

CHAPTER 6

TRANSPORTATION ELEMENT

The original thoroughfare plan for Farmington was developed in 1982 and updated in 1990. In the year 2000 Farmington prepared a transportation plan as a component of the 2020 Comprehensive Plan. Farmington has experienced significant growth in the past 20 years and is expected to grow even more by the year 2030. The Metropolitan Council, as a part of its regional forecasting, projects that Farmington will have a population of 32,000 by the year 2030. The same projections call for households to increase to 12,500 by the year 2030. These projections reflect an increase of approximately 19,635 persons and an increase of approximately 8,330 households when compared to year 2000 levels.

The projected increases will require the provision of additional roadway capacity. Some of the increase in capacity will be provided by new facilities and some by expansion of existing facilities. Equally important will be planning for public transit extensions to the City. The importance of such planning cannot be overstated as a more balanced transportation system needs to be provided. The city must work closely with the regional, state, county and adjacent municipalities in the planning of not only roadways, but planning for transit availability. The City will be working with Castle Rock Township in 2009 to determine not only potential land uses, but roadway systems as well.

The transportation plan which follows is designed to be a guideline for the City as they continually plan for the future. The plan is a "living document" that requires periodic attention and revision to fit ever changing circumstances.

GOALS AND OBJECTIVES

The City of Farmington provides a transportation system which, in conjunction with State and County facilities, allows for the movement of people and goods throughout the City and County. The identification of goals and objectives assists in providing direction in the development of an integrated multi-modal transportation system that will serve the anticipated growth within Farmington over the next 20 years.

The goals of the Transportation Plan that will guide further development of the City's transportation system are to:

1. Provide a transportation system that is integrated with City land use and development plans, that preserves City historical resources, and conserves and enhances environmental features and resources, and to
2. Provide a transportation system for the efficient and effective movement of people and goods in the City of Farmington.

Decisions and actions that affect the transportation system should be consistent with the following Transportation Plan goals and objectives as they are made by the City of Farmington:

1. Consider the impacts of improvements to the existing transportation system on economic development, land use, environmental resources, and social, historical, and cultural resources.
2. Facilitate an appropriate level of mobility for persons and goods within and through the City by providing connections to the regional transportation system.
3. Provide a roadway system which includes a practical roadway categorization that accommodates access and mobility needs appropriately. The Farmington Area Transportation Study will assist in this endeavor.
4. Provide sufficient capacity in the transportation system to accommodate existing and future travel demand.
5. Develop a transportation system that is cost-feasible, in which each expenditure satisfies a public transportation priority.
6. Encourage and enlist private sector participation in serving the travel needs of the City.
7. Provide improvements that improve the safety and operational characteristics of the transportation system and meet appropriate engineering standards.
8. Promote increased vehicle occupancies throughout the City.
9. Promote transportation alternatives in the form of transit, bicycle, and pedestrian facilities and services for persons who cannot, or choose not to, use automobiles.

EXISTING ROADWAY SYSTEM CHARACTERISTICS

This chapter will provide a brief discussion of various existing roadway system characteristics. Included will be roadway jurisdiction, traffic lane availability and the most recent daily traffic volume information.

Roadway Jurisdiction

Roadways in the City of Farmington come under the jurisdiction of the State of Minnesota, Dakota County and the City of Farmington. Map 6.1 illustrates the State and County facilities. All other roadways are under the jurisdiction of the City of Farmington.

Roadway Lanes

There are few roadways within the City of Farmington that contain more than two traffic lanes (one in each direction). The only four lane roadways are a segment of Trunk Highway (TH) 3, a portion of County State Aid Highway (CSAH) 31 which is Pilot Knob Road and a portion of CSAH 50. The four-lane segment of CSAH 50 extends from Akin Road westerly through the City. East of CSAH 50, the roadway is a three lane facility with one through lane in each direction plus a center left turn lane. This three-lane section extends from Akin Road to TH 3.

The four lane segment of TH 3 extends from Ash Street, thence northerly to a point north of 213th Street. The four-lane segment of CSAH 31 (Pilot Knob Road) begins in Apple Valley at CSAH 42 and extends southerly into Farmington to a point in the vicinity of 190th Street.

The remaining roadways are two-lane facilities with some higher traveled routes having exclusive left and/or right turn lanes at critical locations. The multi-lane roadways are shown on Map 6.2.

Existing Daily Traffic Volumes

A basic planning tool that is used to determine the ability of a roadway to accommodate the existing or projected volumes that utilize a roadway is the volume of daily traffic along that facility. The most recent daily traffic volumes on various roadways in Farmington are taken from traffic flow maps prepared by the Minnesota Department of Transportation (MnDOT). Map 6.3 provides the most recent Average Annual Daily Traffic (AADT) volumes on specified roadways where count data is taken. The volumes shown on Trunk Highways are year 2006 volumes while the county and municipal roadways are 2005 volumes.

SOCIO-ECONOMIC DATA

The Metropolitan Council has prepared socio-economic projections for the years 2010, 2020 and 2030 for Farmington. The projections are a part of the Regional Development Framework that was adopted in 2004 and updated in 2005. The projections are utilized by the Metropolitan Council to plan for regional systems. The projections, shown in Table 6.1, have been developed by the City of Farmington and should be part of an on-going dialogue between the City of Farmington and the Metropolitan Council to consider changes in growth trends or community expectations regarding growth.

SOCIO-ECONOMIC PROJECTIONS

Table 6.1

	Revised Development Framework				
	1990	2000	2010	2020	2030
Population	5,940	12,365	20,500	27,510	32,700
Households	2,064	4,169	7,500	10,500	12,500
Employment	2,342	3,986	6,600	8,400	9,900

The Metropolitan Council also provides the Traffic Assignment Zones (TAZ) that they utilize in their forecasts. Table 6.2 shows the forecast for population, households, and employment by the TAZ zones. The zones for Farmington are shown on Map 6.4 which follows.

