

City of Novi Non-motorized Master Plan

Preliminary Inventory and Analysis

Progress Draft, August 12, 2010

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Existing Conditions and Analysis

This information is used to assess the state of the existing pedestrian and bicycle facilities. It is also used to help determine potential non-motorized facilities and to support recommendations.

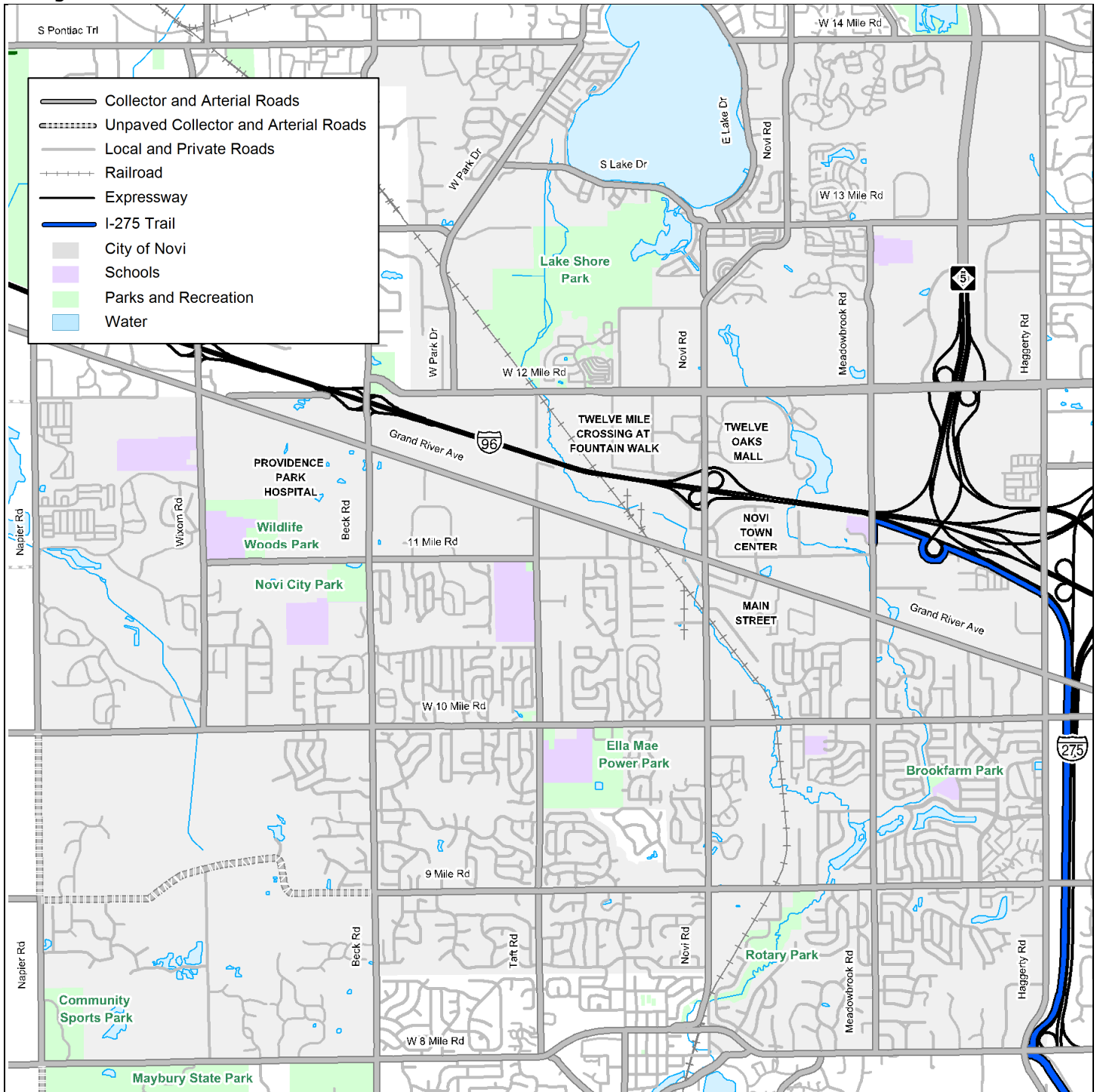
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Potential Facilities Analysis

This analysis evaluates what is possible or appropriate, but should not be confused with recommendations.

- Potential Near-term Road Conversions
- Potential Neighborhood Connectors and Off-Road Trails

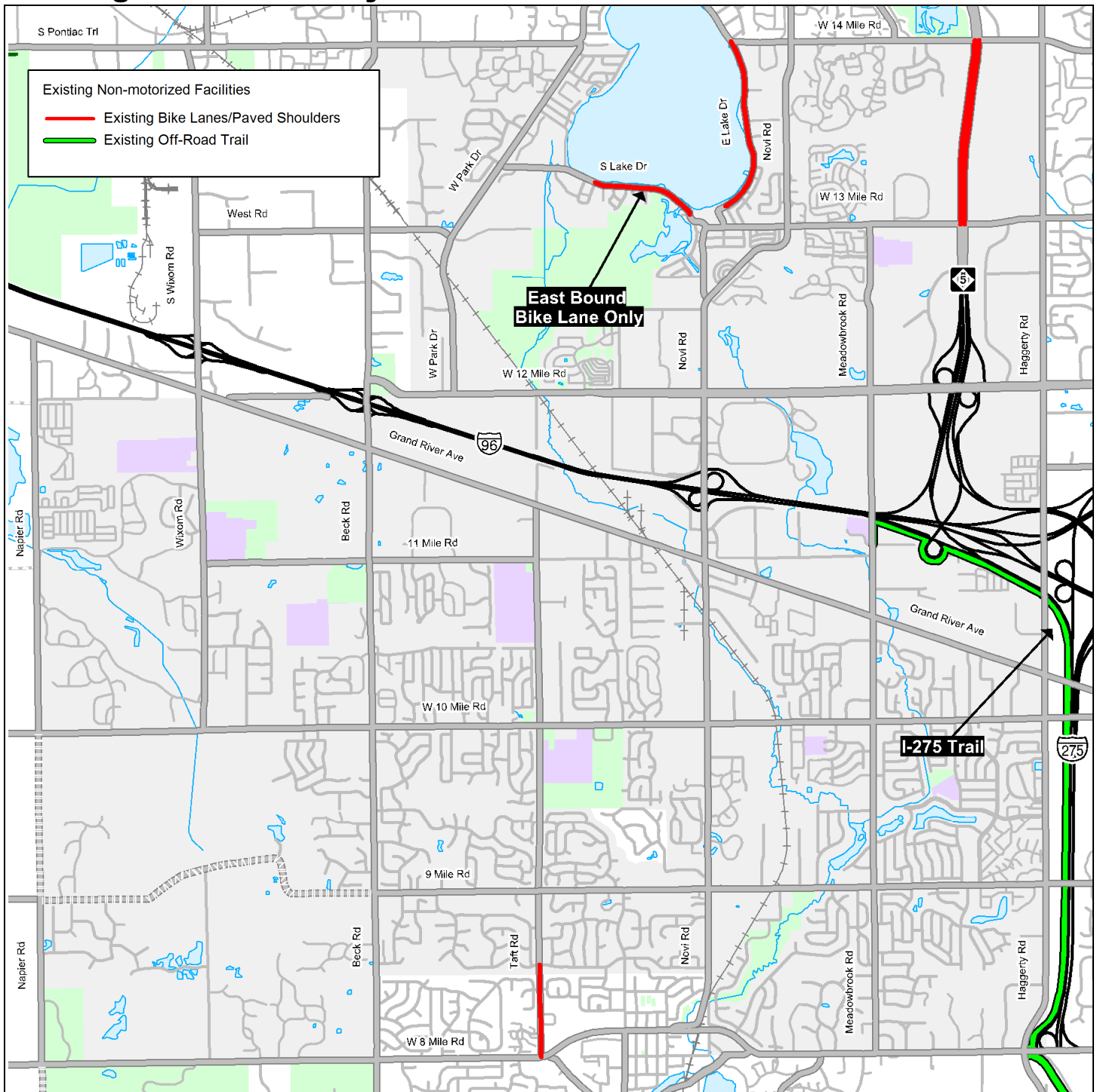
Project Overview



Population: currently estimated to be 52, 231 (city special census 2007)

