Brooklyn Boulevard Corridor Study

Vision and Goals
Existing Conditions

City of Brooklyn Center

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Introduction

Brooklyn Boulevard serves as a primary corridor within Brooklyn Center's "City Center"—the triangle formed by TH 100, Brooklyn Boulevard, and I-694. As an "A" Minor Arterial, the Boulevard not only provides access from Highways 100 and I-694 to the Brookdale Mall site—a former regional shopping destination poised for redevelopment—and surrounding commercial areas, but also provides an alternative transportation connection between Minneapolis and its northern suburbs.

Land uses adjoining Brooklyn Boulevard reflect the evolution of the community from the time Brookdale Center was constructed in 1962 until today: post-WWII housing that has remained in residential use, similar housing converted to commercial uses, smaller locally-owned commercial, national chain commercial, and offices. The quality and character of development along the corridor also varies significantly reflecting eras of prosperity and disinvestment. This incremental development of the past 50 years has resulted in a corridor that does not function at an optimal level; numerous driveways and access points create safety and operational concerns for motorists, a lack of good sidewalks and trails inhibit pedestrian and bicycle circulation, potentially incompatible adjacent land uses reduce quality of life for current occupants and dampen redevelopment opportunities, and transit facilities are not well integrated into the overall framework.

Brooklyn Center's Comprehensive Plan identifies Brooklyn Boulevard as a critical element within the City Center, which merits focused efforts to renew, revitalize and redevelop. In keeping with the recommendations of the Comprehensive Plan, the City of Brooklyn Center is working toward a vision for the future of Brooklyn Boulevard with agency and community stakeholders.

The purpose of this study is to create a vision and future roadway concepts for the Brooklyn Boulevard Corridor that can become the foundation for identifying financial resources to fund preliminary engineering and construction, to be the basis to redevelop initiatives and review of redevelopment proposals.

The Existing Conditions Study presents the Vision as articulated to date, as well as an assessment of Existing Conditions in the corridor. The purpose of this report is to assemble and analyze data for the corridor to identify issues. Identification and mapping of corridor needs, deficiencies, constraints, and opportunities will assist in refining the corridor vision and goals, as well as the future concepts for the corridor.

Vision

The following statement is provided as the future vision guiding the Brooklyn Boulevard Corridor Study. The vision addresses five topic areas:

- Roadway functionality
- Land Use, Community Character and Redevelopment
- Transit
- Pedestrian and Bicycle Facilities
- Implementation

A vision statement is provided for each topic area, followed by specific goals to be accomplished as part of the Corridor Study.

Vision for Roadway Functionality:

In the future, the City and its project partners would like to see Brooklyn Boulevard effectively function as an "A" Minor Arterial on the regional system (CSAH 152), providing relief and support for Interstate 694 (I-694) and Trunk Highway (TH) 100. Further, as an "A" Minor Arterial, the function of this roadway emphasizes mobility over parcel access, efficiently moving vehicular traffic through Brooklyn Center as well as providing regional access to I-694 and TH 100. The I-694/TH 100 interchange lacks accommodations for eastbound to southbound traffic and northbound to westbound traffic. Brooklyn Boulevard provides these connections.

A plan for replacing direct parcel access from Brooklyn Boulevard with a system of frontage/backage roads or consolidating access through shared driveways where frontage/backage roads are not possible, should be developed and consistently implemented as opportunities arise from parcel acquisition or redevelopment. This access management plan will also address spacing of full-movement intersections with local streets, providing sufficient spacing between full-movement intersections to facilitate mobility where possible and meet the intentions of the Hennepin County access management plan.

Intersections should be designed to accommodate forecast turning movements through 2030 and sufficient right of way preserved to construct future roadway improvements, multi-modal needs, and provide sufficient set back to adjacent land uses.

Existing safety concerns should be addressed through geometric design, traffic controls and access management.

Corridor Study Goals:

- Identify measures to improve roadway safety for all users where there are safety concerns.

- Identify measures to improve traffic operations at critical intersections both under existing and 2030 forecast conditions.

- Identify opportunities to eliminate or minimize access from Brooklyn Boulevard to private properties and minor side streets to enhance mobility and improve safety. Identify alternative access where needed.

- Identify appropriate future typical cross sections for key segments of the corridor addressing all modal needs; assess available right of way and identify right of way preservation needs for these future cross sections.

Vision for Land Use, Character, and Redevelopment:

In the future, land use types and scale of development should be appropriate to Brooklyn Boulevard's transportation function as an "A" Minor Arterial as well as its role as a community gateway. Appropriate setbacks from Brooklyn Boulevard should be provided. Single-family homes with access directly on Brooklyn Boulevard should be phased out and replaced with multi-family and/or commercial use as redevelopment occurs or property owners are willing to sell. Access to all land uses along the corridor should be provided via backage roads and/or the local network to facilitate mobility on Brooklyn Boulevard. Land uses fronting on Brooklyn Boulevard should also provide a transition to the single-family neighborhoods behind them through appropriate street design, building scale and buffering.

The visual character of Brooklyn Boulevard should support quality land use by providing appropriate green and/or open space, streetscaping, lighting and landscaping. Stormwater treatment should be attractive as well as effective in improving water quality. The improved aesthetic character of Brooklyn Boulevard redevelopment will result in economic development for the City.

Redevelopment opportunities should be appropriately sized to attract high quality development, provide appropriate site access, promote effective internal circulation and provide amenities which enhance the character of the corridor. Brooklyn Boulevard provides access from TH 100 to the Shingle Creek Crossing redevelopment area.

Brooklyn Boulevard should promote and enhance all modes of transportation in keeping with *Complete Streets* principles. Although there is no singular design prescription for *Complete Streets*; the Brooklyn Boulevard study will look at sidewalks, trails, boulevard widths, on-street bike lanes, shoulders, special bus accommodations, comfortable and accessible public transportation stops, frequent and safe crossing opportunities, median islands, accessible pedestrian signals, curb extensions, narrower travel lanes, and other treatments as appropriate.

Corridor Study Goals:

- Identify areas of land use not fully compatible with the transportation function of Brooklyn Boulevard. Recommend land use changes that would improve compatibility in terms of character, scale and access.

- Identify measures to improve transitions from Brooklyn Boulevard land uses to adjacent single-family neighborhoods.

- Develop a streetscape concept that relates to the character of other City Center public improvements. Identify appropriate opportunities for green space, open space and/or stormwater treatment.

- Identify measures that will promote and enhance *Complete Streets* principles.

Vision for Transit:

Metro Transit strives to deliver environmentally sustainable transportation choices that link people, jobs, and community conveniently, consistently, and safely. The vision for transit along Brooklyn Boulevard will strive to meet this mission.

Transit facilities along Brooklyn Boulevard should promote efficient flow of buses as well as attract and promote the comfort of transit users. Transit rider facilities (bus stops, shelters, park and ride lots, etc.) should be provided in locations that promote personal safety and comfort for waiting riders; however, locational changes should be minimized to avoid rider confusion. Roadway enhancements (transit shoulders, etc.) should be designed to promote the efficient flow of transit vehicles and address roadway safety concerns. The future roadway should be able to be modified to incorporate longer term transit improvements (fixed route transit, etc.).

Corridor Study Goals:

- Identify opportunities to enhance transit rider safety and comfort in the corridor.

- Identify measures to improve transit operations in the corridor.

- Identify opportunities to support or enhance transit ridership in the corridor including transit supportive land use and good connections between transit facilities and rider origins and destinations.

- Identify deficient pedestrian crossings to improve access to bus stops.

Vision for Pedestrian and Bicycle Facilities:

Sidewalks and trails should provide continuous systems for walkers and bicyclists, connecting residential areas, transit facilities, recreational facilities, and shopping/employment areas. Sidewalks and trails should be offset a sufficient distance from Brooklyn Boulevard to provide a buffer from arterial traffic. All sidewalk and trail facilities should be ADA compliant, provide safe crossings of roadways and transit facilities, and be placed appropriately given the roadway function. Of particular concern is the proposed Twin Lakes Regional Trail, which is planned to cross Brooklyn Boulevard near 55th Avenue. The network of on-street and off-street facilities should be compatible with surrounding roads such as facilities in Minneapolis (49th Avenue and Osseo Road).

Corridor Study Goals:

- Identify gaps in the current sidewalk and trail systems and recommend options for providing a continuous pedestrian and bicycle system.

- Identify measures to improve safety and comfort for walkers and bikers along Brooklyn Boulevard.

- Identify appropriate pedestrian and bicycle facilities within future typical cross sections for Brooklyn Boulevard.

- Identify appropriate pedestrian crossing enhancements that connect key destinations and other sidewalk and trail system routes across Brooklyn Boulevard.

Vision for Implementation:

The final Brooklyn Boulevard concept should be accompanied by an implementation plan that phases recommended improvements in appropriately-sized pieces that can be funded and constructed in a reasonable manner. The Brooklyn Boulevard Corridor Study should result in a long-term vision shared by the transportation stakeholders represented in the Corridor – the City of Brooklyn Center, Hennepin County, Three Rivers Park District, Metro Transit and the Minnesota Department of Transportation – and cooperatively implemented over time.

Corridor Study Goals:

- Identify a comprehensive set of projects that will build toward the long-term vision identified in the corridor study. Projects should be appropriately sized for anticipated funding sources and appropriately defined to fall within participating agency authorities.

- Identify potential funding sources, agency responsibilities and timelines for each project.

- Identify appropriate sequencing and/or timelines for each project.

- Identify measures to sustain long-term agency commitment to the Corridor Study recommendations.

- Identify funding source and operations/maintenance strategies for streetscape components.

Demographics

Context

Understanding population trends for population and employment is critical to planning for future land use and transportation needs. In order to understand how the corridor will continue to change and evolve in the future, it is essential to identify past development trends and anticipate expected future conditions. Understanding the demographic trends in Brooklyn Center will help shape long-rage concepts for Brooklyn Boulevard, including selecting appropriate roadway concepts to accommodate changes in traffic, and guiding land uses to fit community needs.

Existing Conditions

Data from the US Census (2010), Minnesota Department of Employment and Economic Development, and the Metropolitan Council were used to summarize future population, number of households, and retail and non-retail employment trends. These measures were examined by Traffic Analysis Zones, or TAZs, to better correlate demographic changes with future traffic conditions. See Figure 1 for a map of TAZs analyzed. Table 1 on the next page provides a summary of Metropolitan Council Regional forecasts.

In 2030, projections indicate that the population for the area surrounding the corridor will remain at 2010 numbers (approximately 10,000 people). In some respect, this depicts a corridor that contains neighborhoods that are fully developed. However, a slight increase in new households (approximately 100 households) is projected over the next twenty years. This increase is expected to occur on the west side of Brooklyn Boulevard in TAZs 722 and 730.

