

Dayton Transportation Plan 2016 Update

Prepared for:
City of Dayton, MN



12260 S. Diamond Lake Road
Dayton, MN 55327



Responsive partner.
Exceptional outcomes.

Prepared by:

WENCK Associates, Inc.
1800 Pioneer Creek Center
Maple Plain, MN 55359
Phone: 7963-479-4200
Fax: 763-479-4242

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2	2040 Transportation Plan Cost for Major Roadways – Option B
3	2040 Transportation Plan Cost for Major Roadways – Option C

1.0 Summary

The City of Dayton Transportation Plan was updated to account for changes in the Future Lane Use Plan, which includes land use impacts related to the current Brockton interchange location. The Transportation Plan and associated roadway cost information were last updated in 2009. Since that time, the Future Lane Use plan was updated to account for development needs and impacts of the future Brockton interchange.

Figure 1 shows the Future Land Use Plan. Figure 2 shows the planned location of the Brockton interchange.

Figure 1-1: Future Land Use Plan

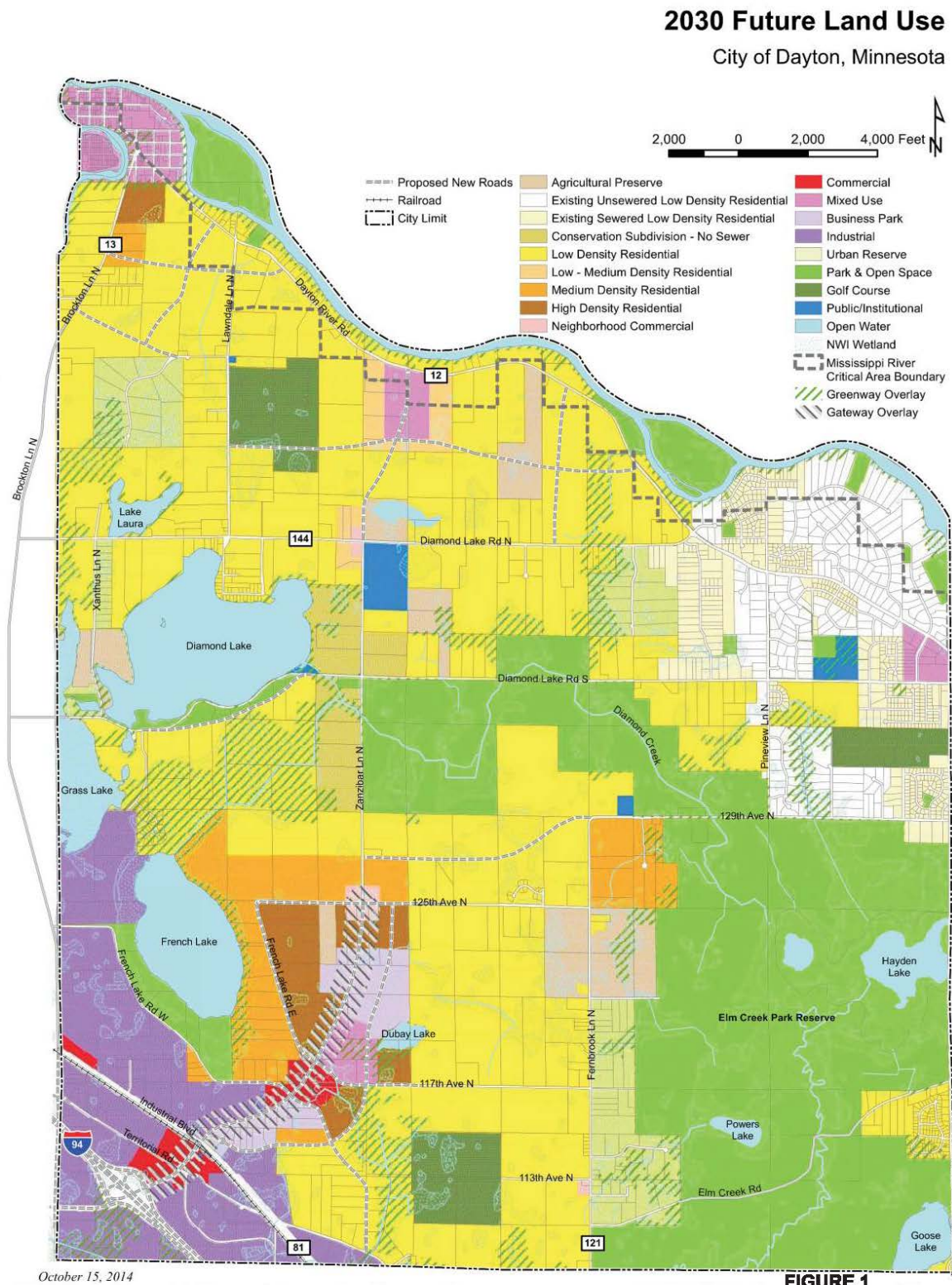
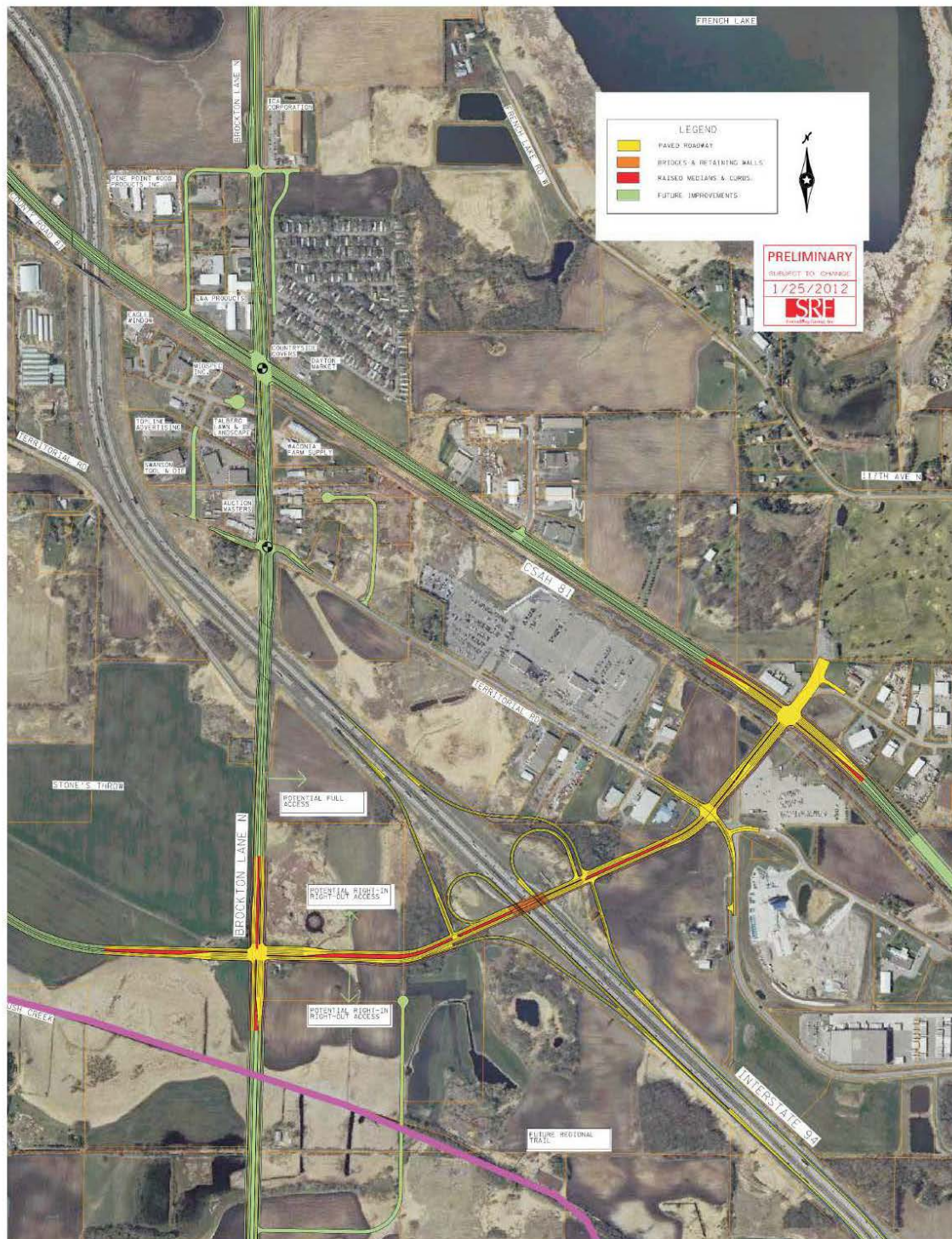