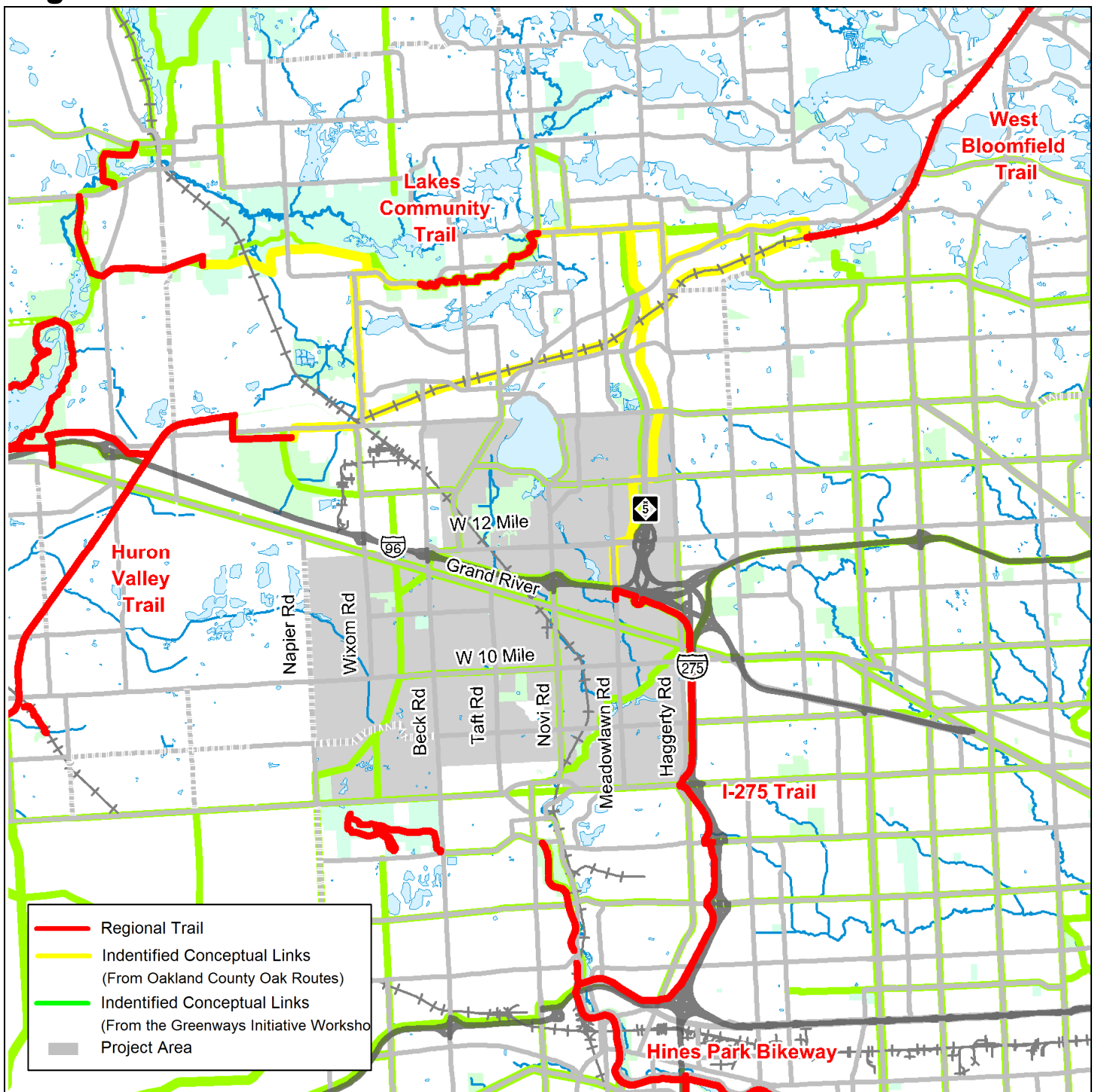
Size: Over 30 Square Miles

Existing Trails Inventory



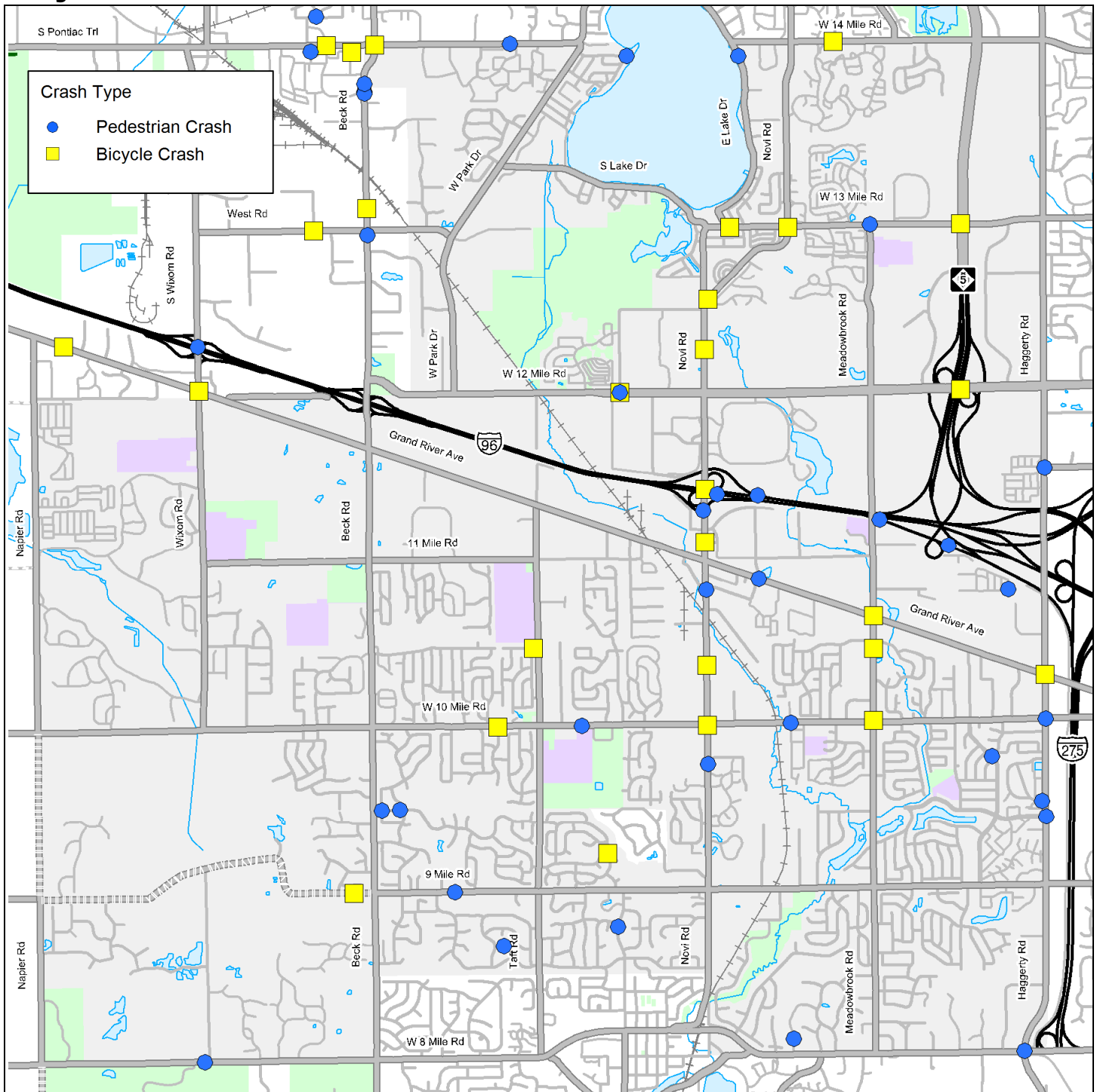
The I-275 Trail is a 40 mile bikeway that links communities in Wayne, Oakland and Monroe counties. The trail terminates at Meadowbrook Road just to the south to the I-96 expressway.

Regional Trails Overview



The existing I-275 Trail and under development M-5 run up the eastern border of the city. When completed it will provide a key link between the extensive regional trail system to the south and the proposed cross state trail to the north. The ITC corridor that generally runs north-south between Wixom Road and Beck Road between Maybury State Park and just east of Lyon Oaks County Park has the potential to link to key regional parks to the residents.

Bicycle and Pedestrian Crash Locations



The crashes shown are from a five year period, 2004 – 2008.

There were 31 bicycle involved crashes, none were fatal and six resulted in serious injury. Drinking or drug use was involved in 1 of the crashes. There was no traffic control at 38% of the crashes; a signal was present at 43% and a stop sign at 19% of the locations.

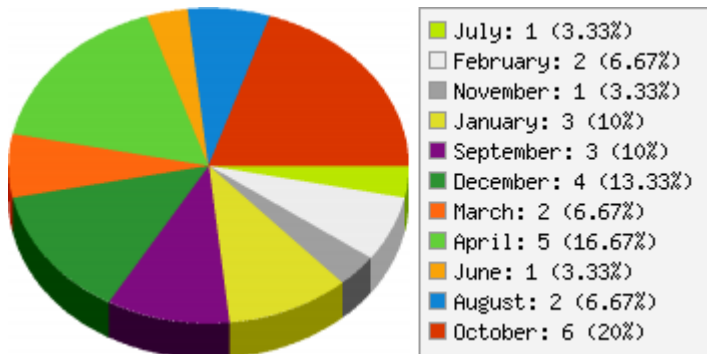
There were 30 pedestrian involved crashes, none were fatal and ten resulted in serious injuries. Drinking or drug use was involved in 3 of the crashes. There was no traffic control at 70% of the crash locations.

The Michigan Traffic Crash Fact website was the source of the data and charts.

Pedestrian Crash Data

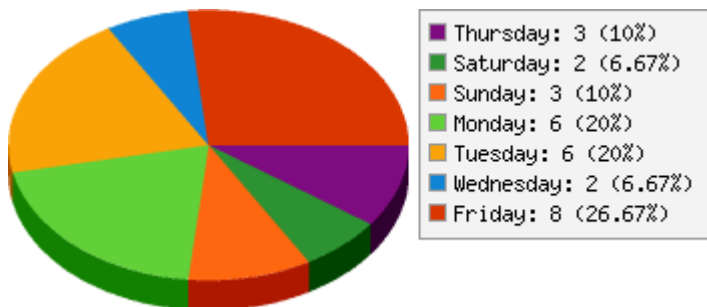
Month of Crash

Pedestrian crashes occurred in every month except February.



