Draft Station Plan

Metro Transit is planning improvements to the Route 5 corridor with the D Line, a rapid bus service. The D Line will substantially replace Route 5, running primarily on Chicago and Emerson/Fremont Avenues. Rapid bus brings better amenities, faster service and a more comfortable ride. The D Line project is currently in the station planning phase. Pending full project funding, D Line stations would be constructed in 2020 and 2021.

We are currently seeking feedback on proposed D Line station locations. The draft *D Line Station Plan* was released this week, and we are seeking comments through March 6. This a major opportunity for you and your organization to help inform final station location recommendations.

There are several ways to comment on the plan:

- Review the plan and comment online at metrotransit.org/d-line-project
- Email comments to DLine@metrotransit.org
- Call Customer Relations at 612-333-3333
- Attend an open house to learn more, talk with project staff, and provide comments:
    - Tuesday, February 13, 3:00 – 5:00 p.m. at Chicago-Lake Transit Center
    - Thursday, February 15, 6:00 – 8:00 p.m. at Richfield Municipal Center
    - Saturday, February 17, 2:00 – 4:00 p.m. at Mall of America Transit Center
    - Wednesday, February 21, 6:00 – 8:00 p.m. at North High School
    - Thursday, February 22, 6:00 – 8:00 p.m. at Wellstone High School
    - Saturday, March 3, 2:00 – 4:00 p.m. at Brooklyn Center Transit Center

Metro Transit will report back to the community with revisions in a recommended plan this spring, and bring a final plan to the Metropolitan Council for approval this summer.

We have developed a short video to share with neighborhood groups and the public to provide information on the D Line, the planning process, and how to comment on the draft *D Line Station Plan*. Please consider sharing this video with your community through your social media channels.

To stay in touch with project updates, you can sign up for the D Line newsletter here and at the project website at metrotransit.org/d-line-project.

D LINE STATION PLAN: TABLE OF CONTENTS

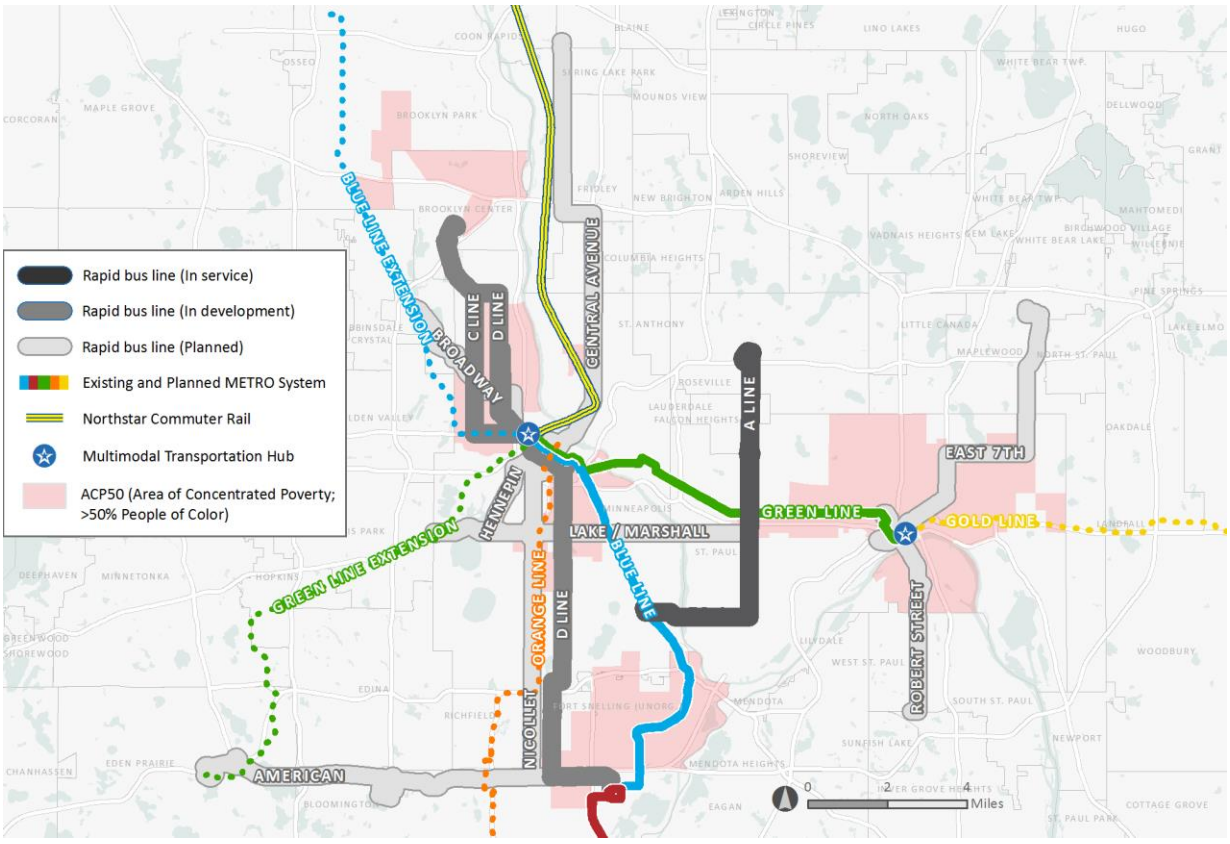
I. INTRODUCTION

The D Line is a planned rapid bus line that will upgrade and substantially replace Route 5, Metro Transit's highest ridership bus route. The D Line corridor stretches approximately 18 miles from the Brooklyn Center Transit Center to the Mall of America Transit Center, serving Fremont/Emerson Avenues in north Minneapolis, 7th/8th Streets in downtown Minneapolis, Chicago Avenue and Portland Avenue in south Minneapolis, Portland Avenue in Richfield, and American Boulevard in Bloomington.

Rapid bus (also called arterial bus rapid transit, or BRT) is a package of transit enhancements that produces a faster trip and an improved experience for customers in the Twin Cities' busiest bus corridors. It runs on urban corridors in mixed traffic.

The D Line will be the third operational line within the Twin Cities region's rapid bus system. The A Line on Snelling Avenue and Ford Parkway began service in June of 2016; the C Line on Penn Avenue is targeted to begin service in 2019.

Figure 1: Planned rapid bus network



Rapid Bus Overview

Rapid bus is designed to provide an improved customer experience with faster and more frequent trips when compared to existing local service. This experience is delivered through a package of improvements that includes enhanced customer facilities and greater operational efficiency.

Every planned rapid bus corridor is unique in street design and surrounding land use. As a result, each line balances flexibility with implementation strategies with core rapid bus characteristics. The following

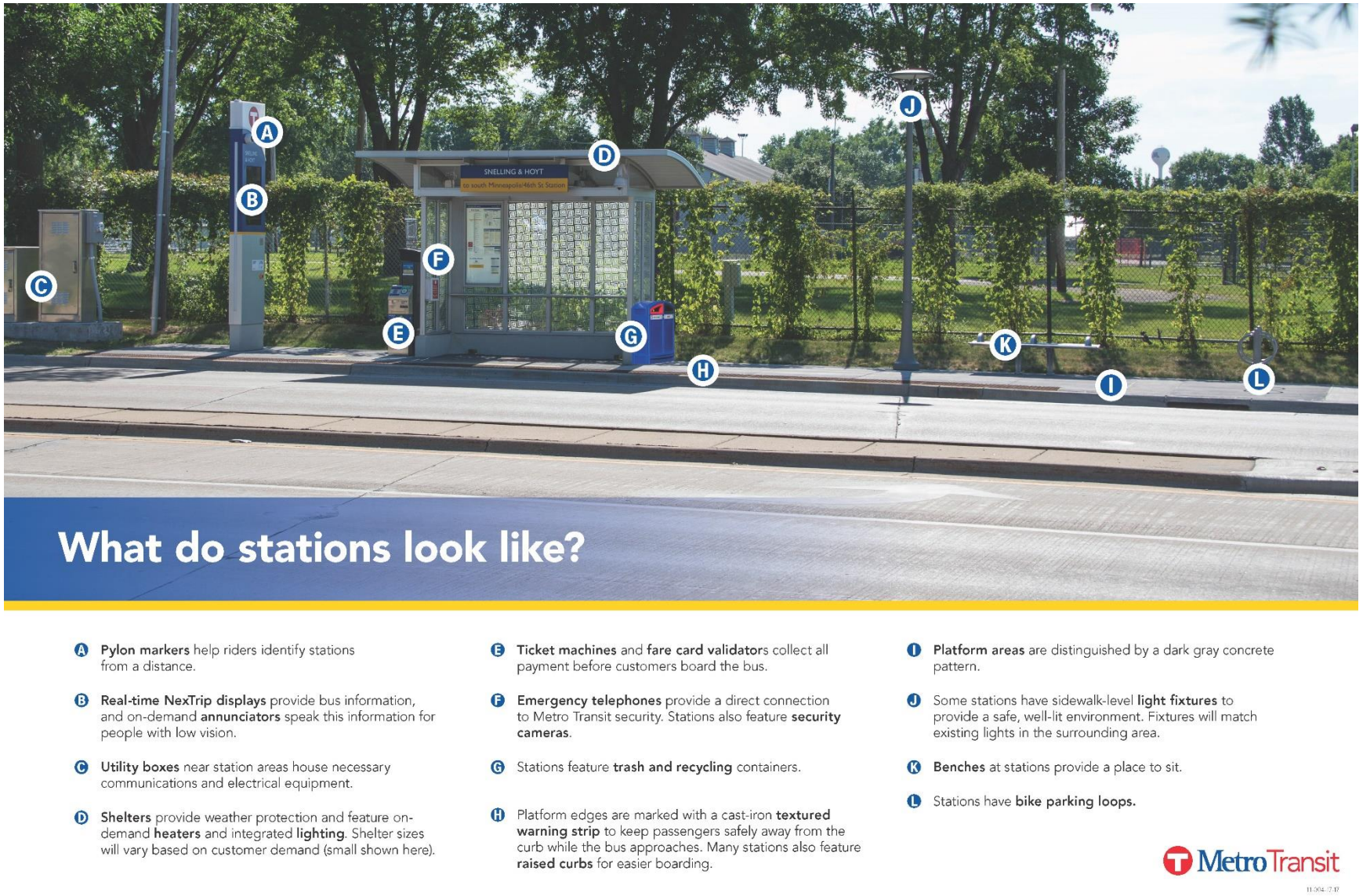
characteristics of rapid bus will be implemented to the extent possible given the context and unique aspects of each planned station along the corridor.

Station Features

Rapid bus brings a light-rail quality experience to bus corridors by providing faster and more efficient service, and station and bus amenities that foster an improved customer experience. See Figure 2 for additional information on the design and features of rapid bus stations in the Twin Cities. Section IV also provides more information on important station characteristics. General information is provided below.

- Curb bumpouts / curb extensions
    - Rapid bus runs in general traffic, with bumpouts (also called curb extensions or bus bulbs) at stations where feasible. Today, many existing local bus stops are located out of a thru-lane of traffic in right-turn lanes or in a curbside parking lane, causing delay for buses merging back into traffic. Curb bumpouts at station platforms eliminate delay-inducing merging movements. They also provide extra space for station amenities and pedestrians on existing sidewalks. Additionally, to facilitate near-level boarding, curb heights will be increased to nine inches from the standard six where possible.
- Off-board fare payment
    - Like on the A Line and light rail, customers will pay fares prior to boarding the bus. Ticket vending machines and fare card validators will be located at each station. Off-board fare payment expedites the boarding process and significantly decreases dwell time at stations, allowing buses to stop briefly in the travel lane rather than pull over. Fare payment will be enforced through random on-board inspections by Metro Transit Police.
- Shelters
    - Shelters provide weather protection while customers wait for the bus. Standard rapid bus shelters feature on-demand heaters and integrated lighting, as well as emergency telephones. Shelters range from 12 to 36 feet long, depending on site conditions and ridership. A concrete foundation increases protection from the elements and helps establish more permanence compared to standard shelters.
- Information
    - Detailed transit information is provided in a variety of formats to offer clear direction and increase customer confidence in trip status. Each station includes a pylon landmark sign with a real-time dynamic display and a printed panel with timetable, maps, and connection information.
- Furnishings and other improvements
    - Several station components will enhance customer safety and comfort, including security cameras and telephones and adequate clear zone for boarding and alighting through any bus door. Benches, trash receptacles, and bike racks will be available for customer use.

Figure 2: Rapid bus station features



Operational Improvements

- Limited stops and increased frequency
    - Rapid bus stations are spaced approximately every half-mile, focusing on upgrading stops to stations where the greatest numbers of customers board buses today. More distance between stations significantly increases overall travel speeds when compared to local bus stop spacing of 1/8 mile (the length of a north-south block in Minneapolis), while also allowing for most customers to access stations comfortably on foot.
    - High frequency service increases the convenience of rapid bus. The D Line will become the primary service in the corridor, running every ten minutes throughout the day with increased service on nights and weekends compared to the existing Route 5.
    - Existing local service on Route 5 will be maintained with reduced frequency generally every 30 minutes to provide continued local service for customers who cannot or choose not to walk to a nearby station.
- Rapid bus vehicles
    - Rapid bus vehicles have distinctive branding to differentiate them from standard buses. D Line buses will be 60-foot articulated vehicles to serve large numbers of riders, with three wide doors to allow customers to enter and exit through all doors of the vehicle. All buses will be low-floor vehicles to help facilitate boarding and alighting for all customers, and buses will have modified seating layouts for more interior circulation space. Accessibility ramps will remain for those customers using a mobility device.
- Transit signal priority (TSP)
    - Buses will be linked to traffic signals throughout the corridor to provide transit signal priority when conditions allow. A TSP system will allow buses to request early green time and/or extended green time to allow movement through the intersection. TSP helps reduce time spent stopped at red lights, a substantial source of bus delay.

Figure 3: D Line articulated bus rendering

Background

While Twin Cities rapid bus has been operating since 2016, origins behind the concept developed in the mid-2000s. In 2008, the Metropolitan Council's *2030 Transit Master Study*[1] identified high-ridership arterial corridors that could potentially foster transitways with high-quality bus or rail service. The study noted that constrained right-of-way availability and substantial community impacts precluded the possibility of bus or rail service in dedicated travel lanes on many of these corridors. However, it was demonstrated that faster and more frequent service along these corridors could substantially increase ridership.

The 2009 update to the Metropolitan Council's *2030 Transportation Policy Plan*[2] (TPP) further identified nine specific arterial corridors for additional study of rapid bus. These nine corridors and two additional routes formed the foundation for 2012's *Arterial Transitway Corridors Study*[3] (ATCS). The ATCS presented the basic components of how rapid bus would operate in the Twin Cities and offered initial concept-level station locations, ridership estimates, and costs for the eleven lines.

Chicago Avenue was one of the original corridors identified in the *2030 Transit Master Study* for further study of arterial rapid bus. During ATCS development in 2011 and 2012, concerns about transit coverage northwest of downtown Minneapolis, a high-service area included in Route 5 but not considered for rapid bus, prompted the recommendation of extending the proposed Chicago Avenue line through north Minneapolis on Emerson-Fremont Avenues. The ATCS concluded that the extended corridor could operate more efficiently than a standalone Chicago Avenue corridor, because implementing rapid bus service over the entire length of Route 5 would better replace duplicative local bus service. The final ATCS report recommended that the line and particularly this extension be further studied prior to implementation. An ATCS addendum[4], which incorporated the extended corridor, was released in January 2013.

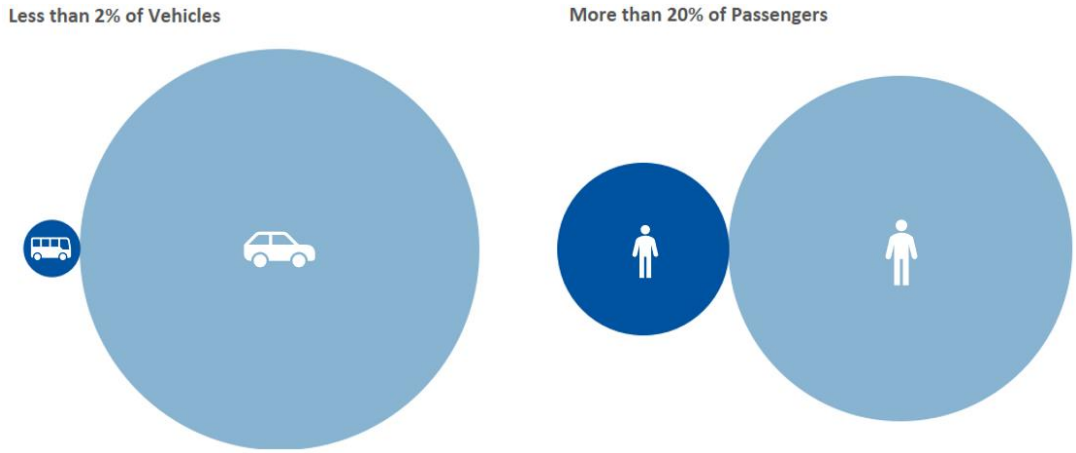
The addition of Emerson-Fremont Avenues to the Chicago Avenue corridor positioned it as the highest-scoring corridor in a technical evaluation, and Metro Transit recommended implementation in the near term. Subsequently, the 2030 TPP was amended in May of 2013 to include the extended corridor. The D Line was further solidified as a planned transitway within the *2040 Transportation Policy Plan*[5], adopted in 2015.

Purpose and Need

The Chicago-Emerson/Fremont (Route 5) corridor needs additional transit capacity. With average daily ridership of about 15,500 rides per weekday in 2016, Route 5 consistently ranks as Metro Transit's top performing local bus route. It also ranks among the top five routes for passengers per in-service-hour, a measure of productivity that indicates a high level of usage for the existing transit service on the Chicago-Emerson/Fremont corridor.

[1] Available at: https://metrocouncil.org/METC/files/cc/ccc84f33-a760-4c3b-84d7-3140425ec352.pdf
[2] Available at: https://metrocouncil.org/Transportation/Planning/Transportation-Policy-Plan/Previous-2030-Policy-Plan.aspx
[3] Available at: https://www.metrotransit.org/abrt-study
[4] Available at: https://www.metrotransit.org/abrt-study
[5] Available at: https://metrocouncil.org/Transportation/Planning-2/Key-Transportation-Planning-Documents/Transportation-Policy-Plan-(1)/The-Adopted-2040-TPP-(1).aspx

Figure 4: Vehicle and Passenger Movement through Route 5 Corridor



System-wide bus ridership has dropped over the past few years, and Route 5 is no exception despite being the busiest local route in the system. The exception to this pattern is the A Line, which opened in June 2016. Over its first year of operation, the corridor saw consistent daily ridership increases of over 30 percent. After crossing the one-year mark, daily ridership on the route averages five to ten percent higher than the previous year, when the A Line was already operating.

With implementation of D Line rapid bus, the Route 5 corridor could see similar results. Speeds along Route 5 are currently slow. During peak hours, it can take more than 45 minutes to travel about eight miles from the Brooklyn Center Transit Center to downtown Minneapolis, and another 45 minutes to travel about 10 miles from downtown to the Mall of America in Bloomington. Additionally, Route 5 has below-average on-time performance, averaging under eighty percent so far in 2017, and often ranking in the bottom quarter of local routes in the system. Operational changes, like transit signal priority, off-board payment, and fewer and more dispersed stations, would all significantly reduce travel time and improve on-time performance.

Figure 5: Route 5 average weekday ridership, 2014-2017

Year	Quarter	Average Weekday Ridership
2014	First	16,900
2014	Second	18,400
2014	Third	18,000
2014	Fourth	18,800
2015	First	16,600
2015	Second	17,400
2015	Third	16,800
2015	Fourth	16,500
2016	First	15,800
2016	Second	15,800
2016	Third	15,200
2016	Fourth	15,200
2017	First	14,700
2017	Second	14,700
2017	Third	13,900

The purpose of the D Line is to enhance transit service and facilities along the Route 5 corridor with increased service frequency, faster speeds, and a more comfortable customer experience without substantially altering the existing roadway.

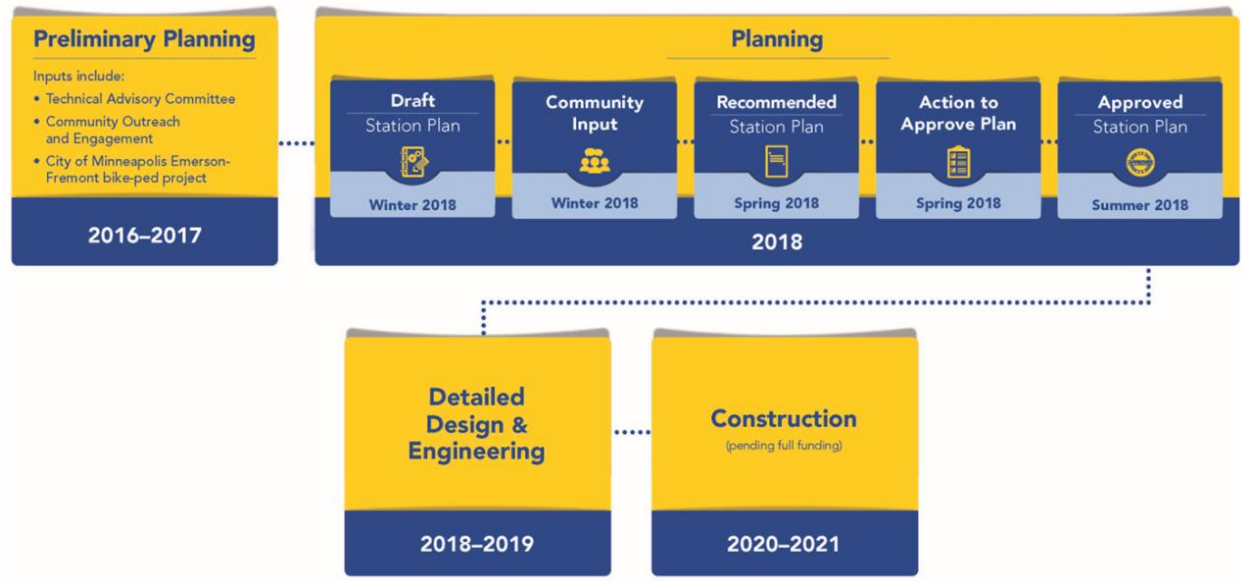
II. PLANNING PROCESS

Rapid bus on the Chicago-Emerson/Fremont corridor was prioritized for implementation by adoption into the amended *2030 Transportation Policy Plan*[6] in 2013 and the *2040 Transportation Policy Plan*[7] in 2015. Since that time, Metro Transit has implemented a D Line planning process that includes a mix of interagency coordination, data analysis and review, and community outreach and engagement.

The planning process will continue into 2018 as the *D Line Station Plan* moves through a public review process before final approval by the Metropolitan Council. Final approval of a *D Line Station Plan* is planned for the summer of 2018.

The main objective of the *D Line Station Plan* is to confirm station and platform locations at the intersection and intersection quadrant level. The approved document will guide the project's design phase. The planning phase will conclude with the Metropolitan Council's approval of the final *D Line Station Plan*. See Figure 6 below for more project development process information.

Figure 6: Project development process



The following sections highlight key components of the D Line planning phase.

Initial Review

An important part of the D Line planning phase included the review of a variety of materials to help identify early station location recommendations and areas with particularly challenging planning issues. Project staff considered previous planning in the Arterial Transitway Corridors Study[8], ridership data, the

[6] More information available at: https://metrocouncil.org/Transportation/Planning/Transportation-Policy-Plan/2030-Transportation-Policy-Plan-(1).aspx
[7] More information available at: https://metrocouncil.org/Transportation/Planning-2/Key-Transportation-Planning-Documents/Transportation-Policy-Plan-(1)/The-Adopted-2040-TPP-(1).aspx
[8] More information available at: https://www.metrotransit.org/abrt-study

existing transit network, and roadway design to identify locations or corridor segments requiring further review.

This early internal review helped focus the planning process on key considerations and station location issues that the public and agency partners could influence. These unresolved locations became the focus for additional planning review with agency partners and the public.

Project Coordination

An important part of the D Line planning phase has included coordination with other planned infrastructure projects throughout the corridor being built by partner agencies like Hennepin County or the City of Minneapolis. See Section III for more information on coordination with specific projects.

Emerson-Fremont Avenues bicycle-pedestrian improvement project (City of Minneapolis)

In some cases, coordination between projects was initiated several years ago to ensure compatibility and reduce impacts. Project coordination was a major factor for early station location considerations in north Minneapolis. In 2014, Metro Transit and the City of Minneapolis coordinated planning of the City's Emerson-Fremont Avenues bicycle-pedestrian improvement project[9] and D Line station locations. As a result, substantial D Line planning recommendations in the north Minneapolis area were made earlier compared to other parts of the corridor. See Section III for more information about coordination with the Emerson-Fremont Avenues bicycle-pedestrian improvements project, including the recommended station locations developed through this coordination.

Planning Issues Review

Specific planning issues and unresolved station locations were considered throughout 2017 with a multi-agency Technical Advisory Committee and a variety of community outreach and engagement activities. This work resulted in the recommendation of station locations presented in this *Station Plan*. See Figure 7 for a concept map identifying unresolved station locations that were the focus of 2017's planning issues review.

