

FINAL

Transportation Plan Update

St. Joseph, Minnesota

SEH No. STJOE 119126

July 30, 2012

Adopted by the City Council on July 19, 2012

This plan is a partial update to Original Transportation Plan Report - accepted (as revised) by City Council on January 4, 2007



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Transportation Plan Update

This plan is an update to Chapters 3, 4 and 5 of the City Council accepted Transportation Plan Dated December 21, 2006 as revised per City Council action on January 4, 2007. The City Council adopted this Transportation Plan Update on July 19, 2012.

Prepared in coordination with the St. Cloud Area Planning Organization for the City of St. Joseph, Minnesota

3.0 Principals of Roadway System Planning

Development of a transportation plan involves numerous tasks; therefore it is important to define the basic guiding principals involved with transportation system plan development. These principals include:

- Functional Classification
- Jurisdictional Classification
- Access Management
- Design Guide

These principals, as detailed in the following sections, provide the framework for developing an orderly and effective transportation system plan.

3.1 Functional Classification

The purpose of this section is to describe the functional classification system and its application to the City of St. Joseph.

Functional classification is a system by which streets and highways are grouped according to the character of traffic intended to serve. Basic to this process is the recognition that individual roadways do not function independently. Most travel involves movement along a network of different types of roads. The functional class of the roadway should be an important consideration in the development of local regulations for land development. The mobility of higher classified roadways should be protected by careful management of site development and access spacing. Transportation problems occur when roadway design and the management of access to the roadway are inconsistent with the functional and operating demands imposed by the surrounding land uses on the roadway.

The four basic functional classification categories (principal arterials, minor arterials, collectors, and local roadways) are described below in Table 4. In addition, the St. Joseph Comprehensive Plan breaks down collectors into community collectors (major collectors) and neighborhood collectors (minor collectors). In the Comprehensive Plan, community collectors are described as having a larger volume of traffic. The primary focus of this study is on community collectors and higher roadway classes. Neighborhood (minor) collectors are not recognized in the regional transportation system.

Table 4: Functional Classification Description

Functional Class	Description	City of St. Joseph Roadway Examples
Principal Arterials	<ul style="list-style-type: none"> ▪ Intended to connect larger cities with one another and connect major business concentrations ▪ Highest volume to capacity ▪ Provide highest level of service at highest speed for the longest uninterrupted distance ▪ Emphasis on mobility rather than land access ▪ Nature of land uses adjacent is typically of higher intensity 	<ul style="list-style-type: none"> ▪ Interstate 94 ▪ CSAH 75
Minor Arterial	<ul style="list-style-type: none"> ▪ Connect to principal arterial, other minor arterials, and collector streets ▪ Moderate length trips ▪ Lower level of mobility than principal arterials ▪ Minimal property access ▪ Regional importance since they relieve, expand, or complement the principal arterial system ▪ Nature of land uses adjacent is typically of medium to high intensity. 	<ul style="list-style-type: none"> ▪ CSAH 2 ▪ CSAH 133
Community Collector (Major Collector)	<ul style="list-style-type: none"> ▪ Serve short trips ▪ Moderate emphasis on both access and mobility ▪ Provide access to and from neighborhoods to business centers and to the arterial system 	<ul style="list-style-type: none"> ▪ CSAH 121 ▪ East Baker Street ▪ Minnesota Street ▪ Northland Drive
Neighborhood Collector (Minor Collector)	<ul style="list-style-type: none"> ▪ Serve short trips ▪ Emphasis on access and connectivity ▪ Provide access to and from neighborhoods to business centers and to the arterial system ▪ Not considered a significant travel corridor in the "regional" roadway network 	Segments of: <ul style="list-style-type: none"> ▪ 4th Avenue Southeast ▪ 7th Avenue Southeast ▪ 12th Avenue Southeast ▪ 16th Avenue Southeast
Local/Neighborhood Roads	<ul style="list-style-type: none"> ▪ Internal to residential neighborhoods, commercial and industrial areas and agricultural lands ▪ Typically serve short trips at low speeds ▪ Provides highest levels of property access 	<ul style="list-style-type: none"> ▪ Transportation plan does not address future local/neighborhood roadways ▪ Refer to City of St. Joseph Comprehensive Plan for further information

3.2 Jurisdictional Classification

Roadways are also classified on the basis of which level of government owns and maintains the road. Three levels of government share jurisdiction over the existing transportation system within the study area. MnDOT maintains the State Trunk Highway (TH) system, Stearns County maintains the County State Aid Highways (CSAH) and County Roads (CR), and the City of St. Joseph and surrounding townships maintain the local city and township roads. Typically, a roadway's jurisdiction is determined by several factors, including the following:

- Length of road/length of trip;
- Connections to roadways of similar jurisdiction level;
- Functional classification;
- Average Daily Traffic (ADT);
- Purpose of trips being served;
- Special facilities served; and
- Design type of the roadway.

Cities and townships generally own roadways that solely serve local property access and transportation needs. Roadways, such as trunk highways, which serve regional, inter-county, or statewide transportation needs, are owned by the State. Stearns County owns the roads that serve intermediate level functions and generally provide intra-county connections to locations within and adjacent to the County. As the City of St. Joseph continues to develop and new roads are built, it is appropriate to examine the jurisdictional responsibility for roadways and to consider if jurisdictional transfers are appropriate. Typically, the majority of new roadway mileage constructed to serve new development will be placed under the jurisdiction of the City unless a new roadway is developed to provide efficient connections to other areas in the region (i.e. SW Beltway).

3.3 Access Management

Access management is a tool for providing access to land development, while preserving the safety, capacity, and operation of the transportation system. Access management consists of carefully controlling the number, location, design, and operation of all driveway and street intersections, which also helps preserve community character, promote economic development, and protect the public investment in the road system.

Access management systems recognize that different roads serve different purposes. The implementation of access management strategies can have significant benefits on the traffic operations of a roadway and help address some of the issues associated with conflicts between through traffic and local traffic. Several of these benefits are listed below.

- Reduce congestion and crashes.
- Preserves roadway capacity and postpones the need for additional travel lanes.

-
- Reduces travel time for efficient delivery of goods and services.
 - Provides easy movement to destinations for the traveling public.
 - Promotes sustainable and orderly community development.

Effective access management begins with thoughtful community development and roadway design. Development practices that promote effective access management include avoiding strip or linear commercial development along major streets or roads where each individual development needs to be served by its own individual driveway to the road and by providing an adequate supporting network of local streets that can consolidate access traffic to public street intersections along major roads. Effective site and road development practices include consideration to driveway design and spacing, development of turn lanes, and treatment of the median area on abutting roadways.

There are a host of techniques that can be used to achieve the benefits of access management. Techniques that should be utilized when possible include:

- Requiring adequate space between street or driveway connections to major roadways based on the type of development and speed of travel.
- Sharing of access points along major roads between adjacent properties and with properties located across the road from the site under consideration.
- Limiting the number of access points for individual properties.
- Requiring direct property access to be provided via collector streets or local streets.
- Providing left and right turn deceleration or acceleration lanes.
- Giving consideration to offsetting driveways if adequate spacing can be provided to minimize the number of conflict points between driveway traffic and through traffic.
- In the case of high volume access driveways and high volume through street traffic, using median barriers to restrict or limit the turning movements that can occur.

The ability to implement these techniques is dependent in large part on the land development conditions. Some techniques are more applicable in areas with existing development, while others are more applicable in advance of land development. The two access consolidation applications described below address this issue.

Access management standards are established to reflect the functional classification of the roads and the character of the area being served. The St. Cloud APO access management standards are located in Exhibit 5-1 in their 2035 Transportation plan. This exhibit details typical facility characteristics, mobility aspects, accessibility and intersection considerations, right-of-way needs, and parking restrictions. Each of the primary functional facility types are grouped into urban, urbanizing, and rural land development categories.

In addition to the standards developed by the St. Cloud APO, additional standards have been developed to guide the location and frequency of access locations (public or private roads or driveways) along the minor arterial and collector facilities. The guidelines are detailed in Table 5 below:

Table 5: Access Spacing Guidelines

Facility Type	Area Type	Primary Full Movement Intersections	Conditional Secondary Intersection	Private Access
Minor Arterial	Rural	1/2 mile	1/4 mile	Restricted, but permitted subject to conditions
	Urban/Urbanizing	1/4 mile	1/8 mile	Highly restricted
Collector	Rural	1/2 mile	1/4 mile	Permitted subject to conditions
	Urban/Urbanizing	1/8 mile	NA	
	Urban Core	300-660 depending on block length		

The access management standards are intended to be guidelines for the City to utilize as new development or redevelopment occurs. The intent is that over time, as land areas are developed or redeveloped, the access to the different classes of roadways will meet these guidelines. If there are existing problems or a major road reconstruction project is proposed, access management techniques and guideline standards can be applied to retrofit existing roadways.

