

## Transportation System

### Growth Forecasts and Transportation Planning

Transportation planning includes forecasting the impact of growth on transportation systems. The Metropolitan Council does this by using a regional travel demand model, which is a representation of reality based on assumptions about future growth, future transportation system improvements, transportation costs, and travel behavior patterns. The region is broken into geographic units of analysis called transportation analysis zones (TAZs). Ordinarily, communities are required to consider the distribution of forecasted growth by TAZ. This is important because growth in different parts of a community will affect roadways differently. However, because of its generally dispersed rural nature, the regional travel demand model only includes one TAZ for Scandia. Met Council growth forecasts for the entire City of Scandia are indicated in Table 26 - *Scandia growth forecasts*.

Washington County is also conducting travel demand modeling of its own. Map 12 - *Household Change by TAZ* (on page 45), shows the distribution of household growth assumed for each TAZ by the Washington County travel demand model. Because of the way it is constructing the model, it provides an opportunity to look at Scandia's conditions more closely. Map 12 - *Household Change by TAZ*, illustrates that the model includes seven TAZs for Scandia, including one that encompasses the Village Center. By anticipating where growth might occur, it provides transportation planners an opportunity to look at how growth will affect particular segments of roadways differently.

**Table 26 - Scandia growth forecasts**

Population			
2000	2010	2020	2030
3,692	4,370	5,000	5,400
Households			
2000	2010	2020	2030
1,294	1,590	1,890	2,100
Total Employment			
2000	2010	2020	2030
272	420	520	610
Retail Employment			
2000	2010	2020	2030
70	70	80	80
Non-Retail Employment			
2000	2010	2020	2030
202	350	440	530

Source: Metropolitan Council;  
Washington County

The Washington County base model, the results of which are shown in Map 24 – *Forecasted Traffic Volumes for Washington County: 2030*, incorporates future roadway improvements throughout the county based on anticipated funding availability. Washington County has also conducted transportation modeling for five other scenarios, two of which had implications for Scandia. One scenario looked at the impact of not replacing the Stillwater Bridge. According to the model, this would result in greater traffic volumes on TH 95/St. Croix Trail, as increasing demand to cross the river seeks out alternate routes. Under this scenario, the segment of TH 95 just south of Chisago County is forecasted to have 11,100 vehicles per day in 2030, as opposed to 8,200 under base model assumptions. Another scenario involved looking at the impacts of improvements to Highway 36, Interstate 94 and Interstate 494. Traffic forecasts in Scandia also increase under this scenario, but are less pronounced (9,200 vehicles on the segment of TH 95 mentioned above). The reasons are less obvious, but improvements to principal arterials will involve shifting of traffic toward this network of facilities as they become more attractive.

## Traffic Forecasts and Roadway Capacity

The Met Council requires community comprehensive plans to include existing and future traffic forecasts on Principal Arterials and A-Minor Arterials. Rural communities can apply trend growth factors to traffic forecasts, but Washington County's travel demand model includes forecasts for these roadways as well as other significant roadways. Results from the Washington County transportation demand model are similar to historical annual traffic volume growth rates, which generally range from 2 to 4 percent for Scandia.

The capacity of roadways relates primarily to the number of travel lanes and posted speed, but other factors affect flow as well as efficiency and safety. These include the number of potential conflict points, including intersections and driveways. Level of Service, or LOS, is a term used to grade how freely traffic flows on a roadway during peak periods. These grades range from LOS A (unobstructed, freely flowing conditions) to LOS F (long delays and heavy congestion). LOS D (heavy, but stable flow) is the effective capacity of the roadway. For planning purposes, Mn/DOT considers roadways with LOS D as an acceptable level of traffic, but roadways with LOS E as those that will eventually require improvements in terms of safety, efficiency and capacity (e.g., greater limitations on intersections/driveways, addition of turning/passing lane, or addition of travel lane, etc.).