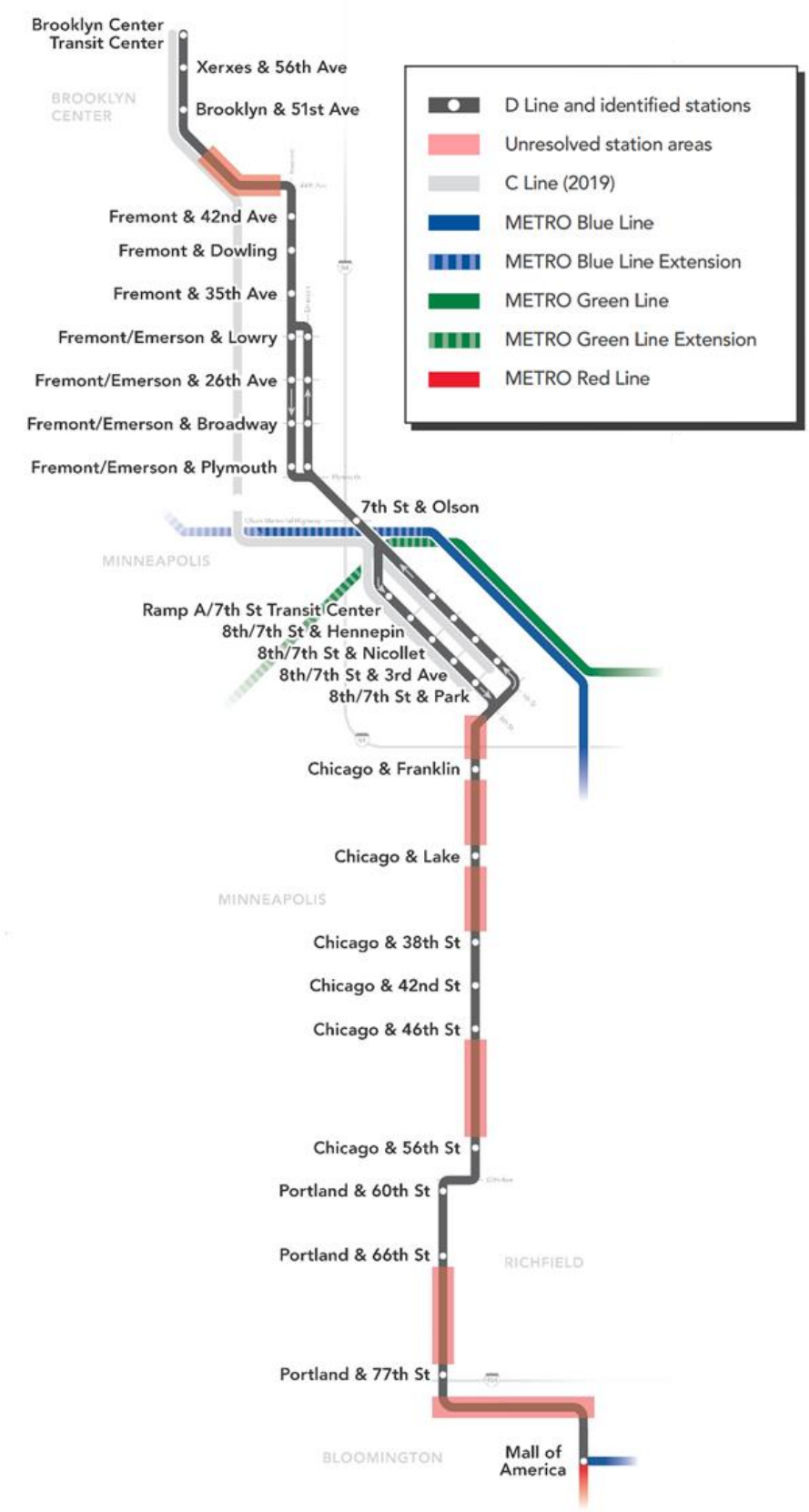
Technical Advisory Committee

The Technical Advisory Committee (TAC) consists of interagency partners advising the project on station location issues throughout the corridor. The TAC met monthly throughout 2017. Station location recommendations in this *Station Plan* were made in coordination with the TAC, which includes:

- Hennepin County
- City of Brooklyn Center
- City of Minneapolis
- City of Richfield
- City of Bloomington
- Minneapolis Park and Recreation Board

[9] More information available at: http://www.ci.minneapolis.mn.us/cip/future/emerson-fremont

Figure 7: Draft concept map identifying unresolved station areas for 2017 planning review



Community Outreach and Engagement

A variety of outreach and engagement activities occurred throughout 2017 to help inform station location recommendations in this *Station Plan*. Types of activities included:

- Providing information, facilitating conversations, and seeking targeted feedback at neighborhood group meetings
- Tabling to provide information and seek feedback at community events like community festivals or Open Streets events
- Meeting with area businesses to discuss potential D Line station locations
- Surveying customers about the D Line and the Chicago-Lake Transit Center
- Presenting and receiving feedback at transportation committees of local governments

For more information about past meetings and presentations, see the D Line project website[10].

D Line Station Plan Process

Draft *D Line Station Plan* Review

A community outreach and engagement process will be implemented along with the publication of this draft *D Line Station Plan* to help finalize the document prior to Metropolitan Council approval. Public open houses, on-bus outreach, electronic and print communications, interactive online plan review, and opportunities for one-on-one conversations with Metro Transit staff will help refine the recommendations in this draft *Station Plan*.

The open comment period on the draft *D Line Station Plan* will extend for 30 days after the release of the document. Input obtained during this comment period will be integrated into a revised and recommended *D Line Station Plan*. The draft *D Line Station Plan* is available on the D Line project website[11].

Recommended *D Line Station Plan* Review

A revised recommended *D Line Station Plan* will be released in the spring of 2018. A 30-day comment period will provide a final opportunity for public input on recommended station locations.

Final *D Line Station Plan* Approval

Final plan revisions will be made after the close of the recommended *D Line Station Plan* comment period. The final *D Line Station Plan* will go before the Metropolitan Council for approval in the summer of 2018. An approved *D Line Station Plan* will finalize station and platform locations before D Line detailed design begins in mid-2018.

[10] More information available at: https://www.metrotransit.org/d-line-meetings
[11] More information available at: https://www.metrotransit.org/d-line-station-plan

III. PROJECT IMPLEMENTATION & TIMELINE

Anticipated Project Schedule

The D Line process consists of three major components:

- Planning (2016-2018)
- Design (2018-2019)
- Construction (2020-2021, pending funding availability)

Planning Phase (2016-2018)

See Section II for more information about the D Line planning phase. The D Line planning phase will conclude with the adoption and approval of the final *D Line Station Plan* by the Metropolitan Council, anticipated in the summer of 2018. The approved *D Line Station Plan* will finalize station locations and key station components to inform the design phase.

Design Phase (2018-2019)

Following Metropolitan Council approval of the final *D Line Station Plan*, engineering and design will begin in 2018 and continue into 2019.

Construction Phase (2020-2021)

The D Line is targeted for construction in 2020 and 2021, pending full project funding availability.

Construction and system testing would lead to the beginning of revenue service in 2021 or 2022. This timeline is subject to change.

Coordinated Implementation

The D Line project will continue to be developed in coordination with a variety of planned infrastructure projects throughout the corridor, as summarized below. More project coordination information for individual station locations is available within Section V.

44th Avenue/Webber Parkway reconstruction project (Hennepin County)

Hennepin County is planning to reconstruct 44th Avenue/Webber Parkway between Penn Avenue and Lyndale Avenue and 41st Avenue North.[12] Construction is anticipated to begin in 2020. To minimize disruption, the design and construction of D Line platforms and the 44th Avenue/Webber Parkway reconstruction project will be coordinated to the extent possible.

Coordinated stations:

- 44th Avenue & Penn-Oliver area
- 44th Avenue & Humboldt-Girard area

Emerson-Fremont Avenues bicycle-pedestrian improvement project (City of Minneapolis)

The City of Minneapolis plans to improve bicycle and pedestrian facilities on Emerson-Fremont Avenues in 2018.[13] D Line station locations were coordinated in advance of the city's 2014 application for

[12] More information available at: https://metrocouncil.org/Transportation/Planning-2/Transportation-Funding/Regional-Solicitation/2016-Submitted-Applications/ROADWAY-RECONSTRUCTION-MODERNIZATION/5141HennCoRRM.aspx

[13] More information available at: http://www.ci.minneapolis.mn.us/cip/future/emerson-fremont

Regional Solicitation funding and confirmed in late 2016. Coordination ensures that bicycle-pedestrian improvements will not be impacted by D Line station locations.

Coordinated stations:

- Fremont & 42nd Avenue
- Fremont & Dowling
- Fremont & 35th Avenue
- Emerson-Fremont & Lowry
- Emerson-Fremont & 26th Avenue
- Emerson-Fremont & West Broadway
- Emerson-Fremont & Plymouth

METRO Green Line Extension (Metro Transit)

The METRO Green Line Extension project[14] will add a traffic signal at 7th Street and 5th Avenue and bicycle and pedestrian improvements along 7th Street. D Line platform design and construction will be coordinated with the METRO Green Line Extension to the extent possible.

Coordinated station:

- 7th Street & Olson-5th Avenue

Hennepin Avenue reconstruction project (City of Minneapolis)

The City of Minneapolis plans to reconstruct Hennepin Avenue from Washington Avenue to 12th Street beginning in 2020.[15] The design and construction of the 8th Street & Hennepin platform will be coordinated with this reconstruction project to the extent possible.

Coordinated station:

- 8th Street & Hennepin

Franklin Avenue Highway Safety Improvement Project (Hennepin County)

Hennepin County plans to make safety improvements at the intersection of Chicago Avenue and Franklin Avenue through the MnDOT Highway Safety Improvement Program. The project is currently planned for construction in 2020 or 2021 and will include safety features like curb extensions and signal improvements. Project coordination will reduce construction impacts and result in a more compatible design that accommodates both projects.

Coordinated station:

- Chicago & Franklin

46th Street Highway Safety Improvement Project (Hennepin County)

Hennepin County plans to make safety improvements through the MnDOT Highway Safety Improvement Program along 46th Street, including the intersection of Chicago and 46th Street. The project is currently

[14] More information available at: https://metrocouncil.org/Transportation/Projects/Current-Projects/Southwest-LRT.aspx
[15] More information available at: http://www.ci.minneapolis.mn.us/cip/future/WCMSP-172270

planned for construction in 2019 or 2020 and will include safety features like signal modifications and pedestrian ramp improvements. Coordination will reduce construction impacts and result in a more compatible design that accommodates both projects. The project is currently planned for construction in 2019 or 2020.

Coordinated station:

- Chicago & 46th Street

Portland Avenue bicycle and pedestrian improvements (Hennepin County)

Hennepin County plans to construct pedestrian and bicycle improvements along Portland Avenue between 60th and 66th Streets. Design of the D Line will be coordinated to the extent possible with the Portland Avenue improvements to balance the needs of all roadway users, including transit riders, pedestrians, and bicyclists. Construction of the planned bicycle and pedestrian improvements is planned for 2020.[16]

Coordinated stations:

- Portland & 60th Street
- Portland & 66th Street

Mall of America Transit Center renovation (Metro Transit)

The D Line station will be integrated into the planned Mall of America Transit Center renovation project to be completed in 2019. The transit center will be improved with rapid bus-ready improvements that can be utilized by the D Line.

Coordinated station:

- Mall of America Transit Center

Shared C Line and D Line Stations

The D Line will share several stations in Brooklyn Center and downtown Minneapolis with the C Line[17]. These stations will have been built or made rapid bus-ready by the C Line project in 2018-2019:

- Brooklyn Center Transit Center
- Xerxes & 56th Avenue
- Brooklyn & 51st Avenue
- Ramp A/7th Street Transit Center
- 7th Street & Hennepin
- 7th Street & Nicollet
- 7th Street & 3rd/4th Avenue
- 7th Street & Park Avenue
- 8th Street & Nicollet (to be built in coordination with 8th Street reconstruction, 2019-2020)

[16] More information available t: https://metrocouncil.org/Transportation/Planning-2/Transportation-Funding/Regional-Solicitation/2016-Submitted-Applications/MULTI-USE-TRAILS-BIKEWAYS/5217HennCoTr.aspx
[17] More information available at: https://www.metrotransit.org/c-line-project

- 8th Street & 3rd/4th Avenue (to be built in coordination with 8th Street reconstruction, 2019-2020)
- 8th Street & Park Avenue (to be built in coordination with 8th Street reconstruction, 2019-2020)

IV. STATION CHARACTERISTICS

Several major considerations influence the design of a rapid bus station, including:

- Intersection location of station (including station spacing)
- Platform location
- Shelter size
- Curb location
- Platform length

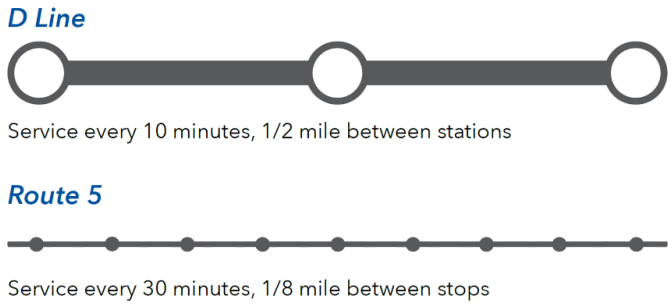
Additional background information guiding station decisions is below. These considerations played a central role in developing each station plan within Section V.

After station plan approval, this document will guide the detailed design of stations by confirming station intersections and platform location at those intersections. Other characteristics will be finalized through detailed engineering in the upcoming design phase.

Station location: Why this intersection?

A key objective of rapid bus is to offer faster trips for more people along the corridor. Faster trips depend in part upon the strategic placement of stations spaced more widely than existing Route 5 bus stops. Spacing stations on average every half mile is a foundational consideration in station planning. The existing Route 5 stops approximately every 1/8-mile. This increase in station spacing distance is anticipated to help D Line service operate about 20 percent faster than the existing Route 5, when combined with other improvements. Serving today's customers well and maximizing future ridership along the corridor depends upon station locations serving substantial numbers of passengers without adding significant walk distance.

Figure 8: Rapid bus and local service stop spacing after D Line implementation



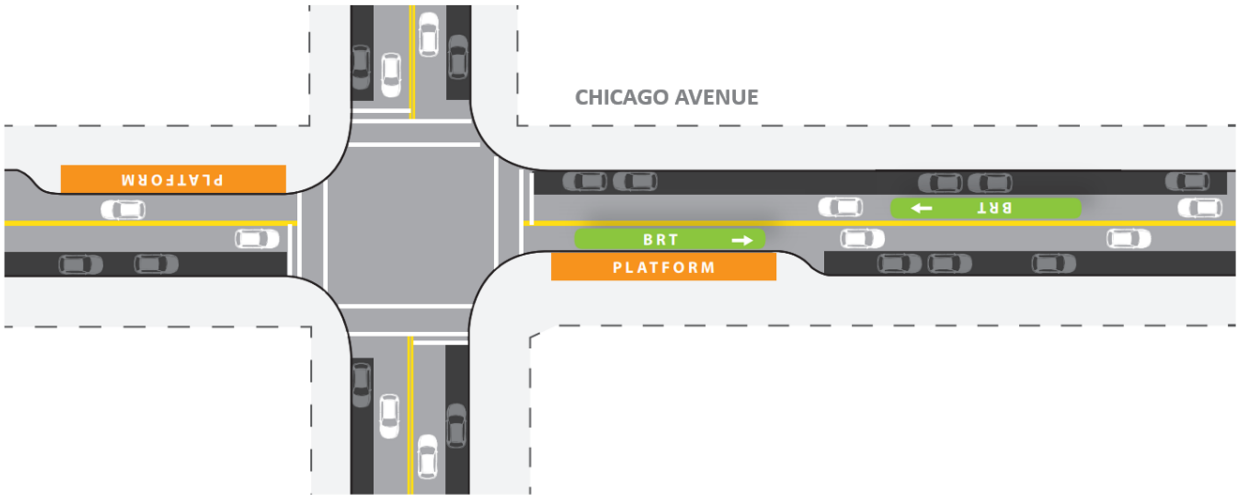
Station location inputs include, but not limited to:

- Targeted half-mile station spacing, on average
- Existing transit ridership at current bus stops
- Community input and feedback
- Connectivity to existing transit network
- Existing land uses
- Street design (e.g., roadway cross-section, bicycle/pedestrian facilities, driveway access medians, etc.)
- Available right-of-way

Platform location: Nearside or farside of the intersection?

A nearside station platform is located just before a roadway intersection. A farside platform is located just after a roadway intersection. Rapid bus operations benefit more from farside platforms. As a result, D Line platforms will be placed farside whenever possible.

Figure 9: Farside platform example



Farside platforms are beneficial because they reduce conflicts between right-turning vehicles and stopped transit vehicles common at nearside stop locations. Farside stations also maximize transit signal priority effectiveness by allowing a bus to activate its priority call to the signal, progress through the intersection, and stop at the farside platform. This reduces scenarios more common to nearside locations when a bus is required to stop twice before moving through an intersection: once to unload and load passengers at the platform itself and again for a red traffic signal after leaving the platform.

The preferred D Line platform location is on the farside of intersections. However, not all platforms are sited farside. Site-specific conditions that may prevent implementation of farside platforms include:

- Existing roadway access points or driveways
- Right-of-way constraints
- Surrounding land uses

Shelter size: Small, medium, large?

Rapid bus stations are equipped with more features than a typical bus shelter to allow for a more comfortable customer experience. Station features will incorporate many elements found at light rail stations, but in a more compact setting adaptable to site-specific conditions. Standard station features include shelters with heat and lighting, security features like a camera and phone, real-time bus arrival information, trash receptacles, and printed maps. A key variable at each station is shelter size: small, medium, or large shelter structures. Basic shelter dimensions are:

- Small shelter: 12’ (length) x 5’ (width) x 9’ (height);
- Medium shelter: 24’ x 5’ x 9’-12’; and
- Large shelter: 36’ x 5’ x 9’-12’.

The primary consideration in determining shelter sizes at each platform is existing ridership across the day and at peak times (specifically, the number of boardings) for all routes serving the current location/bus stop. More boardings at an existing stop warrant a larger shelter, with shelters sized to accommodate peak demand based on daily ridership and all-door boarding on three-door, 60-foot buses.

The general boarding guidelines for different shelter sizes are:

- Small shelter: Fewer than 50 boardings per day
- Medium shelter: Between 50 and 200 boardings per day
- Large shelter: More than 200 boardings per day

Specific site conditions may also influence the size of the shelter planned for each location. Shelter size will ultimately be determined through detailed site engineering in the design phase.

See Figures 10-12 for images of small, medium, and large rapid bus shelters.

Figure 10: Small shelter on the A Line, Snelling & Dayton station

Figure 11: Medium shelter on the A Line, Snelling & County Road B station

Figure 12: Large shelter on the A Line, Snelling & University station

Curb Bumpouts/Curb Extensions: Will the curb at station platforms be extended?

Platform bumpouts are considered at locations where the area against the curb is currently used for on-street parking or in some cases, turn lanes, to eliminate delay-inducing merging movements. The presence and design of any bicycle facility adjacent to a potential platform can also influence the feasibility of a bumpout. Many existing local bus stops are located in curbside parking lanes or right-turn lanes, causing delay for buses merging back into traffic.

A bumpout platform is a section of widened sidewalk extended from the existing roadway curb to the edge of a through-lane for the length of the platform to provide space for shelters and other station furnishings and allow for a clear boarding area along the curb. Beyond the platform length, this curb extension transitions back to the typical sidewalk width. This is illustrated in Figure 13.

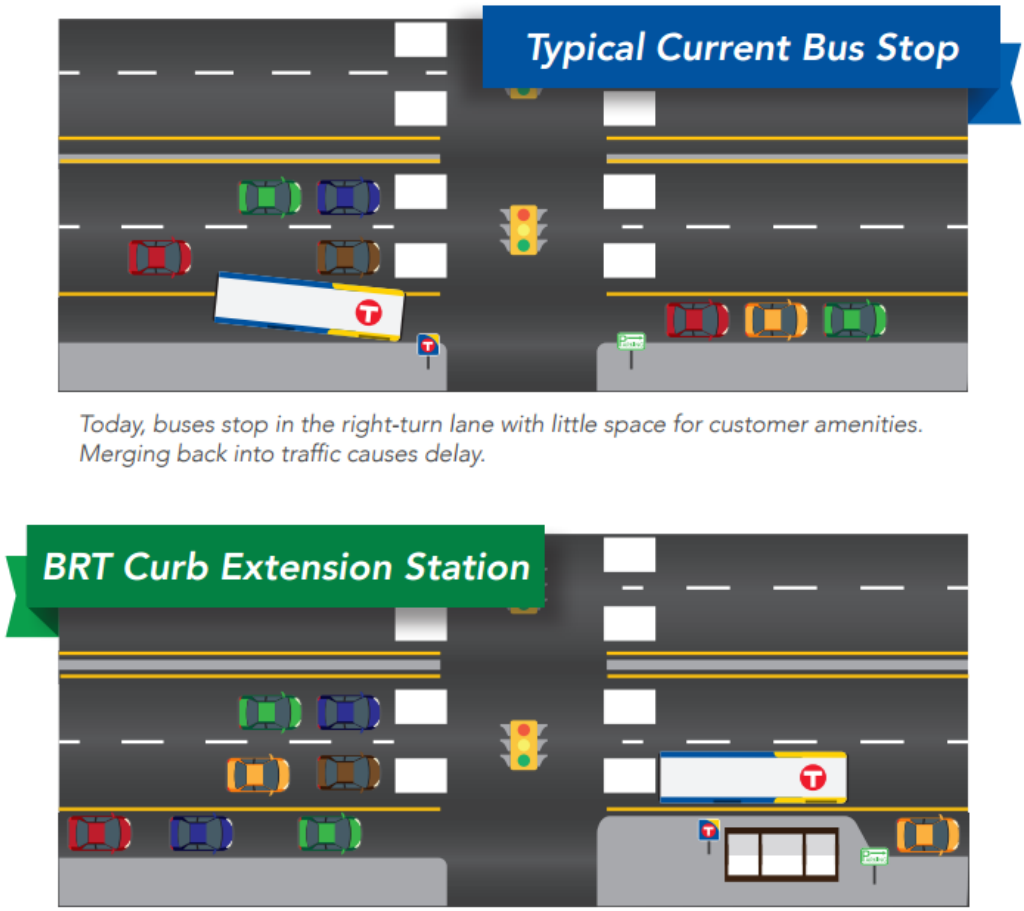
Bumpouts improve overall bus operations by:

- Eliminating the need for buses to merge in and out of traffic to access stations
- Potentially reducing overall bus stop zone length, which may allow on-street parking spaces to be added in space previously used for bus movements
- Providing space for clear and accessible all-door boarding, shelters, and station amenities
- Minimizing conflicts between waiting bus passengers and pedestrians using the sidewalk

At locations where bumpout platforms are not considered due to lane configurations or absence of on-street parking, the platforms will be adjacent to the existing curbside travel lane without moving the curb.

Under both bumpout and non-bumpout/curbside platform conditions, buses will generally stop in the travel lane and eliminate the need to merge into traffic when leaving stations.

Figure 13: Typical current bus stop versus bumpout



Platform length and height: How long will the platform be? How high will the platform be?

Generally, D Line platforms will be designed for a standard length of 60 feet. A 60-foot platform length can fully accommodate a 60-foot articulated bus, the planned standard bus type for the D Line. Certain constrained conditions, like existing access points and driveways, might prevent a full 60-foot platform from being constructed; however, these situations are avoided wherever possible. In some places, stations may be designed at a longer length to accommodate more than one stopped bus.

Platforms will be designed with a standard of nine-inch curb height to facilitate "near-level boarding." Near-level boarding substantially reduces the distance between the curb and the floor of the bus, easing vehicle access for passengers with low mobility and enabling faster boarding and alighting of all passengers. Near-level boarding does not eliminate the need for ramps to be deployed to assist passengers using mobility devices. Curb heights of nine inches or lower are compatible with all bus models. Curb height for specific D Line platforms will be finalized within the project's detailed design phase and can be influenced by variables like area drainage requirements and Americans with Disabilities Act (ADA) standards.

Figure 14: Near-level boarding detail

Near-level boarding is not "level boarding," where platforms are located at the same level and height as the floor of the bus, at approximately 14 inches. Light rail platforms within the Twin Cities are an example of level-boarding platforms. Level-boarding platforms are not being considered for the D Line due to engineering considerations and the tight space constraints of the corridor; ramping up to a 14-inch curb from a 6-inch sidewalk requires a prohibitively large area. Level boarding also requires that buses slow down considerably upon approaching stations, which can significantly negate the travel time savings benefit that rapid buses may provide.

V. STATION PLANS

The following section contains individual station plans for each of the D Line stations. The plans communicate two core station components: the station intersection and the location of platforms within that intersection. While other anticipated design details are provided for additional context (e.g., curb bumpout information and platform length), these details are conceptual and will be finalized throughout the design phase in 2018 and 2019.

The individual station plans are organized north to south, beginning in Brooklyn Center and ending in Bloomington.

The *D Line Station Plan* identifies 37 stations (71 total platforms) over the approximately 18-mile corridor. Figures 15-18 summarize the recommended station locations at the corridor-wide level, illustrating existing Route 5 ridership and planned station spacing.