3.4 Design Guide

The design criteria presented in this section should be used as a general guidance for the development of the roadway system in the City of St. Joseph. Each segment of roadway within the City should be reviewed in greater detail at the time of design and/or construction. The following pages provide design recommendations and typical roadway guidelines for a network classification system including minor arterials and community collectors.

3.4.1 Minor Arterials

Minor arterial roadways connect important locations within a region. They connect the City of St. Joseph with other cities (St. Cloud, Waite Park) and with other important locations within Stearns County and the region. They also provide supplementary connections to business concentrations and other important points outside of the county or region. Minor arterials emphasize mobility rather than providing access (see Figure 3).

Typical Posted Speed:

- 30-40 mph in urban/urbanizing areas
- 35-55 mph in rural areas

Number of Travel Lanes:

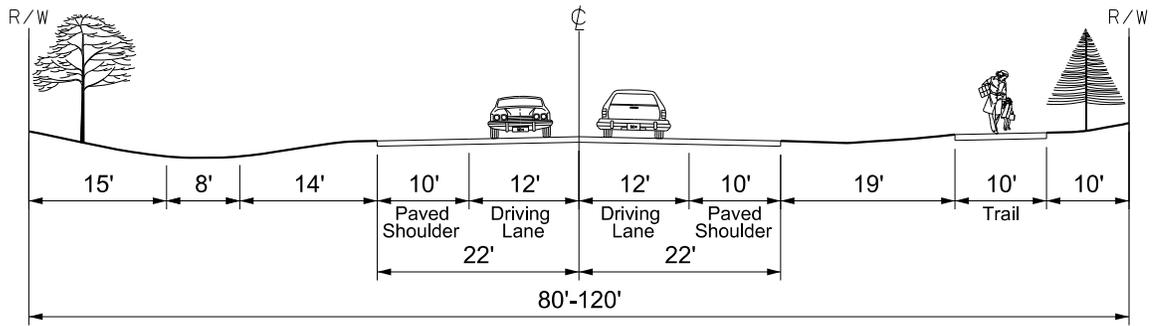
2-4 lanes; depending of projected travel demand (10,000-12,000 ADT is a typical threshold for 4-lane need).

Right-of-Way Requirements:

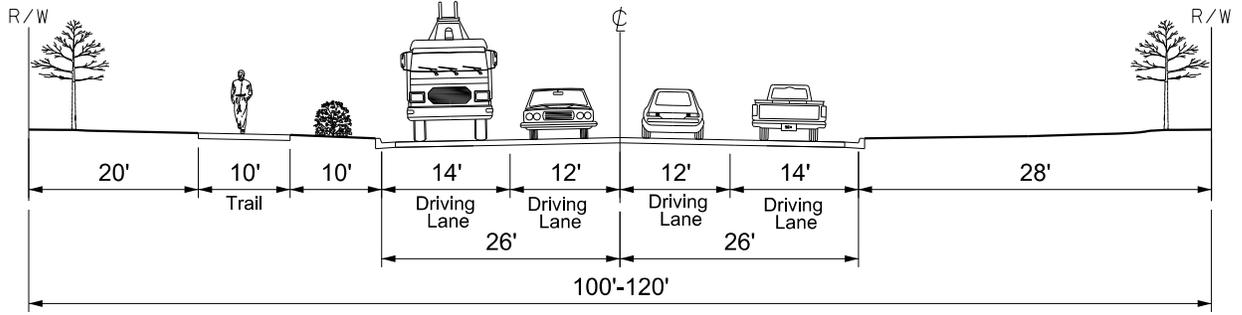
80-foot to 150-foot wide corridor to accommodate up to a divided four-lane roadway with consideration for turn lanes and adjacent sidewalk/trail on both sides of the road.

Estimated Construction Cost per Mile of Roadway:

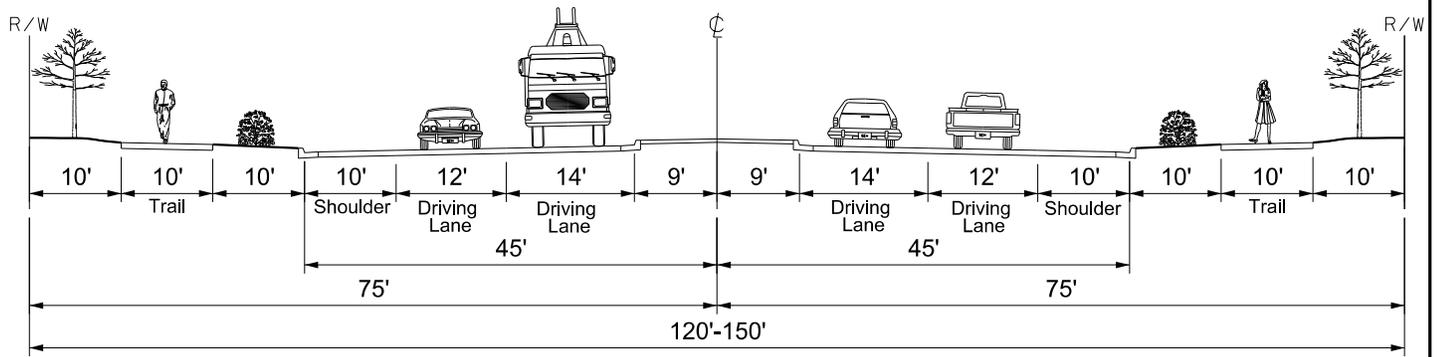
Construction costs vary greatly based on width of roadway, design specifications, adjacent trail(s), utility improvements/relocations, terrain, underlying soils, etc. The cost to construct a minor arterial could range from approximately \$2.5 million to \$3.5 million per mile not including right of way costs.



Minor Arterial
(Two-Lane Rural)



Minor Arterial
(Four-Lane Undivided Urban)



Minor Arterial
(Four-Lane Urban Divided)

- Emphasize mobility rather than providing access to local properties
- Design speed: 45-55 Miles per hour
- Typical posted speed: 30-40 miles per hour in urban areas, and 35-55 miles per hour in rural areas
- Two-Lane or Four-Lane facility. A Four-lane roadway may be divided with a raised center median
- Recommend adjacent 10' shared use path
- 80'-150' Right of Way corridor
- The estimated construction cost per mile of regional arterial roadway could range from approximately \$2.5 million to \$3.5 million

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TRANSPORTATION PLAN
POTENTIAL MINOR ARTERIAL
ROADWAY CROSS SECTIONS
ST. JOSEPH, MINNESOTA

FIGURE
NO. 3

3.4.2 Community (Major) Collector Roadways

Major Collector roadways are designated to serve slightly shorter trips than arterial roadways. They collect and distribute traffic from developments to the arterial system. Community collectors supplement the regional arterial system and equally emphasize mobility and land access (see Figure 4).

Typical Posted Speed:

30 mph in urban areas
35-55 in urbanizing and rural areas

Number of Travel Lanes:

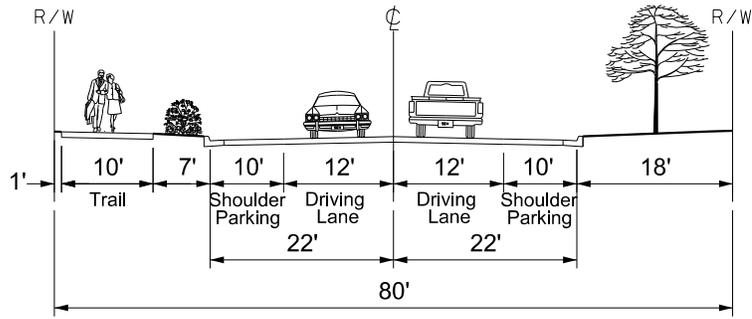
2-4 lanes; depending on projected travel demand and need to safely serve turning traffic

Right-of-Way Requirements:

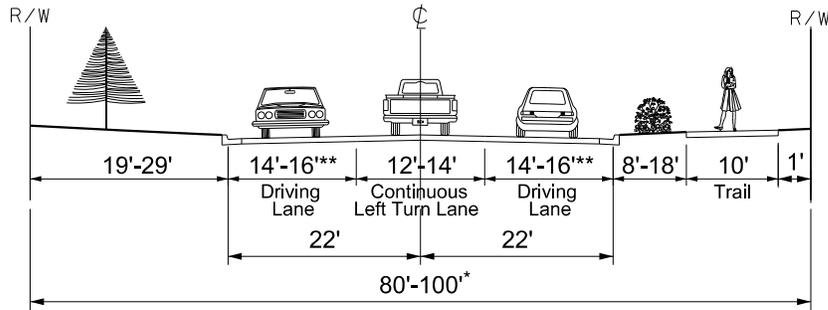
80 to 100-feet to accommodate up to a four-lane undivided typical section with a trail.

