2025 Rice County Transportation Plan

Prepared by:

BOLTON & MENK, INC.
Consulting Engineers & Surveyors

12224 Nicollet Avenue
Burnsville, MN 55337
(952) 890-0509

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ACKNOWLEDGEMENTS:

PROJECT MANAGEMENT TEAM

Dennis Luebbe, Rice County Highway
Stefan Gantert, Rice County Highway
Chris Chromy, Bolton & Menk, Inc.
Gina Mitchell, Bolton & Menk, Inc.
Chris Moates, Mn/DOT District 6

TRANSPORTATION ADVISORY COMMITTEE

Tom McMahon, City of Dundas
Tom Drake, City of Faribault
Joel Erickson, City of Lonsdale
Loren Dahl & Steve Felix, City of Morristown
Diana Ludwig, City of Nerstrand
Heidi Hamilton, City of Northfield
Gary Ebling, Bridgewater Township
Clayton Mechura, Cannon City Township
Don Michel, Warsaw Township
Stan Burmeister, Forest Township
Clarence Salaba, Wheatland Township
Joseph LeBrun, Erin Township
Dan Morris, Morristown Township
Michael Groth, Northfield Township
Arnie Petricka, Richland Township
Dick Langeslag, Walcott Township
Paul Linse, Webster Township
Marlene Pohl, Wells & Shieldsville Townships
Kent Jones, Wheatland Township
Duane Bailey, Wheeling Township
Milt Plaisance, Rice County
Jim Brown, Rice County

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1.0 INTRODUCTION

1.1 Study Background

Rice County is located immediately south of the Twin Cities Metropolitan Area. Its regional location is illustrated in Figure 1.1-1 – Regional Location. Scott, Dakota, Steele, Waseca, Goodhue, and LeSueur Counties border on the north, south, east, and west respectively. The cities within Rice County include a small portion of Dennison, Dundas, Faribault, Lonsdale, Morristown, Nerstrand, and Northfield.

As identified in the 2002 Rice County Comprehensive Plan, the predominate land use in the unincorporated areas of the County is agricultural. Nearly all residential and non-residential development is directed to the cities within the County where public sewer treatment and water supply are available. Some growth is directed to recognized unincorporated villages. The County's current Comprehensive Plan provides for non-residential land uses along the Interstate 35 (I-35) corridor around the CSAH 1 interchange and south of Trunk Highway (TH) 19 and west of I-35.

The I-35 corridor extending north/south through Rice County provides connectivity to the Twin Cities Metropolitan Area. This proximity has resulted in recent population growth in many Rice County cities. According to the U.S. Census, Rice County's population in 2000 was 56,665. The 2002 Rice County Comprehensive Plan projected an estimated 2020 population of 89,135, an increase of 57.3% over the 2000 population.[1] After the completion of the 2002 Comprehensive Plan, the Minnesota State Demographic Center report was presented, which projected Rice County's 2025 population at 76,320, an increase of 34.7% over the 2000 population.[2] Despite the variations between the projections, it is evident that a considerable amount of population growth is expected in Rice County.

1.2 Growth Area Designations

Figures 1.2-1 through 1.2-6 illustrate the Urban and Rural Designations for Rice County, as well as each city in Rice County. These areas correspond to the different types of development patterns within the County and will be used as a basis in applying roadway standards, policies, and guidelines.

- Traditional Urban Core – areas within municipalities developed on the traditional grid street network.
- Urban/Urbanizing – areas developed on a curvilinear street pattern within city limits. It also includes all undeveloped property in a city, all land extending at least one (1) mile beyond a city's corporate city limits, all land within and one-half (½) mile beyond an unincorporated village, and the non-residential land use guided area adjacent to I-35 between CSAH 46 and Base Line Road. The city and village growth areas, as well as the non-residential land use guided areas are consistent with the Rice County Urban Expansion Areas and Village Growth Zones identified in the Rice County Comprehensive Plan[3], unless specifically requested by a city to be larger.
- Rural – areas within Rice County that consist of primarily agricultural, rural residential, and natural open space.

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[1] Rice County, 2002 Comprehensive Plan, 2002, p. 33.
[2] Minnesota Planning State Demographic Center, Minnesota Population Projections 2000 – 2030, October 2002, <http://www.demography.state.mn.us/DownloadFiles/00Proj/PopulationProjections02.pdf>.
[3] See also 2002 Comprehensive Plan, p. 51.

1.3 Plan Purpose

Rice County operates and maintains a highway system, which in conjunction with local, regional, and state systems, helps to serve the transportation needs of its residents and businesses. As a result, the County contributes to or makes decisions, which affect all other transportation modes and systems. Within this context, the Rice County Transportation Plan provides the framework for development of the Rice County Transportation System through the year 2025. The Plan describes system principals and standards, evaluates the existing County transportation system, identifies future system needs, develops a transportation system plan, and outlines strategies to implement the Plan.

Understanding the relationship between land use and transportation, this Plan is a guide to land owners, townships, cities, and Rice County in preparing for future growth and development. As such, whether an existing road is proposed for upgrading or a land use change is proposed on a property, this Plan provides the framework for decisions regarding the nature of roadway infrastructure improvements necessary to develop a safe and efficient roadway system.

1.4 Agency and Public Involvement Process

Public involvement was identified as a key component to the successful development of the Rice County Transportation Plan. Public involvement efforts provided the public and local agencies with continuing opportunities to be involved in the identification of issues and potential improvements of the existing and future transportation system in Rice County. Input from affected local agencies and the public was important in lending credibility to key decisions made during the transportation planning process. Making timely, accurate, and useful information available to both key decision-makers and the general public assisted in gaining public input and agency support necessary to ultimately approve and implement the Transportation Plan. Key elements of the Public Involvement Plan and their objectives included:

- Transportation Advisory Committee – comprised of city and township staff or elected officials to provide input on general issues and concerns reflected in the Transportation Plan.
- Newsletters – 3 newsletters provided written information about the planning process to city and township officials and other interested stakeholders.
- Public Information Meetings – 2 countywide meetings held to gather input and inform the public on the overall transportation planning process.
- Informal Open House Meetings – 3 series of local meetings held across the County in 4 different locations (12 meetings total) to provide information to local landowners, residents, and elected officials and to develop grassroots support for transportation planning activities and recommendations.
- Individual Agency Staff Meetings – meetings held with local communities, adjacent counties, and other agencies to identify applicable transportation information to incorporate into the Plan.
- Elected Officials Meetings – meetings held to share information, as well as listen and understand key transportation principals and issues.
- County Website – Rice County's website was utilized as a means to advertise public involvement opportunities and display information presented at Informal Open House and Public Information Meetings.

A summary of the transportation issues identified through the public involvement process is illustrated in Figure 1.2-7 – Transportation Issues.

2.0 SYSTEM PRINCIPLES AND STANDARDS

The transportation system principles and standards included in this Plan create the foundation for developing the transportation system, evaluating its effectiveness, determining future system needs, and implementing strategies to fulfill the goals and objectives identified.

2.1 Functional Classification

Recognizing that individual roads and streets do not serve independently in any major way, most travel involves movement through a network of roadways. Functional classification defines the nature of this channelization process by defining the part that any particular road or street should play in serving the flow of trips through a roadway network. Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide. Functional classification involves determining what functions each roadway should perform prior to determining its design features, such as street widths, design speed, and intersection control.

There are two sets of functional classification definitions for the Rice County Transportation Plan, Urban and Rural. The urban roadway system includes Principal Arterials, Minor Arterials, Collectors, and Local Roadways. The rural roadway system includes Principal Arterials, Minor Arterials, Major and Minor Collectors, and Local Roadways. Both classifications have fundamentally different characteristics relative to density and types of land use and travel patterns. Rice County's current classifications are illustrated in Figure 2.1-1 – Existing Roadway Functional Classification. It is also recognized that the roadway network in Rice County is part of a greater regional roadway system. In particular, the function of Principal and Minor Arterial roadways extend beyond the Rice County borders.

Urban System – The urban functional classification definitions shall apply to all incorporated cities of Rice County including Dundas, Faribault, Lonsdale, Morristown, and Northfield. The urban definitions shall apply to urban areas as well as urbanizing areas as illustrated on Figures 1.2-1 through 1.2-6.

<u>Urban Principal Arterials</u>

- *Primary Purpose:* Connect Rice County with large urban areas and major cities
- *Character of Service:*
  - Accommodate the longest trips in the roadway network, typically greater than 8 miles.
  - Emphasis is focused on mobility rather than access.
  - Travel speeds of 55 mph or greater
  - Freeway/Expressway Design
- *System Role:* 2-4% of roadway miles
  30-55% of vehicle miles traveled
- *Spacing:* 6-12 miles

<u>Urban Minor Arterials</u>

- *Primary Purpose:* Link large urban areas, principal arterials, and regional business concentrations
- *Character of Service:*
  - Accommodates trips greater than 2 miles.
  - Emphasis is more on mobility than access.
  - Travel speeds of 30–55 mph
  - Urban highways
- *System Role:* 10-20% of roadway miles
  25-45% of vehicle miles traveled
- *Spacing:* 1-2 miles

Urban Collectors

- *Primary Purpose:* Establish local connectivity within Cities by interconnect neighborhoods, business concentrations, and arterial roadways. Provide secondary connectivity between smaller towns.
- *Character of Service:*
  - Accommodates trips less than 5 miles.
  - Emphasis is balanced between mobility and access.
  - Travel speeds of 30–45 mph
  - 2-lane streets, parkways, multi-lane urban roadways
- *System Role:* 15-25% of roadway miles
  10-35% of vehicle miles traveled
- *Spacing:* ½-1 mile

Urban Local Streets

- *Primary Purpose:* Facilitate the collection of local traffic and convey it to Collectors and Minor Arterials.
- *Character of Service:*
  - Accommodates the trips less than 2 miles.
  - Emphasis is on access rather than mobility.
  - Travel speeds of 30 mph or less
  - 2-lane local streets
- *System Role:* 65-80% of roadway miles
  10-30% of vehicle miles traveled
- *Spacing:* As needed for access
- *Rural System:* The rural functional classification definitions shall apply to all permanently rural and/or unincorporated areas in Rice County. The rural definitions shall apply to rural areas as illustrated on 1.2-1 through 1.2-6.

Rural Principal Arterials

- *Primary Purpose:* Connect Rice County with large urban areas and major cities
- *Character of Service:*
  - Accommodate the longest trips in the roadway network, typically greater than 8 miles.
  - Emphasis is focused on mobility rather than access.
  - Travel speeds of 55 mph or greater
  - Freeway/Expressway Design
- *System Role:* 2-4% of roadway miles
  30-55% of vehicle miles traveled
- *Spacing:* 6-12 miles

Rural Minor Arterials

- *Primary Purpose:* Link large urban areas and rural principal arterials to larger towns and regional business concentrations. Facilitate inter-county travel and connectivity.
- *Character of Service:*
  - Accommodates trips greater than 5 miles.
  - Emphasis is more on mobility than access.
  - Travel speeds of 55 mph
  - 2-lane and multi-lane rural highways
- *System Role:* 5-15% of roadway miles
  25-45% of vehicle miles traveled
- *Spacing:* 3-5 miles

Rural Major Collectors

- *Primary Purpose:* Provide secondary connectivity between cities and towns, county seat, regional parks, business concentrations, and regional educational facilities.
- *Character of Service:*
  - Accommodates the trips less than 8 miles.
  - Emphasis is balanced between mobility and access.
  - Travel speeds of 30–55 mph
  - 2-lane rural roadways
- *System Role:* 15-25% of roadway miles
  10-35% of vehicle miles traveled
- *Spacing:* As needed for connectivity

Rural Minor Collectors

- *Primary Purpose:* Facilitate the collection of traffic and convey it to Major Collectors and Minor Arterials. Provide connectivity between rural residential areas.
- *Character of Service:*
  - Accommodates the trips less than 5 miles.
  - Emphasis is on access rather than mobility.
  - Travel speeds of 30-55 mph
  - 2-lane rural roadways, local streets
- *System Role:* 15-25% of roadway miles
  10-25% of vehicle miles traveled
- *Spacing:* As needed for access and connectivity

Rural Local Roadways

- *Primary Purpose:* Land Access
- *Character of Service:*
  - Accommodates the trips less than 2 miles.
  - Emphasis is on access
  - Travel speeds of 30 mph
  - 2-lane local roadways
- *System Role:* 65-75% of roadway miles
  5-20% of vehicle miles traveled
- *Spacing:* As needed for access

2.2 Roadway Capacity

Capacities of roadways vary greatly and are directly related to many roadway characteristics including access spacing, traffic control, adjacent land uses as well as traffic flow characteristics such as percentage of trucks and number of turning vehicles. Roadway capacity per lane for divided arterials is 700 to 1000 vehicles per hour and 600 to 900 vehicles per hour for undivided arterials. These values tend to be 10% of the daily physical roadway capacity. Based on these figures; a two-lane arterial roadway may achieve a daily capacity of up to 12,000 to 18,000 vehicles per day, a four-lane arterial roadway may achieve a daily capacity of up to 28,000 to 40,000 vehicles per day, and a four-lane freeway may achieve a daily capacity of up to 70,000 vehicles per day. Some roadways have physical capacities that are much greater than the acceptable level of traffic on a particular street. The acceptable level of traffic volumes on collectors and local streets vary based on housing densities and setbacks, locations of parks and schools, and overall resident perceptions. Typically, acceptable traffic levels on local streets in residential areas are approximately 1000 to 1500 vehicles per day.

Since roadway capacities vary greatly, each of the state and county roadways in Rice County were assigned a designation to represent the general characteristic of the corridor. These designations, as well as the corresponding daily roadways capacities, are presented in the table below.

Table 2.2-1 Roadway Design Capacities

Designation	Roadway Type	Daily Capacity (vpd)
Gravel	G	500
Rural 2-lane 55 mph	R2	12,000
Rural 2-lane Limited	R2L	7,500
Urban 2-lane Arterial	U2	9,000
Urban 3-lane Arterial	U3	17,500
Urban 2-lane Local	U2L	7,500
Urban 4-lane, Undivided	U4U	20,000
Urban 4-lane, Divided	U4D	40,000
4-lane Freeway	4F	70,000

G – Gravel – These roadways include county, city, and township roadways with a gravel surface. Gravel roadways with volumes greater than 500 vehicles per day require significantly higher maintenance cost and it becomes cost effective to pave these roadways.
R2 – Rural 2-lane 55 mph – These roadways include state and county roadways in rural areas with the ability to maintain a 55 mph travel speed. These roadways are free from tight horizontal curves, steep vertical grades, sight distance restrictions, and reduced speed zones.
R2L – Rural 2-lane Limited – These roadways include county roadways in rural areas with tight horizontal curves, steep vertical grades, sight distance restrictions, and reduced speed zones. These characteristics result in limited mobility and require travel speeds considerably lower than 55 mph.
U2 – Urban 2-lane Arterial – These roadways include state and county roadways in urbanized areas with the ability to maintain a 30 mph or greater travel speed. These roadways typically have limited access from adjacent properties and are given traffic control priority at intersections.
U3 – Urban 3-lane Arterial – These roadways have similar characteristics as the Urban 2-lane Arterial but include a center left turn lane at most intersections. The center left turn lane provides significant capacity benefits by removing left turning vehicles from blocking thru movements.
U2L – Urban 2-lane Local – These roadways include county roadways in urbanized areas with developed properties fronting the county roadway with direct access. These roadways typically operate at travel speeds at or below 30 mph.
U4U – Urban 4-lane Undivided – These roadways include state and county roadways in urbanized areas with two continuous lanes of traffic in each direction. These roadways typically lack turn lanes and medians for traffic channelization and typically have developed properties fronting the roadway with direct access. These roadways typically operate at travel speeds at or below 35 mph.
U4D – Urban 4-lane Divided – These roadways include state and county roadways in urbanized areas with two continuous lanes of traffic in each direction separated by a median. These roadways typically include median openings only at major cross streets and include turn lanes for traffic sorting. These roadways typically operate at travel speeds at or above 30 mph.
4F – 4-lane Freeway – These roadways include state routes with access restricted to grade-separated interchanges. These roadways typically operate at travel speeds at or above 60 mph.