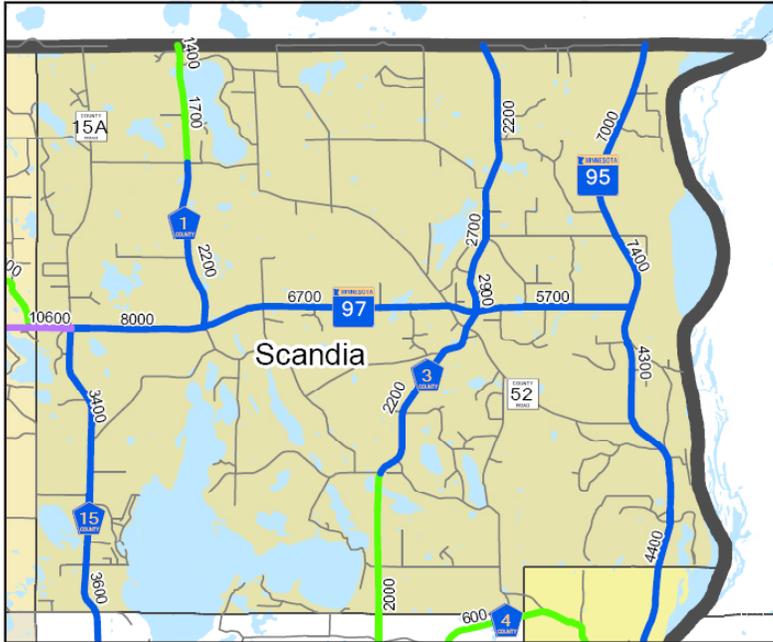
Generally speaking, two-lane minor arterial roadways have an effective daily capacity (LOS D) of 10,300 vehicles per day<sup>3</sup>. The addition of a continuous center turn lane (3-lane roadway), which improves traffic flow, provides a daily capacity of 14,800. As indicated in Map 21 - *Existing Traffic Volumes for Scandia*, only a few segments of TH 97/ Scandia Trail in the city are approaching these capacity limitations. The addition of turning lanes and passing lane segments has improved their effective capacity and functioning. Traffic volumes increase on Scandia Trail heading west toward Forest Lake. As indicated in Map 22 - *Forecasted Traffic Volumes*, the highest forecasted volume for 2030 is 15,100 just west of CSAH 15/ Manning Trail (currently 10,600). While Mn/DOT identifies a need for eventual expansion of this roadway as part of the Transportation System Plan, it is not a priority corridor and it is part of a long list of unfunded needs through 2030.

Map 23 - *Existing Traffic Volume for Washington County* and Map 24 - *Forecasted Traffic Volume for Washington County 2030*, allow comparison of Scandia's traffic volumes to those of surrounding communities. While a few communities have lower traffic volumes, many have much more traffic than Scandia.

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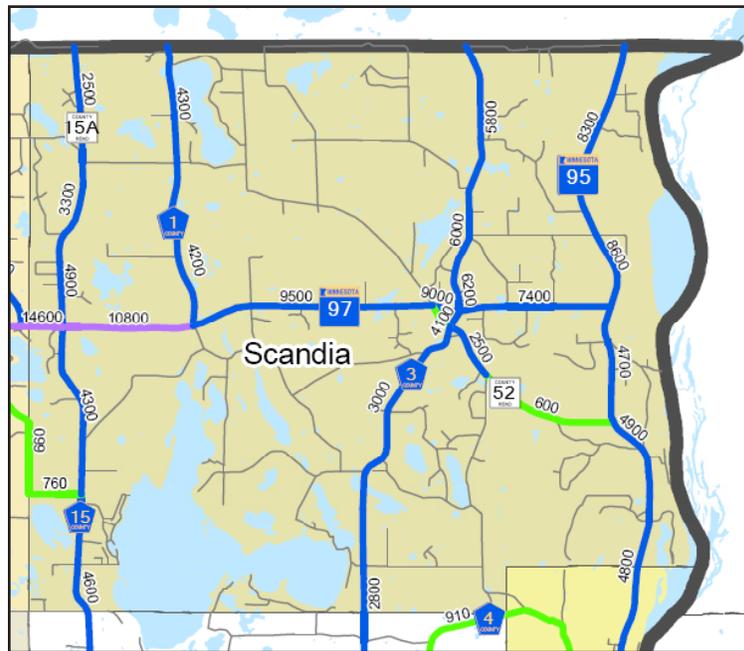
<sup>3</sup>TH 97 and Surrounding Area Study, October 2002.