Figure 1-2: Interchange Location



SOURCE: SRF

FIGURE 2

2.0 Traffic Forecasts

Existing transportation planning information for the City of Dayton was gathered and reviewed to fully understand previous methods and results. The following documents were reviewed:

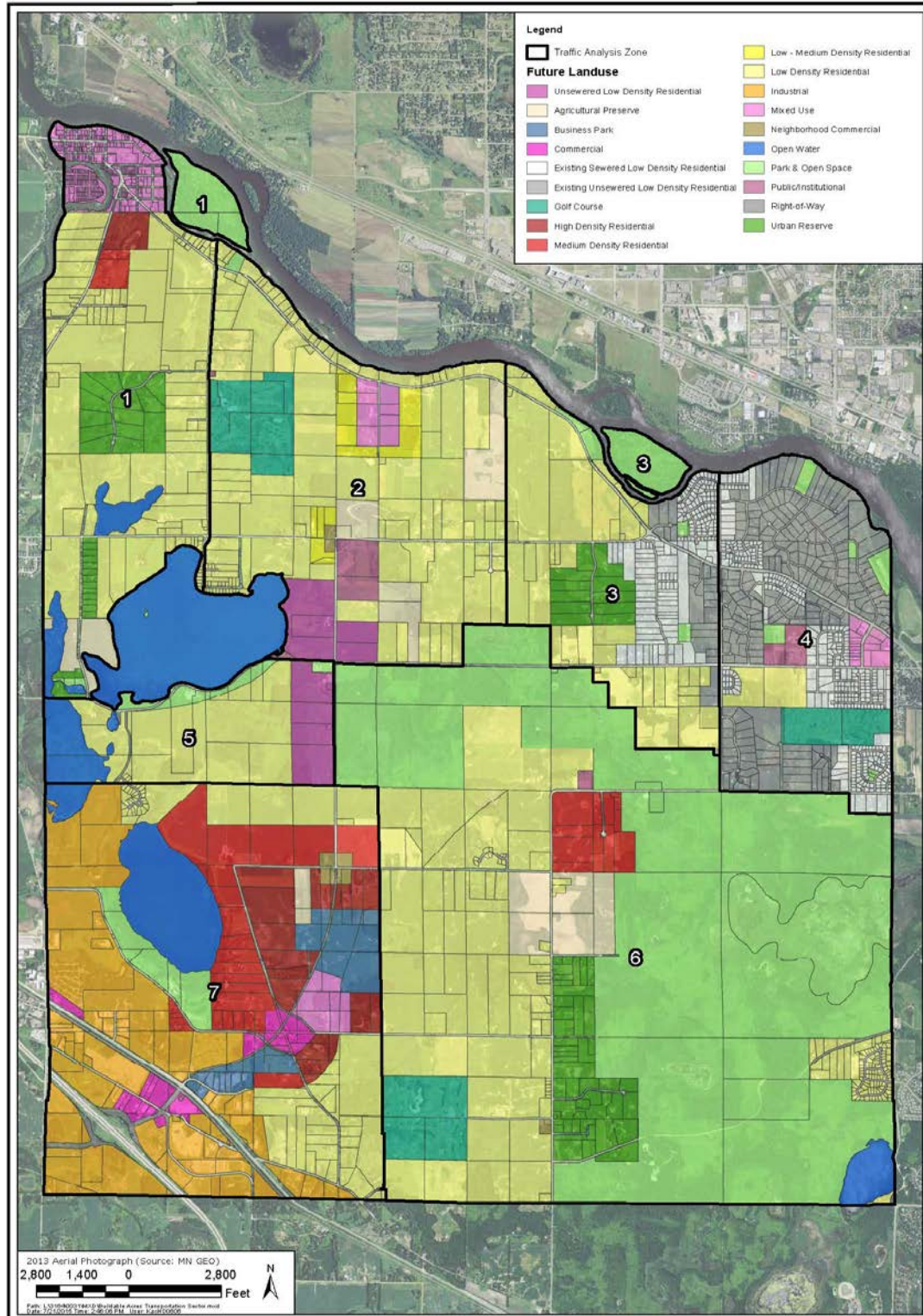
- ▲ 2009 Transportation Plan
- ▲ 2008 Comprehensive Plan
- ▲ Hennepin County Transportation Plan
- ▲ NW Hennepin County I-94 Study
- ▲ Current planned roadway improvements
- ▲ Development studies (EAW, AUAR, etc.)
- ▲ Other studies with a transportation component

Current land use information and the Dayton Future Land Use Plan updated in the summer of 2014 were used to determine future traffic volume forecasts for major roadways within the city. The Future Land Use Plan provides a framework for full build-out of the city, including the location and density of all future uses.

For traffic forecasting purposes, the city was divided into the seven Traffic Analysis Zones (TAZ) shown in Figure 3. Through the use of existing GIS information, the amount of buildable area for each land use type was determined in each TAZ. Trip generation estimates were developed for each TAZ using data presented in the Institute of Transportation Engineers' *Trip Generation*, Ninth Edition.

Using existing traffic and turn movement volume information, trip distribution percentages were developed for each TAZ. The gross trip generation includes 15% to 25% of trips that occur within each TAZ. External trips were assigned to the surrounding roadway system using the trip distribution percentages, resulting in daily traffic volumes generated by all future lane uses.

Figure 2-1: Buildable Land Area and Traffic Analysis Zones



3.0 Future Roadway System

Based on the resultant trip distribution and traffic volumes, an initial roadway system was developed. This roadway system accounts for the type and location of roadways needed to accommodate the forecasted traffic volumes. The necessary roadway capacity and functional classification were identified for the forecasted volumes. Right-of-way needs and roadway cross-sections have been identified.

Year 2040 major roadway options and traffic forecasts are shown in Figures 4 through 9. Option A was identified as most feasible since does not involve routing a roadway through Elm Creek Park reserve. Options B and C are still feasible but will require further discussions with Three Rivers Park District staff.

