Brooklyn Boulevard Corridor Study

Summary Report

City of Brooklyn Center

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Summary Report Preface

The Summary Report is intended to capture the breadth of work and documentation that was compiled during the Brooklyn Boulevard Corridor Study in 2012. The Summary Report captures key findings and recommendations prescribed in the Study's Vision and Goals and Existing Conditions Report, Recommended Concept Report and Implementation Plan. These plans serve as the foundation for the Brooklyn Boulevard Corridor Study.

Various technical memorandums were also prepared during the course of this project. These supporting documents should serve as a guide when making future planning and engineering decisions. Furthermore, additional guidance has been given by elected leaders and policy makers. On November 29, 2012, the Planning Commission passed a resolution supporting the draft design concepts for the 2012 Brooklyn Boulevard Corridor Study, in addition to recommending future land use and design considerations along the corridor (Planning Commission Resolution 2012-22).

Supporting Documents

1. Brooklyn Boulevard Traffic Analysis Technical Memorandum (July 23, 2012)
2. Brooklyn Boulevard Open House Summaries (June 19, 2012 and September 18, 2012) and Project Comments
3. Technical Advisory Committee Meeting Records (January 24, 2012, March 13, 2012, April 9, 2012, August 15, 2012 and November 14, 2012)
4. Interim and Ultimate Recommended Concepts Layouts
5. Implementation Plan Layout
6. Right-of-way Map

Introduction

The purpose of the Brooklyn Boulevard Corridor Study is to define a vision and future roadway concept for the corridor that can serve as the foundation for identifying financial resources for preliminary engineering and construction. The enhanced corridor would improve transportation for all modes; establish a cohesive streetscape design to encourage pedestrians, bicyclists, and transit users; and attract and retain businesses.

Brooklyn Center's Comprehensive Plan (2008) also identifies Brooklyn Boulevard as a critical element within the City Center. Therefore, it merits focused efforts to renew, revitalize, and redevelop. In keeping with the recommendations of the Comprehensive Plan (2008), the City developed a vision for the future of Brooklyn with input from agency and community stakeholders. Project partners include Hennepin County, Three Rivers Park District, the Minnesota Department of Transportation (MnDOT) and Metro Transit.

The Summary Report highlights the planning process, existing conditions visions and goals and recommendations described in the Final Reports. More importantly, the Summary Report outlines the Implementation Plan. The intent of the Implementation Plan is to identify roadway projects along the Brooklyn Boulevard corridor that ultimately fit together and to develop a strategy to complete the comprehensive improvements to the corridor. Planning-level cost estimates are also included to understand the financial needs for the various projects. A summary of these improvements and cost estimates are included in Table 5.

Corridor Context

Brooklyn Boulevard serves as a primary corridor within Brooklyn Center's City Center, which is the triangle formed by Trunk Highway (TH) 100, Brooklyn Boulevard, and I-694. The corridor serves as an alternative transportation connection between Minneapolis and the northern suburbs. As an "A" Minor Arterial, the boulevard also provides access from TH 100 and I-694 to Shingle Creek Crossing. Shingle Creek Crossing is a 65 acre site, which was once anchored by the Brookdale Mall. The mall was closed in 2010 and is part of a larger redevelopment effort. These efforts have resulted in a new Wal-Mart and plans to add new commercial and retail space.

Minor Arterials

Minor arterial roadways emphasize mobility for short to medium length trips and provide limited access to properties.

Land uses along Brooklyn Boulevard reflect the evolution of the community from the time Brookdale Center was constructed in 1962 until today. Land use patterns closely resemble post-World War II housing that has remained in residential use, housing converted to commercial uses, smaller locally owned businesses, national chain businesses, and offices. The quality and character of development along the corridor also varies significantly and reflects eras of prosperity and disinvestment.

Over the past 50 years, these land use patterns have resulted in a corridor that does not function at an optimal level. For instance, numerous driveways and access points create safety and operational concerns for motorists. Potentially incompatible adjacent land uses also reduce the quality of life for current occupants and dampen redevelopment opportunities.

Process Summary

Throughout the study process, stakeholder input was gathered to identify existing issues, help shape the corridor vision and goals, develop the recommended concept, and specify implementation roles. On-going coordination with agency partners helped the study team to refine and select concepts and was also used to build consensus for long-term solutions.

The study was led by the City of Brooklyn Center with participation from various agencies with decision-making authority (see Table 1). These study partners formed the Technical Advisory Committee (TAC) for the project and met seven times to provide input on study components, the recommended corridor concept, and implementation steps. The project team also consulted with the Brooklyn Center City Council to advise them of project progress and to gather input.

Stakeholder Involvement

The stakeholder involvement process had several key objectives:

- Build agency consensus through on-going communication and involvement.
- Develop successful, context-sensitive solutions through agency collaboration.
- Provide opportunities for public input prior to finalizing the corridor vision.

Table 1: Study Partners

Agency	Jurisdiction
Minnesota Department of Transportation	I-94 and TH 100 interchanges and the bridge over TH 100
Hennepin County	Brooklyn Boulevard and intersecting County roads
Metro Transit	Transit operations and infrastructure
Three Rivers Park District	Trail crossing at 55th Avenue

Public Outreach

A breadth of public outreach efforts were used to engage the public. A project website, series of newsletters, and press coverage informed the public about the study and encouraged input. In addition, two open house meetings were held, which were open to the public. The first meeting focused on identifying existing corridor issues and presenting an early corridor concept for refinements and comments. The second meeting included a presentation of the recommended concept and implementation plan. Meeting attendees were generally supportive of the study and confirmed many similar existing issues identified by the study team and TAC.