Map 21 - Existing Traffic Volumes for Scandia



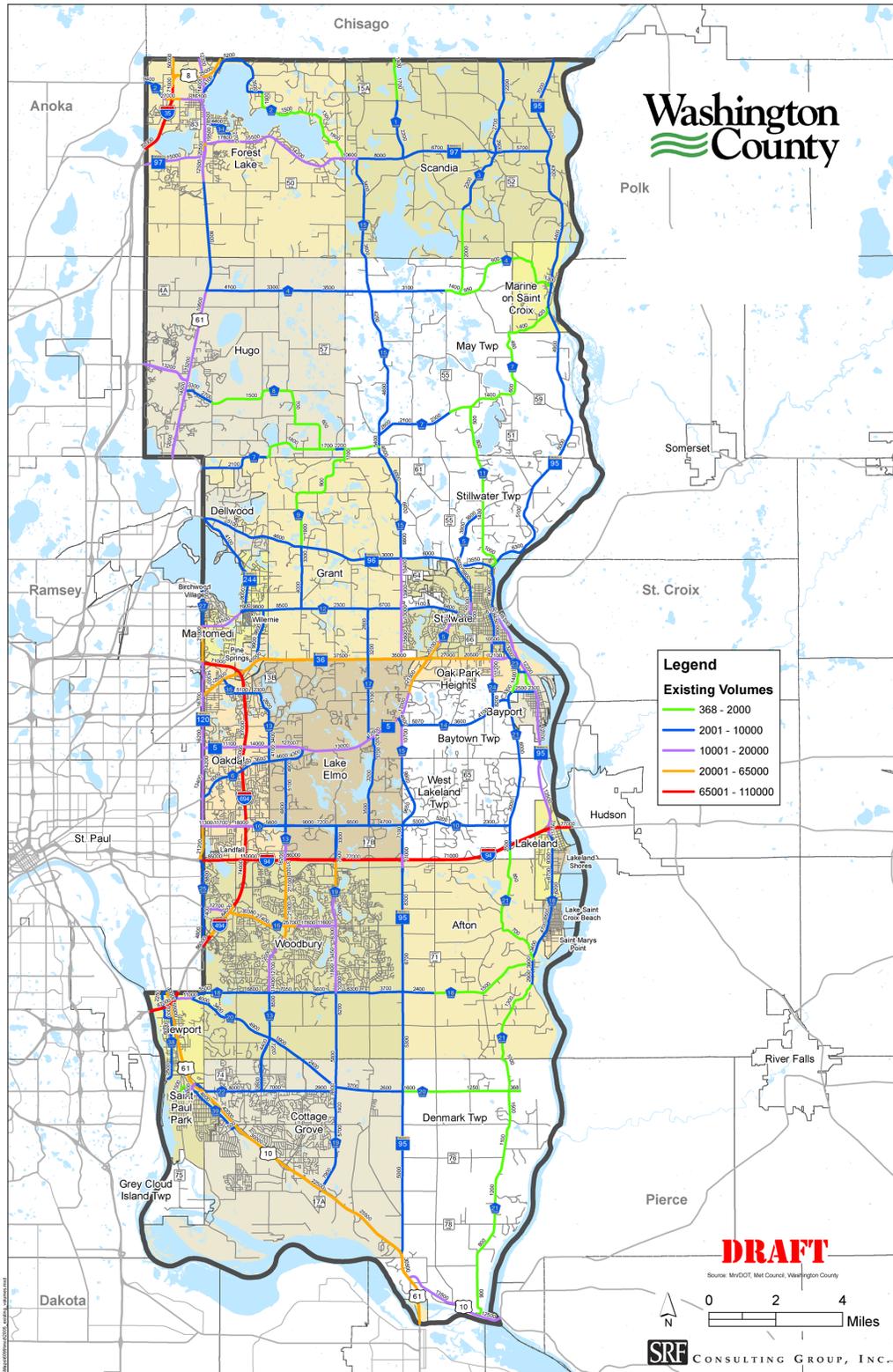
Source: Washington County

Map 22 - Forecasted Traffic Volumes : 2030 Draft for Scandia



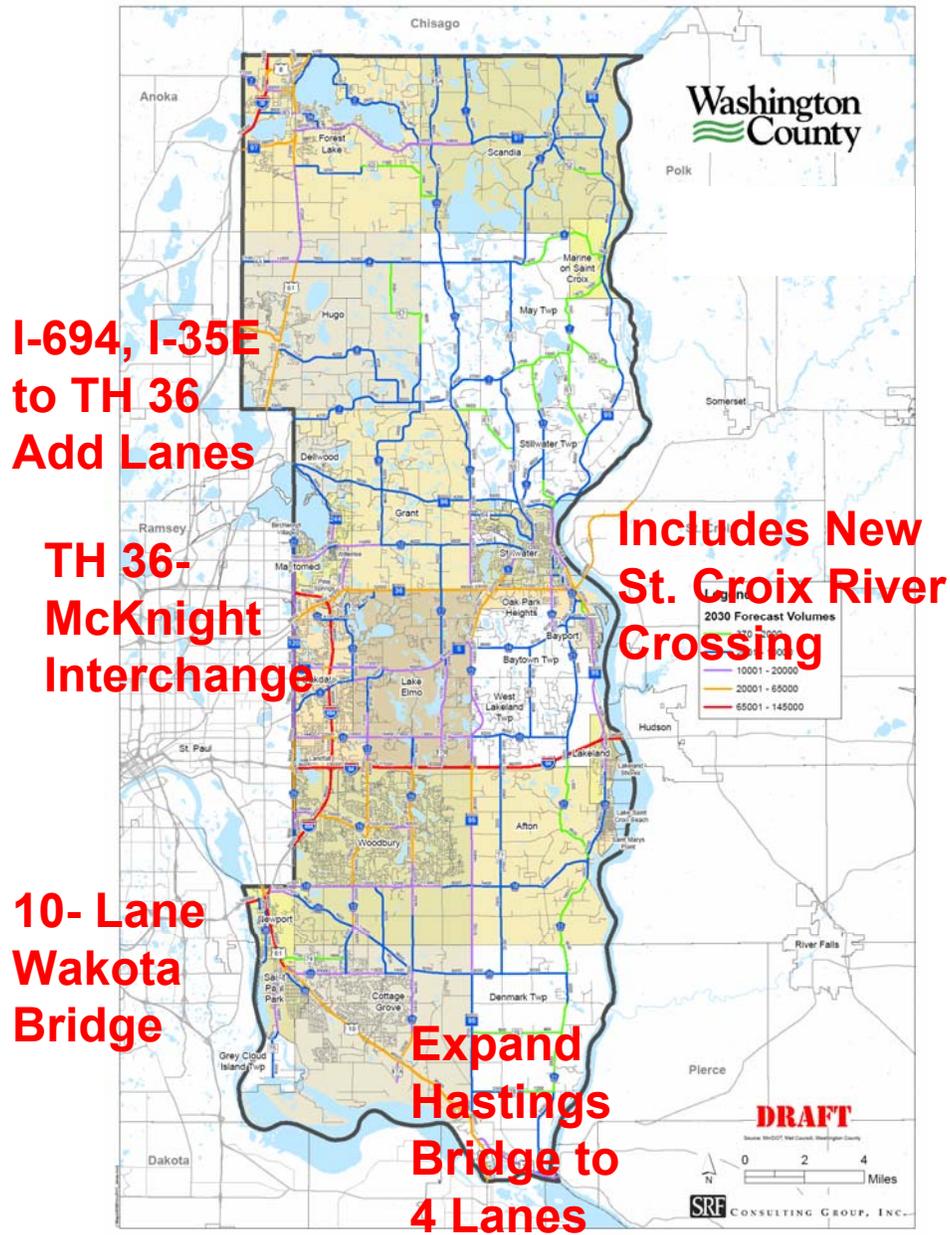
Source: Washington County

Map 23 - Existing Traffic Volumes for Washington County



Source: Washington County

Map 24 - Forecasted Traffic Volumes for Washington County : 2030



Source: Washington County

## Roadway Functional Classification

Roadway Functional Classification in Scandia is shown on Map 25 - *Roadway Functional Classification*. Scandia's comprehensive plan must map at least those roadways that have a functional classification of Principal Arterial (e.g., Interstate Highway) or A-Minor Arterial (e.g., State Trunk Highway), including the number of existing and future lanes. These are the region's most important roadways in terms of mobility over longer distances. They are characterized by their length, directness and traffic volume; and they are typically designed to limit interference in the flow of traffic. In Scandia, these roadways are limited to the following state and county roads, all of which are two-lane undivided facilities. Scandia Trail was recently repaved with turning/passing lanes. No lane additions to any of these roads are funded through 2030.

### A-Minor Arterials

- TH 97/Scandia Trail
- TH 95/St. Croix Trail
- CSAH 3/Olinda Trail
- CSAH 15/Manning Trail (south of TH 97)

It is important to note that Washington County identifies a potential future north/south principal arterial corridor that extends from one end of the county to the other. This corridor begins as County Road 15A in Scandia, continues as CSAH 15 south of Scandia Trail, and includes TH 95 south of Interstate 94. Forecasted traffic volumes for this corridor are considerably greater in the central portion of the county, so it is unclear when, if ever, the portion of the corridor in Scandia would become a principal arterial. It is also unclear how such a corridor would interconnect with the system in Chisago County. Nevertheless, Washington County will wish to preserve adequate rights-of-way where there are potential roadway expansions, particularly south of Scandia Trail.