Figure 3-1: Year 2040 Major Roadways Option A

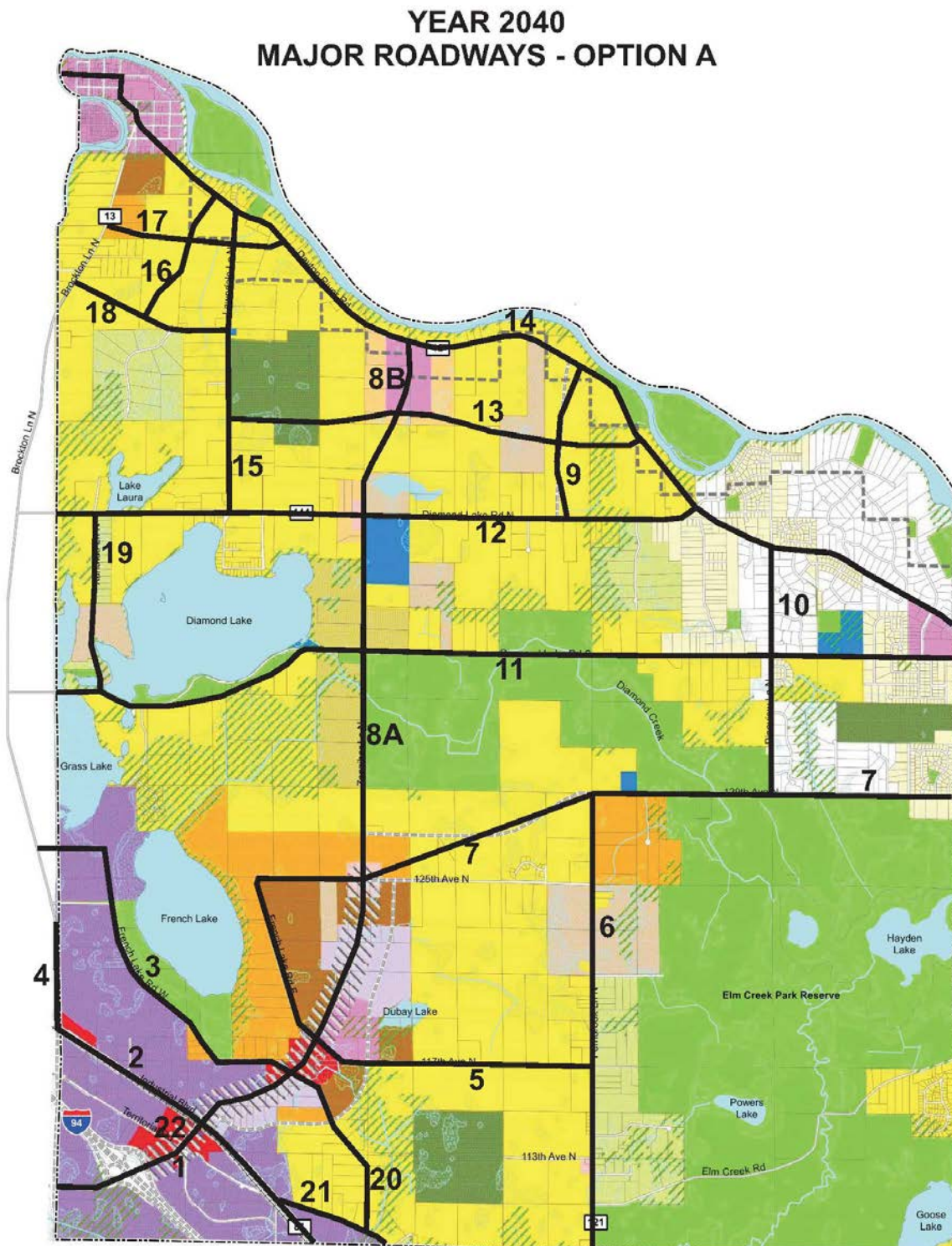


Figure 3-2: Year 2040 Traffic Volumes Option A