Brooklyn Center

Brooklyn Center Transit Center
Xerxes & 56th Avenue
Brooklyn & 51st Avenue

North Minneapolis

44th Avenue & Penn-Oliver area
44th Avenue & Humboldt-Girard area
Fremont & 42nd Avenue
Fremont & Dowling
Fremont & 35th Avenue
Emerson-Fremont & Lowry
Emerson-Fremont & 26th Avenue
Emerson-Fremont & West Broadway
Emerson-Fremont & Plymouth
7th Street & Olson-5th Avenue

Downtown Minneapolis

Ramp A/7th Street Transit Center
7th-8th Street & Hennepin
7th-8th Street & Nicollet
7th-8th Street & 3rd/4th Avenue
7th-8th Street & Park

South Minneapolis

Chicago & 14th Street
Chicago & Franklin
Chicago & 24th Street
Chicago & 26th Street
Chicago-Lake Transit Center
Chicago & 34th Street
Chicago & 38th Street
Chicago & 42nd Street
Chicago & 46th Street
Chicago & 52nd Street
Chicago & 56th Street
Portland & 60th Street

Richfield

Portland & 66th Street
Portland & 73rd Street
Portland & 77th Street

Bloomington

American & Portland-Chicago
American & Bloomington
American & Thunderbird
Mall of America Transit Center

Figure 15: Planned D Line stations and existing Route 5 ridership, northern section

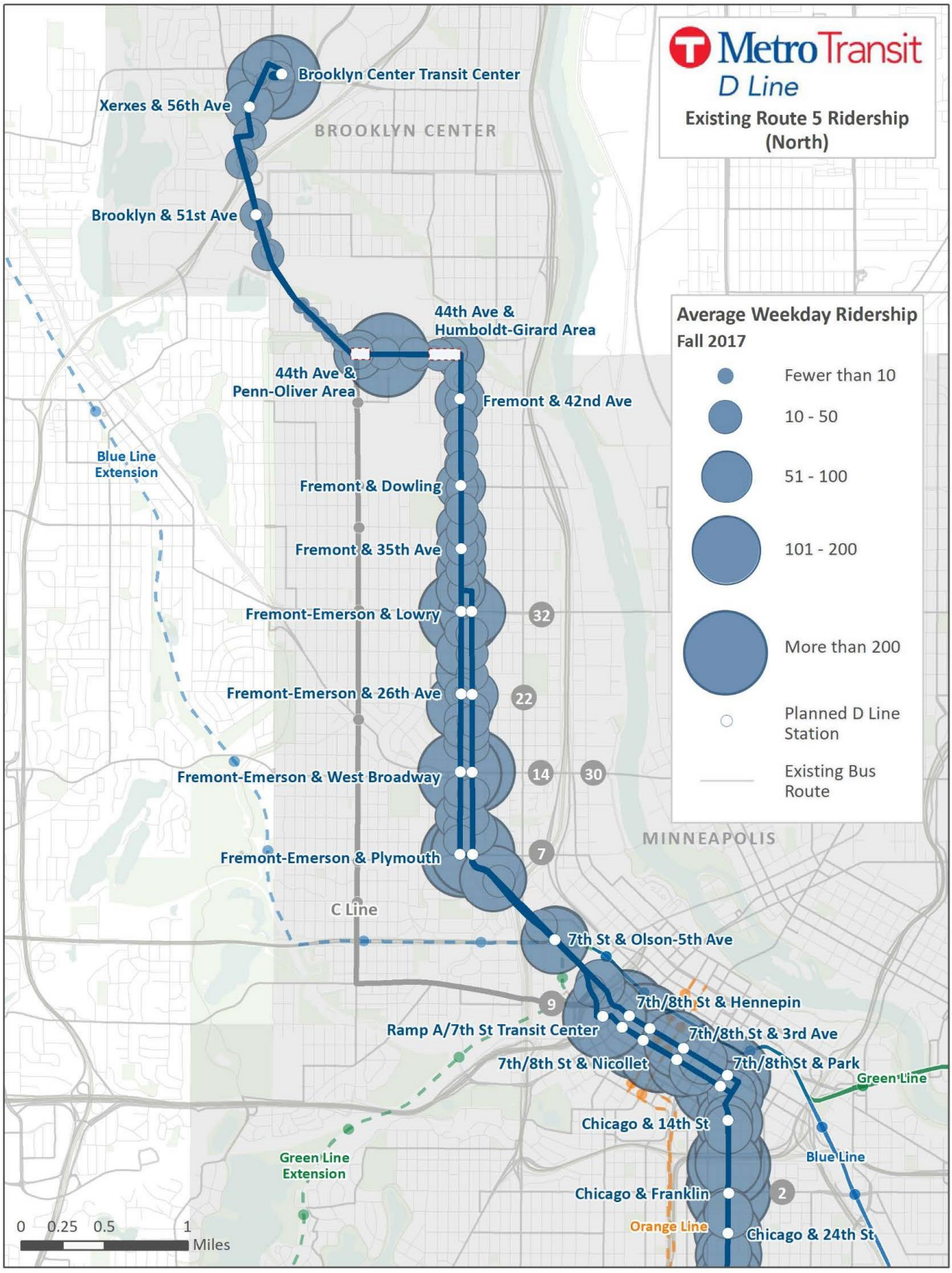


Figure 16: Planned D Line stations and existing Route 5 ridership, southern section

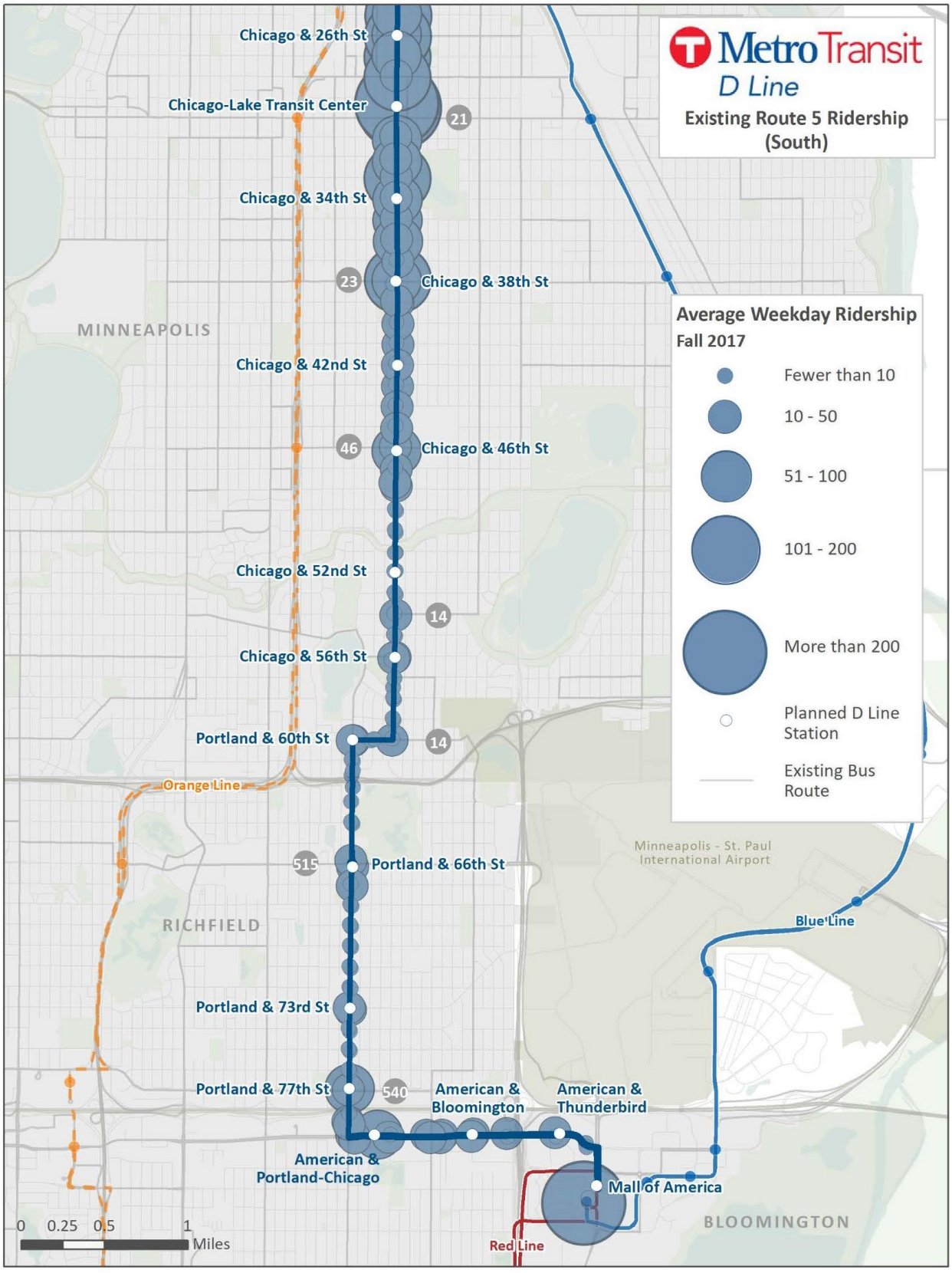


Figure 17: Planned D Line stations and station spacing, northern section

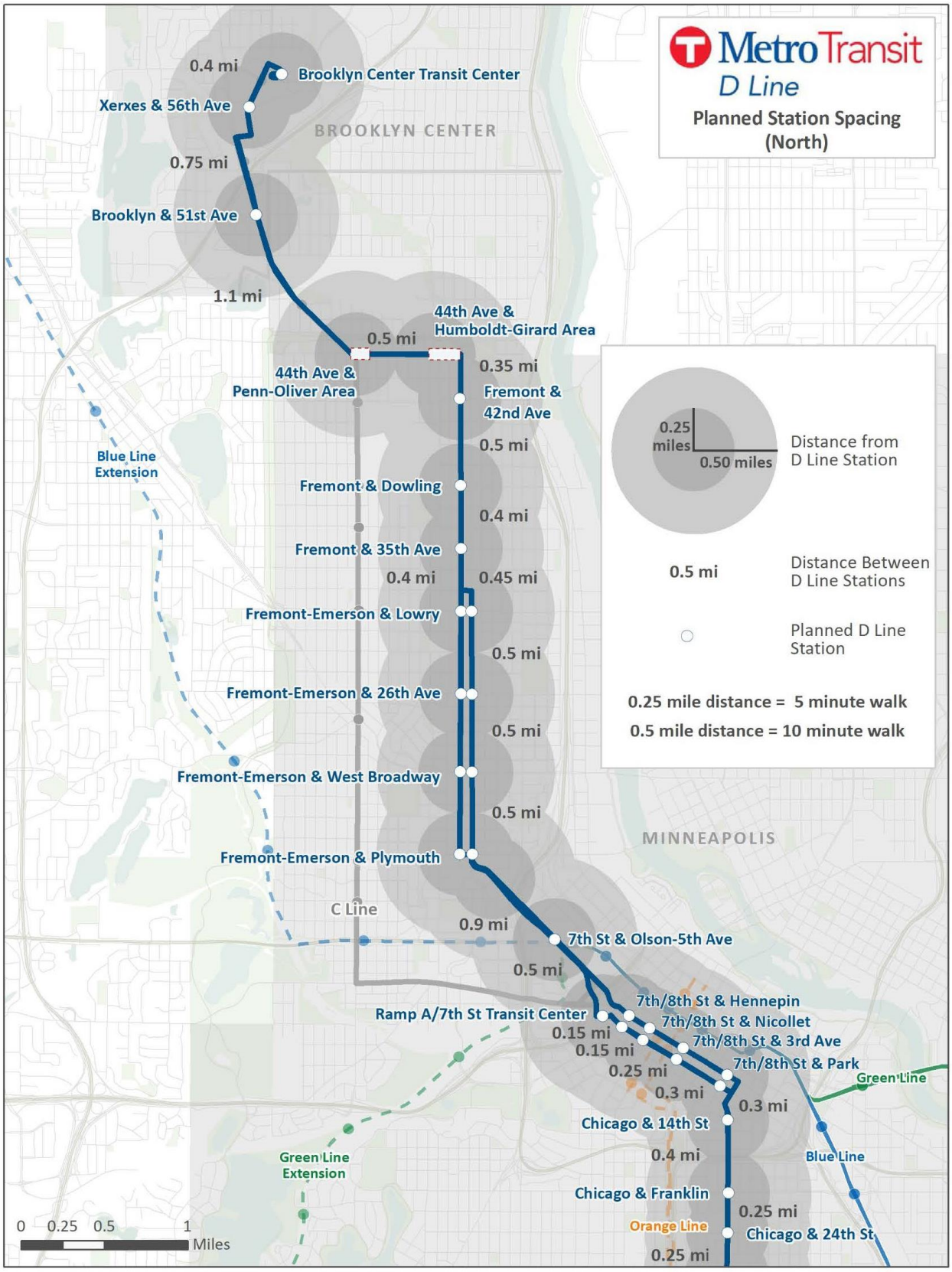
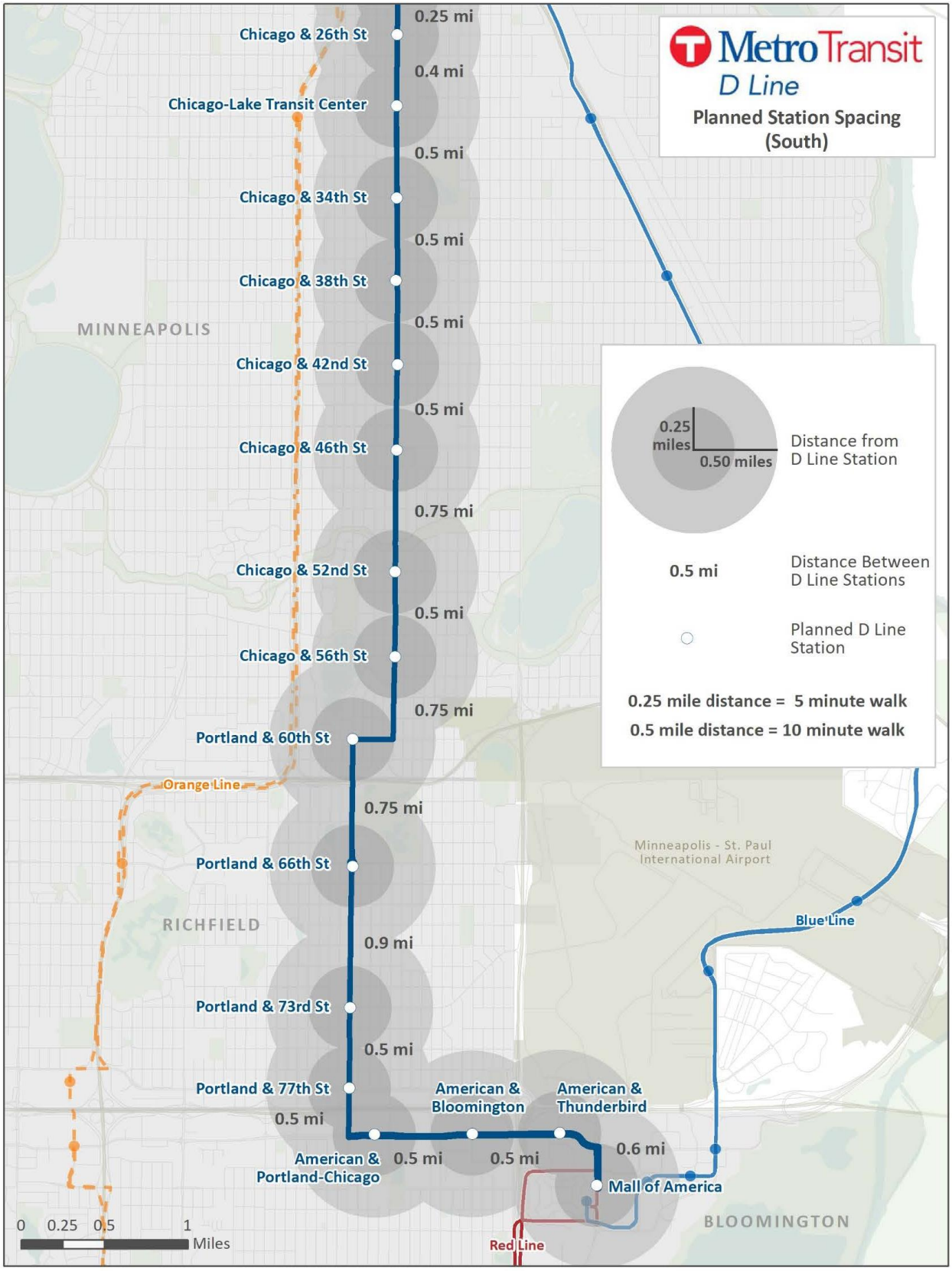


Figure 18: Planned D Line stations and station spacing, southern section



Station Plan: Shared C Line and D Line Stations in Brooklyn Center

The stations below were approved within the C Line planning process. See the final *C Line Station Plan*[18] for more information. These shared stations will serve both the C Line and D Line.

Brooklyn Center Transit Center

- Rapid bus improvements will be built at the Brooklyn Center Transit Center in 2018.

Xerxes & 56th Avenue

- The Xerxes & 56th Avenue station will be built as part of C Line construction in 2018.

Brooklyn & 51st Avenue

- The Brooklyn & 51st Avenue station will be built as part of C Line construction in 2018, in coordination with the Brooklyn Boulevard Corridor Project which will reconstruct Brooklyn Boulevard between 49th Avenue and 59th Avenue.[19]

[18] More information at: https://www.metrotransit.org/c-line-station-plan
[19] More information at: http://www.cityofbrooklyncenter.org/index.aspx?NID=1190

Figure 19: Shared C Line and D Line stations in Brooklyn Center

Station Plan: 44th Avenue & Penn-Oliver area

44th Avenue & Penn-Oliver area		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	44th Avenue & Penn-Oliver area
	Platform location	Southbound and northbound: On 44th Avenue between Penn and Oliver; quadrants to be determined Platform locations within the 44th Avenue and Penn-Oliver area will be determined in coordination with Hennepin County's 44th Avenue/Webber Parkway reconstruction design process.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.5 mi to 44th Avenue & Humboldt-Girard area Within guidelines of about half-mile station spacing. Northbound: About 1.1 mi to Brooklyn & 51st Avenue Longer station spacing than guidelines due to lower-ridership segment, lower-density land uses, and presence of railroad overpass.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 100 boardings per weekday
	Platform location compared to existing bus stop	Southbound: To be determined; existing bus stop farside of Penn on southeast quadrant Northbound: To be determined; existing bus stop nearside of Penn on northeast quadrant
	Connecting service	Routes 19, 721, 724
	Parking changes	Southbound and northbound: To be determined Parking changes dependent upon coordination with Hennepin County's 44th Avenue/Webber Parkway reconstruction project design process.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: To be determined Curb configuration dependent upon coordination with Hennepin County's 44th Avenue/Webber Parkway reconstruction project design process.
	Platform length	Southbound and northbound: 60' platform Platforms will be designed to accommodate a 60' BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Project coordination: 44th Avenue/Webber Parkway reconstruction project (Hennepin County)

- Hennepin County is planning to reconstruct 44th Avenue/Webber Parkway from Penn to Fremont in 2020.[20]
- The identification of platform locations is not feasible until reconstruction project design advances in 2018.
- In coordination with Hennepin County, staff has determined that D Line platforms are generally feasible on 44th Avenue between Penn and Oliver. The City of Minneapolis also supports the placement of a D Line station in the 44th Avenue and Penn-Oliver area. Design considerations will include bicycle-transit interactions in an effort to maintain bicycle facilities throughout the length of the 44th Avenue reconstruction project.
- To minimize disruption, construction of D Line platforms will be coordinated with the 44th Avenue/Webber Parkway reconstruction project to the extent possible.

Other station locations considered: Osseo & 47th Avenue

The 2013 Arterial Transitway Corridor Study addendum[21] (ATCS) included a conceptual Osseo & 47th Avenue station. This station plan does not include a D Line station at Osseo and 47th Avenue.

Station spacing and ridership

- The D Line planning process does not include an Osseo & 47th Avenue station because of the 44th Avenue & Penn-Oliver station recommendation. A combination of lower transit demand, limited available space at Osseo and 47th Avenue and the surrounding intersections[22], and close proximity to the Penn-Oliver area (less than a half-mile) limit the feasibility of building a second station within the area.
- Transit customers in this area will access the D Line at the 44th Avenue & Penn-Oliver area station.

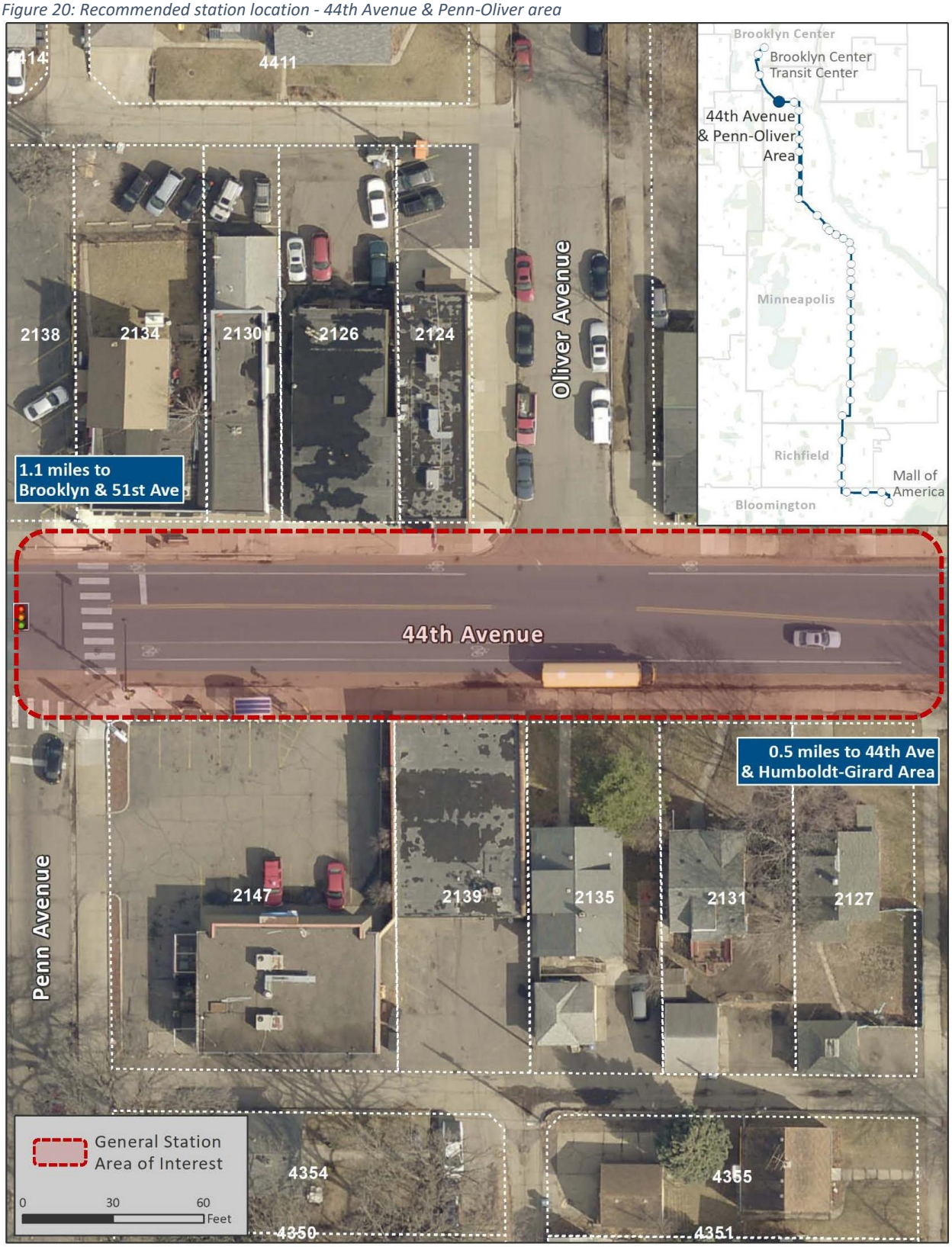
Other station locations considered: 44th Avenue and Morgan

Station spacing

- A 44th Avenue & Morgan station is not included because of the feasibility of a 44th Avenue & Penn-Oliver station. If building a station near the intersection of 44th Avenue and Penn had been deemed technically infeasible, a station at Morgan would be a candidate for siting a station in this area.
- Access to the D Line to/from Patrick Henry High School (about two short blocks away) will be comparable to C Line access.

[20] More information at: https://metrocouncil.org/Transportation/Planning-2/Transportation-Funding/Regional-Solicitation/2016-Submitted-Applications/ROADWAY-RECONSTRUCTION-MODERNIZATION/5141HennCoRRM.aspx
[21] More information at: https://metrotransit.org/abrt-study
[22] More information at: https://www.metrotransit.org/Data/Sites/1/media/about/improvements/c-line/final-station-plan/04---osseo--victory-area---final-station-plan.pdf

Figure 20: Recommended station location - 44th Avenue & Penn-Oliver area



Station Plan: 44th Avenue & Humboldt-Girard area

44th Avenue & Humboldt-Girard area		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	44th Avenue & Humboldt-Girard area
	Platform location	Southbound and northbound: On 44th Avenue between Humboldt and Girard; quadrant to be determined Platform locations within the 44th Avenue & Humboldt-Girard area to be determined in coordination with Hennepin County's 44th Avenue/Webber Parkway reconstruction design process.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.35 mi to Fremont & 42nd Avenue Shorter station spacing than guidelines due, in part, to provide access to Hamilton Manor senior housing Northbound: About 0.5 mi to 44th Avenue & Penn-Oliver area Within guidelines of about half-mile station spacing
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 235 boardings per weekday
	Platform location compared to existing bus stop	Southbound and Northbound: To be determined
	Connecting service	Routes 721 and 724
	Parking changes	Southbound and northbound: To be determined Parking changes dependent upon coordination with Hennepin County's 44th Avenue/Webber Parkway reconstruction project design process.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: To be determined Curb configuration dependent upon coordination with Hennepin County's 44th Avenue/Webber Parkway reconstruction project design process.
	Platform length	Southbound and northbound: 60' platform Platforms will be designed to accommodate a 60' BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

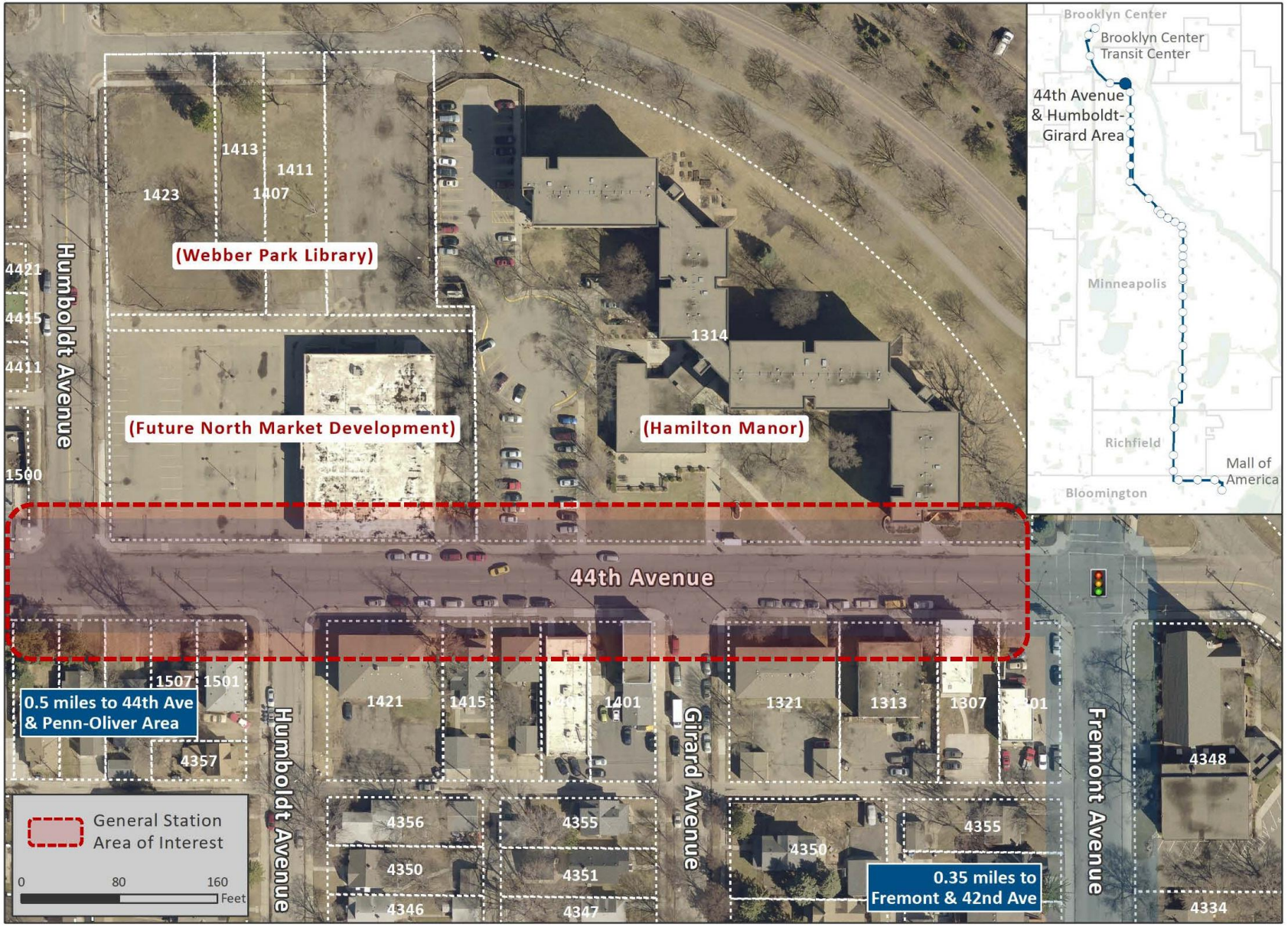
Notes and Discussion

Project coordination: 44th Avenue/Webber Parkway reconstruction project (Hennepin County)

- Hennepin County is planning to reconstruct 44th Avenue/Webber Parkway from Penn to Fremont in 2020.[23]
- The identification of platform locations is not feasible until reconstruction project design advances in 2018.
- In coordination with Hennepin County, staff has determined that D Line platforms are generally feasible on 44th Avenue between Penn and Oliver. The City of Minneapolis also supports the placement of a D Line station in the 44th Avenue and Penn-Oliver area. Design considerations will include bicycle-transit interactions in an effort to maintain bicycle facilities throughout the length of the 44th Avenue reconstruction project.
- To minimize disruption, construction of D Line platforms will be coordinated with the 44th Avenue/Webber Parkway reconstruction project to the extent possible.