Principal and Minor Arterials are complemented by Collector roadways, often under the jurisdiction of the County in rural areas. Scandia has also identified a set of local collectors that connect small residential enclaves and neighborhoods. As the name suggests, the purpose of these roadways is to collect traffic from a broader system of local roads and "deliver" it to a limited number of intersections with arterials. A system of collector streets and local roads is important in preserving the mobility function of regional roadways while also providing an alternative, and often more direct, means of circulating through the community.

### Major Collector

- CSAH 1/Lofton Avenue

### Minor Collectors

- CR 15A/Manning Trail (north of TH 97)
- CR 52/Oakhill Road (south of TH 97)
- Keystone Ave. N. / 192nd St. N.



## Citywide Future Local Roadways and Functional Role

Given the primarily low-density rural nature of Scandia, the network of minor arterial and collector roadways should be sufficient. However, as the community experiences moderate growth, it will be important to identify potential new links. Land subdivision and site plan reviews should ensure that these missing links between local roadway segments are eventually dedicated to form an interconnected rural street system.

Factors to consider in identifying new roadway segments include the following:

- Rural topography, wetlands and other natural features
- Continuity of roadway alignment
- Land use and zoning
- Market interest, parcel configuration and anticipated build-out conditions

Notwithstanding a more extensive analysis of environmental and ownership conditions, examples of potential new local streets include the following:

- Meadowbrook Road extension between Oakhill Road and 218th Street, which provides a missing link in a direct connection to TH 97/Scandia Trail
- Link between 209th Street/Quality Trail, which provides a connection toward the Village Center
- Ozark Avenue N. southward from 209th to Oxboro Avenue N., which provides more direct fire and emergency service response to points south and which provides an alternative to traveling on TH 97/Scandia Trail

A common problem in developing rural areas is how to address the development of local streets in the absence of a more detailed local street plan. The risks of a poorly planned and developed street system includes landlocked parcels, increased needs for direct access onto arterial roads, parcels that require circuitous access, and/or parcels that have only one ingress/egress point (e.g., long dead-end streets). Like other communities, Scandia requires that subdivisions consider the interconnection of new local streets with future subdivisions and with access management guidelines of the County and State.

One major concern among communities is the creation of long dead-end streets that become de facto cul-de-sacs. Although Scandia does not currently have a maximum dead-end street length, many communities do. Stearns County recently surveyed members of the Minnesota Chapter of the American Planning Association with regard to this issue. This information is available in a separate document. This is a largely contextual issue that may be best addressed by engaging adjoining property owners in areas experiencing development interest.

## Village Center Streets

Identifying new local street alignments is particularly important in and around the Village Center area, an area that includes a mixture of zoning that includes Retail Business (RB), General Business (GB) and higher density Single Family Estate (SFE). Much of this area to the east of Oakhill Road has no direct access to Oakhill Road or the historic Scandia Village Center. Employees, visitors and residents of this area must walk or drive a circuitous route that includes Ozark, Scandia Trail, Olinda Trail and Oakhill Road.

Providing new Village Center connections will increase the vitality, walkability and accessibility of the area. It will also establish a framework for future development and avoid overreliance on the Scandia Trail/Olinda Trail intersection. In conjunction with the eventual southward expansion of Ozark, two main options should be explored, which begin to interconnect local streets and form a finer-grained network in the heart of the community:

### Village Center Connection Options:

- Provide a non-motorized extension of Ozark Court North to Olinda Trail, which provides the shortest and most logical connection between the new business district and the Village Center
- Connect 209th Street North from Ozark to its alignment between Olinda and Oakhill

## Access Management

Limiting the number of intersections and driveways is important to maintaining mobility and safe operations on roadway that are intended to carry traffic longer distances at higher speeds. Driveways and public streets connecting with TH 97/Scandia Trail and TH 95/St. Croix Trail are subject to Mn/DOT Access Management guidelines. Roadways under the jurisdiction of Washington County must meet County access spacing guidelines for connecting driveways and public streets.

Mn/DOT Access Management guidelines are based on the type of roadway (A-Minor Arterials in this case) and the land use and surrounding development patterns. TH 97/Scandia Trail is classified as Category 5B (Minor Arterial-Urban/Urbanizing) because of the City's Diversified Rural designation by the Metropolitan Council. TH 95/St. Croix Trail is Category 5A (Minor Arterial-Rural, Exurban, Bypass). Recommended intersection spacing on TH 97 is one-quarter mile, while recommended spacing is one-half mile on TH 95. Exceptions are made in cases where environmental and topographic conditions prevent such spacing, and where access to property is not otherwise available.