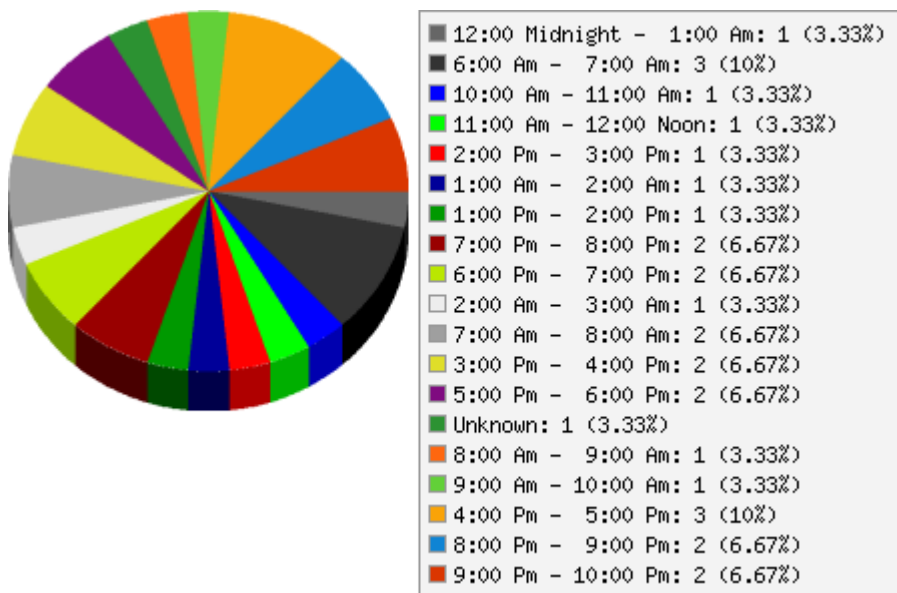
Day of Week

Crashes took place on every day of the week with the most occurring on a Friday.



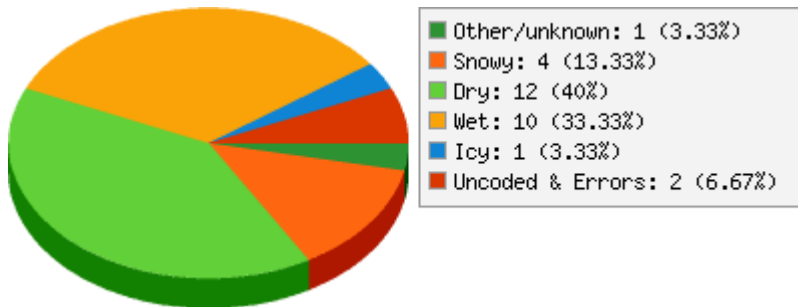
Time of Day

All but one crash took place between 6:00 AM and 10 PM. Half the crashes took place during daylight, 7% took place during dawn and 40% took place in the dark (3% was not coded).



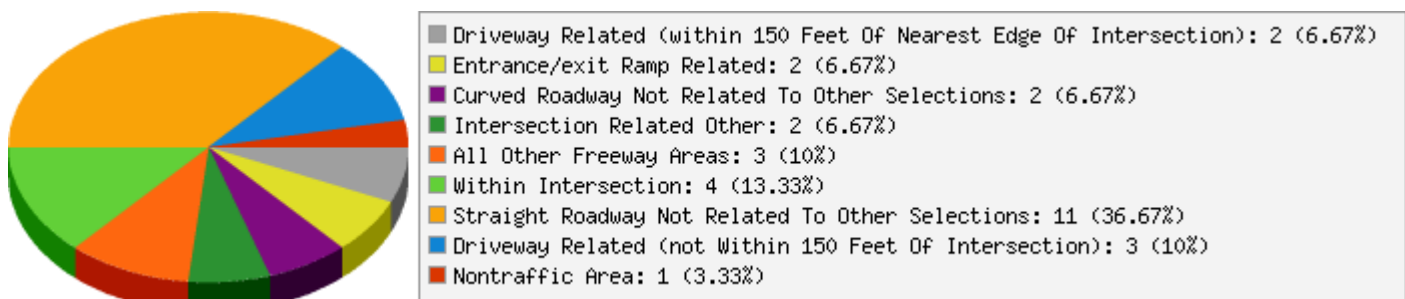
Road Conditions

Wet, Snowy or Icy roads were a factor in about half the crashes.



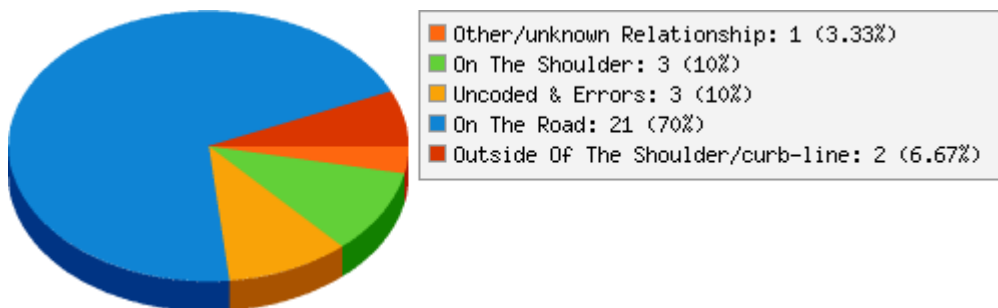
Area of Road at Crash

43% of the crashes are related to an intersection or driveway.



Relation to Roadway

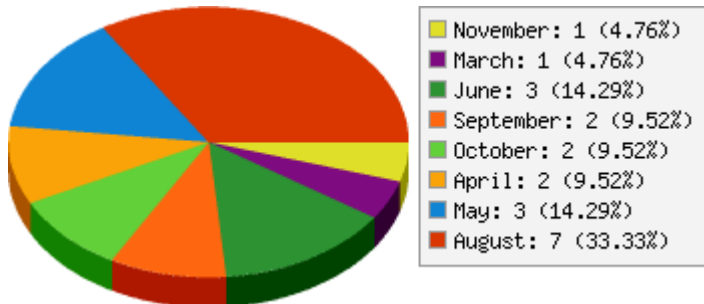
70% of the crashes took place on the roadway.



Bicycle Crash Data

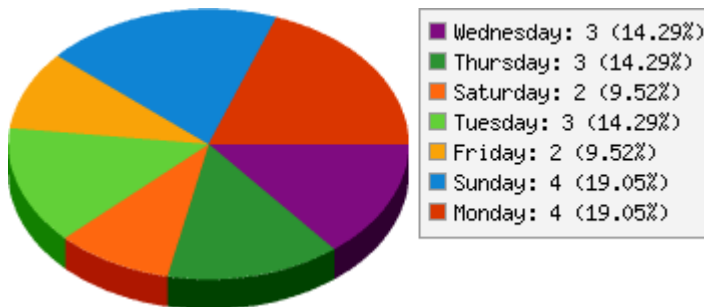
Month of Crash

There were no crashes during the months of December, January, February and March. This is likely due to fewer bicyclists during the winter months and that winter bicyclists are more experienced bicyclists.



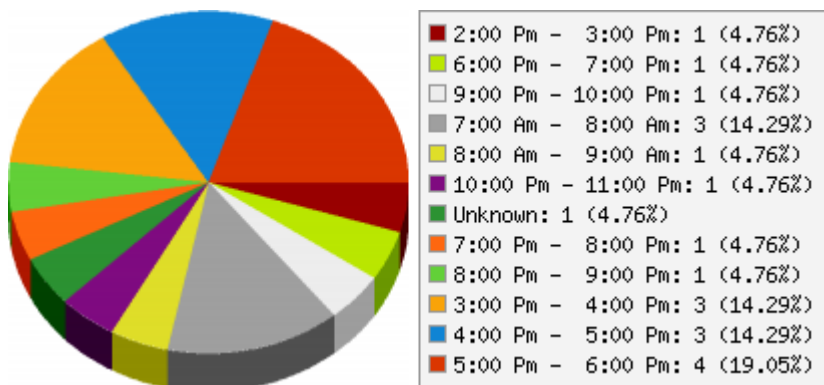
Day of Week

Crashes were evenly distributed throughout the week.



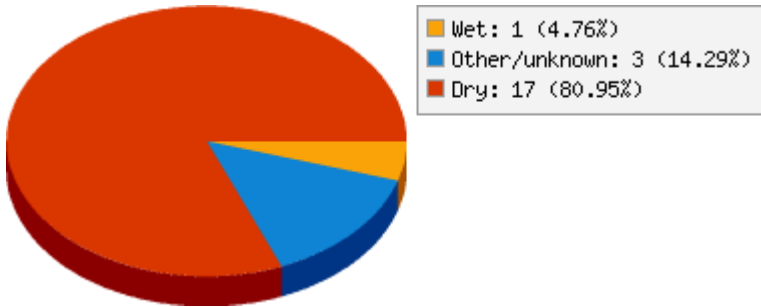
Time of Day

The crashes took place between 7:00 AM and 10 PM. 81% of the crashes took place in daylight, 5% at dusk and 10% took place when it was dark (9% was not coded).



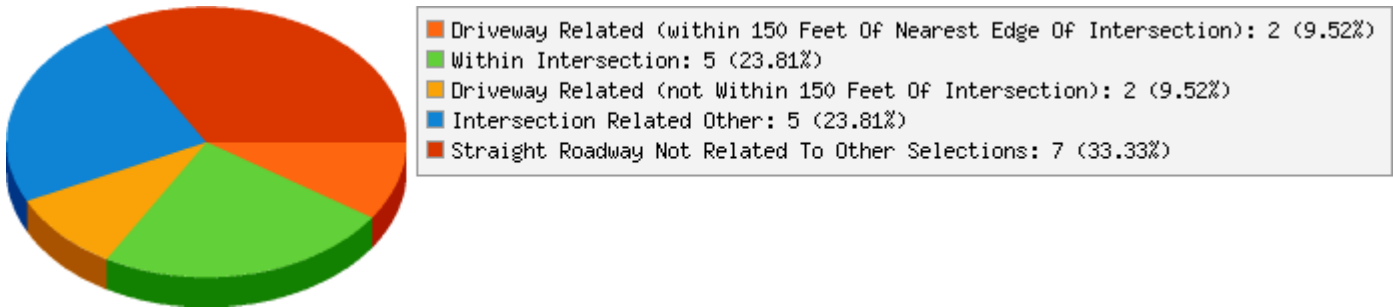
Road Conditions

The road was dry for 80% of the crashes.