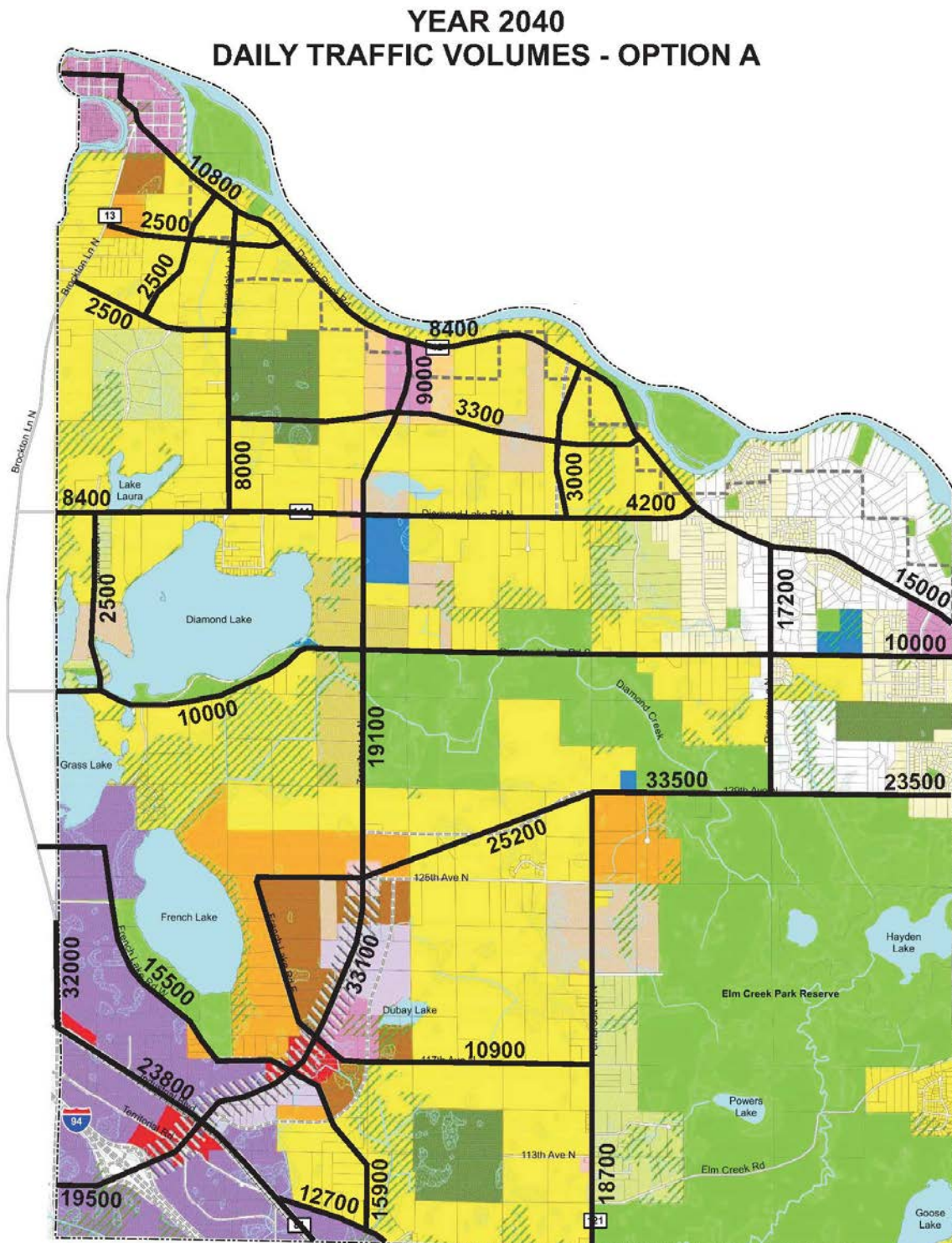


Figure 3-3: Year 2040 Major Roadways Option B