Public Involvement Goal

A public involvement goal was developed for the Brooklyn Boulevard Corridor Study:

To develop a progressive vision and corridor concepts for Brooklyn Boulevard that balances the needs of land use, transportation, and livability improvements and will be supported by diverse stakeholders. The future vision for the corridor will reflect the transportation needs of the City and County, while considering the needs of all multimodal users of the corridor.

Vision and Goals

The Brooklyn Boulevard Corridor Study was guided by a vision and goals that addressed five topic areas. The vision for Brooklyn Boulevard was also established with input from agency and community stakeholders. The vision and goals are summarized in Table 2.

Table 2: Vision and Goals

Topic	Goal
Roadway Functionality	Improve roadway safety, improve traffic operations, reduce the number of access points to enhance mobility and safety, and address all modal needs.
Land Use, Community Character and Redevelopment	Identify land uses that are not compatible with the future vision for transportation functions, improve transitions to residential neighborhoods, develop a streetscape concept, and promote Complete Streets principles.
Transit	Enhance transit rider safety and comfort, improve transit operations, support transit ridership by providing transit supportive land uses, and identify deficient pedestrian access to bus stops.
Pedestrian and Bicycle Facilities	Identify gaps in the trail and sidewalk network, appropriate improvements given the corridor context, and key pedestrian crossing enhancements.
Implementation	Identify a comprehensive set of projects to build towards the long-term vision for the corridor, identify potential funding sources and agency responsibilities, prioritize needed improvements, and sustain long-term agency commitment to the study recommendations.

Existing Conditions

As part of the Brooklyn Boulevard Corridor Study, an Existing Conditions Study report was prepared to identify corridor issues. The identification and mapping of corridor needs, deficiencies, constraints, and opportunities assisted in refining the corridor vision and goals as well as the recommended corridor concept. An assessment of the existing conditions guided development of the recommended concept. A summary of key findings is presented below.

Demographics

Regional forecasts for Brooklyn Center indicate an increases in population (17 percent), households (11 percent), and employment (58 percent increase in retail employment, 100 percent increase in non-retail employment) over the next twenty years. These forecasts support the need for transportation improvements in the corridor.

Land Use

Single-family homes directly on Brooklyn Boulevard are recommended to transition to other land uses in the City of Brooklyn Center's *Comprehensive Plan (2008)*, which recommends the redevelopment and reconfiguration of these parcels. As residences along Brooklyn Boulevard become available, the City will purchase these properties – this will enable site reconfiguration and parcel assembly to better fit the long-term corridor vision.

Transit

Existing transit routes, service levels, and amenities are generally adequate for the level of ridership in the corridor. Transit effectiveness along the corridor is hindered by a lack of pedestrian-oriented compact development that provides destinations for transit users. Improvements to transit infrastructure elements may also encourage land use changes and increase transit use.

Trails and Sidewalks

Sidewalks are present throughout the corridor but have inadequate boulevards, which create an uncomfortable environment for pedestrians. The free right turn configuration at some intersections and TH 100 off ramps creates a challenge for pedestrians crossing the turn lane, causing them to defer to vehicles that are unlikely to give pedestrians the right of way. Additionally, trails are not continuous and better east-west crossings for bicyclists and pedestrians are needed. Streetscaping improvements would provide visual amenities and establish an identity for the corridor.

Traffic, Safety, and Access

The recommended concept for the corridor includes specific improvements, such as turn lane modifications, access closures, and geometric changes to address safety and traffic operation issues. Key issues identified include:

- Free right turn from the I-94 off ramps onto southbound Brooklyn Boulevard
- Free right turn at the south TH 100 off ramp to northbound Brooklyn Boulevard that presents a challenging pedestrian crossing
- High turning volumes at the 51st Street/Brooklyn Boulevard intersection

Environmental and Cultural Constraints

During the inventory of existing conditions, no major issues were identified that substantially influenced concept development. Given the level of anticipated improvements and the lack of critical resources present, further study should not be required through an environmental review to implement the recommended changes.

Recommended Concept

The recommended concept for this segment of Brooklyn Boulevard was developed to address the issues identified as part of the planning process, in addition to the findings listed in the vision and goals and existing conditions report. Visions and goals focused on improving; roadway functionality, land use and redevelopment, transit and pedestrian and bicycle facilities. The Recommended Concept Report provides a more in-depth view behind the technical analysis and findings. The recommend concept is summarized in Figure 1 and highlighted throughout this section.