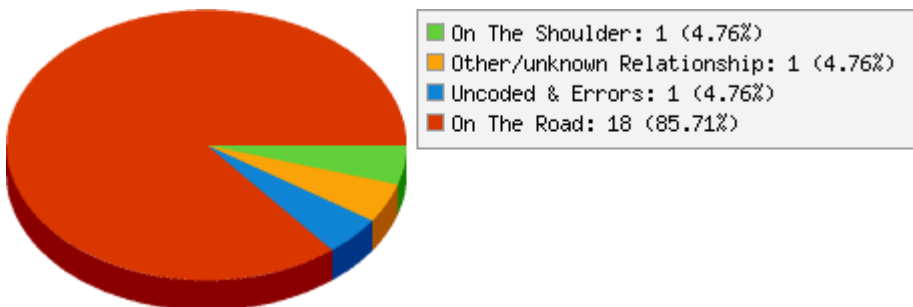
Area of Road at Crash

67% of the crashes were related to a driveway or intersection.

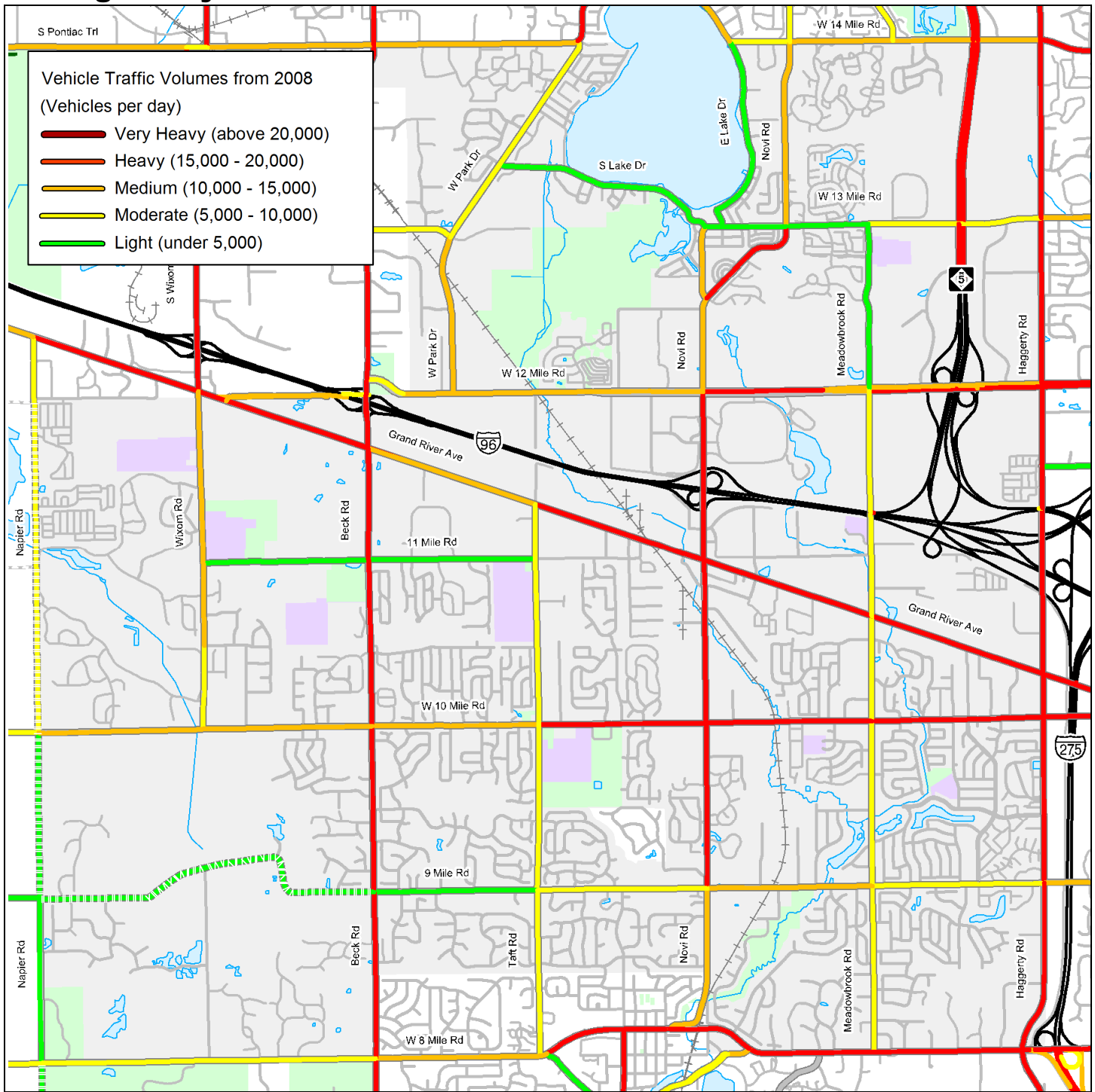


Relation to Roadway

86% of the crashes took place in the roadway.



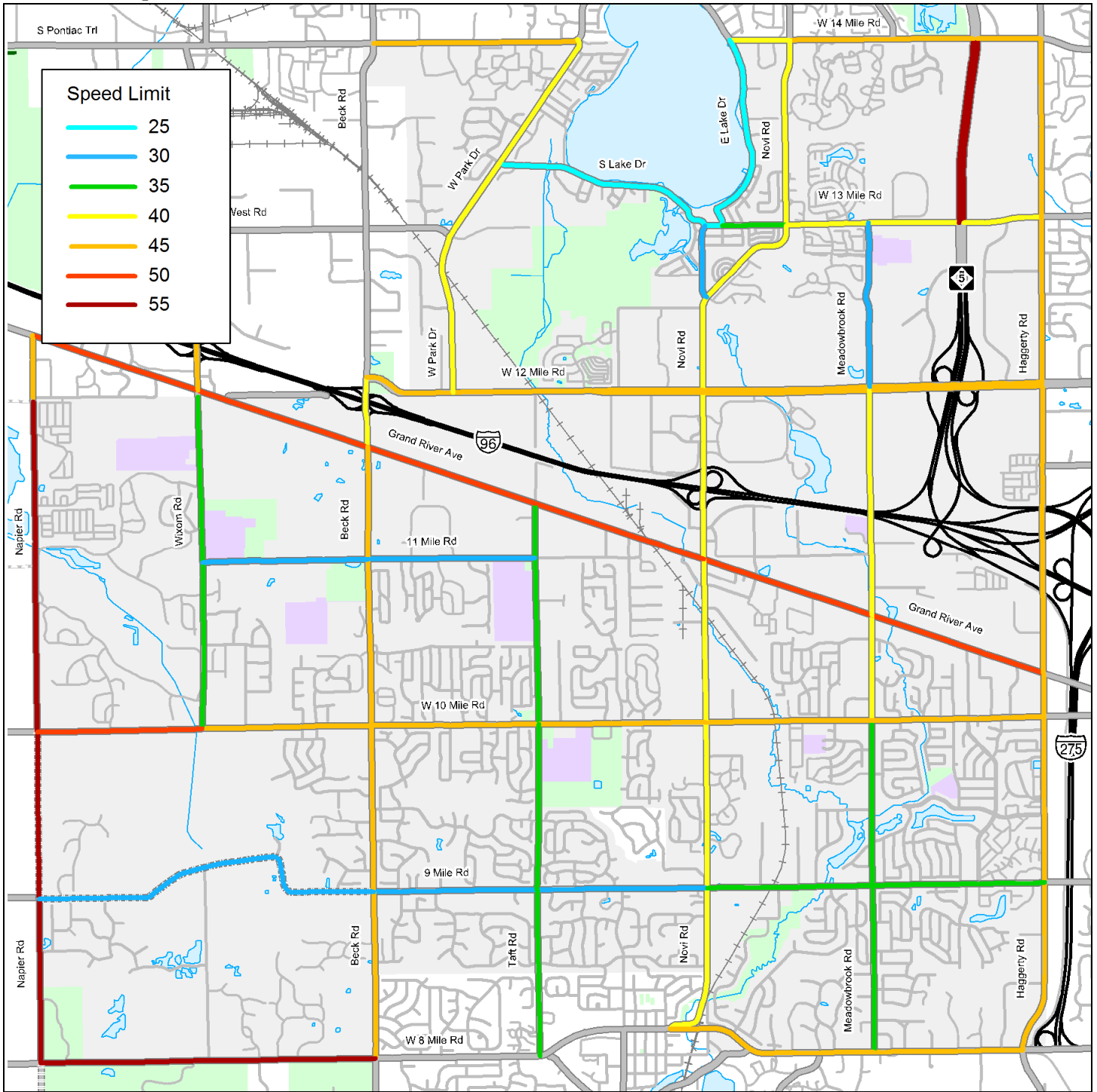
Average Daily Traffic Volumes



Annual Average Daily Traffic (AADT) is an estimate of traffic volumes. The volumes based on total two-way traffic over a 24-hour period and may vary by season or day of the week. The volumes are determined from a combination of actual traffic counts and modeling. The map shows 2009 data provided by SEMCOG.