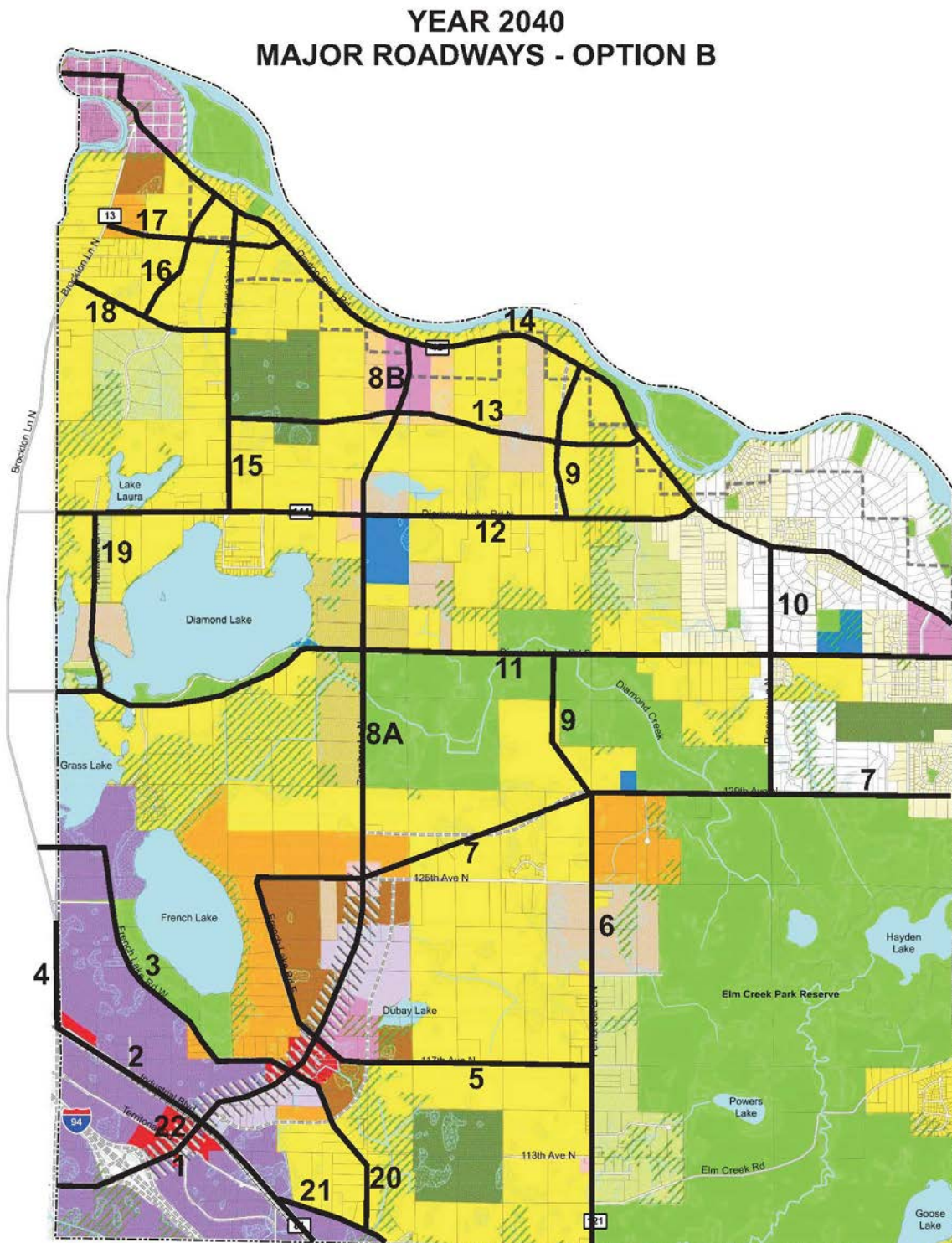


Figure 3-4: Year 2040 Traffic Volumes Option B

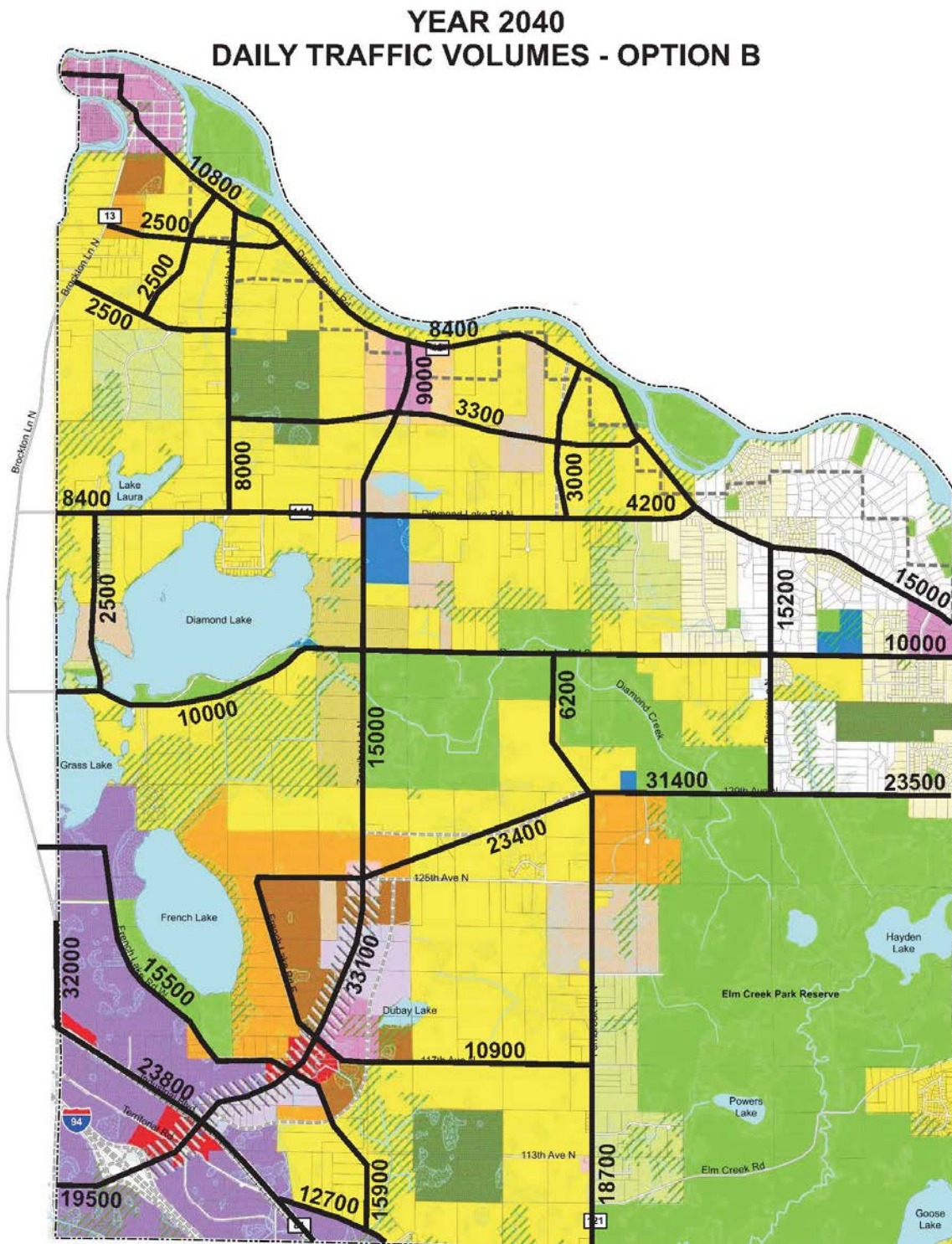