Allocation of Forecasts to Traffic Analysis Zones (TAZ)

Table 6.2

TAZ #*	2000			2010			2020			2030		
	Pop	HH	Emp	Pop	HH	Emp	Pop	HH	Emp	Pop	HH	Emp
159	0	0	0	249	100	500	750	281	715	1,380	540	900
168	0	0	0	1,228	600	610	1,930	1,157	865	2,030	1,300	1,000
169	0	0	0	1,556	306	181	4,690	1,701	315	8,540	2,885	500
170	4,624	1,804	3,439	3,839	1,303	3,798	3,900	1,350	4,065	4,030	1,450	4,200
171	603	186	329	4,926	2,213	1,250	6,610	2,884	1,915	7,045	3,080	2,760
1173	2,989	910	22	5,560	2,030	51	6,100	1,950	75	6,125	2,000	90
172	4,149	1,269	196	3,142	948	210	3,530	1,177	300	3,550	1,245	450
TOTAL	12,365	4,169	3,986	20,500	7,500	6,600	27,510	10,500	8,400	32,700	12,500	9,900

Pop = Population forecasts
 HH = Households forecasts
 Emp. = Employment forecasts

Farmington Commuting

No city or town is large enough or varied enough to meet all of the needs of all citizens within its borders. People that live in any town can need or choose to work, shop, live or recreate outside their hometown's borders, and oftentimes new residents and businesses locate in a given area because of convenient location and transit connections. That is why connections to other towns are so vital to a city's health; a city's success is greatly dependent upon its connections to other cities. Farmington needs to enhance and strengthen our connections to our neighboring cities and towns to continue to grow economically and to serve and attract residents.

It is more important to enhance connections with some cities than it is with others. For example, with fewer than 10 daily commuters from Farmington, Eureka Township does not serve Farmington's residents to the degree that Apple Valley does (Apple Valley receives between 250 and 500 commuters per day from Farmington). Apple Valley and cities like it offer economic opportunities to residents of Farmington and other nearby towns such as shopping (Southport Plaza), recreation (Minnesota Zoo) and employment (Uponor International).

The city that attracts the largest number of Farmington residents is Eagan with nearly 500 people traveling there from Farmington each day. Farmington residents go there to work and shop because Eagan has developed as a regional destination. Other cities that attract large numbers of Farmington residents each day are not surprisingly Lakeville, Burnsville, Bloomington and Minneapolis (each attracting between 250 and 500 persons daily). Cities that attract between 100 and 250 Farmington residents daily include Apple Valley, Eden Prairie, Rosemount and Edina.

Much of this data can be explained with the identification of major metropolitan destinations within these municipalities. The following is a list of major draws in the above listed and other cities in the Minneapolis - St. Paul metropolitan region:

Downtown Minneapolis

Downtown St. Paul

Mall of America

Minneapolis – St. Paul International Airport

“Apple Core” Business District of Apple Valley

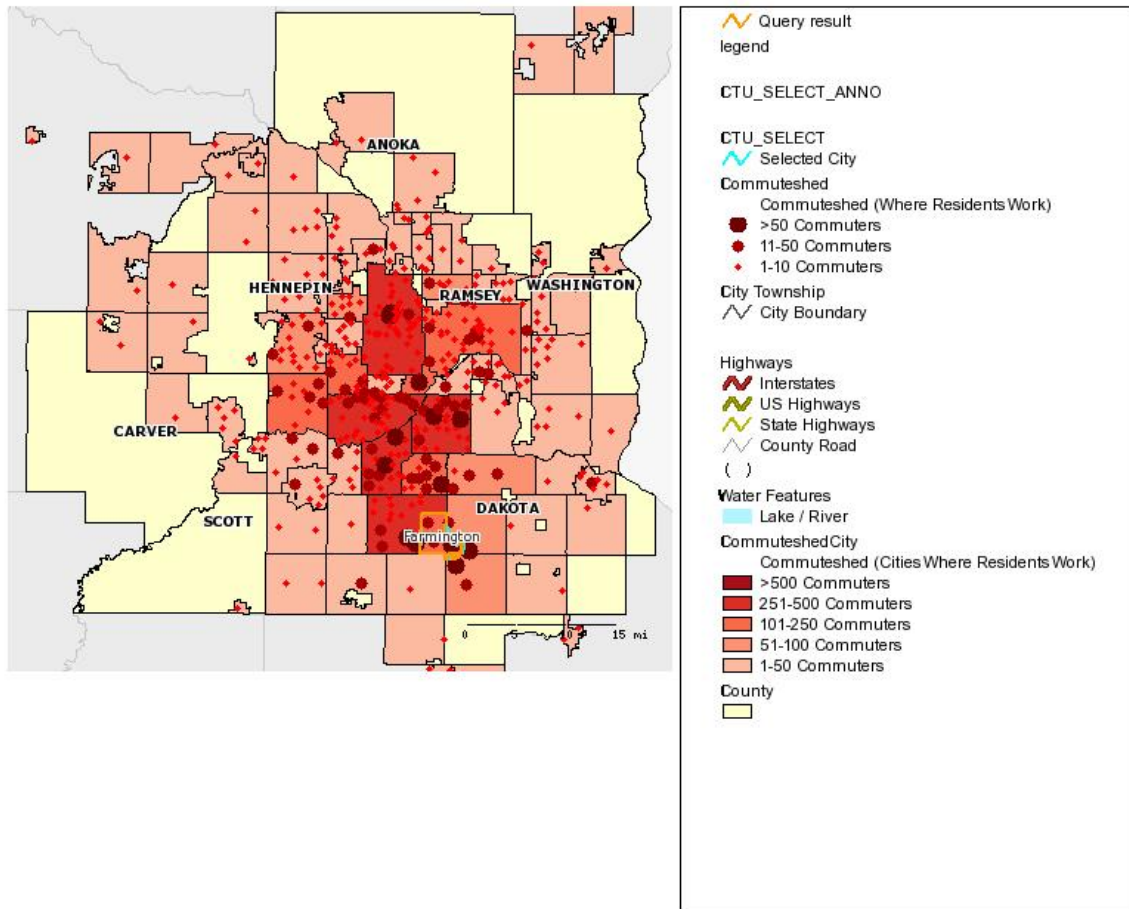
“Town Center” Business District of Eagan

The 494 Strip between Eden Prairie and Inver Grove Heights

Several Regional Shopping Malls (i.e. Southdale Center, Burnsville Center, Rosedale Center, et cetera)

Farmington's Commuteshed is shown below:

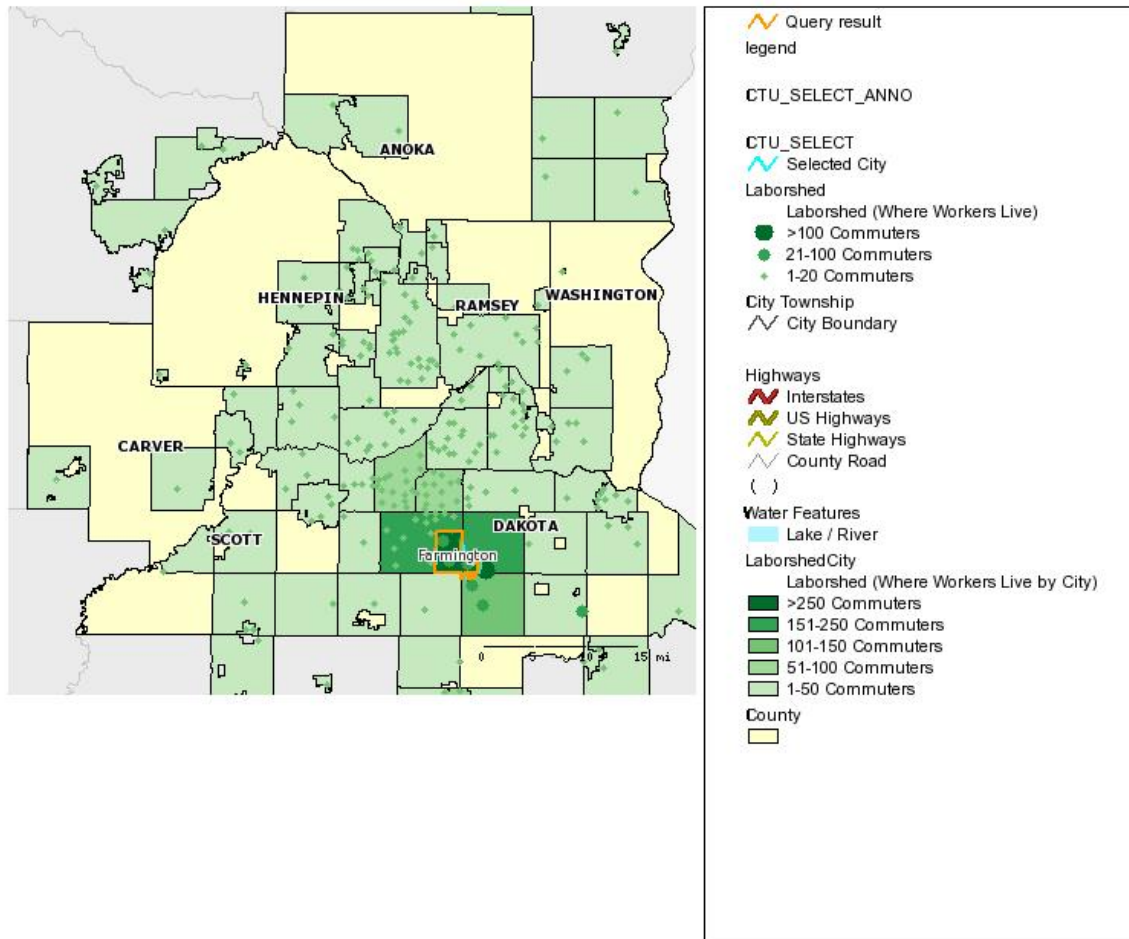
Farmington Commuted



Minnesota 3D Project, 2006

The other side of commuting in Farmington is thinking about how people from other cities arrive in Farmington, with what purpose and destination. By looking at the map of Farmington’s Laborshed, it is shown that the City is retaining many citizens for its workforce and providing the local economy with its largest percentage of workers with over 250 commuters daily. Lakeville and Empire Township each provide between 150 and 250 daily commuters while Apple Valley, Burnsville and Castle Rock each send between 100 and 150 persons each day.

Farmington Laborshed



Minnesota 3D Project, 2006

Recent traffic counts reflect those trends and past traffic counts show how development has impacted major roadways over the past ten years. For the purpose of this segment of the 2030 Comprehensive Plan this report will be limited to *inter-city* travel to the North and the West over the past decade and toward 2030.

Traffic counts* are as follows:

	Pilot Knob Road at Northern Border	TH 3 at Northern Border	CSAH 50 at Western Border
1996 (actual)	12,600	6,500	10,400
2005 (actual)	23,500	12,500	14,600
2020 (projected in 1998)	36,000	11,000	23,000

*measured in Annual Average Daily Traffic

Those figures, however accurate or current, only take into account existing roadways. Several more developments (Fairhill), city projects (new Farmington Senior High School) and roadways (195th Street) have been planned since the most recent of those traffic counts was produced in 2005. Those projects along with future possible annexations, population, and job base growth will determine much of how and where Farmington's roadways will appear.

Farmington's Population will continue to grow over the coming years. In short, the Metropolitan Council expects Farmington to add 61% more residents, 56% more households, and 50% more jobs in the coming two decades.

It is important to note the placement of some of these new developments to illustrate the relative importance of certain roadways over others. Most of the residential development will be built in the northeast part of Farmington while the commercial and industrial will be developed along the CSAH 50 corridor west of downtown.

While the main routes in and out of Farmington will remain and need to be strengthened, several new roads will need to accommodate the road traffic within Farmington as well as to other municipalities. Existing roadways that will handle inter-city traffic include CSAH 50, TH 3 and Pilot Knob Road/County Road 31. Planned roadways that will mainly handle future traffic and intra-city traffic include, but are not limited to, Diamond Path to the north, 208th Street in the south, and the 195th Street/Flagstaff Avenue exchange in the midsection of Farmington.

YEAR 2030 TRAFFIC VOLUME PROJECTIONS

Traffic volume projections for major Farmington roadways have been estimated for the year 2030. These estimates consider the City Land Use Plan, Dakota County 2025 projections and the City's 2020 Comprehensive Plan. The estimates are utilized to help identify future potential corridors of congestion as well as potential lane and right-of-way needs for the future. The City will also utilize the Dakota County Road Plat Review Needs Map which is also used by the County to identify land and right of way needs for the future on County roads. The volumes may differ from future estimates that are to be prepared by Dakota County for the year 2030 and should they affect any specific corridor, can be rectified in the future. The 2030 daily volume estimates are shown on Map 6.5 which follows.

FUNCTIONAL CLASSIFICATION OF ROADWAYS

The functional classification of roadways provides guidelines for safe and efficient movement of people and goods within the City. Roads are categorized based upon the level of access and/or mobility provided.

