

CHAPTER 5: TRANSPORTATION

5.1 Introduction & Transportation Plan Objectives

The purpose of the City of Brooklyn Park Transportation Plan is to identify existing and future transportation needs, describe the transportation system that is needed to sustain development and define the implementation process for the required improvements. The Plan will allow the City to appropriately guide land use development patterns, to take necessary steps to acquire or preserve the rights-of-way needed for future transportation facilities and develop a staging and funding plan for the construction of these transportation facilities.

The transportation system in the City of Brooklyn Park is based on the 2000 and 1993 Transportation Plans. This updated plan will ensure that the transportation system will continue to meet the City's future needs. The objectives of the Transportation Plan are:

- *To provide for a multi-modal integrated transportation system that will serve the needs of City's residents, employers, workers, and visitors.*
- *To support the City's development and redevelopment plans.*
- *Compliment the metropolitan transportation system that lies within the City's boundaries.*

5.2 Regional Context

The City of Brooklyn Park covers approximately 27 square miles and is located in Hennepin County, northwest of downtown Minneapolis (Figure 5.2). The City is completely within the Metropolitan Urban Service Area (MUSA) that defines the area where the Metropolitan Council encourages urban development, however, the City has followed a managed growth plan over the past several decades.

As a result of a long-standing growth management policy, the agricultural community that once defined Brooklyn Park has evolved into a residential community. The southern and eastern parts of the City are mature and suburban in character. Northwestern Brooklyn Park, generally north of 93rd Avenue and west of Winnetka Avenue, remains rural in character. Urban and suburban style development is expected to fill in this area within the next twenty years. In addition, the City has extensive industrial and commercial districts.

5.3 Roadways

5.3.1 Existing System

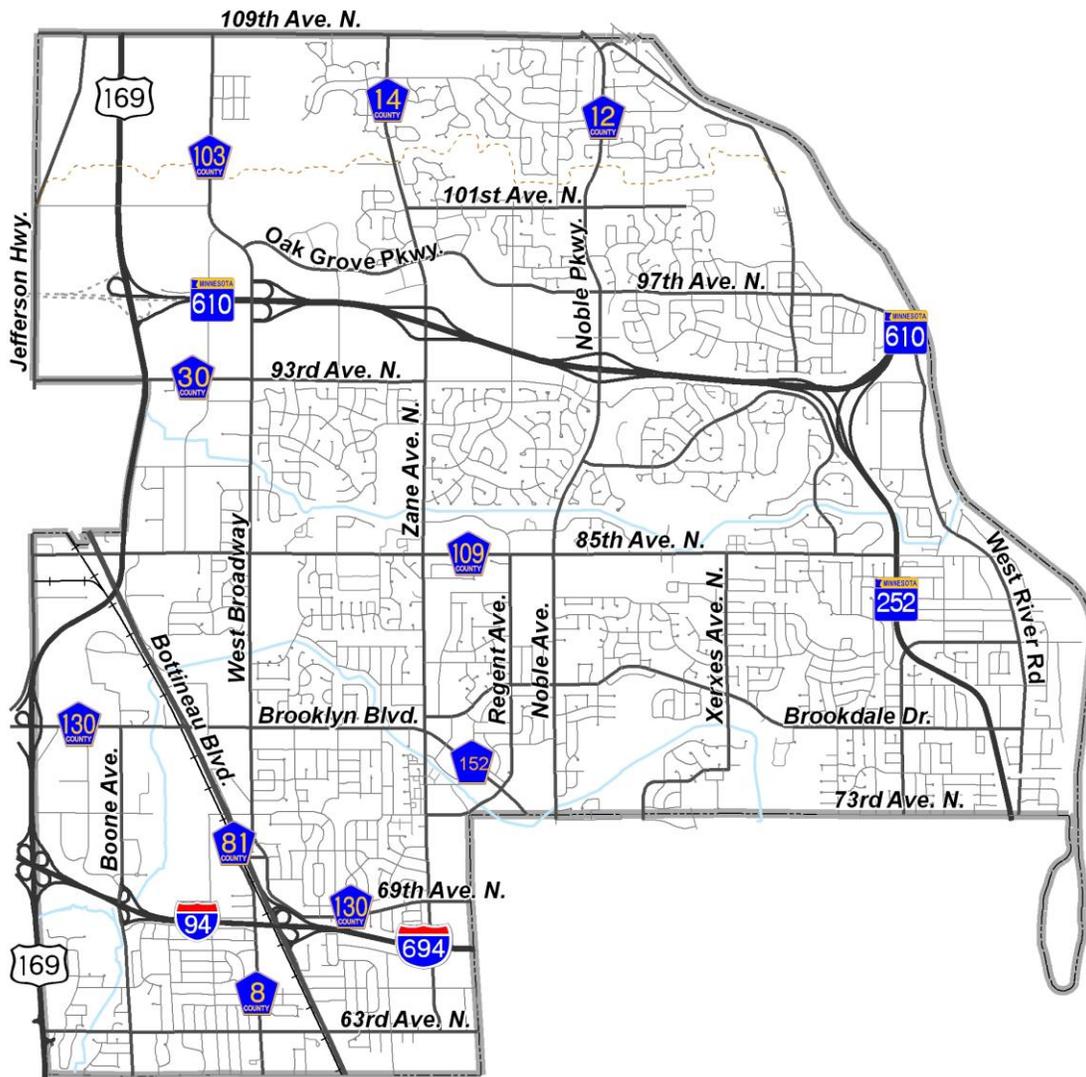
The existing street and highway system of the City of Brooklyn Park is presented in Figure 5.3.1A. Several metropolitan highways provide Brooklyn Park with access to the Twin Cities metropolitan area and to Greater Minnesota. These roadways include Interstate 94/694 in the southwestern portion of the City; Trunk Highway

169 along the western edge of the City; Trunk Highway 252 across the southeastern portion of the City, and Trunk Highway 610, located in the northern portion of the City. Several County State Aid Highways within the City provide both east-west and north-south connections with the adjacent communities and link to trunk highways. The City currently has 81 traffic or pedestrian signals as depicted in Figure 5.3.1B.

As increased development occurs, transportation improvements to the existing system will be needed to provide continuity, system capacity, and sufficient access to developing areas. The completion of TH 610 between TH 169 and I-94 in the northwestern portion of Brooklyn Park and across Maple Grove as well as reconstruction of TH 169 north of County Road 81 will provide the northwestern portion of the City and the Twin Cities region with a significant increase in roadway capacity and substantially alter existing travel patterns within the corridor and the City.

Figure 5.3.1A: Existing Roadway Network

November 2007



plays in servicing the flow of trips through the overall network. The Metropolitan Council has established detailed criteria for all of the different functional classifications. These criteria were discussed and debated during the evaluation process. The functional classification criteria currently used by the Metropolitan Council are presented in Appendix A: SRF October 15, 2007 Memo along with the planning principles. Table 5.3A summarizes the spacing guidelines presented in Appendix A. These guidelines have been used to improve the existing functional classification in anticipation of future development in Brooklyn Park.

Table 5.3.2A Summary of Roadway Spacing Criteria			
Functional Classification	Area Type		
	Near Metro Center/ Regional Business Concentrations	In Fully Developed Areas	In Developing Areas
Principal Arterial Roadway	2 to 3 miles	3 to 6 miles	6 to 13 miles (radial)
Minor Arterial Roadway	¼ to ¾ mile	½ to 1 mile	1 to 2 miles (as needed)
Collector Roadway	⅛ to ½ mile	¼ to ¾ mile	½ to 1 mile (as needed)

Table from Brooklyn Park Transportation Plan, April 2000, Table 4.

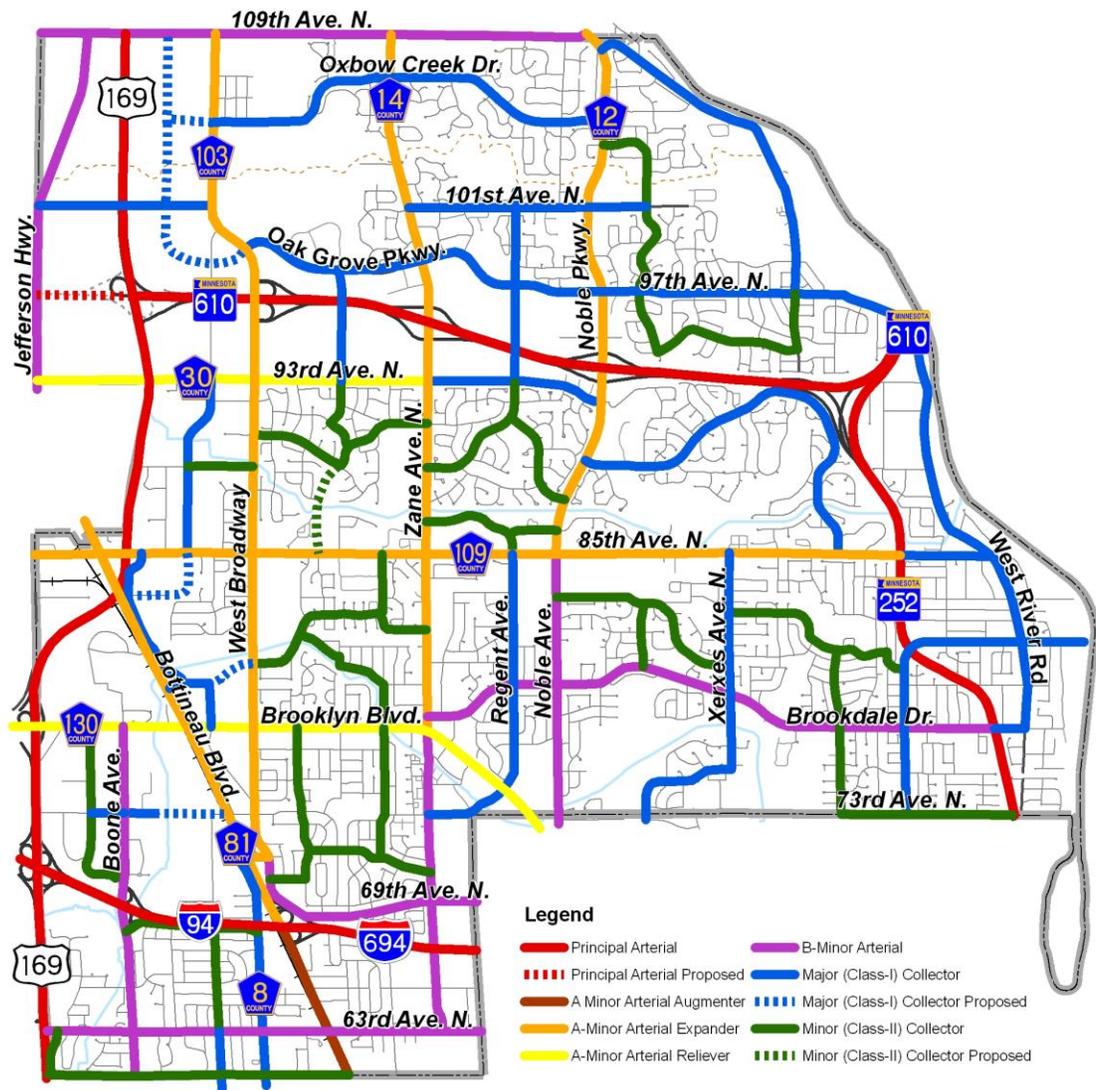
The intent of a functional classification system is to create a hierarchy of roads that collects and distributes traffic from individual properties in neighborhoods to the metropolitan highway system. In doing so, the functional classification system should also account for physical constraints to continuity, such as rivers. Arterial roadways should serve significant trip generators such as large employment and commercial centers. Collector routes should serve residential uses and areas of relatively low demand. This is the relationship between the land use plan and transportation plan.

The existing functional classification system is based upon the 1997 Metropolitan Council Functional Classification map and supplemented with additional arterial and collector routes based on Brooklyn Park's current Transportation Plan (see Figure 5.3.2).

The proposed roadway system should be consistent with the anticipated full urbanization of Brooklyn Park in 2020. Additionally, based on future growth in the Twin Cities metropolitan area and demand on principal arterial routes, additions to the existing A-Minor arterial system have been identified to increase mobility between communities.

Figure 5.3.2: Roadway Classification

December 2008



5.3.3 Principal Arterials

Principal arterials are the highest roadway classification and are considered part of the metropolitan highway system. Their purpose is to connect the central business districts of Minneapolis and Saint Paul with each other and with other regional

business concentrations in the metropolitan area. They also connect the Twin Cities with important locations outside the metropolitan area.

Principal arterials are generally constructed as limited-access freeways in the developed area, but may also be constructed as multi-lane divided highways (or expressways). The Metropolitan Council's functional classification plan includes Interstate 94 and Trunk Highways 169, 252, and 610 as principal arterial roadways.

The following briefly describes existing principal arterial routes in Brooklyn Park:

Interstate 94/694. Currently, I-94/694 is the only east-west principal arterial extending the entire width of Brooklyn Park. I-94/694 has both a regional and state-wide importance. It connects the Twin Cities metropolitan area with St. Cloud and areas further north and west, such as Alexandria and the Fargo-Moorhead area. The nearest parallel facilities are TH 55, approximately six miles to the south, and TH 10 approximately six miles north of the City's northern border. The completion of TH 610 between TH 169 and I-94 will provide a parallel facility (in the northwestern Twin Cities) approximately three miles north of I-94/694.

Trunk Highway 169. TH 169 is an important regional highway serving a variety of state-wide transportation needs, ranging from the movement of agricultural goods in southern Minnesota to access to tourist and recreational amenities in northern Minnesota. Within the Twin Cities metropolitan area, TH 169 is one of the significant north-south routes, crossing the Mississippi River to the north and the Minnesota River to the South.

Trunk Highway 252. This roadway provides a north-south connection to I-94 to and from the area north and east of the Mississippi River (Anoka County). It serves as the second north-south principal arterial in Brooklyn Park. Trunk Highway 252 is a divided expressway with signalized, at-grade intersection approximately every half-mile.

Trunk Highway 610. This four-lane freeway was completed in 2000 between TH 252 and TH 169. When completed to I-94, TH 610 will provide an additional east-west arterial north of the I-694 loop in the northern Twin Cities metropolitan area.

5.3.4 Minor Arterials

Minor arterials emphasize mobility over land access and connect cities with adjacent communities and the metropolitan highway system. Major business concentrations and other important traffic generators are often located along minor arterials. In the metropolitan area, minor arterials are divided into two classes: A-Minor and B-Minor arterials.

A-Minor Arterials. The Metropolitan Council has identified minor arterials that are of regional importance because they relieve, expand, or complement the principal arterial system. Sub-classifications of these roads have been categorized as follows in Table 5.3.2A:

Table 5.3.2A Table of A-Minor Arterial Types				
Type	Relievers	Expanders	Augmenters	Connectors
Definition	Relievers provide direct relief for metropolitan highway traffic.	Expanders connect developing areas outside the Interstate 494/694 ring.	Support Principal Arterials within the 494/694 beltway.	Connects town centers.
Roadway Examples	Brooklyn Boulevard 93 rd Avenue.	Bottineau Boulevard (north of I-94) 85 th Avenue	Bottineau Boulevard (south of I-94)	None in Brooklyn Park

B-Minor Arterials. The Metropolitan Council defines or considers all minor arterials other than A-Minor arterials as B-Minor arterials. These roadways typically serve a city-wide function by providing mobility for medium-length to long trips. Existing B-Minor arterials in Brooklyn Park include Jefferson Highway, 109th Avenue, Boone Avenue, Brookdale Drive, 63rd Avenue, 68th/69th Avenues, and Zane Avenue (south of Brooklyn Boulevard).

