

# **TRANSPORTATION**

## **I. INTRODUCTION**

This Chapter of the Comprehensive Plan includes an overview of various transportation system components within the City of Osakis. The principal components of this section include:

- Functional Classification System of Roadways;
- Analysis of Existing Transportation System;
- Land Use Impact on Future Volumes;
- Local, Regional and State Transportation Plans; and
- Transportation Recommendations.

This element of the Comprehensive Plan is intended to provide guidance for the development of a transportation system that serves the access and mobility needs of the City in a safe, efficient and cost-effective manner. It is important the local transportation system is coordinated with respect to county, regional and state plans and that the system enhances quality economic and residential development within the City.

## **II. FUNCTIONAL CLASSIFICATION SYSTEM OF ROADWAYS**

Roadways are classified based on the type of function they are performing or intended to perform, within and through the City. The purpose of classifying roadways is to ensure they provide access in a safe and efficient manner. The classification assists in designing the appropriate roadway widths, speed limits, intersection control, design features, accessibility and maintenance priorities. Land use and development should be taken into account when planning functional classifications and roadway design. The ideal system is not always possible due to existing conditions, topography or other natural features. The classification system is intended to be used as a guideline and may need to be adapted as actual roadways are developed. The Federal Highway Administration (FHWA) has established detailed criteria for all of the different functional classifications.

Access and mobility are the two of six key elements in transportation planning. Mobility is more important on arterials, which requires limited access points onto the arterial roadway. Access is more important on local roadways, which results in more limited mobility. Other functional design stages include:

- Main movement
- Transition
- Distribution
- Collection
- Access; and
- Termination

As a part of the transportation plan analysis, an inventory of the roadway system is necessary in order to view certain characteristics. A key transportation goal for road authorities is to attempt to balance mobility (through traffic need) and access (abutting property owner need) functions of roadways. The concept of functionally classifying a road system provides some guidance and suggests that a complete system should consist of a mix of various types of roads to best address the needs of a variety of users. Therefore, an ideal system includes major arterials (strictly emphasize mobility), minor arterials (emphasize mobility), collectors (address mobility and limited access) and local (focus on access) streets. Functional classes of the same roadways may vary in different areas and access management guidelines and roadway characteristics differ depending on the nature of the surrounding land use (i.e. urban, urbanizing or about to become urban and/or rural). All street classifications within Osakis are defined as being within an urban boundary (as opposed to urbanizing and/or rural areas). The functional

classification of roadways within the City of Osakis are illustrated on Map 7-1. They are classified as follows: Federal Interstate, Major Arterial, Minor Arterial, Major Collector, Minor Collector, Local Roadway and Rivers and Lakes.

**A. Principal Arterials:**

Interstate 94 (I-94) is classified as a principal arterial which is located south of the City. Principal arterials connect communities with other areas in the state and other states. Emphasis is placed on mobility rather than land access. Intersections with principal arterials are usually limited and controlled. Direct access to principal arterials from local or residential streets is generally not allowed and should be discouraged. The nature of land uses adjacent to principal arterials is typically of a higher intensity. Principal arterials as described by the Douglas County Comprehensive Plan are typically spaced every 2 to 3 miles for developing areas and about 10 miles in rural areas.

**B. Minor Arterials:**

There are two minor arterials located within Osakis. Trunk Highway 27 running east and west through the City and Trunk Highway 127 located in the southeastern portion of the City. Like principal arterials, minor arterials emphasize mobility as opposed to land access. Minor arterials generally connect urban service areas in developed communities to areas outside. They typically provide access for medium to short trips. Minor Arterials are generally spaced every  $\frac{1}{2}$  to  $\frac{3}{4}$  mile apart in metropolitan areas and 1 to 2 miles in developing areas. Minor Arterials are designed to allow traffic to flow at an average speed of 20 to 30 miles per hour during peak traffic times.

**C. Major Collector Streets:**

The major collector street system facilitates movement from minor arterials and serves shorter trips within the County. Collector streets have equal emphasis on both access and mobility. Collector roads are typically spaced every  $\frac{1}{4}$  to  $\frac{3}{4}$  mile in fully developed areas and  $\frac{1}{2}$  to 1 mile in developing areas. CSAH 3 and CSAH 51 have been identified as a major collector roads.

**D. Minor Collector Streets:**

Minor collector streets are typically spaced every  $\frac{1}{4}$  to  $\frac{3}{4}$  mile in fully developed areas and  $\frac{1}{2}$  to 1 mile in developing areas. Minor collectors provide supplementary interconnection among growth rural centers and have emphasis on land access. Minor collector streets within the City of Osakis include CSAH 3 south of Nokomis and CSAH 4.