Estimated Construction Cost per Mile of Roadway:

Construction costs vary greatly based on width of roadway, design specifications, adjacent trail(s), utility improvements/relocations, underlying soils, etc. The cost to construct a community collector could range from approximately \$2.0 million to \$3.0 million per mile not including right of way costs.



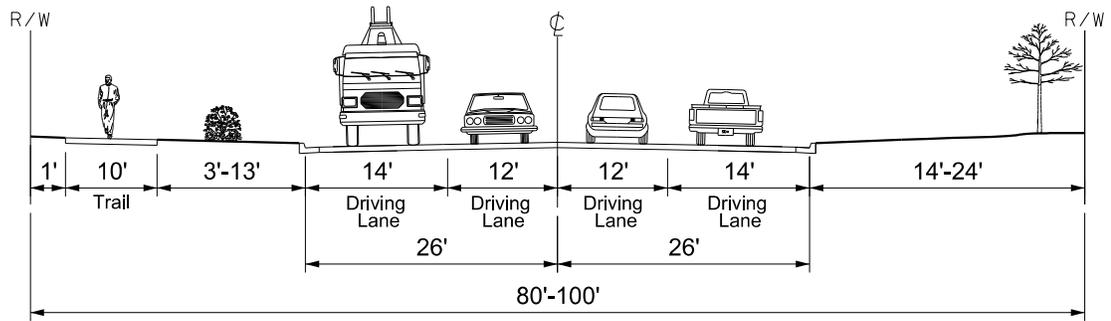
Community Collector
(Two-Lane Urban)



Community Collector
(Three-Lane Urban)

* 100' width allows adding right turn lane at intersections.

**12' lane and 4' shoulder



Community Collector
(Four-Lane Undivided Urban)

- Emphasis is on land access and mobility
- Typical posted speed: 30 miles per hour in urban areas, and 35-55 miles per hour in rural areas
- Recommend adjacent 10' shared use path
- 80'-100' Right of Way corridor (to accommodate up to a four-lane, undivided urban section with a trail)
- The estimated construction cost per mile of a regional collector roadway could range from approximately \$2.0 million to over \$3.0 million



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TRANSPORTATION PLAN
POTENTIAL COMMUNITY (MAJOR)
COLLECTOR ROADWAY CROSS SECTIONS
ST. JOSEPH, MINNESOTA

FIGURE
NO. 4

3.4.3 Neighborhood (Minor) Collector Roadways

Minor Collector roadways have a similar function as major collector roadways but would typically serve shorter trips providing connectivity to roadways of a higher classification. Minor collector roadways may be embedded within a residential neighborhood or business development. Minor collectors are not recognized as significant travel corridors in the regional roadway network system and emphasize land access over mobility (see Figure 4A).

Typical Posted Speed:

30 mph in urban areas
35-55 in urbanizing and rural areas

Number of Travel Lanes:

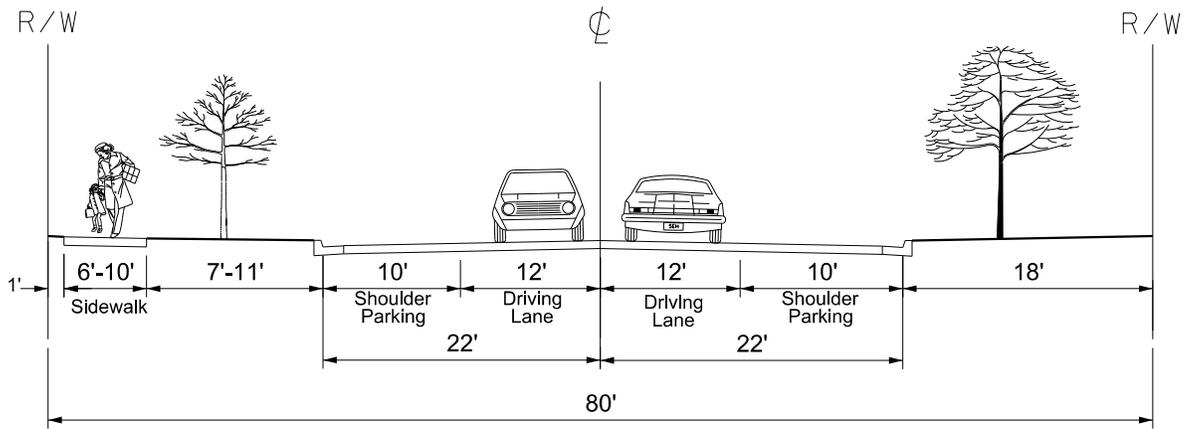
Typically 2 lanes

Right-of-Way Requirements:

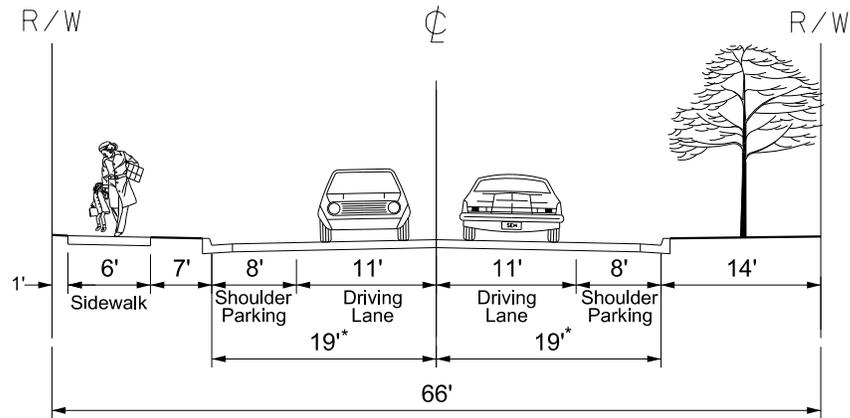
66 to 80 feet to accommodate a two-lane undivided typical section with a sidewalk or trail.

Estimated Construction Cost per Mile of Roadway:

Construction costs vary greatly based on width of roadway, design specifications, adjacent trail(s), utility improvements/relocations, terrain, underlying soils, etc. The cost to construct a neighborhood collector could range from approximately \$1.5 million to \$2.5 million per mile not including right of way costs.



Neighborhood Collector
(Two-Lane Urban)



Neighborhood Collector
(Two-Lane Urban)

* Minimum width for Municipal State Aid street with parking on both sides.
32' is minimum if parking is allowed on one side.

- Emphasis is on land access and connectivity
- Typical posted speed: 30 miles per hour in urban areas
- Recommend adjacent 6' sidewalk or 10' shared use path
- 66'-80' Right of Way corridor
- Neighborhood (minor) collectors are not acknowledged in the regional roadway network.
- The estimated construction cost per mile of a minor collector roadway could range from approximately \$1.5 million to \$2.5 million



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TRANSPORTATION PLAN
POTENTIAL NEIGHBORHOOD (MINOR)
COLLECTOR ROADWAY CROSS SECTIONS
ST. JOSEPH, MINNESOTA

FIGURE
4A

4.0 Principals of Roadway System Planning

All public roadways in the City of St. Joseph represent a roadway network. The intent of this section is to evaluate the existing and future roadway network within St. Joseph planning boundary. The planning boundary or project limits can be viewed in Figure 5 and it is considered the orderly annexation area. The future roadway network will be evaluated using estimated full build-out traffic volumes. Full build-out traffic volumes were calculated based upon anticipated growth within the City of St. Joseph planning boundary. Further details regarding full build-out traffic forecasts can be viewed in Section 4.2.1. Evaluating the future roadway network under City full build-out traffic demands will help identify issues and opportunities for improvements.