5.3.5 Major (Class-I) Collectors

Major collectors are major collectors that serve shorter trips and provide access from neighborhoods to the arterial system. They supplement the arterial system by emphasizing mobility over land access. They are lower-volume roads than arterial routes because of their location.

5.3.6 Minor (Class-II) Collectors

Minor collectors are shorter in length and lower in volume than Major collectors. They also serve lower-volume areas such as residential neighborhoods and provide greater access to adjacent land uses than Major collectors.

5.3.7 Local Roadways

Local roadways provide access to private property from the minor arterial and collector system. The City policy is that local roadways in developing areas are constructed by the developers through the platting process.

Local streets (either residential, commercial, or industrial) should be interconnected to the fullest extent possible. Cul-de-sacs should be used only to access small areas that could not otherwise be served without environmental impact or loss of parcels.

5.3.8 Private Roadways

The City has several private roadways in both residential and business settings. Private roadways are typically created so that certain zoning setbacks are not required, a higher quality of design or amenity is implemented, or for privacy reasons. The City policy is that all private roadways must be built to public roadway construction standards to ensure durability and reliability. Maintenance of private roadways is the responsibility of the owner of the roadway, typically a residential neighborhood association or business.

5.3.9 Mileage Impacts

The mileage for each of the functional classification groups must fall within certain established guidelines. Most of the proposed changes to the functional system are in the urban area and involve increasing the density of A-Minor arterials to help support the principal arterial system. Currently, the seven-county Twin Cities metropolitan area has approximately 20 percent of its miles in the arterial category. The specified range for the arterial system is 15 to 25 percent.

With the development of northern Brooklyn Park, there is a significant increase in the existing arterial and collector mileage, however, the development of the northern area would also result in a proportional increase in local street mileage; therefore, it is anticipated that the recommended functional classification changes would not measurably alter the current mileage distribution because the changes are relatively small in comparison to the total number of miles in the urbanized metropolitan area.

Roadway	From	To	Number of Lanes*	Classification
62 nd Avenue	Hampshire Avenue	Mendelssohn Avenue	2	Minor Collector
63 rd Avenue	E. City Limits	Zane Avenue	2	B-Minor Arterial
63 rd Avenue	Zane Avenue	Louisiana Avenue	4	B-Minor Arterial
63 rd Avenue	Louisiana	W. City Limits	2	B-Minor Arterial
68 th Avenue	Colorado Avenue	Lakeland Avenue	2	B-Minor Arterial
69 th Avenue	E. City Limits	Colorado Avenue	2	B-Minor Arterial
70 th Avenue	Kentucky Avenue	Lakeland Avenue	2	Minor Collector
71 st Avenue	Zane Avenue	Kentucky Avenue	2	Minor Collector
73 rd Avenue	Boone Avenue	Northland Drive	2	Major Collector
73 rd Avenue	T.H. 252	Humboldt Avenue	2	Minor Collector
73 rd Avenue	Unity Avenue	Zane Avenue	2	Major Collector
74 th Avenue	Xerxes Avenue	France Avenue	2	Major Collector
79 th Avenue	Jolly Lane	Bottineau Blvd	2	Minor Collector
80 th Avenue	Humboldt Avenue	James Avenue	2	Minor Collector
81 st Avenue	River Park	T.H. 252	2	Major Collector
83 rd Avenue	Lad Pkwy	Noble Avenue	2	Minor Collector
85 th Avenue	T.H. 252	Jefferson Hwy	4	A-Minor Arterial (Expander)
85 th Avenue	West River Road	T.H. 252	2	Major Collector
89 th Avenue	West Broadway	Wyoming Avenue	2	Minor Collector
93 rd Avenue	Noble Pkwy	Zane Avenue	2	Major Collector

93 rd Avenue	Zane Avenue	Jefferson Hwy	2	A-Minor Arterial (Reliever)
94 th Avenue	Russell Avenue	Fallgold Pkwy	2	Minor Collector
97 th Avenue	West River Road	Noble Pkwy	2	Major Collector
101 st Avenue	Fallgold Pkwy	Douglas Drive	2	Major Collector
101 st Avenue	Winnetka Avenue	Jefferson Hwy	2	Major Collector
109 th Avenue	West River Road	W. City Limits	2	B-Minor Arterial
Boone Avenue	62 nd Avenue	64 th Avenue	2	B-Minor Arterial
Boone Avenue	64 th Avenue	Brooklyn Boulevard	4	B-Minor Arterial
Bottineau Blvd	S. City Limits	I-94/694	4	A-Minor Arterial (Augmenter)
Bottineau Blvd	I-94/694	W. City Limits	4	A-Minor Arterial (Expander)
Brookdale Drive	T.H. 252	Welcome Avenue	2	B-Minor Arterial
Brookdale Drive	Welcome Avenue	Zane Avenue	4	B-Minor Arterial
Brookdale Drive	West River Road	T.H. 252	2	Major Collector
Brooklyn Boulevard	S. City Limits	W. City Limits	4	A-Minor Arterial (Reliever)
Candlewood Drive	Zane Avenue	West Broadway	2	Major Collector
Douglas Drive	101 st Avenue	109 th Avenue	4	A-Minor Arterial (Expander)
Douglas Drive	71 st Avenue	Brooklyn Blvd	2	Minor Collector
Douglas Drive	Candlewood Drive	85 th Avenue	2	Minor Collector
Edinbrook Pkwy	85 th Avenue	Noble Pkwy	2	Major Collector
Edinbrook Terrace	Noble Pkwy	Zane Avenue	2	Minor Collector
Fallgold Pkwy	94 th Avenue	Noble Pkwy	2	Minor Collector
France Avenue	Brookdale Drive	83 rd Avenue	2	Minor Collector
France Avenue	S. City Limits	74 th Avenue	2	Major Collector
Hampshire Avenue	93 rd Avenue	Oak Grove Pkwy	2	Major Collector
Hampshire Avenue	Nedderson Pkwy	93 rd Avenue	2	Minor Collector
Hampshire Avenue	Shingle Creek Drive	Shingle Creek Drive	2	Minor Collector
Humboldt Avenue	73 rd Avenue	76 th Avenue	2	Major Collector
Humboldt Avenue	76 th Avenue	T.H. 252	4	Major Collector
I-94/694	E. City Limits	W. City Limits	6	Principal Arterial
James Avenue	80 th Avenue	Pearson Pkwy	2	Minor Collector
Jefferson Hwy	93 rd Avenue	109 th Avenue	4	B-Minor Arterial
Jolly Lane	Brooklyn Boulevard	79 th Avenue	2	Major Collector
Kentucky Avenue	70 th Avenue	Brooklyn Blvd	2	Minor Collector
Lad Pkwy	Xerxes Avenue	83 rd Avenue	2	Minor Collector
Lakeland Avenue	68 th Avenue	71 st Avenue	4	B-Minor Arterial
Lakeland Avenue	79 th Avenue	85 th Avenue	2	Major Collector
Mendelssohn Avenue	62 nd Avenue	63 rd Avenue	2	Minor Collector
Modern Road	West Broadway	Boone Avenue	2	Minor Collector
Nedderson Pkwy	Zane Avenue	Setzler Pkwy	2	Minor Collector
Newton Avenue	Brookdale Drive	Pearson Pkwy	2	Minor Collector
Noble Avenue	S. City Limits	85 th Avenue	2	B-Minor Arterial
Noble Pkwy	85 th Avenue	101 st Avenue	4	A-Minor Arterial (Expander)
Noble Pkwy	101 st Avenue	109 th Avenue	2	A-Minor Arterial (Expander)
Northland Drive	Boone Avenue	Brooklyn Boulevard	4	Minor Collector
Oak Grove Pkwy	Noble Pkwy	Regent Avenue	2	Major Collector
Oak Grove Pkwy	Regent Avenue	West Broadway	4	Major Collector
Oxbow Creek Drive	Noble Pkwy	Winnetka Avenue	2	Major Collector
Pearson Pkwy	James Avenue	Xerxes Avenue	2	Minor Collector

Prestwick Pkwy	Noble Pkwy	Regent Pkwy	2	Minor Collector
Regent Avenue	85 th Avenue	Edinbrook Terrace	2	Minor Collector
Regent Avenue	93 rd Avenue	101 st Avenue	2	Major Collector
Regent Avenue	Unity Avenue	85 th Avenue	2	Major Collector
Regent Pkwy	Zane Avenue	93 rd Avenue	2	Minor Collector
Russell Avenue	94 th Avenue	97 th Avenue	2	Minor Collector
Russell Avenue	97 th Avenue	West River Road	2	Major Collector
Setzler Pkwy	Neddersen Pkwy	West Broadway	2	Minor Collector
Shingle Creek Drive	Brooklyn Boulevard	Hampshire Avenue	2	Minor Collector
Shingle Creek Drive	Hampshire Avenue	Candlewood Drive	2	Minor Collector
T.H. 169	S. City Limits	N. City Limits	4	Principal Arterial
T.H. 252	S. City Limits	Brookdale Drive	6	Principal Arterial
T.H. 252	Brookdale Drive	T.H. 610	4	Principal Arterial
T.H. 610	E. City Limits	T.H. 252	8	Principle Arterial
T.H. 610	T.H. 252	T.H. 169	4	Principle Arterial
West Broadway	S. City Limits	Bottineau Blvd/ 71 st Avenue	2	Major Collector
West Broadway	71 st Avenue	85 th Avenue	4	A-Minor Arterial (Expander)
West Broadway	85 th Avenue	93 rd Avenue	2	A-Minor Arterial (Expander)
West Broadway	93 rd Avenue	Oak Grove Parkway	4	A-Minor Arterial (Expander)
West Broadway	Oak Grove Parkway	Winnetka Avenue	2	A-Minor Arterial (Expander)
West River Road	Brookdale Drive	97 th Avenue	2	Major Collector
West River Road	Russell Avenue	Noble Pkwy	2	Major Collector
Winnetka Avenue	62 nd Avenue	63 rd Avenue	2	Minor Collector
Winnetka Avenue	63 rd Avenue	Modern Road	2	Minor Collector
Winnetka Avenue	West Broadway	109 th Avenue	2	A-Minor Arterial (Expander)
Wyoming Avenue	85 th Avenue	93 rd Avenue	2	Major Collector
Xerxes Avenue	74 th Avenue	85 th Avenue	2	Major Collector
Zane Avenue	63 rd Avenue	Brooklyn Blvd	4	B-Minor Arterial
Zane Avenue	Brooklyn Blvd	T.H. 610	4	A-Minor Arterial (Expander)
Zane Avenue	T.H. 610	101 st Avenue	6	A-Minor Arterial (Expander)
* Number of lanes may change at approaches to a controlled intersection.				

Table 5.3B Future Roadways/Routes			
Roadway	From	To	Expected Classification
73 rd Avenue	Bottineau Blvd.	Boone Avenue	Major Collector
Wyoming/83 rd Aves	Bottineau Blvd	85 th Avenue	Major Collector
Oxbow Creek Drive	Winnetka Avenue	Xylon Avenue	Major Collector
Tessman Pkwy	85 th Avenue	Setzler Pkwy	Minor Collector
Xylon Avenue	West Broadway/Oak Grove Parkway	109 th Avenue	Major Collector

5.3.10 Recent Improvements (Since 2000 Plan)

Several roadway improvements were made since the 2000 Transportation Plan was implemented. Following are descriptions of the most notable construction or reconstruction projects since 2000:

Trunk Highway 610. Trunk Highway 610 opened for traffic between TH 252 and TH 169 in 2000. Widening of the bridge over the Mississippi River to eight lanes was completed a year later.

Interstate-94/694. Interstate 94/694 through Brooklyn Park, Brooklyn Center, and Maple Grove was reconstructed from 2002 through 2004 to accommodate an additional lane in each direction. The Zane Avenue overpass was also reconstructed to a four-lane width with this project.

Noble Parkway (CSAH 12). Noble Parkway was completed in 2002 between 101st Avenue and 109th Avenue along with reconfiguring the intersection with West River Road. Noble Parkway transferred to Hennepin County's jurisdiction in 2006.

Zane Avenue/Douglas Drive (CSAH 14). Zane Avenue north of TH 610 was a two-lane rural highway before 2003. Hennepin County, the City, and adjacent developer landowners constructed the six-lane roadway between TH 610 and 101st Avenue. North of 101st Avenue, as the roadway shifts to the Douglas Drive alignment, it was reconstructed to a four-lane divided section.

Oak Grove Parkway. Formerly known as 97th Avenue, the segments between Regent Avenue and Hampshire Avenue opened for traffic in 2006.

Oxbow Creek Drive. The first phase of a new Major collector was constructed between Noble Parkway and Douglas Drive in 2003. The second phase extended the roadway west to 105th Trail in 2005. The third phase, opened in late 2006, extended the roadway west to Winnetka Avenue.

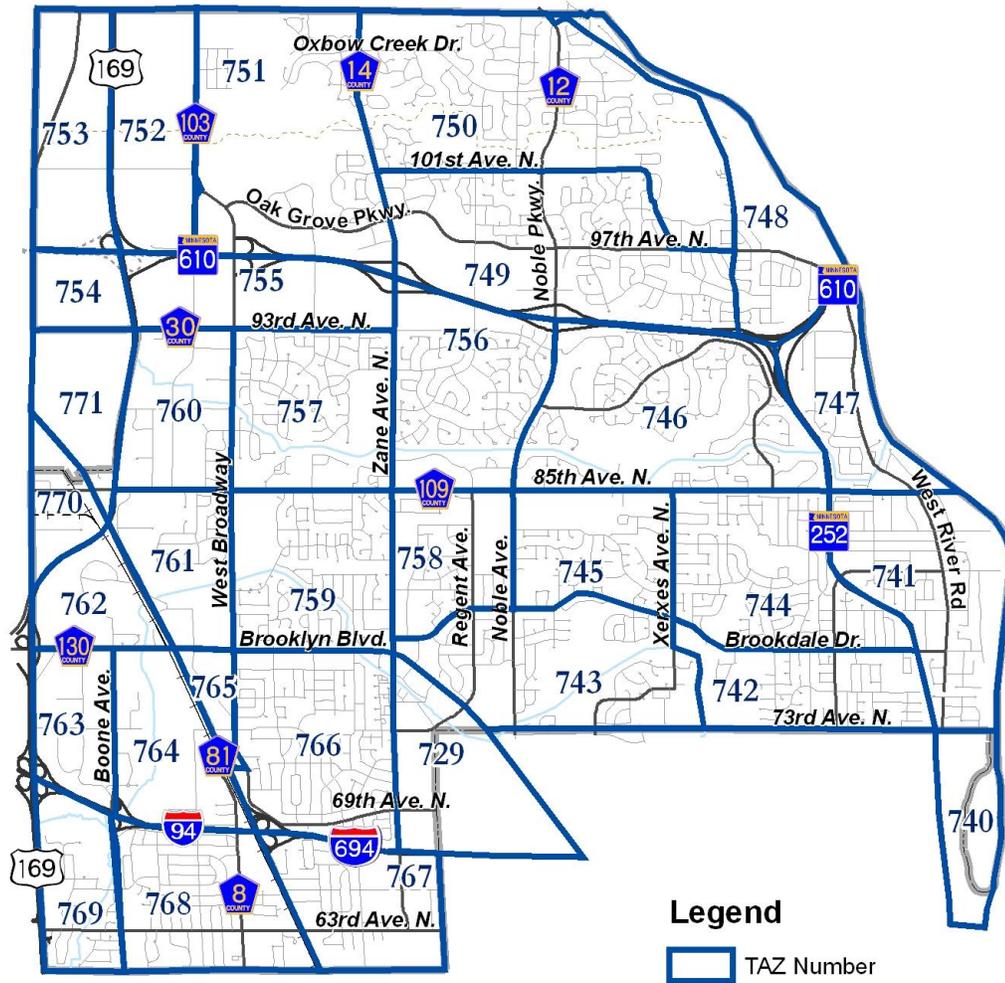
Highway 252 Third Lane. The City of Brooklyn Park constructed a third southbound lane on Highway 252 between Brookdale Drive and 73rd Avenue in the summer of 2007. This project is on a state highway with the approval of MNDOT. The project is anticipated to relieve some congestion in the morning peak hours, but not eliminate the problem.