**E. Local Streets:**

Local streets connect blocks and land parcels. The primary emphasis is on land access. In most cases, local streets will connect to other local streets and collector streets. In some cases, they will connect to minor arterials. Local streets serve short trips at low speeds. Local streets generally occur at every block. Due to the number of local streets, a listing of street names is not included.

**III. ANALYSIS OF EXISTING TRANSPORTATION SYSTEM**

The existing conditions of the transportation systems are an important consideration in the determination of future needs. Discussion of certain existing elements of the roadway, air and transit systems in Osakis follows.

**A. Existing Traffic Counts**

The Minnesota Department of Transportation has documented traffic volume information for major roadways within Douglas and Todd Counties, including those within the City of Osakis. Daily volumes, as of 1998, from MnDOT are illustrated in Table 7-1 and shown on Map 7-2.

**Table 7-1  
Historic Average Daily Traffic Counts**

<b>Roadway</b>	<b>Location</b>	<b>ADT 1998</b>
CSAH 3	North stretch to Nokomis Street	2,400
State Hwy 27	Westerly from CSAH 3	5,900
Nokomis Street	CSAH 3 to 2 <sup>nd</sup> Avenue W.	5,000
Lake Street	1 <sup>st</sup> Avenue E. to 5 <sup>th</sup> Avenue E.	710
Nokomis Street	1 <sup>st</sup> Avenue E. to Highway 127	4,000
1 <sup>st</sup> Avenue E.	Nokomis to intersection of State 127	1,600
Highway 127	CSAH 3 to Nokomis Street	1,350
Highway 27	Nokomis Street to Lake Street	3,200
Highway 27	Lake Street to CR 4	2,750
CR 51	South from Nokomis	1,050
1 <sup>st</sup> Avenue & Central Avenue	Downtown	580

Source: MnDOT

\*Due to road construction road counts were not taken, in 2002.

**B. Physical Condition of Roadways**

Community survey participants were asked to rank the overall physical condition of roadways within the community, results follow:

Excellent	7%
Good	42%
Fair	24%
Poor	10%

Survey participants were also asked to identify specific priorities for the improvement of roadways within the community. Higher percentages of participants identified a need to improve the following: Main Street East, 8<sup>th</sup> Avenue East & West, Industrial Park, King Street, Downtown, and West End Oak Street.

**C. Transit Service**

Rainbow Rider currently provides public transit for Douglas, Pope, Stevens and Traverse Counties with handicapped accessible buses and a volunteer driver program. The service is supported by passenger fares, service contracts, state and federal taxes, sales of advertising space, local county appropriations, and donations and is governed by the Rainbow Rider Transit Board.

Rainbow Rider offers door-to-door service with extra care given to children and senior citizens. Door-to-door service means drivers assist passengers with a steadying arm between the bus and the exterior door of their pick-up and drop-off locations and carry up to three small packages (up to 25 pounds or what can be carried in one trip).

The Rainbow Rider bus fare in the volunteer driver area is the IRS rate \$.485 per mile plus starting in January 2006 \$7.00 admin fee. Children 3-11 travel for half fare when accompanied by an adult, full fare when traveling alone. Children under three are always free and must be

accompanied by an adult. All buses are handicapped accessible and equipped with an infant safety seat, two-way radio and cellular phone.

The community survey indicated most respondents (59%) would not utilize transportation access and services such as bus and/or taxi service if it were available, although 63% thought that others within the community would benefit from access to public transportation.

#### **D. Bicycle and Pedestrian Facilities**

With the development of the Central Lakes Trail, as well as its connection to the Lake Wobegon Trail and several other local and regional trails throughout the greater area, much has been completed in recent years to facilitate the transportation needs of bicyclists, pedestrians and snowmobiles. Bicycle and pedestrian facilities, however, are not limited to the development of large, regional trails. Local sidewalk linkages, as well as bicycle lanes, routes and paths all play an important role in the transportation network. Osakis's sidewalks do not cover the entire City but are dispersed in the older, more dense areas of the community. The Subdivision Ordinance does not require the installation of sidewalks and/or trails within new subdivisions. The City should at minimum require sidewalks along collector streets and arterials as well as leading to parks. Sidewalks within the City of Osakis are depicted on Map 7-3. Recommendations relative to bicycle and pedestrian facilities follow below:

- Construct continuous pedestrian facilities along all major streets and highways; these should be direct and interconnect with all other modes of transportation.
- Provide safe, secure and convenient facilities for pedestrians into and within commercial developments (downtown).
- Relate sidewalk design to the function and the anticipated amount of pedestrian traffic. Locate sidewalks to take advantage of views and other amenities, when appropriate.
- Require pedestrian facilities as land is developed based on standards for the street classification.
- Provide ramps and curb cuts throughout the pedestrian system for physically challenged persons.