[23] More information at: https://metrocouncil.org/Transportation/Planning-2/Transportation-Funding/Regional-Solicitation/2016-Submitted-Applications/ROADWAY-RECONSTRUCTION-MODERNIZATION/5141HennCoRRM.aspx

Figure 21: Recommended station location - 44th Avenue & Humboldt-Girard area



Station Plan: Fremont & 42nd Avenue

Fremont & 42nd Avenue		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Fremont & 42nd Avenue
	Platform location	Southbound: Nearside of 42nd Avenue on northwest corner Nearside improves constructability and reduces parking impact for small businesses farside of intersection. Northbound: Nearside of 42nd Avenue on southeast corner Farside platform not possible due to driveway access about 10' from curb.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.5 mi to Fremont & Dowling Within guidelines of about half-mile station spacing. Northbound: About 0.35 mi to 44th & Humboldt-Girard area Shorter station spacing than guidelines due, in part, to provide access to Hamilton Manor senior housing.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 165 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At existing bus stop
	Connecting service	Routes 721 and 724
	Parking changes	Southbound and northbound: Reduction of about 2-3 parking spaces at each location due to the expansion of existing bus stop zone Existing bus stop zones would be extended to accommodate curb taper.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60' platform Platforms will be designed to accommodate a 60' BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

The intersection of Fremont and 42nd Avenue is a commercial node. Ridership at this location is higher than at surrounding stops.

Project coordination: Emerson/Fremont Avenues bicycle-pedestrian improvement project (City of Minneapolis)

- D Line station planning in north Minneapolis between Plymouth Avenue and 42nd Avenue occurred in conjunction with the development of the City of Minneapolis Emerson-Fremont Avenues bicycle-pedestrian improvement project.[24] Outreach and engagement occurred separately between projects.
- Station locations were coordinated in advance of the city's 2014 Regional Solicitation application and confirmed in late 2016.
- Coordination ensures that bicycle-pedestrian improvements (planned for construction in 2018) will not be impacted by D Line construction (planned for construction in 2020/2021, pending full project funding).

[24] More information at: http://www.ci.minneapolis.mn.us/cip/future/emerson-fremont

Figure 22: Recommended station location - Fremont & 42nd Avenue

Station Plan: Fremont & Dowling

Fremont & Dowling		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Fremont & Dowling
	Platform location	Southbound: Farside of Dowling on southwest corner Northbound: Farside of Dowling on northeast corner In both directions, farside has adequate platform length available and is preferred to maximize transit signal priority potential.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.4 mi to Fremont & 35th Avenue Close to guidelines; provides access to a high-ridership segment between Dowling and Lowry. Northbound: About 0.5 mi to Fremont & 42nd Avenue Within guidelines of about half-mile station spacing
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 220 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At opposite corner of existing bus stop
	Connecting service	Routes 721 and 724
	Parking changes	Southbound and northbound: Reduction of about 2-3 parking spaces at each location, due to the relocation and expansion of existing bus stop zone. Potential for existing nearside bus stop zones to be converted to curbside parking.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

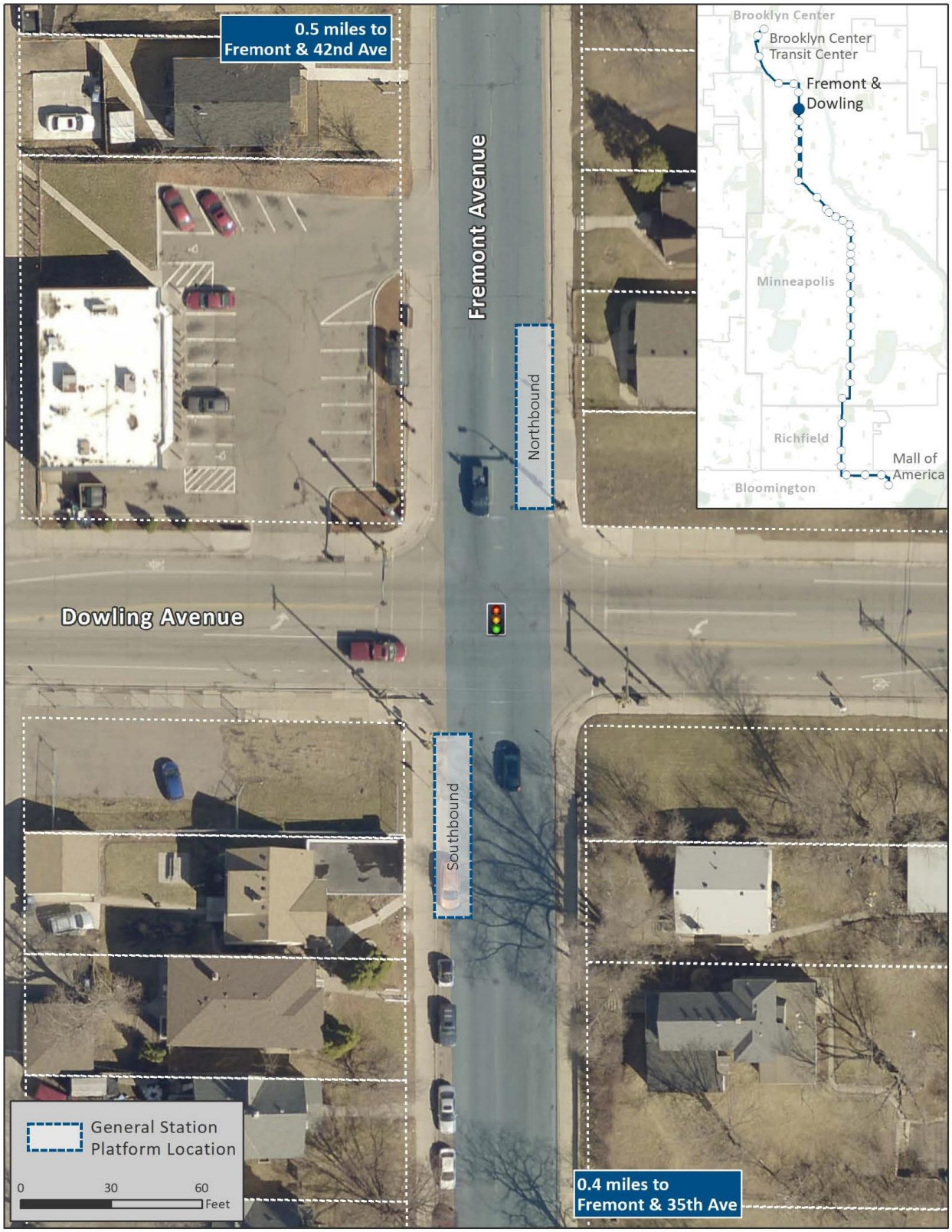
Fremont and Dowling is a major intersection in north Minneapolis, and ridership is substantially higher than at surrounding stops.

Project coordination: Emerson/Fremont Avenues bicycle-pedestrian improvement project (City of Minneapolis)

- D Line station planning in north Minneapolis between Plymouth Avenue and 42nd Avenue occurred in conjunction with the development of the City of Minneapolis Emerson-Fremont Avenues bicycle-pedestrian improvement project.[25] Outreach and engagement occurred separately between projects.
- Station locations were coordinated in advance of the city's 2014 Regional Solicitation application and confirmed in late 2016.
- Coordination ensures that bicycle-pedestrian improvements (planned for construction in 2018) will not be impacted by D Line construction (planned for construction in 2020/2021, pending full project funding).

[25] More information at: http://www.ci.minneapolis.mn.us/cip/future/emerson-fremont

Figure 23: Recommended station location - Fremont & Dowling



Station Plan: Fremont & 35th Avenue

Fremont & 35th Avenue		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Fremont & 35th Avenue
	Platform location	Southbound: Farside of 35th Avenue on southwest corner Northbound: Farside of 35th Avenue on northeast corner In both directions, farside has adequate platform length available and is preferred to minimize sightline conflicts at unsignalized intersection.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.4 mi to Emerson-Fremont & Lowry Northbound: About 0.4 mi to Fremont & Dowling In both directions, shorter spacing than guidelines provides access to a high-ridership segment between Dowling and Lowry.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 310 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At opposite corner of existing bus stop
	Connecting service	No connecting service
	Parking changes	Southbound and northbound: Reduction of about 2-3 parking spaces in each location, due to the relocation and expansion of existing bus stop zone. Potential for existing nearside bus stop zone to be converted to curbside parking.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

An additional station between Dowling and Lowry is warranted because of consistently high transit demand in this segment. 35th Avenue directly services existing ridership that is comparable to surrounding stops, but with more even station spacing.

Project coordination: Emerson/Fremont Avenues bicycle-pedestrian improvement project (City of Minneapolis)

- D Line station planning in north Minneapolis between Plymouth Avenue and 42nd Avenue occurred in conjunction with the development of the City of Minneapolis Emerson-Fremont Avenues bicycle-pedestrian improvement project.[26] Outreach and engagement occurred separately between projects.
- Station locations were coordinated in advance of the city's 2014 Regional Solicitation application and confirmed in late 2016.
- Coordination ensures that bicycle-pedestrian improvements (planned for construction in 2018) will not be impacted by D Line construction (planned for construction in 2020/2021, pending full project funding).

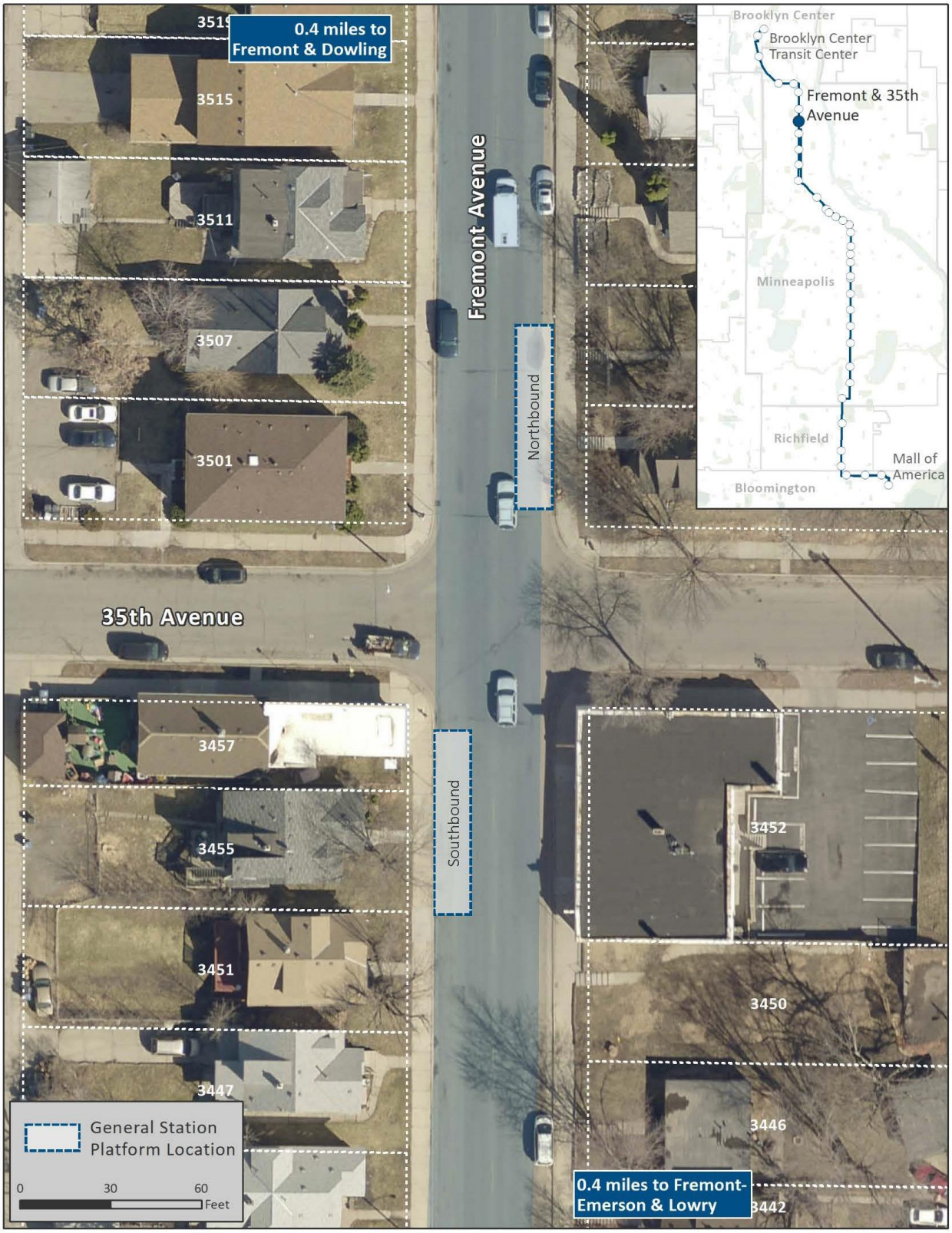
Other station locations considered: Fremont and 36th Avenue

Station spacing and ridership

- Ridership is slightly lower at 36th Avenue compared to 35th Avenue when including adjacent stops.
- Station spacing is more uneven compared to 35th Avenue, which provides spacing of about 0.4-mi between Lowry and Dowling.

[26] More information at: http://www.ci.minneapolis.mn.us/cip/future/emerson-fremont

Figure 24: Recommended station location - Fremont & 35th Avenue



Station Plan: Emerson-Fremont & Lowry

Emerson-Fremont & Lowry		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Emerson-Fremont & Lowry
	Platform location	Southbound: Farside of Lowry on Fremont, southwest corner Farside has adequate platform length available and is preferred to maximize transit signal priority potential. Northbound: Nearside of Lowry on Emerson, southeast corner Farside platform not possible due to driveway about 40' from curb.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.5 mi to Emerson-Fremont & 26th Avenue Within guidelines of about half-mile station spacing. Northbound: About 0.4 mi to Fremont & 35th Avenue Shorter spacing than guidelines provides access to a high-ridership segment between Dowling and Lowry.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 610 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At existing bus stop
	Connecting service	Route 32
	Parking changes	Southbound and northbound: Reduction of about 2-3 parking spaces in each location due to the expansion of existing bus stop zone Existing bus stop zone would be extended to accommodate curb taper.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60' platform Platforms will be designed to accommodate a 60' BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

The Emerson-Fremont and Lowry intersections are major community nodes with high ridership compared to surrounding bus stops. The intersections also provide a connection to the existing Route 32 local service.

Project coordination: Emerson/Fremont Avenues bicycle-pedestrian improvement project (City of Minneapolis)

- D Line station planning in north Minneapolis between Plymouth Avenue and 42nd Avenue occurred in conjunction with the development of the City of Minneapolis Emerson-Fremont Avenues bicycle-pedestrian improvement project.[27] Outreach and engagement occurred separately between projects.
- Station locations were coordinated in advance of the city's 2014 Regional Solicitation application and confirmed in late 2016.
- Coordination ensures that bicycle-pedestrian improvements (planned for construction in 2018) will not be impacted by D Line construction (planned for construction in 2020/2021, pending full project funding).

[27] More information at: http://www.ci.minneapolis.mn.us/cip/future/emerson-fremont

Figure 25: Recommended station location - Emerson-Fremont & Lowry

Station Plan: Emerson-Fremont & 26th Avenue

Emerson-Fremont & 26th Avenue		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Emerson-Fremont & 26th Avenue
	Platform location	Southbound: Farside of 26th Avenue on Fremont, southwest corner Farside has adequate platform length available and is preferred to maximize transit signal priority potential. Northbound: Farside of 26th Avenue on Emerson, northeast corner Farside has adequate platform length available and is preferred to maximize transit signal priority potential. Nearside not feasible due to driveway about 20' from intersection.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.5 mi to Emerson-Fremont & West Broadway Within guidelines of about half-mile station spacing. Northbound: About 0.5 mi to Emerson-Fremont & Lowry Within guidelines of about half-mile station spacing.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 380 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At opposite corner of existing bus stop
	Connecting service	No connecting service
	Parking changes	Southbound and northbound: Reduction of about 2-3 parking spaces, due to the relocation and expansion of existing bus stop zone Potential for existing nearside bus stop zone to be converted to curbside parking.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60' platform Platforms will be designed to accommodate a 60' BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

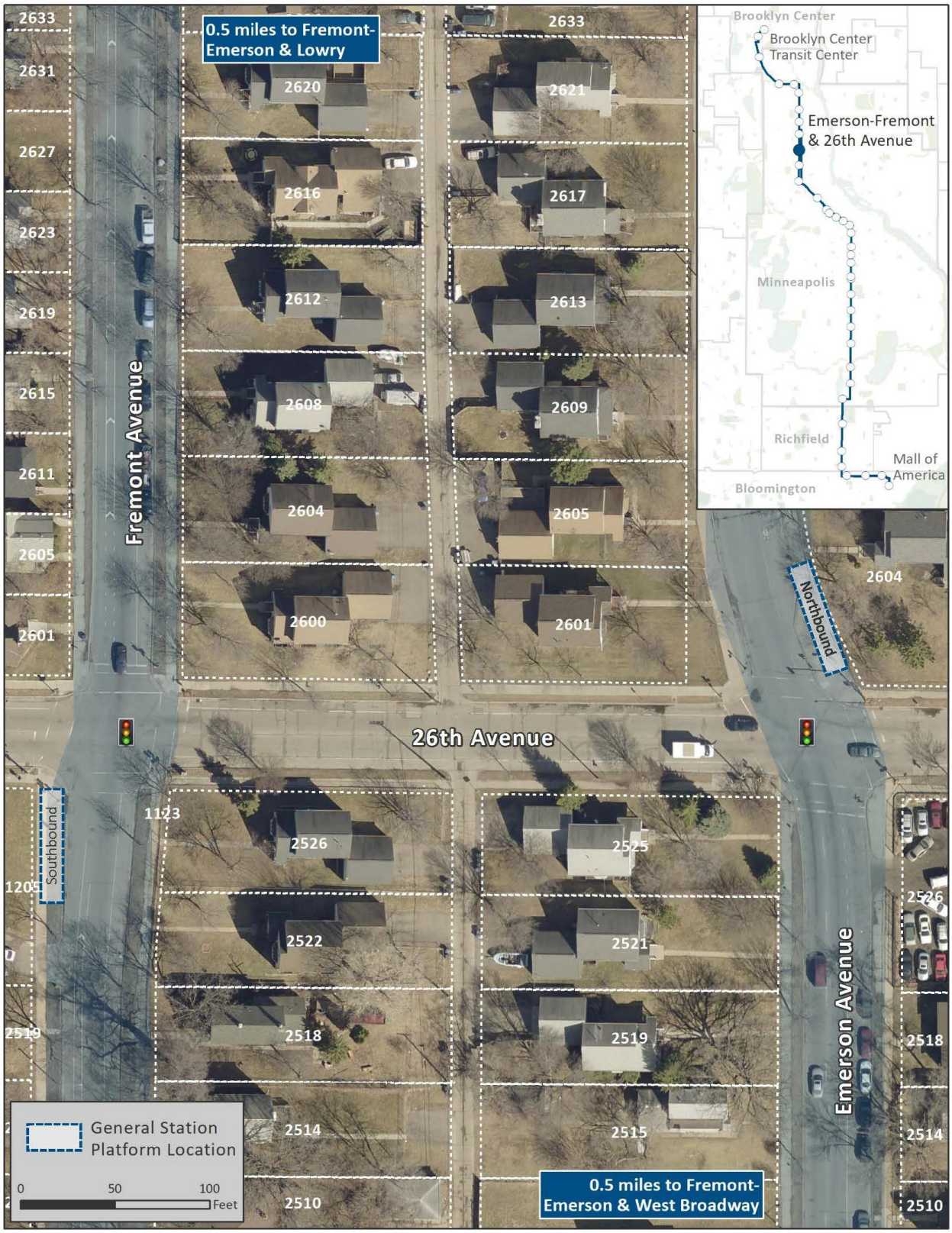
An additional station between Lowry and West Broadway is warranted because of consistent transit demand in this segment. 26th Avenue offers even station spacing, a signalized intersection for safe operations, and similar ridership to surrounding stops.

Project coordination: Emerson/Fremont Avenues bicycle-pedestrian improvement project (City of Minneapolis)

- D Line station planning in north Minneapolis between Plymouth Avenue and 42nd Avenue occurred in conjunction with the development of the City of Minneapolis Emerson-Fremont Avenues bicycle-pedestrian improvement project.[28] Outreach and engagement occurred separately between projects.
- Station locations were coordinated in advance of the city's 2014 Regional Solicitation application and confirmed in late 2016.
- Coordination ensures that bicycle-pedestrian improvements (planned for construction in 2018) will not be impacted by D Line construction (planned for construction in 2020/2021, pending full project funding).

[28] More information at: http://www.ci.minneapolis.mn.us/cip/future/emerson-fremont

Figure 26: Recommended station location - Emerson-Fremont & 26th Avenue



Station Plan: Emerson-Fremont & West Broadway

Emerson-Fremont & West Broadway		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Emerson-Fremont & West Broadway
	Platform location	Southbound: Farside of West Broadway on Fremont, southwest corner Farside is preferred to maximize transit signal priority potential. Existing driveway about 60' from intersection will require design adjustments. Northbound: Farside of West Broadway on Emerson, northeast corner Farside has adequate platform length available and is preferred to maximize transit signal priority potential.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.5 mi to Emerson-Fremont & Plymouth Within guidelines of about half-mile station spacing. Northbound: About 0.5 mi to Emerson-Fremont & 26th Avenue Within guidelines of about half-mile station spacing.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 840 boardings per weekday
	Platform location compared to existing bus stop	Southbound: At opposite corner of existing bus stop Northbound: At existing bus stop
	Connecting service	Routes 14, 30
	Parking changes	Southbound and northbound: No changes
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound: 60' platform Platform will be designed to accommodate a 60' BRT vehicle. Northbound: 60' platform To obtain a 60' platform, deviations from design standards may be required due to existing driveway about 60' from intersection.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

The Emerson-Fremont and West Broadway intersections are critical community nodes with the highest ridership in north Minneapolis at over 700 combined boardings per day. The intersections also provide transit connections to the existing Routes 14, 30, and 32 local service.

Project coordination: Emerson/Fremont Avenues bicycle-pedestrian improvement project (City of Minneapolis)

- D Line station planning in north Minneapolis between Plymouth Avenue and 42nd Avenue occurred in conjunction with the development of the City of Minneapolis Emerson-Fremont Avenues bicycle-pedestrian improvement project.[29] Outreach and engagement occurred separately between projects.
- Station locations were coordinated in advance of the city's 2014 Regional Solicitation application and confirmed in late 2016.
- Coordination ensures that bicycle-pedestrian improvements (planned for construction in 2018) will not be impacted by D Line construction (planned for construction in 2020/2021, pending full project funding).

Other platform locations considered: Northbound platform nearside of West Broadway

- A northbound nearside location was considered, and has more available length compared to the recommended farside location. However, the farside platform is preferred for the following reasons:
    - Maximizes the potential of transit signal priority at the busy intersection;
    - Maintains ease of transfers to the heavily used bus stop for westbound/northbound Routes 14 and 30;
    - Minimizes potential impacts to historic properties on the southern half of the intersection.

Other station locations considered: Emerson-Fremont and 16th Avenue

The 2013 Arterial Transitway Corridor Study addendum[30] (ATCS) included a conceptual Emerson-Fremont & 16th Avenue station. This station plan does not include a D Line station at Emerson-Fremont and 16th Avenue.

Land use and station spacing

- A major consideration of a potential Emerson-Fremont & 16th Avenue station is to provide rapid bus access to North High School, located about one block west of the D Line corridor.
- Ridership data, however, suggests North High School students predominantly use the existing Route 5 bus stops at Emerson-Fremont and 15th Avenue (about 60 student-related boardings per day). Emerson-Fremont and 15th Avenue is located just 0.15 mile north of the planned Emerson-Fremont & Plymouth station, too close to sustain an additional D Line station.

[29] More information at: http://www.ci.minneapolis.mn.us/cip/future/emerson-fremont
[30] More information at: https://metrotransit.org/abrt-study

Emerson-Fremont & 16th Avenue is also less than a quarter-mile from the planned Emerson-Fremont & Plymouth station.

- It is anticipated that existing Route 5 school trips will continue to serve North High School after the D Line begins operations. In addition to the school-related service, the local Route 5 service will continue operating about every 30 minutes.

Consistency

- Comparable station spacing of about half-mile will be located on the Penn Avenue corridor's C Line between Plymouth and Golden Valley. Ridership is similar on these segments between Plymouth and Golden Valley on Route 19 (future C Line) and Plymouth and West Broadway (future D Line).

Design considerations: Northbound platform farside of West Broadway

- The existing driveway constrains available platform length and may require design considerations like the narrowing of the existing driveway and non-raised curb heights.
- A platform concept was developed in the planning process to better understand potential northbound platform operations. See Figure 27 for additional information.