Functional classification of a roadway system involves determining what function each roadway should be performing with regard to travel within and through the City. The intent of a functional classification system is the creation of a roadway hierarchy that collects and distributes traffic from local roadways and collectors to arterials in a safe and efficient manner. Such classification aids in determining appropriate roadway widths, speed limits, intersection control, design features, accessibility and maintenance priorities. Functional classification helps to ensure that non-transportation factors, such as land use and development, are taken into account in planning and design of the roadway system.

A balanced system is desired, yet not always attainable due to existing conditions and characteristics. The criteria of the functional classification system are intended to be guidelines and are to be applied when plans are developed for the construction or reconstruction of a given classified route. Different roadways with very similar design characteristics may have different functional classifications. Some roadways, for a short segment, may carry higher volumes than a roadway with a higher classification. Spacing guidelines may not follow recommendations for a variety of reasons such as topography, land use type and density and environmental concerns.

The two major considerations in the classification of roadway networks are access and mobility. Mobility is of primary importance on arterials, thus limitation of access is a necessity. The primary function of a local roadway, however, is the provision of access, which in turn limits mobility. The extent and degree of access control is a very important factor in the function of a roadway facility. The functional classification types utilized are dependent upon one another in order to provide a complete system of streets and highways. The relationship of functional classification with regard to traffic mobility and land access is shown on Map 6.6.

A complete functional design system provides a series of distinct travel movements. Most trips exhibit six recognizable stages. These stages are as follows:

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

Map 6.7 depicts this hierarchy of movement by illustrating a hypothetical trip using a freeway, which comprises the main movement. When the vehicle leaves the freeway, the transition is the use of the freeway ramp at a reduced speed. The vehicle then enters the moderate speed arterial, the distribution function, to travel toward a neighborhood. From the arterial the vehicle enters a collection road.

A local access road then provides direct approach to the residence or termination point. Each of the six stages of the trip is handled by a facility designed specifically for that function. Speeds and volumes normally decrease as one travels through the six stages of movement.

It must be recognized that all intermediate facilities are not always needed for various trip types. The character of movement or service that is provided has a function, and these functions do not act independently. Therefore, the travel categories, more movements, become consistent with function and the classification of that function.

Map 6.8 provides the future Functional Classification of Roadways for Farmington. It is the intent of this system to complement the metropolitan and county system and to provide connectivity to adjacent municipalities. A brief discussion of the functional classification follows. The Metropolitan Council description of the classifications is contained in the Appendix of this Chapter. It is important to note that MnDOT has classified TH 3 as a “4B – Principal Arterial-Urban/Urbanizing” section.

PRINCIPAL ARTERIALS

Principal arterial roadways serve major activity centers, higher traffic volumes, longer trips and carry a higher proportion of total urbanized travel on a minimum of mileage. Along these facilities, access needs to be limited in order to preserve the ability of the roadway to accommodate the volumes and to maximize safety. Spacing varies from 2-3 miles for a fully developed area to 3-6 miles for a developing area. The management criteria require that a 40 mph average speed be achieved during peak traffic periods and little or no direct land access should be allowed within an urban area. Grade separated intersections are required for freeways and highly desired for other principal arterial roadways. There are no principal arterials in Farmington however; CSAH 70 has been identified as a potential future principal arterial.

MINOR ARTERIALS

Minor arterial roadways connect the urban service area to cities and towns inside and outside the region and generally service medium to short trips. Minor arterials may also provide an alternate route for congested principal arterial roadways. Minor arterials connect principal arterials, minor arterials, and connectors. The spacing ranges from $\frac{1}{4}$ to $\frac{3}{4}$ of a mile in metro centers to 1-2 miles in a developing area. The desired minimum average speed during peak traffic periods is 20 mph in fully developed areas and 30 mph in developing areas.

The emphasis for minor arterial roadways is on mobility rather than on land access. In urban areas, direct land access is generally restricted to concentrations of commercial/industrial land uses. Minor arterial roadways in the City are:

"A" Minor Arterials

State Trunk Highway 3

State Trunk Highway 50

County State Aid Highway 66

County State Aid Highway 50

County Road 64

County State Aid Highway 31

County State Aid Highway 74

COLLECTOR STREETS

Collector streets provide more land access than arterials and provide connections to arterials, although not in all cases. As is the case with any roadway system, there will always be exceptions to the planning guidelines that are used to classify a roadway system. Collectors serve a dual function of accommodating traffic and provision of more access to adjacent properties. Mobility and land access are equally important and direct land access should predominately be to development concentrations. Collector road spacing ranges from ¼ to ¾ miles in a fully developed area to ½ to 1 mile in a developing area. Collectors can be broken down further into major and minor collectors.

Major Collectors

Major collectors generally connect to minor arterials and serve shorter trips within the City. These roads supplement the arterial system in that mobility is slightly emphasized over access.

Minor Collectors

Minor collectors provide the connection between neighborhoods and commercial/industrial areas and the major collector/minor arterial system. Access is slightly emphasized over mobility in minor collectors.

There are numerous collectors within the City. Refer to Map 6.8 for the location of these collectors.

LOCAL STREETS

The lowest classification of roadways is the local roadway where access is provided with much less concern for control but land service is paramount. Spacing for local streets is as needed to access land uses. Local roadways generally have lower speed limits in urban areas and normally serve short trips. Local streets will connect with some minor arterials but generally connect to collectors and other local streets. The development of local streets will be guided by the location of the existing and proposed minor arterials and collectors as well as by development and the expansion of local utilities.

ACCESS MANAGEMENT

The management of thoroughfare access along roadway systems, particularly arterial and collector roadways is a very important component of maximizing the capacity and decreasing the crash potential along those roadway facilities. As mentioned in a previous section, arterial roadways have a function of accommodating larger volumes of traffic and often at higher speeds. Therefore, access to such facilities must be limited in order to protect the integrity of the arterial function. Collector roadways provide a link from local streets to arterial roadways and are designed to provide more access to local land uses since the volumes and speeds are often lesser than arterial roadways.

MnDOT studies have shown that as the density of access increases, whether public or private, the traffic carrying capacity of the roadway decreases and the vehicular crash rate increases¹. Businesses suffer financially on roadways with poorly designed access, while well-designed access to commercial properties supports long-term economic vitality.

