live within walking distance of their workplace, medical provider, or other professional services. Office land uses tend to attract some bicycle trips due to people bicycling to work. Office land uses are situated in the following locations:

- Medical offices north of W. 66th Street (Fairview Southdale Hospital, Southdale Medical Center, Twin Cities Orthopedics, and others)
- Offices north of W. 66th Street between France and York Avenues
- Offices along the west side of France Avenue
- Offices located along W. 77th Street
- Centennial Lakes office buildings

It is assumed that offices located in the study area do not attract significant pedestrian traffic at this time. However, this could change as additional high density housing units are constructed in the study area. It is possible some people will move to the area to be close to their workplace. It is also assumed that there are low rates of bicycle transportation to offices in the study area, mostly due to lack of bicycle infrastructure in the study area and surrounding neighborhoods.

Retail Land Uses: Retail land uses tend to attract more pedestrians and bicyclists than other land uses, provided that housing is located within close proximity to retail land uses. People tend to visit retailers close to their home or workplace, unless they have needs for specialty goods or are visiting destination retail areas. The Southdale area is a regional retail destination. It is expected that most people drive to Southdale retail if they live outside of the study area; however, some people shopping in the area prefer to walk between retail destinations once they reach the Southdale area. The diversity of retail land uses in the study area mean that most nearby residents should be able to meet their retail needs within the study area. Retail pedestrian/bicycle generators include the following:

- Southdale Center
- Galleria
- Southdale Square (York Avenue and W. 66th Street)
- Retail uses along France Avenue
- Retail uses along York Avenue
- Retail uses along Hazelton Street
- Limited retail/banks north of W. 66th Street

As with office land uses, it is assumed that retail in the study area does not currently attract significant pedestrian and bicycle traffic. However, existing retail will likely draw additional pedestrian and bicycle traffic as residential density increases.

Hotel Land Uses: There is currently one hotel in the study area. The Westin Edina Galleria is located at York Avenue and W. 69th Street, in close proximity to both the Galleria and Southdale Center. It is expected that the hotel generates more pedestrian traffic than other land uses, given its close proximity to retail and restaurants in the area. Hotel guests are more likely to walk to their destinations as some might not have access to a vehicle during their stay. The Westin is unlikely to be a significant bicycle trip generator as most guests do not have access to bicycles during their stay; however, there may be some bicycle use among employees of the hotel.

Transportation Land Uses: The Southdale Transit Center is located on the east side of Southdale Center, near York Avenue. It serves several local and express buses. The transit center is expected to be a more significant pedestrian and bicycle trip generator, as most people access transit by walking and bicycling.

Recreational, Worship, and Institutional Land Use: There are several recreational, worship, and institutional land uses within the study area. Several of these are expected to generate more bicycle and pedestrian trips than other destinations in the study area, particularly parks and schools. These destinations include:

- Lake Cornelia/Edina Aquatic Center
- Arneson Acres Park
- Lake Edina Park
- Centennial Lakes
- Edina Art Center
- Southdale YMCA
- Southdale Library and County Service Center
- Cornelia Elementary School
- Christ Presbyterian Church – W. 70th Street and TH 100

Residential Land Uses: Residential land uses are currently located along the edges of the study area. Single family residential is generally located west of Valley View Road/France Avenue and east of Xerxes Avenue. High density residential (apartments, condos, and townhomes) are located north of W. 66th Street, west of France Avenue, south of Hazelton Road, and along both sides of York Avenue south of Hazelton Road.

It is expected that high density housing generates a greater share of pedestrian and bicycle trips in the area. This is assumed in part because high density housing is located closer to retail, office, and transit than single family residential areas. Single family residential land uses are likely to generate more pedestrian and bicycle trips to the recreational and school land uses in the study area, as those destinations are located closer to single family residential.

New high density housing has been constructed at York Avenue and W. 69th Street (One Southdale Place). It is assumed that this housing generates more pedestrian trips than other residential land uses in the study area, given its close proximity to retail and restaurant destinations in Southdale Center, the Galleria, and along the east side of York Avenue.