Additional growth is expected to occur along the corridor over the next twenty years. This growth will be a result of redevelopment initiatives that will reflect new commercial and office uses, as guided by the City's Comprehensive Plan. Therefore, employment is predicted to increase by 242 new jobs across the entire corridor. This increase is broken out by retail and non-retail jobs. Retail employment is anticipated to increase by 45 jobs and non-retail employment is anticipated to increase by 125 jobs. The majority of this growth will occur in TAZ 732, which includes Shingle Creek Crossing, a 65 acre redevelopment site that was once anchored by the Brookdale Mall.

Adjustments to the regional forecasts may be necessary as redevelopment gains momentum along the corridor to better reflect anticipated developments. These assumptions will need to be discussed and coordinated with the Metropolitan Council. These discussions will be timely as the Metropolitan Council updates the 2030 Regional Development Frameworks, known as Thrive MSP 2040 and reassess the region's population, household and employment forecasts. These efforts will be a foundation for the 2018 Comprehensive Plan Updates.

Table 1: Population, Household and Employment Forecasts by TAZ

	Population			Households		
TAZ	2010	2030	Difference	2010	2030	Difference
721	527	527	0	223	229	6
722	2,503	2,503	0	1,154	1,184	30
730	5,016	5,016	0	1,939	1,988	49
731	1,979	1,979	0	725	743	18
732	0	0	0	0	0	0
Total:	10,025	10,025	0	4,041	4,144	103

	Employment			Retail Employment			Non-Retail Employment		
TAZ	2010	2030	Difference	2010	2030	Difference	2010	2030	Difference
721	880	900	20	50	50	0	830	850	20
722	773	790	17	30	30	0	743	760	17
730	690	710	20	210	215	5	480	495	15
731	665	680	15	607	610	3	58	70	12
732	2,800	2,970	170	2,355	2,400	45	445	570	125
Total:	5,808	6,050	242	3,252	3,305	53	2,556	2,745	189

Source: Metropolitan Council Regional Forecasts by TAZ (August 2011).

Land Use

Context

Brooklyn Boulevard currently is lined by a variety of land uses ranging from single and multi-family residential, office, retail, schools and places of worship. Brooklyn Boulevard has evolved over the years into an "A" Minor Arterial roadway with high traffic volumes. The combination of parcels with direct access to a roadway with large roadway traffic volumes, higher travel speeds, and shallow house setbacks, no longer makes Brooklyn Boulevard a desirable residential environment for single-family households. The future vision for land uses along the corridor focuses on a transition to a high quality mix of multi-family residential and commercial uses. The City's long-term goal is to redevelop single-family parcels along Brooklyn Boulevard to land uses better suited for this roadway, where higher traffic volumes would be seen as a benefit, rather than a drawback, to the adjacent land use.

Existing Conditions

A number of single-family parcels abutting Brooklyn Boulevard have been guided to either retail or office/service uses in the City's 2030 Comprehensive Plan (see Figure 2 in appendix). The Comprehensive Plan also shows the guiding of two parcels located south of the Brooklyn Boulevard/TH 100 interchange to a townhome, multifamily, retail, office, or public/semi-public land use. Beyond the comprehensive plan specified parcels, 24 single-family residential parcels and one multifamily parcel currently exist with direct Brooklyn Boulevard access. Twelve of these parcels are located north of Admiral Lane, while the other 12 are located south of TH 100.

Should access be eliminated for the parcels identified in the comprehensive plan or for the parcels mentioned above as a result of the roadway reconstruction project, potential alternative uses will need to be identified for these parcels. Given the size, location and configuration of these parcels, the following list of issues, opportunities and constraints will need to be addressed when identifying alternate land uses:

- **Small parcel size.** Parcels may be needed to be assembled in order to create a parcel large enough to support an alternate land use.

- **Shallow lot depths.** Any future use will need to adequately accommodate site circulation needs and building setbacks.

- **Adjacent single-family uses.** Any alternate use should not adversely impact adjacent single-family land uses, but rather provide an appropriate buffer between the single-family uses and Brooklyn Boulevard.

- **Lack of driveway access to adjacent streets.** Additional parcels may need to be acquired to provide side street access to these parcels.

- **Remnant single-family lots.** Once the identified single-family lots have been redeveloped into alternate land uses, remnant single-family lots may result. These remnant parcels would still functional because existing access is provided from a side street, but they may appear to be out-of-place due to the removal of adjacent single-family lots.

Beyond the 24 parcels identified above, there are additional single-family and multifamily lots that abut the corridor, but could remain viable due to the fact that they face onto streets other than Brooklyn Boulevard and are adjacent to an intact single-family neighborhood, or they are separated from Brooklyn Boulevard by a median island and frontage road, which set these houses back from Brooklyn Boulevard with access provided by the frontage road.

Transit

Context

Transit is an integral component of the transportation infrastructure within the Brooklyn Boulevard Corridor study area. In the Twin Cities, there are five types of public transit service: fixed-route bus service, light rail transit (LRT), commuter rail, dial-a-ride service, and vanpools. Fixed Route transit service is provided by Metro Transit and the Metropolitan Council's Metropolitan Transportation Service (MTS). There are currently ten fixed bus routes operating on Brooklyn Boulevard within the study area and an additional three routes providing connecting service at a the Brooklyn Center Transit Center (BCTC), but which do not operate on Brooklyn Boulevard. In compliance with the Americans with Disabilities Act of 1990 (ADA), individuals who cannot use fixed route bus service due to a disability or health condition are provided service through Metro Mobility paratransit service. Within Brooklyn Center this service is provided 24 hours a day, on weekdays, Saturdays, and Sundays.

Existing Conditions

Areas of the Twin Cities are grouped into one of five distinct Transit Market Area categories, as defined in Appendix G: Regional Transit Standards of the 2030 Transportation Policy Plan, adopted by the Metropolitan Council in November of 2010. The categories are calculated using the factors of population density, employment, and transit dependent population. The category assigned to an area determines the level and type of transit service that is appropriate for that are (see Table 2). For instance, Market Area I has the highest concentration of people likely to use transit, and as such has the highest levels of transit service. Market Area V has the lowest concentration of people and jobs and thus can only support the lowest levels of transit service. Furthermore, regional design standards are custom-tailored for each transit Market Area. These standards represent typical design guidelines for transit service, though exceptions exist based on specific conditions. Additional information on the characteristics and service design for each Market Area can be found in the Metropolitan Council's 2030 Transportation Policy Plan.

Table 2: Market Areas -- Suggested Service Types

Transit Market Area	Suggested Service Type
Area I	Primary emphasis on regular route service. Downtown area circulators possible
Area II	Primary emphasis on regular route service. Crosstown routes and limited stop services are appropriate to link major destinations.
Area III	A mix of regular route and community circulator service complemented by dial-a-ride service in specific cases. Community circulators should tie into regular route regional service at a transfer point.
Area IV	Peak period express service, if potential demand for service is sufficient to support at least three peak-period trips. General public dial-a-ride services are appropriate.
Area V	Primary emphasis on general public dial-a-ride services
ADA Paratransit Service	Paratransit service as determined by state and federal regulation. See ADA section of this appendix for additional details.
Transitways	Transitway service is unique to each transitway corridor, and is determined through detailed planning and study unique to individual transitway corridors.

Source: Appendix G: Regional 2030 Transportation Policy Plan

The Brooklyn Boulevard corridor study area meets the Transit Market Index thresholds for Transit Market Area II. According to the Regional Transit Standards, Market Area II is defined as having: "high to moderately high population and employment densities yielding a market area that is conducive to fixed route transit operations, but not as intensive as in Market Area I." Market Area II features a large variety of transit service options including express, urban radial, and urban crosstown. Additionally, many areas within Market Area II are served by suburban local and/or suburban circulator service.

The geographic extent of Market Area I is currently limited to the downtown cores of Minneapolis and Saint Paul and the densely populated areas in the immediately surrounding area. Because Market Area designation is primarily driven by population and employment density, re-designation of the Brooklyn Boulevard Corridor study area to Market Area I would require a significant increase of these densities within the study area.

As outlined in the Metropolitan Council's 2030 Transportation Policy Plan, many of the service standards for Market Areas I and II are similar, or even identical. These similarities include transit service options and service span. Some service standards, such as route spacing and minimum frequency and maximum route spacing have less intensive standards to reflect the less intensely developed areas being served. However, these standards represent only the minimum service levels that must be provided. If specific areas within Market Area II require more intensive transit service than the standards dictate, transit service will typically be designed to match the need.

No transitways are being developed in the Brooklyn Boulevard Corridor study area; however, existing and planned transitways are near the corridor. Northstar Commuter Rail opened in 2009 and provides service from Big Lake to downtown Minneapolis. The nearest station to the study area is in Fridley.

The Bottineau Transitway Draft Environmental Impact Statement (DEIS) is currently evaluating alternatives for high-frequency transit options that will connect downtown Minneapolis to communities in the northwestern suburbs. As a part of the DEIS, bus connections from nearby communities (including Brooklyn Center) to the Bottineau Transitway are being planned. Although the Bottineau Transitway is not in the Brooklyn Boulevard Corridor study area, connections from the study area to the planned transitway will provide greater access to the regional transitway system.

Fixed Route Service

The location of fixed route service in the study area is shown in Figure 3. In total, the routes consist of ten local and three express routes. A summary of the routes operating on Brooklyn Boulevard, including route type, operator, and approximate frequencies, is shown in Table 3. Similar information for the three routes connecting to the BCTC, but not operating on Brooklyn Boulevard, is shown in Table 4.

Because of the BCTC's location to the east of Brooklyn Boulevard on County Road 10, transit is not provided continuously along the corridor. Service on Brooklyn Boulevard south of 55th Avenue North is primarily provided by Routes 5, 19, 721, and 724. Service on Brooklyn Boulevard north of 58th Avenue North is provided only by Route 723. No service is operated on Brooklyn Boulevard between 55th Avenue North and 58th Avenue North.

Table 3: Brooklyn Boulevard Corridor Transit Service Summary

Rte	Type	Provider	Route Description	Approximate Frequency (min)				
				Peak	Mid	Eve	Sat	Sun
5	Local	Metro Transit	Brooklyn Center to Mall of America via north, downtown, and south Minneapolis	5-10	7-8	10-15	10	10-15
19	Local	Metro Transit	Brooklyn Center, Robbinsdale & north Minneapolis to downtown Minneapolis	8-15	15	15-20	15-20	20-30
22	Local	Metro Transit	Brooklyn Center to south Minneapolis via downtown Minneapolis	11-15	20	20-30	20	30
717	Local	MTS	Brooklyn Center to Plymouth	60	60	60	-	-
721	Local	Metro Transit & MTS	Hennepin Technical College to Brooklyn Center or downtown Minneapolis	30-60	60	60	60	60
723	Local	MTS	Brooklyn Center to Starlite Transit Center via North Hennepin CC	30	30	60	60	60
724	Local	Metro Transit	Brooklyn Park to Brooklyn Center or downtown Minneapolis	30	30	30	30-60	30-60
760	Exp	Metro Transit	Brooklyn Park to downtown Minneapolis	15-30	-	-	-	-
761	Exp	Metro Transit	Brooklyn Park & Brooklyn Center to downtown Minneapolis	5 trips	-	-	-	-
767	Exp	Metro Transit	Brooklyn Park to downtown Minneapolis	1 trip	-	-	-	-

Table 4: Transit Service at BCTC, Not Operated on Brooklyn Boulevard

Rte	Type	Provider	Route Description	Approximate Frequency (min)				
				Peak	Mid	Eve	Sat	Sun
722	Local	Metro Transit & MTS	69th Avenue & Humboldt Avenue or 83rd Avenue & Noble Avenue to Brooklyn Center	15-30	30	30	30	30
762	Local	Metro Transit	Brooklyn Center Transit Center to downtown Minneapolis	2 trips	-	-	-	-
801	Local	MTS	Brooklyn Center or Columbia Heights to Roseville	3-4 trips*	-	-	-	-

* *Frequency refers only to trips serving the BCTC*

Average weekday boardings for the routes operating on Brooklyn Boulevard are shown in Table 5. Route 5 currently carries the largest number of passengers both at a route-level total and for stops within 1/4-mile (five minute walk) of the study area. The next three highest boardings for stops within 1/4-mile are found on Routes 19, 724, and 760. The remaining routes board between 2 and 80 passengers per day on stops within 1/4-mile of the study area. Boardings at the BCTC represent a significant portion of the total boardings on many routes, comprising approximately one-third of the boardings on Routes 721, 723, and 724.