As with many transportation related decisions, land use activity and planning is an integral part of creation of a safe and efficient roadway system. Land use decisions have a major impact on the access conditions along the roadway system. Every land use plan amendment, subdivision, rezoning, conditional use permit, or site plan involves access and creates potential impact to the efficiency of the transportation system. Properties have access rights and good design will minimize the deleterious effect upon the roadway system. Access management is a combination of good land use planning and effective design of access to property.

The granting of access in Farmington is shared by the State, the County and the City, with each having the permitting process responsibility over roadways under their control. The traveling public benefits from access spacing, whether using grade-separated crossings, frontage roads, right turn only entrances/exits, etc.

MnDOT has developed guidelines for access management based upon their goals of safety, mobility, and statewide economic growth. As a part of their guidelines, three new categories were developed as an addition to the functional classification system:

- High Priority Interregional Corridors (IRC)
- Medium Priority IRC
- High Priority Regional Corridors

These types of roadways link the State's primary trade centers and the Twin Cities Metro area to one another. MnDOT has further divided the primary categories into sub-categories based upon the specific facilities and land use patterns surrounding the roadway. Table 6.3 provides a summary of access categories and sub-categories along with the functional classification and statewide strategic importance. The roads found in the City that fall under each category are also provided. It is important to note that some

¹ "Toward An Access Classification System and Spacing Guidelines", Technical Study No. 4, MnDOT, February 1999.

roads may be listed in several categories since the adjacent land use and facilities changes along the roadway length. There are not any interregional or regional corridors in Farmington.

SUMMARY OF MnDOT ACCESS CATEGORIES

Table 6.3

Category	Area Type	Functional Classification	Roadways within Farmington
1	High Priority Interregional Corridors		
1F	All Areas	Interstate Highways	None
1A-F	All Areas	Principal Arterials	None
1A	All Areas	Principal Arterials	None
2	Medium Priority Interregional Corridors		
2A-F	All Areas	Principal Arterials	None
2A	Rural, ExUrban, & By-Pass	Principal Arterials	None
2B	Urban & Urbanizing	Principal Arterials	None
2C	Urban Core	Principal Arterials	None
3	High Priority Regional Corridors		
3A-F	All Areas	Principal & Minor Arterials	None
3A	Rural, ExUrban, & By-Pass	Principal & Minor Arterials	None
3B	Urban & Urbanizing	Principal & Minor Arterials	None
3C	Urban Core	Principal & Minor Arterials	None
4	Principal Arterials in Metro Area and Primary Trade Centers		
4A-F	All Areas	Principal Arterials	None
	Rural, ExUrban, & By-Pass	Principal Arterials	None
	Urban & Urbanizing	Principal Arterials	None
	Urban Core	Principal Arterials	None
5	Minor Arterials on All Systems		
5A	Rural, ExUrban, & By-Pass	Minor Arterials	TH 3, CSAH 50, CSAH 31, TH 50, CSAH 74, CSAH 66, CR 64
5B	Urban & Urbanizing	Minor Arterials	TH 3, CSAH 50, CSAH 31, TH 50, CSAH 74, CSAH 66, CR 64
5C	Urban Core	Minor Arterials	TH 3, CSAH 50

Recommended spacing guidelines have been developed for each access category, including public intersections and private driveways and entrances. Table 6.3 shows a

summary of MnDOT access spacing guidelines for the access categories presented in Table 6.4. These MnDOT guidelines should be followed for the state roads.

SUMMARY OF MnDOT RECOMMENDED ACCESS SPACING

Table 6.4

Category	Area or Facility Type	Typical Functional Classification	Intersection Spacing		Signal Spacing	Private Access
			Primary Full Movement Intersection	Conditional Secondary Movement		
1F	Freeway	Principal Arterials	Interchange Access Only		Not Allowed	Not Allowed
1A-F	Full Grade Separation		Interchange Access Only		Not Allowed	Not Allowed
1A	Rural, ExUrban, & By-Pass		1 mile	½ mile	Interim Only By Deviation Only	By Deviation Only
2A-F	Full Grade Separation	Principal Arterials	Interchange Access Only		Not Allowed	Not Allowed
2A	Rural, ExUrban, & By-Pass		1 mile	½ mile	Strongly Discouraged By Deviation Only	By Exception or Deviation Only
2B	Urban & Urbanizing		½ mile	¼ mile		
2C	Urban Core		300-660 feet dependent upon block length		¼ mile	Permitted Subject to Conditions
3A-F	Full Grade Separation	Principal & Minor Arterials	Interchange Access Only		Not Allowed	Not Allowed
3A	Rural, ExUrban, & By-Pass		1 mile	½ mile	1 mile	Permitted Subject to Conditions
3B	Urban & Urbanizing		½ mile	¼ mile	½ mile	By Exception or Deviation Only
3C	Urban Core		300-660 feet dependant upon block length		¼ mile	Permitted Subject to Conditions
4A-F	Full Grade Separation	Principal Arterials	Interchange Access Only		Not Allowed	Not Allowed
4A	Rural, ExUrban, & By-Pass		1 mile	½ mile	1 mile	By Deviation Only
4B	Urban &		½ mile	¼ mile	½ mile	By

Urbanizing

Exception

						or Deviation Only
4C	Urban Core		300-660 feet dependent upon block length		¼ mile	Permitted Subject to Conditions
5A	Rural, ExUrban, & By-Pass	Minor Arterials	½ mile	¼ mile	½ mile	Permitted Subject to Conditions
5B	Urban & Urbanizing		¼ mile	1/8 mile	¼ mile	By Exception or Deviation Only
5C	Urban Core		300-600 feet dependent upon block length		¼ mile	Permitted Subject to Conditions

DAKOTA COUNTY ACCESS SPACING GUIDELINES

Through access management, Dakota County strives to maintain the integrity of the roadway system by preserving the balance between safety and mobility of the roadway system. The County strives to adequately service the through traffic on a roadway with the limited ability to improve the system while simultaneously providing adequate access to serve development. “The Dakota County access management plan involves requiring enough data for developments so the County can understand the impacts, operation needs, and improvements. The County can then stipulate the specific access spacing requirements for various highway types through the plat commission and/or specify the best location and requirements for access through the permit process.”²

According to Dakota County, several benefits are established by the use of proper access management guidelines. These benefits include:

- Significantly reduces the crash rates on highways.
- Protects the public investment and ensures the maximum return on the highway system infrastructure.
- Prolongs the functional life of existing highways by maintaining or increasing capacity thereby reducing the need for new capital construction to meet increasing system demands.