Concept Development

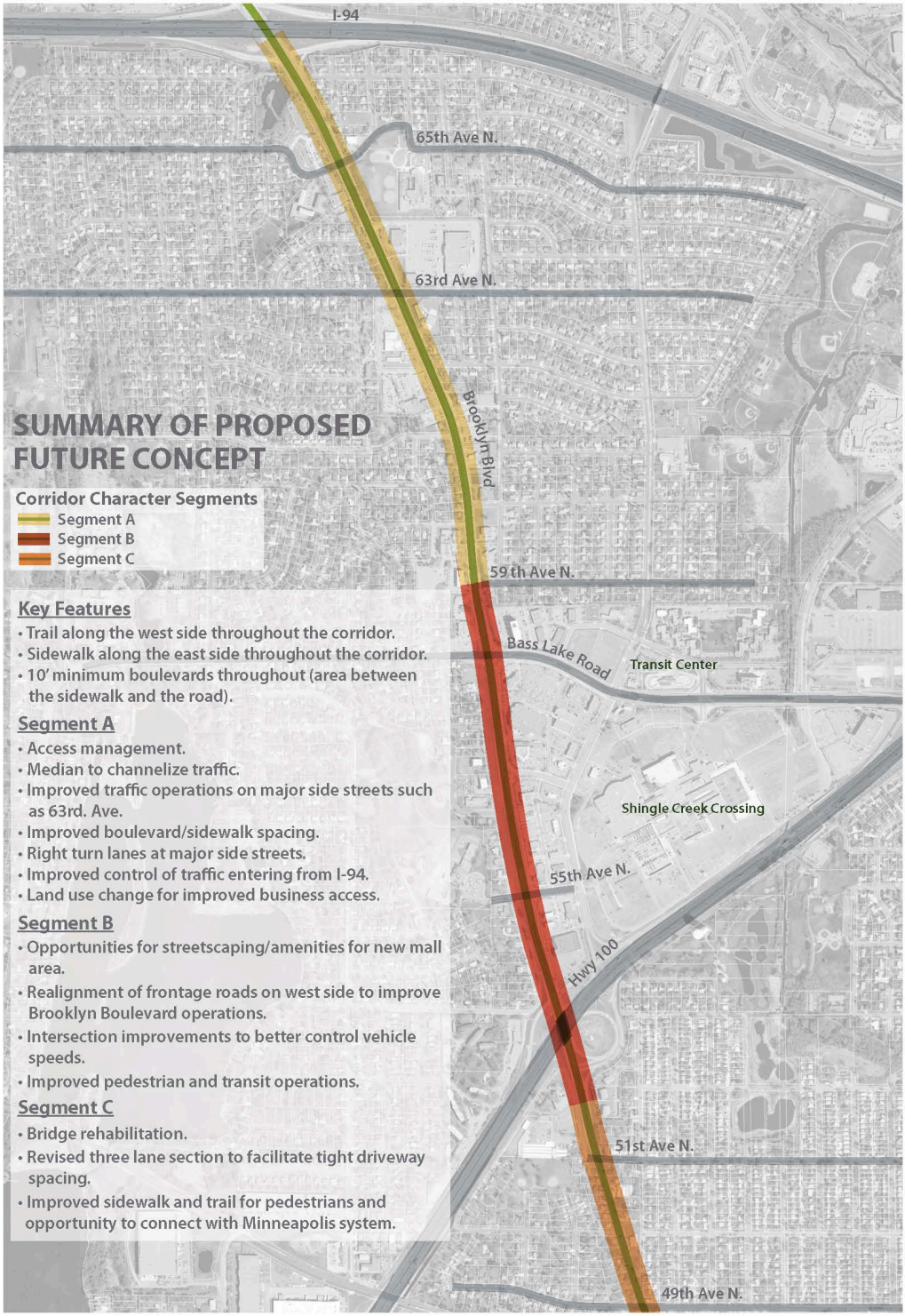
The recommended geometric layout was developed over the course of the study in cooperation with TAC members. Early drafts were presented and discussed at TAC meetings and at the first public open house, then refined to respond to stakeholder input. The geometric layout incorporates a balance between the required functions of an "A" Minor Arterial (mobility and access) connecting I-694 to TH 100, and providing local access to adjacent businesses and connected neighborhoods. The layout also incorporates aesthetic components as well as multi-modal transportation needs, including vehicles, bicycles, pedestrians, and transit.

Concept development began with consideration of the roadway's capacity and appropriateness of the speed limit for the context of the roadway. The existing four-lane roadway provides sufficient vehicular capacity and does not require expansion at this time based on coordination with Brooklyn Center, Hennepin County, and MnDOT staff as well as traffic operations review.

The concept was also developed based on 40 miles per hour (mph) design speed north of TH 100 and 35 mph south of TH 100. The existing posted speed is 40 mph north of TH 100 and is appropriate; however, the posted speed is typically determined based on a speed study. The existing posted speed of 35 mph south of TH 100 is appropriate as well as there are multiple direct residential accesses that are to be maintained. The 35-40 mph speeds fall within the low speed regime of MnDOT and Minnesota State Aid manuals for roadway facility design. The low speed regime allows more flexibility in lane width and turn-lane lengths on the roadway and with clear zone requirements to fixed objects behind the curb. Therefore, the layout incorporates 11-foot lanes to preserve the lower speed character of the roadway while also providing opportunity to increase amenities behind the curb, such as widened boulevards, plantings, wider sidewalk/trail width, and transit amenities, such as benches and/or shelters

Concept development also took into consideration access management. As part of the study, existing access points were reviewed and compared with future land use plans. Direct access to Brooklyn Boulevard was recommended to be consistent with Hennepin County's access spacing guidelines of full access every 1/4 mile and partial access every 1/8 mile. The geometric layout developed for the project meets the intent of Hennepin County access spacing guidelines and calls for a raised median throughout the corridor from TH 100 to I-694. Various access points were also consolidated or eliminated for the recommended concept. The greatest impact to access will be between 58th Avenue (Bass Lake Road) and 63rd, where no median exists today.

Figure 1: Summary of Recommended Concept



Concept Components

The geometric layout incorporates various elements to address the issues reviewed as part of the study. The Summary Report has highlighted a number of these components, including traffic components, land use transition areas, pedestrian/bicycle components, streetscaping, gateway and transit improvements.

Traffic Components

Intersection geometry for the recommended concept is based on traffic analysis at various intersections along the corridor. Turn lanes will accommodate future traffic projections as the area grows and redevelops. Dual left-turn lanes from Brooklyn Boulevard onto 58th Avenue (Bass Lake Road) are included to accommodate traffic moves to destinations, such as the Brooklyn Center Transit Center and the redevelopment of Shingle Creek Crossing. Based on the findings, a list of recommended traffic elements is included in the recommended concept and layout. A summary of those elements are included in callout box below and on page 10.