Table 5: Average Weekday Boardings

Rte	Type	Total Boardings	Boardings Within 1/4-Mile of Brooklyn Boulevard		Boardings at BCTC	
			Boardings	percent	Boardings	percent
5	Local	18,349	371	2.0%	773	4.2%
19	Local	6,452	217	3.4%	387	6.0%
22	Local	6,890	80	1.2%	352	5.1%
717	Local	399	35	8.8%	72	18.1%
721	Local	950	61	6.4%	279	29.3%
723	Local	733	57	7.8%	264	36.0%
724	Local	2,524	155	6.1%	813	32.2%
760	Express	638	172	27.0%	0	-
761	Express	305	31	10.3%	18	5.8%
767	Express	244	2	0.8%	0	-

The distribution of average weekday boardings within the study area is shown in Figure 4. Boardings in the area are predominantly concentrated at the BCTC, the intersection of Xerxes Avenue and Bass Lake Road, and the stops immediately north and south of Xerxes/Bass Lake Road. High numbers of boardings are also found at the 65th Avenue and Brooklyn Boulevard Park and Ride, at Brooklyn Boulevard and 53rd Avenue, and on 51st Avenue. The majority of the remaining stops have fewer than 10 boardings per day.

Transit Infrastructure

Bus Stops and Shelters

The location of bus stops and shelters within the study area are shown in Figure 6. There are currently 45 bus stops within 1/4-mile of the Brooklyn Boulevard corridor. On average, these bus stops supply 1,190 weekday boardings and are spaced at approximately eight stops per mile throughout the study area.

Metro Transit's standard for providing bus shelters is minimum daily boardings of 25 for areas outside of Minneapolis and Saint Paul. With the exception of the stop at Brooklyn Boulevard and 51st Avenue, which has average weekday boardings of 39, all stops in the study area that meet the shelter boarding threshold appears to have shelters installed.

Brooklyn Center Transit Center

The BCTC acts as the primary transit hub in the area (see Figure 5 at the end of this document for a picture). With the exception of Routes 760 and 767, all routes operating on Brooklyn Boulevard in the study area use the BCTC as either a route terminal or a major mid-route time point. Routes serving BCTC include: 5, 19, 22, 717, 721, 722, 723, 724, 761, 762, and 801.

The BCTC was originally located adjacent to the Brookdale Shopping Center. After a series of moves within the area, the transit center was relocated to its current location immediately to the north of the shopping center across Bass Lake Road. The current facility consists of seven individual bus stop locations surrounding a single-story heated structure.

With the closing of the Brookdale shopping center, transit-supportive land uses surrounding the transit center have mostly been limited to a small cluster of apartment buildings to the north of the site. Because these uses are so limited, boarding activity at the BCTC is predominantly characterized by transfer activity between routes rather than as a major origin or destination.

65th Avenue & Brooklyn Boulevard Park & Ride

The 65th Avenue Park and Ride, constructed in 1995, is one of 111 regional park and ride facilities and currently has a capacity of 239 vehicles (see Figure 8 for an aerial view). This park and ride includes a heated shelter for customer use. The results of the 2010 park and ride system survey prepared by Metro Transit show 140 users in 2010 for a percent utilization of 58.6 percent. This is only slightly less than the system-wide percent utilization of 60.2 percent. Usage of the park and ride peaked in 2007 with 182 users, declined from 2007 to 2008 and again from 2008 to 2009, and increased from 2009 to 2010. This drop in usage was most likely the result of significant unemployment and lower gas prices and mimics the change in the overall usage rates for the system as a whole (see figure 7 which illustrates the capacity and usage from 2007 to 2010).

Issues, Limitations, and Constraints

The provision of effective and productive transit service to the Brooklyn Boulevard corridor is affected primarily by two limitations: 1) The overall automobile-focused design of the roadway and 2) land use patterns that are not conducive to transit.

Much of the corridor is unwelcoming to pedestrian users, and as a result is also unwelcoming to transit. Sidewalks along the corridor are generally narrow or non-existent. Additionally, there is often no buffer

between pedestrians on the sidewalk and vehicles on the road. An example of such a buffer is a grassy boulevard strip between the sidewalk and the road. These buffers may be enhanced further by providing physical barriers between the two uses in the form of trees planted in the boulevard area and/or allowing parking on the side of the street. The roadway speed of 40 miles per hour (mph) is also a detractor for pedestrian use, as well as the frequent wide intersection crossings. Overall, the roadway design is more suited to total throughput than providing direct access to destinations.

Transit suitability is also hindered by surrounding land uses, a large number of vacant lots, and access that is principally designed for automobile use. Transit service works most effectively in areas with compact development that is pedestrian-oriented and presents a mix of uses that provides both origins and destinations for transit customers.

Trails and Sidewalks

Context

The vision for Brooklyn Boulevard includes a trail and sidewalk system that provides a continuous, safe, and comfortable network. Direct field observations and mapping analyses were used to provide an overview assessment of the connectivity and condition of the existing trails and sidewalks in the Brooklyn Boulevard corridor. The analysis focuses on several key aspects of the trail and sidewalk network that influence user safety, comfort, and convenience:

- Continuity
- Connectivity to Community Destinations
- Grade-separated Interchange Crossings
- At-grade Intersection and Driveway Crossings
- Spatial Relationship of Trails and Sidewalks to the Roadway
- Streetscape Character

The analysis identifies a number of opportunities for improved pedestrian and bicyclist facilities that will support the City's stated goal to "reduce reliance on the private automobile and encourage walking and transit use." The City has invested in the sidewalk network to provide good pedestrian access to most destinations. Accommodations for bicyclists are lacking. Further discussion is necessary as the project develops to meet Hennepin County's goal to better accommodate bicyclists.

Existing Conditions

Existing and Planned Trail Networks

The Brooklyn Boulevard corridor is shown as a future bikeway with "Full Accommodation" in the *Hennepin County Bicycle System Plan* (Hennepin County Plan). The "Full Accommodation" designation recommends both on-road and off-road facilities for bikers within or adjacent to the road right of way. The City's 2030 Comprehensive Plan does not show a proposed future trail along Brooklyn Boulevard. West of Brooklyn Boulevard, Bass Lake Road is shown in the Hennepin County Plan as an existing bikeway. East of Brooklyn Boulevard, Bass Lake Road is shown as a future bikeway with full accommodation. See Figure 9.

The Three Rivers Park District regional trail system gives Brooklyn Boulevard the potential for good pedestrian and bicyclist access to the greater regional park system and other adjacent communities in the northwest metropolitan area. The Twin Lakes Regional Trail crosses the Brooklyn Boulevard corridor at 55th Avenue and extends west to Crystal Lake and east to the Mississippi River. The Twin Lakes Regional Trail subsequently connects with the Shingle Creek Regional Trail approximately one half mile to the east, which provides access to additional recreational areas. Regional trail wayfinding signage that identifies local destinations was installed by Three Rivers Park District in 2010 along the regional trails in the City of Brooklyn Center. A district wayfinding system that complements Three Rivers Park District's

system could aid in the public's understanding of local destinations, along with sidewalks and trails available to reach these destinations.

A deficient regional trail crossing currently exists along the Twin Lakes Regional Trail at the intersection of 55th Avenue and Brooklyn Boulevard. Reconstruction of Brooklyn Boulevard provides an opportunity to improve this regional trail crossing. The Twin Lakes Regional Trail Master Plan states that besides modifications to the existing median and turn islands on the south side of this intersection, additional improvements that could be considered include countdown timers and/or traffic signal adjustments.

Trail and Sidewalk Continuity

Sidewalks are continuous for most of the length of the study area on both sides of the roadway. The one exception is on the west side between Bass Lake Road and 55th Avenue, where the sidewalk route shifts to the residential frontage road for 2000 feet. The corridor currently only has one small segment of off-road "trail" that accommodates both pedestrians and bicyclists along the west side from I-694 to the transit park and ride lot.

Field verification of sidewalk conditions was performed by checking a sampling of locations throughout the corridor. In most locations, the sidewalk is typically five feet wide and constructed of concrete. The physical condition is generally good without major cracking or heaving. There are some instances where panels have been replaced over time.

Wider trails or sidewalks should be considered to create more room for approaching pedestrians and bicyclists to pass each other. An eight-foot wide path is the minimum standard multi-use trail width for two-way travel. In select locations, sidewalk width in the public right of way could be augmented by an entrance or plaza area on private property that flows together seamlessly. If on-road bike facilities are proposed, they should utilize pavement markings so that the lane is clearly distinguished from vehicle travel lanes. Any proposed off-road bike facilities will need to provide two feet clear minimum from the edge of trail. The type of pavement, whether concrete or bituminous, requires further consideration based on anticipated use, aesthetics, and maintenance plans.

Connectivity to Community Destinations

The corridor has numerous public facilities with good pedestrian access that can support the goal of increased walkability and transit use. There are six parks, three schools, and two transit hubs either directly on the corridor or within two blocks of the corridor. The schools and parks are child and family-oriented and require special attention to ensure safe access. The 65th Avenue Park and Ride accommodates suburban transit riders that park their personal vehicles and ride transit for the remainder of their trips to various destinations. The Brooklyn Center Transit Center located approximately one quarter mile east on Bass Lake Road serves mostly route transfers and transit users that drive to the Transit Center.

In most instances, these public facilities are conveniently accessible via existing sidewalks on the main cross streets when on the same side of the road. Crossing Brooklyn Boulevard itself can be a major obstacle; safe intersection crossings should be a primary focus of the project to assist the diversity of corridor users.

Pedestrian access to parks should also be considered. In two specific locations, there are actually no direct pedestrian connections from Brooklyn Boulevard – Happy Hollow Park and Marlin Park. Connections should be established to these facilities.