Figure 27: Preliminary Emerson & West Broadway platform concept

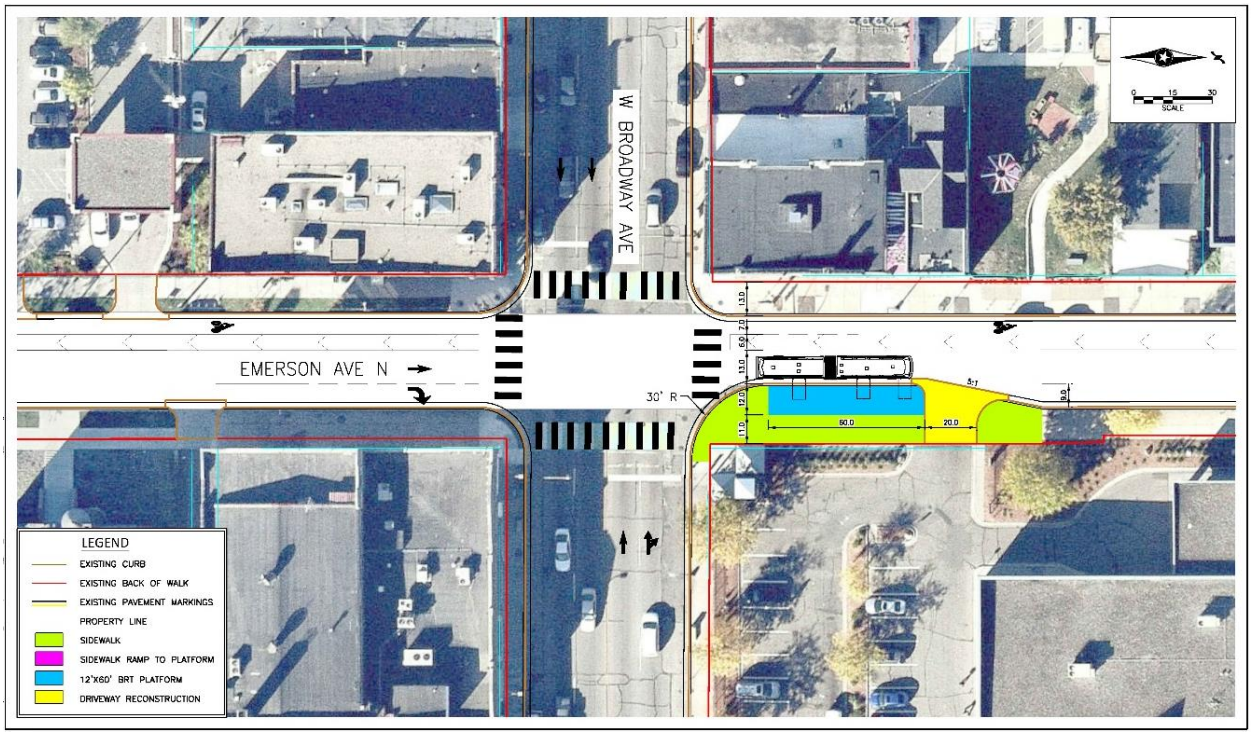


Figure 28: Recommended station location - Emerson-Fremont & West Broadway

Station Plan: Emerson-Fremont & Plymouth

Emerson-Fremont & Plymouth		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Emerson-Fremont & Plymouth
	Platform location	Southbound: Farside of Fremont Avenue on Plymouth Avenue, southeast corner (after left turn from Fremont Avenue to Plymouth Avenue) Northbound: Farside of Plymouth Avenue on Emerson Avenue, northeast corner In both directions, farside has adequate platform length available and is preferred to maximize transit signal priority potential
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.9 mi to 7th Street & Olson/5th Avenue Longer station spacing than guidelines due, in part, to presence of I-94 overpass. Northbound: About 0.5 mi to Emerson/Fremont & Broadway Within guidelines of about half-mile station spacing.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 600 boardings per weekday
	Platform location compared existing bus stop	Southbound and northbound: At existing bus stop
	Connecting service	Route 7
	Parking changes	Southbound and northbound: No changes No existing parking lanes in northbound or southbound direction.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Emerson-Fremont and Plymouth are major intersections in north Minneapolis, and ridership is substantially higher than at surrounding stops. They also provide transit connections to Routes 7 and 32 local service.

Project coordination: Emerson/Fremont Avenues bicycle-pedestrian improvement project (City of Minneapolis)

- D Line station planning in north Minneapolis between Plymouth Avenue and 42nd Avenue occurred in conjunction with the development of the City of Minneapolis Emerson-Fremont Avenues bicycle-pedestrian improvement project.[31] Outreach and engagement occurred separately between projects.
- Station locations were coordinated in advance of the city's 2014 Regional Solicitation application and confirmed in late 2016.
- Coordination ensures that bicycle-pedestrian improvements (planned for construction in 2018) will not be impacted by D Line construction (planned for construction in 2020/2021, pending full project funding).

Other station locations considered: 7th St and 11th Ave/Bryant

The 2013 *Arterial Transitway Corridor Study* addendum[32] (ATCS) included a conceptual 7th Street & 11th Avenue/Bryant station. This station plan does not include a D Line station at 7th Street and 11th Avenue/Bryant.

Station Spacing and Other Transit Service

- Proximity to other planned transitway service, including a planned D Line Emerson-Fremont & Plymouth station, is the primary reason a station at 7th Street & 11th Avenue/Bryant is not recommended.
- While ridership at 7th Street and 11th Avenue/Bryant is substantial (about 160 boardings per weekday), customers will be within a quarter-mile of the D Line station at the Emerson-Fremont & Plymouth station. Customers will also be within a half-mile of the planned METRO Blue Line Extension at the Van White Station on Olson Memorial Highway and will also be served by the C Line on Olson Highway prior to light rail opening. Route 5 service will also continue to serve the existing stop. As a result, an additional D Line station is not recommended. Outside of downtown, this station plan limits quarter-mile station spacing to the Chicago & 24th Street station where a variety of dense land uses drive high ridership throughout the surrounding area.

Other station locations considered: Emerson-Fremont & 16th Avenue

The 2013 Arterial Transitway Corridor Study addendum[33] (ATCS) included a conceptual Emerson-Fremont & 16th Avenue station. This station plan does not include a D Line station at Emerson-Fremont and 16th Avenue.

[31] More information at: http://www.ci.minneapolis.mn.us/cip/future/emerson-fremont
[32] More information at: https://www.metrotransit.org/abrt-study
[33] More information at: https://metrotransit.org/abrt-study

Land use and station spacing

- A major reason to consider a station at 16th Avenue is rapid bus access to North High School, located about one block west of the D Line corridor.
- Ridership data, however, suggests North High School students predominantly use the existing Route 5 bus stops at Emerson-Fremont and 15th Avenue (about 60 student-related boardings per weekday). Emerson-Fremont and 15th Avenue is located just 0.15 mile north of the planned Emerson-Fremont & Plymouth station, too close to Plymouth Avenue to warrant an additional D Line station. Emerson-Fremont & 16th Avenue is also less than a quarter-mile from the planned Emerson-Fremont & Plymouth station.
- It is anticipated that existing Route 5 school trips will continue to serve North High School after D Line begins operations. In addition to the school trips, the local Route 5 service will continue operating about every 30 minutes.

Consistency

- One mile to the west, the C Line will serve stations at Plymouth and Golden Valley, roughly one-half mile apart. Ridership is similar on these segments between Plymouth and Golden Valley on Route 19 (future C Line) and Plymouth and West Broadway (future D Line).

Figure 29: Recommended station location - Emerson-Fremont & Plymouth

Station Plan: 7th Street & Olson-5th Avenue

7th Street & Olson-5th Avenue		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	7th Street & Olson-5th Avenue
	Platform location	Southbound: Farside of Olson, southwest corner At existing transit stop with rapid bus-ready amenities. Northbound: Farside of 5th Avenue, northeast of intersection Farside has adequate platform length available and is preferred to maximize transit signal priority potential.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.5 mi to Ramp A/7th Street Transit Center Within guidelines of about half-mile station spacing. Northbound: About 0.9 mi to Emerson-Fremont & Plymouth Longer station spacing than guidelines due, in part, to presence of I-94 overpass.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 370 boardings per weekday
	Platform location compared to existing bus stop	Southbound: At opposite corner of existing bus stop; will use existing rapid bus-ready bus stop Northbound: No existing bus stop Establishes new bus stop at intersection of 7th Street & 5th Avenue
	Connecting service	Routes 19, 22, and 755 Will provide connection to future METRO Green Line Extension at Royalston Ave/Farmers Market Station
	Parking changes	Southbound and northbound: No change
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound: Maintain existing curb line No changes anticipated to curb line at existing rapid bus-ready bus stop. Northbound: To be determined and coordinated with METRO Green Line Extension Curb configuration dependent upon coordination with METRO Green Line Extension project.
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Other platform locations considered: Northbound platform and potential realignment

- A modification to the alignment of the northbound D Line to serve the existing rapid bus-ready transit stop on Olson Highway just west of 7th Street was evaluated. Serving this existing station would reduce capital costs required for a new station. Field tests indicate that making the additional turning movements will result in, on average, about two minutes delay compared to the existing alignment. In addition, delay variability is large and could exceed four minutes.

- In addition, the future METRO Blue Line Extension will add complexity to traffic operations at the intersection. Coordination with the METRO Blue Line Extension and Green Line Extension projects and the City of Minneapolis determined that time delay from a D Line realignment cannot be reduced. As a result, the realignment option is no longer being considered and the existing rapid bus-ready bus stop on Olson will not be used for the D Line.

- Further interagency coordination indicated the location farside of 5th Avenue provides the best and safest alternative for a northbound D Line platform. It connects customers to the future METRO Green Line Extension Royalston Ave/Farmers Market Station, offers a safe signalized pedestrian crossing, and is near Sharing and Caring Hands and Mary's Place.

- The METRO Green Line Extension project will add a traffic signal at 7th Street and 5th Avenue and bicycle and pedestrian improvements along 7th Street. The existing condition is shown in Figure 30 below. The D Line platform design will fit into the long-term intersection improvements to the extent possible.

Figure 30: Diagram of future signalized intersection of 7th Street & 5th Avenue

Figure 31: Recommended station location - 7th Street & Olson-5th Avenue

Station Plan: Shared C Line and D Line Stations in Downtown Minneapolis

The stations below were approved within the C Line planning process. See the final *C Line Station Plan*[34] for more information. These will be shared stations serving both the C Line and D Line.

Ramp A/7th Street Transit Center

- The Ramp A/7th St Transit Center will be modified with rapid bus-ready improvements in 2018.

7th Street & Hennepin

- The 7th Street & Hennepin platform will use rapid bus-ready infrastructure previously built to improve transit on 7th Street.

8th/7th Street & Nicollet

- The 8th Street & Nicollet platform will be built as part of the 8th Street reconstruction project in 2019 and 2020.[35]
- The 7th Street & Nicollet platform will use rapid bus-ready infrastructure previously built to improve transit on 7th Street.

8th/7th Street & 3rd/4th Avenue

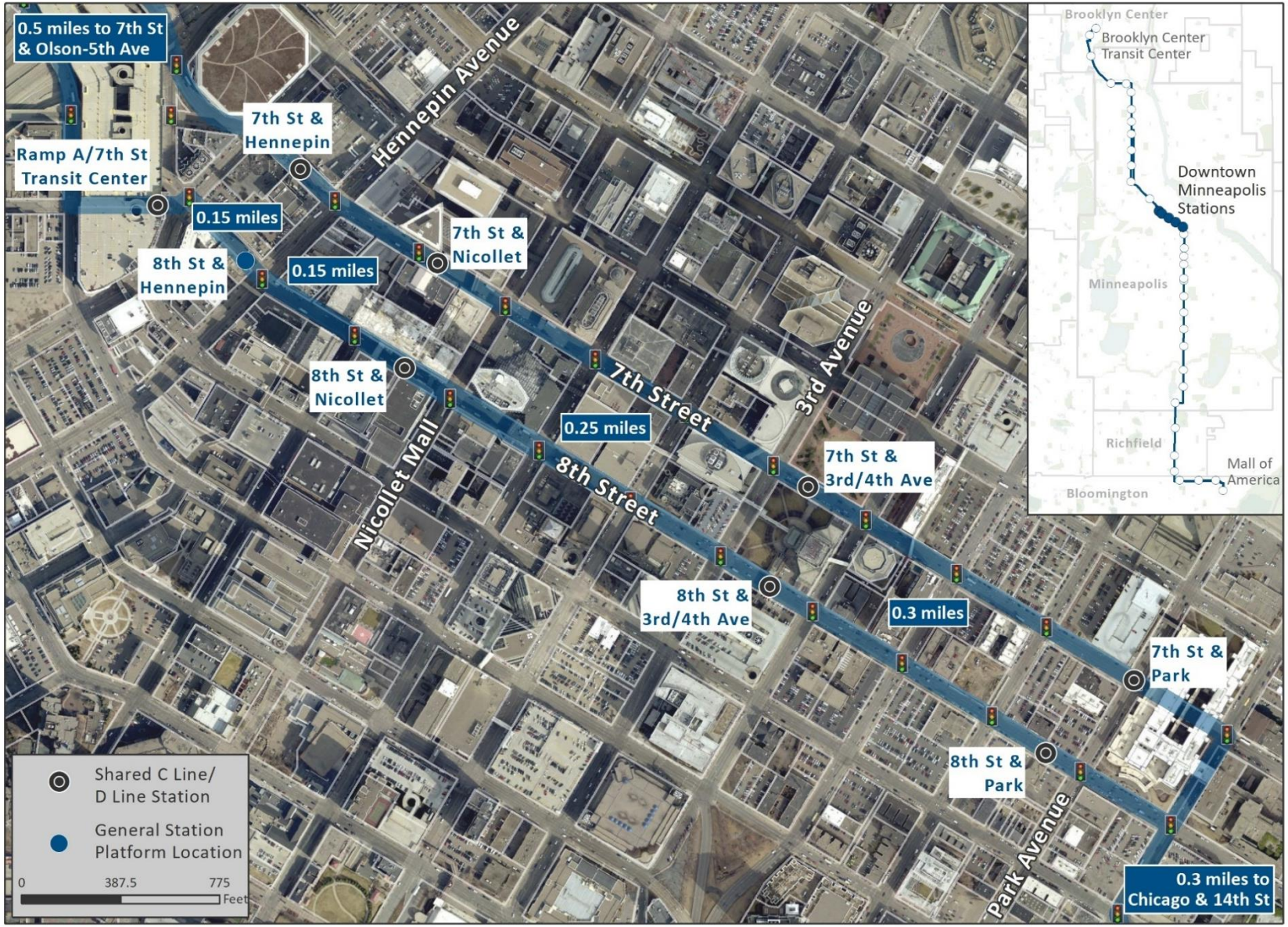
- The 8th Street & 3rd/4th Avenue platform will be built as part of the 8th Street reconstruction project in 2019 and 2020.[2]
- The 7th Street & 3rd/4th Avenue platform will be built as part of C Line construction in 2018.

8th/7th Street & Park

- The 8th Street & Park platform will be built as part of the 8th Street reconstruction project in 2019 and 2020.[2]
- The 7th Street & Park platform will be built as part of C Line construction in 2018.

[34] More information at: https://www.metrotransit.org/c-line-station-plan
[35] More information at: http://www.8thstreetproject.com/

Figure 32: Shared C Line and D Line stations in downtown Minneapolis



Station Plan: 8th Street & Hennepin

8th Street & Hennepin		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	8th Street & Hennepin
	Platform location	Southbound: Nearside of Hennepin Avenue Farside not technically feasible; nearside platform design to be coordinated with the planned Hennepin Avenue reconstruction project, led by the City of Minneapolis.
SURROUNDING CONTEXT	**Station spacing**	Downtown's very high ridership, many dense destinations, and unique land uses result in closer station spacing than on most of the corridor. Ramp A/7th Street Transit Center and 8th Street & Nicollet are less than 0.2 mi from 8th Street & Hennepin.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 2,170 boardings per weekday
	Platform location compared to existing bus stop	Southbound: At existing bus stop
	Connecting service	Connections to many routes; including high frequency Route 6 and the planned C Line.
	Parking changes	Southbound: No parking changes
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound: To be determined Curb configuration dependent upon coordination with the Hennepin Avenue reconstruction project.
	Platform length	Southbound: To be determined Platform length dependent upon coordination with the Hennepin Avenue reconstruction project.

**Final conditions to be developed during the engineering/design process.*

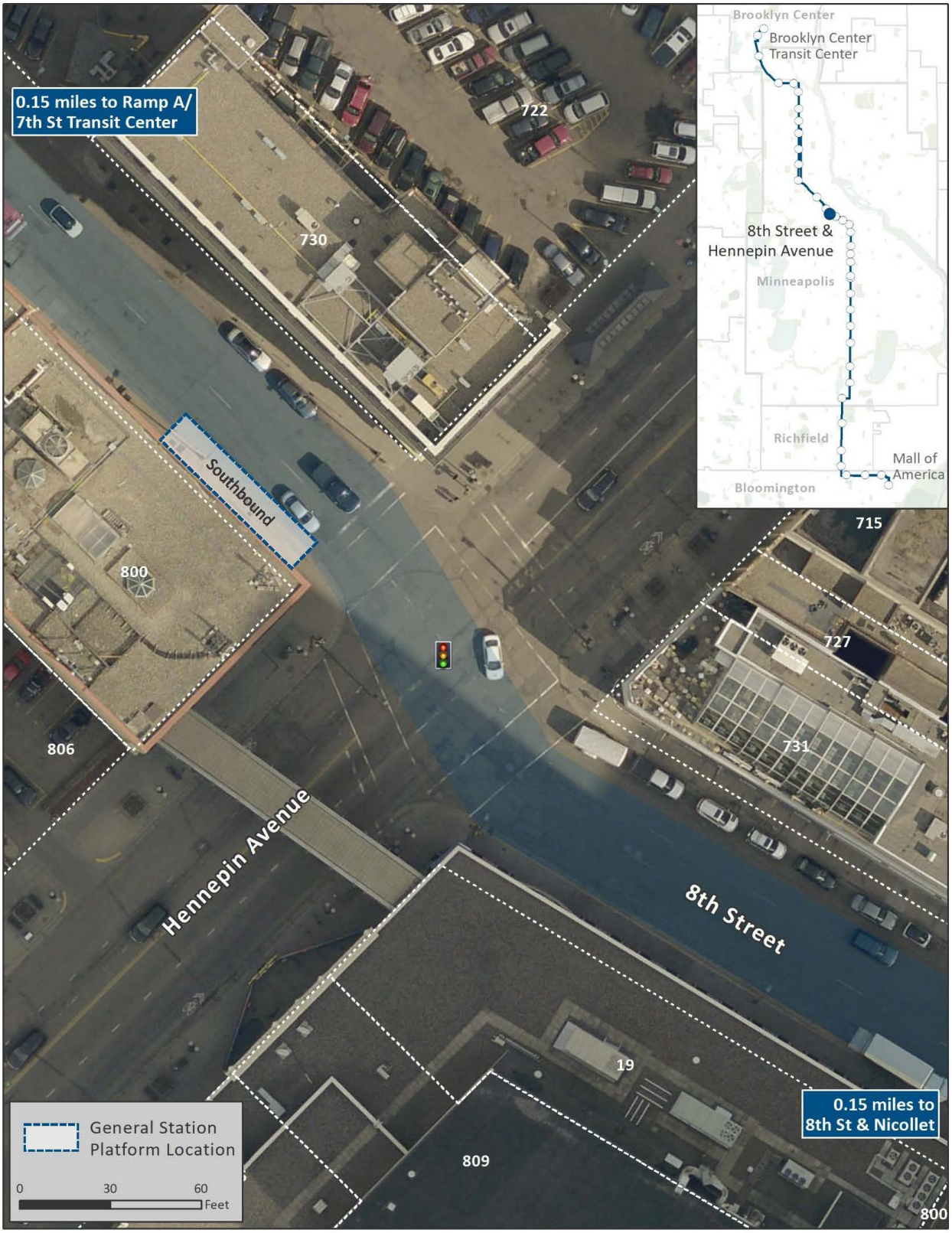
Notes and Discussion

Project coordination: Hennepin Avenue reconstruction project (City of Minneapolis)

- The City of Minneapolis is planning to reconstruct Hennepin Avenue from Washington to 12th Street in 2020.[36]
- The design and construction of the 8th Street & Hennepin platform will be coordinated with this reconstruction project to the extent possible.

[36] More information at: http://www.ci.minneapolis.mn.us/cip/future/WCMSP-172270

Figure 33:Recommended station location – 8th Street & Hennepin



Station Plan: Chicago & 14th Street

Chicago & 14th Street		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Chicago & 14th Street
	Platform location	Southbound: Farside of 14th Street, southwest corner Northbound: Farside of 14th Street, northeast corner In both directions, farside has adequate platform length available and is preferred to maximize transit signal priority potential.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.4 mi to Chicago & Franklin Shorter station spacing than guidelines due to high-ridership segment. Northbound: About 0.3 mi to 7th-8th Streets & Park Shorter station spacing than guidelines due to high-ridership segment and proximity to downtown.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 340 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At opposite corner of existing bus stop
	Connecting service	No connecting transit service
	Parking changes	Southbound: No parking changes Existing farside taxi zone would be replaced by relocated bus stop zone. Northbound: Reduction of about 2-3 parking spaces, due to the relocation and expansion of existing bus stop zone Potential for existing nearside bus stop zone to be converted to curbside parking.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and southbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Other station locations considered: Chicago and 15th Street

- Chicago and 15th Street has substantially lower ridership compared to at 14th Street (about 280 boardings compared to about 60 boardings per weekday).
- Outreach and engagement suggested that community members consider Chicago and 14th Street as the center of the neighborhood compared to other intersections.

Other station locations considered: Chicago and 17th Street

- While ridership is substantial at Chicago and 17th Street (about 340 daily boardings), multiple driveway access points and the interstate highway overpass in the northbound direction severely limit constructability in this location.
- Chicago and 17th Street is less than 1,000 ft from the recommended Chicago & 14th Street station.

Other station locations considered: Chicago and 18th Street

The 2012 *Arterial Transitway Corridor Study*[37] (ATCS) included a conceptual Chicago & 18th Street station in addition to the station at 14th Street. This station plan does not include a D Line station at Chicago and 18th Street.

Station spacing

- While ridership is substantial at Chicago and 18th Street (about 310 daily boardings), it is only about 900 ft from the recommended Chicago & Franklin station.
- Not recommending a Chicago & 18th Street station prioritizes improved travel times from stop consolidation.

[37] More information at: https://www.metrotransit.org/abrt-study

Figure 34: Recommended station location - Chicago & 14th Street

Station Plan: Chicago & Franklin

Chicago & Franklin		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Chicago & Franklin
	Platform location	Southbound: Farside of Franklin, southwest corner Northbound: Farside of Franklin, northeast corner In both directions, farside has adequate platform length available and is preferred to maximize transit signal priority potential.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.25 mi to Chicago & 24th Street Shorter station spacing than guidelines due to high-ridership segment. Northbound: About 0.4 mi to Chicago & 14th Street Slightly shorter station spacing than guidelines due to high-ridership segment and proximity to downtown.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 820 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At opposite corner of existing bus stop
	Connecting service	Routes 2, 9, and 39
	Parking changes	Southbound: Reduction of about 2-3 parking spaces, due to the relocation and expansion of existing bus stop zone Potential for existing nearside bus stop zone to be converted to curbside parking. Northbound: No parking changes Relocation of bus stop zone to farside would shift location of curbside parking to nearside.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Project coordination: Highway Safety Improvement Project (Hennepin County)

- Hennepin County is planning to make safety improvements at the intersection through the MnDOT Highway Safety Improvement Program.
- The project is currently planned for construction in 2020 or 2021 and will include safety features like curb extensions and signal improvements.
- Coordination will reduce construction impacts and result in a more compatible design that accommodates both projects and improves the intersection for different road users.

Other station locations considered: Chicago and 18th Street

The 2012 *Arterial Transitway Corridor Study*[38] (ATCS) included a conceptual Chicago & 18th Street station in addition to the station at 14th Street. This station plan does not include a D Line station at Chicago and 18th Street.

Station spacing

- While ridership is substantial at Chicago and 18th Street (about 310 daily boardings), it is only about 900 ft from the recommended Chicago & Franklin station.
- Not recommending a Chicago & 18th Street station prioritizes improved travel times from stop consolidation.

Design considerations: General station concept

- See Figure 35 for an example of a preliminary station concept at Chicago and Franklin.
- Station design considerations in 2018-2019 will require coordination to account for any impacts to the adjacent Peavey Field Park and the public art installation at the corner of Chicago and Franklin.