Source: Based on Highway Capacity Manual

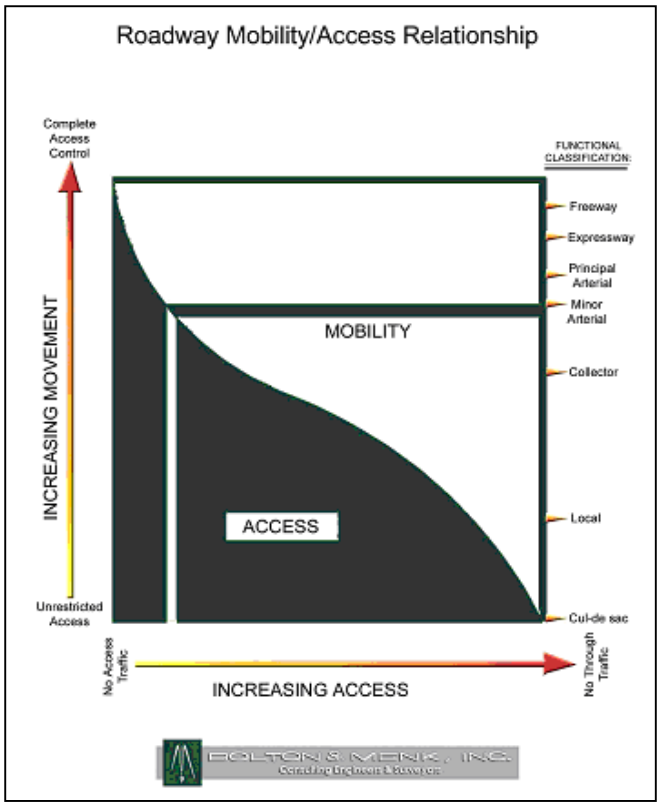
A capacity deficiency exists when traffic volumes exceed the capacity of the roadway. Roadway Level of Service (LOS) is used to assign a value to the level of congestion and efficiency of the roadway. The LOS is determined by the ratio of the actual roadway volume to the established capacity. In general, the higher the volume, the lower the LOS. There are six LOS, depending on the extent of congestion and service on the roadway. These LOS are defined as follows:

Table 2.2-2 Roadway Level of Service	
Level of Service	**Volume to Capacity Ratio (V/C)**
A	0.00 to 0.35
B	0.35 to 0.50
C	0.50 to 0.75
D	0.75 to 0.90
E	0.90 to 1.00
F	> 1.00
Source: Based on Highway Capacity Manual	

Rice County will consider capacity improvements based on anticipated LOS D or worse. This implies an anticipated traffic volume to capacity ratio of 0.75 or more.

2.3 Access Management Policy and Spacing Guidelines

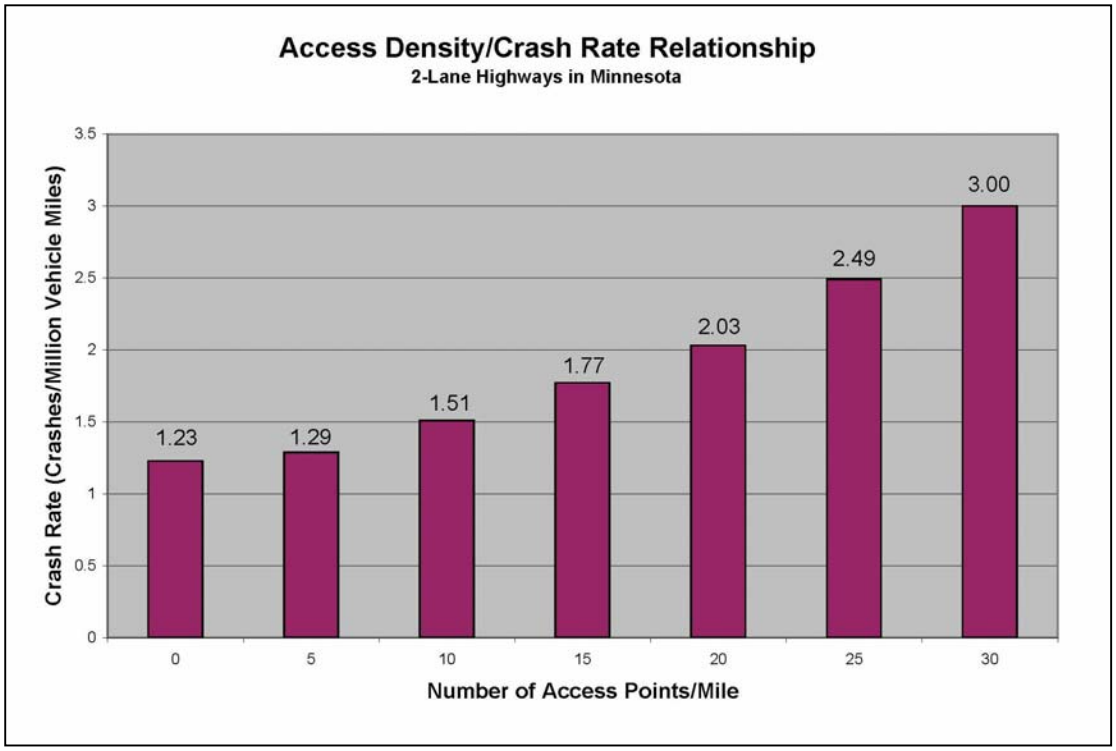
Access management policies and spacing guidelines are developed to maintain traffic flow on the roadway network so each roadway can provide its functional duties while providing adequate access for private properties to the transportation network. This harmonization of access and mobility is the keystone to effective access management. Mobility is the ability of people to move via a transportation system component from one place to another. The degree of mobility depends on a number of factors, including the ability of the roadway system to perform its functional duty, the capacity of the roadway, and the operational level of service on the roadway system. Access is the relationship between adjacent land use and the transportation system. There is an inverse relationship between the amount of access provided and the ability to move through-traffic on a roadway such that as higher levels of access are provided, the ability to move traffic is reduced. The graphic below illustrates the access/mobility relationship.



Each access location (i.e. driveways, intersections) creates a potential point of conflict between through vehicles and vehicles entering and exiting the roadway; either through the slowing effects of merging and weaving that takes place as vehicles accelerate from a stop turning onto the roadway, or deceleration to make a turn to leave the roadway. At signalized intersections, the potential for conflicts between vehicles is increased, as through-vehicles are required to stop at the signals. If the amount of through traffic on the roadway is high and/or the speed of traffic on the roadway is high, the number and nature of vehicle conflicts are also increased.

Accordingly, the safe speed of a road, the ability to move traffic on that road, and safe access to cross street and adjacent to the road all diminish as the number of access points increases along a specific segment of road. Because of these effects, there must be a balance between the level of access provided and the desired function of the roadway.

Various studies have demonstrated a direct relationship between the number of full access points and crash rates, including FHWA's Access Research Report No. FHWA-RD-91-044. The graphic below illustrates the safety benefits of access management.



In Rice County, access spacing guidelines are recommended as a strategy to effectively manage existing ingress/egress onto County roadways and to provide access controls for new development. The access spacing guidelines for Rice County are consistent with current practices in other counties as well as with Mn/DOT. The hierarchy of the functional classification system should be upheld when applying the access spacing guidelines to the roadway network (i.e. a collector street should have priority access to a minor arterial roadway over a local street or adjacent property). When there is opportunity for site/property access on more than one public roadway, access shall be taken on the lower-function or lower-volume roadway. The table below presents the proposed access spacing guidelines for the Rice County roadway network:

Table 2.3-1 - Access Spacing Guidelines

Type of Access	Minor Arterial			Collectors		
	Urban Core	Urbanizing	Rural	Urban Core	Urbanizing	Rural
Primary, Full Movement, Public Street	1/8-mile	1/4-mile	1/2-mile	1/8-mile	1/8-mile	1/2-mile
Conditional Secondary, Public Street	1/8-mile	1/8-mile	1/4-mile	1/16-mile	1/8-mile	1/4-mile
Traffic Signal Spacing	1/4-mile	1/4-mile	1/2-mile	1/8-mile	1/4-mile	1/2-mile
Site/Property Access	Permitted, Subject to Conditions	Not Permitted	Permitted, Subject to Conditions	Permitted, Subject to Conditions	Permitted, Subject to Conditions	Permitted, Subject to Conditions

Primary, Full Movement Public Street Access – These access types include other collector or arterial roadways that provide continuity in the roadway network and access to large geographic areas.
Conditional Secondary Public Street – These access types include other collector and other public (local) roadways. These accesses are subject to restricted movements, if needed, including right-in/right-out, left-in.
Traffic Signal Spacing – Traffic signal installation requires a Signal Justification Report (SJR) and is subject to the warrants provided in the Minnesota Manual of Uniform Traffic Control Devices. Signal placement typically coincides with a Primary, Full Movement Public Street Access.
Site/Property Access – These access types include any public or private access to a specific adjacent property. Examples of these type of accesses include private residences, townhome association roadways, retail malls, industrial sites, public and private schools, government offices. Site/Property access that is permitted but subject to restrictions shall be at the discretion of the County engineer.

[1] These guidelines apply to County roadways only. Mn/DOT has access authority on all Principal Arterials and Minor Arterials under their jurisdiction.

The rationale for managing access in rural areas differs from the rationale used in urban areas. Roadways in rural areas almost always serve low-density land uses and usually have volumes well below capacity thresholds. Managing rural access increases safety and minimizes operational/maintenance costs.

To address access in rural areas, Minnesota's Local Road Research Board (LRRB) developed the following best management practices:

- Establish an access policy – develop a formal policy that ensures that the agency has processes in place to determine the need for and evaluate the use, location, spacing and design characteristics of the requested access points.
- Encourage coordination during the zoning and platting process.
- Give access permits for specific use.
- Encourage adequate spacing of access points.
- Protect the functional area of intersections.
- Ensure adequate sight distance at entrances.

- Avoid offset or dogleg intersections and entrances.
- Encourage development of turn lanes and entrances.
- Consider consolidating access or relocating existing access.
- Encourage good driveway and intersection design characteristics such as:
  - Proper driveway width and turning radii
  - Proper corner clearance
  - Adequate approach grade
  - Alignment of intersections at right angles to maximize sight lines, minimize the time a vehicle is in the conflict area and facilitate turning movements
  - Proper grading of entrance inslopes and culvert openings
  - Keeping sight triangles and clear zones free of obstructions

These best practices should be considered in the implementation of the Rice County access spacing guidelines. As noted above, access guidelines can be implemented using different methods (e.g., land use regulations, subdivision regulations, access permit processes and access/transportation advisory committees). Any processes should also deal with situations outside the guidelines, such as hardship cases. In existing corridors where significant development has occurred, the number of existing access points usually exceeds access guidelines. Unless these areas are undergoing redevelopment, access management must be approached differently. The access management strategy for such areas should entail aggressively minimizing new accesses, while consolidating/reducing existing access points as redevelopment occurs. The following access suggestions provide alternatives for minimizing access and for addressing access issues when the guidelines cannot be met:

Encourage shared driveways and internal circulation plans – If indirect access cannot be achieved during plat reviews, promote internal site circulation using shared access points.

Restrict turning movements to reduce conflicts – If access points cannot be eliminated, consider turning movement restriction (e.g., left-in or right-in/right-out only) through installation of raised medians or other channelization or signing. Eliminating a single turning movement can significantly reduce vehicle conflicts and crashes.

Develop good parallel street systems for carrying local traffic – Make sure that important arterial routes have parallel street systems that provide local access and carry shorter local trips.

Develop proper secondary street spacing – Ensure that plats and new development proposals provide proper intersection spacing for future signals. Signalized intersections should be limited depending upon the type of street. Collector streets should provide continuity and connectivity with other street systems.

Encourage proper lot layout to minimize access points – Promote direct residential access points onto local routes, instead of onto arterials or collectors. Direct residential access onto arterial or collector routes slows traffic flow and can result in complaints when traffic levels increase. In rural areas, where farms have one access point per 40-acre entitlement and where lots are clustered in one portion of the farmstead, access points should be placed on local roads, not on high-speed, high-volume state or county roads.

Encourage connectivity between developments – Streets in individual developments should be aligned to provide access to other developments, and right-of-way should be provided for future connections to adjacent developments. This promotes neighborhood connectivity, and provides quick and efficient routes for emergency vehicles, mail, garbage services and street maintenance activities.

2.4 Geometric Design and Right-of-Way Standards

Geometric design standards are directly related to a roadway's functional classification and the amount of traffic that the roadway is designed to carry. For Rice County roadways, geometric design standards were developed based on the American Association of State Highway and Transportation Official's (AASHTO) A Policy on Geometric Design of Highways and Streets and is consistent with Mn/DOT State Aid requirements. Compliance with these standards will enable each roadway to perform its intended function in the roadway network.

The recommended roadway design standards for Minor Arterials and Collector Roadways in Urban Core, Urbanizing, and Rural areas are presented below and illustrated in Figure 2.4-1 and Figure 2.4-2.

Table 2.4-1 Roadway Design Standards

Design Standard	Minor Arterial		Collector	
	Desired	Required	Desired	Required
Design Speed	Posted	55 mph Rural 45 mph Urbanizing 35 mph Urban Core	Posted	55 mph Rural 40 mph Urbanizing 30 mph Urban Core
Design Vehicle	-	WB-62	WB-62	WB-50
Highway Grade	-	0.5% min 4.0% max	0.5% min 4.0% max	0.5% min 6.0% max
Intersection Approach Grade	0.5% - 50' Landing	2% - 25' Landing	0.5% - 50' Landing	2% - 25' Landing
Curb & Gutter				
Design Speed > 40 mph	B424	B418	B424	B418
Design Speed < 40 mph	B624	B618	B624	B618

Each component identified in the typical sections is essential to a particular roadway's ability to perform its function in the roadway network.

Roadway Width – Roadway and travel lane widths are directly associated with a roadway's ability to carry vehicular traffic. On all County Arterial and Collector roadways, a 12' travel lane is required for each direction of travel. The 24' total travel width is needed to accommodate two-way traffic safely and without delay. In addition to the travel width, minimum shoulder/parking lanes widths are also required to accommodate parked or stalled vehicles. Roadway widths not meeting the Geometric Design Standards will result in decreased performance of the particular roadway and additional travel demand on the adjacent roadway network components. For example, a sub-standard Collector roadway may result in additional travel demand on an adjacent local street resulting in an overburden for adjacent landowners. Similarly, additional local circulation may result on an adjacent Minor Arterial resulting in reduced mobility for regional trips.

Medians – Medians are recommended on several Minor Arterial and Collectors roadways. Medians provide safety and operational benefits by providing separation of opposing traffic. Medians on Collector roadways in urban/urbanizing areas also assist in accommodating significant vehicular volumes at acceptable travel speeds for adjacent land uses. These divided urban collectors, or parkways create a more appealing and acceptable travel corridor by reducing the total pavement width while maintaining the travel lane widths required for traffic. Trees and other landscaping can be included within medians on Collector roadways, provide they do not compromise minimum clear zone requirements and do not interfere with traffic control devices. Medians also allow for more comfortable

pedestrian crossings of roadways by providing a safe haven for pedestrians to assess crossing opportunities one direction of vehicular travel at a time.