Traffic Elements

Left and right-turn lanes for a 40 MPH roadway (turn-lanes may be longer based on capacity needs or storage requirements)

- Desired Standard: 315 feet (this includes full width turn-lane and taper)
- Minimum Standard: 235 feet (this includes full width turn-lane and taper)

I-94 South Ramp Intersection

- Modify the I-94 off-ramp from a free channelized right-turn lane to a stop condition channelized right-turn lane.

65th Avenue North

- Add a northbound right-turn lane of desired standard length.
- Revise the southbound right-turn lane from an auxiliary lane from the I-94 ramp to a 300 to 500 foot right-turn lane (full width).

63rd Avenue North

- Provide right-turn lanes on the northbound and southbound approaches of desired standard length, although the northbound right-turn lane should start after the West Fire Station access.
- Remove the split-phasing on the cross-street and replace with a permissive-only phase. Consider providing an eastbound leading left-turn phase (with 3rd car detection). With this being a signalized intersection, modify the eastbound approach to provide a left-turn lane, thru lane and a right-turn lane. A lane for the right-turn movement for westbound is desirable, but not imperative.

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

- Provide right-turn lanes on the northbound and southbound approaches on a case-by-case basis and where space is available. Implementation could occur as right-of-way becomes available during redevelopment.
- A future traffic signal may be warranted at 61st Avenue based on future redevelopment. Other factors to consider are pedestrian crossings of Brooklyn Boulevard and transit locations at this intersection.

58th Avenue (Bass Lake Road)

- Add a second southbound left-turn lane (300 feet in length).
- Extend westbound left-turn lane from 125 feet to at least the standard length.
- Remove the northbound "auxiliary" lane from 56th Avenue North and replace with 300 to 500 foot right-turn lane.
- Provide a right-turn lane into the Cub Foods/Wells Fargo access. Because of the intersection spacing between 56th Avenue North and this access, this right-turn lane will likely be shorter than the minimum standard length.
- Extend eastbound turn lanes to provide 250 feet of storage (this will likely require purchase of home(s). Consider purchasing them as they become available on the south side of Bass Lake Road.
- Remove all three channelized right-turn islands and provide a yield condition.

56th Avenue North

- Modify westbound right-turn lane to a stop condition with no add lane.
- Extend southbound left-turn lane to 400 feet of full width with taper.
- Modify northbound right-turn channelized island to be a yield condition or modify the island (on the north side) to provide only one entering lane from the southbound left-turn movement (may need additional analysis).
- Extend the northbound right turn lane to the desired standard length.

55th Avenue North

- Remove westbound and northbound channelized right-turn islands and provide a stop condition.
- Extend northbound and southbound left-turn lanes to provide desired standard length.
- Realign west frontage road to provide greater intersection spacing from Brooklyn Boulevard.

TH 100 North Ramp

- No recommendations but need to consider auxiliary lane from the TH 100 South Ramp to 55th Avenue North.

TH 100 South Ramp

- Modify off-ramp channelized right-turn lane to a stop condition and remove auxiliary lane to the north.
- Modify the northbound channelized right-turn onto the freeway on-ramp to tighter radius.
- Add the fourth approach (eastbound) and provide access to North Lilac Drive. Remove this access from 51st Avenue.
- Signalize the intersection.

51st Avenue North

- Provide connection to the TH 100 south ramp via Lilac Drive.
- Provide a southbound left-turn lane of desired standard length.

50th and 49th Avenue North

- Could consider three-lane section, but would need Minneapolis to continue a similar roadway section.

Other Private Access

- Provide right-turn lanes to private access locations based on case-by-case basis. Higher volume driveways may need right-turn lanes to provide a safer intersection.

Land Use Transition Areas

Over the years, Brooklyn Boulevard has evolved into an "A" Minor Arterial roadway with high traffic volumes. The corridor will continue to serve this function based on future traffic forecasts and land use plans, which creates a need to improve the corridor's mobility and safety. As part of this effort, it is also important to recognize the City's long-term goal to redevelop single-family parcels along Brooklyn Boulevard to land uses better situated for this roadway, where higher traffic volumes would be seen as a benefit, rather than a drawback, to the adjacent land uses.

As redevelopment occurs, access to these sites will need to be controlled to ensure the corridor's safety and mobility is not jeopardized. Therefore, the recommended concept has eliminated direct access to some of these parcels. These parcels would be considered as potential future land use transition areas and are located in five areas throughout the corridor.

The future land use transition areas were analyzed to determine preliminary parcel redevelopment parameters that might affect future redevelopment. For all of the land use transition areas, future land use change and access transition would be contingent upon willing sellers and private market demand. Roadway reconfiguration may also require property acquisition, but allow for remnant parcel development. Table 3 summarizes the land use transition areas and the recommended roadway options.