Many of the adjacent residential neighborhood streets do not have sidewalks. Further consideration should be given to the continuity of sidewalks into surrounding neighborhoods.

Concentrated commercial areas along the corridor provide residents with important services, but are often not easily accessible to pedestrians and bicyclists. The building and site development patterns are generally auto-oriented with driveway access and surface parking at the front of properties and buildings set back at the site interiors. This development pattern has two main results – pedestrians must cross parking lots to access front doors (often without dedicated walkways) and the visual character of the sidewalk lacks the animation that the adjacent building facades can offer.

Requiring direct sidewalk connections from commercial building primary entrances to the sidewalk in the public right of way would facilitate pedestrian and bicyclist access. When properties make improvements or redevelop, the design of attractive architectural facades that incorporate windows and high quality materials facing the public right of way should be encouraged through the permitting process.

Pedestrian Facilities on Grade-separated Interchange Crossings

Within the study area, Brooklyn Boulevard bridges over TH 100 at a full access interchange. The approximate length of the crossing on the east side (where three of the four access ramps are located) is 950 feet. The length on the west side is approximately 500 feet. Although the distance is not far to walk, the skew of the alignments and the geometry of the interchange ramps make the interchange inhospitable to pedestrians. Lack of crosswalks also makes crossing the interchange area uncomfortable.

The design of bridge deck features such as lighting and railings at a more pedestrian scale can make such crossings more comfortable. Clear demarcation of pedestrian and bicycle routes across highway access ramps through pedestrian curb ramps and pavement marking is also recommended. MnDOT plans to redeck the bridge at TH 100, which will provide opportunity for improvements to pedestrian facilities.

Figure A - View of Brookly Boulevard Looking North Approaching the TH 100 Overpass

Pedestrian Facilities at At-grade Intersection and Driveway Crossings

One of the primary challenges hindering safe and convenient pedestrian and bicycle circulation along and across Brooklyn Boulevard is the number of at-grade intersection crossings. There are eight signalized intersections that include designated pedestrian crossings and twelve other non-signalized intersections that permit only north-south crossings along Brooklyn Boulevard but not east-west crossings. Additionally, there are numerous commercial and residential driveways to cross. The "free-right" configuration at some intersections is an additional challenge to pedestrians and bicyclists, who must defer to turning vehicles that are unlikely to stop and give them right of way.

Figure B - Existing 63rd Avenue Intersection Crossing at Brooklyn Boulevard

Reducing the total amount of crossings would benefit pedestrians and bicyclists. Ensuring that all roadway crossings are ADA compliant and clearly demarcated is critical. Center median pedestrian refuges of adequate width can facilitate safe crossing of wide intersections where space and lane configurations permit.

Figure C - Center Median Pedestrian Refuge along Bass Lake Road

Spatial Relationship of Trails and Sidewalks to the Roadway

Right of way width is often a primary constraint in the design of a suburban arterial roadway such as Brooklyn Boulevard. The spatial relationship of trails and sidewalks to the roadway and vehicle traffic is often impacted due to this constraint. For the most part, the existing sidewalk is separated from the curb by a "boulevard" ranging from five feet to eight feet wide. In some select instances it is wider; the locations of most concern are where no boulevard is provided and the sidewalk is directly at the back of the roadway curb. Without a spatial buffer between different travel modes, there is greater risk of an accident between vehicles and pedestrians or bicyclists from a vehicle veering over the curb or a pedestrian or bicyclist losing balance near the curb edge and entering the roadway. A boulevard also provides area for snow storage, which is particularly an issue along Brooklyn Boulevard due to snow removal coordination and timing between the City and the County. The boulevard also provides a buffer area to prevent splashing when the road is wet. Having additional spatial buffer from the roadway is both a physical and psychological comfort to pedestrians.

Figure D - Sidewalk with No Boulevard

In most cases, a six-foot wide minimum boulevard area is preferred between the roadway curb and the adjacent trail or walk, with ten feet preferred. This boulevard could be vegetated or paved, but it should ideally be visually distinct from the travel path. The boulevard can also serve as a place for transit stops, lighting, signage, street trees, or other streetscape elements – out of the way of both vehicles and pedestrians and bicyclists.

Additionally, boulevard areas can vary to meet the required cross slope (maximum two percent for ADA standards) on the sidewalk if grade constraints exist either in the roadway or the elevation next to the sidewalk (for example, if the sidewalk is much higher in elevation compared to the roadway). A sidewalk with no boulevard does not provide this flexibility.

Figure E - Sidewalk with Boulevard

Streetscape Character

Streetscape character is expressed in the design detail of the various elements of a roadway including pavement, lighting, fencing, street trees, landscaping, furnishings, or signage. Additional consideration to these aspects of the roadway can greatly influence its attractiveness to pedestrians and transit users. Since Brooklyn Boulevard is a county state aid route, Hennepin County streetscape design standards should be noted when potential enhancements are explored as a basis for design. The design standards regulate the location, size, and setbacks of streetscape elements such as plantings.

Brooklyn Boulevard north of 65th Avenue, along with Bass Lake Road east of Brooklyn Boulevard, has recently been reconstructed with streetscape enhancements that visually distinguish them from typical roadways and create a recognizable "sense of place." The City has expressed a desire for lower maintenance plantings, but general themes and elements should be considered. The use of a consistent or complementary palette of materials, forms, and colors will establish visual continuity within the area that can help distinguish the community's redeveloping "downtown" area. Existing gateway signage elements could be enhanced or modified to reflect more recent thinking about city branding and expressions of civic identity.

While substantial investments have been made in providing pedestrian accommodations in the corridor to date, there are many opportunities for improvement. If trail, sidewalk, and streetscape improvements are an integral part of the new vision for the Brooklyn Boulevard corridor in the study area, the community will ultimately gain a safer, more convenient, and more attractive roadway facility that serves all modes of travel.

Traffic, Safety, and Access

Background

A traffic analysis was completed for Brooklyn Boulevard (CSAH 152) from I-94 to 49th Avenue North in the City of Brooklyn Center, dated July 23, 2012. The traffic analysis looked at intersection operations analysis, crash analysis, geometric design and access management. Improvements were identified to mitigate many of the existing issues. A preliminary layout was developed which incorporated these recommendations, and is included in the overall Brooklyn Boulevard Study (Layout titled: "Brooklyn Blvd – Long Term Concept").

Existing Traffic Volumes

Existing a.m. and p.m. peak hour turning movement counts were gathered for the project. The intersections and dates collected are shown in Table 6.

Table 6: Existing Turning Movement Counts

Main Roadway	Cross-Street	Year
Brooklyn Boulevard (CSAH 152)	65th Avenue North	Dec 2006
Brooklyn Boulevard (CSAH 152)	63rd Avenue North	Jan 2012
Brooklyn Boulevard (CSAH 152)	Bass Lake Road (CSAH 10)	Jan 2012
Brooklyn Boulevard (CSAH 152)	56th Avenue North	No Count
Brooklyn Boulevard (CSAH 152)	55th Avenue North	Jan 2012
Brooklyn Boulevard (CSAH 152)	TH 100 North Ramp	Mar 2008
Brooklyn Boulevard (CSAH 152)	TH 100 South Ramp	Mar 2008
Brooklyn Boulevard (CSAH 152)	51st Avenue / Lilac Drive	Aug 2010
Brooklyn Boulevard (CSAH 152)	50th Avenue North	Aug 2002
Brooklyn Boulevard (CSAH 152)	49th Avenue North	Aug 2000

Existing Daily Traffic Volumes

The existing traffic volumes were gathered from the flow maps. These volumes were collected in 2007 and are shown in Table 7.

Table 7: Existing Daily Traffic Volumes

Roadway	Location	Daily Volume
Brooklyn Boulevard (CSAH 152)	North of I-94	40,700
Brooklyn Boulevard (CSAH 152)	South of 63rd Avenue	23,100
Brooklyn Boulevard (CSAH 152)	South of Bass Lake Road (CSAH 10)	22,200
Brooklyn Boulevard (CSAH 152)	South of 51st Avenue	18,700
63rd Avenue	West of Brooklyn Boulevard (CSAH 152)	7,800
63rd Avenue	East of Brooklyn Boulevard (CSAH 152)	4,000
Bass Lake Road (CSAH 10)	West of Brooklyn Boulevard (CSAH 152)	11,500
Bass Lake Road (CSAH 10)	East of Brooklyn Boulevard (CSAH 152)	12,900
56th Avenue	East of Brooklyn Boulevard (CSAH 152)	6,400
51st Avenue	East of Brooklyn Boulevard (CSAH 152)	3,300

Existing Intersection Operations

An existing intersection operations analysis was completed using a modified existing to account for the different year the traffic data was collected for the a.m. and p.m. peak hour traffic volumes and are shown in Figure 10. Intersection operations analysis results identify a Level of Service (LOS) which indicates how well an intersection is operating. Intersections are given a ranking from LOS A through LOS F. LOS A indicates the best traffic operation and LOS F indicates an intersection where demand exceeds capacity. LOS A – D is generally considered acceptable by drivers.

An existing traffic analysis was completed using the Highway Capacity Software (HCS) software, modified existing traffic volumes (balance as needed), geometrics and traffic control. Results of the analysis shown in Table 8 indicate that all of the intersections are currently operating at an overall LOS D or better during the a.m. and p.m. peak hour.

Table 8: Existing Peak Hour Capacity
Level of Service Results for Brooklyn Boulevard (CSAH 152)

INTERSECTION	Level of Service	
	A.M. Peak	P.M. Peak
65th Avenue North	B	C
63rd Avenue North	C	C
Bass Lake Road (CSAH 10)	C	D
56th Avenue North*	A/B	A/B
55th Avenue North	B	C
TH 100 North Ramp	A	A
TH 100 South Ramp*	A	B
51st Avenue / Lilac Drive*	A/D	A/F
50th Avenue North*	---	---
49th Avenue North	---	---

**Unsignalized intersection; Overall LOS/Worst Movement*

Existing Safety Analysis and Geometric Review

The existing corridor was reviewed for potential geometric or traffic control modifications to improve the safety and flow of traffic, transit, pedestrians, bicyclists and other non-motorized wheeled sources of travel. The review included the most recent Hennepin County crash data for intersections and roadway segments from 2005 to 2009. The MnCMAT data from 2007-2011 were also reviewed from the most recent years. These two data sets were collected for different years and under different methods. Therefore, they will not produce the exact number of crashes or statistics. The Hennepin County data are more applicable to this roadway and the comparable statistics of similar roadways. The MnDOT data are used as supplemental data for missing information.

The Hennepin County data identifies the following locations as having an actual crash rate higher than the critical crash rate. These intersections/roadway segments are as follows:

- Brooklyn Boulevard (CSAH 152) at 65th Avenue
- Brooklyn Boulevard (CSAH 152) at 63rd Avenue
- Brooklyn Boulevard (CSAH 152) south of 63rd Avenue
- Brooklyn Boulevard (CSAH 152) at Bass Lake Road (CSAH 10)

From the MnCMAT data, seven Fatal and Type A crashes were identified. The MnCMAT data also identifies crashes with pedestrians and bicyclists. The number of crashes from 2007 to 2011 involving these other modes includes nine crashes involving pedestrians and seven crashes involving bicycles.