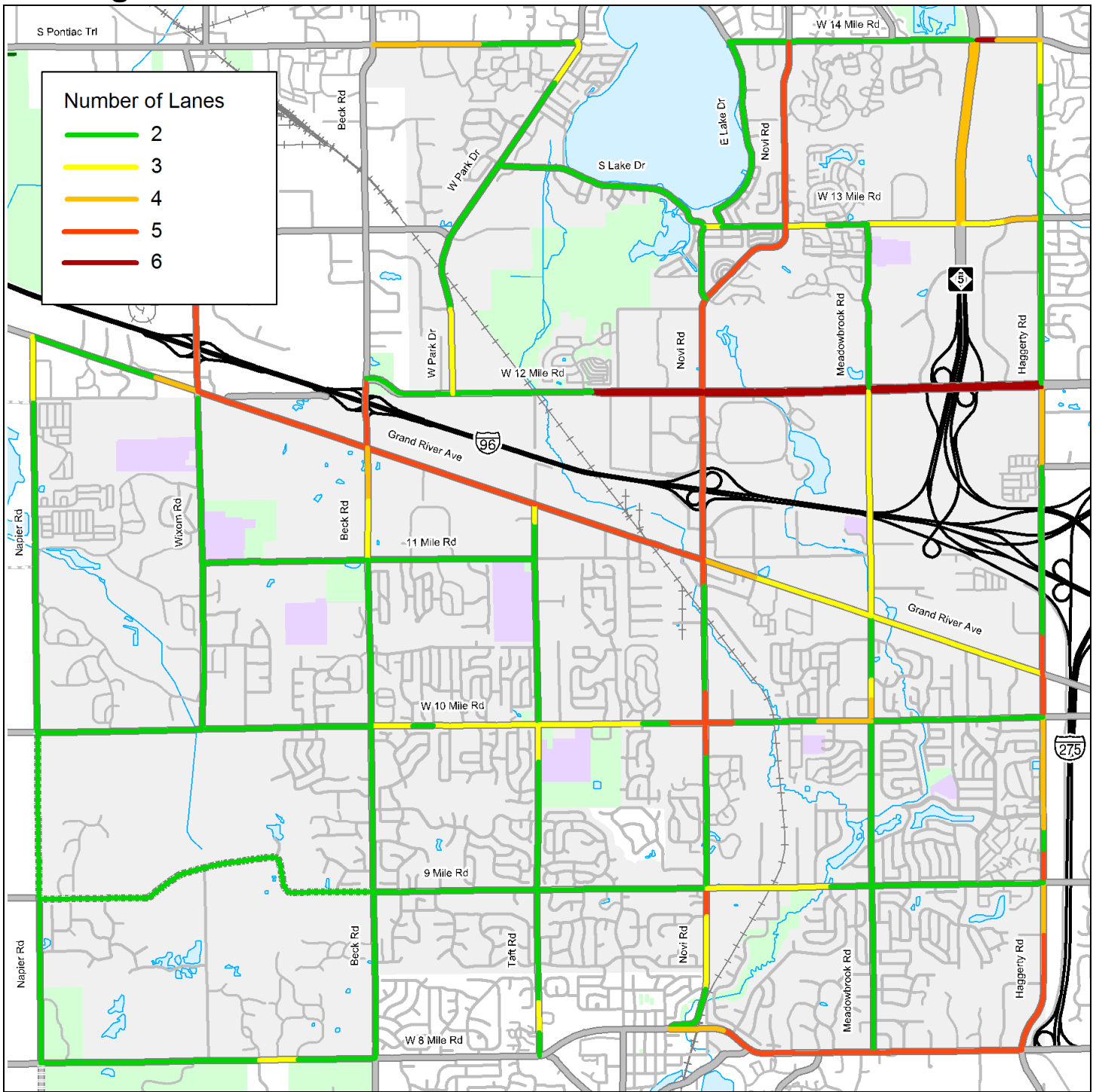
The gradations used generally reflect noticeable changes in the comfort level of bicyclists sharing a roadway with motorists, all other factors being equal.

Posted Speed Limit



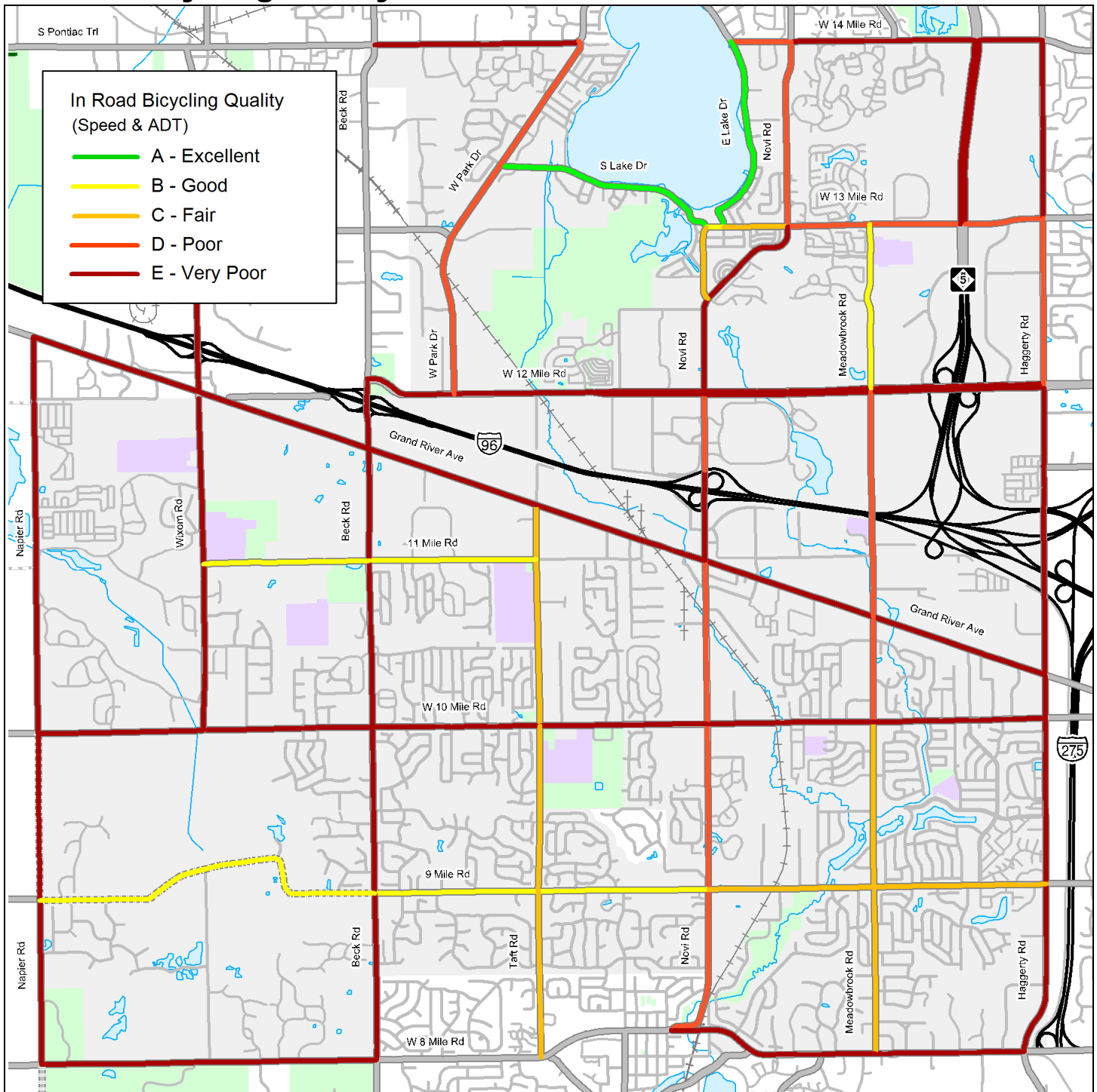
Roadways with high speeds can reduce the comfort level for bicycles and pedestrians traveling along a road corridor, and may even discourage bicycle and pedestrian use all together. Actual running speeds are likely higher than posted speeds.

Existing Road Cross Section



The majority of the roads in the city are two lane roads, although many of these roads have designated turn lanes and bypass lanes in places. The widest roads for the most part boarder the freeway corridors.