5.3.11 Traffic Analysis Zones

The following section examines subsections of the City. These traffic analysis zones (TAZ) are shown in Figure 5.3.13. The analysis looks at households and employment data for each zone which are presented in Appendix A.

Figure 5.3.13: Traffic Analysis Zones

March 2007



Discrepancies By TAZ

The tables in Appendix A present discrepancies between the City's estimates and the Metropolitan Council's estimates. The following describes the City's rationale for the population listed in each TAZ. The City acknowledges that the Metropolitan Council uses an aggregate City-wide number used for regional traffic modeling. Transportation projects that at the county or local level will rely on population and employment figures in particular TAZs. Additionally, access points to regional roadways depend on individual TAZ data.

729 – This area of the City includes the Village Creek redevelopment area. Several new housing units have been constructed. Additionally, 306 more were removed in 2008 and are expected to be replaced with a less dense housing development. A goal of the redevelopment district is not to increase the housing density in the area.

741 – This portion of the City is nearly entirely built out. The City has identified some properties as being subdividable. There is a small commercial area that could be attractive for housing redevelopment purposes in the next two decades.

743 – This portion of the City is almost entirely built out. A few large single-family lots have the potential for subdivision.

744 – This portion of the City is almost entirely built out. The City has identified only one parcel that could be subdivided into additional single-family lots.

746 – This area of the City has some older businesses along 85th Avenue that have redevelopment potential, but not to the level that the Metropolitan Council has estimated. Otherwise, the TAZ is entirely developed.

747 – This area of town contains a small retail strip center, a fast-food restaurant, and an elementary school. The City feels that the Metropolitan Council underestimated the current number of employees there today.

748 – This TAZ contains only residential property and the Coon Rapids Dam Regional Park. The City feels that there will not be an increase in employment at the park. There are only a few parcels that have subdividable potential for additional single-family lots.

749 – This TAZ includes a variety of land uses, including retail commercial, medical office, high-density residential, and institutional. The City feels the Metropolitan Council underestimated the number of employees that would work in this area and housing units currently in the area. The City is proposing a portion of this TAZ be used for high-density housing that could yield approximately 200 units.

750 – The only employment center in this TAZ is the Champlin Park High School. The school is near capacity, but is not expected to expand, therefore the City believes that employment will remain constant in the area. The rest of the TAZ consists of residential units—both single-family and medium density attached units. There are

still some developable single-family properties that will likely complete the TAZ in the next five to ten years. The City also believes the Metropolitan Council underestimated the number of housing units in the area.

751 – This area contains the existing Target Northern Campus and the first phase of the Park Place Promenade shopping center. As of spring 2007, approximately 750,000 square feet of office space and 100,000 square feet of retail space have been constructed and occupied. The City estimates that there are over 1,500 employees in the area currently (2007) and that is expected to grow over the next several years with development of the future plans from the Target Corporation. Those plans include 8,000,000 square feet of office, 2,000,000 square feet of retail/service commercial, and 3,000 housing units. This development would be located in both TAZ 751 and 752.

752 – The southern part of this TAZ includes a portion of the Target proposal as described in the previous paragraph.

753 – This area is guided for business park uses and all densities of housing. The City feels the Metropolitan Council underestimated the number of jobs and overestimated the housing units in this area.

754 – Development in this TAZ is dependant upon roadway and utility improvement that are not likely to occur until after 2010, therefore the City does not expect development to occur as early as suggested by the Metropolitan Council. Once development is possible, the signature nature of the adjacent TH 169/610 interchange will yield more jobs than suggested by the Metropolitan Council. Additionally, the City is anticipating a senior housing component to any development on this corner.

755 – This area is proposed as Mixed Use to promote higher densities and attractive buildings along TH 610 in response to the Target proposal to the north. Several businesses were constructed in the early 2000s in this area. Additional corporations, hotels, and other businesses are likely to build multi-level buildings in this area around 2010. The Mixed-Use designation also includes residential uses.

756 – Currently, the undeveloped property in this TAZ is located along TH 610. This land is proposed as Mixed Use. A mix of office and high density residential is planned for the area. The Metropolitan Council's numbers are reflective the previous designation of some office and medium density residential.

757 – This area is predominately residential. The City believes the Metropolitan Council underestimated the number of residential units currently in the TAZ. Additional single-family units are expected within the next five years. North Hennepin Community College owns approximately 23 acres that someday could be used, in part, for some student housing.

758 – This area of the City is completely developed. A portion of it is located within the Village Creek redevelopment area. It is anticipated that some redevelopment is

possible within the next few years, but none is anticipated between 2015 and 2030 for both residential and commercial uses.

759 – This TAZ has been fully developed since the mid-1980s. No additional employment is expected in this area. Some isolated residential redevelopment is possible, but not likely for several years.

760 – There is one developable parcel available for residential purposes that the City is currently working with the landowner to provide three housing units. No additional housing or businesses is anticipated in this TAZ, therefore the City believes the Metropolitan Council overestimated the developmental potential remaining in this area.

761 – In 2005, the City Council approved a residential project allowing the construction of townhome and condominium units. The project is currently under construction. Once finished, no available residential land will remain in this TAZ. The property was guided for commercial uses, but was changed to medium-density residential, so the Metropolitan Council did not have his included in the estimates.

767 – This TAZ includes a portion of the Crystal Airport, which the City is encouraging its closing and redevelopment into a mix of housing and business uses.

771 – Most of this TAZ is in Osseo. The small portion that is in Brooklyn Park is retail area. In 2007, MnDOT purchased the remaining vacant parcels for the Highway 169/CSAH 81/85th Avenue Triangle project. The City does not anticipate additional employment in this area than what is there today: a sit-down restaurant, a fast-food restaurant, and a quick-lube auto service.

5.3.12 Forecasts

Appendix A, October 15, 2007 Memorandum from SRF Consulting Group, Inc., describes the traffic modeling process, including network assumptions and socio-economic assumptions.

5.3.13 Programmed Improvements (by 2030)

The following roadway construction projects in Brooklyn Park have been programmed or funded, at least partially, through the City's Capital Improvement Plan, the Hennepin County Capital Improvement Plan, and/or MNDOT's Transportation System Plan.

TH 169/CSAH 81/85th Avenue Triangle. Reconstruction of the “triangle” area has been delayed several times over recent years, but construction commenced in 2008. The through traffic of Highway 169 will be carried over the BNSF Railroad, County Road 81, and 85th Avenue. A series of fly-over ramps will provide access to

those roadways. Modifications to the Lakeland Avenue frontage road will be included in this project. A three-year construction period is anticipated.

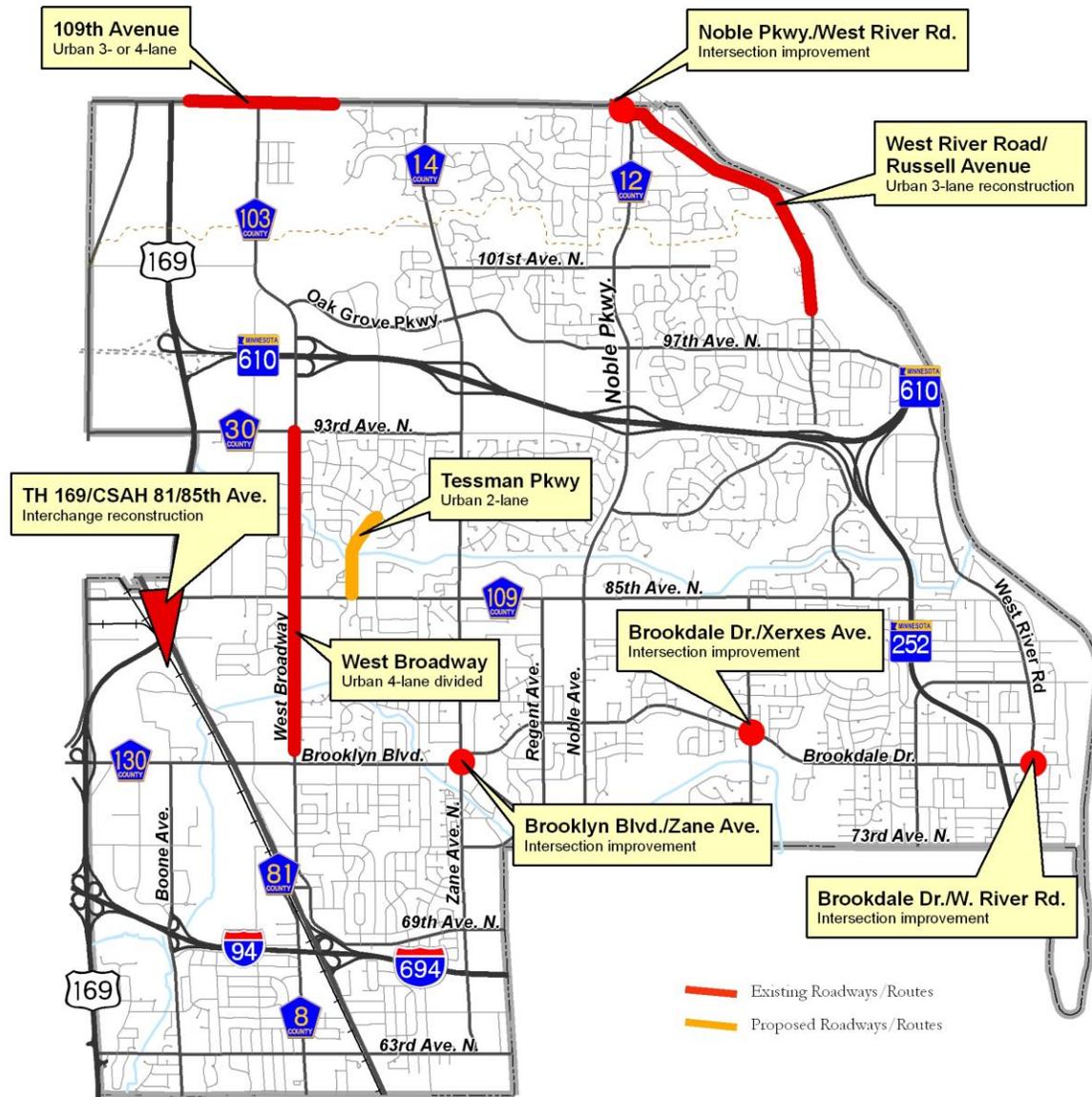
West Broadway (CSAH 103) between Brooklyn Blvd. and 93rd Avenue. North of 78th Avenue, West Broadway is a four-lane undivided roadway. North of 85th Avenue, it narrows to two lanes. Throughout this two-mile portion of roadway, there are no sidewalks, trails, and limited turn lanes. Hennepin County is currently preparing designs to reconstruct the roadway and include those missing features. Construction is anticipated to begin in 2009.

109th Avenue Reconstruction. 109th Avenue between TH 169 and Maryland Avenue will be reconstructed by the cities of Champlin and Brooklyn Park to a three- or four-lane urban roadway with sidewalks and trails. Currently, the roadway is a two-lane rural section roadway without pedestrian facilities or turn lanes. A segment of this reconstruction is anticipated in 2009.

Future Tessman Parkway. The fourth leg to the Century Farms roundabout would extend south to 85th Avenue, opposite Idaho Avenue. This Minor collector roadway would be constructed in a similar manner to Nedderson and Setzler Parkways as residential development occurs.

Figure 5.3.13: Programmed Roadway Improvements by 2030

November 2007



Sources: MNDOT Transportation System Plan, Hennepin County CIP, City of Brooklyn Park CIP

5.3.14 Planned Roadway Improvements (by 2030)

TH 169/93rd Avenue Interchange. Providing traffic relief through the triangle area is anticipated to shift the congestion north to 93rd Avenue (CSAH 30), which is currently a signalized at-grade intersection. This roadway is in close proximity to Highway 610. The anticipated extension of Highway 610 and the subsequent

changes to its access will limit an interchange at 93rd Avenue to having access only to and from the south. Additionally, the St. Vincent de Paul Cemetery in Osseo will require 93rd Avenue to shift northward. The interchange improvement is in MnDOT's TSP for construction in the 2011-2015 timeframe along with the reconstruction of the TH 610/ TH 169 system interchange.

Highway 610 Extension. Highway 610 is planned to be expanded between Highway 169 and Interstate 94. Currently, money is not budgeted for it's construction, however, some progress is underway with improvements to County Road 81 in Maple Grove in anticipation of the complete project. This project is in MnDOT's TSP for 2015-2023 timeframe.

101st Avenue Reconstruction. 101st Avenue between Winnetka Avenue and TH 169 is one of the last gravel roads in Brooklyn Park. The road will be reconstructed as a four- or five-lane roadway to urban standards. This improvement is included in the City's CIP for 2012.

Xylon Avenue. A new north-south collector "backage" roadway between 109th Avenue and 101st Avenue would relieve short distance traffic from Winnetka Avenue as well as provide access to business developments along the east side of TH 169. This improvement is included in the City's CIP for 2010, however, this roadway is development driven.