#### **E. Other Transportation Services**

Taxi service is not currently within the City of Osakis and is not anticipated to have the demographics to support this service for some time.

### **IV. LAND USE IMPACT ON FUTURE TRAFFIC VOLUMES**

The analysis of the transportation system of Osakis is primarily concerned with the roadway system since that is the principal element through which people and goods are transported. The preparation of a thoroughfare plan considers many factors including, but not limited to; existing roadways, regional transportation plans (state and county) and future volume projections.

#### **A. Projected Traffic Volumes**

The projection of traffic volumes to a future year is highly dependent upon expected development within the City of Osakis and the growth area. Another factor, particularly as it relates to arterial roadways, is the expected increase in through traffic volumes on those facilities. Those volumes, which may or may not have destination within the City, are dependent upon regional and state

growth. Table 7-2 illustrates projected traffic (average trips/day) based upon land use calculations (acreages needed to support growth versus actual acreages included in the growth boundaries) established in Chapter 5 of the Comprehensive Plan.

**Table 7-2  
Vehicular Trips Generated By New Development**

Land Use	Assumed Density for Volume Projections	Total Units Assumed	Daily Trip Rate per Unit	Estimated Daily Trips
Residential–Low Density (Single & Two Family Residential, Including Manufactured Homes)	1.87 units per acre	230	9.57/DU	2,201
Residential – High Density*	8.31 units per acre	39	7.0/DU	273
Commercial/Industrial	76 acres	76 acres	55/ac	4,180
<b>Sub Total Additional Trips</b>				6,654
<b>Assume 50 percent of the Highway Commercial Trips are Pass-By or Dual Purpose Trip Types</b>				-3,327
<b>Total Net Additional Trips</b>				<b>3,327</b>

- Assumes 85% of new households low density & 15% of new households high density
- The assumed land use traffic generation is developed by application of trip generation rates in the Institute of Transportation Engineers (ITE) report title Trip Generation, 7<sup>th</sup> Edition, 2003.

The calculations for the new development assumptions indicate nearly 3,327 additional daily vehicle trips could be generated by projected land uses within the City by the year 2030. Although these trips will be spread out across the entire roadway system, roadways primarily being impacted are expected to include Highways 27 and 127, CSAH 3 and CSAH 51.

Table 7-3 lists traffic counts for specified roadways within Osakis in 1998 compared with those projected for 2018. These numbers should be updated as more recent counts are made available from MnDOT. Counts have been projected out 20 years instead of 30 years for statistical accuracy.

**Table 7-3  
2018 Projected Traffic Volumes**

Roadway	Location	2018 Projection	Year 1998
CSAH 3	North stretch to Nokomis Street	4,080	2,400
State Hwy 27	Westerly from CSAH 3	10,030	5,900
Nokomis Street	CSAH 3 to 2 <sup>nd</sup> Avenue W.	8,500	5,000
Lake Street	1 <sup>st</sup> Avenue E. to 5 <sup>th</sup> Avenue E.	1,207	710
Nokomis Street	1 <sup>st</sup> Avenue E. to Highway 127	6,800	4,000
1 <sup>st</sup> Avenue E.	Nokomis to intersection of State 127	2,720	1,600

Highway 127	CSAH 3 to Nokomis Street	2,295	1,350
Highway 27	Nokomis Street to Lake Street	5,440	3,200
Highway 27	Lake Street to CR 4	4,675	2,750
CR 51	South from Nokomis	1,785	1,050
1 <sup>st</sup> Avenue & Central Avenue	Downtown	986	580

Source: Douglas County standard projection rate (1.7). vs. Traffic Analysis Zones (TAZ). Volumes may be higher based on proposed new land uses in this Comprehensive Plan.

## B. Access Management

Managing access points along roadways is important in order to maximize the capacity of the roadway and provide safe routes. Access management is increasingly important along collector streets and arterials. Access management is controlled by the City (local collector streets) the County (county roads) and MnDOT (adjacent to state highways). Land use decisions have an impact on the efficiency of the transportation system.