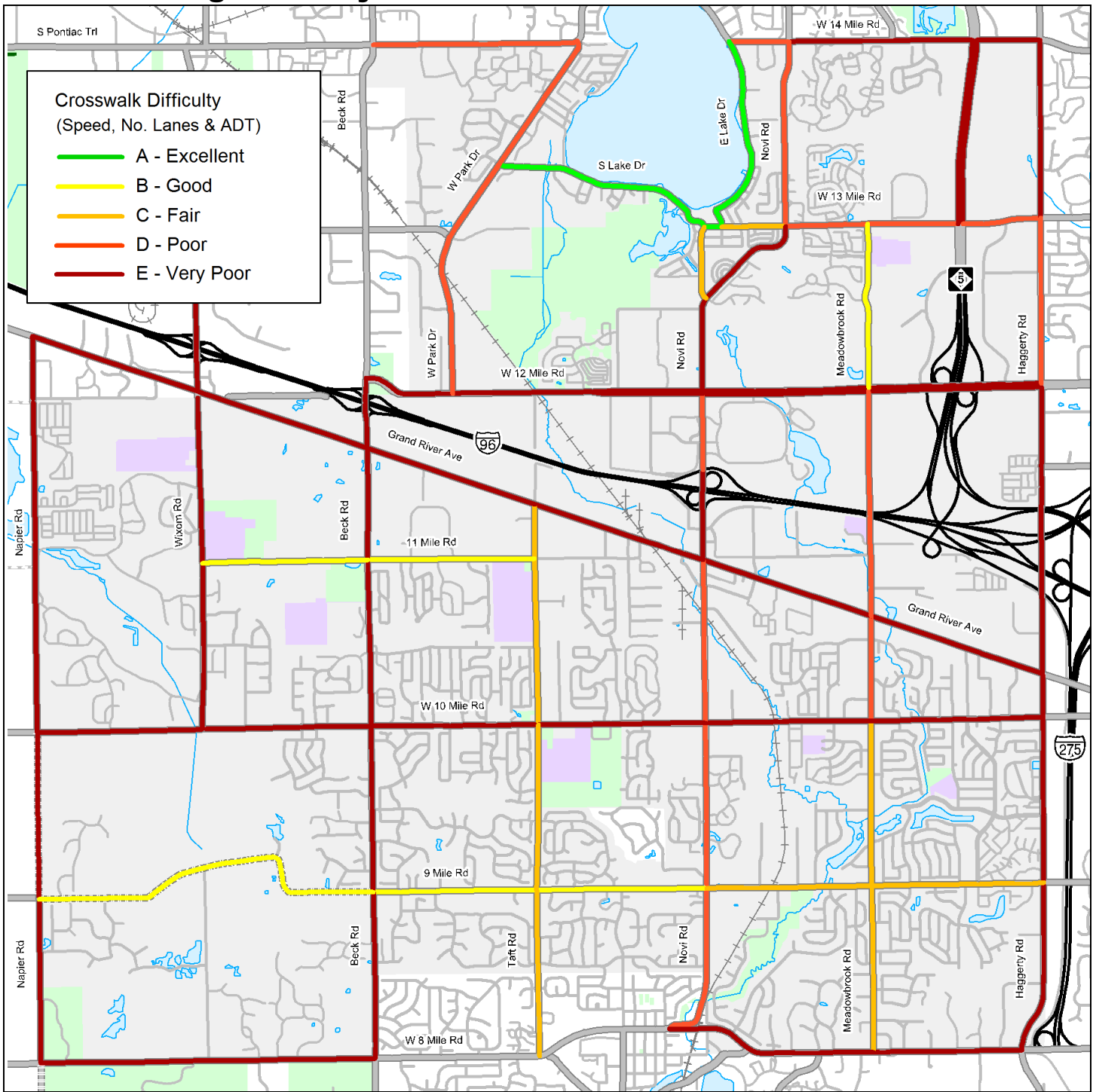
In-Road Bicycling Quality



In-road bicycling facilities improve the quality of the bicycling experience on busy roads. Quality of the in-road bike facilities is based on speed limit and daily traffic volumes. A road with an existing bike lane has a higher quality; however, there are few existing bike lanes in the city.

Without Bike Lane	With Bike Lane	ADT	Speed Limit
A	A	0 - 5,000	25
B	A	5,000 – 10,000	30
C	B	10,000 – 15,000	35
D	C	15,000 – 20,000	40
E	C	20,000 – 25,000	45
E	D	Over 25,000	50

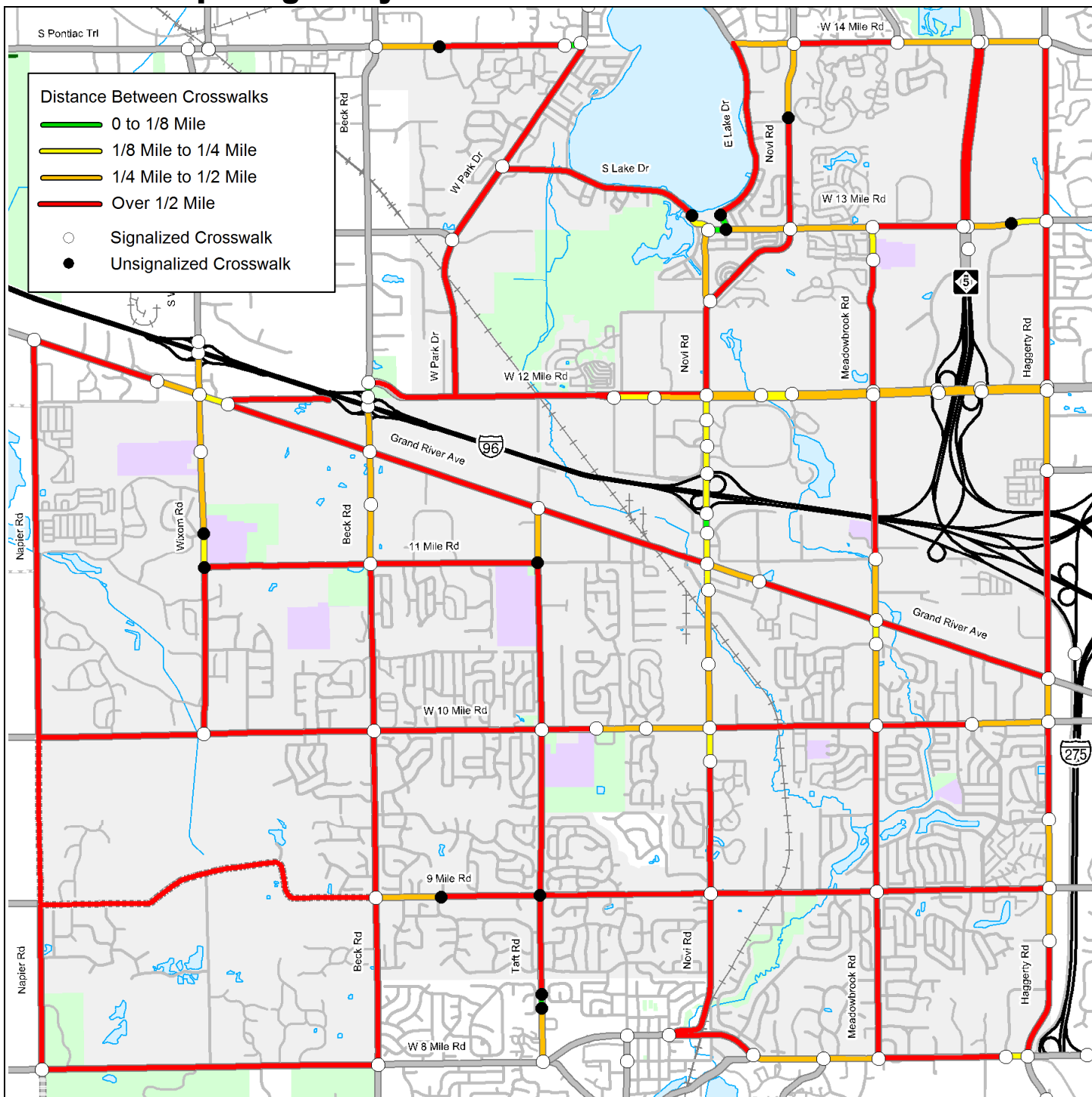
Road Crossing Difficulty



Road crossing difficulty is a measurement of how difficult a person would typically find it to cross a road at an unmarked mid-block crosswalk. It is based on the number of lanes, speed and average daily traffic.

Grade	Lanes	Speed	ADT
A	2	<30	<5,000
B	3	30	5,000-10,000
C	4	35	10,000-15,000
D	5	40	15,000-20,000
E	6	45+	20,000+