Potential Future Pedestrian and Bicycle Trip Generators

Pedestrian and bicycle use is expected to grow in conjunction with anticipated development in the Southdale area. As part of the city's land use plan, the city is considering an increased density scenario that would plan for 100-150 units per acre within the area bounded by TH 62, Xerxes Avenue, France Avenue, and W. 77th Street. This area is dominated by retail and office land uses at this time. As residential density grows in this area, there will be more people living within a short walk or bike ride of retail and office destinations. As a result, it is assumed that more people will walk and bicycle for transportation. The increased density scenario is already coming to fruition. The sections below describe private development that is planned within the study area and expected to be constructed over the next one to two years.

New development in is also an opportunity to influence walking and bicycling behavior in the area. Given the proximity of new residential to commercial land uses, there is a lot of potential for pedestrian and bicycle transportation. The city can work with developers to integrate new or enhanced walking and bicycling routes into or adjacent to developments. The city can also encourage pedestrian-scale development including as active uses on ground floors, windows, and entrances that are oriented towards the sidewalk (rather than towards parking).

Residential development: Within the study area, over 1,400 units of high density residential housing are in some stage of the development process. These developments are generally located much closer to existing commercial development and are therefore expected to generate more pedestrian and bicycle trips as compared to existing residential land uses. Planned residential developments include:

- Gateway Pointe (York Avenue and W. 66th Street) – 210 apartment units
- 6725 York (Wicks site) – 242 apartment units
- 7200 France – 160 apartment units
- Aurora on France (6500 France) – 188 senior/transitional housing units
- Byerly's/Think Bank development – 234 units
- Continental Gardens (York Avenue) -100 senior housing units
- Titus/Eberhardt development (W. 66th Street and Xerxes Avenue) – 275 units
- Beacon Housing – 39 units for homeless young adults

Retail/restaurant development: At this time, there is less commercial development planned than residential development. Several of the residential developments listed above will be mixed-use and will include restaurant and/or retail spaces. The only stand-alone commercial development planned at this time is the Bank of America redevelopment at France Avenue and W. 69th Street. New commercial development is expected to attract pedestrian and bicycle traffic.

In addition, the existing commercial land uses are expected to generate additional pedestrian and bicycle trips as residential development occurs in close proximity to existing retail and restaurant land uses. It is also possible that residents of the new units (particularly apartment units, as people renting typically have more flexibility in housing location than people who own their homes) will move to the area to be closer to jobs in area retail and restaurants. These residents will be more likely to walk and bike to their work due to the close proximity.

Hotel development: The Southdale Hotel is currently in the development process, to be constructed at the southwest corner of York Avenue and W. 66th Street. Given the hotel's proximity to Southdale Center and Southdale Square, it is expected that this development would generate pedestrian trips. As discussed above, the hotel is unlikely to be a strong generator of bicycle trips.

Office/medical development: Fairview Southdale is expanding its Emergency Room. Southdale Medical Center is also pursuing an expansion. It is unlikely that these developments would have an impact on pedestrian and bicycle trip generation in the area.

Pedestrian and Bicycle Analysis Conclusion

Currently, the greatest pedestrian and bicycle trip generators in the area are the commercial areas located in the core of the study area (bounded by W. 66th Street, York Avenue, Hazelton Road, and France Avenue), the Southdale Transit Center, and existing high density housing. However, pedestrian and bicycle use in the area is currently low due for several reasons. Current development patterns are auto-oriented, with parking fronting the street in most cases and large block sizes that add travel time for people walking and bicycling.

Transportation infrastructure is also a barrier, as there are wide roadways and intersections with fast-moving vehicles, gaps in the pedestrian network, and a lack of bicycle facilities. Additionally, most residential land use is separated from commercial land uses, which means that people need to cover greater distances if they wish to walk or bike from their home to retail/office destinations.

Increased residential density in the study area is expected to increase pedestrian and bicycle trips. The greatest future generators are the planned residential development in the core of the study area. As the study area shifts to a mixed-use development pattern, the shorter distances between residential and commercial land uses will make it easier for residents to walk and bike for transportation within the study area. It is expected that future residential and existing retail land uses will generate more pedestrian and bicycle trips than today. Hotel development will also generate additional pedestrian and bicycle trips.