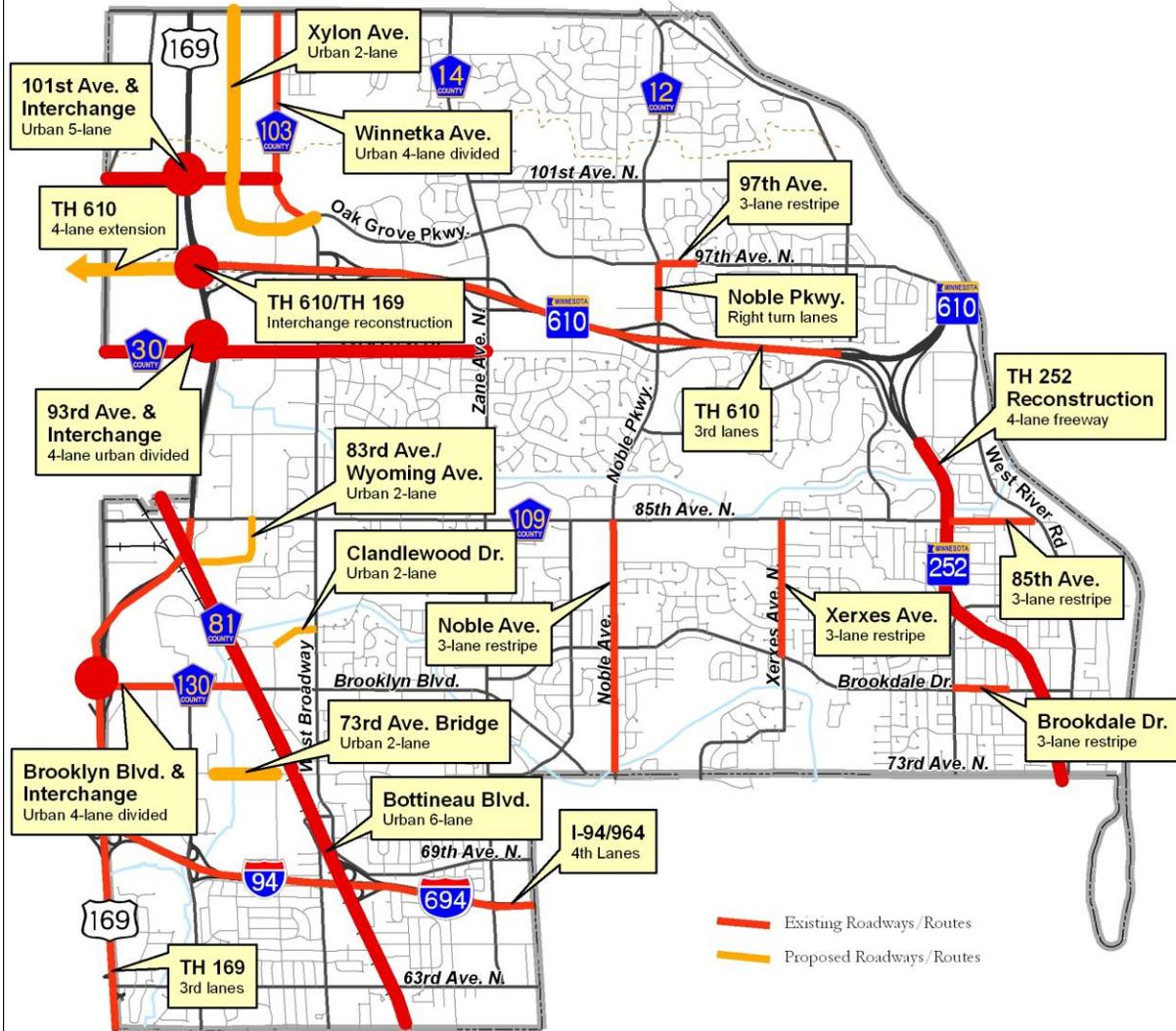
Highway 252 Median Closure. The City of Brooklyn Park will close the Highway 252 median crossing at 81st Avenue/Humboldt Avenue and remove the traffic signal. Right-in/right-out access to those roadways will be maintained. The median closure is anticipated to reduce some of the overall congestion on Highway 252, but not eliminate it. The Brookdale Drive and 85th Avenue intersections would receive the displaced turning movements.

Bottineau Boulevard Reconstruction. Hennepin County is currently reconstructing the roadway in Robbinsdale. Plans indicate that CSAH 81 would be reconstructed in segments over a period of several years between Robbinsdale and Maple Grove. The new roadway would be a six-lane urban design with trails and landscaped medians.

73rd Avenue Bridge. A new bridge over the Shingle Creek wetland complex between Winnetka Avenue and Boone Avenue would relieve business traffic on Brooklyn Boulevard as well as connect two large industrial areas. This improvement is expected to occur by 2015.

Figure 5.3.14: Planned Roadway Improvements (by 2030)

November 2007



Sources: MNDOT Transportation System Plan, Hennepin County CIP Provisional Projects, City of Brooklyn Park CIP.

Figure 5.3.14 Recommended Roadway Improvements (2030)

Priority	Roadway	From	To	Recommended Improvement	Comments	Construction Cost
1	109 th Ave	Xylon Ave	Brittany Dr.	Upgrade to 3-lane minor arterial	Share road with Champlin	\$1,620,00
2	73 rd Ave	East of Boone Ave	Winnetka Ave	Connect segment; construct bridge	Would help Brooklyn Blvd. congestion.	\$3,500,000
1	79 th Ave/ Candlewood Dr	Jolly Ln	West Broadway	Construct new 2-lane Major collector with parking	Construct to match Candlewood Dr.	\$1,000,000
3	85 th Ave	Dupont Ave	W. River Rd	Re-stripe to 3-lane Major collector	Future closure of 81 st Ave at 252 will affect	\$30,000
1	93 rd Ave	Jefferson Hwy	West Broadway	Construct to 4-lane divided	County roadway to be done with interchange	\$800,000
3	93 rd Ave	West Broadway	Zane Ave	Upgrade to a 4-lane divided arterial.	County road near capacity in 2030.	\$800,000
1	Tessman Pkwy	85 th Ave	Founders Pkwy	New 2-lane Minor collector	Dependant upon development	\$600,000
1	93 rd Ave (CSAH 30)	At TH 169		Construct half-diamond interchange to the south over TH 169.	Based on 2005 Study. State and County Roadways.	\$400,000
3	TH 169	CSAH 130		Add northbound auxiliary lane, loop on-ramp, widen bridge, terminate east frontage road	State and County roadways. Based on 1998 corridor study.	\$500,000
1	TH 169	CSAH 81/85 th Avenue area		Grade-Separate/ construct interchange at 85 th Avenue	To start in 2009. State and County roadways.	\$400,000 (City share)
1	West Broadway	Candlewood Dr	93 rd Ave	Reconstruct as urban 4-lane divided	County Roadway. In County and City CIPs	\$3,280,000
2	101 st Ave	Jefferson Hwy	Winnetka Ave	Upgrade to 4-lane Major urban collector;	State Roadway (TH169) involved. Assumes at-grade access.	\$2,200,000
3	85 th Ave	Jefferson Hwy	CSAH 81	Upgrade to 4-lane divided	County roadway. Not in County CIP.	\$500,000
2	West Broadway	62 nd Ave	CSAH 81	Reconstruct as an urban 3-lane section without parking	County roadway. Not in County CIP.	\$600,000
1	Zane Ave/ Brooklyn Blvd	Intersection		Add Additional Turn Lanes	Share with Hennepin County.	\$1,750,000
2	CSAH 81	S. City Limit	N. City Limit	Upgrade to 6-lane urban roadway with transitway	Hennepin County roadway	\$7,700,000
1	W River Rd	99 th Ave	Noble Pkwy	Reconstruct to urban 2-lane road	In City CIP for 2008	\$2,200,000
2	Xylon Ave	West Broadway/Oak Grove Pkwy	109 th Ave	Construct 2-lane Major urban collector	Alignment south of 101 st Ave dependent on Target development	\$2,200,000
1	TH 610	TH 169	I-94 (Maple Grove)	Construct 4-lane freeway	In MnDOT TSP for 2015-2023	\$180,000,000 (State)
1	TH 610	TH 169		Reconstruct interchange	Eliminate signals in TSP for 2024-2030	\$500,000
1	TH 252	I-94 (Brooklyn Center)	TH 610	Reconstruct to 4-lane freeway	State roadway. In TSP for 2024-2030	\$130,000,000 (State)
3	CSAH 130	TH 169	CSAH 81	Reconstruct to 4-lane divided	County roadway, not in County or City CIP.	\$1,000,000
3	TH 610	TH 252	TH 169	Add 3 rd lane in each direction	State roadway add-on issue	\$20,000,000 (State)

Figure 5.3.14 Recommended Roadway Improvements (2030)						
Priority	Roadway	From	To	Recommended Improvement	Comments	Construction Cost
3	I-94	E. City limit	W. City limit	Add 4 th lane in each direction.	State roadway. Just added 3 rd lane.	\$300,000,000 (State)
1	109 th Ave	Xylon Ave	TH 169	Reconstruct to 4-lane divided	With Champlin. Affects TH 169 intersection.	\$500,000
3	TH 169	S. City limit	CSAH 109	Add 3 rd lane in each direction	Requires interchange revisions	\$50,000,000 (State)
2	Noble Ave	S. City Limit	85 th Ave	Restripe to 3- or 4-lane and remove parking	Need to work with Brooklyn Center and Hennepin County	\$70,000
3	Xerxes Ave	Brookdale Dr	85 th Ave	Restripe to 3-lane roadway and remove parking	Minimal parking use	\$40,000
3	Brookdale Dr	Humboldt Ave	Colfax Ave	Restripe to 3-lane roadway and remove parking	Traffic expected to increase in future with TH 252/81 st Ave closure	\$40,000
3	Noble Pkwy	TH 610	97 th Ave	Add northbound right turn lane at 97 th Ave	Heavy movement affects northbound turn traffic. County roadway.	\$50,000
2	97 th Ave	Noble Pkwy	Fallgold Pkwy	Restripe to provide dual left turn lanes westbound to southbound	Split phase signal. Work with County.	\$20,000
1	West Broadway/ Winnetka Ave.	TH 610	109 th Ave	Reconstruct to 4-lane divided urban with right turn lanes	County roadway. May be impacted by Target development.	\$3,300,000
1	83 rd Ave/ Wyoming Ave	CSAH 81	85 th Ave	Construct new 2-lane Major collector	Needed with triangle project	\$1,000,000
2	TH 169	101 st Ave		Construct full diamond interchange	MnDOT has indicated that they will not fund	\$15,000,000
Total cost of capacity and system needs (does not include costs for TH 169, TH 252, TH 610, and I-94).						\$51,700,000

5.3.15 Jurisdictional Transfers

West Broadway (CSAH 8). West Broadway from the southern City limits to Bottineau Boulevard is a two-lane rural section roadway surrounded by an established residential neighborhood south of I-94 and business uses north of I-94. Pedestrian facilities are limited to two blocks along the south end of the roadway. The county identified this roadway as a possible turn-back to the City due to the proximity to parallel County Road 81 (Bottineau Boulevard).

68th/69th/Lakeland Avenues (CSAH 130). This roadway is predominately a two-lane rural section roadway. A four-lane urban section roadway ties into West Broadway near the intersection with 71st Avenue. Traffic is expected to remain constant along this roadway over the next twenty years with about 6,500 vehicles per day. The county identified this roadway as a possible turn-back to the City due to its low volume of traffic.

109th Avenue. This roadway is shared between the cities of Brooklyn Park, Champlin, and Maple Grove and is classified as a B-minor arterial. Its traffic volumes currently and projected would warrant a County Road designation.

5.3.16 Special Study Areas

The following roadways have been identified as needing reconstruction or reconfiguration, yet specific details about the exact needs must be further studied.

Bottineau Boulevard. County Road 81 is currently being studied by Hennepin County and Metro Transit for use as a transit corridor, either by Bus Rapid Transit (BRT) or Light Rail Transit (LRT). Additionally, the County is in the process of reconstructing the roadway through Robbinsdale. The Crystal segment is anticipated in 2008 or 2009 for reconstruction. The Brooklyn Park portions of Bottineau Boulevard would be constructed after that, as funding becomes available. The implementation of one of the transit technologies could have some impact on the design of the roadway. Reconstruction in Brooklyn Park would include widening of the roadway, correction of dangerous grades, and pedestrian and landscaping enhancements.

Trunk Highway 252 Freeway. The current design of Highway 252 as an expressway is not adequate for traffic in the peak hours. Conversion of the road into a grade-separated freeway would alleviate traffic delays as well as enhance safety for both motorists and pedestrians trying to cross the highway. Upgrade of this roadway will also provide a better connection between northern Brooklyn Park (and Anoka County) and downtown Minneapolis and will reduce traffic on paralleling roadways such as West River Road and Humboldt Avenue. Locations and designs of interchanges will require additional study.

93rd Avenue west of Regent Avenue. 93rd Avenue west of Regent Avenue is currently a two-lane rural roadway. As development occurs in the area, upgrading to an urban design, either two- or four-lane will be necessary. A partial interchange with Highway 169 is desired, but is limited due to the proximity to Highway 610 and the St. Vincent de Paul Cemetery.

Target Area Improvements. The Target area at the northeast corner of Highways 169 and 610 will require several upgrades to the existing arterial and collector roadway system in the area. Specific upgrades will not be known until additional study is conducted. Additional overpasses, underpasses, freeway exits, ramp widths, and roadway widening is anticipated. The City will work with MNDOT, Hennepin County, and MetroTransit for these improvements.

101st Avenue Interchange. Creating an interchange on Highway 169 at 101st Avenue will be critical to development in the area. The exact designs of the interchange and to 101st Avenue are not known at this time. Development of the Target area and areas west of Highway 169 will drive those needs and the designs.

Oxbow Creek Drive Extension. Oxbow Creek Drive could be used as a reliever roadway to 101st Avenue between Winnetka Avenue and Jefferson Highway with an overpass constructed over Highway 169.

5.3.17 Roadway Design

The proposed network for parkway roads is a central component of the City’s effort to promote high quality development that has lasting value. The 2000 Northern Area Master Plan proposed that several arterial and collector roads be built or improved as “parkways” or “greenways” which means generous landscaping on the sides and possibly the median. This plan will continue to promote constructing/reconstructing roadways in this manner

It has been found that public investments in roadway landscaping, parks, and similar amenities leads to higher initial private investment and better growth in values over time. Public investments such as these are a more powerful inducement than larger minimum lot sizes in encouraging housing investments and upgrades. The cost to the City of these improvements will be returned through higher property taxes, better quality of life in the neighborhoods, and in an improved community image.

This plan proposes that parkway treatments be applied to Major Collector and A- and B-Minor Arterial roadways. Shoebox lighting should be used as well as burying all overhead utilities to the fullest extent possible.

These higher levels of design require higher levels of maintenance and care. This increased level of service needs to be included in annual budgets.