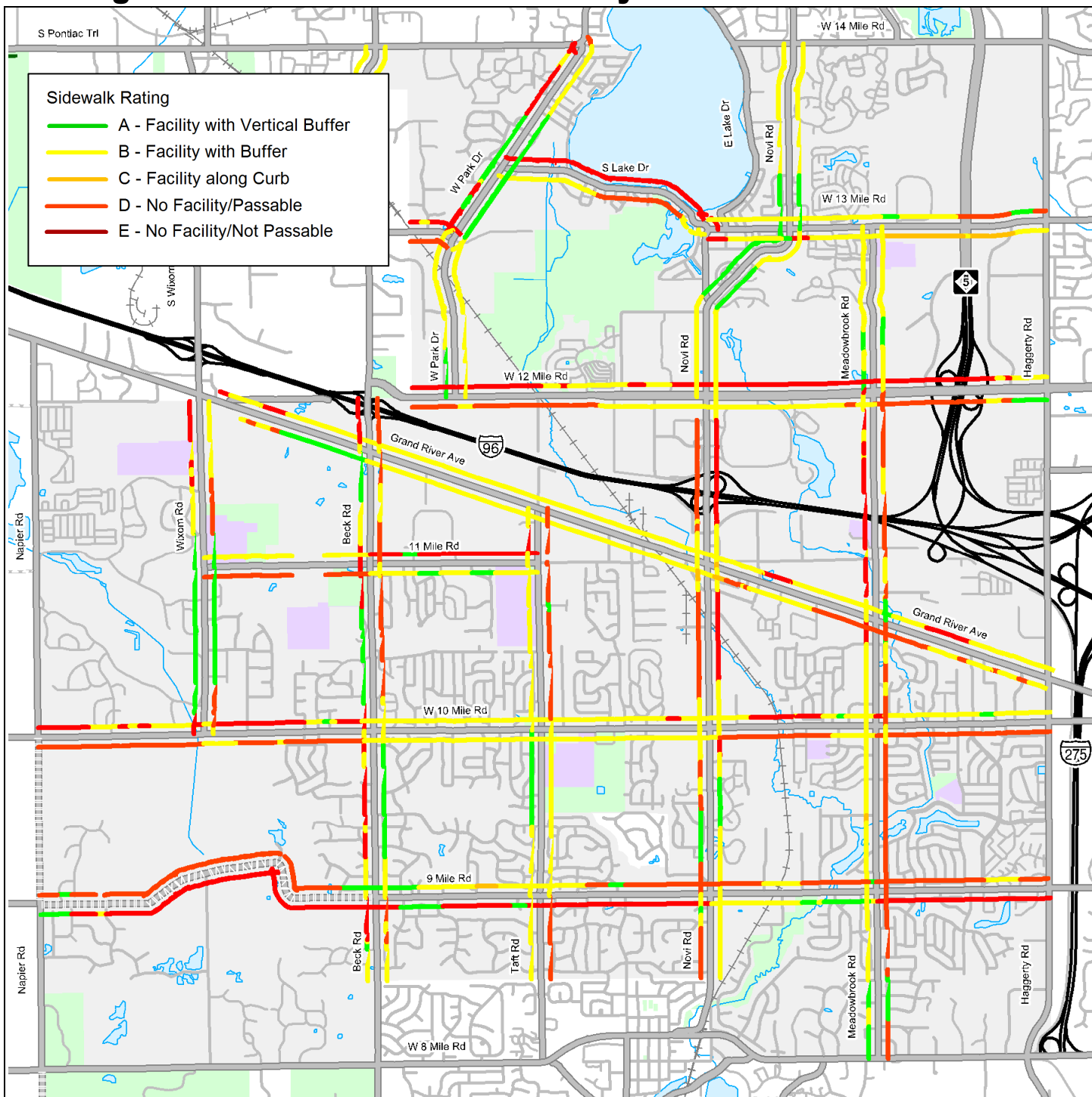
Crosswalk Spacing Analysis



Crosswalk spacing is a key factor in directness of travel. Most pedestrian trips for personal business (like walking to the store) are about 1/2 mile long. Where there is demand to cross the road and crosswalk spacing is over 1/8 of a mile apart, midblock crossings are likely to occur.

There are numerous stretches of roadway with over 1/2 mile between crosswalks.

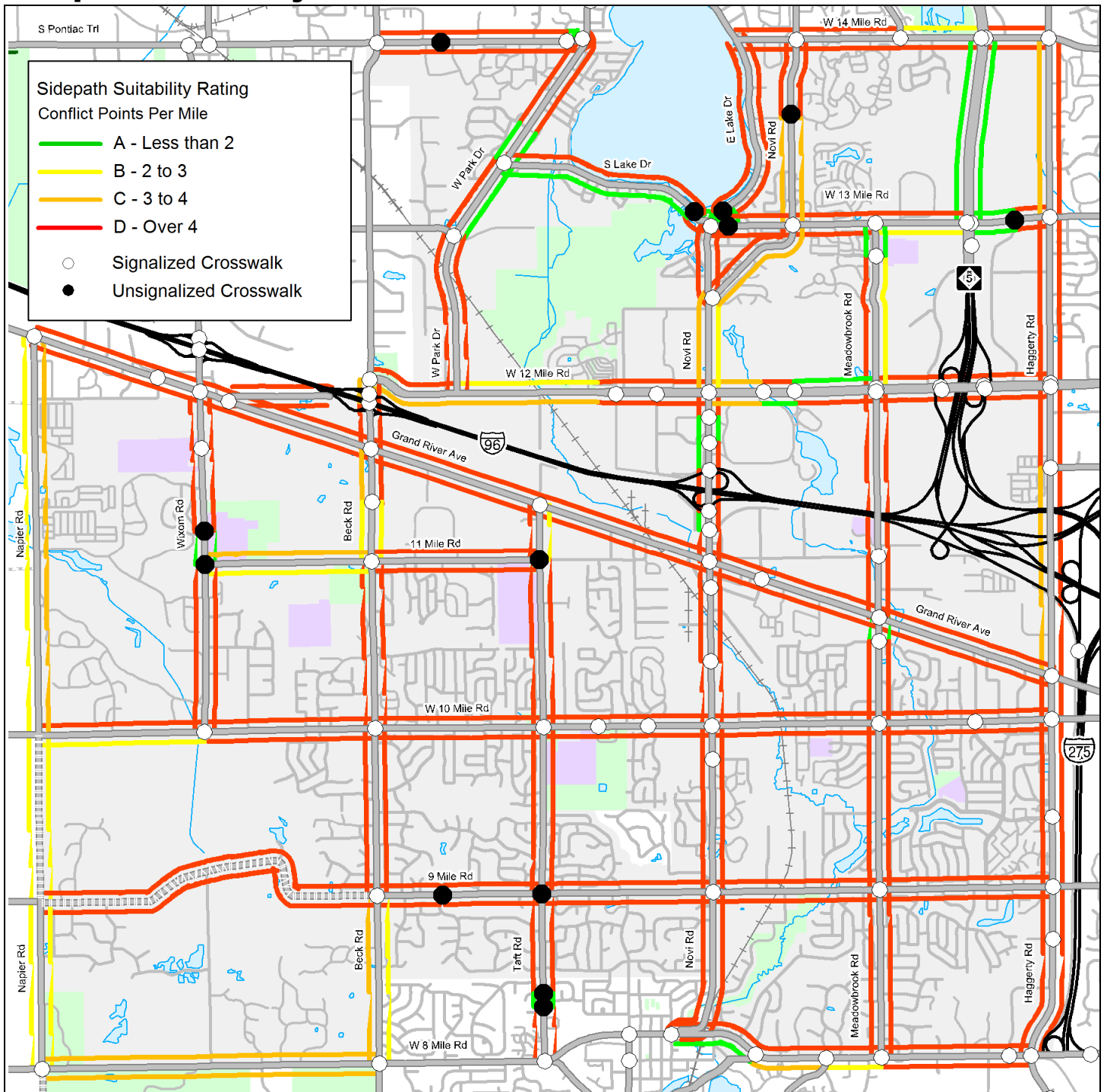
Existing Sidewalk Level of Service Analysis



In Progress – waiting on approval of database format.

A key factor to a pedestrians comfort on a sidewalk is the degree of separation from the roadway. Buffer (lawn extensions) and vertical elements such as trees and light poles increase the pedestrians comfort level.

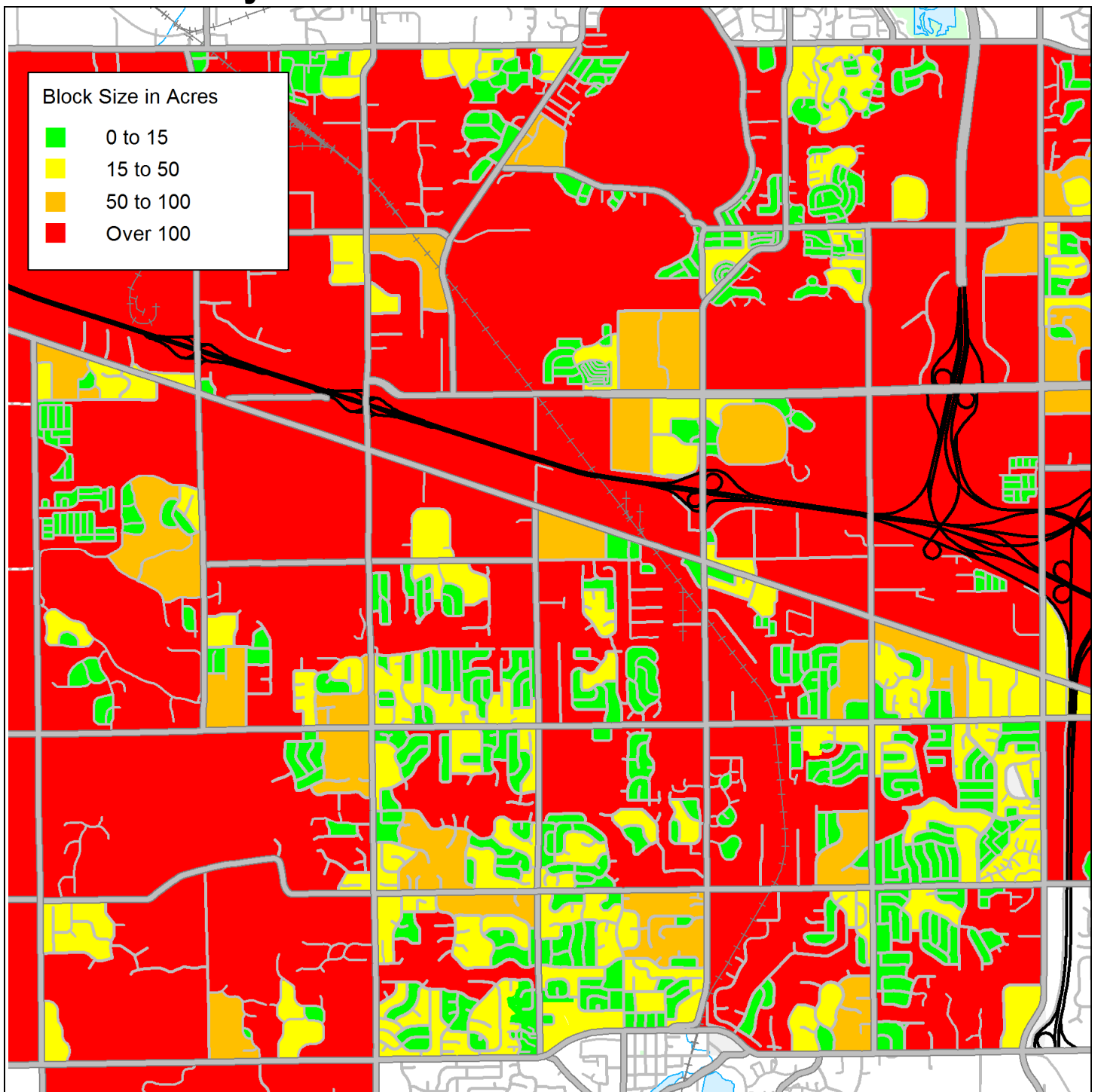
Sidepath Suitability Assessment



A conflict point is a local road or high traffic volume commercial driveway. For this analysis, ten minor/residential driveways were conserved equal to one conflict point.