Reviewing the crash rates is a good method to identify locations with safety issues. From past studies, safety concerns have been identified on other roadway segments and intersections in the corridor. This includes the Brooklyn Boulevard (CSAH 152) at 51st Avenue/Lilac Drive intersection. Therefore, observations and geometric review was completed within the corridor.

The following concerns and observations were determined by reviewing the existing traffic volumes, projected future traffic volumes, crash data, review of the existing geometrics and traffic control at these Brooklyn Boulevard (CSAH 152) intersections:

I-94 South Ramp:

- The eastbound approach to the intersection (the eastbound off-ramp) provides a free channelized right-turn lane which provides a 1,000 foot auxiliary lane on Brooklyn Boulevard to the 65th Avenue intersection. The lane "traps" into the southbound right-turn lane at the intersection. The concerns with these geometrics elements include:
  - When making this right-turn movement followed by a left-turn movement at 65th Avenue, the driver needs to make three lane changes in 1,000 feet. The driver needs to make one lane change to get into the through lane. This is a good design on a free-flowing freeway system. On an arterial system, under stop and go conditions, these types of maneuvers can be challenging for drivers.
  - This style of right-turn treatment (free-right) continues to promote the high-speed of a freeway condition on the arterial roadway. Perhaps, this would be desirable if Brooklyn Boulevard (CSAH 152) was another high speed facility. However, the vision of the corridor wants to increase the multi-modal aspects of the corridor.
- Note that MnDOT may desire to retain the existing configuration. It provides a more efficient design to move traffic and limit queuing on the freeway ramp.

65th Avenue North:

- As noted above, the southbound auxiliary lane from the I-94 South Ramp "traps" into the right-turn lane.
- The northbound approach does not have an exclusive right-turn lane.

63rd Avenue North:

- The northbound and southbound approaches do not have right-turn lanes. While these movements have a relatively low volume, turn lanes are important safety features at traffic signals, and for higher volume and speed roadways.
- Based on our past review of the intersection, the east-west movements are controlled by split phasing. The traffic volumes would likely be better accommodated by a different phasing and lane configuration strategy to improve operational efficiency of the intersection.

62nd Avenue North, 61st Avenue North, 60th Avenue North/Admiral Lane and 59th Avenue North:

- The northbound and southbound approaches do not have right-turn lanes. While these movements have a relatively very low volume, turn lanes are important safety features for higher volume and speed roadways.

- The signal spacing is approximately 5/8ths of a mile (63rd Avenue North to Bass Lake Road [CSAH 10]). Concerns have been identified about safe crossing locations for pedestrians in this area.

Bass Lake Road (CSAH 10):

- The southbound left-turn has been and could be a high volume movement with the re-development of the Brookdale Mall area.

- The channelized right-turn lanes for the westbound and eastbound approaches are designed such that the merging maneuver onto Brooklyn Boulevard is challenging.

- The channelized right-turn lane for northbound movement is into a 500 foot auxiliary lane on Bass Lake Road and "traps" at the right-turn lane into a retail access (Cub Foods). This condition is very challenging, in particular, for drivers making a left-turn at Northway Road. This would require a driver to make three lane changes in 400 feet and any driver continuing on Bass Lake Road needs to make one lane change. The access point to Brookdale Health, near the main intersection, adds to the number of access points drivers need to perceive and react too.

- There are concerns that the westbound left-turn lane is too short (150 feet), especially as the Mall area re-develops.

- The eastbound approach has limited turn-lane lengths.

56th Avenue North:

- The southbound left-turn movement has been and could be a large volume into the mall area. The existing left-turn lane is too short based on design standards (125 feet). The left-turn movement turns into two lanes into the mall area. This northbound channelized right-turn movement turns into these lanes as well. It could be difficult to understand who has the right-of-way.

- The westbound approach right-turn movement has two-lanes which quickly merge into one lane at the intersection. This right-turn turn movement has an auxiliary lane for 800 feet and becomes a "trap" right-turn lane at Bass Lake Road. This is complicated for drivers making a left-turn at Bass Lake Road as three lane changes would need to be made in this distance. An additional complication is the access to the retail area 200 feet north of 56th Avenue North.

- The northbound right-turn lane is short (150 feet).

55th Avenue North:

- The close-in frontage road on the west side of the intersection complicates the various movements and turns through both intersections leading to lost efficiency of the traffic signal and potential confusion to the drivers.

- The northbound and westbound channelized right-turn lanes make merging challenging because of the angle drivers approach the departing roadway.

- The northbound and southbound left-turn lanes appear short (200 feet).

- Pedestrian crossing accommodations for the regional trail are inadequate.

TH 100 North Ramp:

- Any modifications to the northbound auxiliary lane from TH 100 south ramp and 55th Avenue North will need to be reconciled at this intersection.

- The southbound right-turn lane is too short (100 feet).

TH 100 South Ramp:

- The off-ramp currently provides a free-channelized right-turn lane which has an auxiliary lane to 55th Avenue North. While this is an efficient design, it does promote a higher speed environment and challenging pedestrian crossing. The pedestrian crossing of the northbound on-ramp is also a more high-speed crossing.

51st Avenue North:

- Identified safety issues in previous traffic study, dated February 10, 2010.

- Location of existing bus stop promotes pedestrian crossing at non-intersection locations.

- The southbound direction lacks a southbound left-turn lane. This movement serves a large area with a moderate left-turning volume.

- Access issues from side streets EB to NB left turn.

From 51st Avenue North to 49th Avenue North:

- The roadway operates acceptably and with minimal crashes as a four-lane undivided roadway. Different lane configurations could provide acceptable operations, but a transition location would need to be identified and an agreement with Minneapolis should be attempted to provide a similar type roadway configuration.

Private Access Locations:

- There are a number of private access driveways. These will need to be evaluated location by location. An implementation strategy will be needed to determine how access may change over time with re-development.

Access Management Guidelines

Brooklyn Boulevard (CSAH 152) is identified as an "A" Minor Arterial. Existing daily traffic volumes in the corridor range from 19,000 to 23,000. The speed limit on the roadway is 40 MPH north of TH 100 and 35 MPH south of TH 100. The existing access spacing is shown in Figure 11.

Based on typical Hennepin County access spacing guideline policy for this type of roadway, the access spacing guidelines for this corridor would be:

- Full access spacing at 1/4-mile
- Partial access spacing at 1/8-mile

Based on the guidelines, one full-movement intersection between 60th Avenue and 61st Avenue could be installed if warrants are met and is justified. It is very unlikely either location meets traffic signal warrants at this time. When re-development occurs in this segment of the corridor, traffic volumes should be monitored for a traffic signal. In addition, pedestrian movements should be monitored to identify potential destinations and crossing locations.

Year 2030 Traffic Projections

To evaluate the intersections under design-year conditions, 20-year turning movement volumes were developed for a.m. and p.m. peak hours (see Figure 12). These volumes were developed using the following:

- Existing turning movement and daily traffic volumes.
- Future daily traffic volumes shown in the City of Brooklyn Park's Transportation Plan.
- Traffic impact analysis for the "Shingle Creek Crossing for Gatlin Development Company by Kimley-Horn and Associates 04/07/2011."

Year 2030 No Build Traffic Analysis

The No-Build scenario assumes no major improvements are made including signal revisions / additions, roadway improvements (turn lanes, revised intersection geometry, etc.) or any other geometric improvements which would improve general traffic operations.

A year 2030 No Build traffic analysis was completed using the same methodology as for the existing conditions. The HCS results of the analysis are shown Table 9.

Table 9: Year 2030 No Build Peak Hour Capacity Analysis
Level of Service Results for Brooklyn Boulevard (CSAH 152)

INTERSECTION	Level of Service	
	A.M. Peak	P.M. Peak
65th Avenue North	C	C
63rd Avenue North	C	D
Bass Lake Road (CSAH 10)	D	F
56th Avenue North*	A/B	A/B
55th Avenue North	B	C
TH 100 North Ramp	B	B
TH 100 South Ramp*	A/B	A/F
51st Avenue / Lilac*	A/E	A/F
50th Avenue North*	---	---
49th Avenue North	---	---

**Unsignalized intersection; Overall LOS/Worst Movement*

The results show that the signalized intersection of Brooklyn Boulevard at Bass Lake Road, and the unsignalized intersections at Brooklyn Boulevard at TH 100 South Ramp and 51st Avenue/Lilac Drive do not operate acceptably under year 2030 No Build conditions. Improvements are identified in the recommendations portion of the report. In addition, the 63rd Avenue intersection could be operated more efficiently to reduce overall intersection delay and improve safety.

Environmental and Cultural Constraints

Context

A scan of social, environmental, and economic (SEE) issues was conducted in order to identify existing resources and potential impact areas along Brooklyn Boulevard. One purpose of the SEE scan was to identify and confirm these resources within corridor so that the general impacts of alternatives on these resources could be considered during the concept development process. The SEE scan was also intended to summarize existing information and identify potential issues that may require further investigation as part of future environmental reviews under the National Environmental Policy Act (NEPA) and Minnesota Environmental Policy Act (MEPA). SEE information was gathered at a screening-level, using Geographic Information Systems (GIS) data and information provided by resource agencies noted below. The SEE scan does not represent the full extent of the data, analysis, or studies needed for completion of an environmental review under NEPA and MEPA.

Existing Conditions

The study area for the SEE scan included Brooklyn Boulevard and areas within approximately 1,000 feet of the existing roadway. The following is an overview of the key resources identified:

- The Minnesota State Historic Preservation Office has record of one previously identified building (The J.L. Woodman House) of possibly historic value located at 6505 Brooklyn Boulevard. This building was demolished to construct the Metro Transit Park and Ride facility.

- Cahlander Park, Garden City Park, Marlin Park, Wangstad Park, Northport Park, Centerbrook Golf Course, and Happy Hollow Park are located within 1,000 feet of Brooklyn Boulevard. Cahlander Park, Garden City Park, and Happy Hollow Park are adjacent to Brooklyn Boulevard and would be more likely to be impacted if right of way boundaries for the roadway are expanded. Any park impacts would be subject to Section 4(f) of the Department of Transportation Act of 1966 is federal funding is used for the project. None of the parks along the corridor were funded by the Land and Water Conservation Fund Act of 1964 and subject to Section 6(f) of the Act.

- According to the Minnesota Pollution Control Agency "What's In My Neighborhood?" database, hazardous waste generators, storage tanks, and remediation sites are located throughout the corridor, mostly associated with the businesses in the corridor (such as automotive service centers).

- See Table 10. No Superfund sites are located in the study corridor.