Table 3: Land Use Transition Areas

Location	Transition Area	Concept Summary	Land Use Impacts
West Side of Brooklyn Boulevard	Intersection of 55th Ave./Brooklyn Blvd. Service Road	The service road west of 55th Ave. would be realigned west, so the 55th Ave. Service road intersection is closer to Northport Elementary School.	The conceptual service road realignment would significantly impact nine parcels, such that these parcels would likely not be able to support future development.
	South of Bass Lake Road (Service Road Access Option)	Access could occur from multiple points along the Brooklyn Blvd. Service Road. The main internal circulation would most likely occur between 57th Ave. and the service road cul-de-sac.	The proposed land use transition area south of Bass Lake Road is comprised of five parcels. These parcels would need to be assembled into a larger parcel to provide flexibility for future redevelopment.
	South of Bass Lake Road (Expanded Parcel Option)	Abandon the Brooklyn Blvd. service road north of 57th Ave. and the service road cul-de-sac. Main access with the alternative option would be limited to 57th Ave.	The proposed land use transition area south of Bass Lake Road is comprised of 17 parcels. Internal circulation could potential be more flexible and provide better opportunities for redevelopment
	Admiral Lane to 61st Ave.	Access drives could only occur off of Admiral Lane and 61st Ave. Main internal circulation would occur between Admiral Lane and 61st Ave. access drives. Potential uses for the area could be used for alternative types of senior housing, limited use office condominiums or could be combined with adjacent parcels to the west for future redevelopment.	The area is comprised of 17 single family residential parcels.
	61st Ave to 62nd Ave	Access could occur off of 61st Ave or 62nd Ave. Potential uses for this area include an option for large scale senior housing or to relocate existing Brooklyn Boulevard businesses to an overall PUD.	The area is comprised of two commercial parcels and one single family residential parcel.
	62nd Ave to 63rd Ave	Revised parking layout and access drives would allow boulevard treatments and off-street trails in the area and promote redevelopment.	The area is comprised of three commercial parcels (includes current vacant lot).
	63rd Ave. to Halifax Drive	The access drive off of 63rd Ave. should be located west of existing Ewing Lane and be setback from Brooklyn Blvd. Main internal circulation would occur between the 63rd Ave. and Halifax Drive access drives.	The area is comprised of 13 single family residential parcels. These parcels could be used for limited use office condominiums or combined with adjacent parcels to the west for future redevelopment.
East of Brooklyn Boulevard	61st Ave.	The transition concept includes the extension of 61st Ave. east of Brooklyn Blvd. and the creation of a new cul-de-sac.	The area is comprised of six commercial parcels and two multi-family residential parcels. One commercial parcel would be significantly impacted by the new cul-de-sac.
	65th Ave.	Access could occur off of 65th Ave or Ewing Ave.	The area is comprised of 4 commercial parcels.

Pedestrian Facility Components

The existing sidewalks along Brooklyn Boulevard are immediately adjacent to the curb or have minimal separation (three to five feet) from the roadway, which leads to an uncomfortable environment for pedestrians. The Recommended Concept includes wider boulevards throughout the corridor. Furthermore, the study recommends that a sidewalk be located on the east side of Brooklyn Boulevard, extending the full length of the study area from 49th Avenue to I-694. The sidewalk is recommended to be buffered from the roadway with a 10-foot boulevard to enhance user comfort and safety.

The study also includes a proposed realigned intersection at Admiral Lane/60th Avenue. The City may want to consider the construction of a sidewalk along Admiral Lane, 60th Avenue, and a short segment of Vincent Avenue to make a convenient connection to Centennial Park. The City may also want to consider including a sidewalk along the extension of 61st Avenue, east of Brooklyn Boulevard and then a short off-street extension of the sidewalk east to Beard Avenue.

Recommended Pedestrian Safety Improvements Include:

- Median refuge islands
- Countdown timers
- Future signal at 61st Avenue/Brooklyn Boulevard intersection
- 55th Avenue Regional Trail crossing
    - An at-grade crossing is recommended to provide trail crossing accommodations with fewer property impacts and lower cost than a grade-separated crossing.
    - Possible future overpass consideration with adjacent property redevelopment opportunities.

Off-Street Multi-Use Trail Components

The study concluded that an off-street multi-use trail should be located on the west side of Brooklyn Boulevard, extending the full length of the study area from 49th Avenue to I-694. The trail is recommended to be buffered from the roadway with a 10-foot boulevard to enhance user comfort and safety. Placing the multi-use trail on the west side provides convenient access to four neighborhood parks and one elementary school, in addition to linking adjacent communities. It also takes advantage of two existing trails along the west side of the roadway.

On-street bike facilities were also examined as part of this study. Given that a four lane section along with a design speed of 40 mph are proposed for north of TH 100, an on-street bike facility is a concern from a safety standpoint and therefore not recommended for the area north of TH 100.

The area south of TH 100, with a 35 mph design speed, and 3-lane section with shoulders, may allow for on-street bicycle facilities. It is recommended that the City coordinate with the City of Minneapolis when determining the feasibility of implementing bike lanes south of TH 100.

Streetscape Components

Streetscape elements proposed for Brooklyn Boulevard build upon recently constructed streetscapes on Bass Lake Road and Xerxes Avenue Brooklyn Boulevard continues to reinforce the identity of this district as the community's commercial core. Streetscape elements such as street lights, maintenance strips, fencing and bus stops continue the vocabulary already established for the district.

The concepts include recommendations for three character segments for streetscape elements. The segments include 49th Avenue to TH 100, TH 100 to 59th Avenue, and 59th Avenue to I-694. In essence, each segment includes similar boulevard and median treatments (see call out boxes). However, a range of improvements is recommended for each of the segments as shown on the Recommended Concept Summary graphic.

Streetscaping Improvements

The boulevard treatment options include:

- Turf grass with street trees
- Maintenance strip
- Sidewalk or trail
- Sidewalk access to bus stops
- Ornamental lighting

Median treatment options include:

- Ornamental lighting
- Colored pavement and bollards in narrow medians
- Turf grass with street trees and a maintenance strip in wide medians
- Landscape planting beds at the end of turf grass areas

Gateway Components

Gateway monuments are recommended at key community and commercial area entrances to the corridor (for example, TH 100, 58th Avenue, and I-94). Intersections along Brooklyn Boulevard received one of three different streetscape treatment types (primary, secondary and no treatment), based on their role in providing community gateways, wayfinding, and streetscape character.