Figure 3-5: Year 2040 Major Roadways Option C

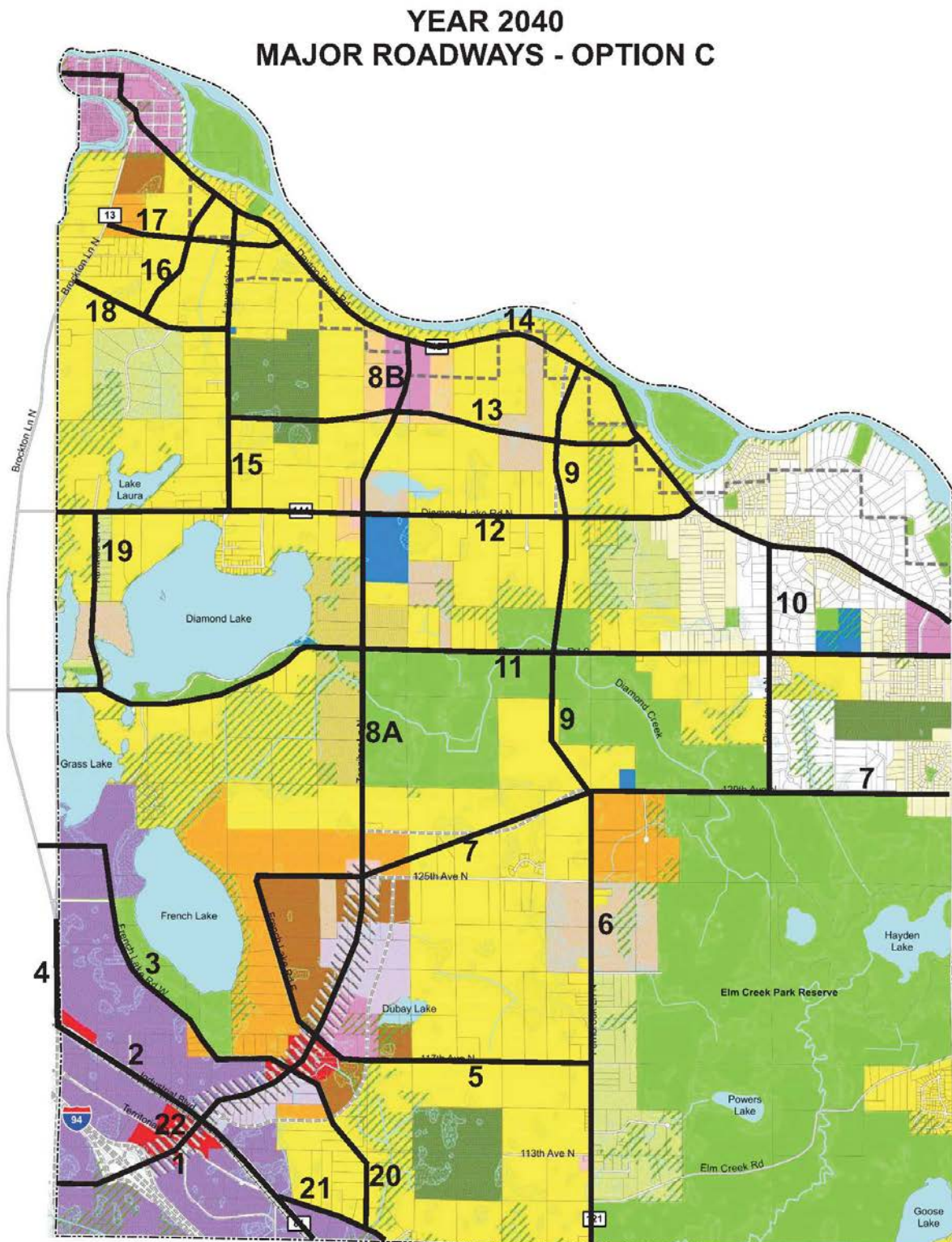
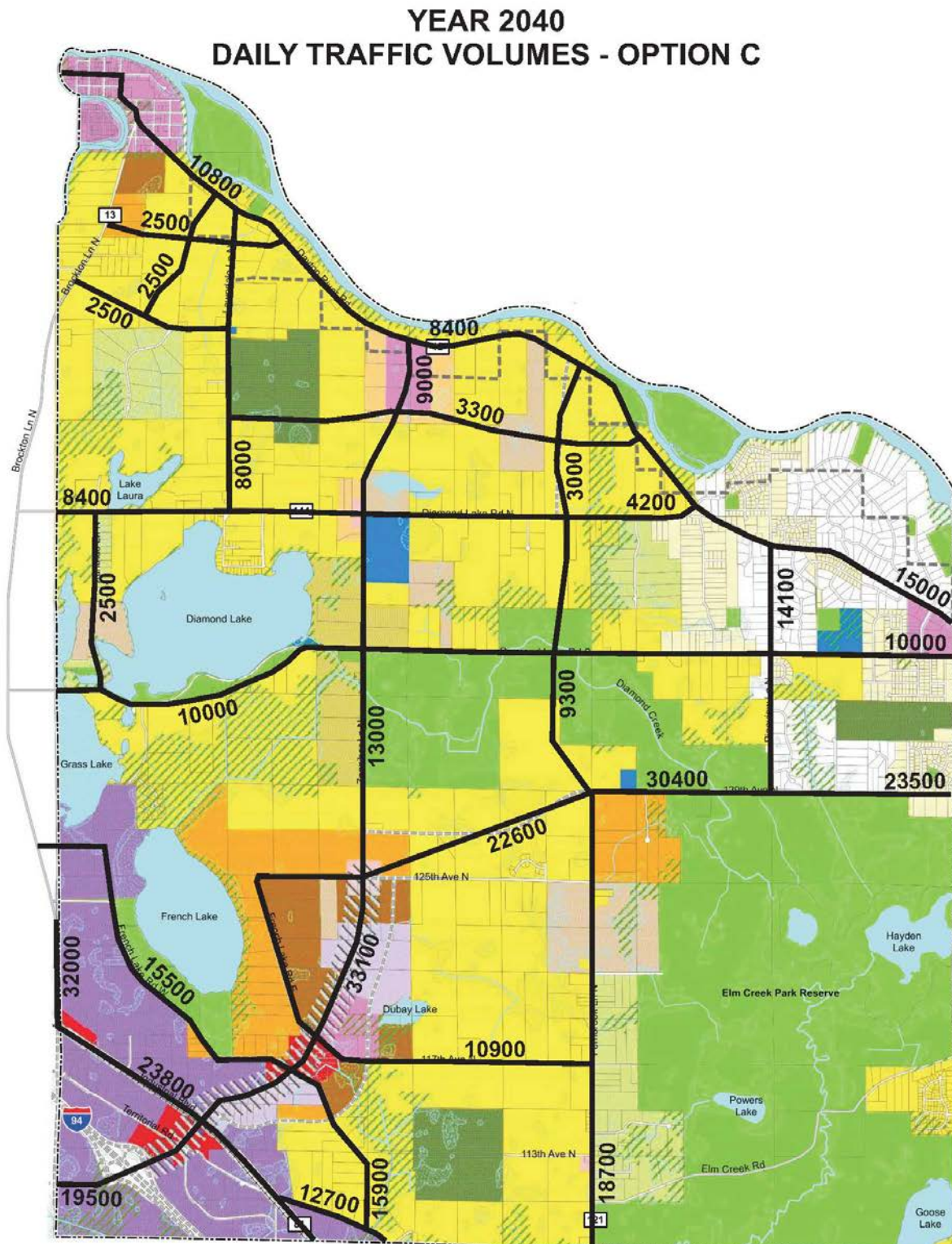