Douglas and Todd Counties have prepared access spacing guidelines for roadways throughout the county. Following are MnDOT recommended spacing guidelines and typical posted speeds:

**Table 7-4  
MnDOT Recommended Access Spacing**

Functional Class	Median Treatment	Existing and Proposed Land Use	Typical Posted Speed (MPH)	Full Median Opening Spacing (Miles)	Minimum Signal Spacing (Miles)	Spacing Between Connections (Feet)**
Principal Arterial	Divided	Rural	65	1	1	1320
		Urban	>=45	1/2	1/2	1320
		Urban Core	<45	1/4	1/4	440
	Undivided	Rural	55	NA	1	860
		Urban	>=45	NA	1/2	860
		Urban Core	<45	NA	1/4	440
Minor Arterial	Divided	Rural	55	1/2	1/2	820
		Urban	>=40	1/2	1/2	490
		Urban Core	<40	1/4	1/4	275
	Undivided	Rural	55	NA	1/2	820
		Urban	>=40	NA	1/2	490
		Urban Core	<40	NA	1/4	350
Collectors Highway	Divided	Urban	>=40	1/4	1/4	435
		Urban Core	<40	1/8	1/8	275
	Undivided	Rural	55	NA	1/2	585
		Urban	>=40	NA	1/4	435
		Urban Core	<40	NA	1/8	310

Source: MnDOT

\*Distances are based upon spacing between connections (major roads, local public streets and private driveways). Distances are minimum and greater spacing is beneficial.

## V. TRANSPORTATION PLANS

The thoroughfare plan for the City in conjunction with the land use plan and other infrastructure plans, provides a guideline for which growth can be accommodated in a reasonable fashion and existing issues regarding transportation can be addressed. Local, regional and state transportation plans follow:

## A. Transportation Plans

The City of Osakis has not yet implemented a Capital Improvement Program, which identifies proposed street project within a five-year plan. Local street improvement projects which have been identified as needing consideration in the near future include: reconstruction of Nester, Osage, and Main Streets, 6<sup>th</sup> Avenue West Extension, Downtown improvement in conjunction with Douglas County including Main and Central Avenue's and reconstruction of CR 3 south in conjunction with Douglas County.

The Douglas and Todd Counties Comprehensive Plan identify transportation issues on a county wide basis to be addressed.

The Douglas County Transportation component calls for the reclassification of roadways as well as addition of roadways throughout the County, although none within Osakis. Improvement projects included on the County 2006-2010 Construction Program include an overlay of CSAH 3 (CSAH 13 to N Co line) in 2006 at an estimated cost of \$500,000. Noted transportation issues within the Douglas County Comprehensive Plan for Osakis are as follows:

- Low bridge clearance on CSAH 3 and First Avenue West;
- Snow traps on TH 27 between Osakis and Alexandria;
- Poor pavement on TH 127 between Osakis and I-94; and
- Lack of continuous east-west routes in Osakis.

Transportation Plans for Todd County include<sup>1</sup>:

- Overlay of CR 51, SE of Osakis slated for summer 2006
- Overlay of CR 4 NE of Highway 27 potentially to occur in 2007
- Surfacing of Lake Wobegon Todd County Segment in 2006

There were no transportation issues noted within Todd County likely for the reason that the majority of the City falls within Douglas County.

Future collector streets have been identified on Map 7-4. The location of this collector street has been based on recommended spacing of collector streets, land uses, topography and existing roadways. It is important to note the attached map is for illustrative purposes only and not intended to constitute an official transportation map.

## B. Transportation Funding

There are a number of various funding mechanisms available to support transportation projects these include the following:

1. **Federal Funding.** Osakis may apply for federal funds for highways through the Surface Transportation Program of the Federal Highway Trust Fund, through MnDOT's District 4 Area and 3 Transportation Partnership (ATP). Solicitation occurs approximately every two years, with federal funding covering 80% of a project cost. Types of projects funded include highway reconstruction, safety projects, trails which are part of a project, transit and park-and-ride projects.
2. **MSAS System.** The State of Minnesota, through the gas tax and license fees, collects funds to be used to construct and maintain the State's transportation system. Most of the funds collected are distributed for use on the State's Trunk Highway (TH) system, the County State Aid Highway (CSAH) system and the Municipal State Aid Street (MSAS) system. Of the

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<sup>1</sup> (Loren Fellbaum, Public Works Assistant Engineer, Todd County, personal communication, February 2006)

funds available they are distributed 62% TH, 29% CSAH and 9% MSAS. When a City's population goes above 5,000 they become eligible to receive a portion of the MSAS funding. According to population projections found in Chapter 3, Demographics, Osakis is not anticipated to reach a population of 5,000 by 2030.