Primary intersections are located at community gateways to announce arrival and entrance to the City or arrival to the City's commercial core. Primary intersections receive the highest level of streetscape treatment and may include large gateway monuments, heightened landscape plantings, seating and trash receptacles, and fencing/screening of adjacent parking lots.

Secondary intersections are located at signalized intersections that are not primary intersections. These intersections include enhancements that create a pleasant environment for pedestrians as they wait to cross Brooklyn Boulevard. Secondary intersections receive some streetscape treatment, but not to the same extent as primary intersections and may include small monuments and landscape plantings.

Both primary and secondary intersections will have marked crosswalks at signalized intersections with colored pavement at the intersections.

Proposed Gateways

Primary Gateways

- On and off ramps at TH 100
- 58th Avenue (Bass Lake Road)
- I-694

Secondary Gateways

- 49th Avenue
- 55th Avenue
- 61st Avenue
- 63rd Avenue
- 65th Avenue

Transit Components

Transit is an important component of the transportation infrastructure within the Brooklyn Boulevard Corridor study area. A total of 10 bus routes operate on portions of Brooklyn Boulevard. Currently, there are no plans for additional increased transit service along Brooklyn Boulevard; however improvements to some bus stop locations and increased passenger amenities are recommended to encourage increased transit use in the corridor.

Currently, there are 18 bus stops directly on Brooklyn Boulevard. Bus stop spacing in the corridor is approximately eight stops per mile. This type of spacing provides the greatest amount of access to transit customers by minimizing the distance users need to travel to a bus stop. No additional bus stops are needed along Brooklyn Boulevard. As development occurs, consideration should be given to the placement of buildings closer to Brooklyn Boulevard and to the placement of parking farther from the roadway. Building in this manner provides better access for transit customers to adjacent land uses.

Along Brooklyn Boulevard, the majority of the bus stops are located at the near-side of an intersection; however, there are a few bus stops along the corridor that are at far-side and mid-block locations. Many of the existing bus stop locations along the corridor have been placed in appropriate locations; however, five locations were identified as problematic and needing to be relocated. In addition to adjusting the location of some bus stops, it is recommended that bus pull-outs on Brooklyn Boulevard be removed. This is recommended because removing the bus pull-outs and allowing buses to remain in the travel lane eliminates the need for buses to merge in and out of traffic, thus providing a faster travel time for transit customers. Removing the existing pull-outs also helps provide consistency in the corridor.

As a part of the future roadway concept, a 10-foot boulevard is proposed between the edge of the roadway and the sidewalk. This boulevard along with the sidewalk width provide for an adequate pedestrian/transit patron distance from vehicles, eliminating the need to provide pull-outs for the sake of creating a delineated space for transit users. The future transit concept includes recommendations for three tiers of transit stop amenities based on ridership at each stop (See Table 4).

Table 4: Recommended Transit Stop Amenities

Transit Tiers	Recommendations
Low Volume Boarding Locations	At low volume boarding bus stop locations, a bench, trash receptacle, and landscaping elements are proposed.
Medium Volume Boarding Locations	At medium volume boarding bus stop locations, two benches, trash receptacle, and landscaping elements are proposed.
High Volume Boarding Locations	At high volume boarding bus stop locations, a passenger shelter, a bench, trash receptacle, a bicycle locker and bicycle racks, and landscaping elements are proposed.

Lighting was also considered as it affects transit customer perceptions of safety and security at a bus stop as well as the use of the site by non-transit customers. Lighting can enhance a person's sense of comfort and security, especially in the evening and late evening. Bus stops should be coordinated with existing streetlights to provide a minimum level of lighting and security; lighting should be incorporated at medium- and high-volume boarding locations if feasible.

Implementation Plan

The implementation plan documents basic information, including a description of the location and design features for each project (see Table 5). Planning level cost estimates for each project are included to position the project for future funding opportunities. The overall improvements identified in the concept layout are estimated to cost in excess of $30 million. Improvements include the complete reconstruction of 1.1 miles of a four-lane urban facility with turn lanes and restricted access at cross streets and business driveways. Easement needs are in addition to the costs shown.

The Implementation Plan also allows for traffic safety and operational benefits to be realized sooner rather than waiting for the entire project to be built. Projects can be timed to coincide with redevelopment as it occurs along the corridor. Furthermore, the Implementation Plan identifies smaller projects with independent utility that can be constructed in phases and are consistent with the Recommended Concept.

Preliminary phased improvement projects have been identified as:

- Pavement rehabilitation from 49th Avenue to 51st Avenue and conversion to a 3-lane section and addition of trail
- Intersection and Frontage Road reconfiguration at 51st Avenue and South TH 100 Ramps
- Bridge over TH 100 re-decking and reconfiguration
- Intersection, frontage road and access improvements between TH 100 and 65th Avenue
- Bass Lake Road Intersection Reconfiguration
- Roadway reconstruction from Bass Lake Road to 65th Avenue
- 63rd Avenue Pavement rehabilitation / Reconstruction
- TH 94 Off-ramp reconfiguration
- Trail construction
- Streetscaping and other aesthetic improvements

It is also important to recognize the scarcity of available funding and the reality that project funding will need to be acquired over time. Therefore, various funding sources have been identified to plan for potential funding. The Implementation Plan allows project partners to match smaller projects with realistic funding amounts.