- A field review found multiple ethnic restaurants and grocery stores, particularly on the northern half of the study area that are likely minority-owned. According to U.S. Census data (2010), Brooklyn Center has a higher proportion of minority residents (50.9 percent) than the state as a whole (14.7 percent). The City also has a higher proportion of foreign-born persons (19.9 percent) compared to the state as a whole (6.5 percent). Any potential impacts to minority populations are not likely to be disproportionate, but environmental justice issues should be considered at the time of a future project (analysis would be required if federal funding is used). The poverty rate (12.9 percent) is slightly higher than the state as a whole (10.0 percent); low-income populations are not expected to be disproportionately impacted.

- No occurrences of state or federally listed threatened or endangered species, rare species, or species of special concern have been recorded within 1,000 feet of the corridor according to the Natural Heritage Information System (Copyright 2011 State of Minnesota Department of Natural Resources).

- One location of possible wetland area is shown on the National Wetland Inventory in Garden City Park. If the project will impact the park, a wetland delineation should be performed to minimize and/or avoid wetland impacts. At the time of future construction, the absence of wetlands in the rest of the project corridor should be verified.

- The project area is subject to review by the Shingle Creek Watershed Management Commission. The project does not cross any streams, but Shingle Creek is located about 2,500 feet away from the corridor, and Ryan Creek crosses Brooklyn Boulevard approximately 1,000 feet south of 49th Avenue (the southern project boundary). Depending on the nature of future projects (based on project acreage or ground disturbance), plan review may be required. Storm water treatment will need to be analyzed in order to determine appropriate mitigation. Future projects should strive to meet the goals of the City of Brooklyn Center Local Water Management Plan.

It is understood by the project partners that more detailed planning, engineering, and environmental analysis, conducted in accordance with MEPA/NEPA guidelines, may be required before specific solutions are implemented. If future projects involve federal funding or approvals, then environmental review and documentation will be required under NEPA. Environmental review and documentation will be required under MEPA if projects exceed thresholds defined in Minnesota Rules 4410.4300 or Minnesota Rules 4410.4400.

Table 10: Environmental Reviewed Sites

Type	Site	Status
Leak Site	Former Residence – 6451 Brooklyn Blvd	Site closed in 1996, no contaminated soil present
Leak Site	Garden City Elementary – 3501 65th Avenue North	Site closed in 2004, contaminated soil still present (fuel oil)
Unpermitted dump	Brooklyn Center Dump – near Halifax Drive	Inactive
Voluntary Investigation and Cleanup	Rainbow Gardens – 6300 Brooklyn Boulevard (previously a dry cleaner)	Inactive
Leak Site	Brooklyn Center Mobil – 6245 Brooklyn Blvd	Site closed in 1990, no contaminated soil present
Leak Site	Brookdale Chrysler Plymouth – 6121 Brooklyn Blvd	Site closed in 1999, unknown if contaminated soil still present (fuel oil)
Leak Site	O'Malley Construction/Holiday Station – 5710 Xerxes Avenue North	Multiple leaks – most recently closed 2010, contaminated soil still present (fuel oil)
Leak Site	Brookdale Car Wash – 5500 Brooklyn Blvd	Site closed in 1990, no contaminated soil present
Leak Site	Goodyear Service Center – 55th At & Xerxes Avenue North	Site closed in 1996, unknown if contaminated soil present (used oil)

Type	Site	Status
Leak Site	Carson Pirie Scott – TH 100 & Brooklyn Blvd	Site closed in 1991, contaminated soil still present (fuel oil)
Leak Site	Malborg – 5120 N Lilac Dr	Site closed in 1992, contaminated soil remaining (fuel oil)
Voluntary Investigation and Cleanup	Howe Fertilizer – 4821 Xerxes	Active cleanup site (farm supplies)

Appendix A – Figures 1 – 12

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SRF Consulting Group, Inc

Brooklyn Boulevard - Traffic Analysis Zones (TAZ)

Brooklyn Boulevard
City of Brooklyn Center

Figure 1

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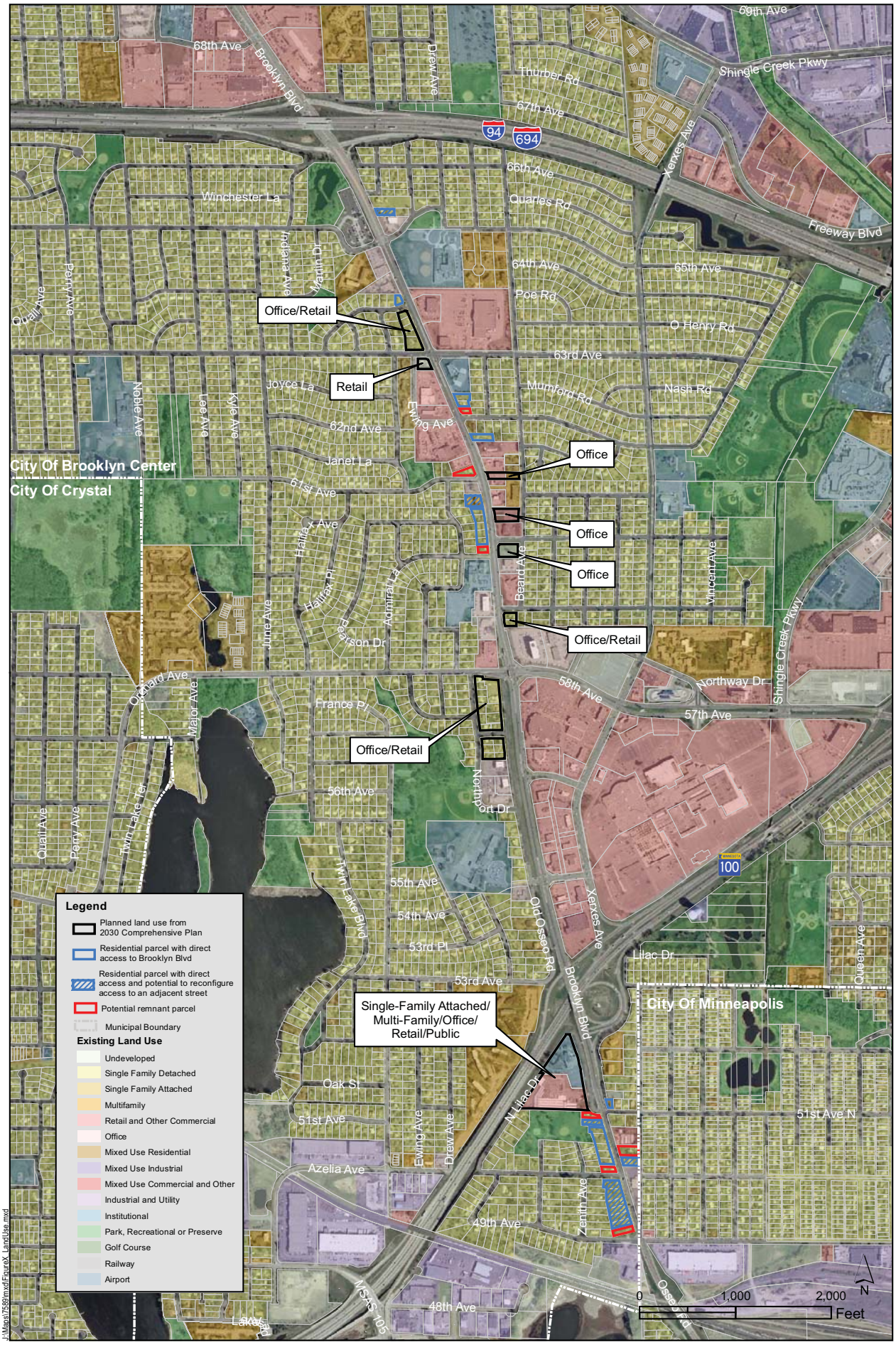
January 2012