Right-of-Way Width – Right-of-Way width includes the minimum property necessary for the recommended roadway design under normal conditions. The minimum right-of-way provides sufficient space for the roadway itself, traffic control devices, snow storage, and other maintenance activities. Additional right-of-way and/or easements may be necessary to accommodate significant changes in elevation as well as turn lanes at intersections, sidewalks and trails, transit stops, and private utilities. Right-of-Way requirements may be increased for site-specific circumstances, at the discretion of the County Engineer.

Additional Right-of-Way for Sidewalks, Trails, and Berms – Sidewalks, trails, and earthen berms are encouraged on Minor Arterial and Collector roadways in Urban/Urbanizing Areas. These roadways are expected to carry a significant amount of vehicular traffic and these amenities can be beneficial in maintaining livability of areas that they serve. Sidewalks and trails accommodate pedestrian, bicycle, and other non-motorized travel in a safe and comfortable manner through separation of travel modes. Berms provide visual and noise mitigation for residential areas adjacent to these roadways.

Sidewalks and trails along Minor Arterial and Collector roadways shall meet the Americans with Disability Act (ADA) requirements and shall be placed outside the boulevards identified in Figure 2.4-3 – Minor Arterial Roadway Design Standards and Figure 2.4-4 – Collector Roadway Design Standards. Concrete sidewalks shall be 5'-8' wide and will require an additional 10-15 feet of right-of-way width. Bituminous walks and trails shall be 8'-12' wide and will require an additional 15-20 feet of right-of-way width. Trails are also encouraged along rural Minor Arterial and Major Collector roadways to link communities and rural recreational areas. Refer to Section 5.3 – Multimodal System for more information on countywide trail routes.

Earthen berms are encouraged to preserve the livability of residential areas along Minor Arterial and Collector roadways in Urbanizing areas. Since the earthen berms principally benefit adjacent property owners, they shall be primarily constructed outside the County highway right-of-way and maintained by local units of governments or private property owners. Figure 2.4-1 – Sidewalk & Trail and Earthen Berm Design Standards illustrates the minimum design standards for sidewalks, trails, and earthen berms adjacent to County highways.

Intersection Design Standards – In addition to the typical section elements illustrated on Figure 2.4-3 – Minor Arterial Roadway Design Standards and Figure 2.4-4 – Collector Roadway Design Standards, additional design requirements are necessary to achieve and maintain safe and efficient operations at roadway intersections. Roadway intersections result in critical locations for roadway performance. The overall safety and efficiency of a roadway network can often be determined by the quality of intersection design and operation. Design details for intersection construction shall be consistent with Chapter 5 of the Mn/DOT Road Design Manual. Turn lanes at intersections increase capacity, provides maximum convenience, and instills drive confidence in decision-making.

In Rice County, a *right-turn lane* is required on the county highway at any new intersection or existing public road intersection. A *left turn lane* is required on the county highway where left turn volumes exceeds 30 vehicles per hour. While many intersection locations do not presently include turn lanes, application of these standard through reconstruction and development projects is recommended. A *left turn bypass lane* may be considered on the county highway in Rural Areas under the conditions where a "T" intersection would result and where the fourth leg of the intersection is not expected in the near future. Bypass lanes shall not be constructed in Urban Core or Urbanizing areas, rather the left turn lane

criteria shall apply. A left turn bypass lane shall be required for intersections serving over 10 homes in Rural Areas.

Traffic control on the Rice County roadway system, including at public and private street intersections, shall be consistent with the Minnesota Manual on Uniform Traffic Control Devices (MMUTCD).

Driveway Design Standards – Similar to roadway intersections, driveways create conflict points along county roadways. Improperly designed driveways may result in operational and safety deficiencies for both the roadway and driveway users. Design details for driveways on county roadways shall be consistent with Mn/DOT Standard Plates 7035 and 9000. The recommended driveway design standards for entrances on county roadways are presented below.

Table 2.4-2 Driveway Design Standards

	Commercial/ Industrial/ Farm/Field	Urban Residential	Rural Residential
Width	32’	16’	24’
Maximum Grade	8%	10-15%	10-15%
Approach Grade	0.5% - 25’ Landing	0.5% - 25’ Landing	0.5% - 25’ Landing
Entrance Radii	25’	NA	25’
Side Slope	1:6	NA	1:6

2.5 Jurisdictional Designation

The jurisdictional designation of a roadway identifies which level of government owns and maintains it. This is an important element of a Transportation Plan, because it defines responsibilities for a roadway and affects many areas including regulatory, maintenance, construction, and financial. The current jurisdictional designation of roads within Rice County is identified on Figure 2.5-1 – Existing Jurisdictional Designation.

Guidelines for Jurisdictional Designation

Jurisdictional designation is based on a variety of issues and factors including functional classification, system continuity, access control, type of trips served (purpose and length), traffic volumes, legal requirements, historical practices, and funding and maintenance issues. The primary goal in reviewing jurisdiction is to match the roadway’s function with the unit of government best suited for its responsibility.

The following guidelines were discussed and agreed upon by the Transportation Advisory Committee to provide a basis to review the routes in Rice County for potential jurisdictional transfers. These guidelines will not determine if the jurisdictional transfers are feasible or politically acceptable, nor do they establish a timeframe under which transfers may occur. Instead, the guidelines define a common-sense approach for arriving at logical jurisdictional designations. It is not anticipated that all guidelines must be met in order for a jurisdictional designation to be recommended. However, a route meeting more criteria will have a stronger case for recommending a new route designation.

State Jurisdiction – Normally, state jurisdiction is focused on routes that can be characterized as follows:

- Functional classification of either a Principal Arterial or Minor Arterial;
- Typically longer routes serving statewide and interstate trips that connect larger population and business centers;

- Spaced at intervals that are consistent with population density, such that all developed areas of the state are within reasonable distance of an arterial (as a guide, rural arterial routes are considered to "serve" a community if it is within 10 miles or 20 minutes travel time on a minor arterial);
- Typically have design features (such as properly spaced access points), which are intended to promote higher travel speeds. They also accommodate more truck movements; and
- Typically carrying a major portion of trips entering and leaving urban areas as well as the majority of trips bypassing central cities.

County Jurisdiction – Typically, county jurisdiction is focused on routes that can be characterized as follows:

Rural Areas:
- Functional classification of Minor Arterial, Major Collector, or Minor Collector
- Provide essential connections and links not served by the Principal and other Minor Arterial routes. They serve adjacent larger towns that are not directly served by Principal and Minor Arterial routes, and they provide service to major traffic generators that have intra-county importance;
- Spaced at intervals that are consistent with population density so as to provide reasonable access to arterial or collector routes in developed areas;
- May provide links between local traffic generators and outlying rural areas.

Within Urban/Urbanizing Areas:
- Functional classification of either Principal Arterial, Minor Arterial, or Collector;
- Carry higher traffic volumes or they provide access to major regional traffic generators (e.g. shopping centers, higher education centers, major industrial complexes, county government offices);
- Provide connections and continuity to major Rural Collector routes accessing the urban/urbanizing area and they provide continuity within the urban/urbanizing area, but do not divide homogeneous neighborhoods;
- Emphasize higher mobility features than other Local Minor Arterial routes (i.e., some form of access management or access control).

City Jurisdiction – Arterial routes, within the urban/urbanizing area, should be considered for city jurisdiction if they can be characterized as follows:
- Short segments (less than 3 miles) with a moderate volume of traffic (3,000 to 8,000 ADT);
- Higher local land access needs and close intersection spacing (promotion of local land access over mobility);
- Close spacing with other Arterial routes and shorter trip lengths such as found in Central Business District (CBD) areas;
- Provide no or very limited continuity to outlying rural areas. Urban Arterials lend to have shorter trip lengths than Rural Arterials or Collectors.
- Serve small geographic travelsheds;
- Provide on-street parking or other amenities that discourage the use of the route as a regional route (promotion of local access and adjacent land use activities at the street edge).

Collectors and Local streets that provide property access and local traffic circulation are normally under city jurisdiction. These streets typically constitute 65 to 80 percent of the entire urban system mileage and can be characterized as follows:

- Shorter in length (less than 1.5 miles) and carry low to medium volumes of traffic (500 to 3,000 ADT);
- Provide land access and traffic circulation to residential neighborhoods and to commercial and industrial areas (high access low mobility functions);
- May divide homogeneous residential neighborhoods to distribute trips to Arterial street system or their final trip destination.

Township Jurisdiction – Customarily, township jurisdiction is focused on rural routes that can be characterized as follows:

- Low traffic volumes (less than 500 ADT);
- Functional classification of Local roadways;
- Minimal design features and most often are gravel surfaced;
- Primary purpose is to provide access to adjacent property;
- Link outlying rural areas to County Roads (CR) or County State Aid Highways (CSAH) and the route length is usually less than five miles between CR or CSAHs;
- Primarily serve farmsteads, small rural subdivisions, rural churches/cemeteries, and agricultural facilities;
- Have irregular access spacing, but most often provide access to farms, field entrances, and they sometimes “T” with other roadways or dead-end.

3.0 EXISTING SYSTEM EVALUATION

An evaluation of the existing transportation system in Rice County was completed and included evaluating roadways for congestion, crash records for accident trends, roadway continuity deficiencies, and existing multimodal transportation uses.

3.1 Volume and Capacity Analysis

Average Annual Daily Traffic (AADT) volumes on state trunk highways, county state aid highways, and county roads were collected using historic data provided by Rice County and Mn/DOT. Most recent AADT for individual segments are illustrated on Figure 3.1-1 – Existing Average Annual Daily Traffic Volumes.

As described in Section 2.2 – Roadway Capacity, each of the county roadways were reviewed and assigned a designation to represent the general characteristics of the corridor as well as assigned a relative daily roadway capacity. The most recent AADT volumes for each roadway were compared to the assigned capacity. Volumes to capacity ratios were computed to serve as an indicator of the level of congestion and efficiency of each roadway. A roadway with a volume to capacity ratio between 0.75 and 0.90 is considered acceptable, however is nearing congestion. Over 0.90 is considered congested. Existing volume to capacity ratios on county state aid highways and county roads in Rice County are present in Appendix A – Traffic Volume to Capacity Analysis Spreadsheets.

Two county roadway segments were identified as nearing congestion levels with volume to capacity ratios between 0.75 and 0.90. They include:

- CSAH 11 from CSAH 38 to TH 21 in Faribault
- CSAH 28 from TH 246 to Maple Street in Northfield

By identifying roadway segments nearing congestion, improvement options can be investigated and planned. Both corridors identified above are designated as urban 2-lane roadways with limited capacity. The character of the corridor is more local with multiple properties fronting and closely access spacing. Capacity improvements may include the addition of a center left turn lane, access consolidation, and changes in traffic control prioritization.

It should be noted that the methodology described above is a planning-level analysis used to evaluate the roadway network as a whole. Congestion likely occurs periodically at isolated locations throughout the county due to daily and seasonal fluctuations in travel demand. These more specific congestion occurrences require more detail, peak hour analysis to determine if isolated capacity improvements are necessary.

3.2 Safety and Crash Analysis

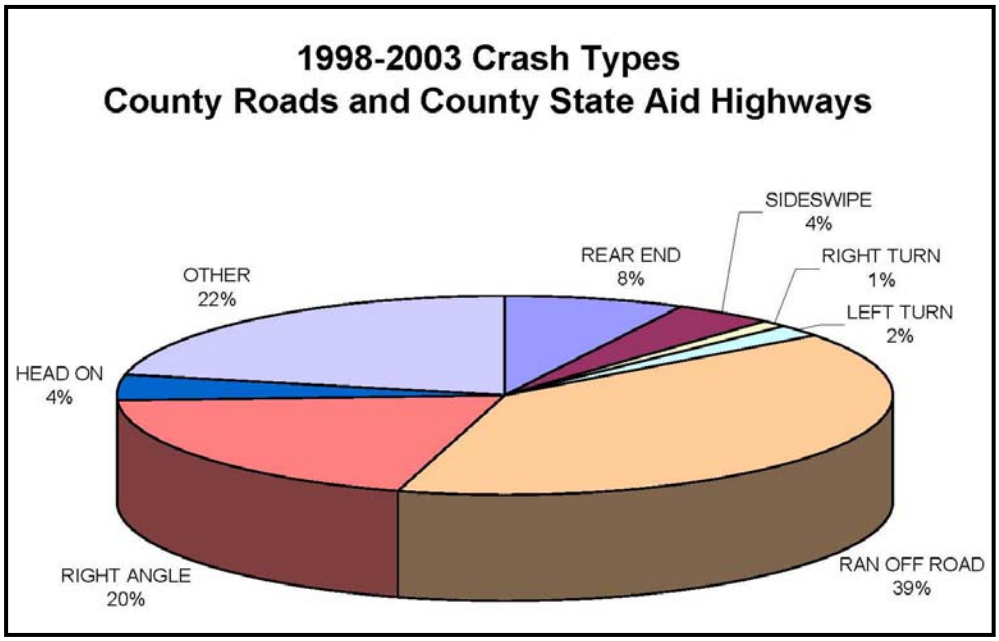
Public safety is a high priority for agencies responsible for planning, design, construction, operation, and maintaining of public transportation facilities. To identify potential safety deficiencies on the county highway system, a crash analysis was performed using Minnesota Department of Public Safety (DPS) crash records from 1998-2003 on county roads and county state aid highways and from 1998-2002 on for the state highway system within Rice County.

Countywide Trends – A summary of the total accidents occurring on county roads, county state aid highways, and state trunk highways in Rice County was created to compare to state-wide averages and identify any abnormalities in Rice County.

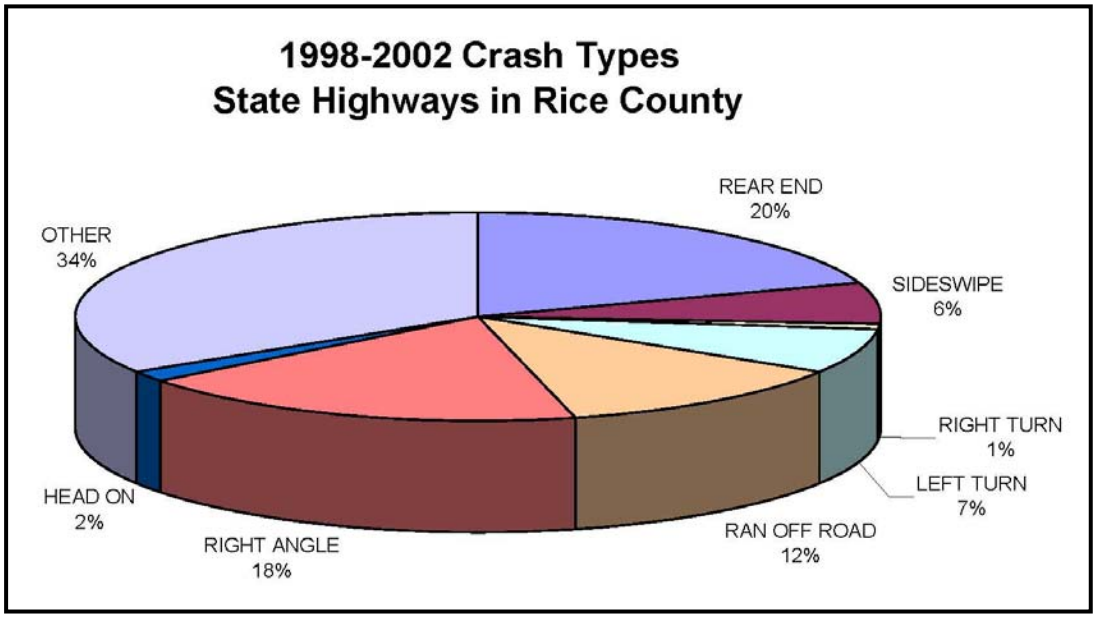
- In 2003, there were approximately 124 million vehicle miles traveled (VMT) on the 430 miles of county roads and county state highways in Rice County.