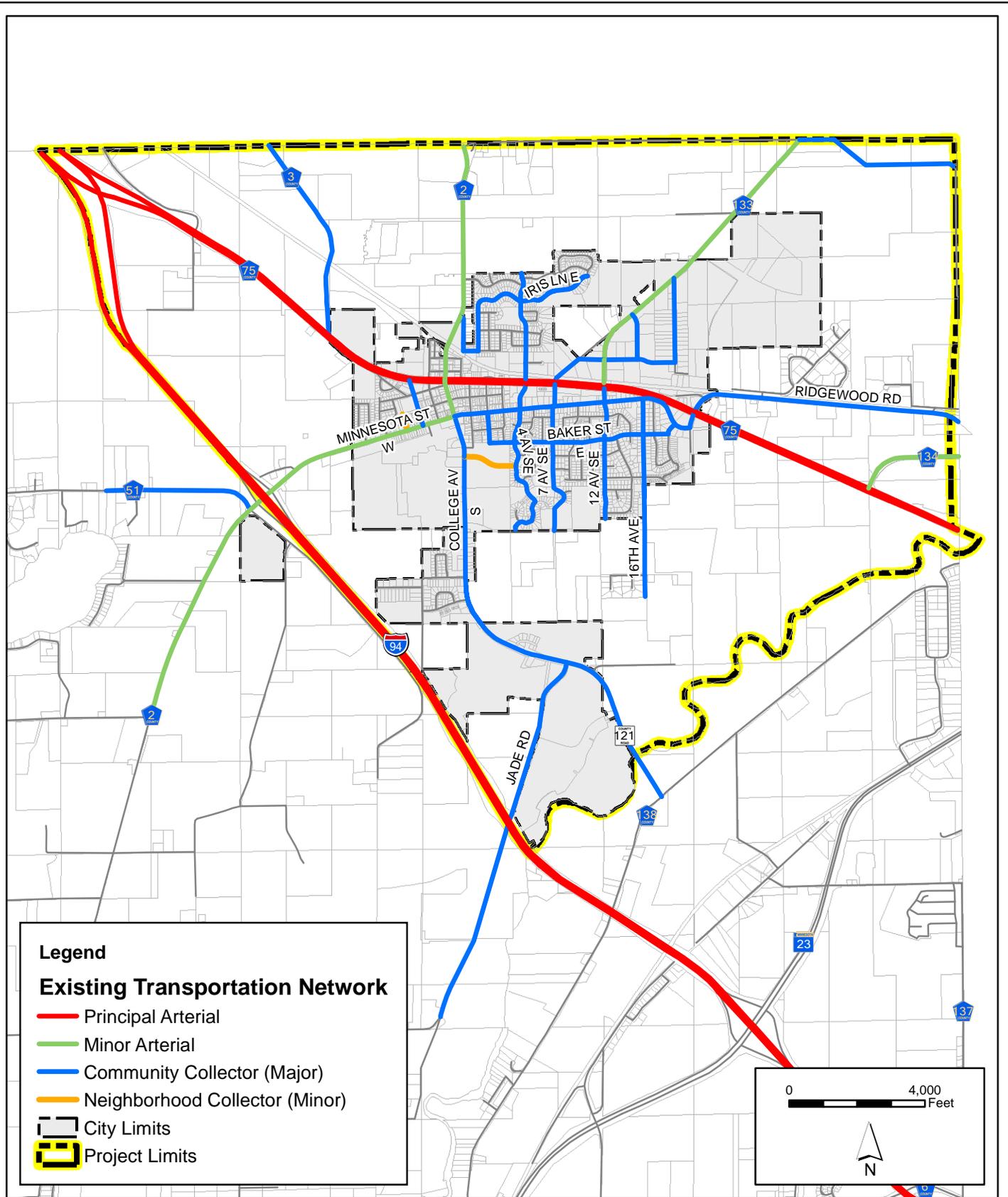
4.1 Existing Transportation System

Figure 5 provides a graphical view of existing principal arterials, minor arterials, and community collector, and neighborhood collector roadways in the City of St. Joseph. There are two principal arterials in the City of St. Joseph: Interstate 94 and CSAH 75. Each of these roadways is under the jurisdiction of the State of Minnesota or Stearns County.

Interstate 94 creates the southern boundary for St. Joseph and operates as a high-speed, four-lane, controlled access freeway that connects major regional trade centers in western Minnesota and North Dakota to the Twin Cities Metropolitan area. As part of the interstate system, this facility carries the highest level of importance with respect to serving long through trips. The City of St. Joseph is served by two interchanges on I-94: one at the junction of CSAH 75; the other at the junction of CSAH 2. A potential future interchange study area has been identified on I-94 in the area of Jade Road and CSAH 138 (see Figure 6).

CSAH 75 is a major east-west corridor that serves regional traffic as well as local traffic. This corridor experiences much congestion in both the AM and PM peak hours as well as on weekends. The high volume, high-speed nature of the corridor results in safety concerns for all modes of traffic using or crossing the highway. Critical planning issues along CSAH 75 include spacing of full access signalized intersections and potential reduction of partial access locations if safety problems arise due to growing traffic demands.

Existing transportation issues were developed by the Stakeholder group, City Council, and public input meetings after thorough discussion. The following highlights these issues that are important to the mobility of the City.



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Existing Transportation Network
Transportation Plan
St. Joseph, Minnesota

Figure
5

4.2 Future Transportation System

Recommended future transportation network can be viewed in Figure 6. The network recommendations extended to the City’s planning boundary.

4.2.1 Traffic Forecasts

Traffic forecasting is the process of using existing and future development patterns to estimate future roadway traffic volumes. The traffic forecasts for this study assumed full build-out conditions for the City of St. Joseph. Full build-out conditions extended to the entire City’s planning boundary as shown in Figure 6.

Traffic forecast were developed with the assistance from the St. Cloud Area Planning Organization (APO). The St. Cloud APO maintains the area’s regional travel demand model. This regional model includes the Cities of St. Cloud, Waite Park, Sauk Rapids, Sartell, St. Augusta, Rockville and St. Joseph. This model is considered a four-step model which includes the following steps:

- Trip Generation
- Trip Distribution
- Modal Split
- Traffic Assignment

For estimation purposes the City of St. Joseph was divided into the Traffic Analysis Zones (TAZ). TAZs generally contain similar land uses and are usually bordered by natural or manmade barriers (i.e. rivers, freeways, railroad corridors, etc.) Please refer to Figure 7 for a graphical location of these zones. There are 18 TAZs included in this study and the numbers representing the TAZs correspond to the St. Cloud APO TAZ designation number.

The first step for the regional demand model is trip generation. Trip generation is the process of applying static generation equations based upon specific TAZ land use characteristics (i.e. number of households, building area, etc.) to determine the total number of trips (productions and attractions) generated for each TAZ. Selected trip rate estimates from the regional model can be viewed in Table 6 below. Tables 7 through Table 10 compares the model year 2005, 2035 and full build-out input land use.

Table 6: Select Model Trip Generation Rates

Land Use Category	Trip Rate	Unit
Single-Family Residential	10.10	per dwelling unit
Multi-Family Residential	6.10	per dwelling unit
Industrial	7.00	1,000 square foot building space
Low Industrial	4.00	1,000 square foot building space
Low Retail	47.50	1,000 square foot building space

The second step, trip distribution allocates these trips to the respective origin (production) and destination (attraction) zone. The third step, modal split is the process of separating the vehicle trips between transit and passenger trips. Due to the low area transit use, the modal split step is excluded from the regional model and the trips generated are passenger car trips. The final step, traffic assignment, is the process of distributing these trips onto the roadway network and the end result will be estimated link average daily traffic (ADT). Figure 8 provides the estimated 2035 traffic forecast volumes for the City of St. Joseph.

Table 7: Households by TAZ

TAZ	Households St. Cloud APO Model		
	2005	2035	Full Build-Out*
121	14	57	142
122	7	7	261
123	8	8	628
124	112	354	1,644
125	2	2	108
126	2	3	23
127	22	22	206
128	372	418	219
129	225	225	269
130	109	109	88
131	32	32	225
132	544	773	806
133	241	291	299
134	8	8	12
137	213	1266	1,400
138	5	5	945
139	90	378	1,570
140	0	0	470
Total	2,006	3,958	9,315

Table 8: Office square footage by TAZ

TAZ	Office (1,000 ft ²) St. Cloud APO Model		
	2005	2035	Full Build-Out*
121	0	15	4,328
122	0	0	3,852
123	0	0	0
124	10	10	2
125	29	216	59
126	0	0	0
127	2	2	84
128	18	18	38
129	40	40	18
130	33	33	20
131	0	24	146
132	0	0	2
133	8	8	279
134	0	0	1
137	0	0	510
138	0	0	0
139	0	0	0
140	0	0	0
Total	140	366	9,339

*Full build out projections have been adjusted at the TAZ level to balance overall projected growth at the regional level (the adjustment has no influence on the 2035 forecast).