Land Use Issues Identification

Brooklyn Boulevard Corridor Study
City of Brooklyn Center

Figure 2

Figure 3. Brooklyn Boulevard Corridor Transit Service

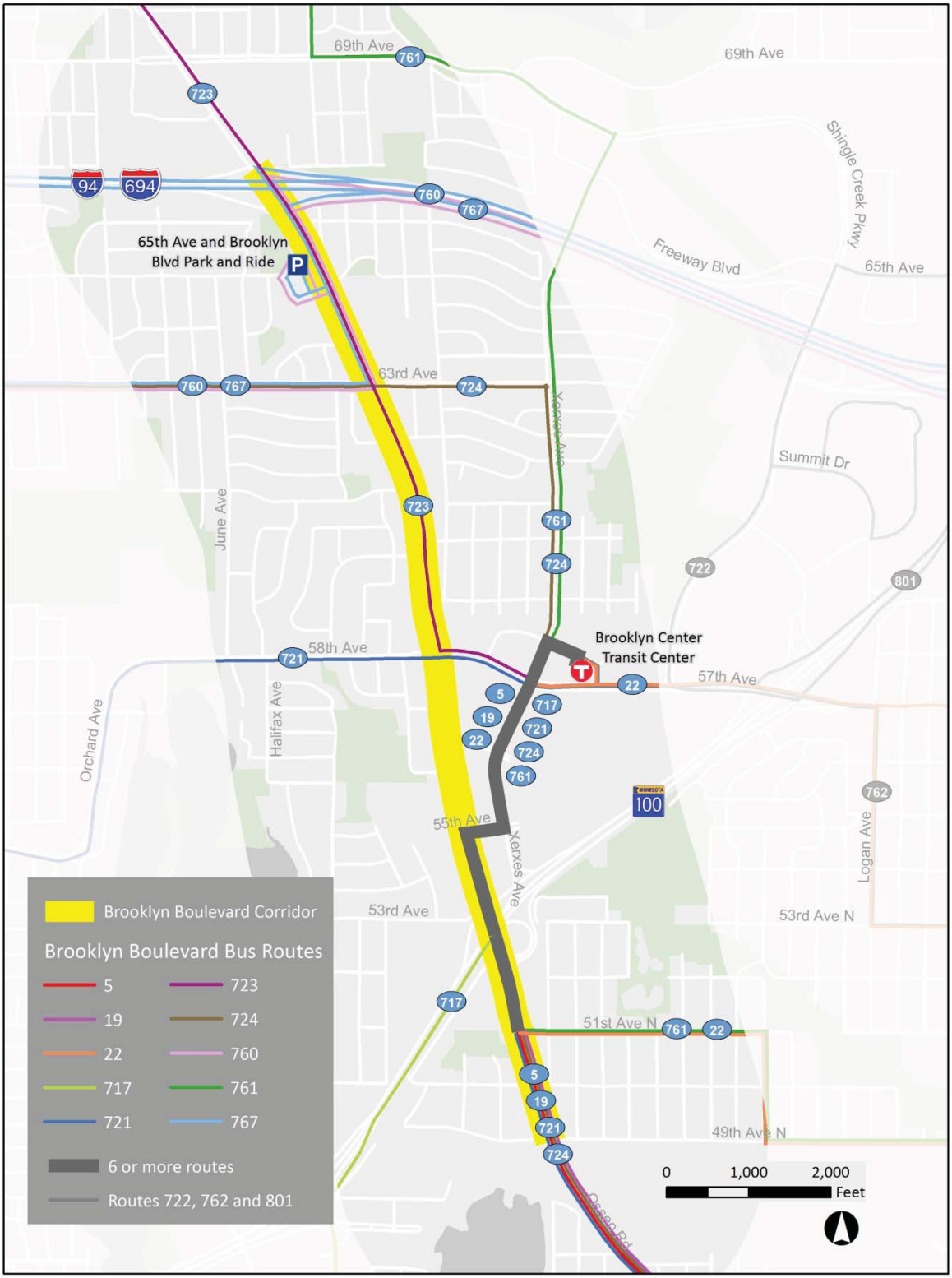


Figure 4. Brooklyn Boulevard Corridor Transit Ridership

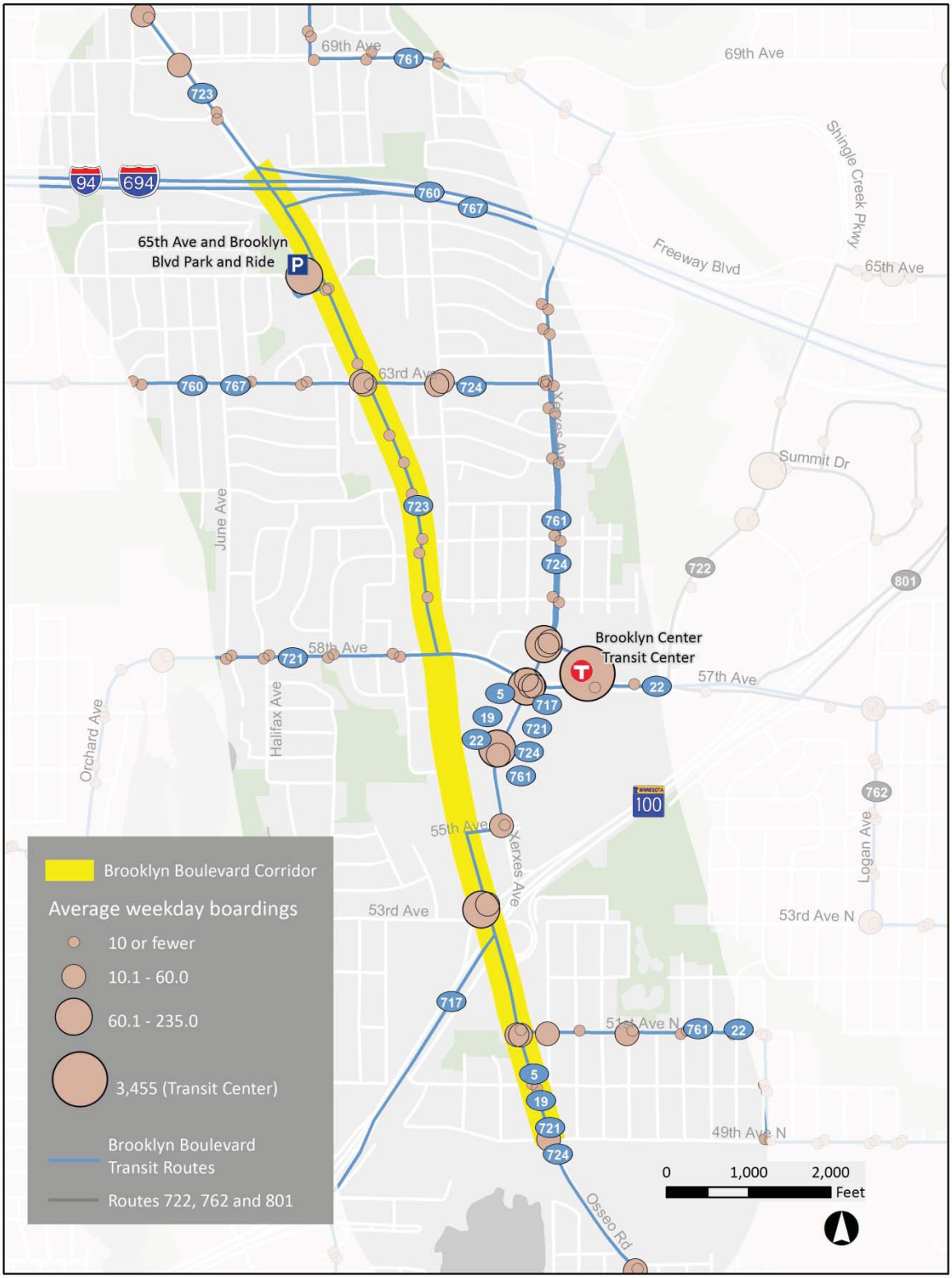


Figure 5. Brooklyn Center Transit Center Aerial

Figure 6. Brooklyn Boulevard Corridor Transit Infrastructure

Figure 7. Capacity and Usage – 65th Avenue and Brooklyn Boulevard Park & Ride

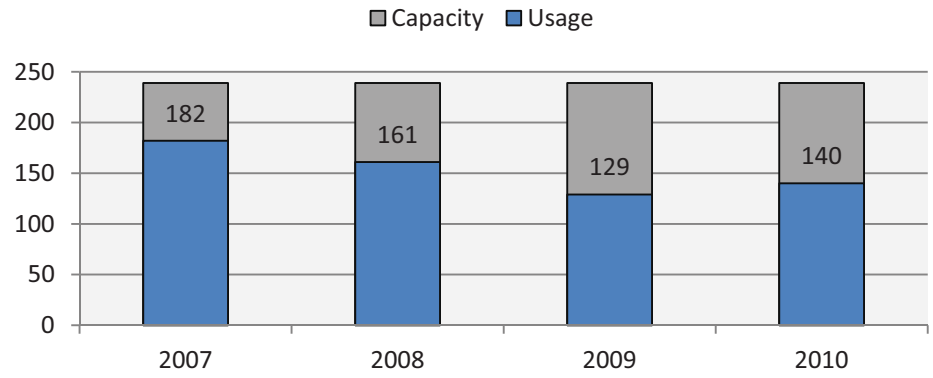
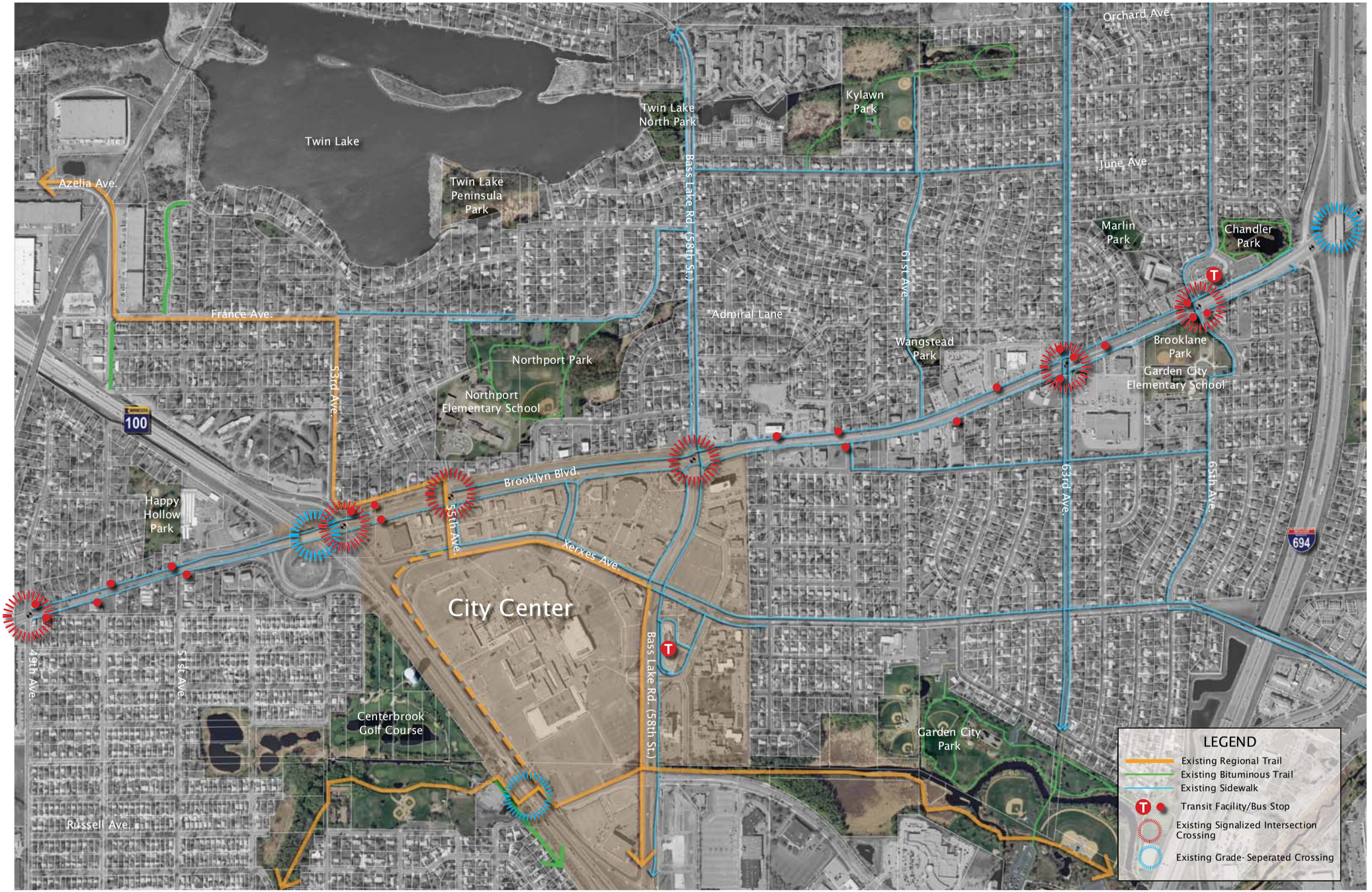