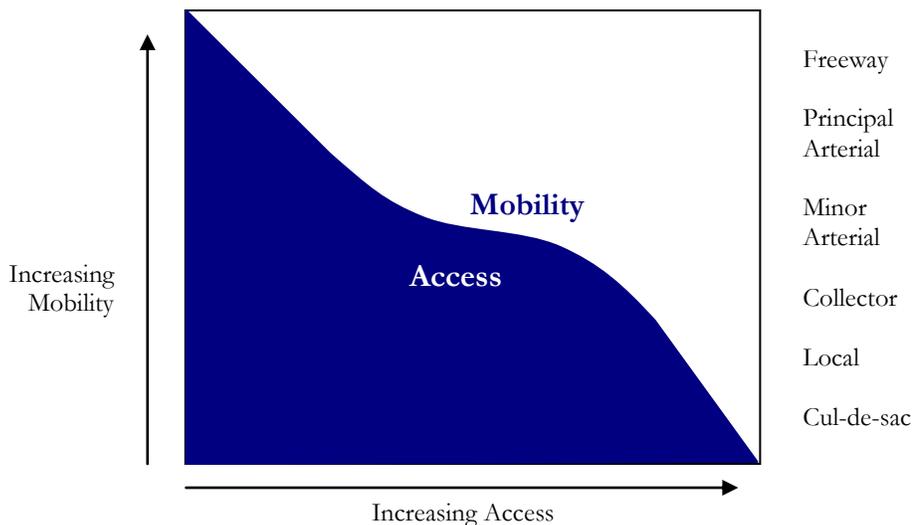
Table 5.3.17 Roadway Designs for New Construction or Reconstructed Roadways			
	Major Collectors	B-Minor Arterials	A-Minor Arterials
Sidewalks*	East/South Side or both sides	East/South Side or both sides	East/South Side
Trails*	North/West Side, if not sidewalks on both sides	North/West Side, if not sidewalks on both sides	North/West Side
On-Street Bike Lanes	Only if no trail	Only if no trail	None
Trees & Shrubs**	In Boulevards	In Boulevards & Medians	In Medians, outside sidewalks & trails
Parking	Generally Allowed	Limited	None
* Reference Potential Sidewalk and Trail Network (Figure 5.5.6) for location specifics.			
**Landscaping placed in locations not detrimental to vehicle and pedestrian safety.			

Gateways. Section 7.4.2 introduces gateways as a decorative element welcoming people to the community. These elements would be located either adjacent to a roadway or in a median island.

5.3.18 Access and Corridor Protection

Access guidelines are important because they define a starting point for balancing property access, safety, and mobility concerns. Routes that provide higher mobility functions have less access and those that have a high amount of access will have lower mobility (see Figure 5.3.18A below). A major purpose of relating access control to roadway purpose is to protect continuous routes and important corridors to the extent possible and to prevent undue restriction of access to local and minor collector routes where access is appropriate. Adequate access control on routes designed to provide mobility prevents the need for expending additional public funds to acquire new rights-of-way and establish new corridors as existing corridors become congested or develop safety problems. On the other hand, excessive protection or acquisition of access along local or urban collector facilities adversely affects potential development and could result in inappropriate expenditures for access control.

Figure 5.3.18: Access versus Mobility



Transportation agencies regularly receive requests for additional access (new public streets, commercial or residential driveways) and these requests may be evaluated by different agencies, planning commissions, and engineering staff. Because of the number of individuals and agencies involved, it is easy to have inconsistent application of access controls and differing viewpoints on the need for access restrictions. This often results in confusion, frustration, and disagreements between agencies, developers, and property owners and can lead to inconsistent and undesirable access spacing and strained relationships, therefore, an essential element to developing a successful access plan is to have published guidelines. Standard access guidelines can be used to improve communication between agencies, landowners, and developers. This will also establish initial expectations for access spacing on higher-level routes and promote consistent access practices between agencies.

Key in controlling access is to understand how some control over access locations is lost early in the process. This begins during the formation of the individual parcels. The City's subdivision requirements are structured to allow for review of all proposed access points on the newly created parcels. Appeal of the regulations may be sought at the Planning Commission or City Council levels of review and are sometimes granted based on specific hardships.

Hennepin County and Mn/DOT must provide reasonable access to each parcel (cannot land-lock parcels or restrict unreasonably unless access rights have been purchased). Reasonable access has been shown by the courts to include a right-in/right-out access or a single-point access. Mn/DOT can also encourage access changes through comments to local governmental units on plats. In addition, they may control the location of the access on the parcel through its driveway access permitting process. Cities and counties may control access through zoning and land subdivision regulations and other review procedures and processes. Methods for controlling access include access points per land parcel and distance between access points, however, counties, like Mn/DOT, are required to provide reasonable access to each parcel unless an alternative, indirect access is available. Alternative access locations normally require advanced planning.

Access to the arterial and major collector streets is of primary concern since these facilities typically carry the highest volumes and have the highest traffic speeds. Long-term impacts of poor access management on these facilities include erosion of roadway capacity and increased safety problems.

It is estimated that under average conditions, the capacity of a four-lane arterial or major collector street with a 45-mile-per-hour speed limit will be reduced by over one percent for every two percent of the traffic that turns between the right lane and driveways at unsignalized driveway locations. For example, if a street carries 1,200 vehicles per hour in a direction and 120 turn into driveways and 120 turn out of driveways per mile (twenty percent turns), then the capacity in that direction will be reduced by ten percent. Currently, over thirty percent of the traffic along arterial or major collector routes with strip commercial development may turn to and from driveways. As the level of design of the driveway is increased (allowing turns to be made at higher speeds), the capacity loss is reduced, thus it is undesirable to limit driveways to a minimum number with design for higher speeds.

Access Policies

In addition to the impact access points have on roadway capacity, they also introduce conflicting traffic movements which affect roadway safety. Providing access control in some form—whether it is through grade-separated crossings, frontage roads, or right-in/right-out entrances and exits—reduces the number of conflicts and increases safety. A number of studies have demonstrated a relation between the number of full access points and the number of accidents, including the Federal Highway Administration (FHWA) Access Research Report Number FHWA-RD-91-044. Generally, as the frequency of access points increase, so does the crash rate. In addition, a study of accidents in suburban areas has indicated that over eleven percent of all accidents on major streets in municipalities involved driveway maneuvers; hence, it is in the public's best interest to have the following policies:

1. Alignment of new accesses with other existing access points;
2. Adequate spacing of access points to separate and reduce conflicts;
3. Indirect access, rather than direct access, on high-speed, high-volume arterial routes; and
4. Adequate right or left turn lanes.

Access Standards

The first step in encouraging better access management is to have a set of consistent access standards that all agencies and private developers can use. Consistent standards have been developed for urban arterial and collector roads (see Table 5.3.18A). The implementation of the guidelines can be achieved through a number of different methods, such as land use regulations, subdivision regulations, access permit processes, and access/transportation advisory committees. These processes should be developed so that they can deal with situations that either are outside the guidelines or are hardship cases.

In existing corridors where significant development has occurred, the number of existing access points is likely to exceed the access guidelines. Unless these areas are undergoing significant redevelopment, their access must be addressed or approached differently. It is recommended that these corridors minimize any new access locations while consolidating and/or reducing existing access as redevelopment occurs.

It is important to consider the following points when reviewing the guidelines and addressing access issues:

- The guidelines apply primarily to routes with an arterial and major collector functional classification; however, the guidelines may also be used on other collector streets;
- The guidelines will not cover every access situation;
- Volumes in Table 5.3.18A refer to 2030 forecast volumes;
- Guidelines should be used as long-term goals, not absolute rules;
- Maintaining some flexibility is important in promoting access consolidation;
- Approach to implementation is as important as the guidelines themselves; and
- Existing physical barriers or constraints need to be considered when considering spacing requirements.

In addition to the proposed access spacing guidelines outlined in Table 5.3.18A and with the significant number of new routes proposed in northern Brooklyn Park, the following eight additional access planning principles should be considered when reviewing proposed improvements. These planning principles encourage agencies to look at the overall transportation system and the potential future improvements that could affect the area and individual development or access that is being proposed. Table 5.3.18B presents urban driveway access spacing guidelines that also abide by the following principles:

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

2. Restrict turning movements to reduce conflicts. If access locations cannot be eliminated, consider turning movement restrictions (left-in only, right-in/right-out only) through channelization, such as installation of a raised median or signing. Eliminating a single turning movement can significantly reduce vehicle conflicts and potential accidents.
3. Develop parallel street systems for carrying local traffic. Ensure that important arterial routes have a good parallel street system to provide the local access function and to carry shorter local trips.
4. Develop proper setbacks for future frontage or backage roads. If frontage roads cannot be justified (benefits do not outweigh costs), ensure that proper building and parking lot setbacks are established so that future frontage or backage roads can be installed with minimal impacts.
5. Develop proper secondary street spacing. When reviewing plats and proposals for new development, ensure that they provide proper intersection spacing for future traffic signals. As a guideline, signalized intersection should be limited to through streets with spacing between one-quarter mile and two-thirds mile, depending upon the type of street. Collector streets should provide some continuity and connectivity with other street systems (see Table 5.3.18A).
6. Encourage proper lot layout to minimize access points. Promote direct residential access points onto local routes, not arterial or major collectors. Direct residential access off arterial or collector routes can result in complaints when traffic volumes increase.
7. Encourage connectivity between development. Individual developments should align streets to provide access to existing developments or reserve right-of-way to provide for future connections to adjacent developments. This promotes neighborhood connectivity, good emergency services, and more efficient travel for mail, garbage, and bus service, as well as street maintenance.
8. Consider official map process for important corridors. Important arterial corridors of future interchange areas that are located in development-prone areas can be protected through an official mapping process. The City should revise its zoning ordinances and subdivision regulations to provide for dedication of officially mapped corridors at the time of platting.

Table 5.3.18A: Urban Public Street Spacing Guidelines (Speeds Less Than 45 mph)

Type of Roadway and Average Daily Traffic Affected by Access ⁽¹⁾⁽⁹⁾		Type of Roadway and Average Daily Traffic Affected by Access ⁽¹⁾⁽⁹⁾		Type of Roadway and Average Daily Traffic Affected by Access ⁽¹⁾⁽⁹⁾		Type of Roadway and Average Daily Traffic Affected by Access ⁽¹⁾⁽⁹⁾	
Type of Public Access Requested	Two-Lane Collector or Local Roads Less than 3,000	1/16-mile spacing	1/8-mile spacing with turn lanes	1/8-mile spacing with turn lanes	1/4-mile spacing with signals and turn lanes	1/2-mile spacing with signals and turn lanes	
	Two-Lane Arterial Less than 3,000	1/8-mile spacing ⁽⁷⁾	1/8-mile spacing with turn lanes	1/4-mile spacing with turn lanes	1/4-mile spacing with signals and turn lanes	1-mile spacing with signals and turn lanes	
	Two-Lane Arterial or Collector 3,000-10,000	1/8-mile spacing ⁽⁷⁾ with turn lanes	1/4-mile spacing ⁽⁷⁾ with turn lanes	1/4-mile spacing with signals and turn lanes	1/2-mile spacing with signals and turn lanes	1-mile spacing with signals and turn lanes	
	Multi-Lane Undivided Arterial or Collector 8,000-25,000	1/4-mile spacing ⁽⁶⁾⁽⁷⁾ with turn lanes	1/4-mile spacing ⁽⁶⁾ with signals and turn lanes	1/4-mile spacing with signals and turn lanes	1/2-mile spacing with signals and turn lanes	1-mile spacing with signals and turn lanes	
	Multi-Lane Divided Arterial or collector Over 10,000	1/4-mile spacing with no median opening ⁽⁴⁾	1/2-mile spacing with signals and turn lanes ⁽⁵⁾	1/2-mile spacing with signals and turn lanes ⁽⁵⁾	1/2-mile spacing with signals and turn lanes	1-mile spacing with signals and turn lanes	
	Controlled Access Arterial Freeway	No Direct Access	No Direct Access	No Direct Access	1-mile spacing (interchange)	1 - 2-mile spacing (interchange)	
	Local: Low-Volume, Non-Continuous Streets ⁽²⁾⁽³⁾		Local: Medium-Volume, Non-continuous Streets ⁽²⁾⁽³⁾	Collector: Low- and Medium-Volume Through Streets ⁽²⁾	Collector and Arterial: High-Volume Through Streets ⁽²⁾	Arterial: High-Volume Streets and Expressways ⁽²⁾	

Notes:

- 1 The urban access guidelines are applicable to Mn/Dot, County, and City roads. Shaded areas are guidelines that may be modified (see below).
- 2 All volumes represent 20-year forecasts. "Low-Volume" denotes fewer than 3,000 vehicles per day. "Medium-Volume" denotes between 3,000 and 8,000 vehicles per day. "high-Volume" denotes more than 8,000 vehicles per day.
- 3 Non-continuous streets refer to cul-de-sac or short local streets (less than half-mile) which do not necessarily cross the roadway in question.
- 4 Additional Access may be permitted in the form of right-in/right-out if the corridor extends through a mature area or if the facility is under the jurisdiction of the County or City. These areas should be evaluated on an individual basis.
- 5 For four-lane County or City roads, the guidelines may be relaxed to 1/4-mile spacing.
- 6 When retrofitting an existing corridor, direct access may be permitted after considering turning conflicts, speed, accident history, and capacity issues.
- 7 Continuous left-turn lanes or a raised median with left-turn lanes may be considered if retrofitting an existing corridor and access guidelines cannot be achieved.
- 8 Property access off of an arterial street should be minimized
- 9 All access locations should have adequate stopping sight distance, drainage, spacing from adjacent access and alignment.

**Table 5.3.18B: Urban Private Driveway Access Spacing Guidelines
For New Developments, Redevelopment of Existing Areas, and Changes in Land Use**

Street with proposed driveway	Nearest Intersecting Street ^{(c)(b)(g)}					Minimum Spacing Between Adjacent Driveways
	Local Street	Minor Collector	Major Collector ^(d)	Minor Arterial ^{(c)(d)}		
				Low Density	High Density	
Local Street						
Private residential ^(b)	40 ft	40 ft	50 ft	50 ft	50 ft	40 ft
Individual Commercial/Multi-Family	50 ft	50 ft	90 ft	90 ft	90 ft	50 ft
Multiple Commercial	90 ft	90 ft	125 ft	125 ft	125 ft	100 ft
Minor Collector						
Private residential ^(b)	40 ft	40 ft	50 ft	50 ft	50 ft	40 ft
Individual Commercial/Multi-Family	50 ft	50 ft	90 ft	90 ft	90 ft	50 ft
Multiple Commercial	90 ft	90 ft	125 ft	125 ft	125 ft	100 ft
Major Collector^{(d)(e)}						
Private residential ^(b)	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
Individual Commercial/Multi-Family	90 ft	90 ft	220 ft	220 ft	220 ft	200 ft ^(h)
Multiple Commercial	125 ft	125 ft	220 ft	220 ft	220 ft	200 ft ^(h)
Minor Arterial (Low Density)^{(c)(d)}						
Private residential ^(b)	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
Individual Commercial/Multi-Family	Not Permitted	Not Permitted	Not Permitted	660 ft	660 ft	230 ft ^(g)
Multiple Commercial	Not Permitted	Not Permitted	Not Permitted	660 ft	660 ft	230 ft ^(g)
Minor Arterial (High Density)^{(c)(d)}						
Private residential ^(b)	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
Individual Commercial/Multi-Family	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	230 ft ^(g)
Multiple Commercial	Not Permitted	Not Permitted	Not Permitted	Not Permitted	660 ft	230 ft ^(g)

General Comments:

1. Areas marked “Not Permitted” indicate that:
 - a. Direct access to private residential uses should be prohibited on major collectors and arterials, and
 - b. When direct access is requested for higher intensity land uses (individual commercial/multi-family residential, multiple commercial) and intersecting streets are of different functional classifications, access should be granted from the street with the lower functional classification.
2. The “Minimum Driveway Distance From Intersecting Street” guidelines refer to full access driveways. Driveways may be located within these minimum distances, but must be approved by the City Engineer and should be limited to right turns into and out of the property.
3. Access will not be permitted onto streets within right-turn lanes or taper areas.
4. The City Engineer reserves the right to review and adjust these guidelines on an individual basis. Departure from the guidelines may be approved by the City Engineer.