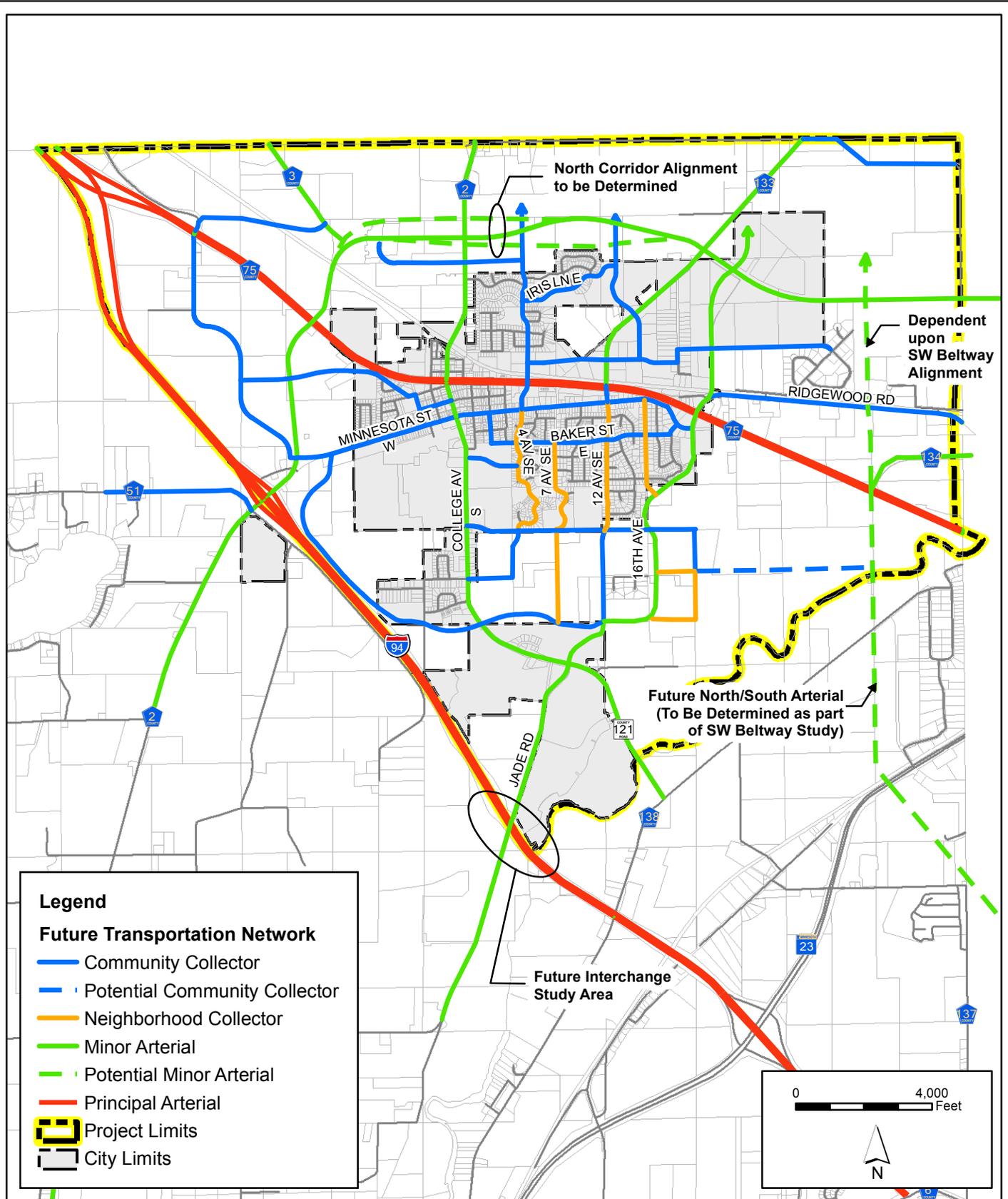
Table 9: Industrial square footage by TAZ

TAZ	Industrial (1,000 ft ²) St. Cloud APO Model		
	2005	2035	Full Build-Out*
121	6	70	4,718
122	0	0	0
123	0	0	0
124	8	67	22
125	414	1,111	2,887
126	384	1,278	10,142
127	22	22	0
128	112	112	22
129	19	19	18
130	7	7	32
131	0	0	6
132	0	0	0
133	13	13	10
134	60	331	0
137	0	0	0
138	0	0	0
139	0	0	0
140	0	0	0
Total	1,045	3,030	17,857

Table 10: Retail square footage by TAZ

TAZ	Retail (1,000 ft ²) St. Cloud APO Model		
	2005	2035	Full Build-Out*
121	19	96	66
122	0	0	0
123	0	0	0
124	6	6	320
125	51	181	280
126	27	27	388
127	6	6	22
128	9	83	164
129	54	54	44
130	10	10	28
131	0	143	51
132	0	0	0
133	25	151	422
134	14	102	1,777
137	0	92	39
138	0	0	0
139	0	0	0
140	6	6	237
Total	227	957	3,838

*Full build out projections have been adjusted at the TAZ level to balance overall projected growth at the regional level (the adjustment has no influence on the 2035 forecast).



Legend

Future Transportation Network

- Community Collector
- Potential Community Collector
- Neighborhood Collector
- Minor Arterial
- Potential Minor Arterial
- Principal Arterial
- Project Limits
- City Limits



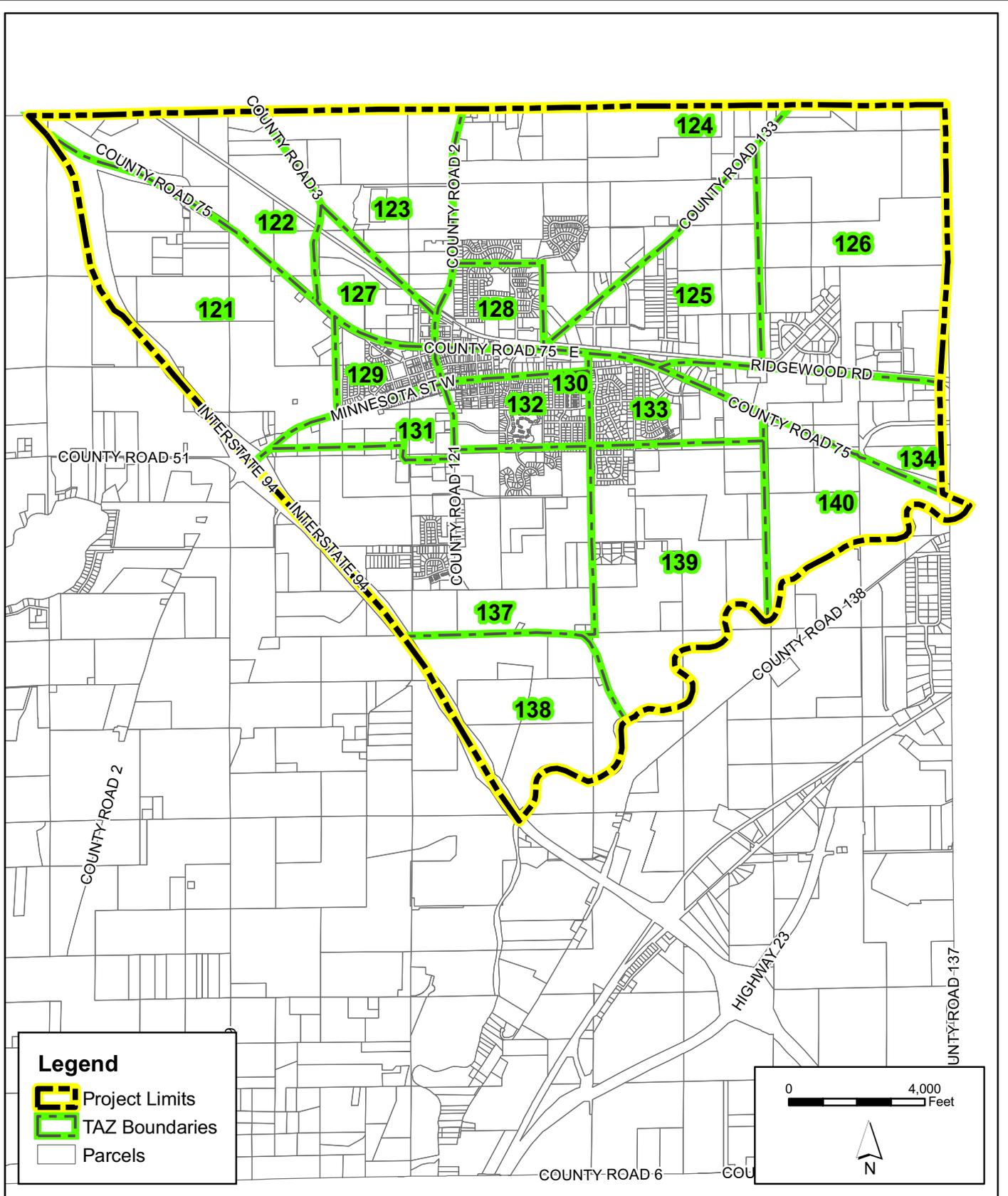
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Future Transportation Network
 Transportation Plan
 St. Joseph, Minnesota