Figure 8. 65th Avenue and Brooklyn Boulevard Park & Ride Aerial



Brooklyn Boulevard Existing Trail/Sidewalk Network Analysis

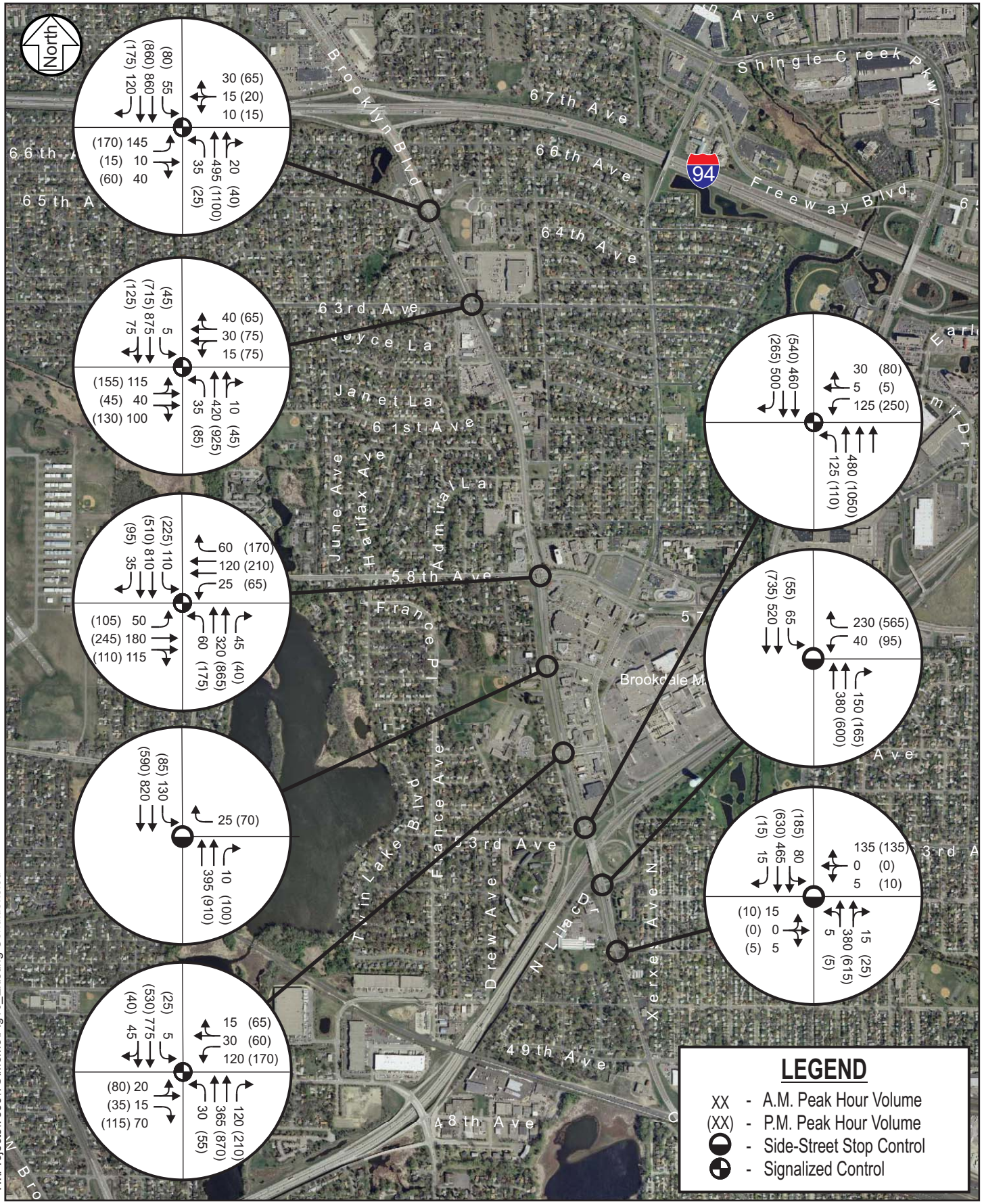
Brooklyn Boulevard Corridor Study

0 300 600 feet

FIGURE 9
June 19, 2012

www.cityofbrooklyncenter.org

SRF Engineers Planners Designers



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SRF Consulting Group, Inc.

Existing Conditions - Traffic Volumes

Brooklyn Boulevard Corridor Study
City of Brooklyn Center

Figure 10

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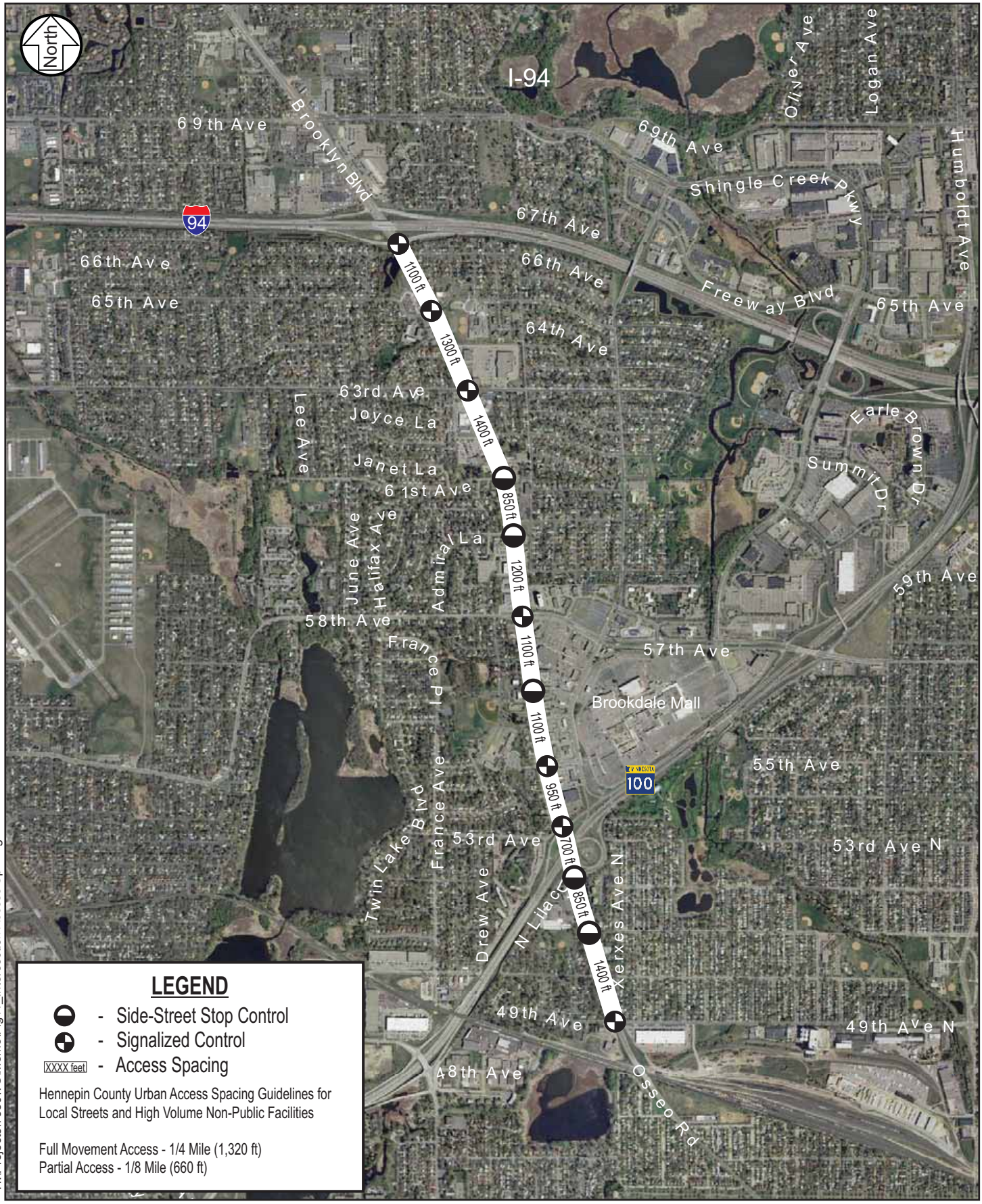
May 2012



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Intersection Access Spacing

Brooklyn Boulevard Corridor Study
City of Brooklyn Center

Figure 11

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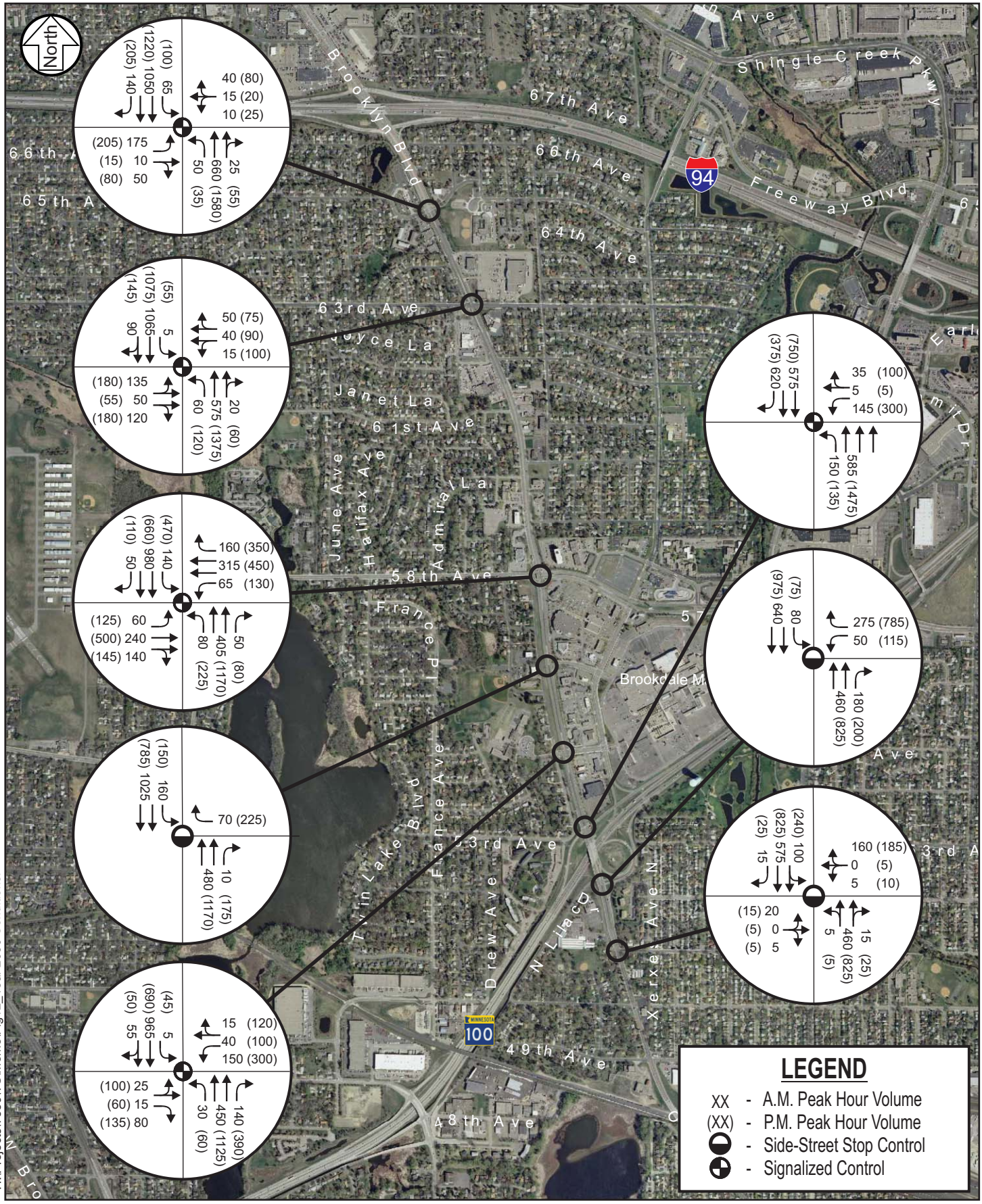
May 2012



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SRF Consulting Group, Inc.

Year 2030 No Build Conditions - Traffic Volumes

Brooklyn Boulevard Corridor Study

City of Brooklyn Center

Figure 12

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