Notes:

- a. Maximum curb cut width is 24 feet unless specific site plan (Internal Design and Access Review) is approved by the City Engineer.
- b. Private Residential includes single-family, two-family, townhome, quadraminium, and manor home dwellings.
- c. Apply specific design criteria.
- d. Driveways onto arterials and major collectors should be prohibited if possible. If driveways cannot be prohibited, the number of driveways onto arterials and Major collectors should be minimized.
- e. If the nearest intersecting street is a signalized Minor collector, driveways may be located less than 125 feet from the corner, but access should be limited to right turns into and out of the property.
- f. If the nearest intersecting street is a signalized Major collector, driveways may be located less than 220 feet from the corner, but access should be limited to right turns into and out of the property.
- g. If the nearest intersecting street is a signalized minor arterial, driveways may be located less than 660 feet (low density) or 1,320 feet (high density) from the corner, but access should be limited to right turns into and out of the property.
- h. Assumes a speed of 40 mph.
- i. Assumes a speed of 45 mph.

5.4 Transit

5.4.1 Existing Transit System

Brooklyn Park is divided into two transit market areas. The southern portion of the city is generally classified as Market Area II and the northern portion of the city is generally classified as Market Area III. These areas are described in the following table:

Table 5.4.1A Transit Market Area Description			
Market Areas	Land Use Pattern	Service Option	Service Characteristics
II	Moderate concentrations of jobs, housing and activities	Regular-route locals, all day expresses, small vehicle circulators, special needs paratransit (ADA, seniors), ridesharing	Frequencies: 15-30 minute or 30-60 minute depending on land use pattern Span of Service: 12-20 hours per day, 7 days per week Access: Locals spaced 0.5-1.0 mile apart with 6-8 bus stops per mile
III	Generally lower concentrations with intermittent pockets of moderate concentrations (pockets would receive highest service levels)	Peak-only express, small vehicle dial-a-ride, midday circulators, special needs paratransit (ADA, seniors), ridesharing	Frequencies: Peak-period-only expresses, 1-2 hour midday frequencies, dial-a-ride advance registration Span of Service: 10-14 hours per day, weekdays and limited weekends Access: Services tied to park-and-ride lots and hubs

Adapted from: Metropolitan Council 2030 Regional Transportation Plan, Table 4-1.

Throughout 2006, the city assisted Metro Transit with the Northwest Metro Transit Restructuring Study. This study examined existing bus routes generally west of the Mississippi River to Highway 169 and north of Highway 55. Metro Transit began the first phase of implementation in June 2007 with the remaining phase in early 2008, pending the relocation or renovation of the Starlite Transit Center.

Local & Express routes. Brooklyn Park is currently served by several local and express bus routes. After implementation of the Study, several of the routes received adjustment in order to achieve better connectivity and better efficiency. Figure 5.4.1A shows the transit system after implementation of the Study.

Figure 5.4.1A: Bus Route Network

February 2008

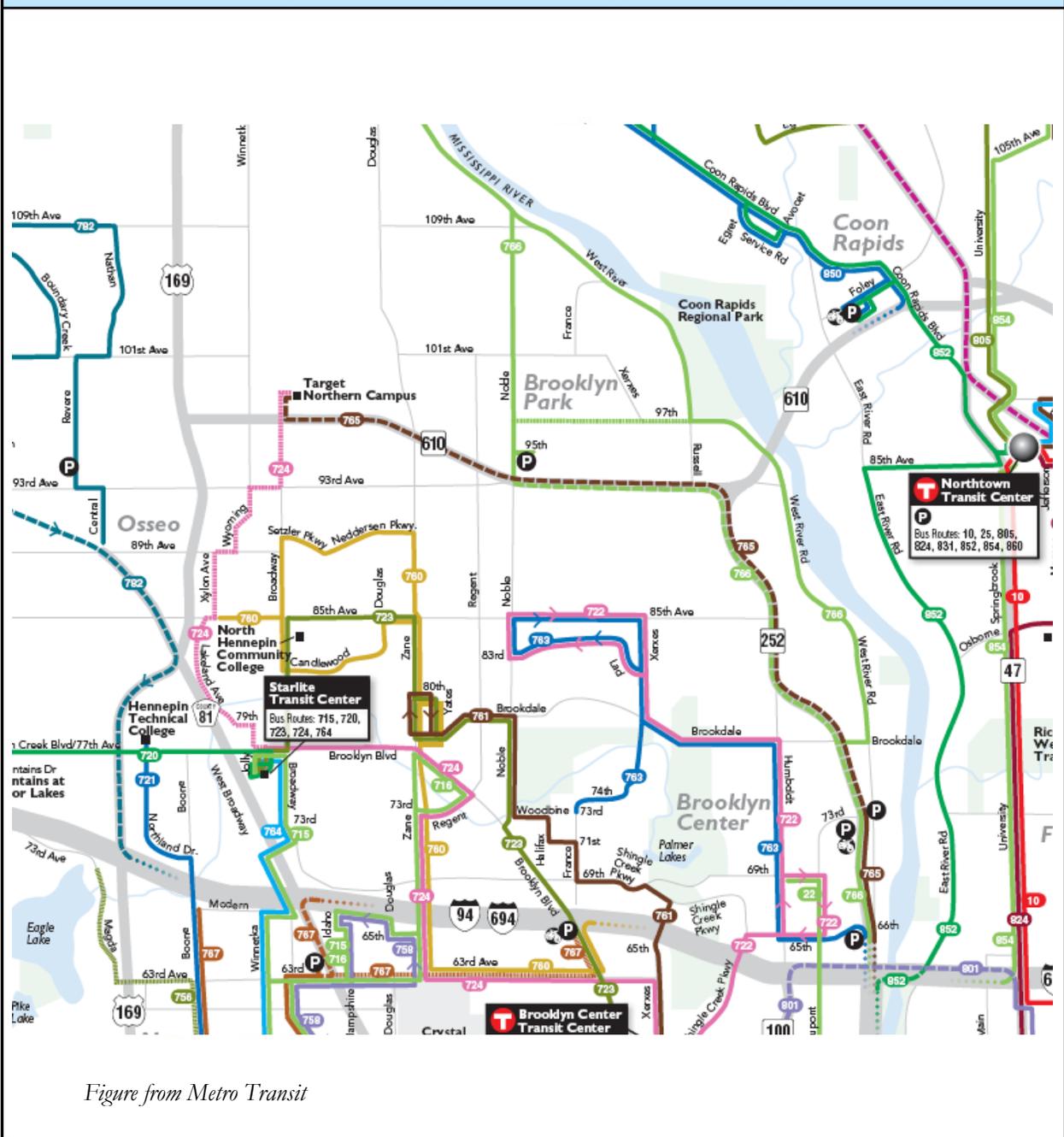


Figure from Metro Transit

Park & Ride Facilities. Brooklyn Park is currently served by three park and ride facilities. The newest facility, the 63rd Avenue and Bottineau Boulevard Park and Ride, opened in March 2007. This park and ride was designed to replace some of the use from the 85th Avenue Park and Ride, which closed in late 2006 in anticipation of the Highway 169 “Triangle” reconstruction project. Additionally, a park and ride

facility in the vicinity of Brooklyn Boulevard and Bottineau Boulevard (CSAH 81) is being explored.

Transit Centers. Brooklyn Park currently contains one transit center at Starlite Shopping Center. Several bus routes converge to create a timed transfer. The current location is too small to accommodate Metro Transit's planned growth in 2007 and early 2008. Metro Transit is exploring alternative sites within the shopping center that will accommodate their needs. A new transit center is anticipated in early 2009.

With the development of the Target area, northeast of Highways 169 and 610, additional bus routes are anticipated to serve the area. Special consideration to transit centers will be made as development of the area occurs.

Transit Corridors. Three designated Transit Corridors traverse Brooklyn Park. Interstate 94/694 and T.H. 252/610 both currently use these arterial roadways to provide express bus service between the northwestern and northern suburbs, respectively, and downtown Minneapolis. All of Brooklyn Park's park and ride facilities are located either adjacent to these routes or within a short distance (see Figure 5.4.1B).

Bottineau Boulevard (CSAH 81) has also been designated a corridor for Bus Rapid Transit (BRT). The route has been the topic of several studies since the late 1980s. Discussions recently began to include analysis for Light Rail Transit (LRT) along this route, based on the unanticipated success of the Hiawatha LRT line in south Minneapolis and Bloomington. The city is encouraging a thorough analysis of the corridor to provide the most cost-effective and efficient mode of transit and to construct it in a timely manner.

Metro Mobility. A special transportation service is available for people with disabilities. Metro Mobility, an ADA-compliant service, is the door-through-door public transportation system for people with disabilities in the Minneapolis/St. Paul area and certain adjoining suburbs, including Brooklyn Park. Customers who are certified can call transportation providers to schedule their trips.

Paratransit/Senior Transportation. Brooklyn Park, along with four other north metro cities, is part of a Senior Transportation Program, a general-public dial-a-ride program that primarily services seniors living independently (more than 90 percent of past riders are people aged 55 or older) and the secondary riders using the program are handicapped individuals who need lift-equipped vehicles. The program is an important service for Brooklyn Park seniors and provides a valued link for life-cycle housing in the communities it serves. This transportation service helps seniors maintain life's basic functions and provides them with a sense of independence within their respective communities. Many of the recipients would remain isolated in their homes without it.

The Senior Transportation Program is a general public dial-a-ride program that primarily provides rides to those on fixed incomes and those needing a lift-equipped

vehicle that depend on this affordable means of transportation. These patrons could otherwise incur a cost of between \$15.00 and \$30.00, or more, for round trips in private taxis or transports depending upon distance and need. The Senior Transportation Program charges \$6.00 to \$8.00 round trip.

The program operates with a combination of user fees and subsidies from city CDBG and general funds, the Metropolitan Council, foundations and other sources. The program establishes a user fee that reflects anticipated operating costs and the ability of clients to pay.

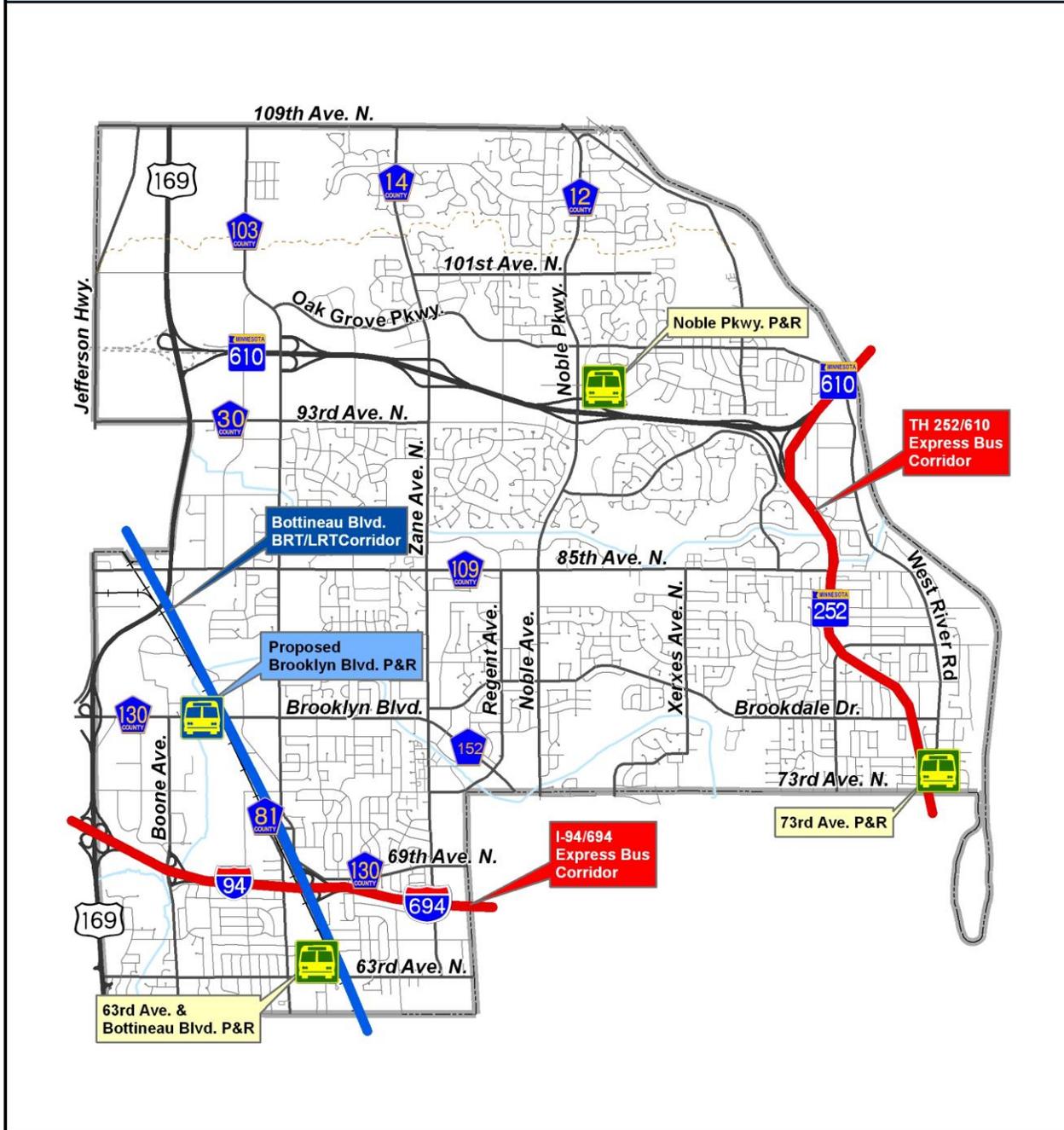
Trips include transportation to and from doctor/dental appointments, banking, legal service, the senior center for congregate dining and activities, shopping facilities, and other personal trips within the service area.

In addition to the Senior Transportation Program, many of Brooklyn Park's senior housing communities provide door-to-door transportation for their residents. The City will continue to encourage these private programs.

It is anticipated that because of operational changes at the Metropolitan Council in addition to decreasing funding sources and increasing operating expenses, there may be substantial changes to the Senior Transportation Program in the near future.

Figure 5.4.1B: Transit Facilities & Transit Corridors

December 2007



5.4.2 Planned Changes

Northwest Metro Restructuring Study. As mentioned earlier, in December 2006, the Metropolitan Council approved changes to the bus service in the northwestern portion of the Twin Cities. Many of these changes have been implemented with additional changes coming after the relocation of the Starlite Transit Center. Many

of the routes serving Brooklyn Park will receive minor adjustments and better connections to other routes, which will improve service to the City's residents and businesses. Additional potential routes are identified in the plan, subject to additional funding.