Potential funding sources include:

- Surface Transportation Funding (STP) Federal funding program
- State funding through MnDOT
- Safe Routes to School – Federal Funding Program
- Transportation Alternatives (TA) – Federal Funding Program

- State Aid funding, City and/or County funding program
- County Participation – Roadway
- County Participation – Roadside Enhancement Partnership Program
- Special grants
- Local funds
- Special assessments
- Developer agreements

Table 5: Project Description and Costs

Project Name	Project Type	Project Description	Estimated Project Cost	Potential Funding Source	Project Priority
#1 – 49th Ave to 51st Ave	Pavement Rehabilitation and Walk/Trail/ Streetscaping	Located between 49th Avenue and 51st Avenue, this project would include a mill and overlay of the existing roadway, add trails and walks and convert the existing four-lane section to a three-lane section with shoulders.	$598,000	A, B, D, E, F	Ultimate 3
#1A – 49th Ave to 51st Ave	Walk/Trail/ Streetscaping	Located between 49th Avenue and 51st Avenue, this project would add trails and walks while maintaining the existing four-lane roadway configuration.	$367,000	B, E, F	Interim 4
#2 – 51st Ave to TH 100	Roadway Reconstruction and Intersection Improvements	Located between the TH 100 bridge and 51st Avenue, this project would reconstruct the existing roadway, add a signal system at TH 100 south ramp intersection, add trails and sidewalks, modify the west frontage road access, and add a center median island.	$3,152,000	A, D, E	Ultimate 1
#3 - TH 100 Bridge	Bridge Rehabilitation	This project would be part of the MnDOT lead TH 100 bridge re-decking scheduled for 2014.	$1,569,000	G	Ultimate 1
#4 – 55th Ave Frontage Road	Street Realignment	Located between TH 100 and Bass Lake Road, this project would combine roadway realignment at 55th Avenue to improve intersection spacing with Brooklyn Boulevard.	$753,000	C	Ultimate 3
#5 – 55th Avenue	Intersection Improvements	Located at the intersection of Brooklyn Boulevard and 55th Avenue, this project would eliminate free right turns. The project also includes signal revisions and trail crossing enhancements.	$416,000	A, D	Ultimate 2
#6 - TH 100 to Bass Lake Road	Pavement Rehabilitation and Intersection Improvements	Located between TH 100 and Bass Lake Road, this project would include a mill and overlay of the entire roadway with turn lane improvements. The project would also modify 55th and 56th Ave. interchanges by eliminating free right turn movements to and from Brooklyn Boulevard. The project does not include sidewalks, trails or streetscaping.	$1,217,000	A, B, D	Ultimate 2
#6A - TH 100 to Bass Lake Road	Walk/Trail/ Streetscaping	Located between TH 100 and Bass Lake Road, this project would add trails, walks and streetscaping.	$1,343,000	B,E	Interim 4

#7 - Bass Lake Road	Intersection Improvements and Walk/Trail/ Streetscaping	Located at the intersection of Bass Lake Road and Brooklyn Boulevard, this project would revise the existing intersection configuration by eliminating free right movements for enhanced pedestrian access/safety and provide for dual left-turn lanes from southbound Brooklyn Boulevard to eastbound Bass Lake Road. The project would also include a frontage road cul-de-sac reconstruction south of Bass Lake Road.	$2,302,000	A, D, E	Ultimate 2
#8 – Bass Lake Road to 65th Avenue	Roadway Reconstruction and Walk/Trail/ Streetscaping	Located between Bass Lake Road and 65th Avenue, this project would be the proposed ultimate condition for the corridor by reconstructing the existing roadway, adding center median islands for improved access control, signal system at 63rd Avenue, entrance modifications, trails and walks and streetscaping.	$7,647,000	A, B, C, D, E	Ultimate 2
#8A – Bass Lake Road to 65th Avenue	Roadway Reconstruction and Walk/Trail/ Streetscaping	Located between Bass Lake Road and 65th Avenue, this project would be the proposed interim condition for the corridor by reconstructing the existing roadway, signal system at 63rd Avenue, entrance modifications, trails and walks and streetscaping (cent median islands would not be constructed as part of the project).	$7,582,000	A, B, C, D, E	Interim 2
#9 – 60th Avenue	Street Alignment	Located on 60th Avenue between Beard Avenue and Brooklyn Boulevard, this project would realign 60th Avenue (through the currently empty lot) to create an intersection with Admiral Lane to the west.	$389,000	H	Ultimate3
#10 – Access Revisions	Street Realignment	Located at 63rd Avenue from France Avenue to Beard Avenue, this project would include a mill and overlay of the existing roadway and add turn lanes on Brooklyn Boulevard.	$552,000	G	Ultimate 5
#11 – 63rd Avenue	Roadway Reconstruction and Pavement Rehabilitation	Located on 63rd Avenue from France Avenue to Beard Avenue, this project would include rehabilitate the existing roadway and adding turn lanes at Brooklyn Boulevard and convert the existing four-lane section to a three-lane section with shoulders.	$325,000	A	Ultimate 1
#12 – EB I-94 Off Ramp	Intersection Improvements	Located at the eastbound TH 94 off-ramp to Brooklyn Boulevard, this project would revise the current intersection to eliminate the free right-turn to Brooklyn Boulevard.	$552,000	G	Ultimate 5

#13 – WB I-94 Off Ramp	Intersection Improvements	Located on the TH 94 westbound off-ramp to Brooklyn Boulevard, this project would revise the current intersection geometry to reduce the intersection skew with Brooklyn Boulevard.	$923,000	G	Ultimate 5

Table Key:
Funding Sources:
A – Surface Transportation Program
B –Transportation Alternatives
C – Safe Routes to School
D – Hennepin County Participation – Roadway
E – Hennepin County Participation – Roadside Enhancement Partnership Program
F – Hennepin County Bikeway Gap Funding
G – MnDOT State Funding
H – Local Funds

Project Priorities:
1 – Current Program funding or Immediate known Safety Concerns
2 – Projects Identified to score well for potential funding
3 – Projects that accommodate land use changes
4 – Maintenance Projects
5 – Potential MnDOT projects

The overall corridor was broken down into 13 potentially separate projects based on functionality, geographic location, independent utility, reasonable cost and type of project improvements. Some of the 13 projects could be broken-down further; in fact, a few are shown with interim and ultimate scenarios that allow for further flexibility from an implementation standpoint.