Figure 35: Preliminary Chicago & Franklin platform concept

[38] More information at: https://www.metrotransit.org/abrt-study

Figure 36: Recommended station location - Chicago & Franklin

Station Plan: Chicago & 24th Street

Chicago & 24th Street		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Chicago & 24th Street
	Platform location	Southbound: Farside of 24th Street, southwest corner Northbound: Farside of 24th Street, northeast corner In both directions, farside has adequate platform length available and is preferred to maximize transit signal priority potential.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.25 mi to Chicago & 26th Street Shorter station spacing than guidelines due to high-ridership segment. Northbound: About 0.25 mi to Chicago & Franklin Shorter station spacing than guidelines due to high-ridership segment.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 670 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At opposite corner of existing bus stop
	Connecting service	No connecting transit service
	Parking changes	Southbound and northbound: Reduction of about 2-3 parking spaces, due to the relocation and expansion of existing bus stop zone Potential for existing nearside bus stop zone to be converted to curbside parking. In northbound direction, existing accessible curbside parking will be impacted farside.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and southbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Figure 37: Recommended station location - Chicago & 24th Street

Station Plan: Chicago & 26th Street

Chicago & 26th Street		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Chicago & 26th Street
	Platform location	Southbound: Farside of 26th Street, southwest corner Northbound: Farside of 26th Street, northeast corner In both directions, farside has adequate platform length available and is preferred to maximize transit signal priority potential.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.4 mi to Chicago & Promenade Shorter station spacing than guidelines due to high-ridership segment. Northbound: About 0.25 mi to Chicago & 24th Street Shorter station spacing than guidelines due to high-ridership segment.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 660 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At opposite corner of existing bus stop
	Connecting service	Routes 27 and 39
	Parking changes	Southbound: Reduction of about 3-5 parking spaces, due to the relocation and expansion of existing bus stop zone Existing nearside bus stop zone cannot be converted to curbside parking due to right turn lane. Northbound: Potential increase of about 3-5 parking spaces, due to the relocation of existing bus stop zone Planned farside platform location is currently a no parking zone. Potential for existing nearside bus stop zone to be converted to curbside parking.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

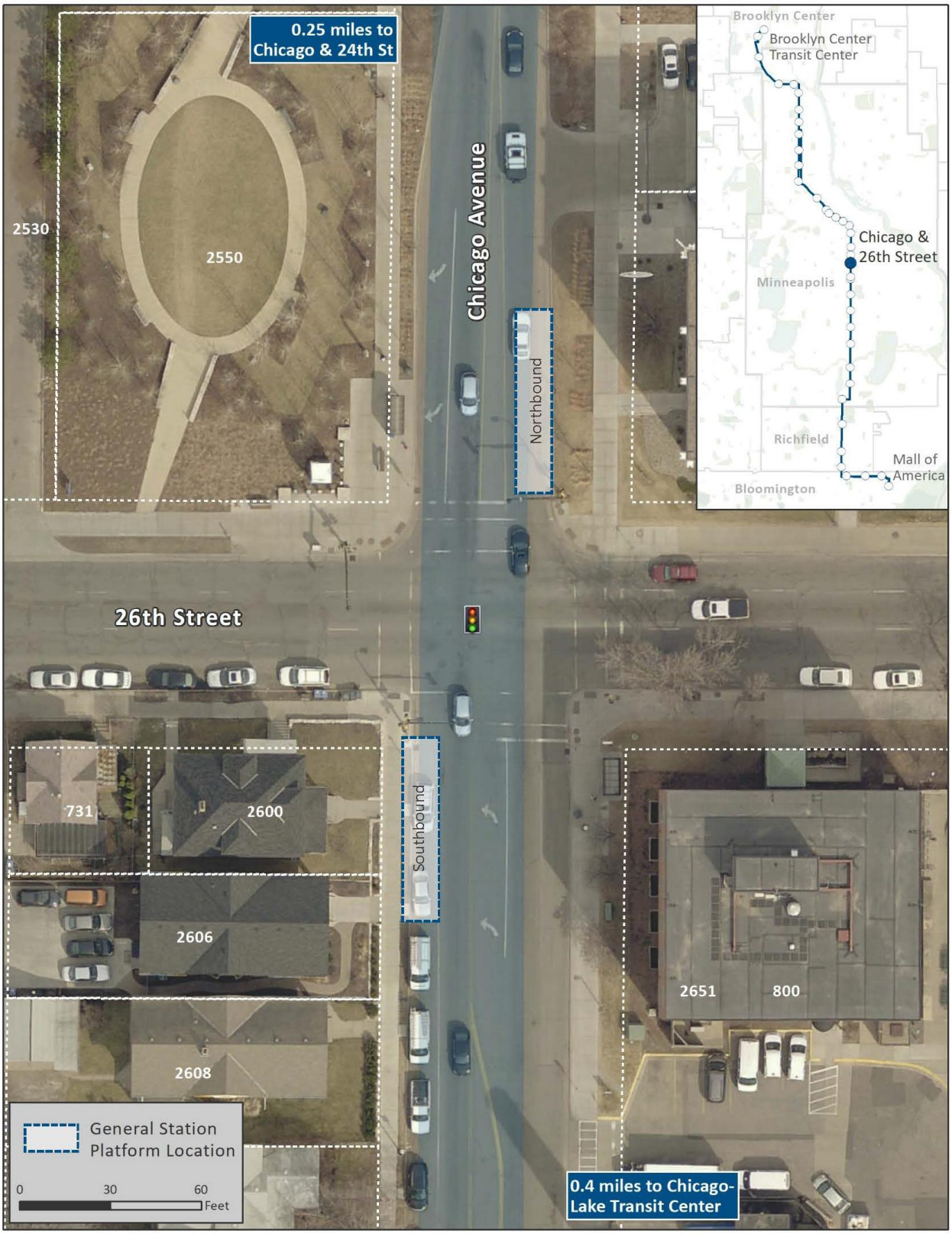
Other station locations considered: Chicago and 27th Street

The 2012 *Arterial Transitway Corridor Study*[39] (ATCS) included a conceptual Chicago & 27th Street station. This station plan does not include a D Line station at Chicago and 27th Street.

- Pedestrian access is blocked east of the intersection of Chicago Avenue and 27th Street by the Abbott Northwestern hospital campus. As an alternate option, 26th Street offers better connectivity to the street grid and more typical rapid bus operations at a signalized intersection.

[39] More information at: https://www.metrotransit.org/abrt-study

Figure 38: Recommended station location - Chicago & 26th Street



Station Plan: Chicago-Lake Transit Center

Chicago-Lake Transit Center		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Chicago-Lake Transit Center
	Platform location	Southbound: Farside of transit center driveway Farside location on-street prioritizes improved travel times by no longer turning into the Chicago-Lake Transit Center. Northbound: Farside of transit center driveway Farside at existing stop has adequate platform length available and is preferred to maximize transit signal priority potential.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.5 mi to Chicago & 34th Street Within guidelines of about half-mile station spacing. Northbound: About 0.4 mi to Chicago & 26th Street Slightly shorter station spacing than guidelines due to high-ridership segment.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 1,500 boardings per weekday
	Platform location compared to existing bus stop	Southbound: Leaves existing off-street stop at Chicago-Lake Transit Center and instead serves Chicago Avenue on-street. Northbound: At existing stop
	Connecting service	Routes 21, 27, 39, and 53
	Parking changes	Southbound: Reduction of about 3-5 parking spaces, due to the relocation of existing bus stop Northbound: No changes
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

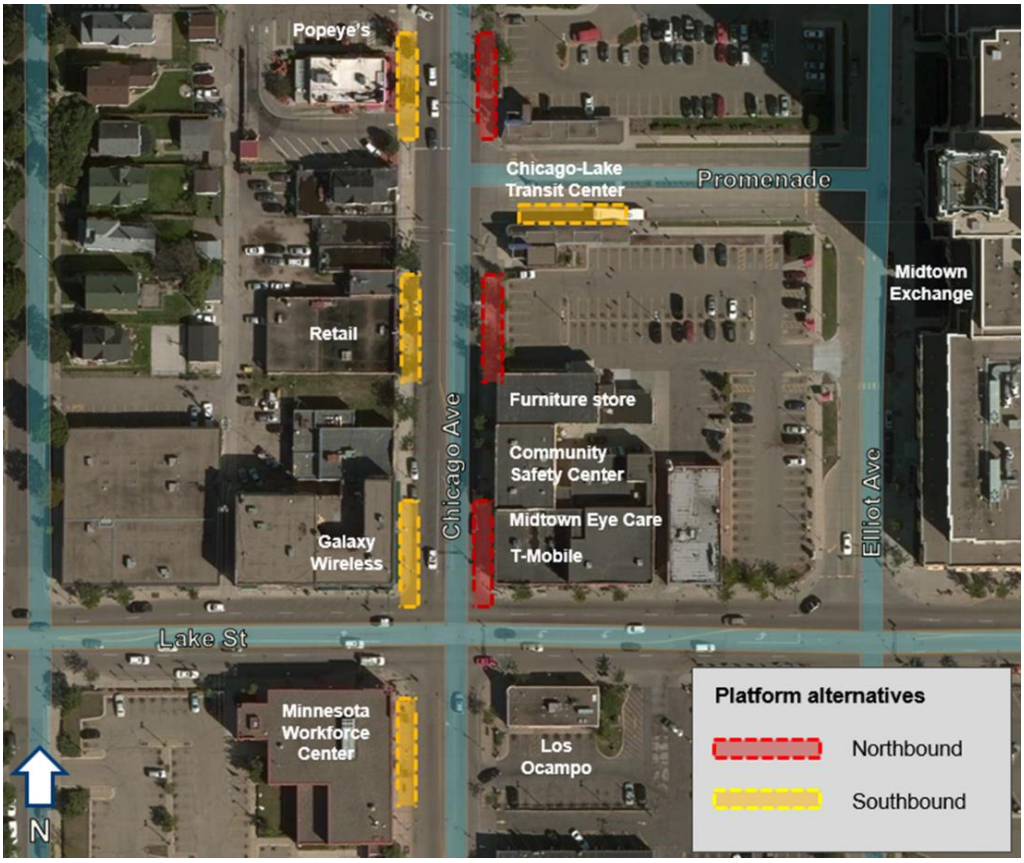
Notes and Discussion

Other station locations considered: Chicago-Lake Planning Study[40]

Background

- Today, at the Chicago-Lake Transit Center, there are 1,500 average daily weekday Route 5 boardings. This is the highest ridership point on the Route 5, outside of downtown Minneapolis.
- The Chicago-Lake Transit Center serves as a major transfer point for customers traveling on Routes 5, 21, and 53.
- The existing Route 5 southbound stop is located off Chicago Avenue on the transit center driveway entrance to the Midtown Exchange building. This requires southbound Route 5 buses to make multiple turning movements, resulting in about three minutes of travel delay and poor on-time reliability.
- Metro Transit completed a Chicago-Lake planning study to consider alternative platform options to provide a faster and more reliable trip.
- Figure 39 illustrates the location of considered alternative platform locations.

Figure 39: Chicago Lake area alternative platform locations



[40] More information at: https://www.metrotransit.org/d-line-library

Study process

- Evaluation of travel times, traffic impacts, transfer movements across routes, and pedestrian access
- Interviews with Metro Transit police, operations, and maintenance departments about how the transit facility functions today
- Customer surveys and conversations with neighborhood groups and small businesses

Study recommendation

- The study recommendation locates both the northbound and southbound platforms on the farside of the existing transit center driveway. Three primary considerations of this recommendation include:
    - **Maintaining the ease of existing transfer activity:** It is estimated that about 50-75 percent of existing customers transfer between routes at this location. The proximity of recommended D Line platforms to the transit center prioritizes the continued ease of these transfers.
    - **Positioning with long-term transitway planning:** Recommended D Line platforms are located between the planned B Line rapid bus (Lake Street corridor) and Midtown rail (Midtown Greenway corridor) services.
    - **Minimizing traffic impacts:** Traffic evaluation indicated minimized traffic impacts by locating platform north of congestion at Chicago and Lake, especially in the southbound direction.

Figure 40: Preliminary Chicago-Lake Transit Center platform concept

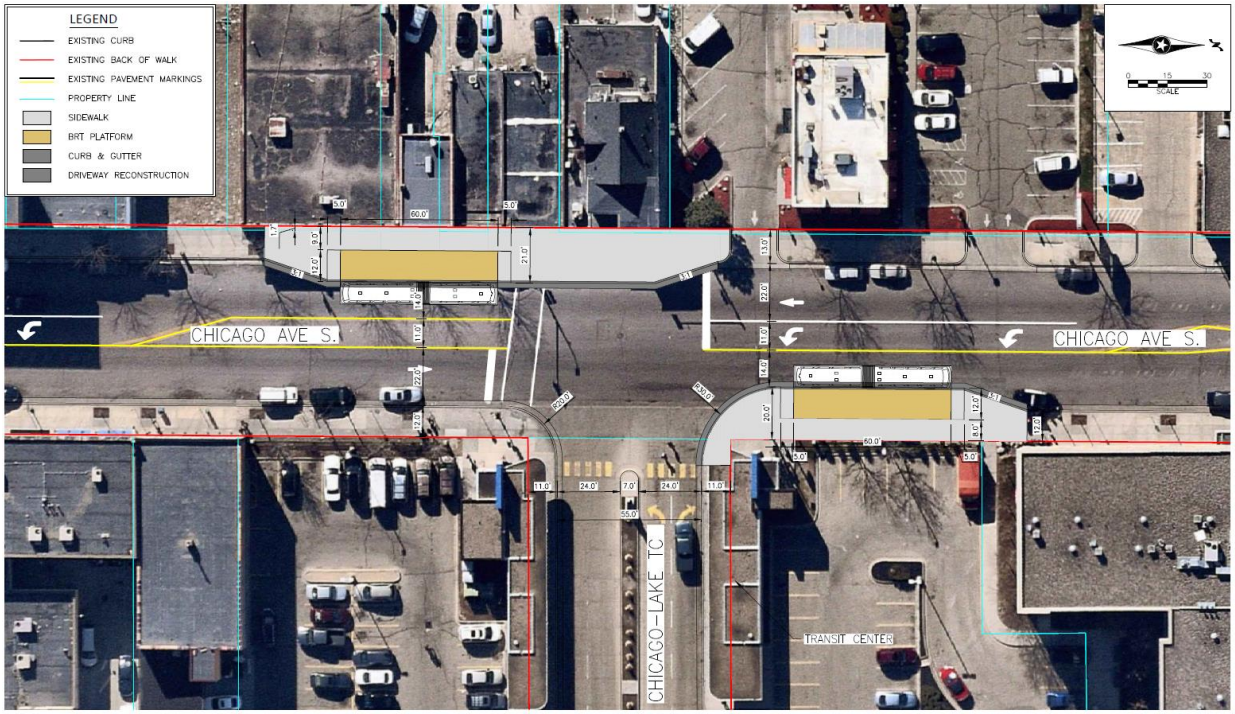


Figure 41: Recommended station location - Chicago-Lake Transit Center

Station Plan: Chicago & 34th Street

Chicago & 34th		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Chicago & 34th Street
	Platform location	Southbound: Farside of 34th Street, southwest corner Northbound: Farside of 34th Street, northeast corner In both directions, farside has adequate platform length available and is preferred to maximize transit signal priority potential.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.5 mi to Chicago & 38th Street Within guidelines of about half-mile station spacing. Northbound: About 0.5 mi to Chicago-Lake Transit Center Within guidelines of about half-mile station spacing.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 450 boardings per weekday
	Platform compared to existing bus stop	Southbound and northbound: At opposite corner of existing bus stop
	Connecting service	No connecting transit service
	Parking changes	Southbound: Reduction of about 2-3 parking spaces, due to the relocation and expansion of existing bus stop zone Potential for existing nearside bus stop zone to be converted to curbside parking. Northbound: Reduction of about 2-3 parking spaces, due to the relocation and expansion of existing bus stop zone Potential for existing nearside bus stop zone to be converted to curbside parking. Farside platform to impact school zone parking restrictions.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Other station locations considered: Chicago and 33rd Street and Chicago and 35th Street

The 2012 *Arterial Transitway Corridor Study*[41] (ATCS) included conceptual Chicago & 33rd Street and Chicago & 35th Street stations. This station plan does not include D Line stations at Chicago and 33rd or 35th Streets.

Station spacing and consistency

- Stations at both 33rd Street and 35th Street would result in station spacing of about 0.25- to 0.33 mile, too close when considering ridership and spacing trends elsewhere on the D Line corridor. Outside of downtown, this station plan limits quarter-mile station spacing to the Chicago & 24th Street station where a variety of dense land uses drive high ridership throughout the surrounding area.
- Other segments on the D Line corridor have higher ridership with stations planned closer to half-mile station spacing, like segments between Chicago and 14th Street and 18th Streets or Chicago and 26th and the Chicago-Lake Transit Center.

Access to destinations

- In addition, access to the Minneapolis Public Schools Wilder Complex is currently provided at the bus stop located at Chicago and 33rd Street. This educational facility includes the Wellstone International High School.
- Ridership data indicates seasonal increases in daily ridership up to about 150 boardings when school is in session.
- Service to the Wilder Complex can be maintained by a Chicago & 34th Street station without introducing additional pedestrian crossings of Chicago Avenue.

[41] More information at: https://www.metrotransit.org/abrt-study

Figure 42: Recommended station location - Chicago & 34th Street

Station Plan: Chicago & 38th Street

Chicago & 38th		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Chicago & 38th Street
	Platform location	Southbound: Farside of 38th Street, southwest corner Driveway access limits available length in both nearside and farside locations. Farside location recommended to maximize transit signal priority potential and will require further project review to account for existing driveway. Northbound: Farside of 38th Street, northeast corner Farside has adequate platform length available and preferred to maximize transit signal priority potential.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.5 mi to Chicago & 42nd Street Within guidelines of about half-mile station spacing. Northbound: About 0.5 mi to Chicago & 34th Street Within guidelines of about half-mile station spacing.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 390 boardings per weekday
	Platform location compared to existing bus stop	Southbound: At opposite corner of existing bus stop Northbound: At existing bus stop
	Connecting service	Routes 23 and 133
	Parking changes	Southbound: Reduction of about 1-2 parking spaces, due to the relocation and expansion of existing bus stop zone Potential for existing nearside bus stop zone to be converted to curbside parking. Northbound: Reduction of about 2-3 parking spaces Existing bus stop zone would be extended to accommodate curb taper.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpouts Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Other platform locations considered: Southbound platform nearside of 38th Street

Constructability

- The existing gas station access driveway limits the constructible platform length to less than 50 feet. This precludes the capability to ensure all-door boarding and exiting at a high-activity location.

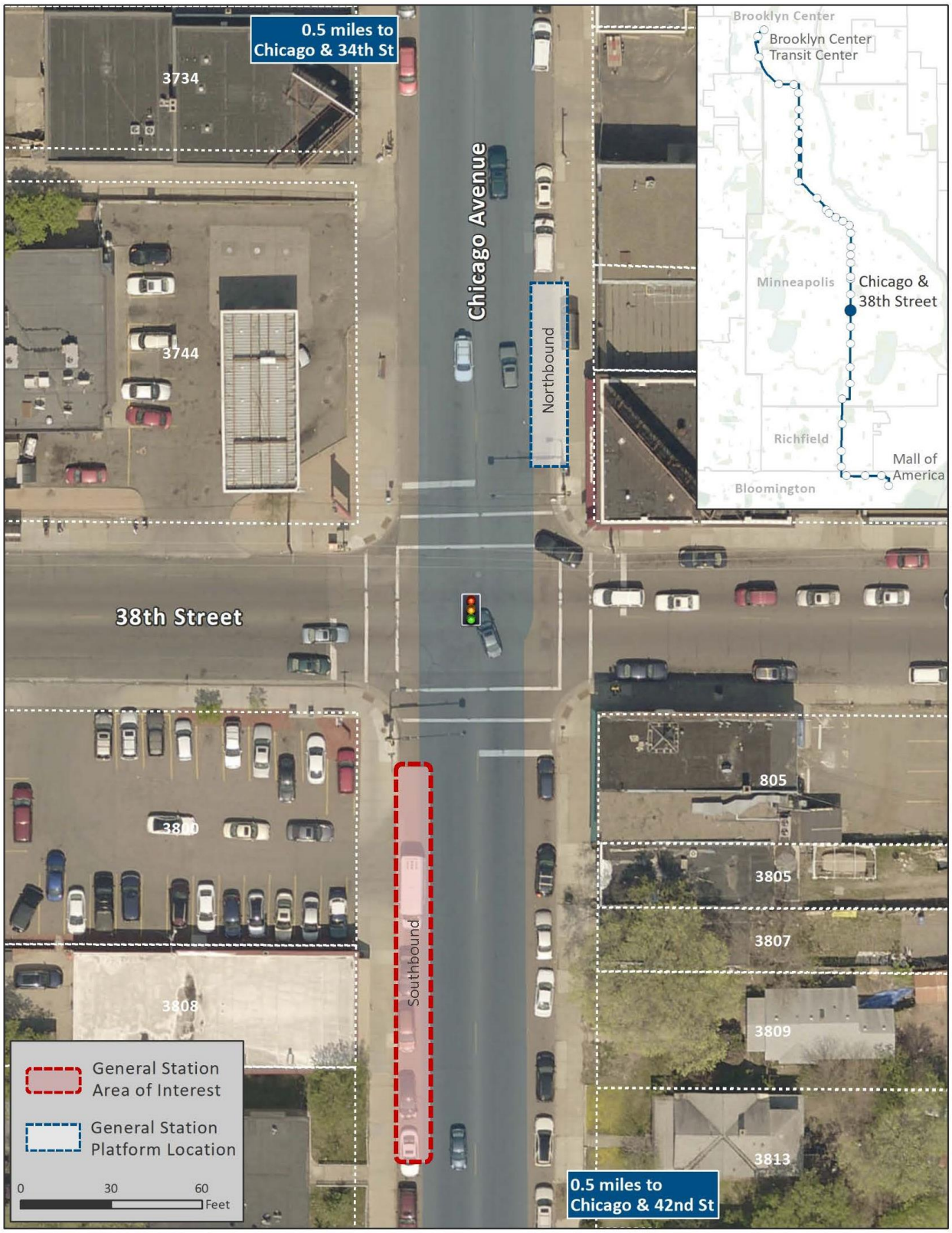
Stop activity

- Existing Route 5 ridership at this southbound stop is about 90 boardings and over 215 alightings. Considering the high usage at this stop, the construction of a platform with the full standard length of 60 feet, 9-inch curbs, and a bumpout is warranted to ensure the best long-term transit operations possible, including all-door boarding.

Transit signal priority

- A farside location will provide additional potential to maximize transit signal priority benefit.

Figure 43: Recommended station location - Chicago & 38th Street

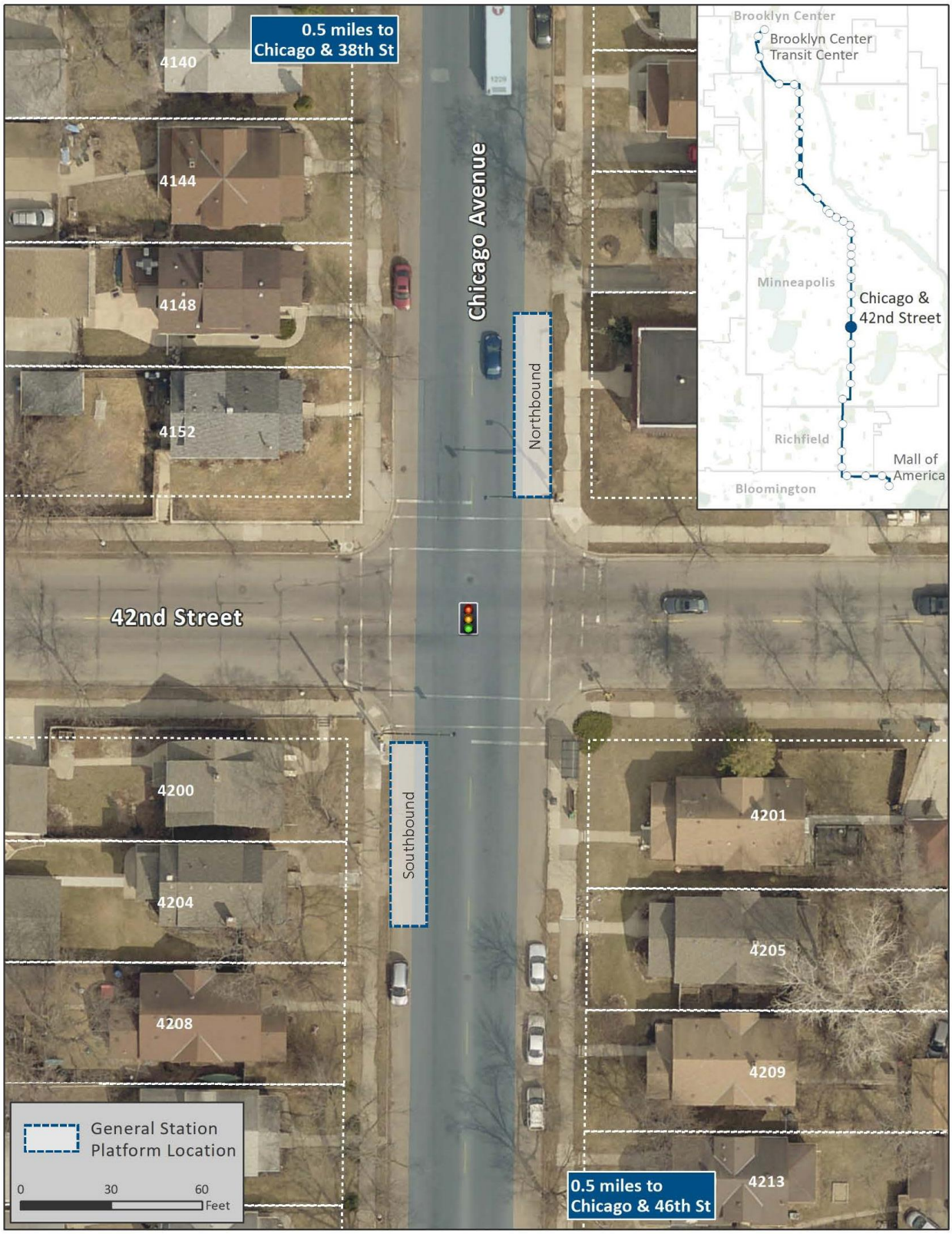


Station Plan: Chicago & 42nd Street

Chicago & 42nd		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Chicago & 42nd Street
	Platform location	Southbound: Farside of 42nd Street, southwest corner Northbound: Farside of 42nd Street, northeast corner In both directions, farside has adequate platform length available and is preferred to maximize transit signal priority potential.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.5 mi to Chicago & 46th Street Within guidelines of about half-mile station spacing. Northbound: About 0.5 mi to Chicago & 38th Street Within guidelines of about half-mile station spacing.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 100 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At opposite corner of existing bus stop
	Connecting service	No connecting transit service
	Parking changes	Southbound: Reduction of about 2-3 parking spaces, due to the relocation and expansion of existing bus stop zone Potential for existing nearside bus stop zone to be converted to curbside parking. Northbound: No impact to number of parking spaces; relocation of existing bus stop zone Potential for existing nearside bus stop zone to be converted to curbside parking.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpouts Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Figure 44: Recommended station location - Chicago & 42nd Street



Station Plan: Chicago & 46th Street

Chicago & 46th Street		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Chicago & 46th Street
	Platform location	Southbound: Farside of 46th Street on southwest corner Northbound: Farside of 46th Street on northeast corner In both directions, farside has adequate platform length available and is preferred to maximize transit signal priority potential.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.75 mi to Chicago & 52nd Street Longer station spacing than guidelines due to lower ridership segment, lower-density land uses, presence of Minnehaha Creek. Northbound: About 0.5 mi to Chicago & 42nd Street Within guidelines of about half-mile average station spacing.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 170 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At opposite corner of existing bus stop
	Connecting service	Route 46
	Parking changes	Southbound and northbound: No changes
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound: Bumpout Bumpout will maximize operational efficiency and pedestrian space. Northbound: No bumpout; maintain existing curb line Adequate space available for transit amenities; full width of bicycle lane to be maintained within existing curb line.
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Project coordination: Highway Safety Improvement Project (Hennepin County)

- Hennepin County is planning to make safety improvements through the MnDOT Highway Safety Improvement Program along 46th Street, including the intersection of Chicago and 46th Street.
- The project is currently planned for construction in 2019 or 2020 and will include safety features like signal modifications and pedestrian ramp improvements.
- Coordination will reduce construction impacts and result in a more compatible design that accommodates both projects.