Starlite Transit Center relocation. The existing Starlite Transit Center is located near the north end of the Starlite Shopping Center (southwest of Brooklyn Boulevard and West Broadway). The Center can accommodate up to three buses at any given time. With the additional connections approved in the Northwest Metro Study, space for additional buses is needed. Metro Transit is working with shopping center management to either relocate the Transit Center to a better location or expand it in its current location.

5.4.3 Future Transit Needs

Target Area Development. As the Target area northeast of Highways 169 and 610 develops, it is anticipated that transit needs will increase. The City will work with Metro Transit and property owners in the area to determine transit needs, including transit centers, as development occurs. Additional routes, such as a connection to the Foley and Northtown Transit Centers, which are not currently a part of Metro Transit's future plans, shall be cooperatively reviewed among all agencies.

Bus Rapid Transit/Light Rail Transit.

The Bottineau Boulevard corridor has been identified as a rapid transit route. Initially, the corridor could be developed as a Bus Rapid Transit (BRT) route. This route could be converted to Light Rail Transit (LRT) as the corridor develops.

Connecting other centers of the community with the Bottineau Boulevard corridor is being explored, such as connecting to the Target area via West Broadway.

Link Transit and Land Use. The City will encourage business developments along transit routes to include site provisions that accommodate transit and transit users. Examples are internal or external bus stops or shelters, sidewalks, or walkways from transit stops to the principle use.

The City will also encourage commercial and higher density residential developments along existing or future transit routes.

5.4.4 Transit Plans and Goals

Policy 1: The City will work with Metro Transit to provide convenient, reliable, and efficient mass transit.

Policy 2: The City will promote transit-oriented development opportunities where appropriate.

Policy 3: When locating affordable housing sites, transit availability will be considered.

5.5 Bikeways, Walkways, and other Modes of Transportation

The City of Brooklyn Park recognizes that travel by foot and bicycle are essential components of the transportation system. Sidewalks and trails along streets are intended to enhance pedestrian and bicyclist safety by providing a separation from street vehicular traffic within the public right-of-way. Pedestrian modes of transportation are typically used for recreation or for short distance trips. The primary purpose of public sidewalks and trails in Brooklyn Park shall be to provide a means for pedestrian and bicyclist travel to schools, shopping, parks, recreational facilities, religious institutions, and civic centers. These trips are made by choice or by necessity. This section will discuss off-street routes for walking and bicycling as it relates to each purpose.

The secondary purpose of sidewalks and trails shall be to serve as portion of the City trail system and Hennepin Parks regional trail system in conjunction with park system trails; serve as portion of the Hennepin County transportation plan bikeway system; create an extension of outdoor social and recreational activities, enhance commercial business activities, and creation the intangible neighborhood effects.

5.5.1 Existing System

The existing dedicated pedestrian system within the City of Brooklyn Park includes approximately 105 miles of concrete sidewalks and just over 45 miles of bituminous trails. An additional mile of unpaved aggregate limestone or wood chip pathways is located within parks areas. Figure 5.5.1 shows the existing off-street pedestrian system.

Concrete sidewalks are designed for most of its use by walkers. Bituminous trails are designed to be used by both walkers and bicyclists.

Brooklyn Park contains two trails of regional significance. The 5.6-mile Rush Creek Regional Trail travels across the northern portion of the city connecting the Coon Rapids Dam Regional Park with the Elm Creek Park Reserve in Maple Grove. The Three Rivers Regional Trail, in the central portion of the city, connects the Rush Creek Regional Trail with the Palmer Lake Park area and Brooklyn Center. Several city park trails and local sidewalks connect to these regional trails.

Figure 5.5.1: Existing Sidewalk & Trail Network

December 2008



5.5.2 Influencing Factors and Issues

School walking areas. Several public and private schools are located within Brooklyn Park's borders. Brooklyn Park's residents also attend nearby schools in neighboring communities. The early 2000s saw several changes to school transportation programs. The areas in which free bus service was available moved farther away from school buildings. Bus service-for-a-fee was implemented in some districts at medium distances from schools, while longer distances were still free. The result of these changes is that many more children are required to walk to school or find an alternate means of transportation, placing more importance on sidewalks and trails as part of the City's transportation system.

Aging & Disabled Population. As with national and state trends, many residents of Brooklyn Park are getting older and living longer. Many of today's seniors remain active even though they no longer drive. The same is true for residents with limited mobility or impairment. Safety for the community's senior and disabled populations is important as well as maintaining their sense of independence. The City will encourage pedestrian connections between senior and adaptive housing sites and nearby services, business, transit, and recreation.

Healthy Living. Brooklyn Park has several recreational trail systems: The Rush Creek Regional Trail Corridor, the West River Road Trail, The Edinburgh Channel Trail, and The Palmer Lake Trail. These popular trails provide users a pleasant walking or biking environment. Over the past several years, use of the trail systems has increased.

Access to the trail systems should be expanded into nearby neighborhoods. Sidewalk or trail routes between neighborhoods and the different trails will allow nearby residents access to the trails from their homes. Vehicle parking is limited along all of these trails and should be reserved for users living large distances away from the trail.

In areas farther from the recreational trails, a system of sidewalk loops should be established in neighborhoods to provide opportunities for a "walk around the block." Directional signs and distance markers should be installed to guide users in their workouts.

5.5.3 Connection to Land Use Plan

Linkages. As stated earlier, people will consider walking for short trips if it is safe and convenient. Connections between residential areas and neighborhood commercial areas will give residents the choice to walk for essential trips. Encouraging people to walk more will result in fewer vehicles on the roads and healthier citizens. The Land Use section (Chapter 3) introduced the Neighborhood Commercial designation. This land use is geared towards business areas whose clientele is generally from nearby neighborhoods. Pedestrian routes to adjacent or nearby residential districts shall be required in new developments and new routes explored in existing areas.

Sidewalk and trail links between residential areas and schools, community centers, and parks will also be explored in existing neighborhoods.

Greenways/Trailways. Brooklyn Park has several multi-use trails located in parks or open spaces that serve a dual function—recreational as well as providing a pedestrian/bicycle transportation route. The Three Rivers trail in the northern portion of the City is a valuable amenity and acts as the basis for the greenway concept.

These greenways are meant to provide outdoor recreation and to offer aesthetic relief in the City’s landscape as well as enhance pedestrian and bike transportation choices. The greenways are to have special consideration in future development and redevelopment of land and infrastructure to encourage preservation of open green space for people as well as wildlife to travel from one destination to the next in a safe and enjoyable manner. The greenway concept is intended to preserve open space amenities and identify potential green corridors to connect places of interest throughout the community.

The connections may be in the form of existing infrastructure (parks, streets, trails, sidewalks) or may be a link planned for the future. The greenways along the creeks and river are primarily intended to preserve a protective buffer and imply that best management practices are maintained by adjacent land owners, however when feasible pedestrian paths are encouraged.



Rush Creek Regional Trail

The Minnesota Department of Natural Resources (MnDNR) has a regional greenway plan outlined in the publication titled *Metro Greenprint: Planning for Nature in the Face of Urban Growth*, published in 1997. The plan defines greenways as: “Corridors of protected open space managed for conservation and/or recreation

purposes. They often follow natural land or water features, and link natural areas, parks, cultural features, and historic sites with each other and sometimes with populated areas.” The program also outlines three key functions of greenways: 1) Function as linkages and increase habitat connectivity and availability; 2) Provide alternative transportation options, and 3) Stimulate business development focused around recreation and tourism.

The 1997 Greenprint Plan laid the foundation for the MnDNR Metro Greenways Program, which sponsors grants and technical assistance to communities in the metro region. This and other resources could be of value for future planning of greenways in the City.

Bike and Pedestrian Facilities. The City will encourage businesses and other organizations to make facilities, such as bike racks, lockers, and showers, available for employees and users who chose to bike or walk. Additionally, the City will require commercial and multi-family developers to include pedestrian routes between the public system and main entrances to the building or site.

5.5.4 Safety

Pedestrian Crossings. Most pedestrian accidents occur while a pedestrian is attempting to cross a roadway. The City is committed to promoting safe crossing areas for pedestrians. Three examples of recent safety initiatives include installing countdown timers at signalized intersections, installing a crosswalk signal near Oxbow Creek Elementary School, and installing median fencing on Zane Avenue. Pedestrian safety will be considered specifically for each crossing based on its unique conditions. Considerations could include, but not be limited to sight distances, lighting, roadway speed, and roadway width.

Safe Routes to School. Several schools are located in areas where pedestrian access is limited due to major roadways. Each school district maintains a list of “hazardous roadways” where students of certain ages or grade levels are not permitted to cross by foot. These roadways are typically high-volume collectors or arterials. The City is committed to working with the schools and residents on the specific issues or conditions of the roadways to make walking to school safe.

5.5.5 Construction & Financial Considerations

The following are policies for funding the construction of sidewalks and trails in new and existing neighborhoods (residential and business).

Sidewalks and Trails in New Neighborhoods. Costs for new sidewalks/trails in residential, commercial, and industrial development shall be borne 100 percent by the developer, including sidewalks along existing roadways adjacent to the site. Development agreements shall include the requirement for providing sidewalk/trails by the developer as per this policy location warrants/standards and City construction

specifications. Sidewalks/trails cost for County State Aid Highways and Municipal State Aid street construction or reconstruction shall be determined on a case by case basis.

Minor In-Fill Sidewalks. Cost for minor fill-in (200 feet or less) sidewalk/trail gaps in existing areas to meet this policy location warrants/standards shall be on a prioritized basis (including financial ability) and borne by the City's general fund as each adopted annual budget allows.

Major In-Fill or Additions. Existing areas may be considered for major fill-in (over 200 feet) or for additional public right-of-way sidewalk/trail upon receipt of a request from at least 51 percent of affected property owners, or upon recommendation of the City Manager. When City initiated, the sidewalk/trail will be assessed 20 percent to the adjacent property owners and the remainder borne by the City. When requested by property owners, the sidewalk/trail will be assessed 100 percent to the adjacent property owners.

5.5.6 Location Warrants, Standards, and Policies

The following are policies related to new street construction and reconstruction and where sidewalks and trails will be included.

General Construction Standards. The City will maintain construction standards for sidewalks and trails to ensure durability as well as placement within the public right-of-way. Certain situations may require specific sidewalk widths or placement. These standards would include signing and marking the sidewalks/trails and street crossings.

Maintenance. In order to minimize City expenses, snow removal is the responsibility of adjacent property owners. The City will plow sidewalks and trails adjacent to arterial roadways and certain Major collector roadways. Areas receiving priority City plowing will be nearest schools. Adjacent residents are encouraged to protect sidewalks, even those plowed by the City, from damage by trees, vehicles, or weather conditions.

Installation Warrants on Existing Roadways. Sidewalk installation in existing mature neighborhoods can be difficult, primarily due to existing vegetation, driveways, overhead utilities, and the like. In an attempt to minimize destruction of existing trees that give neighborhoods character and value, sidewalk installation locations shall be examined carefully. Installation warrants are described for existing roadways and reconstruction areas following this paragraph. Potential sidewalks and trails identified by the City are shown on Figure 5.5.8. Additional sidewalks may be installed at the request of a majority of the residents of a given block of roadway in a reconstruction area.

Arterial Roadway. Sidewalk one side, trail opposite side; or trail on both sides.

Major Collector Roadway. Sidewalk both sides/substitute trail one side if needed for trail system master plan.

Minor Collector Roadway. Sidewalk one side (east or south sides preferred).

Local Roadway. No sidewalk; unless for trail system master plan, significant pedestrian destination or transit opportunities, or request of the adjacent property owners.

Commercial/Industrial Roadway. Sidewalk or Trail determined by street classification, trail system master plan and/or significant pedestrian destination opportunities.

Local Roadway Adjacent to Parks or Schools. Sidewalk on the side of the block that includes park or school frontage.

Install sidewalks and trails around schools. In areas where bus service is not available to students, sidewalks should be installed to provide safe off-street routes to schools. Sidewalks should be installed on existing local streets within a half-mile of all elementary schools.

Use sidewalks to connect neighborhoods with transit. Most of Brooklyn Park's bus routes are on arterial and collector roadways. Most of Brooklyn Park's residents live on local streets. Providing connections from neighborhoods and transit routes will encourage transit ridership as well as improving safety and access for the users.

Coordinate sidewalks and trails with adjacent communities. Brooklyn Park has had a positive history of coordinating trails with neighboring communities. The city will continue to coordinate as opportunities for new trail and sidewalk corridors arise.

Construct at least one mile of sidewalks and trails in existing neighborhoods each year. As opportunities arise through street reconstruction and/or as budgeted, the City will construct at least one mile of sidewalks shown as "future" on the sidewalk and trails master plan.

Work with the school districts to coordinate safe routes to school. The City is committed to provide safe routes for children to get to school. The City will work with the school districts to identify those roadways deemed hazardous and identify solutions to removing barriers for walking to school.

Include safe pedestrian crossings when reconstruction arterial and Major collector roadways. The City will consider grade-separated pedestrian crossings such as bridges or underpasses when constructing or reconstructing major roadways, especially those roadways deemed "hazardous" by school districts.

5.6 Aviation Plan

This section explains aircraft operations and facilities in Brooklyn Park and addresses the land use and planning considerations created by the unique nature of air transportation. The facilities in Brooklyn Park include the Crystal Airport and the Gopher VORTAC (a regional instrument guidance signal transmitter). Other aviation opportunities not currently in Brooklyn Park, such as float planes and heliports, are also discussed.

5.6.1 Crystal Airport

The Crystal Airport is located within the communities of Crystal, Brooklyn Center, and Brooklyn Park. Approximately 79.9 acres of the airport's 433 acres are located within the corporate limits of Brooklyn Park.

The Crystal Airport is one of the seven publicly owned airports in the Metropolitan Airports Commission (MAC) system. It is classified as a minor airport in terms of its functional and operational role within the system. MAC has operated it as a general aviation airport since 1948. Miscellaneous private hangars are located at the airport and most are in poor repair.