Table 6.5 outlines Dakota County’s Access Spacing Guidelines. It is important to note that the guidelines associated with the principal arterial classification are consistent with MnDOT’s guidelines for principal arterials. The access spacing guidelines presented in Table 6.5 are consistent with the County’s long term goals for the roadway segment. Improvements deemed necessary to access spacing will typically be applied in conjunction with CIP projects, plat reviews, or safety or operational requirements.

DAKOTA COUNTY ACCESS SPACING GUIDELINES

Table 6.5

Functional Classification	Principal Arterial	Divided Highways		Undivided Highways		
		Non-P.A.	Non-P.A.	Non-P.A.	Non-P.A.	Non-P.A.
2025 Projected ADT	All	>35,000	15,000 to 35,000	15,000 to 22,000	<15,000	<3,000
Full Movement Public Street Intersections (a)	½ mile	½ mile	¼ mile (c)	¼ mile (c)	1/8 mile (c), (d)	(b), (d)
¾ Public Street Access (a)	¼ mile (a)	¼ mile (a)	1/8 mile Right-in/Right-out only (c)	N/A	N/A	N/A

² Dakota County 2025 Transportation Plan, April 2004.

Source: Dakota County 2003

Roadway type refers to the anticipated cross section. Divided section must be in place for conditional intersection (right-in/right-out or $\frac{3}{4}$ intersection) to be built.

(a) Median access points may be removed or modified to address safety and operational issues identified through engineering review.

(b) Determined based on engineering review, judgment considering location, distance from other driveways, nearby intersections, alignment with other access points, visibility and other operation/safety issues.

(c) Multiple commercial access permitted.

(d) Private residential or individual commercial access permitted.

N/A – Not applicable to undivided roadway segments.

FARMINGTON ACCESS SPACING GUIDELINES

For other roads within the City, a set of access spacing guidelines has been prepared which is intended for use in the access permitting process. The guidelines are presented for functionally classified arterial and collector roadways without reference to the jurisdiction over these roadways. The basic references for the spacing guidelines is that document previously referenced in this section as well as guidelines used in other Minnesota counties and cities. The access guidelines are presented in Table 6.6 below. The stated values are meant to be “minimum” values. Some existing connections, both public and private, may not meet these guidelines. It is also recognized that, due to various circumstances, access may need to be granted that cannot adhere to these guidelines. Volumes do not appear in the table below because the City will assess the volumes on a case by case basis when reviewing its local roadway network. It is important to note that MnDOT and the City have worked on a draft access management plan in order to preserve access along TH 3.

CITY ACCESS SPACING GUIDELINES

Table 6.6

Functional Class	Median Treatment	Existing & Proposed Land Use	Typical Posted Speed (mph)	Full Median Opening Spacing (miles)	Minimum Signal Spacing (miles)	Spacing Between Connections (feet) ¹
Minor Arterial	Divided	Rural Urban Urban Core	55 ≥40 <40	½ ½ ¼	½ ½ ¼	820 490 275
	Undivided	Rural Urban Urban Core	55 ≥40 <40	NA NA NA	½ ½ ¼	820 490 350
Collector	Divided	Urban Urban Core	≥40 <40	¼ 1/8	¼ 1/8	435 275
	Undivided	Rural Urban Urban Core	55 ≥40 <40	NA NA NA	½ ¼ 1/8	585 435 310

NA – Not Applicable

¹ Distances are based upon spacing between connections (major roads, local public streets, and private driveways). Distances are minimum and greater spacing is beneficial.

ROADWAY CAPACITY ISSUES

The year 2030 traffic projections are used as a planning tool to help test the ability of a roadway to accommodate future volumes. In addition to the number of lanes provided, the daily capacity of any individual roadway is based upon many factors. Number of access points per mile, number of signalized intersections per mile, percentage of truck traffic, and the physical grade of the roadway are examples of some of these factors. However, for planning purposes, a generalized ADT threshold for roadways is used. Table 6.7 shows the generalized ADT volume thresholds for a roadway type and number of lanes in terms of level of service. Level of service (LOS) is a qualitative measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels, LOS A to LOS F, are generally used for traffic analysis. LOS A is the best with free flow conditions and little to no delay. LOS F is the worst with congestion, long delays, and forced flow. Table 6.8 provides a brief description of Levels of Service. These values can be used for planning purposes.

GENERALIZED AVERAGE DAILY TRAFFIC VOLUME THRESHOLDS

Table 6.7

Facility Type	Maximum ADT Volume at Level of Service ¹				
	A	B	C	D ²	E
2-Lane Roadway –					
Without Turn Lanes	3,000	4,500	6,500	8,500	10,000
With R Turn Lanes	4,750	7,200	10,300	13,500	15,900
With L Turn Lanes ³	5,250	7,900	11,400	14,900	17,500
With L and R Turn Lanes ³	7,500	11,250	16,250	21,250	25,000
4-Lane Roadway –					
Without Turn Lanes	7,100	10,700	15,400	20,100	23,700
With R Turn Lanes	9,600	14,400	20,700	27,100	31,900
With L Turn Lanes ⁴	10,100	15,200	21,900	28,600	33,700
With L and R Turn Lanes ⁴	12,600	18,900	27,200	35,600	41,900

¹ ADT Volumes above the LOS E maximum threshold would be considered LOS F.

² LOS D is usually the lowest acceptable LOS allowed by most agencies within the metro area.

³ Also considered the planning capacity for a 3-lane roadway (one through lane in each direction with a center, two-way left turn lane) without or with a right turn lane.

⁴ Also considered the planning capacity for a 5-lane roadway (two through lanes in each direction with a center, two-way left turn lane) without or with a right turn lane.

Note: Approximate values based upon several assumptions:

- Capacity assumptions per lane
- Directional orientation
- Peak hour percentages
- ¼ mile signal spacing

LEVEL OF SERVICE DESCRIPTION

Table 6.8

Level of Service	Description	
A	Lower volumes Little to no delay Unimpeded movement	
B	Minor delays Reasonably unimpeded operation Slightly restricted movement	
C	Stable conditions More restricted movements Speeds controlled by higher volumes	
D	Higher density traffic Volumes near capacity Some noticeable congestion	
E	At capacity Major delays are common Lower speeds	
F	Failing condition Significant delays Very low speeds with stop and go traffic	

The potential 2030 traffic volumes, viewed in conjunction with the volume thresholds shown in Table 6 utilize level of service D as an acceptable service level. Roadways that would appear to require corridor expansion include TH 3 from Elm Street north to/beyond the City boundary. The northerly segment of Pilot Knob Road may require some type of improvement most likely pertaining to access management. It is believed that the County does not wish to further expand that four-lane divided roadway.