3. **MnDOT Cooperative Funds.** The State of Minnesota has funds available to assist with cooperative projects which increase safety and mobility.
4. **MN Department of Natural Resources Grants.** Various federal and state grants are available for the development or reconstruction of trails. Typically grants require a 50% match and illustration that the trail is not only of local importance but also of regional significance. Grant programs through the DNR for trail projects include the Federal Recreational Trail Grant Program, Regional Trail Grant Program, Outdoor Recreation Grant Program, and Local Trail Connections Program.
5. **Collector and Local Streets.** Developers may be required to fund the entire cost of minor and major collector streets, as well as local streets as a part of their development fees.

## **VI. Transportation Recommendations.**

A number of recommendations for transportation planning are noted throughout this Chapter. Following is a summary of key items:

### **A. State Highway 27 and County Road 3 Corridors**

- The City should promote Highway 27 and CSAH 3 entrances to Osakis as a high-quality, aesthetically pleasing corridors which create a distinctive impression of the City. Quality building materials, limited outdoor storage, preservation of existing environmental features, working with utility service providers to place utilities underground and landscaping should be emphasized.

### **B. CSAH 3 Corridor**

- The City should continue to work with County elected and appointed officials to include CSAH 3 on the County's Capital Improvement Plan to address needed reconstruction to an urban design and potential trails along the roadways when improved.

### **C. Collector Streets**

The location of collector streets promotes orderly development. As development plans are presented to the City, future collector streets should be designed to provide continuity and prudent access to other collector streets and arterials and adhere to the recommended access management guidelines.

In the context of regional transportation planning and to most efficiently provide for the development of future roadways, the City should develop an official future transportation plan and map examining:

- The capacity of existing streets and the timing of improvements/reconstruction based on threshold increases in vehicle trips;
- The projected costs of said improvements/reconstruction;
- Depicting future collector street corridors which reflect spacing guidelines consistent with urbanizing and rural development factors;
- Projected municipal costs associated with the identification of collector street corridors, right of way acquisition, etc.

#### **D. Local Streets**

- Local streets primarily function to serve residential neighborhoods and other areas of lesser daily traffic volumes. The extension and/or spacing of future local streets should promote excellent access to lower intensity land uses and discourage excessive vehicle speeds. Local streets should not be used for on-site traffic circulation which should be accommodated off the right-of-way.
- Local streets should be laid out to permit efficient plat layout while being compatible with the area's topography, adjacent roadways, municipal utility plans and environmental constraints.
- As the street system continues to expand, street maintenance such as snowplowing, grading rural roadways, dust coating, routine maintenance, etc. will become increasingly important issues. Additional street construction will either increase contracted labor expenses or necessitate an expansion of the City's services provided by the municipal public works department. Prior to approving proposed subdivisions, consideration should be given to the City's ability to provide municipal services, facilities and equipment for snowplowing, street grading, minor street repair, dust-coating, etc. on either a contracted or staff basis.
- Additional vehicle trips generated by proposed development and dispersed over the existing roadway system shall be examined relative to the capacity of existing roadways to accommodate increased traffic.
- The City should develop a Capital Improvement Plan which contains budgets for new construction, reconstruction and scheduled upgrading of the street system, with scheduled maintenance seal coating and storm sewer cleaning. The City should implement a schedule for roadway maintenance and reconstruction (e.g. seal coating every 4-5 years; complete reconstruction or mill/overlay every 15-20 years; re-grading/conversion of gravel roads; etc.).
- To avoid duplicate costs the City should correlate future road construction/reconstruction with municipal utility construction and reconstruction. In addition, the City should advise private utility service providers of proposed urban subdivisions and/or construction/reconstruction project to ensure efficient construction/repair/replacement of services including natural gas, electrical and telephone facilities.

#### **E. Transit/Alternate Modes of Transportation**

- To diminish/prevent congestion, the City should encourage alternate and/or integrated transportation methods which are less dependent on motor vehicles. The City could promote and encourage walking and biking as alternate transportation methods. The City should strive to promote park and ride facilities near Interstate 94 as a means of encouraging car-pooling and ride sharing. As the population ages and diversifies, bus service will become an important amenity in the community and should be promoted. Special attention should be given to improving pedestrian access, movement and crossings to provide both convenience and safety.