Other station locations considered: Chicago and 48th Street

This station plan does not include a station at Chicago and 48th Street. The 2012 *Arterial Transitway Corridor Study*[42] (ATCS) did not include a conceptual Chicago & 48th Street station.

Substantial consideration was given to a potential Chicago & 48th Street station. In addition to conversations with neighborhood groups and business owners, a community workshop was held in the area to discuss a variety of planning considerations, including a potential Chicago & 48th Street station[43]. Attendees included both residents and business owners in the surrounding community. Input was mixed supporting and opposing a variety of potential station locations between 46th and 56th Streets.

Station spacing, customer access and consistency

- A station at Chicago and 48th Street would be about a quarter-mile from the Chicago & 46th Street station. An additional D Line station is not recommended at this location. Outside of downtown, this station plan limits quarter-mile station spacing to the Chicago & 24th Street station where a variety of dense land uses drive high ridership throughout the surrounding area.
- A station at this location would provide access to a neighborhood commercial node with transit-supportive land uses. Elsewhere in the corridor, this Station Plan has considered but ultimately not recommended several stations near transit-supportive land uses despite strong ridership because of access to nearby planned D Line stations about a quarter-mile away. Examples of these considered but not recommended locations include 7th Street and 11th Avenue-Bryant and Chicago and 18th Avenue. Without a station at Chicago and 48th Street, the majority of customers between 46th and 56th Streets (about 160 total boardings per weekday) will be within a quarter-mile walk of the nearest D Line station. Riders currently boarding at Chicago and 49th Street (about 15 total boardings per day) would be able to access the D Line station by walking about a third of a mile. Access to Route 5 will remain at bus stops on every block.

Parking considerations

- A station at Chicago and 48th Street would require changing curbside use from parking to transit boarding.
- Impacts could be reduced by locating a southbound platform at the existing bus stop located just north of the Chicago and 48th intersection. However, this is less than two blocks from the

[42] More information at: https://www.metrotransit.org/abrt-study
[43] More information at: https://www.metrotransit.org/d-line-meetings

recommended Chicago & 46th Street station. The potential consolidation of existing bus stops in the vicinity of Chicago and 48th Street could also mitigate any on-street parking reduction from the placement of a D Line station.

Figure 45: Recommended station location - Chicago & 46th Street

Station Plan: Chicago & 52nd Street

Chicago & 52nd Street		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Chicago & 52nd Street
	Platform location	Southbound: Farside of 52nd Street on southwest corner Northbound: Farside of 52nd Street on northeast corner Farside locations have adequate platform length available. Compared to nearside, farside location improves sightlines at 2-way stop controlled intersection.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.5 mi to Chicago & 56th Street Within guidelines of about half-mile average station spacing. Northbound: About 0.75 mi to Chicago & 46th Street Longer station spacing than guidelines due to lower ridership segment, lower-density land uses, presence of Minnehaha Creek.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 35 boardings per weekday
	Platform location compared to existing bus stop	Southbound: At opposite corner of existing bus stop Northbound: At existing bus stop
	Connecting service	No connecting transit service
	Parking changes	Southbound: Reduction of about 2-3 parking spaces, due to the relocation and expansion of existing bus stop zone Potential for existing nearside bus stop zone to be converted to curbside parking. Northbound: Reduction of about 1-2 parking spaces, due to the expansion of existing bus stop zone
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Other station locations considered: Chicago and 48th Street

This station plan does not include a station at Chicago and 48th Street. The 2012 *Arterial Transitway Corridor Study*[44] (ATCS) did not include a conceptual Chicago & 48th Street station.

Substantial consideration was given to a potential Chicago & 48th Street station. In addition to conversations with neighborhood groups and business owners, a community workshop was held in the area to discuss a variety of planning considerations, including a potential Chicago & 48th Street station[45]. Attendees included both residents and business owners in the surrounding community. Input was mixed supporting and opposing a variety of potential station locations between 46th and 56th Streets.

Station spacing, customer access and consistency

- A station at Chicago and 48th Street would be about a quarter-mile from the Chicago & 46th Street station. An additional D Line station is not recommended at this location. Outside of downtown, this station plan limits quarter-mile station spacing to the Chicago & 24th Street station where a variety of dense land uses drive high ridership throughout the surrounding area.

- A station at this location would provide access to a neighborhood commercial node with transit-supportive land uses. Elsewhere in the corridor, this Station Plan has considered but ultimately not recommended several stations near transit-supportive land uses despite strong ridership because of access to nearby planned D Line stations about a quarter-mile away. Examples of these considered but not recommended locations include 7th Street and 11th Avenue-Bryant and Chicago and 18th Avenue. Without a station at Chicago and 48th Street, the majority of customers between 46th and 56th Streets (about 160 total boardings per weekday) will be within a quarter-mile walk of the nearest D Line station. Riders currently boarding at Chicago and 49th Street (about 15 total boardings per day) would be able to access the D Line station by walking about a third of a mile. Access to Route 5 will remain at bus stops on every block.

Parking considerations

- A station at Chicago and 48th Street would require changing curbside use from parking to transit boarding.

- Impacts could be reduced by locating a southbound platform at the existing bus stop located just north of the Chicago and 48th intersection. However, this is less than two blocks from the recommended Chicago & 46th Street station. The potential consolidation of existing bus stops in the vicinity of Chicago and 48th Street could also mitigate any on-street parking reduction from the placement of a D Line station.

Other station locations considered: Chicago and 54th Street

The 2012 *Arterial Transitway Corridor Study*[46] (ATCS) included a conceptual Chicago & 54th Street station. This station plan does not include a D Line station at Chicago & 54th Street.

[44] More information at: https://www.metrotransit.org/abrt-study
[45] More information at: https://www.metrotransit.org/d-line-meetings
[46] More information at: https://www.metrotransit.org/abrt-study

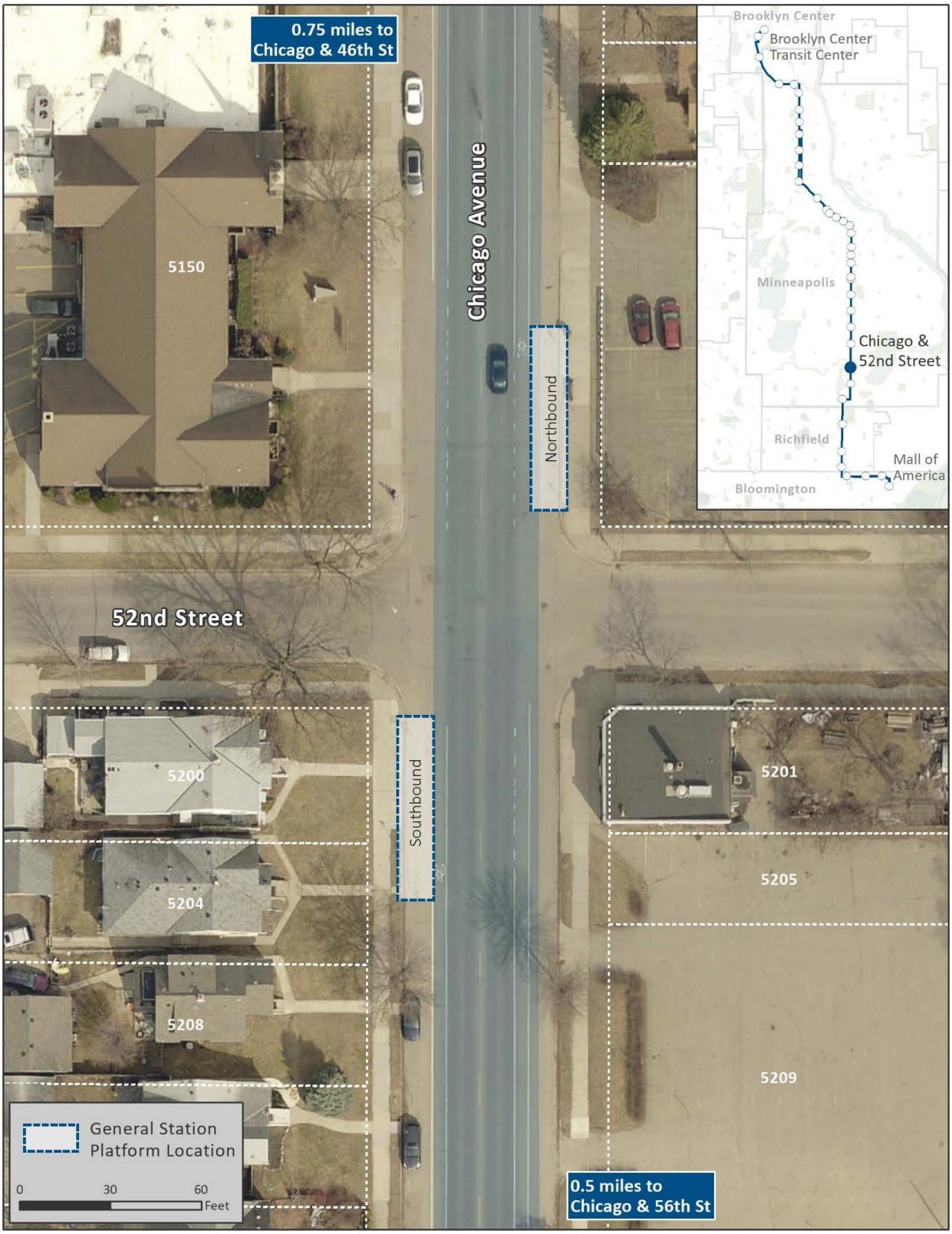
Constructability

- Driveway access substantially limits available platform length at three out of four corners at Chicago and 54th Street. As a result, a station at this location is not feasible.

Ridership

- In addition, ridership is substantially lower at 54th Street (about 20 total daily weekday boardings) compared to 56th Street (about 70).

Figure 46: Recommended station location - Chicago & 52nd Street



Station Plan: Chicago & 56th Street

Chicago & 56th Street		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Chicago & 56th Street
	Platform location	Southbound: Farside of 56th Street on southwest corner Northbound: Nearside of 56th Street on southeast corner Southern half of intersection maintains better constructability due to northern half's hilly topography. 4-way stop control mitigates northbound nearside sightline issues.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.75 mi to Portland & 60th Street Longer station spacing than guidelines due to lower ridership segment and lower-density land uses. Northbound: About 0.5 mi to Chicago & 52nd Street Within guidelines of about half-mile average station spacing.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 80 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At existing bus stop
	Connecting service	Routes 14, 111, and 552
	Parking changes	Southbound: No changes Northbound: Reduction of about 2-3 parking spaces Existing bus stop zone would be extended to accommodate curb taper.
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: Bumpout Bumpouts will maximize operational efficiency and pedestrian space.
	Platform length	Southbound and northbound: 60' platform Platforms will be designed to accommodate a 60' BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Design considerations: General station concept

- Station design considerations in 2018 will require coordination to account for any impacts to the adjacent Todd Park.

Other station locations considered: Chicago and 54th Street

The 2012 *Arterial Transitway Corridor Study*[47] (ATCS) included a conceptual Chicago & 54th Street station. This station plan does not include a D Line station at Chicago & 54th Street.

Constructability

- Driveway access substantially limits available platform length at three out of four corners at Chicago and 54th Street. As a result, a station at this location is not feasible.

Ridership

- In addition, ridership is substantially lower at 54th Street (about 20 total daily weekday boardings) compared to 56th Street (about 70).

Other station locations considered: Chicago and 60th Street

The 2012 *Arterial Transitway Corridor Study*[48] (ATCS) included a conceptual Chicago & 60th Street station. This station plan does not include a D Line station at Chicago and 60th Street.

Ridership and station spacing

- Existing ridership and lower-density residential land uses in this segment of the D Line corridor do not support the inclusion of a station at Chicago and 60th Street.
- All customers except those currently boarding at Chicago and 59th Street would be within a quarter-mile walk to a D Line station. Riders currently boarding at Chicago and 59th Street (about five total boardings per day) would be able to access the planned Portland & 60th Street D Line station by walking about a third of a mile. Access to Route 5 will remain at bus stops on every block.

[47] More information at: https://www.metrotransit.org/abrt-study
[48] More information at: https://www.metrotransit.org/abrt-study

Figure 47: Recommended station location - Chicago & 56th Street

Station Plan: Portland & 60th Street

Portland & 60th Street		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Portland & 60th Street
	Platform location	Southbound: Farside of 60th Street on Portland Avenue, southwest corner (after left turn from 60th Street onto Portland Avenue) Northbound: Nearside of 60th Street on Portland Avenue, southeast corner)
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.75 mi to Portland & 66th Street Longer station spacing than guidelines due to lower ridership segment and land uses like Hwy 62, water plant, Veterans Park. Northbound: About 0.75 mi to Chicago & 56th Street Longer station spacing than guidelines due to lower ridership segment and lower-density land uses.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 50 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At existing bus stop
	Connecting service	Routes 111 and 553
	Parking changes	Southbound and northbound: No change
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: No bumpout; maintain existing curb line
	Platform length	Southbound: 60’ platform Platform will be designed to accommodate a 60’ BRT vehicle. Northbound: About 50’ platform Deviations from design standards may be required due to existing driveway south of intersection.

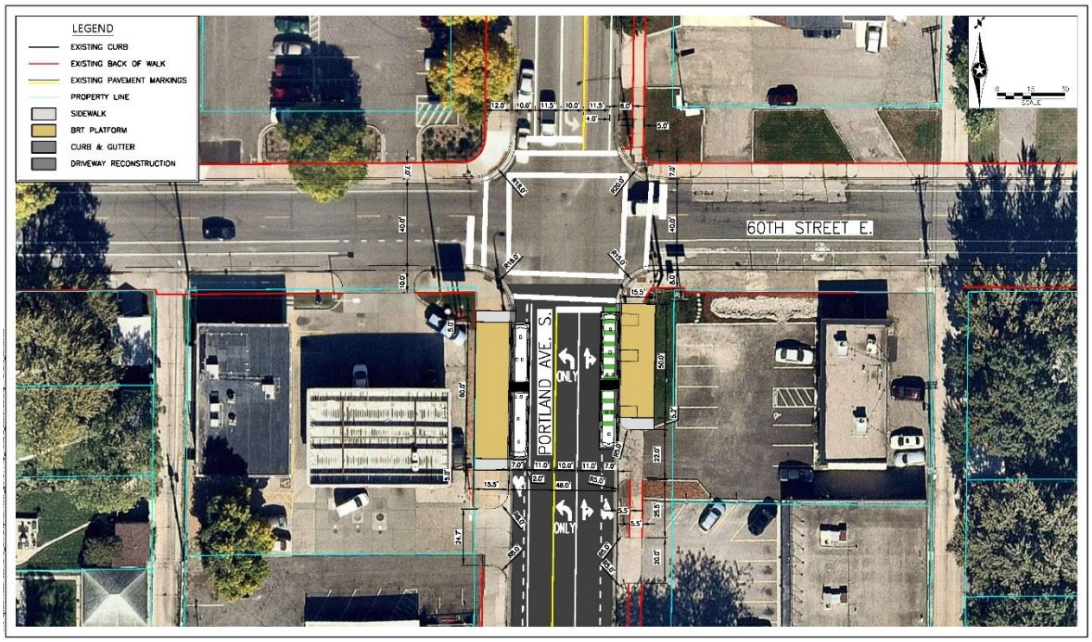
**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Project coordination: Planned bicycle & pedestrian improvements (Hennepin County)

- This station recommendation was developed with consideration of Hennepin County's planned bicycle and pedestrian improvements on Portland Avenue between 60th and 66th Streets.
- Design of the D Line will be coordinated to the extent possible with the Portland Avenue improvements to balance the needs of all roadway users, including transit riders, pedestrians, and bicyclists.
- Construction of the planned bicycle and pedestrian improvements is planned for 2020.[49]
- See Figure 48 for an example of a preliminary station concept at Portland and 60th Street.

Figure 48: Preliminary Portland & 60th Street platform concept



Other station locations considered: Chicago and 60th

The 2012 *Arterial Transitway Corridor Study*[50] (ATCS) included a conceptual Chicago & 60th Street station. This station plan does not include a D Line station at Chicago and 60th Street.

Ridership and station spacing

- Lower existing ridership and lower-density residential land uses in this segment of the D Line corridor do not support the inclusion of a station at Chicago and 60th Street.
- All customers would be within a quarter-mile walk to a D Line station, and riders currently boarding at Chicago and 59th Street (about five total boardings per day) would be able to access the D Line station by walking about a third of a mile.

[49] More information at: https://metrocouncil.org/Transportation/Planning-2/Transportation-Funding/Regional-Solicitation/2016-Submitted-Applications/MULTI-USE-TRAILS-BIKEWAYS/5217HennCoTr.aspx
[50] More information at: https://www.metrotransit.org/abrt-study

Figure 49: Recommended station location - Portland & 60th Street

Station Plan: Portland & 66th Street

Portland & 66th Street		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Portland & 66th Street
	Platform location	Southbound: Nearside of 66th Street on northwest corner Northbound: Nearside of 66th Street on southeast corner Adequate length available nearside at existing stops. No transit signal priority potential due to roundabout intersection. Nearside locations maintain existing transit operations condition at roundabout.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.9 mi to Portland & 73rd Street Longer station spacing than guidelines due to lower ridership segment and lower-density land uses. Northbound: About 0.75 mi to Portland & 60th Street Longer station spacing than guidelines due to lower ridership segment and land uses like Hwy 62, water plant, and Veterans Park.
	Existing ridership within a block, or about 1/8 mile (Spring 2016)	About 100 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At existing bus stop
	Connecting service	Routes 111, 515, and 553
	Parking changes	Southbound and northbound: No changes
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound: No bumpout; generally maintain existing curbline Northbound: To be determined; any curbline adjustments would be built to improve bicycle-transit compatibility
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Other platform locations considered: Southbound platform farside of 66th Street

- A D Line platform at this location is not recommended due to potential long-term changes to traffic and transit operations within the roundabout.

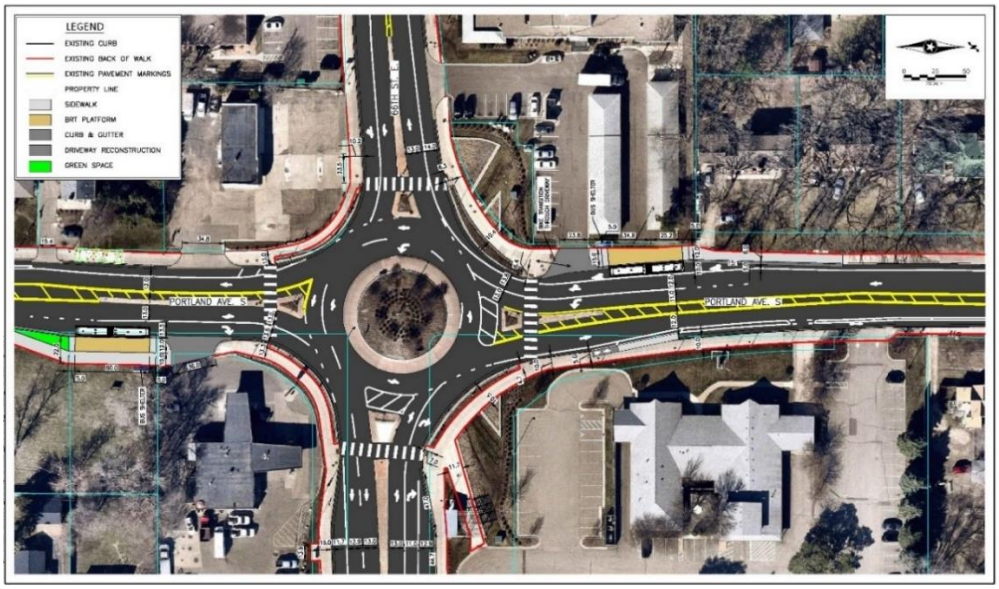
  Locating the southbound platform nearside of 66th Street will maintain the existing use of a bus pullout lane regardless of roundabout operations, removing the potential for buses to block the roundabout's entry and exit.

- Locating a southbound platform farside of 66th Street would also conflict with driveway access on a double parcel immediately south of the roundabout.

Project coordination: Planned bicycle & pedestrian improvements (Hennepin County)

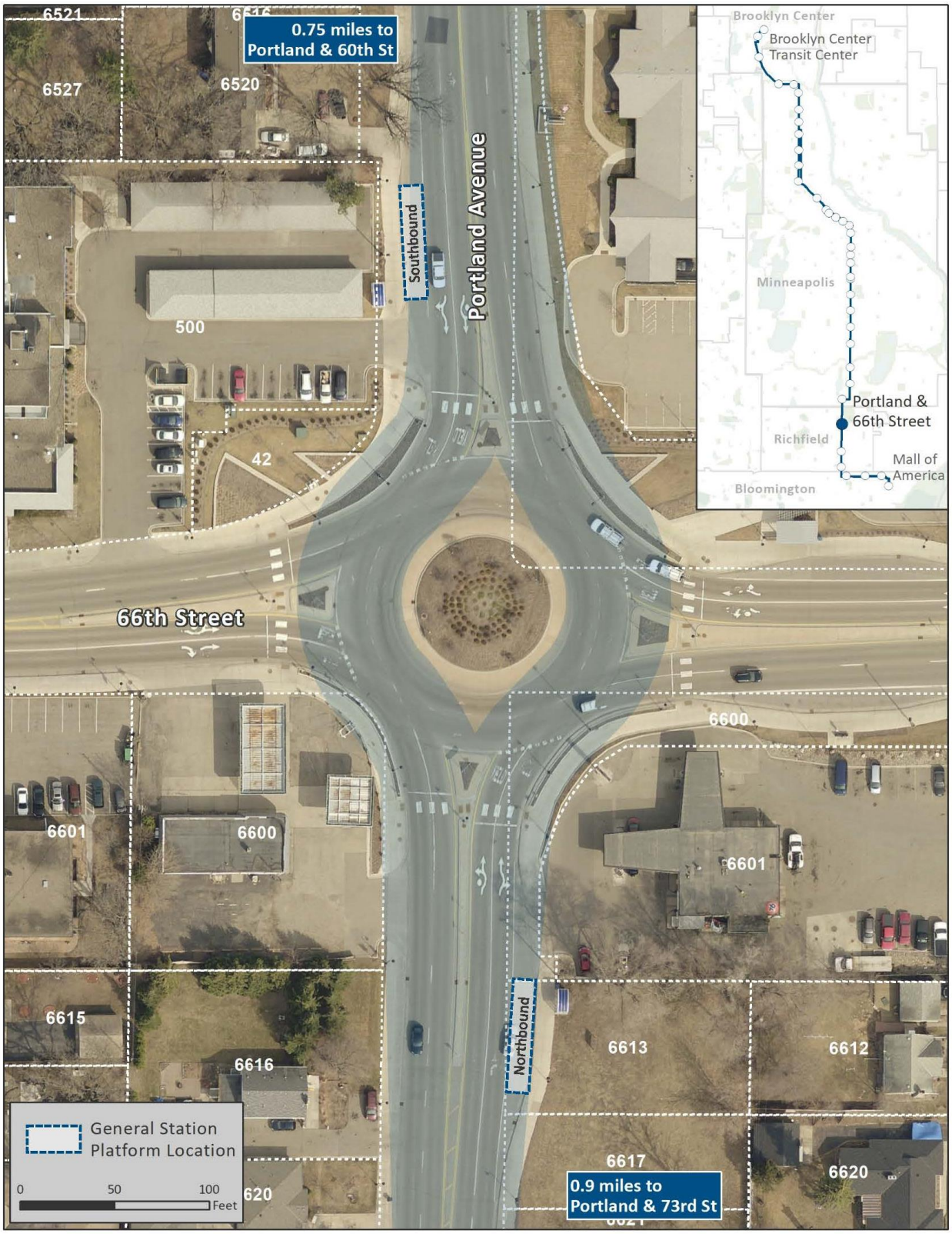
- This station recommendation was developed with consideration of Hennepin County's planned bicycle and pedestrian improvements on Portland Avenue between 60th and 66th Streets.
- Design of the D Line will be coordinated to the extent possible with the Portland Avenue improvements to balance the needs of all roadway users, including transit riders, pedestrians, and bicyclists. Coordination will also focus on lessening conflicts between transit vehicles and bicyclist to the extent possible. Considerations will include transitions of bicycle facilities between on- and off-street locations and connections to existing and/or planned bicycle facilities immediately outside the project limits.
- Construction of the planned bicycle and pedestrian improvements is planned for 2020.[51]
- See Figure 50 for an example of a preliminary station concept at Portland and 66th Street.

Figure 50: Preliminary Portland & 66th platform concept



[51] More information at: https://metrocouncil.org/Transportation/Planning-2/Transportation-Funding/Regional-Solicitation/2016-Submitted-Applications/MULTI-USE-TRAILS-BIKEWAYS/5217HennCoTr.aspx

Figure 51: Recommended station location - Portland & 66th Street



Station Plan: Portland & 73rd Street

Portland & 73rd Street		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Portland & 73rd Street
	Platform location	Southbound: Nearside of 73rd Street on northwest corner Farside platform is not possible due to driveway access about 20 ft from curb. Northbound: Farside of 73rd Street on northeast corner Nearside not possible due to driveway access about 40 ft from intersection.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.9 mi to Portland & 66th Street Longer station spacing than guidelines due to lower ridership segment and lower density land uses. Northbound: About 0.5 mi to Portland & 73rd Street Within guidelines of about half-mile station spacing.
	Existing ridership within a block, or about 1/8 mile (Spring 2017)	About 60 boardings per weekday
	Platform location compared to existing bus stop	Southbound: At existing bus stop Northbound: At opposite corner of existing bus stop
	Connecting service	Route 553
	Parking changes	Southbound and northbound: No change
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: No bumpout; maintain existing curb line
	Platform length	Southbound and northbound: 60’ platform Platform will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Other station locations considered: Portland and 70th Street

The 2012 *Arterial Transitway Corridor Study*[52] (ATCS) included a conceptual Portland & 70th Street station. This station plan does not include a D Line station at Portland & 70th Street.

Ridership

- A single station is being recommended between 66th and 77th Streets due to low existing Route 5 ridership, which does not support station spacing closer than the half-mile spacing guidelines.