- There were a total of 1145 crashes reported on the county road and county state highway system in the six-year period from 1998 to 2003.
- There were a total of 2973 crashes reported on the state trunk highways in Rice County in the five-year period from 1998 to 2002.
- The number of crashes per year increased by approximately 2.3% per year on the county road and county state aid highways while the VMT increased by approximately 3.6% per year.

The graphics below illustrate the crashes on the county road and county state aid highways by crash type and injury severity.



The crash types indicate the nature of the incident and can be an indicator of potential deficiencies. Within Rice County, the proportion of *RAN OFF ROAD* crashes is significantly higher than the statewide average. Based on the 1999 Motor Vehicle Crash Facts, *RAN OFF ROAD* crashes account for approximately 4% and 21% of all statewide crashes in urban and rural areas, respectively. Other crash type proportions are similar to statewide proportion of rural roadway crashes.



The crash severity is a critical component to crash analysis as it measures loss of life, permanent disabilities, other injuries, and property damage. Fatal and Incapacitating Injury crashes are the most severe crashes and rightfully receive a disproportionate level of attention. There were 21 fatal crashes and 98 incapacitating injury crashes on county roads and county state aid highways in the six-year analysis period. Of these 119 crashes, 69 (58%) were the result of *RAN OFF ROAD* type crashes. From 1998 to 2002, there were also 40 fatal crashes and 98 incapacitating injury crashes on state trunk highways in Rice County. The location of these fatal and incapacitating injury crashes are illustrated in Figure 3.2-1 – Location of Fatal and Incapacitating Injury Crashes.

As a means to identify other potentially hazardous areas, locations with 3 or more crashes occurring in the 2000-2002 period were identified for further evaluation. The analysis period was condensed to the most recent 3-year period available for the county roads, county state aid highways, and state trunk highways in Rice County. Locations with less than 3 crashes in 3 years were dismissed as random occurrences. The vast majority of locations with 3 or more crashes are at roadway intersections.

Intersection Crash Analysis – Crash rates were computed for intersections having 3 or more crashes in a three-year period. Because many intersection-related crashes do not occur directly at the intersection, crashes occurring within 500' of urban intersections and 1000' of rural intersections were included the intersection analysis. The Table 3.2-1 – 2000 – 2002 Intersection Crash History Summary summarizes the crash rate at intersections having 3 or more crashes and is sorted by intersection control type.

Table 3.2-1 2000 – 2002 Intersection Crash History Summary

Rank	Intersection			Crash Type						Injury Crashes	
	Traffic Control Type & Location	Crash Rate (MVE)	Total Crashes	Rear End	Right Angle	Left Turn	Side-swipe	Run Off Road	Other	Total	%
Thru Stop:											
1	TH 19 at I-35	3.84	37	10	14	2	3	3	5	14	38%
2	TH 60 at 1st Ave W	3.50	31	9	13	4	1	0	4	10	32%
3	TH 60 at 30th Ave W/I-35 W Ramp	3.38	34	3	17	1	0	2	11	16	47%
4	TH 246 at Jefferson Pkwy	2.52	12	2	4	3	1	1	1	7	58%
5	TH 246 at CSAH 1/CSAH 22/CR 81	2.29	9	0	5	0	2	0	2	5	56%
6	CSAH 46 at CSAH 1	1.98	5	0	3	0	1	0	1	3	60%
7	TH 21 at CSAH 11	1.93	9	3	1	0	0	0	5	3	33%
8	CSAH 11 at CSAH 38	1.26	7	1	1	0	2	0	3	2	29%
9	CSAH 48 at 4th St NW	1.25	17	0	6	1	2	0	8	7	41%
10	TH 60 at 3rd Ave W	1.16	15	3	6	3	0	0	3	6	40%
11	TH 60 at CSAH 13	1.10	9	0	3	0	0	0	6	5	56%
12	TH 3 at CSAH 29	0.65	6	0	0	0	1	4	1	0	0%
Subtotal Thru Stop:			**191**	**31**	**73**	**14**	**13**	**10**	**50**	**78**	**41%**
All-Way Stop:											
1	CSAH 18 at 10th St SW	1.78	8	2	4	0	0	0	2	1	13%
2	TH 246 at CSAH 28	1.00	14	4	4	0	2	0	4	7	50%
Subtotal All-Way Stop:			**22**	**6**	**8**	**0**	**2**	**0**	**6**	**8**	**36%**
Signalized – Low Speed:											
1	TH 60 at 8th Ave/CSAH 18	3.12	67	29	16	8	0	0	14	23	34%
2	TH 60 at 4th Ave W	2.86	37	8	11	3	2	0	13	17	46%
3	TH 60 at Ravine St	2.49	27	7	8	6	0	0	6	8	30%
4	TH 3 at TH 19 North Jct.	2.00	49	8	6	7	7	0	21	15	31%
5	TH 60 at TH 21	1.96	56	14	19	0	4	10	9	23	41%
6	TH 60 at 2nd Ave W	1.54	20	5	6	5	0	0	4	7	35%
7	TH 60 at Park Ave	1.51	21	6	8	2	1	0	4	9	43%
Subtotal Signalized – Low Speed:			**277**	**77**	**74**	**31**	**14**	**10**	**71**	**102**	**37%**
Signalized – High Speed:											
1	TH 3 at Jefferson Pkwy	2.17	30	7	7	10	0	0	6	13	43%
2	CSAH 48 at Division St	1.89	30	4	10	3	3	0	10	18	60%
3	TH 60 at Western Ave	1.67	17	5	6	2	0	0	4	4	24%
4	TH 3 at TH 19 South Jct.	1.57	49	12	5	11	7	0	14	14	29%
5	TH 3 at Jefferson Rd	1.23	17	3	6	4	0	0	4	7	41%
6	TH 3 at CSAH 20	0.57	7	0	2	0	1	1	3	2	29%
7	TH 3 at CSAH 1	0.51	8	1	3	0	1	0	3	3	38%
8	TH 3 at TH 246	0.50	14	4	6	1	1	0	2	6	43%
9	TH 3 at Hester St	0.49	6	0	3	0	0	0	3	5	83%
Subtotal Signalized – High Speed:			**178**	**36**	**48**	**31**	**13**	**1**	**49**	**72**	**40%**

Typically, intersections with different types of traffic control have different types of crashes as well as different crash rates. On a statewide basis, thru/stop controlled intersections have an average crash rate of 0.4 crashes per million vehicles entering (MVE) the intersection. Most frequent crash types at thru/stop-controlled intersections are Right Angle (28%) and Rear End (18-28%, rural-urban). Signalized intersections have an average crash rate of 0.5 to 0.8 crashes per MVE depending on approach speeds and traffic volume level. Most frequent crash types at signalized intersections are Rear End (43-46%, urban-rural) and Right Angle (18-20%, urban-rural).[4]

[4] Mn/DOT Traffic Safety Fundamentals Handbook

Intersection crash rates in Rice County were compared to statewide average crash rates as a means of identifying potential high crash intersections. For purposes of this analysis, intersections with a crash rate of more than twice the statewide average for the intersection type were identified for further study. The table below presents the statewide average and the crash rate threshold described above. Figure 3.2-2 – Comparative Intersection Crash Rates illustrates the intersections in Rice County with crash rates more than twice the state average for the same type of intersection.

Table 3.2-2 Comparative Intersection Crash Rates

Control Type	State-wide Average (Crashes per MVE)*	Rice County Threshold (Crashes per MVE)
Thru Stop	0.4	0.8
All-way Stop	0.6	1.2
Signalized – Low Speed (Hwy Speed < 45 mph)	0.8	1.6
Signalized – High Speed	0.7 (MVE > 15,000) 0.5 (MVE < 15,000)	1.0

* Source: Mn/DOT 1997-1999 Crash Data (State Highway Intersections)

For intersections under thru stop control in Rice County, eleven intersections have crash rates of more than twice the statewide average. The four highest crash rate locations occur on the state trunk highway and do not include a county road or county state aid roadway. Three of the four locations have recently been addressed including installation of a temporary signal at TH 60 at 30th Avenue, installation of all-way stop control at TH 246 and Jefferson Parkway, and interchange improvements at TH 19 and I-35. The remaining intersection will also be improved with a project to convert TH 60 to a 3-lane roadway in downtown Faribault. Intersections that include county road or county state highways include:

TH 246 at CSAH 1/CSAH 22/CR 81 – This intersection is located in a growing residential area near Dundas/Northfield. There are actually two intersections on TH 246 closely spaced together. Because of their spacing, the intersections influence one another heavily. In addition, TH 246 is on a curve through the area, which can further complicate the driving situation. It is recommended that the CSAH 22 leg of the intersection be realigned to provide access spacing on TH 246 consistent with the county's Access Management Guidelines.

CSAH 46 at CSAH 1 – This intersection of relatively low volume, rural roadways had a total of 5 crashes in 3 years, 3 or which were right angle crashes. Based on a cursory review of the intersection, sight distance appears sufficient. While the crash rate exceeds the statewide average by 2.5 times, the relatively low volumes and low crash frequency indicates that there may not be correctable action. This intersection should be regularly monitored for changes in crash occurrence.

TH 21 at CSAH 11 – This T-intersection experienced 9 crashes in three years, 3 of which are rear end crashes. A left turn lane on TH 21 may have safety benefits at this intersection to remove left turning vehicles from the thru lanes. CSAH 11 provides access to several lakes. Since the majority of the crashes were classified as "Other", it is difficult make specific recommendations on corrective action. Further study of the intersection is recommended if the crash frequency and crash rate increases over time.

CSAH 11 at CSAH 38 – This intersection is located in a future growth area west of the City of Faribault. The intersection currently has a y-configuration, which results in a wide, potentially confusing intersection. Minor geometric improvements that would square up and tighten up the intersection would reduce driver confusion and potentially lower crash frequency at this location.

CSAH 48 at 4th Street NW – This intersection is located on a 4-lane divided expressway in the City of Faribault between the signalized intersections with Division Street and TH 60. The width of the CSAH 48 median may result in a potentially confusing intersection for crossing vehicles. The City and County may consider closing the intersection since 4th Street NW is connected with Division Street west of CSAH 48 and TH 60 east of CSAH 48. Signalization is not recommended due the proximity to adjacent signalized intersections.

TH 60 at CSAH 13 – This intersection is located on a high speed, high volume stretch of TH 60 near Warsaw. The intersection is at a slight skew and may have some restricted sight lines along TH 60 west of the intersection. Since the majority of the crashes were classified as "Other", it is difficult make recommendations on corrective action. Further study of the intersection is recommended if the crash frequency and crash rate increases over time.

For intersections under thru all-way stop control in Rice County, one intersection has a crash rate of more than twice the statewide average. The intersection of CSAH 18 at 10th Street SW in Faribault has a crash rate of nearly three times the state average. The intersection is located in an urban residential area is near the public school campus. Four of the eight crashes recorded in three years were right angle crashes. There appears to be sufficient sight distance at the intersections though parked vehicles close to the intersection may restrict sight line periodically. This intersection should be regularly monitored for changes in crash occurrence.

For low-speed, signalized intersections, all seven intersections reviewed have crash rates that exceed or nearly exceed twice the statewide average. Six of the seven intersections are located on TH 60 in Faribault. Mn/DOT is currently planning a FY 2007 overlay project for TH 60 in Faribault that will include converting the existing 4-lane undivided roadway to a 3-lane undivided roadway. The addition of a center left turn lane is expected to reduce the number of Rear End crashes at these locations. The remaining location is located on TH 3 at the north junction of TH 19 in Northfield. This intersection is scheduled for improvement as part of a larger TH 3 reconstruction project in FY 2004.

For high-speed, signalized intersections, five intersections have crash rates that exceed twice the statewide average. Four of the five high crash intersections occur on the state trunk highway and do not include a county road or county state aid roadway. The highest crash rate occurred at TH 3 and Jefferson Parkway and includes one fatal crash. The intersections of TH 60 at Western Avenue and TH 3 at TH 19 South Junction are both scheduled for improvement in FY 2004. The intersection of CSAH 48 and Division Street received signal and intersection improvements in 2004 that improved the intersection geometry and signal visibility.

Segment Crash Analysis – Crash rates were computed for all county road and county state highway segments with more than 1000 AADT and/or having 12 or more crashes in a six-year period. For purposes on this plan, any roadway segment with less than 1000 AADT that did not have a history of two or more crashes per year was eliminated from further analysis. Table 3.2-3 – 1998 – 2003 Roadway Segment Crash History Summary identifies the crash rate per million vehicle miles traveled (MVM) on the county roads and county state aid highways meeting the criteria above and is sorted by roadway type. Crash rates in bold represent those that exceed the established Rice County Threshold described above.