Figure
 6



Legend

-  Project Limits
-  TAZ Boundaries
-  Parcels

0 4,000 Feet



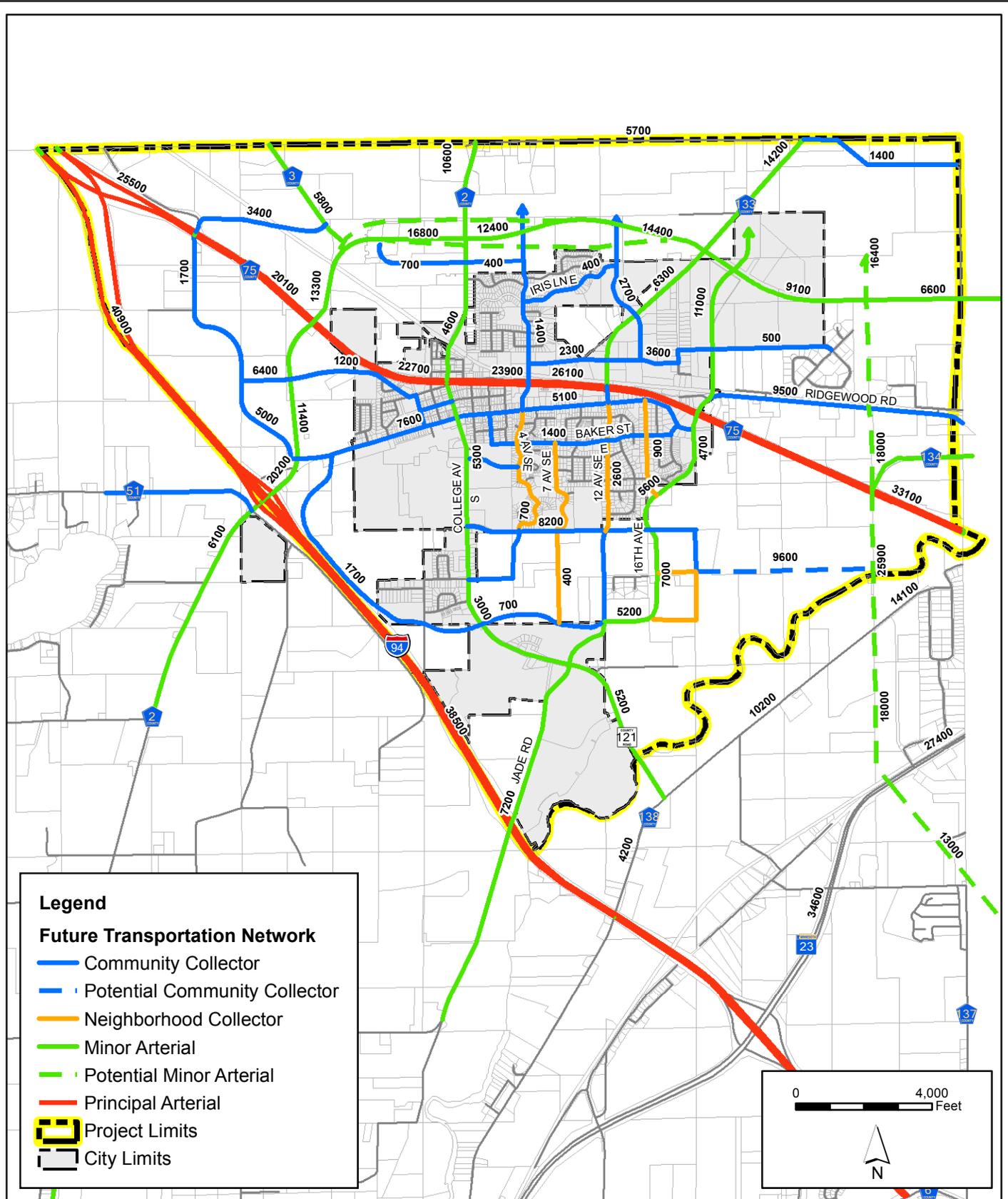

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TAZ Boundaries
Transportation Plan
St. Joseph, Minnesota

Figure
7



Legend

Future Transportation Network

- Community Collector
- - - Potential Community Collector
- Neighborhood Collector
- Minor Arterial
- - - Potential Minor Arterial
- Principal Arterial
- Project Limits
- City Limits

0 4,000
 Feet

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2035 Traffic Forecast
 Transportation Plan
 St. Joseph, Minnesota

Figure
 8

4.2.2 Network Capacity Deficiencies

The results from the traffic forecasting exercise were used to identify any capacity deficiencies that would exist in the 2035 forecast year. This information is used to either plan additional capacity improvements or to manage facilities more effectively through access management, right-of-way preservation, land use and development controls.

Capacity deficiencies are determined by the future volume to capacity ratio (v/c). Future volumes were calculated during the traffic forecasting exercise and Table 11 shows the typical roadway capacities by facility type.

Table 11: Typical Roadway Capacities

Roadway Design	Capacity (Average Daily Traffic – ADT)
2-lane urban roadway	≤ 10,000
2-lane rural roadway	≤ 15,000
3-lane roadway	≤ 17,000
4-lane undivided roadway	15,000 – 20,000
4-lane divided roadway	35,000
6-lane divided roadway	55,000

Based upon the St. Cloud APO 2035 Forecast for this Transportation Plan (Figure 8), two lane roadways within St. Joseph that are expected to experience volumes greater than 10,000 ADT and therefore warrant potential future consideration of multi-lane configurations are all identified as minor arterial corridors. These include portions of CSAH 2, CSAH 133, the North Corridor, the Southwest Beltway, and 20th Avenue. All collector roadways are expected to serve demands within the capacity of a two or three lane configuration.

4.3 Topics of Discussion

In addition to three on-going corridor studies within the City, there are also other topics that came up for discussion with the stakeholder group and public meetings. Each of these is discussed in more detail below.

4.3.1 Southern East-West Corridor

The Southern East-West Street Corridor Study was concluded by the City prior to completion of the environmental review process due to a change in Federal policy. The Future Transportation Network Map (Figure 6) shows the preferred alignment (Alternative G2a as documented in the Corridor Study Report on file at City Hall). As shown on the Future Transportation Network map, the Southern East-West Corridor should be considered a major collector roadway from College Avenue (County Road 121) easterly across the north-south minor arterial route planned generally in the 16th and 20th Avenue corridors. The Southern East-West Corridor collector route should then extend easterly around the southern limits of the Historic Rassier Farm until it intersects with the Southwest Beltway (the alignment for which has not been established).

The Southern East-West Corridor Study defined an additional collector route westerly of College Avenue which loops westerly around the Sisters of St Benedicts property, runs parallel to I-94 until intersecting with Minnesota Street as depicted in Figure 6.

4.3.2 North Corridor/CSAH 2 Realignment

In 2012, Stearns County intends to construct CSAH 2 on a new alignment from Minnesota Street (near the I-94 interchange) to CSAH 75 at its current junction with CSAH 3. This segment establishes the western end of the future North Corridor.

Currently, there are three alignment alternatives for the north corridor easterly of CSAH 3, all of which are shown on the Future Transportation Network map (Figure 6). It is recommended that the Transportation Plan be updated when the North Corridor alignment is selected.

4.3.3 Future Location of the Southwest Beltway

The St. Cloud APO initiated an environmental impact statement scoping study corridor study to determine the best location for the Southwest Beltway. This roadway is envisioned as an arterial roadway with regional significance providing connectivity around the St. Cloud metropolitan area. It is possible that the north/south portion of this beltway will come through or near the City of St. Joseph (as depicted in Figure 6)

During the early stages of Southwest Beltway Study, the Federal Highway Administration (FHWA) implemented a policy change that requires project funding to be programmed before an environmental study process can be completed. The policy change caused the Southwest Beltway Study to be suspended until such time that funding has been programmed.

It has been determined that 20th Avenue should be part of a minor arterial corridor in St. Joseph regardless of the beltway location. If the beltway does not come through the eastern portion of the City, then a north/south collector roadway will be needed in the eastern portion of the City. It is recommended that the Transportation Plan be updated when outcomes of are known.

4.3.4 Future I-94 Access

The topic of a future access to I-94 came up in discussions with the public and stakeholder group in 2006, and again during the 2012 stakeholder meetings. Jade Road is a candidate location within the City of St Joseph. Interchange spacing guidelines prescribe 2-mile spacing on rural freeways and 1 mile minimum spacing on urban freeways. I-94 is currently considered a rural freeway. The need for an interchange would need to be established and agreed upon by MnDOT and the FHWA.

The classification of Jade Road as a minor arterial lends itself well to an interchange location when needs arise and if physical connections can be deemed operationally and physically feasible. This is a topic that should continue to be explored in future updates of this plan.

Figure 6 indicates a potential future interchange study area on I-94 in the area of Jade Road.

4.4 Recommendations

The following recommendations provide a right-of-way footprint for each future minor arterial and collector roadway within the City’s full build-out planning area. Table 12 provides the City with a very valuable and powerful planning tool. More details about design guidelines can be located in Chapter 3. It should be noted that while capacity analysis identifies potential problem areas, it is recommended that additional traffic information be reviewed to confirm operational problems as specific improvements or operational changes are being considered for implementation.