For the task of prioritizing the various projects along the Brooklyn Boulevard corridor, a scale of 1 through 5 is utilized, with 1 being of highest priority and 5 being the least priority. Below is a summary of how each priority level is defined:

- Priority 1 projects:
  Implemented over the next 1 year
  Currently programmed for funding or rehabilitation

- Priority 2 projects:
  Implemented over the next 2 to 4 years
  Score favorably on near term funding solicitation (such as federal STP or TA applications).
  Immediate known safety concerns

- Priority 3 projects:
  Implemented in 4 to 6 years
  Accommodate land use changes through redevelopment
  Provide safety and operational improvements in isolated areas

- Priority 4 projects:
  Implemented in 6 to 10 years
  Pavement replacement/rehabilitation as needed over time
  Enhancement type projects that involve improvements behind the curb

- Priority 5 projects:
  Implemented in 6 to 10 years
  Future projects likely to be built as part of larger project which at this time are not programmed.

Conclusions

Findings and recommendations from this study are described in greater detail in the Existing Conditions Report, the Recommend Concept Report and the Implementation Plan. Key conclusions and recommendations from this study are summarized below:

Geometric Layout

- The geometric layout incorporates a balance between the required functions of an "A" Minor Arterial (mobility and access) connecting I-694 to TH 100.
- The geometric layout includes 11-foot lanes to preserve the lower speed character of the roadway, while providing opportunity to increase pedestrian and bicycle amenities, and landscaping.
- The existing four-lane roadway provides sufficient vehicular capacity and does not require expansion at this time.
- The existing posted speed of 40 miles per hour design north of TH 100 and 35 mph south of TH 100 is appropriate at this time.

Access Management

- North of TH 100, direct access to Brooklyn Boulevard is recommended to follow Hennepin County spacing guidelines of full access every 1/4 mile and partial access every 1/8 mile.
- South of TH 100, existing direct residential accesses are recommended to be maintained. The section of roadway has a lower design speed and characteristics consistent with a residential area where multiple accesses are present.
- Restrict full access between 58th Avenue (Bass Lake Road) and 63rd Avenue, with a center median island.

Land Use Transition Areas

- Single-family parcels along Brooklyn Boulevard will be redeveloped overtime to land uses better suited for this roadway, where higher traffic volumes would be seen as a benefit, rather than a drawback.
- Roadway reconfiguration may require property and easement acquisition that could allow for remnant parcel development.

Pedestrian/Bicycle Facilities

- An off-street multi-use trail with boulevards is recommended to be located on the west side of Brooklyn Boulevard, extending the full length of the study area.

- The study recommends a sidewalk with boulevards be located on the east side of Brooklyn Boulevard, extending the full length of the study area from 49th Avenue to I-694.
- The public process did not indicate a desire for on-street bike lanes.

Intersection Safety Enhancements

- Incorporate median refuge islands and countdown times throughout the study area.
- Install a future traffic signal at the intersection of 61st Avenue and Brooklyn Boulevard.
- In order to accommodate the Twin Lakes Regional Trail crossing at 55th Avenue, an at-grade crossing is recommended. The existing at grade crossing will be enhanced with the elimination of the free right island at 55th Avenue.

Streetscape Character

- Improve the existing community gateway at 49th Avenue.
- Implement new community gateways at I-694, TH 100 and at 58th Avenue (Bass Lake Road) and Brooklyn Boulevard.
- Apply streetscaping design components throughout the corridor (e.g., turf grass with street trees, maintenance strip, ornamental lighting with banners, and plantings). Specific improvements have been identified for the corridor and are described in the Recommended Concept Report.

Transit Components

- Relocate the following problematic bus stop locations:
    - Brooklyn Boulevard between 63rd Avenue and Halifax Drive (southbound)
    - Brooklyn Boulevard between 61st Avenue and 62nd Avenue (northbound)
    - Brooklyn Boulevard and Admiral Lane (southbound)
    - Brooklyn Boulevard and 60th Avenue (northbound)
    - Brooklyn Boulevard and TH 100 (northbound)
    - Brooklyn Boulevard and TH 100 (southbound)
- Remove bus pull-outs on Brooklyn Boulevard.
- Passenger amenities are recommended at all bus stop locations. Bus shelters and passenger amenities should be placed behind the sidewalks or trails when feasible. Different levels of amenities are recommended based on the number of passengers using the bus stop. These are described in more detail in the Recommended Concept Report.

Moving Forward

This multi-dimensional plan provides the design foundation that can be developed and implemented over time by the study partners, enabling them to better plan for ongoing redevelopment and the necessary corridor improvements. More importantly, this study provides the guidance necessary to move forward in achieving the corridor's vision. Achieving this vision will help reach the corridor's desired function, character and identity. However, as improvements are implemented and the corridor redevelops overtime, priorities and needs may shift. Therefore, ongoing collaboration between project partners is necessary to maintain project momentum. A large part of this coordination will be focused on identifying and obtaining funds to implement improvements. The implementation plan will serve as a key resource in helping align potential funding sources with improvements.

As funding is pursued and secured in the future, the Brooklyn Boulevard study will serve as the primary source of planning, engineering/design, and implementation for the corridor from 49th Avenue to I-94.