Table 3.2-3 1998 – 2003 Roadway Segment Crash History Summary

Rank	Roadway	From	To	City / Township	Length	Crashes	Crash Rate
Low Volume – 2 Lane Rural Highway:							
1	CSAH 11	TH 21	CSAH 37	Wells Twp.	2.6	13	**5.52**
2	CR 99	Le Sueur Ave	TH 60	Morristown Twp.	3.6	13	**4.71**
3	CSAH 10	Le Sueur Ave/CSAH 12	TH 21	Shieldsville Twp.	8.1	19	**3.36**
4	CSAH 13	CR 71	CSAH 12	Warsaw Twp.	2.7	10	**2.83**
5	CSAH 15	CSAH 16	CSAH 45	Morristown / Warsaw Twps.	8.5	31	**2.32**
6	CSAH 1	CSAH 4	I-35	Erin / Forest Twp.	7.7	26	**2.00**
7	CSAH 6	Le Sueur Ave	CSAH 3	Wheatland / Webster Twp.	8.8	16	**1.97**
8	CSAH 3	CSAH 86	CSAH 46	Webster Twp.	6.2	14	**1.90**
9	CSAH 2	Le Sueur Ave/CR 137	TH 19	Wheatland Twp.	4.1	20	**1.80**
10	CSAH 22	CSAH 20	TH 246	Bridgewater Twp.	3.0	14	**1.80**
11	CSAH 23	270th St	CSAH 27	Multiple Twps.	9.0	14	**1.77**
12	CSAH 12	CSAH 16	CR 97	Multiple Twps.	6.3	30	**1.67**
13	CSAH 1	Le Sueur Ave/CR 137	CSAH 4	Erin Twp.	4.0	13	**1.27**
14	CSAH 27	CSAH 20	TH 246	Cannon City / Wheeling Twps.	7.4	14	1.03
15	CSAH 19	Faribault City Limit	Goodhue Ave	Walcott / Richland Twps.	12.2	22	0.94
16	CSAH 25	CSAH 20	CSAH 23	Cannon City Twp.	4.2	8	0.86
17	CR 59	Albers Ave	TH 19	Forest Twp.	3.9	4	0.46
Low Volume – 2 Lane Urban Highway:							
1	CSAH 13	TH 60	CR 71	Warsaw Twp.	0.6	6	**6.05**
2	CR 96	CSAH 33	CSAH 96	Lonsdale	0.3	3	**3.34**
3	CSAH 16	S City Limit	N City Limit	Morristown	1.2	5	1.29
4	CR 78	Railway St	Dundas Blvd	Dundas	2.0	7	1.16
2 Lane Rural Highway:							
1	CSAH 1	I-35	Dundas City Limit	Bridgewater Twp.	3.7	40	**2.66**
2	CSAH 11	Faribault W City Limit	TH 21	Faribault	1.1	24	**2.09**
3	CSAH 20	TH 60	CSAH 25	Faribault	1.0	9	**1.68**
4	CSAH 4	Lonsdale S City Limit	TH 19	Lonsdale	1.0	7	**1.44**
5	CSAH 11	CSAH 37	Faribault W City Limit	Wells Twp.	2.3	20	**1.34**
6	CSAH 45	270th St	CSAH 19	Walcott Twp.	5.8	42	**1.20**
7	CSAH 20	CSAH 25	Dundas City Limit	Cannon City / Bridgewater Twps.	9.5	46	**1.17**
8	CSAH 38	CR 71	CSAH 11	Wells Twp.	5.0	24	**1.13**
9	CSAH 31	TH 246	Goodhue Ave	Northfield Twp.	2.0	12	1.05
10	CSAH 12	CR 97	TH 60	Warsaw Twp.	1.6	9	1.03
11	CSAH 46	TH 19	CSAH 86	Webster Twp.	5.1	22	1.02
12	CSAH 46	TH 21	TH 19	Multiple Twps.	10.1	33	1.00
13	CSAH 16	270th St	Morristown City Limit	Morristown Twp.	1.5	4	0.63
14	CSAH 4	TH 21	Lonsdale City Limit	Erin / Wheatland Twps.	4.6	12	0.58
15	CSAH 86	TH 19	CSAH 46	Webster / Wheatland Twps.	8.1	34	0.60
16	CSAH 93	CSAH 39	4th St	Warsaw Twp.	2.4	12	0.49
2 Lane Urban Arterial Roadway:							
1	CSAH 33	Delaware St	TH 19	Lonsdale	0.4	8	**5.50**
2	CSAH 18	CSAH 47/17th St SW	TH 60	Faribault	1.8	60	**4.00**
3	CSAH 1	Dundas/Northfield W City Limit	TH 246	Dundas / Northfield	3.4	21	1.59
4	CSAH 19	CSAH 45	Faribault S City Limit	Faribault	0.7	7	1.15
2 Lane Urban Local Roadway:							
1	CSAH 43	Forest Ave	North Ave	Northfield	1.2	21	2.84
2	CSAH 20	Dundas S City Limit	CSAH 1	Dundas	0.7	5	2.01
3	CSAH 28	TH 246	Heywood Pkwy	Northfield	1.3	16	1.45
4	CSAH 44	CSAH 16	TH 60	Morristown	0.6	4	1.36
4 Lane Urban Arterial:							
1	CSAH 48	I-35 Ramps	TH 60/TH 21	Faribault	1.1	121	**5.15**

Roadway segment crash rates in Rice County were compared to average crash rates for similar type roadways in southeastern Minnesota as a means of identifying potential high crash segments. Table 3.2-4 – Comparative Roadway Segment Crash Rates presents the regional average crash rates by roadway type. Figure 3.2-3 – Roadway Segment Crash Summary illustrates the county road and county state aid highway segments in Rice County with crash rates higher than the regional average as well as those with crash rates more than twice the regional average for the same type of Roadway.

Table 3.2-4 Comparative Roadway Segment Crash Rates

Roadway Segment Type	Mn/DOT District 6 Average (Crashes per MVT)*
(R2) Rural 2-Lane Highway	1.1
(U2L) Urban 2-Lane Local	3.3
(U2) Urban 2-Lane Arterial	3.6
(U4) Urban 4-Lane Undivided	7.7
(U4E) Urban 4-Lane (Divided)	3.6
* Source: Mn/DOT 1999-2001 Crash Data	

While the comparison of segment crash rates to regional average crash rates can help identify areas with potential safety issues, it does not account for random variations (indicated by low volumes). It is important to provide special considerations to roadway segments with an AADT less than 1500 as these roadways are subject to more variability (a small number of crashes can result in a high crash rate).

Intersections and Roadway Segments with crash rates higher than the comparable average may benefit from safety improvement strategies and should be investigated further. Safety improvements such as introduction of left turn lanes can reduce crash frequency on urban arterials by 25-40%[5]. Other safety improvement strategies to consider include implementation of roadway design standards to improve roadside safety in rural areas as well as implementation of access management guidelines to reduce vehicle conflict points in urban areas. High crash locations will require further study to identify the appropriate safety improvement strategies and to evaluate the cost effectiveness of the strategies. A prioritized list of high crash locations recommended for further analysis is included in the implementation plan.

3.3 Continuity Deficiencies

The roadway network in Rice County includes many segmented county roadways that are somewhat non-continuous. For purposes of longer, county-wide trips; heavy reliance on the trunk highways in Rice County is necessary. While this type of road network is adequate for a mostly rural county, it is inadequate for developed and developing areas as it results in increased trip lengths and travel times. As the population growth continues, the Minor Arterial and Major Collector network of county roads will need to make roadway connections and expansions of links to provide for the increasing mobility needs of the County.

3.4 Multimodal Transportation

Rice County has a variety of modal transportation users and services, including trails, railroads, and transit. The existing multimodal uses can be summarized as follows:

[5] Source: Traffic Safety Fundamentals Handbook, Mn/DOT, April 2001

Trails – In 1993, the Rice County Board adopted the Rice County Park System Plan. This plan is an element of the County Comprehensive Plan and contains policies and plans for the park infrastructure and implementation strategies that are necessary for the County to provide for orderly growth and satisfy anticipated park and recreation demands to the year 2013.[6] It also provides an inventory of the existing County parks. Existing trails have been primarily developed by local cities, or they have been developed by the state. Local trails are documented in the cities' comprehensive plans. The existing regional trails within the County are listed below and illustrated in Figure 3.4-1 – Existing Multimodal Uses.

Sakatah Singing Hills State Trail – This legislatively authorized state trail is a 39-mile multiple use trail that has been developed on an abandoned railroad bed. It is operated by the Minnesota Department of Natural Resources (DNR), and extends on the north side of TH 60 from Faribault west to Mankato. It offers opportunities for bicycling, in-line skating, horseback riding, cross country skiing, hiking, as well as snowmobiling (non-studded track only).[7]

Mill Towns Trail – This trail is a legislatively authorized state trail. The vision is to provide connectivity between the Sakatah Singing Hills Trail in Faribault with the Cannon Valley Regional Trail in Cannon Falls. The legislation specifies the communities, but not the route.[8] Currently there is a 3-mile segment of trail completed on an abandoned railroad bed between Northfield and Dundas.

Rail – There is a north/south rail line owned by Union Pacific Railroad Company and Chicago, Milwaukee, St. Paul & Pacific Railroad that runs through Rice County east of I-35. ICE Rail Line has a line off this railroad which generally runs parallel to I-35. Both lines go through Faribault and join south of CSAH 8 in Bridgewater Township. The rail line splices into 3 lines near St. Olaf Avenue in Northfield and all extend into Dakota County. The existing rail lines are illustrated in Figure 3.4-1 – Existing Multimodal Uses.

According to the Cannon River Crossing Corridor Location Study, there are approximately 16 to 18 trains per day that move through the City of Northfield, and the number of trains per day is expected to double in the next 10 years.[9]

In 1998, Mn/DOT completed a report, "Phase 1 Summary Report: Twin Cities Metropolitan Commuter Rail Study." This report evaluated various routes for commuter rail lines in the Twin Cities Metropolitan Area. Two routes terminated in Northfield, one followed the Union Pacific Railroad into downtown St. Paul, and the other, the Dan Patch Line, followed a more westerly alignment utilizing the Canadian Pacific tracks. The Dan Patch Line was recommended for Phase II Analysis by Mn/DOT and is the high priority commuter rail line for further development behind the Northstar and Red Rock Corridors.[10]

Transit – Transit services are important, because they provide transportation choices for commuters and they provide important quality of life services to transit dependent users. In January of 2001, Rice County completed a Rice County Transit Study Report. The objective of the study was to conduct a comprehensive transit service performance and market analysis of transit systems operating in the County, to identify any unmet needs, and to look for opportunities to enhance transit service. Survey results for providers identified the area served, times of operation, number of vehicles, and ridership. The markets and fleets varied from school bus transportation, human service transportation, and general public services.

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[6] Rice County, Rice County Park System Plan, 1993, p. 1
[7] Minnesota Department of Natural Resources, Minnesota State Trails – Sakatah Singing Hills, May 2004.
[8] Minnesota Department of Transportation, SMART – Southeastern Minnesota Association Regional Trails, November 2003, http://www.dot.state.mn.us/transit/SMART/brochure.pdf.
[9] Yaggy Colby Associates, Corridor Location Study Cannon River Crossing, City of Northfield, MN, 2004, p. 3 – 4.
[10] Hoisington Koegler Group Inc., Comprehensive Plan Northfield, Minnesota, City of Northfield, MN, 2004, p. 8-5.

Regular transit services for the general public are available in the Cities of Faribault and Northfield. The City of Faribault provides local transit service, the Faribault Flyer, to its local residents. Since one of the principal factors in providing transit service is concentration of population, transit service is limited. The City of Northfield offers dial-a-ride and work trip service within the city.[11]

There are three existing park and ride lots within Rice County. They are located at the intersections of TH 19 and CSAH 86, I-35 and TH 19, and at TH 21 and 7th Street NW. These lots offer options to reduce travel demand on the roadways.

[11] SRF Consulting Group, Inc., Rice County Transit Study, Rice County, MN, January 2001, pg. 1, 7, 20 – 23.

4.0 FUTURE SYSTEM NEEDS

The transportation system in Rice County needs to evolve consistent with its transition from a mostly rural county to a developing county. In addition to addressing the existing deficiencies, the Transportation Plan identifies anticipated future needs, recognizing the potential savings in addressing these needs before they become deficiencies.

4.1 2025 Traffic Forecasts and Capacity Needs

Traffic forecasts for the year 2025 were developed to identify future travel demands, capacity constraints, and system deficiencies. Average annual daily traffic volumes were forecasted to 2025 on existing Minor Collector, Major Collector, Minor Arterial, and Principal Arterial roadways. These forecasts are illustrated on Figure 4.1-1 – 2025 Forecasted Average Annual Daily Traffic Volumes on Existing Roadways. Forecasts in the Dundas/Northfield and Faribault areas are illustrated in Figures 4.1-2 and 4.1-3 respectively. 2025 traffic forecasts were developed based on household, population, and employment growth projected by each city and Rice County. These projections yielded a population of approximately 126,000.

It is recognized that development may not reach the household, population, and employment projected in all areas, and as a result traffic forecasts may be relatively accurate in locations where development occurs, however in areas that do not develop traffic forecasts may be higher. For these reasons, specific traffic impact studies should be completed as property is proposed for development or redevelopment. In addition, Rice County should periodically review land use and development/growth trends and adjust the projections accordingly. Details on the methodology used to develop forecasts are found in Appendix B – Rice County Traffic Forecasting Modeling Methodology

The 2025 traffic forecasts were compared to existing roadway capacities to identify potential roadway capacity needs. Figure 4.1-4 – 2025 Congestion Analysis shows roadways with capacity deficiencies in the year 2025. Roadway capacities represent existing conditions as of October 2004 and do not include planned roadway capacity improvements.

4.2 Preservation Needs

As a means to protect and achieve the returns on investments previously made on the existing roadway system in Rice County, preservation of the existing roadway pavement is necessary. This would include regular pavement maintenance and rehabilitation necessary to prolong the life of the pavement structure. For purposes on the Transportation Plan, County staff has identified those roadways that have not received a rehabilitation investment since 1993. This includes approximately 220 miles of the 345 existing paved miles of county state aid highways and county roads. Figure 4.2-1 – 2025 Preservation Needs illustrates roadway preservation needs based on historic investments.

4.3 Safety Needs

Maintaining a safe roadway system is of utmost importance for any roadway jurisdiction. While eliminating all crashes on a roadway system may be unachievable, Rice County recognizes that roadway improvements at specific locations may help in reducing the frequency and/or severity of crashes. Specific locations that present complex or unexpected situations that motorists need to recognize and react accordingly can often lead to a concentration of crashes.

The roadway system in Rice County has its share of complex or unexpected driving situations, many of which do not appear to result in an abnormal crash frequency. Many of these locations are the result of an aging system that was built prior to modern design standards. Implementation of the roadway design standards identified in Section 2.4 of this Plan will help to eliminate many of these locations.

Specific locations that are currently experiencing an abnormally high crash rate are identified in Section 3.2 of this Plan. A review of crash records indicates that roadway improvements at these specific locations may result in a lower crash frequency. These existing safety needs are illustrated on Figure 4.3-1 – 2025 Safety Needs.

As a means to proactively address potential future intersection safety issues, forecasted volumes entering intersections currently controlled by a thru-stop condition were reviewed. Intersections with forecasted intersecting daily volumes that met or exceeded the following thresholds where identified.

- 6000 vpd on the major approach and 3000 vpd on the minor approach or
- 9000 vpd on the major approach and 1500 vpd on the minor approach

These intersections are also illustrated on Figure 4.3-1 – 2025 Safety Needs. It is recommended that an Intersection Control Evaluation be completed at each of these intersections as traffic volumes approach the volume thresholds to determine the appropriate intersection traffic control. These thresholds indicate the traffic volume levels at which cross street delays become unacceptable to most motorists, which can often lead to increased crash rates. Appropriate intersection traffic control for these intersections may include all-way stop, signalization, or modern roundabout.

4.4 Continuity Corridors

As Rice County continues to evolve from a mostly rural to developing county, continuity within the roadway network needs to improve to accommodate more direct and efficient trips. Less reliance on the trunk highway system for local and intra-county trips is necessary to preserve mobility on these routes for regional travel.

Objectives – Objectives were developed to help guide decisions relative to roadway network continuity across Rice County and extending into adjacent counties. These objectives are identified as follows:

- Develop continuous, parallel routes on both sides of I-35
- Develop continuous routes around the outer perimeter of cities
- Develop a continuous, north/south route through the lakes area
- Improve continuity of east/west corridors, particularly those with access to I-35
- Maximize utilization of existing infrastructure such as right-of-way, railroad crossings, and river crossings
- Achieve spacing of Minor Arterial roadways of 1 – 2 miles in developing areas and 3 – 5 miles in Rural Areas
- Achieve spacing of Major Collector roadways of ½ – 1 mile in Developing Areas and 1 – 2 miles in Rural Areas
- Address connectivity between places where trips originate and their destinations
- Improve continuity of routes with roadways in adjacent counties
- Remove jogs in roads

Corridor Identification – Roadway corridors were developed based on the objectives identified above and are illustrated in Figure 4.4-1 – Countywide Roadway Continuity Corridor Vision. Additional environmental and feasibility studies, as well as traffic studies, are necessary prior to implementation of new corridors. The purpose of this portion of the Plan is to identify connectivity and continuity needs across Rice County. It is understood that several of these studies will require coordination with adjacent counties, cities, and townships. Actual alignments may vary.