Table 12: Recommendations

Roadway	Classification	Existing Geometrics	Recommended Geometrics**	Recommended Right-of-way (ROW)*	Trail System***
North Corridor from CR 3 to east future city limits	Minor Arterial	n/a	4-lane divided	120-150 feet	Trail
East-west collector from North Corridor to Northland Drive	Community Collector	n/a	2-lane	80 feet	No
Iris Lane from Northland Drive to 15 th Avenue NE	Community Collector	2-lane	2-lane	80 feet	Sidewalk
Elm Street East from Northland Drive to east of 20 th Avenue	Community Collector	2-lane	2-lane	80 feet	No
Ridgewood Road from 20 th Avenue to east future city limit	Community Collector	2-lane	2-lane or 3-lane	80-100 feet	No
Old Highway 52 from 115 th Avenue to Birch Street West	Community Collector	n/a	2-lane or 3-lane	80-100 feet	Trail/Sidewalk
2 nd Ave NE from Birch Street to Ash Street	Community Collector	2-lane	2-lane	80 feet	Sidewalk
Ash Street from Birch Street to College Avenue	Community Collector	2-lane	2-lane	80 feet	Trail/Sidewalk
Minnesota Street from CSAH 2 realignment to 20 th Avenue	Community Collector	2-lane	2-lane or 3-lane	80-100 feet	Trail/Sidewalk
Baker Street from 2 nd Avenue to Minnesota Street	Community Collector	2-lane	2-lane	80 feet	Trail/Sidewalk
Southern East-West Corridor from College Avenue to the Southwest Beltway	Community Collector	n/a	2-lane or 3-lane	80-100 feet	Trail/Sidewalk
115 th Avenue from CR 3 to CSAH 2 realignment	Community Collector	n/a	2-lane or 3-lane	80-100 feet	No
CSAH 2 realignment from CR 3 to Minnesota Street	Minor Arterial	n/a	2-lane or 3-lane	80-100 feet	Trail
CSAH 2 from Minnesota Street to south of I-94	Minor Arterial	2-lane	4-lane divided	120-150 feet	Trail
College Avenue from North Corridor to CR 138	Minor Arterial	2 lane/3-lane	2-lane or 3-lane	80-100 feet	Trail/Sidewalk
Callaway Street from College Avenue to 4 th Avenue	Community Collector	2-lane	2-lane	80 feet	Trail
2 nd Avenue from Minnesota Street to Baker Street	Community Collector	2-lane	2-lane	80 feet	No
Northland Drive from North Corridor to CSAH 75	Community Collector	2-lane	2-lane	80 feet	Trail/Sidewalk

Roadway	Classification	Existing Geometrics	Recommended Geometrics**	Recommended Right-of-way (ROW)*	Trail System***
4 th Avenue from CSAH 75 to Minnesota Street	Community Collector	2-lane	2-lane	80 feet	Trail/Sidewalk
4 th Avenue from Minnesota Street to the Southern East-West Corridor	Neighborhood Collector	2-lane	2-lane	66-80 feet	Trail/Sidewalk
4 th Avenue from the Southern East-West Corridor to College Avenue	Community Collector	2-lane	2-lane	80 feet	Trail/Sidewalk
15 th Avenue from North Corridor to Elm Street	Community Collector	2-lane	2-lane	80 feet	Sidewalk
CR 133 from North Corridor to CSAH 75	Minor Arterial	2-lane	3-lane or 4-lane undivided	100-120 feet	Trail
12 th Avenue from CSAH 75 to Minnesota Avenue	Community Collector	2-lane	2-lane	80 feet	Trail/Sidewalk
12 th Avenue from Minnesota Avenue to the Southern East-West Corridor	Neighborhood Collector	2-lane	2-lane	66-80 feet	Trail/Sidewalk
12 th Avenue from the Southern East-West Corridor to the 16 th Avenue/20 th Avenue/Jade Road Corridor	Community Collector	2-lane	2-lane	80 feet	Trail/Sidewalk
20 th Avenue from North Corridor to CR 121	Minor Arterial	n/a	3-lane or 4-lane	100-120 feet	Trail
Jade Road from CR 121 to south of Interstate 94	Minor Arterial	2-lane	3-lane or 4-lane	100-120 feet	Trail
Southwest Beltway	Minor Arterial	n/a	4-lane divided	120-150 feet	Trail
Collector street along I-94 from Minnesota Street to 20 th Avenue	Community Collector	n/a	2-lane	80 feet	No
7 th Avenue from Baker Street to the easterly extension of collector street paralleling I-94	Neighborhood Collector	2-lane	2-lane	80 feet	Trail
16 th Avenue from Minnesota Street to 20 th Avenue	Neighborhood Collector	2-lane	2-lane	66-80 feet	No
295 th Street loop east of 20 th Avenue	Neighborhood Collector	n/a	2-lane	66-80 feet	No

- * Additional right-of-way may be needed to accommodate turn lanes at major intersections
- ** Recommendations based upon forecast volumes, safety, performance and route continuity
- *** Refer to Figure 9 for detailed information related to trail/sidewalk width and surface types

5.0 Pedestrian and Bicycle System

The Pedestrian and Bicycle system consists of all sidewalks, trails, paths, and other amenities associated with non-motorized travel. Increased attention has been given to non-motorized travel not only as a means of recreation but also as a means of practical transportation. People biking or walking for recreation often value different facility characteristics than those biking or walking to an employment or shopping destination. Two basic needs for improving non-motorized facilities for all purposes are:

- The need for continuous facilities that connect important origin and destination points. This includes removing physical barriers and ensuring system continuity is maintain across political boundaries
- The need to provide facilities with increased safety for the user

5.1 Facility Types

Non-motorized facilities include sidewalks, trails, bike lanes, and shared roadway facilities.

Sidewalks

Sidewalks are typically located parallel and adjacent to roadways and are within public right-of-way. They are primarily concrete and typically range from 4 to 6-feet wide. Sidewalks cater mainly to pedestrian traffic but are also used by bicyclists when other bicycle facilities are not available.

Bike Lane

Bicycle lanes are a portion of the roadway or shoulder that is designated for exclusive or preferential use by bicycles. These lanes are designated through striping or pavement markings and are typically 3 to5-feet wide.

Trails

Trails provide an off-street alternative to pedestrians and bicyclists. These routes may or may not be adjacent to existing roadways and are typically shared facilities ranging between 8 to 12-feet wide. Material surface type includes crushed rock, wood chips, and bituminous pavement.

Shared Facilities

Shared roadway facilities are roadways that pedestrians and bicyclists can legally use for transportation. These facilities include most public roadways except the Interstate System and other freeway types.

5.2 Existing Trail System

St. Joseph existing trail system is composed mostly of trails and sidewalk. This trail system connects pedestrian and bicyclists to area businesses, parks, and schools. There currently is approximately 9.3 miles of designated pedestrian and bicyclists trails within the City of St. Joseph.

5.2.1 Intra-City Trails

Within the City of St. Joseph there are a number of important locations that pedestrian and bicyclists are connected to either with sidewalk or trail. The following Table 13 below describes the current intra-city trails. Figure 9 shows the trail locations graphically.

Table 13: Existing Intra-City Trail System

Trail	Description	Description	Distance (miles)
Iris Lane	From Northland Heights Development to Northland Drive	6' sidewalk	0.42
Ash Street	From alley west of 1 st Avenue NW to 1 st Ave NE	6' sidewalk	0.24
West Minnesota Street	From 4 th Avenue NW to College Avenue	6' or wider sidewalk 6' or less sidewalk	0.38
East Minnesota Street	From College Avenue to 16 th Avenue SE	6' or wider sidewalk 6' or less sidewalk	1.04
East Baker Street	From College Avenue to 1 st Avenue SE	6' or wider sidewalk	0.09
Callaway Street	From College Avenue to Graceview Estates	8' bituminous trail	0.29
Foxmore Hollow	From 1st Avenue SW to College Avenue	6' sidewalk	0.10
Iverson Street	From 3 rd Avenue to College Avenue	6' sidewalk	0.24
1 st Avenue NW	From County Road 75 to West Minnesota Street	6' sidewalk	0.22
College Avenue	From County Road 75 south of Iverson St	6' or wider sidewalk	1.4
College Avenue	From County Road 75 to Jade Road	8' bituminous trail	0.59
Northland Drive	Hickory Drive to north plat line	6' sidewalk	0.22
Northland Addition	From Jasmine Lane to Northland Park	8' bituminous trail	0.11
4 th Avenue NE	Connects County Road 75 to East Minnesota Street	6' sidewalk	0.14
ISD 742 Property (Old Kennedy School site)	Trail system around the school property	8' or less bituminous trail	0.47
Graceview Estates	Trail system within Graceview Estates Development connecting to Klinefelter Park	8' bituminous trail	1.28
12 th Avenue SE	From East Minnesota Street to Klinefelter Memorial	6' sidewalk	0.69
Liberty Pointe	Trail system in Liberty Pointe	8' bituminous trail	0.57
Klinefelter Park	Trail system in Klinefelter Park	8' bituminous trail	0.57
Jade Road	From CR 121 to Kennedy Community School	6' sidewalk	0.23

5.2.2 Regional Trails

Lake Wobegon Trail is a regional trail extending from the City of St. Joseph west 48.7 miles to the City of Osakis. It also has an extension on the west side of the City of Albany which runs northeast past the City of Holdingford connecting to the Soo Line Trail. Lake Wobegon Trail runs along MnDOT rail corridor that was formerly owned by Burlington Northern Railroad Company. The trail is used by bicyclists, walkers, rollerbladers, roller-skiers, and opens to snowmobiles during the winter months. The trail has grown

considerably since first opening and further additions to the trail are continuing to be planned.