The Southdale Working Group is continuing to develop a framework plan for the area based on a set of "Working Principles and Supporting Questions". One of the principals identified with Phase 1 was "Foster a logical, safe, inviting and expansive public realm facilitating movement of people within and to the district" the identified attribute developed in Phase 2 for this principal is "Improved and new pedestrian connections, new street grid".

Figure 16 – Existing Pedestrian and Bicycle Generators

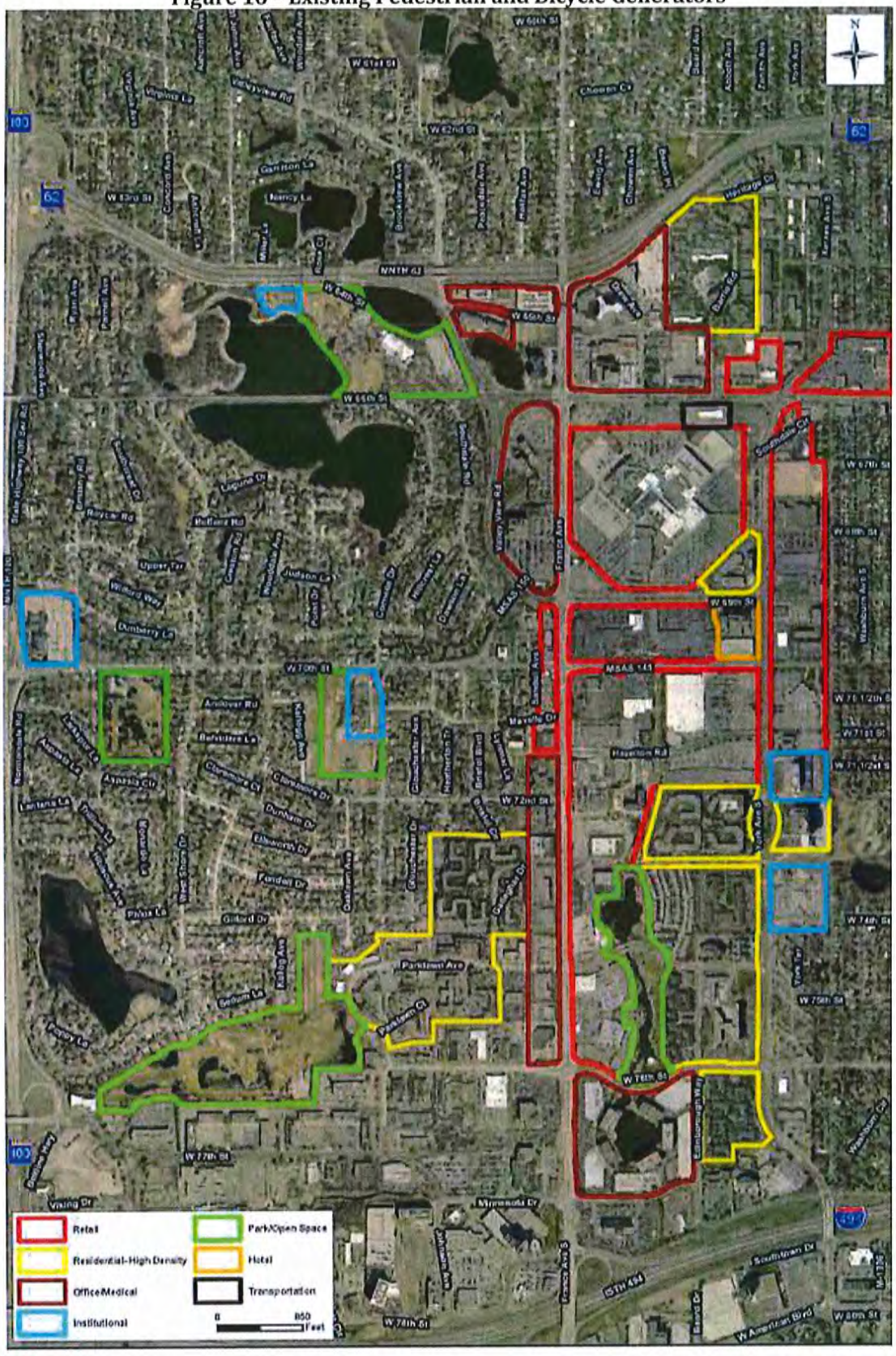
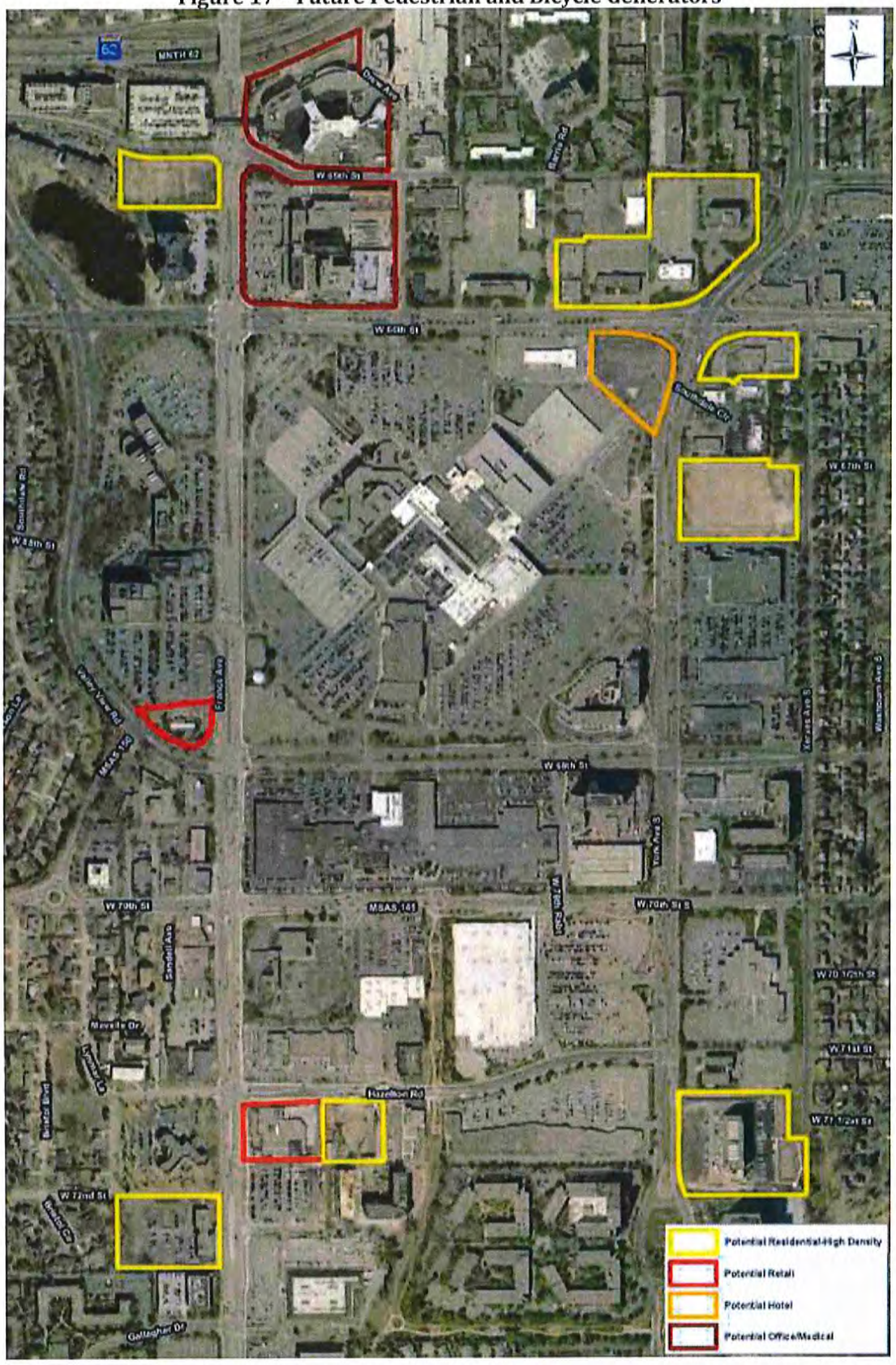


Figure 17 – Future Pedestrian and Bicycle Generators



CONCLUSIONS / RECOMMENDATIONS

Based on the analysis and modeling for both the 2040 base scenario and 2040 high density scenario, issues with some intersections and/or movements will exist if improvements are not made to the transportation system.