Access along County Road 50, west of Akin Road, will have to be managed in order that the expected volumes can be accommodated as efficiently as possible.

TRANSIT

The need for transit in the City of Farmington is becoming more apparent with the increases in population, households and employment in the next twenty years. With the increase of persons migrating to the outer limits of the seven county metro area, there will be a need in the future for Farmington to provide a transit service to transport residents to the metropolitan core and to inner urban/suburban transit zones for employment.

Secondly, with the increase of Farmington's industrial park and Business Park, the need to supply these businesses with employees will be crucial. Therefore, the need for reverse communities to transport workers from the inner metro area will be as important.

Existing Transit Service

Farmington is outside of the Metropolitan Transit Taxing District. The north and south portions of Farmington are in Market Area III and the central portion is in Market Area IV. These market areas are shown on Map 6.9. Farmington is in the area of potential of transit service expansion. Service options for Market Area III include peak-only express, small vehicle circulators, midday circulators, special needs paratransit (ADA, seniors), and ridesharing. Service options for Market Areas IV include dial-a-ride, volunteer driver program and ridesharing.

The principal factors that distinguish the market areas from each other are population and employment density and transit dependency. The areas of potential transit service expansion for 2030 are shown on Map 6.10. Farmington is in the area designated as a potential transit expansion area.

There is no regular route transit service existing in Farmington in 2007. Dial-a-ride service for seniors and persons with disabilities is provided by Dakota Area Resources and Transportation for Seniors (DARTS).

Transit service in Dakota County is presently provided by Metro Transit, the Minnesota Valley Transit Authority (MVTA) and Northfield Transit. DARTS provides service for persons with special needs and for seniors. The Metro Transit or MVTA service in Dakota County does not provide any service in Farmington.

Transit Planning

Regional plans have identified several transit corridors within Dakota County for expanded and enhanced transit service. These corridors include:

- I-35W BRT Corridor: Bus rapid transit (BRT) will run on I-35W from Lakeville to downtown Minneapolis.
- Cedar Avenue BRT Corridor: Bus rapid transit will run on Cedar Avenue from the newly proposed BRT station at 179th and CSAH 23 in Lakeville to the current station in Apple Valley and on to the Mall of America in Bloomington.

- Red Rock Corridor: Commuter rail services will connect Hastings with the downtowns of St. Paul and Minneapolis.
- Robert Street: The feasibility study has been completed and proposes short, medium, and long term visions for the corridor including the location of transit ways and stations that may provide remedies for mobility issues identified in the corridor.
- High Speed Rail: Midwest Regional Rail Initiative (MWRRI), a cooperative, multi-agency effort to develop a nine-state, 3,000-mile regional passenger rail system that traverses through Dakota County. The Metropolitan Council has identified a potential commuter rail corridor along the Canadian Pacific rail line that runs through the City.

To identify existing and potential transit needs and opportunities, several transit indicator trends were examined by Dakota County. These trends included residential, employment, and special population density projections. Key findings of this analysis included:

- The 2030 population forecast indicates a relatively low population density level throughout Dakota County.
- By 2030, Dakota County's senior population percentage will double.
- Residential and commercial development nodes tend to cluster along major transportation corridors.
- The majority of new development is occurring in areas that are served by existing transit services, with the exception of the developing areas in Lakeville and Farmington.
- Dakota County consists of areas where high levels of fixed-route or midday transit are not viable service options due to lower population and employment density levels.

The Cedar Avenue BRT corridor, a transit corridor in regional plans, would provide service from the Mall of America to the newly proposed BRT station at 179th and CSAH 23 in Lakeville. The City will continue to work with Lakeville on this project and may consider a joint land use planning study concerning the special study area in Lakeville and the urban reserve land in Farmington near the newly proposed BRT station at 179th and CSAH 23. This would provide for service to the Hiawatha Light Rail corridor and downtown Minneapolis. The Dakota County Regional Railroad Authority (DCRRA) has adopted an implementation plan for the Cedar Avenue Corridor Transitway. Federal and state funds have been obtained for recent corridor planning. Additional federal funds have been obtained to conduct a more detailed analysis including estimated capital and operating costs to:

- Maintain and expand direct express service to downtown Minneapolis from park-and-ride lots;
- Establish local station-to-station service;
- Expand feeder routes; and
- Provide seamless transfers and connections between buses, Bus Rapid Transit services, and Hiawatha Corridor Light Rail Transit vehicles.

The I-35W BRT Corridor between downtown Minneapolis and Lakeville is one of the most heavily traveled in the Twin Cities. It is also one of the busiest transit corridors in the region. Over the next 25 years, the corridor is expected to experience significant levels of employment and population growth, resulting in very strong travel demand throughout the corridor. As a result, the State Legislature passed a bill in 2003 requiring MnDOT to explore the feasibility of providing I-35W Bus Rapid Transit service. Recommendations of the study included:

- Buses should operate at posted speeds in a shared BRT/HOV lane
- On-line stations should be developed at Lake Street, 46th Street and in the vicinity of I-494
- A mix of express, station-to-station and local service should be provided
- The BRT/HOV lane should be completed to downtown Minneapolis
- The existing bus fleet should be utilized
- New service to Lakeville including a park-and-ride lot just north of County Road 50 should be established.

The Red Rock Commuter Rail Feasibility Study started in 2000. The purpose of this study was to evaluate the opportunities and constraints of operating commuter rail transportation service on existing railroad lines between Hastings and St. Paul to Minneapolis.

A second phase of the study is underway to investigate how commuter rail can be realized in the corridor. In addition, the study will identify environmental, capital, operating and ridership opportunities for implementing commuter rail in the corridor. The second study phase is anticipated to be completed by fall of 2007.

The Robert Street Corridor Transit Feasibility Study has been completed and proposes short, medium, and long term visions for the corridor including the location of transit ways and stations that may provide remedies for mobility issues identified in the corridor.