MAC adopted the Long Term Comprehensive Plan for Crystal Airport in 2008 which included the following objectives:

<p>OBJECTIVES</p> <ul style="list-style-type: none">• Removes one main-wind and one cross-wind runway.• Provides several on-airport parcels for non-aviation development.• Uses existing vacant hangars to provide spaces in short and mid-term period.• Identifies potential new hangar areas to be developed by private funding, if need arises. <p><i>View to SE of Minneapolis CBD</i></p>	
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From the Metropolitan Council 2030 Transportation Policy Plan

Short Term Planning and Safety Considerations

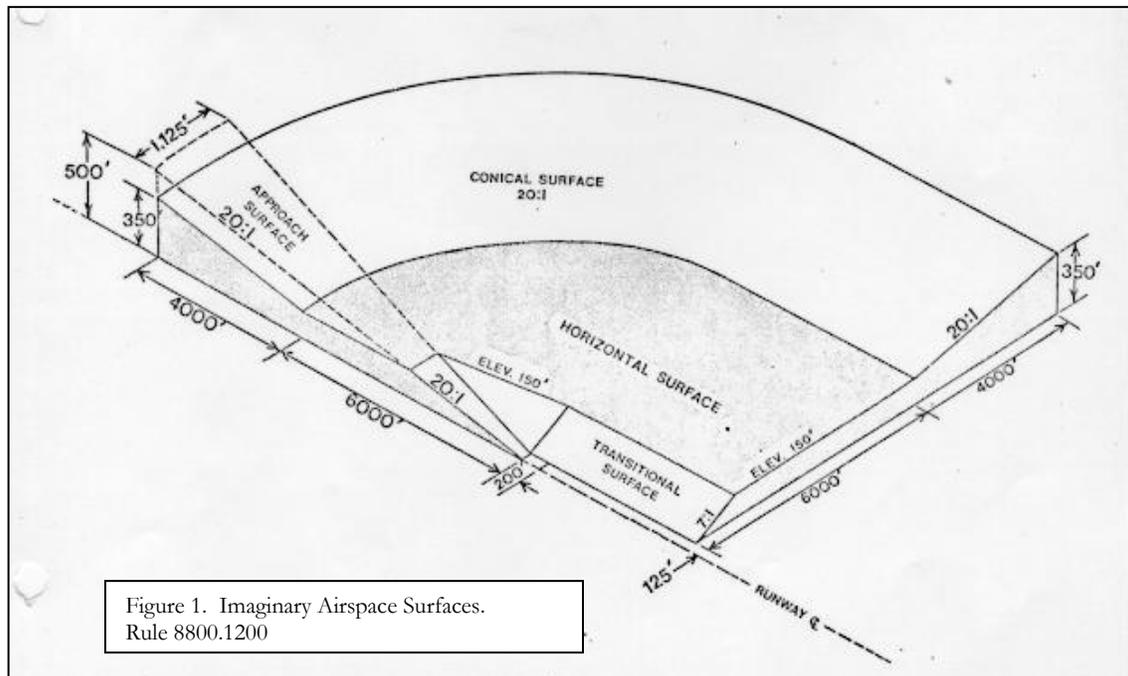
As the airport continues to operate, certain land use planning considerations must occur.

Under federal and state regulations, special zones are established around public airports to assure safety of aircraft operations. Land uses in these zones must be consistent with FAA and Minnesota Department of Transportation-Aeronautics rules.

The imaginary airspace surfaces as described in Rule 8800.1200 are shown in figure 1 below. Any structure or tree of greater height than any of these imaginary airspace surfaces is considered an “obstruction to a public airport.” The imaginary airspace

surfaces for Crystal Airport as they affect Brooklyn Park are shown in figure 2. In addition, objects are considered “general obstruction to air navigation” if they exceed certain heights:

1. Objects extending more than 500 feet above ground level at the site of the object.
2. Objects more than 200 feet above the ground or more than 200 feet above the established airport elevation, whichever gives the higher elevation, within three nautical miles of the nearest runway of an airport, and increasing in height in the proportion of 100 feet for each additional nautical mile of distance from the airport.



Brooklyn Park presently has no structures greater than 200 feet in height, except for a water tower. It is the policy of the City to review all application for development to determine if the proposed structure would be a “general obstruction to air navigation” or an “obstruction to a public airport.” The City will ensure that proper notification to the Commissioner of Transportation is made if any structure over 200 feet is proposed outside of either zone.

The existing minimum clear glide angle is 67:1 on the approach from the northwest. This slope produces a clearance of 46 feet at the intersection of 63rd Avenue and Douglas Drive and increasing to 52 feet at the intersection of 63rd and Edgewood Avenues, just outside of the airport (see figure 3 below). The City shall review all proposals for development within the area of the runway approach to allow for appropriate clearance.

Noise

Because aircraft are capable of creating noise, land use sensitive to noise should not locate in the vicinity of the Crystal Airport without special noise reduction building techniques. Examples of such noise sensitive uses may include hospitals, nursing homes, or certain precision manufacturing. The City will continue to work with the Metropolitan Airports Commission on airport noise related issues. Application of the Land Use Compatibility Guidelines for Aircraft Noise will be used for land use planning within the 2013 noise impact area depicted in the MAC’s *MIC Contours* figure below.

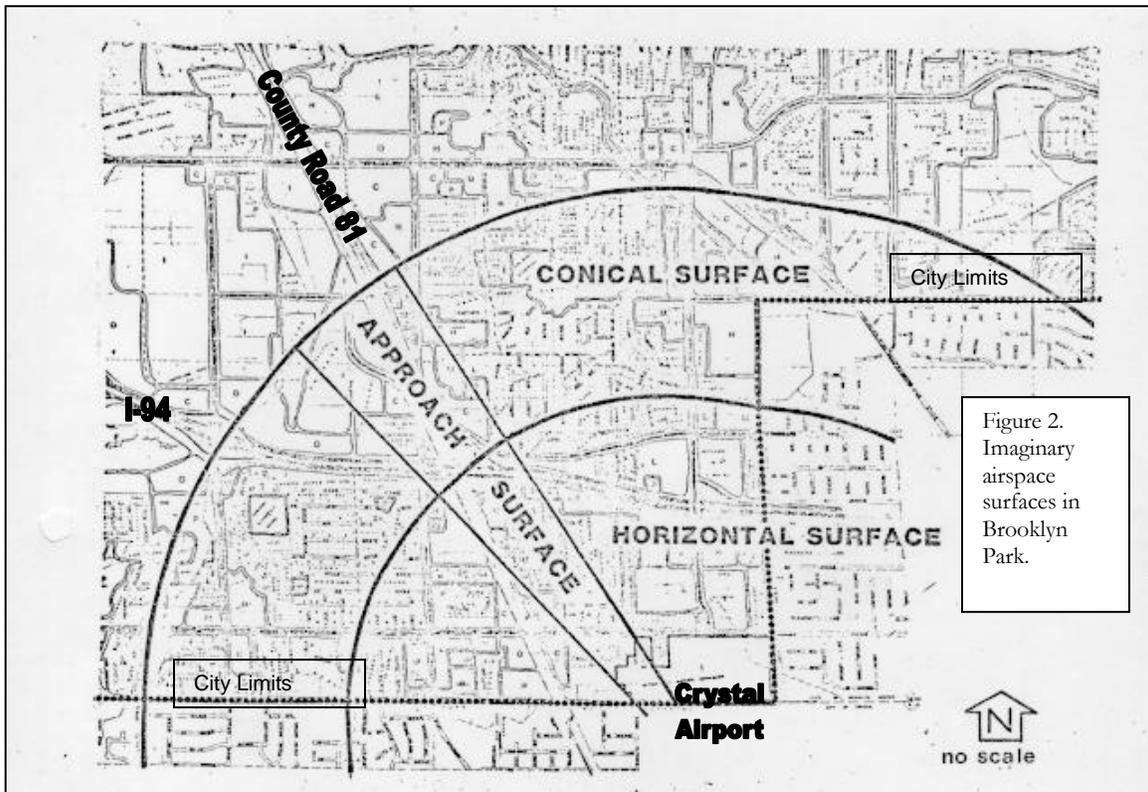
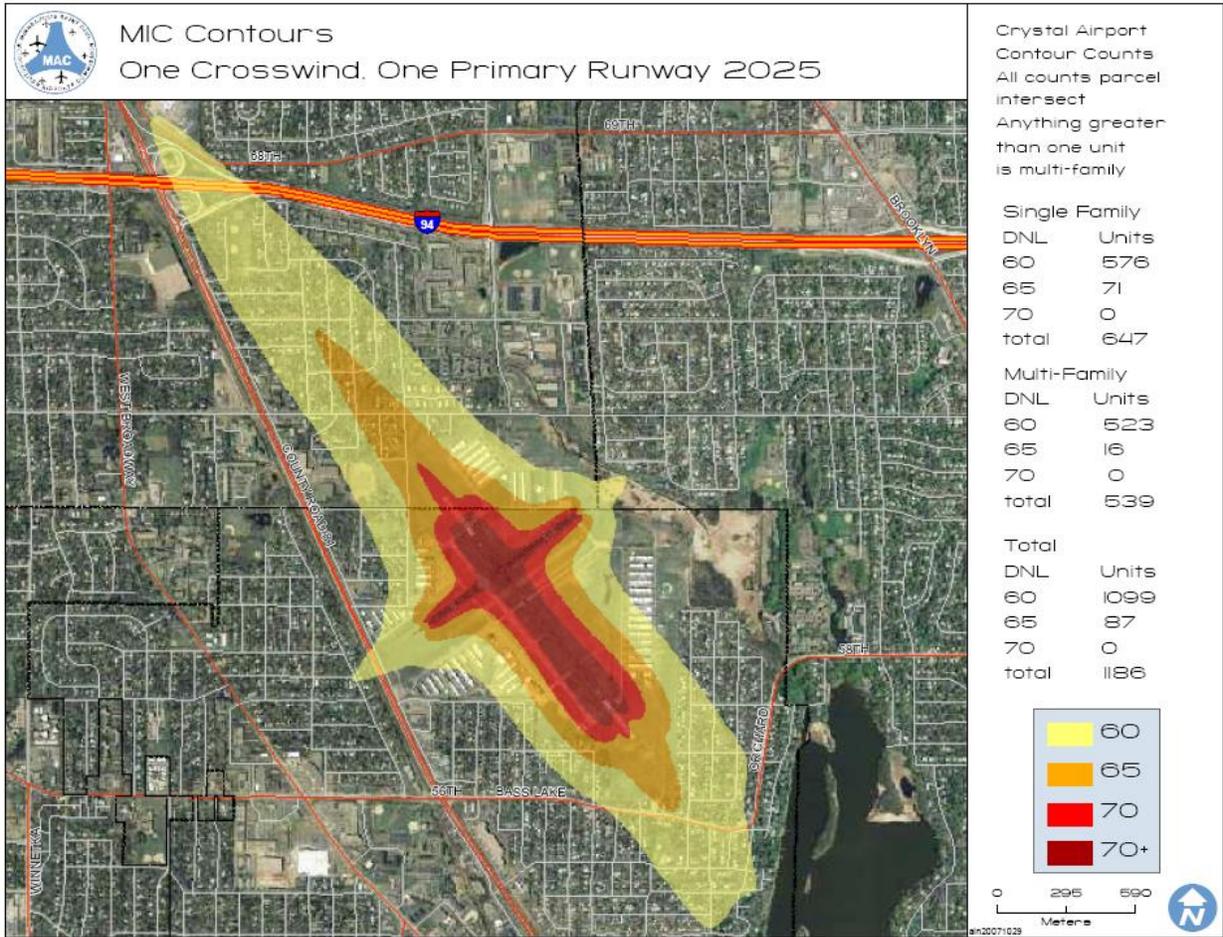


Figure 2. Imaginary airspace surfaces in Brooklyn Park.



Long-Term Planning and Safety Considerations

The Crystal Airport has experienced several consecutive years of declining use. Over the past few years, several air-based businesses have left the Crystal Airport. There are no commercial fixed-route passenger carriers. Nearly all of the airport’s use is from private recreational flights.

The MAC has closed one of the primary parallel runways and the turf crosswinds runway. With the closing of these two runways, MAC expects to have land available for non-aeronautical uses. If MAC pursues non-aeronautical development, they have committed to meeting with the city and the Metropolitan Council staff to discuss the potential uses and how the cities feel the parcels could best be utilized. MAC will work with the city to determine if zoning changes are appropriate for any non-aeronautical uses proposed.

5.6.2 Gopher VORTAC

The Federal Aviation Administration (FAA) operates an aircraft navigation facility in northern Brooklyn Park. This Very High Frequency Omni-Directional Range Tactical Air Navigation (VORTAC) is located on a 13-acre parcel lying north of

Oxbow Creek Drive and east of the Marvella neighborhood. The VOR is a ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees azimuth, oriented from magnetic north and is used as the basis for navigation in the National Airspace System¹. It serves as a navigational aid for cross-country air traffic and also for airplanes approaching the Metropolitan Airport Commission's airport system as well as airports in central Minnesota and western Wisconsin. To ensure the effectiveness of the facility, The FAA prefers to maintain a clear zone of at least 1000 feet from the VOR in which no structures may be located. This clear zone is subject to the position and height of the object or structure in relation for the VOR as well as the materials of the object or structure.

When the City of Brooklyn Park developed the Northern Area Master Plan in 1999, the FAA had indicated that the facility would be removed within several years as a new technology is implemented to provide air traffic navigation. Since that Comprehensive Plan Update, the City has worked with the FAA and the adjacent landowners on the status of the VOR. The FAA indicated that the ground-based VOR system would remain in place for several more years while a satellite-based system is refined. The ground-based system would then be preserved for several years as a back-up system. The FAA subsequently upgraded the facility to a Doppler system, which improves its reliability and decreases the impact of nearby obstructions.

The FAA owns development easements over the properties to the north and west of its property. No development easements are in place to the east and south. Two of these three parcels are a part of the "Oxbow Creek West" development. During its review period, the developer worked with the FAA to determine what areas must include height restrictions. Five of the proposed lots were determined to need restrictions to the type of house that could be constructed. The developer has indicated that he will work with the FAA on each house plan proposed for those lots. The City will not issue any building permits until the FAA approves the house plans.

The City will not prohibit development on land that the FAA does not own the rights for development. The City will see any prohibition on this land as a taking and the FAA must purchase the development rights from the property owner.

5.6.3 Heliports

No heliports currently exist in the city, however Brooklyn Park's current Zoning Code allows heliports as conditional accessory uses in the Business Park zoning district. With increased corporate presences along the T.H. 610 corridor, heliports may be attractive features for large businesses or for a hospital desiring an air-ambulance component. The City will notify the Commissioner of Transportation should a heliport be proposed.

¹ From letter to Todd Larson from Charles Faso, Real Estate Contracting Officer, Federal Aviation Administration, May 6, 2005.

5.6.4 Float Planes/Sea Planes

The Mississippi River forms the east boundary of the City. Much of the river area could accommodate float planes. The Coon Rapids Dam area would not be suitable for airplane activity due to the currents. River Park provides public access to the river, although it is not designed specifically to accommodate aircraft.

5.6.5 Private Airports

No private airports exist in Brooklyn Park any more. The last private dirt runway was removed in 2004 with the development of the “Prairie Gardens” neighborhood (near Brunswick Avenue and Oxbow Creek Drive). When this private runway was created, Brooklyn Park was a rural community. Now that the City is predominately urban and suburban, this type of use is not seen as compatible. Other than business heliports, the City will not encourage or allow private airports.

5.7 Goals, Policy Objectives, and Implementation Actions

Integrated System. The City will support an integrated transportation system consisting of roadways, transit, and off-street pedestrian ways.

Target Development Area. The City will work with Hennepin County, MNDOT, and Metro Transit with the Target project.

Transportation Choice. The system will be conducive to choices in the mode of transportation Brooklyn Park residents and visitors use. Users should not be forced to use only automobile transportation because no other mode is available.

Link Transportation to Land Use. The City will consider transportation in its land use decisions, including the relation between different neighboring land uses.

Promote Non-Automotive Transportation. The City will include pedestrian, bicycle, and transit use in public and private developments. Walkways and Transit in High Density Housing and Commercial Areas will be required.

Appendix