Figure 3-6: Year 2040 Traffic Volumes Option C



4.0 Transportation Plan Cost Estimates and Fees

The 2040 traffic volume forecasts were used to determine the recommended number of lanes and right-of-way for each roadway. The additional right-of-way needed over existing conditions and anticipated construction costs were combined to determine the total cost estimate for each roadway segment. The resultant cost estimates are shown in Tables 1, 2, and 3.

4.1 TRUNK TRANSPORTATION FEE

The updated costs discussed above, allow for a calculation of trunk transportation fees based on the remaining developable acres within the City.

Summary of current and proposed fees:

Current Rates		Proposed Rates		
<u>Non-Residential</u>	<u>Residential</u>	<u>Non-Residential</u>	<u>Residential</u>	<u>Increase</u>
\$11,190/acre	\$2,500/unit	\$14,400	\$3,217	~29%

The proposed fees are based on collecting 50% of the needed costs for transportation improvements, with remaining costs to be funding through other sources, such as State Aid or grants.

Tables

- 1 2040 Transportation Plan Cost for Major Roadways – Option A
- 2 2040 Transportation Plan Cost for Major Roadways – Option B
- 3 2040 Transportation Plan Cost for Major Roadways – Option C

Table 3
2040 Dayton Transportation Plan Cost Estimate
Major Roadways - Option C

[illegible]



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Toll Free: 800-472-2232

Email: wenckmp@wenck.com

Web: wenck.com

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