North/South Corridors (A – K)

Corridor A

Purpose: Continuity on the west side of Rice County from CSAH 12 (210th St.) to TH 13 in Scott County. This will provide connectivity to TH 169 (Principal Arterial) via Scott County CSAH 17.

Use of Existing Roadway(s): Nearly 17 miles of this proposed corridor currently exists via CR 137, a portion of CSAH 12, and a portion of CSAH 2. Approximately 4 of the 17 miles are paved, while the remaining 13 miles are of a gravel surface.

Missing Connection(s): The only missing segment along this corridor is the northern most 1 – 1½ miles, which would connect to TH 19 at TH 13.

Corridor B

Purpose: Provide a link from TH 99 north through Lonsdale to Scott County CSAH 23, which extends into the City of Prior Lake. Due to the amount of lakes and wetlands in this area of the County the corridor breaks at TH 99 and resumes at CSAH 12 where it extends through CR 72/CSAH 16 on the east side of Morristown into Steele County.

Use of Existing Roadway(s): North of TH 99, nearly 10 of the 11 mile corridor exists via TH 19, CSAH 4, and TH 21, all of which are paved. South of CSAH 12, approximately 4 of the 6-mile corridor exist via CR 72, and CSAH 16.

Missing Connection(s): CSAH 4 is proposed to be realigned to the west side of Lonsdale. Additional study would be necessary to determine continuous movements at the intersections of CSAH 4 at TH 21, TH 19, and CSAH 2.

Realigning CR 72 is proposed to offer a continuous route, including at the intersection with TH 60. CSAH 16 is proposed to be realigned with CR 72 on the east side of the City of Morristown.

Corridor C

Purpose: Connectivity through the lakes area of Rice County to Scott County CSAH 27 which extends north of the Principal Arterial of CSAH 42 in Savage and south to Steele County CR 17 to US 14.

Use of Existing Roadway(s): Approximately 17 of this 25-mile corridor utilizes existing county or township road right-of-way. This route utilizes a portion of CSAH 3, CSAH 6, Elmore Avenue, CSAH 34, CSAH 9, CSAH 36, CR 68, Fairbanks Avenue, CSAH 13, Farwell Avenue, and Garfield Avenue. All of the county road segments are paved, while township roadways are gravel surfaced.

Missing Connection(s): Approximately 8 miles of new alignment would be necessary to achieve this corridor. The missing segments to complete this route, including CSAH 3 to Elmore Avenue, CSAH 34 to CSAH 9, CSAH 9 to CSAH 36, CSAH 36 to CR 68, CR 68 to Fairbanks Avenue, Fairbanks Avenue to Farwell Avenue, and Farwell Avenue to Garfield Avenue.

Corridor D

Purpose: This route will provide a western parallel route to I-35 and assist in preserving I-35 for regional trips. The corridor will provide connectivity to and between the City of Faribault and destinations to the south including Medford and Owatonna and the commercial/industrial uses planned between TH 19 and CSAH 1. This commercial/industrial area will also be connected to the planned commercial and industrial land uses at CSAH 86 and Scott County CSAH 2 north of the County.

Use of Existing Roadway(s): Approximately 17 of this 25-mile corridor utilizes the existing county or township road right-of-way of Canby Avenue, Chester Avenue, CSAH 46, Canby Way, CSAH 93, and CSAH 18. All of the county road segments are paved, resulting in approximately 11 of the 25-mile corridor being a paved surface.

Missing Connection(s): This route includes a jog on TH 19 between Chester Avenue and CSAH 46 to avoid wetlands and wildlife management areas. Several segments south of TH 21 are missing, including links between CSAH 46 and Canby Avenue, extension of Canby Avenue south to CSAH 11 across the Cannon River, and the extension to CSAH 93, CSAH 18 and parallel to I-35 to the Rice/Steele County line.

Corridor E

Purpose: This route will provide an eastern parallel route to I-35 and assist in preserving I-35 for regional trips. The corridor will provide connectivity to and between the City of Faribault and destinations to the south including Medford and Owatonna and the commercial/industrial uses planned between TH 19 and CSAH 1. This commercial/industrial area will also be connected to the planned commercial and industrial land uses at CSAH 86, Scott County CSAH 2, Dakota County CSAH 70 and CSAH 60 located north of the County.

Use of Existing Roadway(s): Nearly this entire 16-mile corridor utilizes existing county or township road right-of-way. CSAH 46 north of TH 19, Aberdeen Trail, Base Line Road, and CR 76 to TH 21. All the county roads are paved.

Missing Connection(s): Depending on the specific plans developed to realign CSAH 46 at TH 19 to move the intersection further from I-35, it appears that potentially less than 1 mile of new right-of-way would be needed to complete the realignment.

Corridor F

Purpose: This roadway provides the opportunity for an efficient north/south route on the west side of the Cities of Dundas and Northfield and connects to Foliage Avenue in Dakota County (CSAH 23). Foliage Avenue connects with Cedar Avenue and extends north into Eagan where it crosses the Minnesota River to the Mall of America and Minneapolis/St. Paul International Airport.

Use of Existing Roadway(s): Of the 4.5 mile corridor, 3 miles of existing right-of-way is used along Decker Avenue and part of CSAH 8 located north of TH 3. The 1-mile portion of CSAH 8 that is utilized is paved.

Missing Connection(s): A 1.5-mile segment located between approximately 118th Street and Decker Avenue does not exist. There is also an approximate ½ mile segment within Dakota County missing to complete the connection to CSAH 23 (known further to the north as Cedar Avenue).

Corridor G Purpose: This route will provide an eastern parallel route to I-35 and assist in preserving I-35 for regional trips. Destinations to the north include Northfield and Dundas and beyond by means of TH 3. Destinations to the south include Medford and Owatonna.

Use of Existing Roadway(s): This approximate 7-mile paved corridor includes Willow Street to CSAH 19 to CSAH 21.

Missing Connection(s): None.

Corridor H Purpose: This route would continue to provide an alternative route to TH 3 for travel between the Cities of Dundas and Northfield and Faribault, as CSAH 20 does today. In addition, it would provide an opportunity around the east side of the City of Faribault.

Use of Existing Roadway(s): Approximately 6 mile of existing, paved CSAH 20 could be used, as well as approximately 2 miles of existing, gravel CSAH 41/Eiler Avenue.

Missing Connection(s): Approximately 2 miles of new roadway alignment would be necessary to bypass the Cannon City area and connect existing CSAH 20 and CSAH 41.

Corridor I Purpose: TH 3 provides continuity into Dakota County to St. Paul on the north and Dakota County CSAH 47 provides continuity to the City of Hastings. On the south TH 3 provides continuity to the City of Faribault.

Use of Existing Roadway(s): There are approximately 14 miles of TH 3 in Rice County. CSAH 47 begins in Dakota County approximately 1 mile north of the City of Northfield. Both roads are paved.

Missing Connection(s): No segments are missing.

Corridor J Purpose: This route provides an alternative to TH 3 to move north/south around the east side of the Cities of Dundas and Northfield using a portion of Jefferson Parkway. It connects to an existing Cannon River crossing on Canada Avenue in Waterford Township within Dakota County. The route connects on the south to the City of Faribault and beyond into Steele County.

Use of Existing Roadway(s): Right-of-way exists for approximately 15.5 miles of the 19-mile corridor. Jefferson Parkway, Hall Avenue, CSAH 30, Goodrich Trail, Giefer Avenue, CR 188, and CSAH 23. The CSAH roadways, Jefferson Parkway, and part of Hall Avenue are paved, resulting in approximately 6 miles of gravel surface.

Missing Connection(s): Several segments north of TH 246 are missing to provide connectivity to Jefferson Parkway located on the east side of the City of Northfield. Connectivity is also needed between Goodrich Trail and Giefer Avenue, Giefer Avenue and CR 188, and CSAH 23 at the Rice/Steele County line.

Corridor K Purpose: This route provides for continuous travel on the east side of Rice County, connecting with Dakota County CSAH 47 to Hastings on the north and Steele County on the south. It also provides connectivity to an existing Cannon River crossing on Dakota County Road 59.

Use of Existing Roadway(s): This corridor is approximately 20 miles long, using roughly 15.5 paved miles of CSAH 42, CR 81, TH 246, CSAH 27, and CSAH 26.

Missing Connection(s): To provide a continuous route there are approximately 3.5 miles of missing connections where roadways take a ½ to 1 mile jog on an east/west route between CSAH 42 to Kane Avenue, CSAH 27 to CSAH 26, and 2 different segments of Lamb and Larson Avenues.

East/West Corridors (L – U)

Corridor L Purpose: The corridor provides connectivity between TH 169 and the Minnesota River on the west and TH 52 on the east to Cannon Falls and Red Wing via TH 19 utilizing an existing overpass at I-35.

Use of Existing Roadway(s): This 12-mile paved route utilizes TH 19 and CSAH 86 in Rice County.

Missing Connection(s): None.

Corridor M Purpose: This roadway would provide connectivity to the west to LeSueur County CSAH 29 located on the south side of the City of New Prague, and to the east to Dakota County Road 90. The route would serve as an alternative to the TH 19/CSAH 86 routes and use an existing overpass at I-35 and CSAH 3.

Use of Existing Roadway(s): This paved corridor is approximately 12 miles long and includes 40th Street, CSAH 6, 50th Street, and CSAH 3. The CSAH routes provide roughly 8.5 miles of paved surface. Approximately 2.5 miles of gravel makeup the balance of the existing corridor.

Missing Connection(s): Approximately 1.5 miles of the total corridor are missing. Segments that are missing along the route include connections on the east and west ends between 40th and 45th Streets and between 45th and 50th Streets. Also missing is the segment between Elmore and Dent Avenues.

Corridor N Purpose: This route provides continuity to the west to LeSueur County CSAH 28, which connects to TH 169 north of the City of LeSueur. To the east there is connectivity to TH 52 and beyond to the City of Red Wing via TH 19. This route uses an existing interchange at I-35.

Use of Existing Roadway(s): This paved corridor is approximately 25 miles long and includes CSAH 2 and TH 19.

Missing Connection(s): None.

Corridor O

Purpose: This route provides continuity west to Montgomery in Le Sueur County, by means of CSAH 1 to LeSueur County CSAH 26. Le Sueur CSAH 26 connects to TH 169 at the City of Le Sueur. An alternative route on the west side for the county would utilize TH 21 rather than CSAH 26 in Le Sueur County. To the east, this route provides connectivity to the Cities of Dundas, Dennison, Goodhue, Lake City, as well as TH 52 via Goodhue CSAH 9. This route uses an existing interchange at I-35.

Use of Existing Roadway(s): This paved corridor is roughly 25 miles long and would use existing right-of-way of CSAH 1, TH 246, and CSAH 31.

Missing Connection(s): Utilizing the CSAH 1 alignment west of CSAH 4 to provide a continuous route would require approximately ½ mile of new right-of-way, while utilizing TH 21 would require approximately 2.5 miles. Minor realignment of CSAH 1 is proposed east of I-35 to remove curves and improvement the safety of the roadway. A new alignment would be necessary at the City of Dundas in order to achieve the level of mobility this corridor is intended to provide. This would include a new crossing of the Cannon River in Dundas, connecting near CSAH 20/115th Street and resulting in approximately ½ - 1 mile of new right-of-way).

Corridor P

Purpose: This route connects TH 99 on the west to TH 169 in St. Peter and beyond to TH 14 at the City of Nicollet. To the east, the route connects to the Big Woods State Park and Nerstrand. This more direct east/west route will facilitate traffic desiring to access I-35 and travel north if an interchange is developed in the future. This route uses an existing overpass at I-35 and existing Cannon River crossing at CSAH 29.

Use of Existing Roadway(s): This corridor is approximately 25 miles long using the existing roadways of TH 99, TH 21, CSAH 9, CSAH 29, and TH 246. Approximately 3 miles of CSAH 29 proposed with this corridor are unpaved.

Missing Connection(s): Roughly 5 miles of the corridor are missing, including the segments from TH 21 to CSAH 9, CSAH 9 to CSAH 29, and the realignment of CSAH 29 east of TH 3 to flatten curves and avoid Cannon City.

Corridor Q

Purpose: This 5 mile segment of TH 21 provides continuity into the City of Faribault from the west and north and has an existing interchange at I-35.

Use of Existing Roadway(s): TH 21, which is a paved road.

Missing Connection(s): None.

Corridor R

Purpose: This route connects the City of Faribault with the lakes area west of I-35. The route will provide a continuous local option to cross I-35 using the existing CSAH 11 underpass, which helps to preserve TH 60 for regional travel.

Use of Existing Roadway(s): This 11.5 mile paved corridor includes CSAH 12 and portions of CSAH 38 and CSAH 11.

Missing Connection(s): The only missing connection is an approximate 1-mile section between CSAH 12 and CSAH 38.

Corridor S Purpose: This route provides an alternative to the current TH 60 alignment to bypass the City of Faribault or the option for local traffic to move across I-35 by means of an existing overpass.

Use of Existing Roadway(s): This 7.5 mile corridor includes CSAH 39, 230th Street, and part of 220th Street and utilizes the existing bridge across the Straight River on 220th Street. Approximately 3 miles of the corridor are paved, while roughly 4 are gravel surfaced.

Missing Connection(s): Connectivity is needed between 230th Street and 220th Street and between 220th Street and TH 60, resulting in approximately 2 miles of new roadway.

Corridor T Purpose: This is the current TH 60 route, which connects I-35 to TH 169 and TH 14 in Mankato and to Wabasha on the east side of the state.

Use of Existing Roadway(s): TH 60, which is paved.

Missing Connection(s): None.

Corridor U Purpose: This route provides an alternative to the current TH 60 alignment to bypass the City of Faribault or the option for local traffic to move across I-35 by means of an existing overpass.

Use of Existing Roadway(s): This corridor is roughly 20.5 miles long and includes CSAH 15, part of 250th Street, and CSAH 19. Roughly 1 mile is unpaved and 18.5 are paved.

Missing Connection(s): The missing 1-mile connection on this route is between 250th Street and CSAH 19.

Figure 4.4-2 – Future System Improvement & Expansion Needs illustrates individual projects necessary to achieve the continuity vision presented above. It also identifies capacity improvements necessary to achieve the level of mobility desired for these corridors as well. Figure 4.4-3 – Future Non-System Improvement Needs identifies projects that are not on a continuity corridor.

4.5 Gravel to Pavement Program

Life cycle cost analysis completed by other Minnesota counties has determined that it becomes cost effective to pave gravel roadways when traffic volumes are greater than 300 ADT. While this remains a good rule of thumb for most Minnesota counties, Rice County's gravel to pavement needs are more focused on achieving the continuity corridors described above. Paving of select gravel county and township roads to achieve portions of the continuity vision will ultimately limit the use of remaining, none-contiguous gravel routes to local land access and maintain traffic volumes below 300 ADT in rural areas.

Rice County needs to review horizontal and vertical alignments of any gravel to pavement candidate, prior to paving. Motorists drive paved roadways much more aggressively than gravel roadways and higher travel speeds should be accounted for in the design. Tight, horizontal curves and limited sight distance over hills, which may have not been a problem with a gravel surface, can often result in immediate crashes problems when the roadway is paved.

5.0 TRANSPORTATION SYSTEM PLAN

The transportation system plan developed for Rice County is based on principles and standards, strengths and limitations of the existing system, and anticipated future needs. The result is a transportation vision for Rice County that supports the movement of people, goods, and services safely and efficiently.

5.1 Future Roadway Network and Functional Classification

The recommended future roadway functional classification for Rice County is illustrated in Figure 5.1-1. This system was developed utilizing the functional classification criteria identified in Section 2.1 and the desired, long-term continuity vision described in Section 4.4.