Washington County access spacing guidelines are also based on the type of roadway. Principal Arterials limit direct access for driveways and require one-half mile spacing for intersecting Local Streets (continuous), Collector Streets, and Minor Arterials. Spacing guidelines for Minor Arterials are based on the average daily trips on the roadway and range from one-eighth to one-half mile with private driveway spacing determined by other criteria such as sight distance, speed, traffic volume, etc. Collector and Local Streets have similar spacing requirements as Minor Arterials with no distinction based on average daily trips.

Land use planning and subdivision regulation are the responsibilities of the City. In conjunction with local land planning, Scandia should ensure that land subdivision does not preclude the development of a local road network that reduces the need for individual driveways onto these and other minor arterials. The Metropolitan Council requires that Scandia address policies and efforts to this effect. One option is for Scandia to state an intention to create backage roads (rather than frontage roads), which is one way to provide access to parcels that would otherwise have access onto the arterial. This is one way that rural character along these roads can be maintained.

## Transit

Scandia is in Transit Market IV Area, where transit service is limited and not cost-effective due to low rural and agricultural densities. Services characteristic to these areas can include dial-a-ride, volunteer driver and ridesharing programs. In the case of rural Washington County, including Scandia, dial-a-ride service is provided by Human Services, Inc., which operates HSI Transporter.

Nearby Forest Lake, however, is a freestanding Transit Market III Area, as identified in the Metropolitan Council's 2030 Transportation Policy Plan. This identifies areas which generally support peak-oriented commuter transit service. However, it does not currently have regular route transit service as it is not part of the metropolitan transit taxing district. It is, however, identified as a future area of expansion, which would create additional revenue for expanded service.

In anticipation of potential transit service, Washington County has created a transit center as part of its new government service center at Forest Road and Fitzgerald Tr. N. As of January 7th, 2008, Metropolitan Council initiated Route 288, a one-year demonstration route between the Forest Lake Transit Center and downtown Minneapolis. These changes also include the new Running Acres Park-and-Ride at Lake Drive and Zurich Street in Columbus that opened in May 2008. This is being done to provide relief at the crowded 95th Avenue Park-and-Ride in Blaine and is part of efforts to mitigate the impacts of the I-35W bridge collapse. Scandia residents have access to this facility, which includes 309 spaces that can also be used in the interim for carpoolers.

The Metropolitan Council's 2030 Transportation Policy Plan identifies the Rush Line along the I-35/US 61 Corridor as a future transitway. It is also identified as a Tier II corridor as part of Mn/DOT's commuter rail system plan. The Rush Line Corridor Task Force, which is studying transit options and building support for transit in the corridor, has completed a study of commuter coach bus service between a Park-and-Ride in Lent Township and downtown St. Paul. It would stop at the Forest Lake Transit Center en route to downtown St. Paul.

## Bicycling and Walking

Hiking and bicycling trails are specifically addressed in the Parks and Open Space Plan. Given the low volume of traffic, long distances, and rural density, biking and walking are primarily recreational and reasonably accommodated by paved shoulders on arterials and collector streets. However, there will be greater demand for walking and biking to and around the Village Center. A principal strategy to accommodate or encourage walking and bicycling to the Village Center would be to ensure interconnected streets and to provide sidewalks and bicycle racks.

## Airports

The only air traffic consideration for Scandia is the designation of Big Marine Lake as a permitted seaplane lake. Seaplane traffic on Big Marine Lake must comply with Minnesota aeronautics rules and regulations for permitted seaplane lakes. There are no airports within Scandia nor is the city within any "influence area" of any existing or planned airport.

## *Transportation System*

## *Current Conditions*

Therefore, regulations regarding land use and height do not apply. The nearest airport is the special purpose airport in Forest Lake. However, the Metropolitan Council's Transportation Policy Plan reflects Federal Regulation Title 14, Part 77 which establishes standards and notification requirements for objects affecting navigable airspace. All municipalities must protect airspace from potential electronic interference and obstructions to air navigation. As proof that they have done so, they must include a policy and text regarding their notification to the Federal Aviation Agency. To notify the Federal Aviation Agency, municipalities must submit Form 7460. They must also demonstrate that they have adopted local codes and ordinances for control of objects affecting navigable airspace, including construction exceeding 200 feet above ground level at certain distances from aviation facilities.