As development is proposed in the Southdale Area detailed analysis of adjacent intersections should be conducted to document the need for specific improvements at the critical intersections. These intersections at a minimum would include:

2040 Base Conditions Scenario

1. France Avenue at TH 62 Ramps
2. France Avenue at W. 65th Street
3. France Avenue at W. 66th Street
4. France Avenue at W. 69th Street
5. France Avenue at W. 70th Street
6. France Avenue at W. 76th Street
7. France Avenue at Minnesota Drive
8. York Avenue at W. 69th Street
9. York Avenue at Parklawn Avenue
10. York Avenue at W. 78th Street
11. Hazelton Road at Target Access
12. Minnesota Dr at Edinborough Way

2040 High Density Scenario

1. France Avenue at TH 62 Ramps
2. France Avenue at W. 65th Street
3. France Avenue at W. 66th Street
4. France Avenue at W. 69th Street
5. France Avenue at W. 70th Street
6. France Avenue at Hazelton Road
7. France Avenue at Gallagher Drive
8. France Avenue at Parklawn Ave
9. France Avenue at W. 76th Street
10. France Avenue at Minnesota Drive
11. Xerxes Ave at TH 62 North Ramp
12. York Avenue at W. 69th Street
13. York Avenue at Hazelton Road
14. York Avenue at Parklawn Avenue
15. York Avenue at W. 78th Street
16. Valley View Road at W. 69th Street
17. Hazelton Road at Target Access
18. Edinborough Way at W. 76th Street
19. Minnesota Dr at Edinborough Way
20. Minnesota Drive at W. 77th Street

Most of the traffic issues documented in this Study can be addressed by relatively low-cost improvements such as:

- Signal Timing;
- Improvements to turn lanes geometry, or:
- Installation of traffic signals or roundabouts at stop controlled intersections;

With the current proposed development and possible increased development scenario, in the future more trips are expected by all modes of transportation. If a greater proportion of these trips are walking, bicycling, and/or transit trips, it will reduce the pressure on the roadway system. The study area has potential to be a place where residents can meet many of their transportation needs by walking, bicycling, and using transit. Below are general recommendations that the City could pursue to encourage walking and bicycling in the Southdale area:

1. Enhance and expand the pedestrian and bicycle network in the study area:

    - Develop a dense web of pedestrian connections so people can access destinations more directly (rather than walking out of their way to follow existing pedestrian connections)
    - Identify, enhance, and develop key pedestrian and bicycle routes between residential and commercial land uses
    - Plan and implement a low-stress bicycle network to expand upon the successful Edina Promenade
    - Address challenging pedestrian and bicycle crossings within the study area: work to shorten crossing distances, remove free-right turns, and improve key pedestrian crossings at currently un-signalized locations
    - Improve and/or develop pedestrian timing plans in coordination with vehicle signal timing plans

2. Balance the needs of different transportation modes: Improved signal timing, adding turn lanes or widening roadways may improve conditions for people driving, but will make crossings more challenging for people walking and bicycling. It will be important to consider impacts to people walking and bicycling as the city considers improvements to the roadway system.

3. Work with residential and commercial developers to improve bicycle and pedestrian conditions in the study area:

    - Integrate new or enhanced walking and bicycling facilities into or adjacent to development
    - Develop building designs and site plans that are pedestrian scale: including active uses on ground floors and entrances oriented towards the sidewalk

4. Work with owners of existing large commercial properties (for example, Southdale Center and the Galleria) to develop pedestrian and bicycle routes through their development.

5. Coordinate with "Southdale Working Group" to implement the identified Working Principals and associated Attributes.