It is noted that several of the future classification changes are in the northern one-third of Rice County. This is due to the urbanization anticipated in this area. As identified in Section 2.1, in Urbanizing Areas, the spacing between roadways of the same classification becomes reduced (e.g. Urban Minor Arterial spacing is 1-2 miles, while Rural Minor Arterial spacing is 3-5 miles). Changes to the existing roadway functional classification are illustrated in Figure 5.1-1 and described in the tables below:

Table 5.1-1 Future Minor Arterial Roadway Functional Classification Changes

Corridor	Roadway	From	To	Existing Functional Classification	Prerequisite for Change
A	CSAH 2	CR 137	TH 19	Minor Collector	Completion of the extension of CSAH 2 to TH 19 and TH 13, extension of existing Minor Arterial in Scott County (TH 13)
C	CSAH 3, 6, Elmore Avenue	CSAH 86	TH 19	Varies Local to Major Collector	Completion of continuous corridor from CSAH 86 to TH 19, extension of existing Minor Arterial in Scott County (CSAH 27)
	CSAH 34, 9, 36	TH 19	TH 21	Minor Collector	Completion of continuous corridor from CSAH 86 to TH 21
	CR 68, CSAH 13, Fairbanks Avenue	TH 21	TH 60	Local Roadway	Completion of continuous corridor from CSAH 86 to TH 60
	Fairwell and Garfield Avenue	TH 60	CR 73	Local Roadway	Completion of continuous corridor through Rice County, connecting to TH 14 via Steele CSAH 17 and CSAH 42 via Scott CSAH 27
L	CSAH 86	TH 19	CSAH 46	Major & Minor Collector	None, should be changed immediately to be consistent with Scott and Dakota County classification
N	CSAH 2	CR 137	TH 19	Major Collector	Completion of upgrade to 10-ton route in 2006, coordinate change with Le Sueur County to include the Le Sueur CSAH 26/Rice CSAH 2 between TH 13 and TH 19
O	CSAH 1	CR 137	I-35	Minor & Major Collector	Completion of a continuous route between TH 21 in Montgomery and I-35, need to coordinate change with Le Sueur County
	CSAH 1, 115th Street, TH 246, CSAH 31	I-35	E. County Line	Major Collector	Completion of a continuous route between I-35 and TH 52, including new alignment and Cannon River crossing at Dundas, need to coordinate change with Goodhue County
P	CSAH 9	TH 21	TH 3	Minor Collector & Local Roadway	Completion of continuous corridor connection between CSAH 9 and TH 21 and completion of a new I-35 interchange

Table 5.1-2 Future Major Collector Roadway Functional Classification Changes

Corridor	Roadway	From	To	Existing Functional Classification	Prerequisite for Change
A	CR 137	CSAH 2	CSAH 12	Minor Collector	Completion of upgrade to paved roadway
B	CR 72	CSAH 12	TH 60	Local	Completion of realignment of CSAH 16 at Morristown and continuous corridor between CSAH 12 and CSAH 16
D	New Corridor	CSAH 86	TH 19	NA	Completion of a continuous corridor
	Canby Ave	TH 21	CSAH 38	Local	Completion of a continuous, paved corridor
	New Corridor	CSAH 38	TH 60	NA	Completion of new Cannon River Crossing and continuous corridor
	CSAH 93, 18	TH 60	S. County Line	Local	Completion of a continuous corridor
E	CR 59 & Baseline Avenue	TH 19	CSAH 8	Local	Completion of upgrade to paved roadway on Baseline Avenue
	CR 76	CSAH 8	TH 21	Minor Collector & Local	None, should be implemented immediately
F	CSAH 8 & Decker Ave.	TH 19	TH 3	Minor Collector & Local	Completion of a continuous corridor
G	CSAH 21	CSAH 19	CR 98	Minor Collector	Completion of corridor improvements in Goodhue County
J	Hall Avenue	TH 19	CSAH 28	Local	When urbanization occurs in the Cities of Dundas and Northfield and the corridor is completed.
	CSAH 30, CR 188 & Various Township Roads	CR 81	CSAH 27	Local	Completion of a continuous corridor
K	CSAH 42 & CR 81	TH 19	TH 246	Minor Collector & Local	Completion of a continuous corridor, coordinate change with Dakota County to include the Dakota CR 59/Rice CSAH 42 between Dakota CSAH 47 and TH 246
	CSAH 26	TH 246	CSAH 19	Minor Collector	None, could be implemented immediately
M	CSAH 6	W. County Line	TH 19	Minor Collector	Change in classification of CSAH 2 to Minor Arterial
	CSAH 6, 3	TH 19	CSAH 46	Minor Collector & Local	Completion of continuous corridor between CSAH 6 and CSAH 3 overpass of I-35
P	CSAH 29	TH 3	CSAH 20	Local	None, could be implemented immediately
R	CSAH 12	CR 137	CSAH 38	Minor Collector & Local	Completion of continuous corridor between west county line and TH 21 in Faribault
S	CSAH 39 & 220th Street	TH 60/ CSAH 17	TH 60	Local	Completion of a continuous corridor connecting TH 60 around the south side of Faribault
U	New Corridor	CSAH 45	CSAH 19	NA	Completion of continuous connection between CSAH 15 and CSAH 19

Table 5.1-3 Future Minor Collector Roadway Functional Classification Changes				
Roadway	**From**	**To**	**Existing Functional Classification**	**Prerequisite for Change**
CR 52	TH 19	CR 59	Local	None, could be implemented immediately
CSAH 96 & 33	CSAH 86	CSAH 1	Local	None, could be implemented immediately
CSAH 5	CSAH 3	TH 19	Major Collector	Completion of Corridor C
Baldwin Avenue	TH 19	CSAH 1	Local	None, could be implemented immediately
CR 63	TH 99	CR 37	Local	None, could be implemented immediately
CR 60	CSAH 1	130th St	Local	None, could be implemented immediately
CR 24 & 80	CSAH 27	CSAH 19	Local	None, could be implemented immediately
CSAH 25	CSAH 20	CSAH 23	Local	None, could be implemented immediately
CR 54/Farwell Ave	60th St	CR 59	Local	Upon urbanization of the City of Lonsdale's growth area
CR 54/60th St	CR 52	Farwell Ave	Local	Upon urbanization of the City of Lonsdale's growth area
CSAH 38	CSAH 10	Fairbanks Ave	Major Collector	Upon completion of CSAH 12 connection to CSAH 38
CSAH 3	CSAH 6	45th St. W	Major Collector	Upon completion of CSAH 6 connection from Elmore Ave. to 45th St. W
CR 59	CR 137	TH 19	Local	Upon completion of I-35 overpass and continuous corridor
CR 81	TH 246	CSAH 31	Local	None, could be implemented immediately; portions to be upgraded to Major Collectors upon completion of Corridor J and K
CR 29	CSAH 20	TH 246	Local	None, could be implemented immediately
CR 60/130 St	CSAH 9	CSAH 46	Local	None, could be implemented immediately
CSAH 16	TH 60	CSAH 14	Local	None, could be implemented immediately

Functional Classification changes within the City of Faribault and the City of Northfield are also recommended to be consistent with countywide classifications. Currently, roadway classifications increase one level upon entering these municipalities to reflect the differing roadway classifications in Rural and Urban areas, as described in Section 2.1. For simplicity and consistency in the regional roadway system, classifications of roadways within these urban areas are proposed to be consistent with the classification in rural areas. Roadway design standards and access management guidelines have been established for these roadways in both rural and urban areas to ensure their intended function and mobility needs can be achieved and maintained.

5.2 Jurisdictional Transfer Candidates and Implementation

The future roadway network and functional classification strategies identified in Section 5.1, together with the guidelines for jurisdictional designation identified in Section 2.5, were used to identify roadways candidates for jurisdictional transfer. While this Plan recommends a number of potential transfers, it is understood that not every candidate will actually be transferred as proposed in this Plan and that some revisions in the Plan may be made in the future based on changing needs and situation. Candidates are illustrated in Figure 5.2-1. Appendix C – Potential Roadway Jurisdictional Transfer Candidates summarizes these recommendations, as well as rationale for candidates, net change in system mileage by agency, and actions required to complete the transfer. Based on the recommended jurisdictional transfers, a summary of mileage impacts to each roadway system in presented in Table 5.2-2 – Jurisdictional Transfer Mileage Summary.

Table 5.2-1 Jurisdictional Transfer Mileage Summary			
	Existing Mileage (miles)	**Future Mileage (miles)**	**Net Change (miles)**
State	126.8	117.5	-9.3
County	432.6	395.1	-37.5
City	176.2	180.2	+4.0
Township	482.8	525.6	+42.8

Before addressing specific transfers, it is recommended that Rice County develop a Memorandum of Understanding (MOU) that outlines the process for negotiating potential jurisdictional changes. The MOU would address issues such as:

1. Schedule or Timeframe of Proposed Transfers
   - A non-binding schedule (goal) for the jurisdictional transfer of identified routes within the 2025 timeframe.
2. System Issues and Legal Requirements
   - The ability to transfer mileage between the state, state-aid and local road system
   - The receiving agency's ability to use funding from turnback accounts for maintenance and improvements.
   - The requirements if a route is reverted to a township (i.e., the county must meet the requirements set forth in Minnesota Statutes, which require a public hearing, completion of repairs or improvements to meet standards for comparable roadways in the town and continued maintenance for a two-year period before date of revocation).
   - Further limitations on establishment, alteration, vacation or revocation of county highways as described in Minnesota Statutes Section 163.11.
3. Planning and Programming Issues
   - Any allocation of funds that will be made available from the transferring agency to the receiving agency.
4. Project Development, Design and Construction Issues
   - The process for development of projects, studies, right-of-way acquisition, design and construction of transferred routes.
   - The design and construction standards to be used for projects.
   - The process and framework for cost-sharing agreements.
5. Operational and Maintenance Issues
   - The responsibilities for utility permits, driveway access permits, changes to traffic controls and signing, and level of routine regular maintenance.

5.3 Multimodal System

Rice County's future multimodal vision is illustrated in Figure 5.3-1 – Future Multimodal Uses. As with roadways, it is envisioned that the multimodal system in Rice County will develop through cooperation, coordination, and in partnership with the state, cities, townships, as well as private partnerships.

Goals and Objectives

Goal 1: Encourage development of alternative modes of transportation in Rice County to provide residents different travel options and to assist in reducing vehicle travel demand.

Goal 2: Accommodate multimodal uses along county highway right-of-way to provide connectivity between communities, County parks, as well as regional amenities located outside of Rice County as a viable alternative to vehicle usage.

Goal 3: Seek funding from regional and state agencies to plan and deliver alternative modes of transportation.

Trails:

Each city or township may define a sidewalk or trail system that includes county roads within its jurisdiction. At the time improvements are planned for these roadways, the city or township is responsible for informing the County of its desire for constructing sidewalks or trails. The cities and townships participate in the cost of construction in accordance with current County policy on cost participation, but generally the city or township pays the cost of construction.

Objective 1: Encourage the completion of the 8-mile segment of the Mills Town Trail to provide regional trail continuity from the Sakatah Singing Hills Trail to the Cannon Valley Trail.

Objective 2: Develop a county trail system that connects County parks and the Nerstrand State Park with the regional trail system.

Objective 3: Update the 1993 Rice County Park System Plan to include the trail vision identified in this Plan.

The trail corridor vision identified in Figure 5.3-1 – Future Multimodal Uses identifies the opportunities for connectivity within the County, as well as to regional amenities located outside of Rice County. The regional significance of the corridors is outlined as follows:

- Corridor A – connectivity between the Sakatah Singing Hills Trail and Cleary Lake Regional Park in Scott County.
- Corridor B – connectivity between the Mill Towns Trail, planned Cedar Avenue bus rapid transit system, Minnesota Zoo, and Lebanon Hills Regional Park in Dakota County.
- Corridor C – connectivity between the City of Faribault and Steele County north of the City of Medford.
- Corridor D – connectivity between park and wildlife management areas in Rice County with the Cities of Lonsdale, Dundas, and Northfield, with connection to the Mill Towns Trail by means of Corridor B.
- Corridor E – connectivity between park and wildlife management areas, Nerstrand Big Woods State Park, Mill Towns Trail, and beyond into Le Sueur and Goodhue Counties.
- Corridor F – connects Corridors A and E to the City of Faribault.
- Corridor G – connects the City of Faribault to Corridor E.
- Corridor H – connects Corridor A to the City of Faribault along the north side of Cannon Lake and Wells Lake.
- Corridor I – includes the Sakatah Singing Hills Trail and Mills Town Trails, which is planned to connect to the Cannon Valley Trail, providing connectivity from the City of Mankato to the City of Cannon Falls.

Rail:

Objective 4: Establish the County Board as the regional rail authority to provide for the preservation and/or improvement of local rail service for agriculture, industry, and passenger traffic and provide for the preservation of abandoned rail right-of-way for future transportation uses.

Objective 5: When rail corridors become available through abandonment, pursue options of alternate uses including trails and other forms of transit or recreational uses.

Objective 6: Support the development of the Dan Patch commuter rail service not only to northern Rice County, but extension south to the City of Faribault.

Objective 7: Evaluate the need for grade separated railroad crossings to improve roadway safety and mobility.

Transit:

Objective 8: Support the Rice County Transit Study Report recommendations for implementation identified as follows:

> Faribault – Expand route service deviation by adding a second route, eliminate the Senior Connection program and replacing it with a demand response service, keep the current service hours, and develop a new simplified map and schedule containing the service expansion. Also recommended was service to the rural area of southern Rice County.
>
> Northfield – Expand demand response service hours and territory, hours and days of transit service, service into Dundas and possibly other outlying areas, as well as marketing efforts. Also recommended was the creation of a link to the Jefferson Line Service with Northfield Transit operating a connecting link to the Big Steer Travel Center to provide northbound a southbound connections.
>
> Rural Transit Service – It was recommended that Northfield service the rural area of northern Rice County and the southern area serviced by Faribault. This service was suggested to consist of curbside pick-up with a single drop point in the main cities. One round trip service per day is suggested between Morristown and Faribault, Nerstrand and Faribault, Lonsdale and Northfield, and Faribault and Northfield.[12]

Objective 9: Evaluate the opportunity to provide connectivity to an existing or future transit service into the Twin Cities Metropolitan Area, particularly to the planned bus rapid transit system along Cedar Avenue in Lakeville, as well as potential future transit systems along I-35. Evaluate the ability to provide connectivity to service along I-35 south into Steele County.

Objective 10: Rice County supports ride sharing efforts by identifying potential future park and ride lots at existing and potential future I-35 interchanges at CSAH 86, CSAH 1, CSAH 9, and TH 60.

Implementation – Prioritization for establishing improvements and/or projects will include, but not be limited to the following:

- Opportunity for implementation (e.g. together with a roadway construction/reconstruction project, at the time development occurs, etc.)
- Public/private partnerships (e.g. land dedication, cash contribution, construction, etc.)
- Public, city, and township support for the project
- Opportunity for financial support from private partnerships, cities, townships, state, and/or federal sources.

[12] SRF Consulting Group, Inc., Rice County Transit Study, Rice County, MN, January 2001, pg. 57 – 59.

6.0 PLAN IMPLEMENTATION

Rice County, and the communities within Rice County, recognizes that available funding is not adequate to meet all the identified transportation needs in the County. As a result, recommended improvements have been prioritized to maximize the results of the County's investment. Additional recommendations have also been prepared to better position the County to preserve opportunities for future improvements as well as prolong the need for some improvements.