The AASHTO Guide for the Development of Bicycle Facilities generally considers sidewalks undesirable as shared-use paths. This is due to the inherent conflicts between bicycles and motorists where a pathway intersects with driveways and roads. Suitable sidepath locations are uninterrupted by driveways and roadways for long distances and provide safe and convenient road crossing opportunities to destinations on the other side of the road

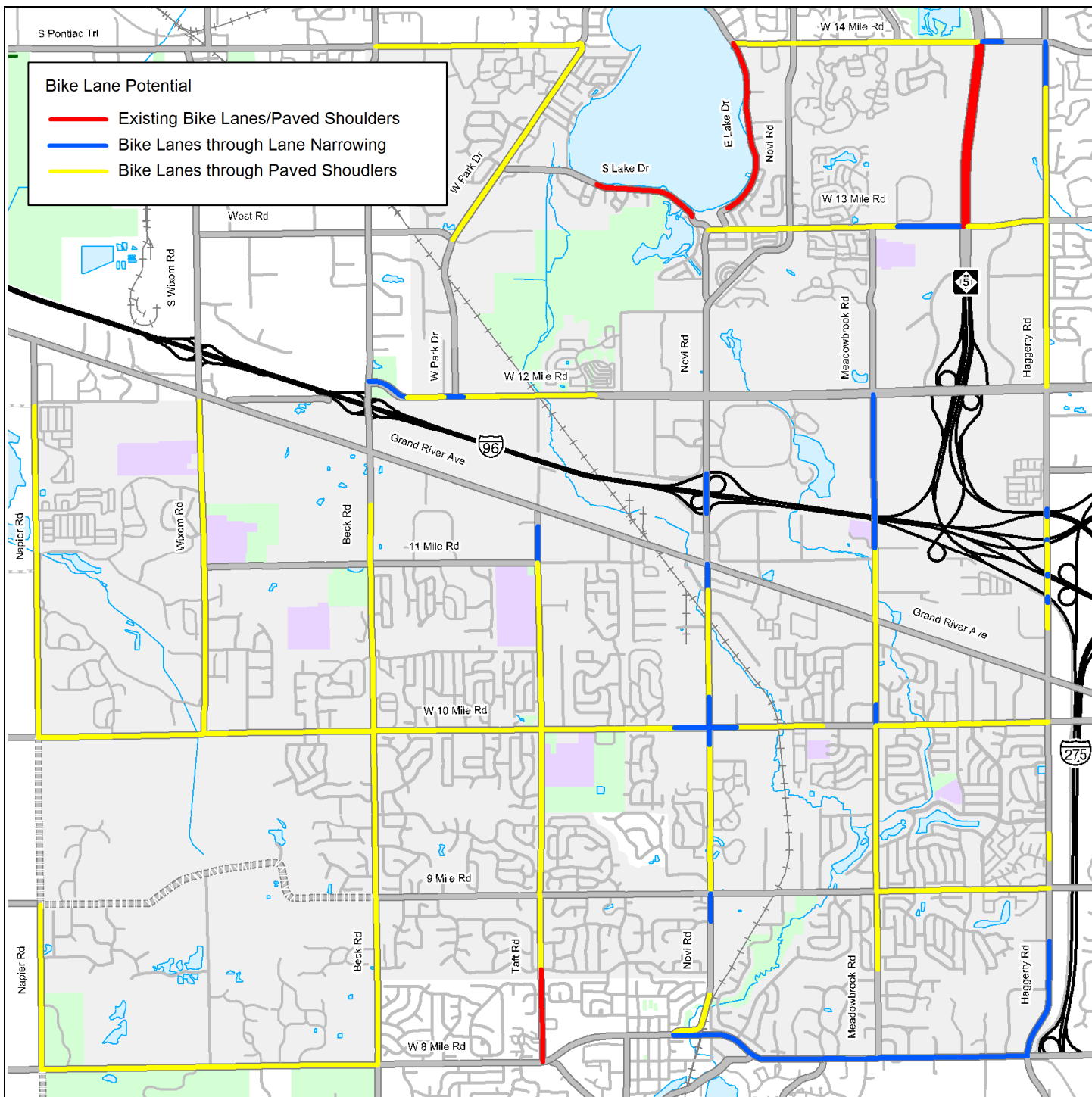
Block Size Analysis



Block size is an excellent measurement of directness of travel and a key indicator in the level of pedestrian activity. A block is defined as an area that a person cannot pass through. These areas usually do not have any sidewalks, roadways or bike paths allowing access between two points. One example is an expressway where you may have to go a mile or more out of your way just to get to the other side.

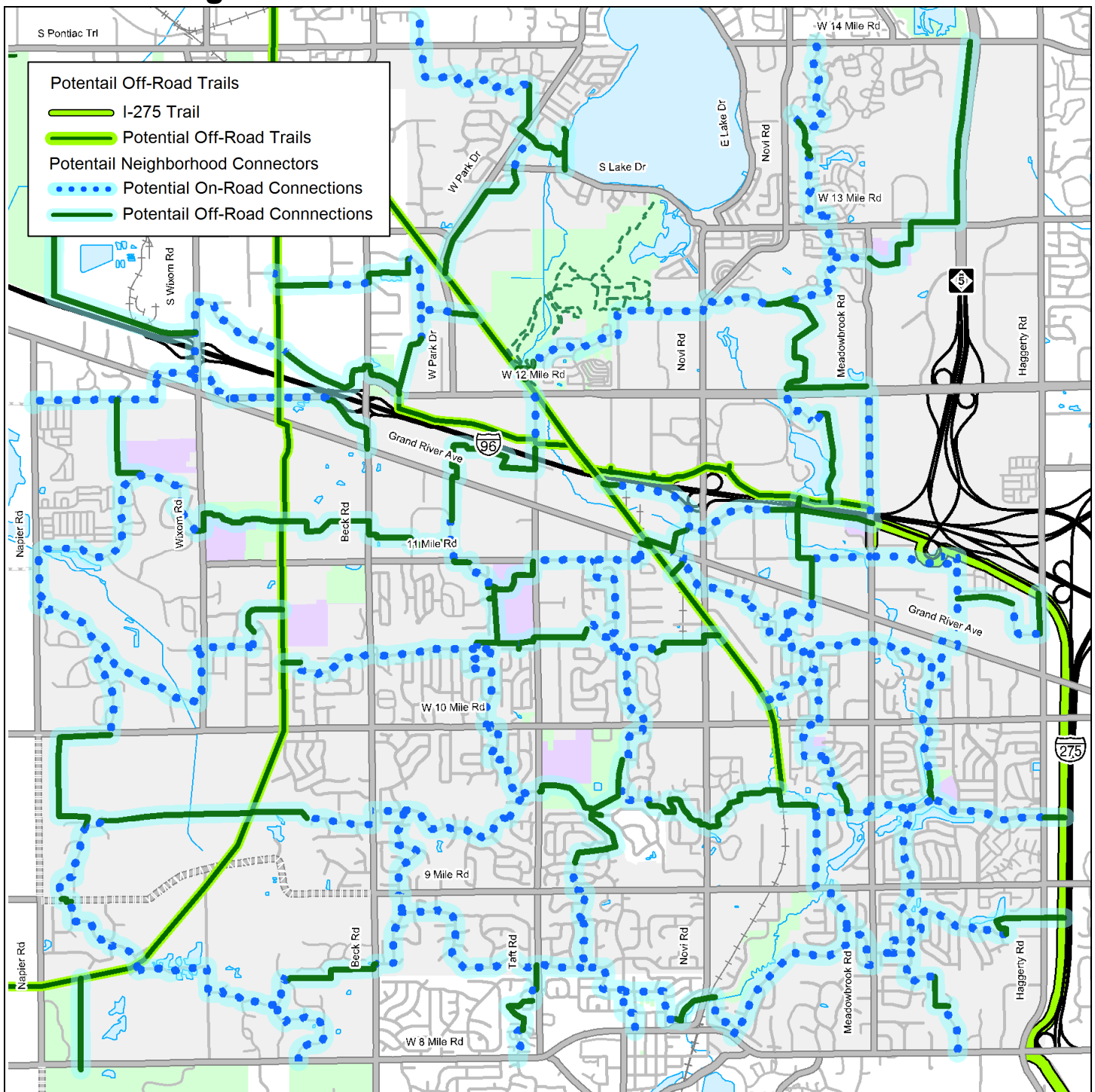
The majority of the city's landmass is in blocks over 100 acres in size. There are no large contiguous areas where the block size is 15 acres or less in size. Finding ways to create more direct pedestrian travel ways will be key to making Novi a more walkable community.

Potential Near-term Bike Lanes



There are very limited opportunities to add bike lanes via narrowing existing motor vehicle lanes. The most potential to add bike lanes is through paving the road shoulders. Paving road shoulders has many benefits to motorists and the longevity of the roadway beyond providing a facility for bicyclists and pedestrians where a sidewalk is not present.

Potential Neighborhood Connectors and Off-Road Trails



Nighborhood Connectors are non-motorized routes that utilize the local road system and off-road trails to provide links to key destinations while generally avoiding busy roadways. These routes appeal to bicyclists and pedestrians who are not comfortable walking or bicycling along busy roadways. The key to making these routes work is to provide safe ways to cross the primary roads.

The City of Novi's neighborhood roads in conjunction with some new off-road trails provide the opportunity for an outstanding network of neighborhood connectors that link the residents to parks, schools, regional trails and commercial centers.