The Robert Street Corridor Transit Feasibility Study covers a travel shed existing from the Saint Paul Union Station Multimodal Transit Hub to approximately 14 miles south to Dakota County Road 42 in Rosemount. Centered on Robert Street, the study corridor extends from I-35E on the west to the Mississippi River on the east. It includes the Cities of St. Paul, West St. Paul, South St. Paul, Lilydale, Sunfish Lake, Inver Grove Heights, Rosemount, and portions of Mendota, Mendota Heights and Eagan. The study will also consider the potential transportation opportunities associated with the redeveloping UMore Park area.

The City of Farmington must continue to work, aggressively, with the Metropolitan Council and Dakota County in order to extend transit into the City. The potential of utilizing MVTA transit service also needs to be investigated. The City, as it continues to grow, will need to have transit service for residents that cannot or do not desire to utilize an automobile, especially for work trips.

Park and Ride/Transit Stations

The City of Farmington does not have any park and ride lots nor any transit stations. The nearest transit station is located in Apple Valley at CSAH 31 and directly north of CSAH 46 (Apple Valley – 157th Street Station). The nearest park-and-ride facilities are located at:

- Cedar Avenue and 155th Street
- CSAH 42 and Burma Avenue (Rosemount)
- City Hall in Rosemount
- CSAH 23 and CSAH 9 (Lakeville)

A map showing the locations of the park-and-ride facilities and transit stations is provided on Map 6.11.

Potential Park-and-Ride Lots in Farmington

The City of Farmington proposes four park-and-ride lots within the next ten years as ridership increases. The first lot is proposed at the southeast intersection of Pilot Knob Road and 195th Street. The lot is proposed to be located at the City's Central Maintenance Facility. This site is beneficial to transit passengers because it is centrally located within the City and has direct access to Pilot Knob Road, with linkages to transit hubs in Apple Valley to the north.

The second proposed transit stop is within a new industrial area on the west side of Pilot Knob at 208th Street. This transit stop may be used as a reverse commute location for employees from the urban core transported to employment in the outer suburban core such as Farmington. This may also be an ideal location for a transit facility due to the availability of industrially zoned land and its location at the most southern reaches of the seven county metro area. Additionally, this location would be positioned on two major transportation routes including Pilot Knob Road and CSAH 50. CSAH 50 provides access to Cedar Avenue and Interstate 35 to the west and TH 52 to the east.

The third proposed transit stop is at the Farmington City Center located on Elm Street in Farmington. This location is in the central area of the downtown, providing easy access for commuters. This location could serve to provide access to the transit stop in Rosemount and could serve a route along CSAH 50 to the Cedar Avenue BRT Corridor.

The final proposed location for a park and ride is along the west side of Trunk Highway 3 within the proposed Fairhill development. At this northern location along TH 3, most of the northern bound traffic can be captured and connected with the transit stop in Rosemount.

The proposed locations, indicated on Map 6.12, could provide Farmington with important transit connections to and from the northern, eastern and western suburbs of the seven county metro area. The locations could also expand the local, county and regional

transportation systems in the future, considering the expected growth of Farmington in the next twenty years.

AVIATION

There are no existing or planned aviation facilities within Farmington. However, Farmington has a responsibility to include airspace protection in its comprehensive plan. The protection is for potential hazards to air navigation including electronic interference. Airspace protection should be included in local codes/ordinances to control height of structures, especially when conditional use permits would apply. The City has included this in section 10-4-5 of the City Code. Any person(s) proposing a structure of two hundred feet (200') or more above ground level located within the city shall notify and obtain the approval of the Federal Aviation Administration (FAA) and the Minnesota Department of Transportation. (Ord. 002-469, 2-19-2002). Any proposed construction or alteration must include notification to the FAA should such activity contain a potential hazard to air navigation or electronic interference. These are defined by Federal regulations code CFR - Part 77.

There are two existing regional aviation system facilities that affect the City of Farmington, the Airlake Airport and the Farmington VOR. The VOR is an off-airport radio navigation aid that is owned and operated by the Federal Aviation Administration. It is anticipated that this facility will be operational for at least 10 more years and needs to continue to be protected from incompatible land uses. The FAA usually owns or controls property generally within 1,000 feet of the facility. The 1,000 foot protection zone cannot include any structures and should be included in local ordinances and land use maps. The Federal notification procedure should be utilized for any development proposal located within one-half mile of the facility.

The City of Farmington is within the Influence Area of the Airlake Airport. Therefore, it is affected by planning considerations potentially involving the following items:

- Airport zoning
- Environmental mitigation
- Airport development and economic impacts
- Ground access needs
- Infrastructure requirements
- General land use compatibility

The Airlake Airport is owned and operated by the Metropolitan Airports Commission (MAC). The airport functions as a general aviation reliever for the MSP International Airport. It will continue its regional system role as a "minor" airport. The airport is located in Eureka Township. The long range plan conducted in 2007 proposes the extension of the lone runway from 4,098 feet to 5,000 feet. There are safety zones at the ends of runways which restrict land use to help insure the safety of people and property on the ground. Such regulations are produced by the Minnesota Department of Transportation (MnDOT). MnDOT has established regulations that control type of

development allowed off runway ends. These runway safety zones are not in the City of Farmington.

The City has prepared the proper ordinances and City Code amendments that are necessary to respond to the airspace protection and land use safety. The airspace and VOR land use protection areas are illustrated on Map 6.13.

RAIL

The major rail that passes north and south through Farmington is owned and operated by Canadian-Pacific Railway Company (CP). Traffic on this rail line has increased considerably with the upgrade of the rail line in 1998. The CP and Union Pacific Railway Company share current traffic on the line. Approximately, 10 to 12 trains per day utilize this line.

The Canadian Pacific Rail Company is discouraging any additional at grade crossing within the City because of traffic and safety concerns. Additionally, north of the Vermillion River, no at grade crossing is allowed because of the addition of a sidecar switching line creating the need to bridge the line in this location. Therefore, any future crossing of the rail line within the City requires bridging of the CP line.

Associated with the CP rail line, are noise impacts from locomotive whistles that have been addressed by the City. On August 3, 1998, the City Council adopted an ordinance for the regulation of railroad locomotive whistles at grade crossings within the City. The adopted ordinance requires that between the hours of 11:00 pm and 7:00 am no person shall sound or blow any whistle of any locomotive within the City limits, except as a warning of imminent and immediate danger to life or property. This ordinance was adopted to reduce the amount of noise impacts from locomotive whistles thereby creating a better quality of life for the City of Farmington.

**TRANSPORTATION
APPENDIX**