6.1 System Priorities and Funding

The Transportation Plan has outlined the basic framework and vision for the development of the Rice County Transportation System through the year 2025 and beyond. In summary, it is necessary to invest resources on several different levels in order to maintain and achieve the long-term vision for the transportation system. These include:

Investment Level 1 – Preserve Existing System – Rice County has made a significant level of investment in its existing roadway infrastructure. It is important that facilities be maintained and managed properly to protect these investments. As summarized in Section 4.2, approximately 220 miles of existing paved county road and county state aid highways have not received any investment in the past 12 years and will likely need overlays in the next 20 years. This represents $54,750,000 in preservation needs. It is recommended that preservation needs be prioritized based on functional classification and traffic volume levels.

Investment Level 2 – Address Safety Needs – Safety of the Rice County Transportation System is of utmost importance. Section 3.2 summarizes specific locations where crash history indicates an abnormal crash frequency relative to the traffic volume levels. Specific roadway improvements, such as adding turn lanes and shoulders as well as increasing curve radii and sight distances, may reduce crash frequency at these locations. Locations having crash rates of more than twice the state average have been targeted and represent approximately $6,100,000 in immediate safety needs. In addition, it is recommended that Rice County and its communities take a proactive approach in addressing potential future safety issues. Investment is necessary to complete intersection control studies, implement intersection control needs, and review/compare annual crash records to help identify and address new safety needs in a timely manner. An investment need of $3,900,000 over 20 years is anticipated to implement a proactive safety approach.

Investment Level 3 – System Improvements – The Countywide Continuity Corridor Vision described in Section 4.4 and illustrated on Figure 4.4-1 provides the long-term vision for regional mobility within and through Rice County. Immediate and on-going investment is necessary to begin planning for, preserving opportunities for, and achieving portions of this vision. Investments necessary to improve or expand Existing Roadways, New Roadway Corridors in Urbanizing Areas, and New Roadway Corridors in Rural Areas in order to achieve the desire vision and level of mobility have been identified and are summarized below in Table 6.1-1 – System Improvement Investment Areas. It should be noted that this is a long-term vision for regional mobility and will not be achieved in the 20-year timeframe of this Plan. Rather, investment necessary to achieve this vision is anticipated to be on-going through the next twenty years and beyond.

Table 6.1-1 System Improvement Investment Areas		
Type	**Study Needs**	**Construction**
Existing Roadways	$250,000	$25,000,000
New Roadways in Urbanizing Areas	$1,250,000	$15,000,000
New Roadways in Rural Areas	$1,000,000	$49,500,000
Total System Needs	$2,500,000	$89,500,000

System improvements on Existing Roadways include gravel to pavement needs, capacity expansion needs, and reconstruction needs to meet design standards. Study needs for existing roadways include corridor studies within cities to identify specific capacity improvements. Estimated costs represent anticipated Rice County costs and will require matching funds from municipalities consistent with the cost participation policy.

System improvements on New Roadways in Urbanizing Areas include new alignments and extension of existing corridors in developing urban areas of the county. Study needs include corridor studies in cooperation with municipalities and developers to establish alignments and right-of-way to be obtained through dedication during the platting process of individual developments and through other means of acquisition. Estimate costs represent anticipated Rice County costs necessary to upsize the proposed roadways from a City collector to County collector or arterial. Remaining costs are anticipated to be borne by the City and/or developer and should be specified in the City's developers agreement.

System improvements on New Roadways in Rural Areas include new alignments and extension of existing roadways that correspond to corridors illustrated on Figure 4.4-1 that are located in rural areas of the county. Study needs include corridor studies to establish alignments and right-of-way necessary for the proposed roadway. Estimated costs represent anticipated Rice County costs necessary to construct the roadway. Additional cost for right-of-way acquisition is likely.

Investment Level 4 – Non-System Improvements – Rice County regularly receives requests from property owners, townships, and municipalities for roadway improvements on county roads and county state aid highways that do not meet the criteria outlined for preservation needs, safety needs, or achieving the corridor system vision. These types of improvements include gravel to pavement needs, realignment requests, turn lanes and shoulder improvements, and sight distance improvements. Rice County currently has identified approximately $17,310,000 of these types of improvements.

The total level of investment necessary to address the needs of each investment level is difficult to identify. Investment in specific project needs often eliminate the need for another project. A significant amount of overlap exists in the 4 levels of investment identified above.

Transportation Funding – Rice County will develop the best transportation system to provide for safe and efficient movement of people, goods, and services within its financial constraints. Primary sources for funding for county transportation projects in Rice County include the County levy, County State Aid Highway funds, and city cost participation. These and other potential funding sources are outlined below.

County Sources:

- County Levy – The County levy (property taxes) includes approximately $800,000 annually for roadway construction projects.

- Bonding – Bonding may be utilized for special projects, typically those that are urgently needed, or those where there are no alternative funding sources. In effect, the project is purchased "on time" as the County pays off the bonds.

- Local Option County Taxes – Local option county taxes such as a sales tax on fuel or other sales taxes may be used with authorization from the legislature to assist in funding future interchanges, transit infrastructure, and highway improvement and expansion needs associated with anticipated County growth. The County should also consider pursuing legislative approval to allow collection of a wheelage tax in Rice County, similar to the that allowed in the 7-County Metropolitan Area.

- Gravel Tax - Minnesota statutes (MS 298.75 Subd. 6) provides Rice County the ability to impose a tax on aggregate material produced within the County or imported into the County. Revenues are distributed to the respective jurisdictions' road and bridge fund accounts. The County would receive 60% of the taxes collected while cities and townships would receive 30%. The remaining 10% goes into a special reserve fund for the restoration of abandoned pits, quarries, or deposits located upon public and tax forfeited lands within the County. Rice County does not currently impose a gravel tax.

<u>Federal Sources:</u>

- The federal Surface Transportation Program provides revenue from the federal motor fuel tax for various types of transportation improvements. Projects are selected through the Area Transportation Partnership (ATP) project solicitation and administered by Mn/DOT. This solicitation process typically occurs annually and there is a high demand and competition for these funds. In recent years, there has been between $3 and $5 million dollars allocated to county projects in the eleven counties in Mn/DOT District 6. Rice County and its cities are encouraged to work in partnership with one another when soliciting ATP funds. Project that are backed with strong, multi-agency partnerships and local matching dollars are typically more successful in attaining ATP funds.

- Hazard Elimination Safety Funds (HES) – These funds are available for smaller projects, such as intersection improvements. HES funds most often provide a good return on investment.

- High Priority Project Fund (HPP) – Each member of Congress is provided a portion of federal funds to contribute to important, high priority projects, within their own district. Local officials prepare information about each of these projects for review and assessment by the respective Congress member.

- Railroad Safety Projects – Railroad safety projects compete from a very limited pool of funds and are limited to small projects. The higher the "incidence rating" (number of trains per day, times highway traffic volumes), the better the chance of receiving funds from this program.

<u>State Sources:</u>

- County State Aid Highway (CSAH) Funds – The state constitution directs that Minnesota's 87 counties shall receive 29 percent of the funds the state collects from motor fuel taxes and motor vehicle license fees known as Highway User Tax Distribution Fund (HUTDF). CSAH funds can only be used for eligible items on designated County State Aid Highways. Rice County receives approximately $2,100,000 in CSAH funds annually for roadway construction projects.

- Bridge Bonds – Both federal and state bridge funds are available, but generally for bridges in very poor structural condition.

- State Trunk Highway Jurisdictional Transfer Funds – Each road performs a function or purpose within the overall roadway system. Occasionally, the function or purpose of a road is not aligned with the appropriate jurisdiction. When a trunk highway is no longer appropriate on the trunk highway system, Mn/DOT transfers the road, through the turnback process, to the County.

  Key to the County's acceptance of the turnback agreement is the ability of the State to provide funding for upgrading a roadway to County standards at the time of the turnback. As these remnants of trunk highways change function and become the responsibility of the County, Mn/DOT provides similar funding.

City Sources:

- City Cost Participation – Cities in Rice County, with populations greater than 5000, participate in the cost of county highway projects. The cost participation policy included in Appendix D outlines specific levels of cost participation.
- Special Assessments – Cities may assess project costs to benefiting property owners through a special assessment process. Through this process, a property may be assessed the estimated amount their property value will increase due to the project.

System Priorities – Funding availability is extremely limited. The investment necessary to address transportation needs in Rice County far exceeds available resources. Strategic prioritization is necessary to achieve the most benefit to the system with the least investment. A comprehensive investment strategy that addresses each investment level described above is recommended so that Rice County and its municipalities can proactively implement the vision of the future transportation system.

As a means to guide prioritization of limited resources, minimum and desired achievements of the transportation plan are outlined below. Currently funding levels are likely insufficient to meet the outlined minimum achievements. New funding will be necessary to begin addressing the desired achievements.

Minimum Achievements:

1. Implement a pavement management system (Investment Level 1)
2. Prioritize preservation investment based on functional classification and traffic volumes (Investment Level 1)
3. Address existing safety deficiencies (Investment Level 2)
4. Preserve opportunities by conducting corridor studies to identify alignment and right-of-way for new corridors (Investment Level 3)
5. Fund county share of new corridors in urbanizing areas (Investment Level 3)
6. Complete jurisdictional transfers – County/State (Investment Level 3)
7. Manage land use decisions to avoid creating new needs on the county highway system (Investment Level 4)

Desired Achievements:

1. Plan for intersection control needs (Investment Level 2)
2. Develop/improve rural minor arterial corridors (Investment Level 3)
3. Develop/improve parallel routes to I-35 (Investment Level 3)
4. Address existing and future traffic congestion (Investment Level 3)
5. Develop/improve rural major collector corridors (Investment Level 3)
6. I-35 access improvements (Investment Level 3)
7. Complete jurisdictional transfers – County/city/township (Investment Level 1, 3, and 4)

6.2 Pavement Management Program

As a mechanism to protect the County's investment in pavement structures, reduce maintenance costs, improve general safety and restore the function of pavements on Rice County highways, the following pavement management strategies are recommended:

1. Establish a database to manage historic and ongoing records on pavement sections. The database shall include the following information:
   a. Existing pavement and base material types and thickness
   b. Subgrade soil types and strength (R-values)
   c. Type of roadway section (rural or urban)
   d. Functional classification
   e. Construction history (year of original construction and overlays)
   f. Maintenance history (year of seal coat, patching, etc.)
   g. Use history (ADT, HCADT)
   h. Field performance condition rating

2. Perform field performance condition rating and establish a pavement quality index (PQI) on each pavement section. A field performance condition rating should be completed on 1-mile intervals to establish a rating attributed to pavement roughness (ride quality) as well as pavement distress (cracking, rutting). Table 6.4-1 – Pavement Quality Index outlines the ratings and their corresponding description.

Table 6.4-1 Pavement Quality Index

Numeric Rating	**Description**
3.7 to 4.5	Very Good
2.8 to 3.6	Good
1.9 to 2.7	Fair
1.0 to 1.8	Poor
0.0 to 0.9	Very Poor

   a. Establish a Comprehensive Pavement Rehabilitation Plan that includes:
      i. Routine maintenance – crack filling, joint sealing, seal coat to counter affects of natural elements
      ii. Functional improvements – seal coat and thin overlays to improve the ride on higher volume (>1500 ADT) and/or higher functional classification routes
      iii. Structural improvements – overlays to improve structural capacity of the pavement to extend life of the pavement or address high truck loads
      iv. Preservation – minimal investment in pavements to keep the surface in a safe condition until reconstruction can occur
      v. Reconstruction – replacement of aggregate base and pavement when pavement can no longer be improved by one of the first four strategies
   b. Establish Pavement Quality Goals for Each Roadway Functional Classification.
      i. Principal Arterials – 3.1 or higher
      ii. Minor Arterials – 2.8 or higher
      iii. Major Collectors – 2.5 or higher
      iv. Minor Collectors – 1.9 or higher
      v. Local Roads – 1.4 or higher

6.3 Corridor Studies

In order to preserve opportunities for new corridors and extension/expansion of existing corridors, several corridors studies are recommended to occur in a timely manner. As development continues to occur in Rice County and its communities, opportunities to develop necessary connections within the transportation system diminish. The intent of these corridor studies is primarily to identify corridor alignments and right-of-way requirements so that land use decisions can be made consistent with the intent of the Transportation Plan and future corridor right-of-way can be preserved.

Figure 6.3-1 illustrates the corridor study needs in Rice County. Corridor studies have been categorized based on anticipated development demand in the area. While this is intended to provide general guidance on the timing of corridor studies, the actual timing will vary based on property owners plans. Awareness and communication of corridor study needs between Rice County Planning and Zoning, Rice County Highway Department, and City Community Development Departments are critical to ensure corridor alignment opportunities are not lost through land development and/or building construction.

6.4 Land Use Decisions

For the purposes of prioritizing improvements and managing growth, it is necessary to consider the impacts of various land use decisions. Rice County recognizes that development should occur when necessary infrastructure or support services exist or when such necessary infrastructure improvements are constructed along with and by development.

Premature development is the development of land prior to the necessary infrastructure or public service support service capacity being available or development allowed to occur without constructing the necessary infrastructure improvements. Premature development can present an unnecessary risk to new residents and businesses, increased costs to tax payers for later provision of services, and may result in the need to redirect scarce financial resources away from other priority projects. To minimize these risks, it is recommended that Rice County adopt by ordinance provisions defining conditions when a development proposal may be considered premature. Such ordinance may include infrastructure provisions (e.g. lack of roads or highways, adequate drainage, adequate potable water supply, waste disposal systems, stormwater management systems, etc.), public service capacity provisions (e.g. parks, fire, medical, schools, police protection, etc.), or inconsistency adopted plans (e.g. Comprehensive Plan, Capital Improvement Plans, etc.).

Premature development ordinance provisions related to roadways should include provisions addressing the effects increased traffic from new development may have on substandard roadways. A roadway may be substandard based on conditions such as width, grade, stability, alignment, site distance, and paved surface condition that an increase in traffic volume generated by the proposed subdivision would create a hazard to public safety and general welfare, or seriously aggravate an already hazardous condition, and when roads are inadequate for their intended use. Provisions should define conditions when development or redevelopment on a gravel roadway or other substandard roadway would be denied or funds required to be escrowed for future improvements. Rice County further encourages cities to adopt comparable provisions.

Rice County has established a Plat/Development Review Committee to recognize and support the planned and orderly development and redevelopment of the County. The Plat/Development Review Committee requirements define the type of actions proposed within a city or township that will require review and/or approval from the Rice County Highway Department. Rice County recognizes that rural development may impact the planned growth of the city and/or its orderly extension of public utilities. It is recommended that Rice County provide the city with a copy of Plat/Development Review Committee applications received for development located within one (1) mile of the city's corporate city

limits and request their participation in the Committee. Based on the impact city development may have on township roadways, Rice County encourages cities to solicit township comments on development proposals having potential impact.

6.5 I-35 Corridor Planning Priorities

The Rice County Board has taken the lead on a multi-agency committee to plan for the long-term I-35 interchange locations within Rice County. The primary objective of the initiative is to preserve and achieve economic development opportunities within the county as well as at specific interchange locations. The findings of the committee include the following priorities:

Modification of Existing Access:

- High Priority: TH 19 & TH 60
- Medium Priority: CSAH 1
- Low Priority: TH 21 and TH 48

Construction of New Interchanges:

- High Priority: CSAH 9
- Medium Priority: CSAH 86 & CSAH 39
- Low Priority: CSAH 8, CSAH 15, and the Alternate to CSAH 15/39