5.3 Future Trail System

This section will detail community efforts to expand their current trail system. Details will be provided for both intra-city and regional trail expansion. Figure 9 provides a graphical view of potential trail expansion sites.

5.3.1 Intra-City Trail Expansion

The proposed trail expansion will add approximately 17 miles of trail system within the City of St. Joseph. These trails will provide community connectivity to the Lake Wobegon Trail and the potential Glacial Lakes Trail expansion. It is recommended that a grade separated crossing over CSAH 75 be considered in the future. Table 14 summarizes the planned future trail system.

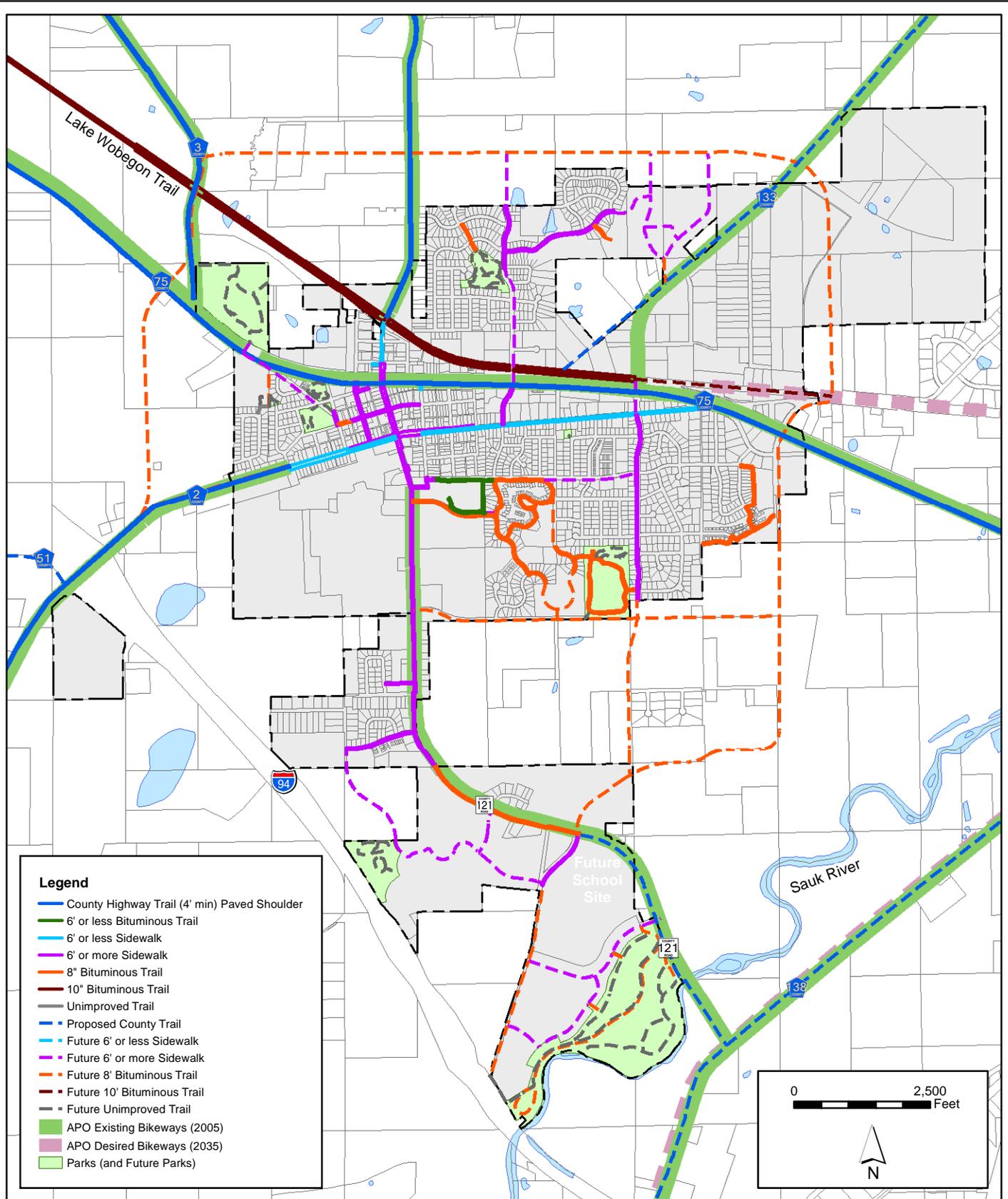
Table 14: Future Intra-City Trail System

Trail	Description	Proposed Geometrics	Distance (Miles)
North Corridor	From County Road 133 to CSAH 2 Realignment	8' bituminous trail	2.07
Southern East-West Corridor	From College Avenue to 20th Avenue SE	8' bituminous trail	1.27
Nearly Street	From Jade Road/12th Avenue west through Rivers Bend Development	6' sidewalk	0.77
Rivers Bend	Trail System within Rivers Bend Addition (east of Jade/12th Avenue)	6' sidewalk 8' unimproved trail 8' bituminous trail	1.06 2.17 1.32
CSAH 2 Realignment	From North Corridor to West Minnesota Street	8' bituminous trail	1.34
Northland Drive	From Wobegon Trail to Hickory	6' sidewalk	0.4
Crescent Hill Development	Trail System within Crescent Hill Development	6' sidewalk	0.78
12th Avenue SE	From Klinefelter Park to 20th Avenue South	8' bituminous trail	0.60
Baker Street	From 7 th Avenue to 12 th Avenue NE	6' sidewalk	0.35
Jade Road/12 th Avenue SE	From Kennedy Community School to Interstate 94	6'-8' bituminous trail	0.70
20 th Avenue SE	Wobegon Trail to County Road 121	8' bituminous trail	2.13
20 th Avenue NE	Wobegon Trail to North Corridor	8' bituminous trail	0.88
Graceview Estates	Connection with existing Graceview Estates trail system	8' bituminous trail	0.35
West Minnesota Street	From 4 th Avenue Northwest to CSAH 2 Realignment	8' bituminous trail	0.56
Northland Park	Trail system in Northland Park	bituminous trail	0.77
County Road 133	Trail system from Crescent Hill development to the Wobegon Trail	8' bituminous trail	0.56
Northland Heights	Connecting Northland Heights to Crescent Hill, North Corridor, and Northland Plat 8	6' sidewalk	0.53
Old TH 52	Old TH 52 from Millstream Park to Birch Street	6' sidewalk	0.34

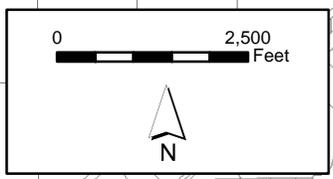
Trail	Description	Proposed Geometrics	Distance (Miles)
West Park	West Park to Iverson Street	6' sidewalk	0.38
County Road 133	Crescent Hill Development to 320th Street	8' bituminous trail	1.4
Wobegon Trail	County Road 133 to 20 th Avenue NE	10' bituminous trail	0.70
Hollow Park	Hollow Park to Old TH 52	8' bituminous trail	0.14

5.3.2 Regional Trail Expansion

There has been discussion regarding possible extension of the Glacial Lakes State Trail expansion to St. Joseph. Two possible alternatives have been considered including connection to the CSAH 2 trail system or the County Road 121 trail system. Currently, the Glacial Lakes State Trail has 13.5 miles of paved surface and is located on a former Burlington Northern Railroad corridor. The developed portion of the trail runs from Willmar to a few miles north of New London. The remaining 22 mile stretch to Richmond is undeveloped and has some original railroad stones as a surface. Also there has been discussion regarding the possible extension of the Lake Wobegon Trail from the City of St. Joseph east to the City of Waite Park and the City of St. Cloud.



- Legend**
- County Highway Trail (4' min) Paved Shoulder
 - 6' or less Bituminous Trail
 - 6' or less Sidewalk
 - 6' or more Sidewalk
 - 8" Bituminous Trail
 - 10" Bituminous Trail
 - Unimproved Trail
 - Proposed County Trail
 - Future 6' or less Sidewalk
 - Future 6' or more Sidewalk
 - Future 8" Bituminous Trail
 - Future 10" Bituminous Trail
 - Future Unimproved Trail
 - APO Existing Bikeways (2005)
 - APO Desired Bikeways (2035)
 - Parks (and Future Parks)



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Trails Map
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Figure
9



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