- Most customers would be within a quarter-mile walk to a D Line station, and riders currently boarding at 69th and 70th Streets (about 35 total boardings per day) would be able to access the D Line station by walking about a third of a mile. Access to Route 5 will remain at bus stops on every block.

Consistency

- A single station recommendation is consistent with other segments on the corridor where additional intersections with substantially higher existing ridership are not being recommended, like 7th Street and 11th Avenue-Bryant. There are about 160 boardings per weekday at 7th Street and 11th Avenue-Bryant compared to about 80 total boardings for all stops on Portland between 66th and 73rd Streets.

Other station locations considered: Portland and 72nd Street

Ridership

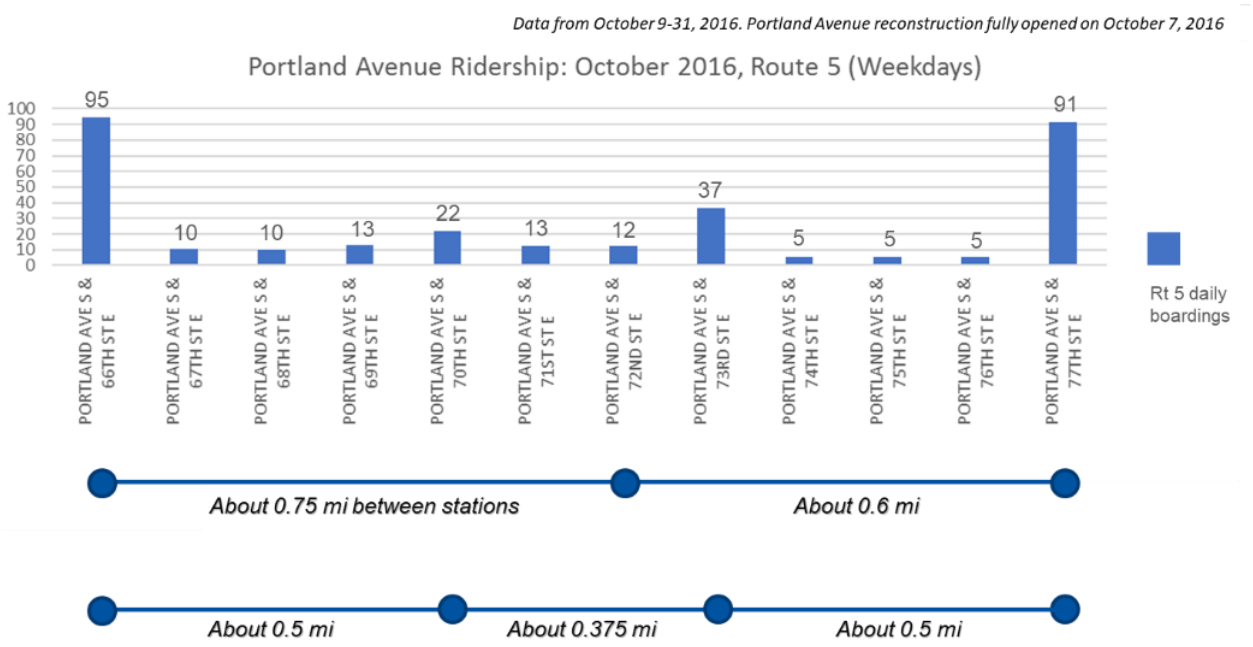
- Ridership between 66th and 77th Streets is highest at 73rd Street and not at 72nd Street. See Figure 52 for more information.

Connectivity

- The large block west of Portland and 72nd Street disconnects the street grid and limits pedestrian access for neighborhoods to the west.

[52] More information at: https://www.metrotransit.org/abrt-study

Figure 52: Existing Route 5 ridership on Portland Avenue



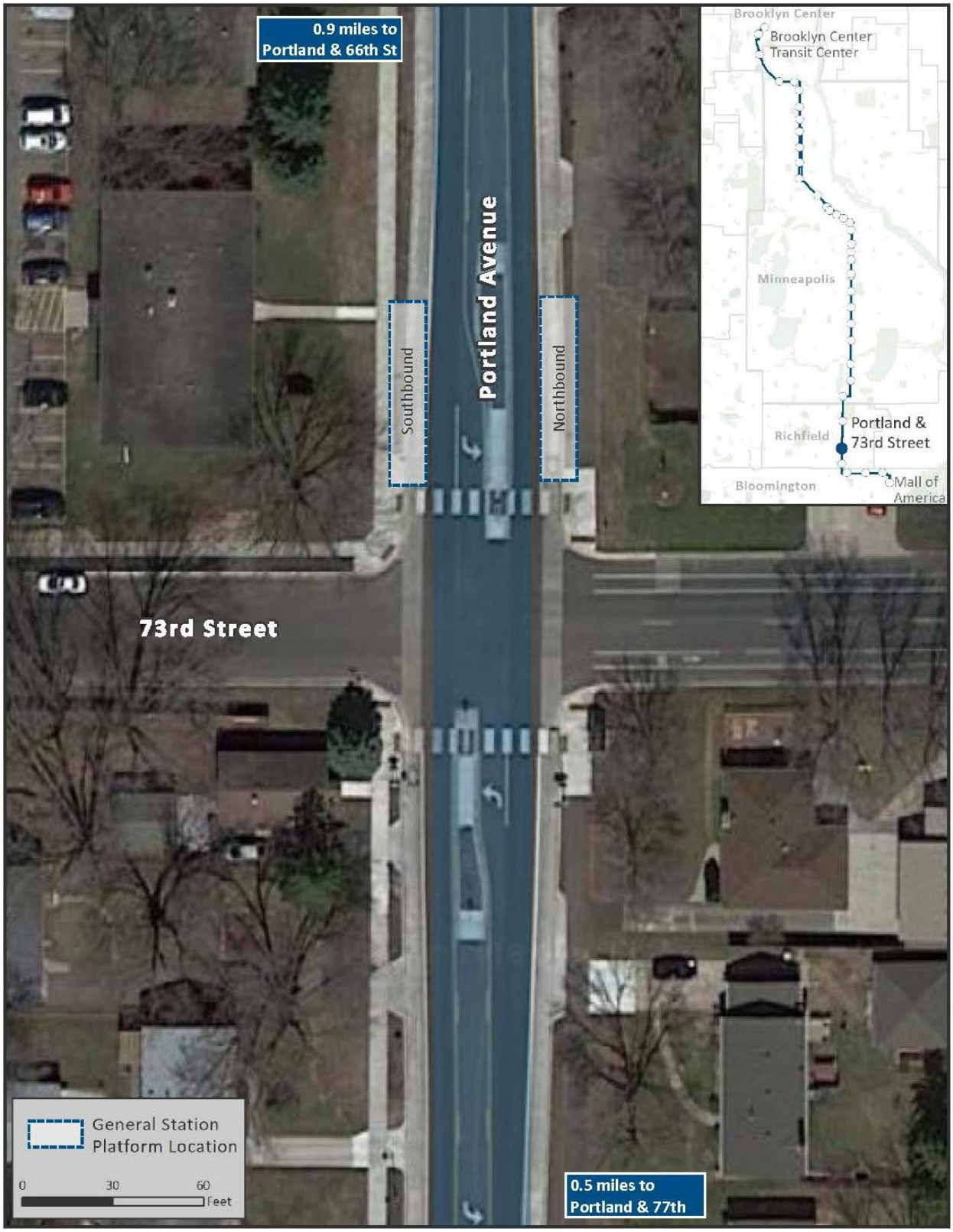
Design considerations: Bicycle-transit interaction

- Portland Avenue was reconstructed between 67th Street and 77th Street in 2015 and 2016. This resulted in a new cross section, depicted in Figure 53 below. D Line platform design is planned to utilize the existing curbline established by the reconstruction project.

Figure 53: Portland Avenue typical cross section after reconstruction

- D Line design considerations will include any impacts to the existing sidewalk and mixed-use bicycle-pedestrian facility on either side of the roadway. The on-street bicycle lanes are not anticipated to be impacted. The planned use of the existing curbline will result in buses operating in largely the same way they do today for existing service, temporarily stopping in the bicycle lane to allow passengers to board and exit the bus.

Figure 54: Recommended station location - Portland & 73rd Street



Station Plan: Portland & 77th Street

Portland & 77th Street		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Portland & 77th Street
	Platform location	Southbound: Nearside of 77th Street on northwest corner Farside platform is not feasible due to driveway about 20' from curb. Northbound: Farside of 77th Street on northeast corner Farside has adequate platform length available and is preferred to maximize transit signal priority potential.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.5 mi to American & Portland-Chicago Within guidelines of about half-mile station spacing. Northbound: About 0.5 mi to Portland & 73rd Street Within guidelines of about half-mile station spacing.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 60 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At existing bus stop
	Connecting service	Routes 540 and 553
	Parking changes	Southbound and northbound: No change
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: No bumpout; maintain existing curbline
	Platform length	Southbound and northbound: 60' platform Platform will be designed to accommodate a 60' BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Design considerations: Bicycle-transit interaction

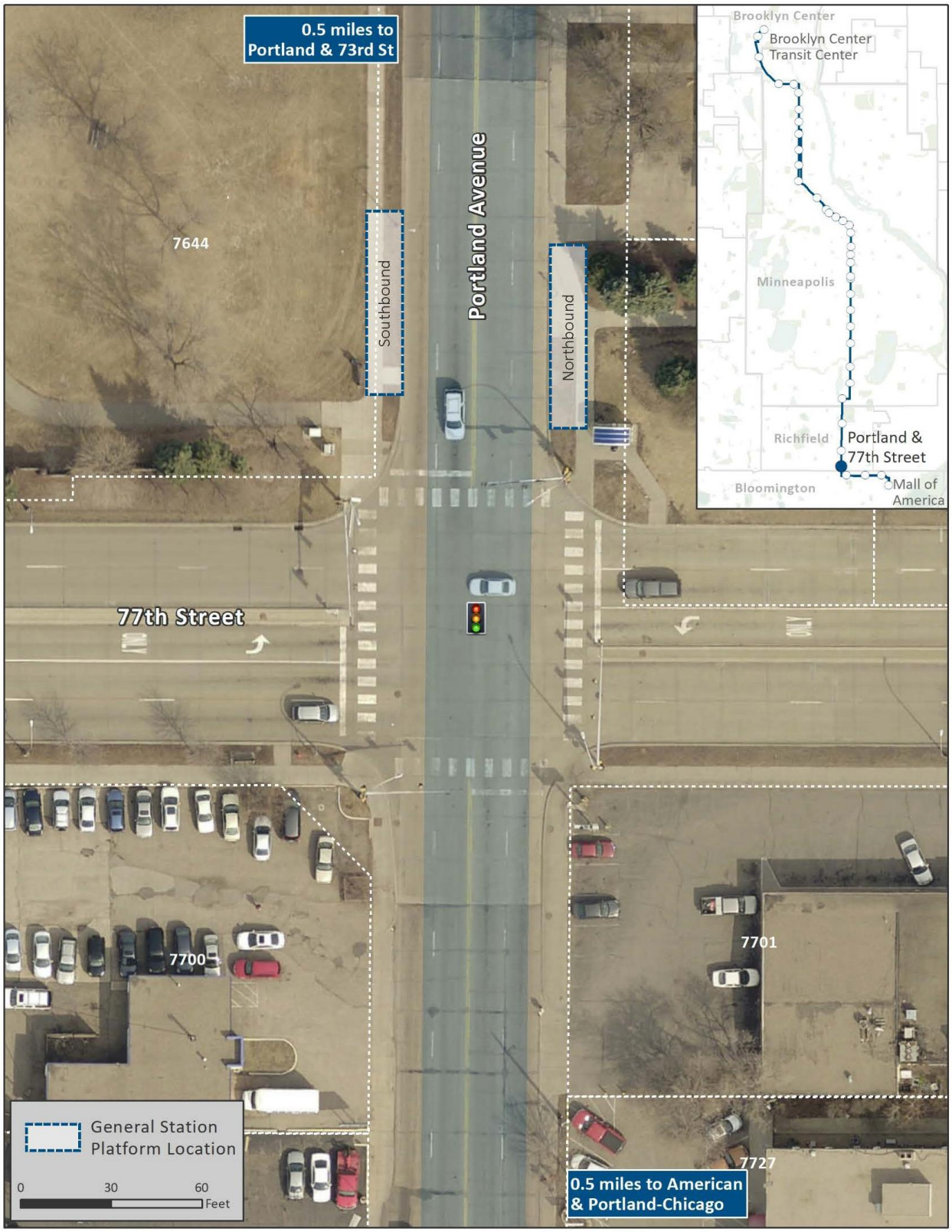
- Substantial planning coordination with Hennepin County and the City of Richfield focused on the potential interaction between transit and bicycle facilities.
- Portland Avenue was reconstructed between 67th Street and 77th Street in 2015 and 2016. This resulted in a new cross section, depicted in Figure 55 below. D Line platform design is planned to utilize the existing curbline established by the reconstruction project.

Figure 55: Portland Avenue typical cross section after reconstruction

- D Line design considerations will include any impacts to the existing sidewalk and mixed-use bicycle-pedestrian facility on either side of the roadway. The on-street bicycle lanes are not anticipated to be impacted. The planned use of the existing curbline will result in buses operating in largely the same way they do today for existing service, temporarily stopping in the bicycle lane to allow passengers to board and exit the bus.
- See Figure 56 for an example of a preliminary station concept at Portland and 77th Street.

Figure 56: Preliminary Portland & 77th Street platform concept

Figure 57: Recommended station location - Portland & 77th Street



Station Plan: American & Portland-Chicago

American & Portland-Chicago		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	American & Portland-Chicago
	Platform location	Southbound: To be determined Area of interest spans from midblock to nearside of Chicago; final location dependent upon further coordination with City of Bloomington Northbound: Midblock between Portland and Chicago At existing bus stop with adequate platform length available
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.5 mi to American & Bloomington Within guidelines of about half-mile station spacing. Northbound: About 0.5 mi to Portland & 77th Street Within guidelines of about half-mile station spacing.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 220 boardings per weekday
	Platform location compared to existing bus stop	Southbound: To be determined Existing bus stops at Portland and Chicago; potential for new midblock location dependent upon further coordination with City of Bloomington Northbound: At existing bus stop
	Connecting service	Routes 542 and 553
	Parking changes	Southbound and northbound: No changes
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: No bumpout; maintain existing curbline No change anticipated to curblines at existing transit stops.
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Planning consideration: Shared station with future American Boulevard rapid bus service

- The proposed station location is anticipated to also be utilized by a planned American Boulevard rapid bus service.[53] There is no project schedule or projected opening date for an American Boulevard rapid bus service.

Other platform locations considered: Southbound platform midblock or nearside of Chicago Avenue

- This station plan recommends a general area of interest for the southbound platform between a midblock location and Chicago Avenue. A southbound midblock platform location is preferred if pedestrians can reach it safely using a pedestrian crossing.

Potential midblock pedestrian crossing improvement

- Today, pedestrians and transit customers frequently make unprotected midblock crossings of American Boulevard.
- If ongoing project coordination with the City of Bloomington determines a midblock pedestrian crossing is not feasible, then the final southbound platform location will be nearside of Chicago to utilize the existing signalized crossing. See Figure 58 below for more information.

Figure 58: Midblock locations on American Boulevard

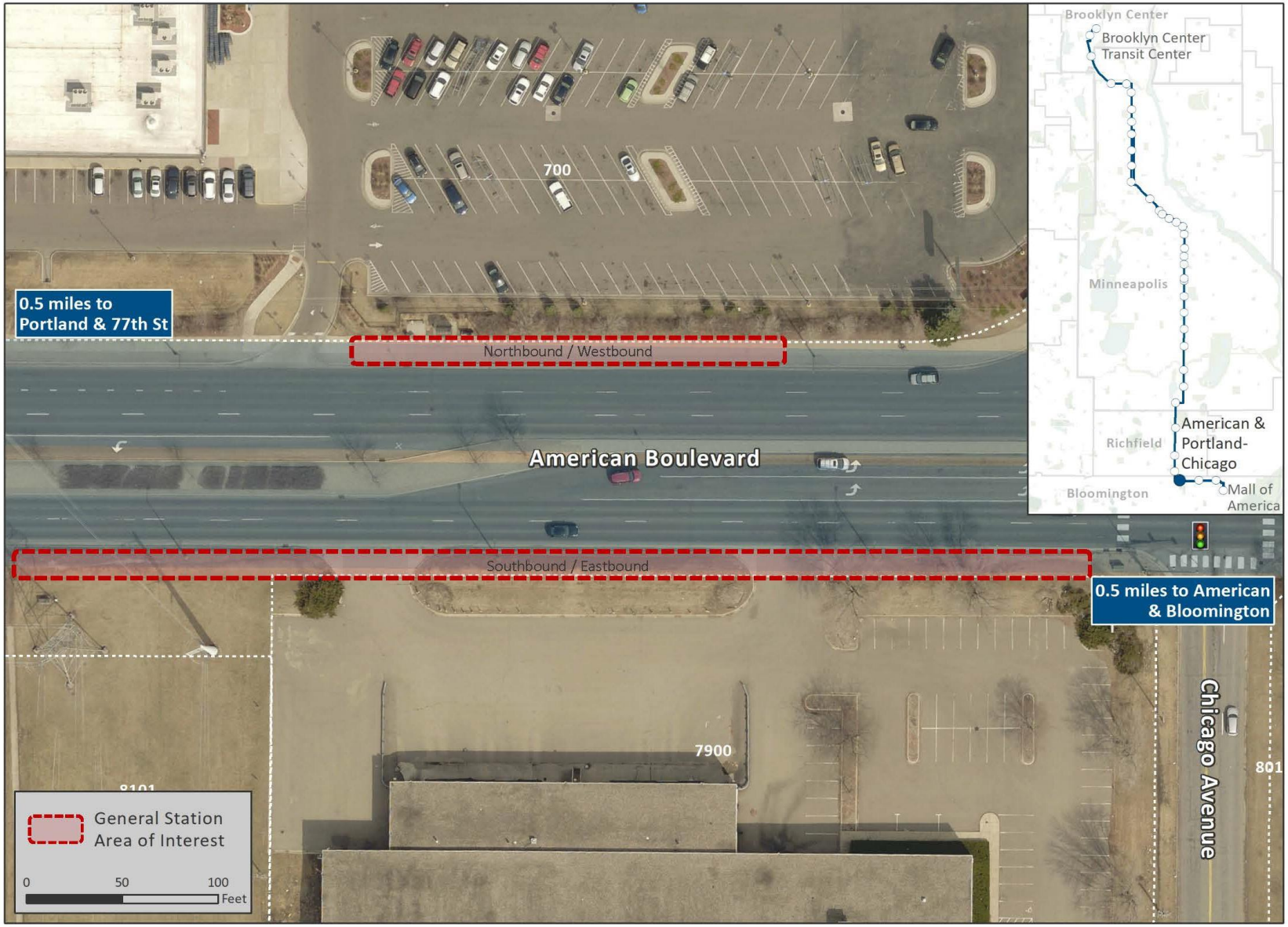
Other station locations considered: American and Portland

The 2012 *Arterial Transitway Corridor Study*[54] (ATCS) included a conceptual American & Portland station. This station plan does not include a D Line station at American and Portland.

- Ridership and pedestrian movements are more focused eastward from Portland.
- Coordination with the City of Bloomington indicates a preference to locate rapid bus platforms away from the busy intersection of Portland and American to reduce traffic complications and improve overall safety.

[53] More information at: https://www.metrotransit.org/Data/Sites/1/media/pdfs/atcs/american.pdf
[54] More information at: https://www.metrotransit.org/abrt-study

Figure 59: Recommended station location: American & Portland-Chicago



Station Plan: American & Bloomington

American & Bloomington		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	American & Bloomington
	Platform location	Southbound: Farside of Bloomington on southeast corner Northbound: Farside of Bloomington on northwest corner In both directions, farside has adequate platform length available and is preferred to minimize sightline conflicts at unsignalized intersection.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.5 mi to American & Thunderbird Within guidelines of about half-mile station spacing. Northbound: About 0.5 mi to American & Portland-Chicago Within guidelines of about half-mile station spacing.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 70 boardings per weekday
	Platform location compared to existing bus stop	Southbound: At existing bus stop Northbound: At opposite corner of existing bus stop
	Connecting service	Routes 515, 540, 542, and 552
	Parking changes	Southbound and northbound: No changes
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: No bumpouts; maintain existing curblines
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Planning consideration: Shared station with future American Boulevard rapid bus service

- The proposed station location is anticipated to also be utilized by a planned American Boulevard rapid bus service.[55] There is no project schedule or projected opening date for an American Boulevard rapid bus service.

Other station locations considered: American and 12th Avenues

The 2012 *Arterial Transitway Corridor Study*[56] (ATCS) included a conceptual American & 12th Avenue station. This station plan does not include a D Line station at American and 12th Avenue.

Station spacing, ridership, and land use

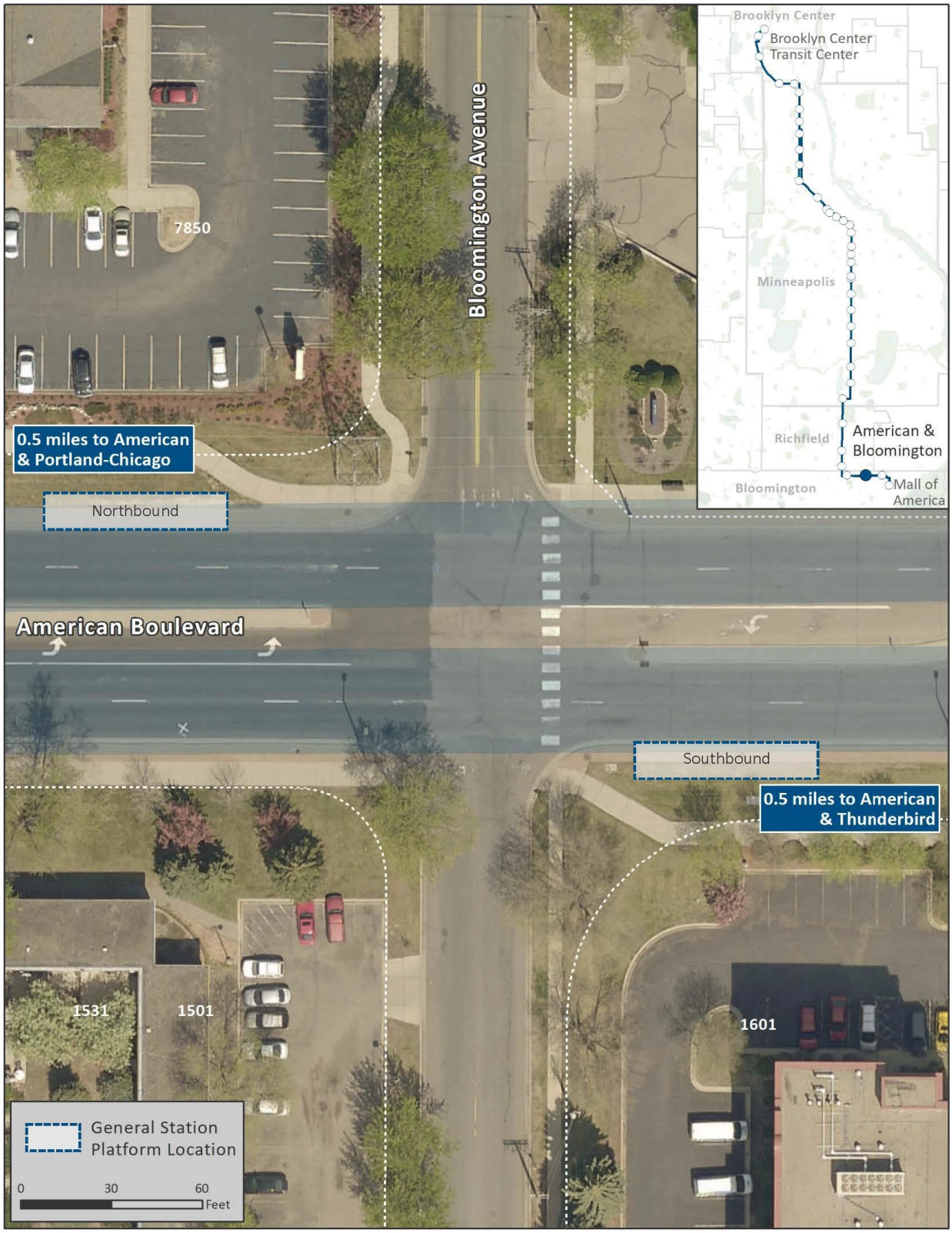
- A D Line station at American and 12th Avenue would result in station spacing of about 0.25 and 0.33 mi to neighboring stations. However, the surrounding land uses, longer block lengths, ridership considerations, and station location precedents set elsewhere on the corridor do not support station spacing closer than half-mile guidelines.

Constructability

- Limited right-of-way is available at 12th/13th Avenues compared to Bloomington Avenue, likely requiring design mitigations to ensure transit operations needs are met.
- An existing midblock crossing at American and Bloomington can be utilized to assist pedestrians and customers with safe crossings of American.

[55] More information at: https://www.metrotransit.org/Data/Sites/1/media/pdfs/atcs/american.pdf
[56] More information at: https://www.metrotransit.org/abrt-study

Figure 60: Recommended station location - American & Bloomington



Station Plan: American & Thunderbird

American & Thunderbird		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	American & Thunderbird
	Platform location	Southbound: Nearside of Thunderbird on southeast corner Nearside has adequate platform length available at existing stop and is preferred for compatibility with any potential future Mall of America-related redevelopment. Northbound: Farside of Thunderbird on northwest corner Farside has adequate platform length available and is preferred to maximize transit signal priority potential.
SURROUNDING CONTEXT	**Station spacing**	Southbound: About 0.6 mi to Mall of America Transit Center Slightly longer station spacing than guidelines due to surrounding land use and ridership patterns concentrated at the Mall of America terminal. Northbound: About 0.5 mi to American & Bloomington Within guidelines of about half-mile station spacing.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 30 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At existing bus stop
	Connecting service	Routes 515, 540, and 542
	Parking changes	Southbound and northbound: No changes
DESIGN CONSIDERATIONS	**Curb configuration**	Southbound and northbound: No bumpout; maintain existing curbline
	Platform length	Southbound and northbound: 60’ platform Platforms will be designed to accommodate a 60’ BRT vehicle.

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Planning consideration: Shared station with future American Boulevard rapid bus service

- The proposed station location is anticipated to also be utilized by a planned American Boulevard rapid bus service.[57] There is no project schedule or projected opening date for an American Boulevard rapid bus service.

Design considerations: Southbound nearside platform location

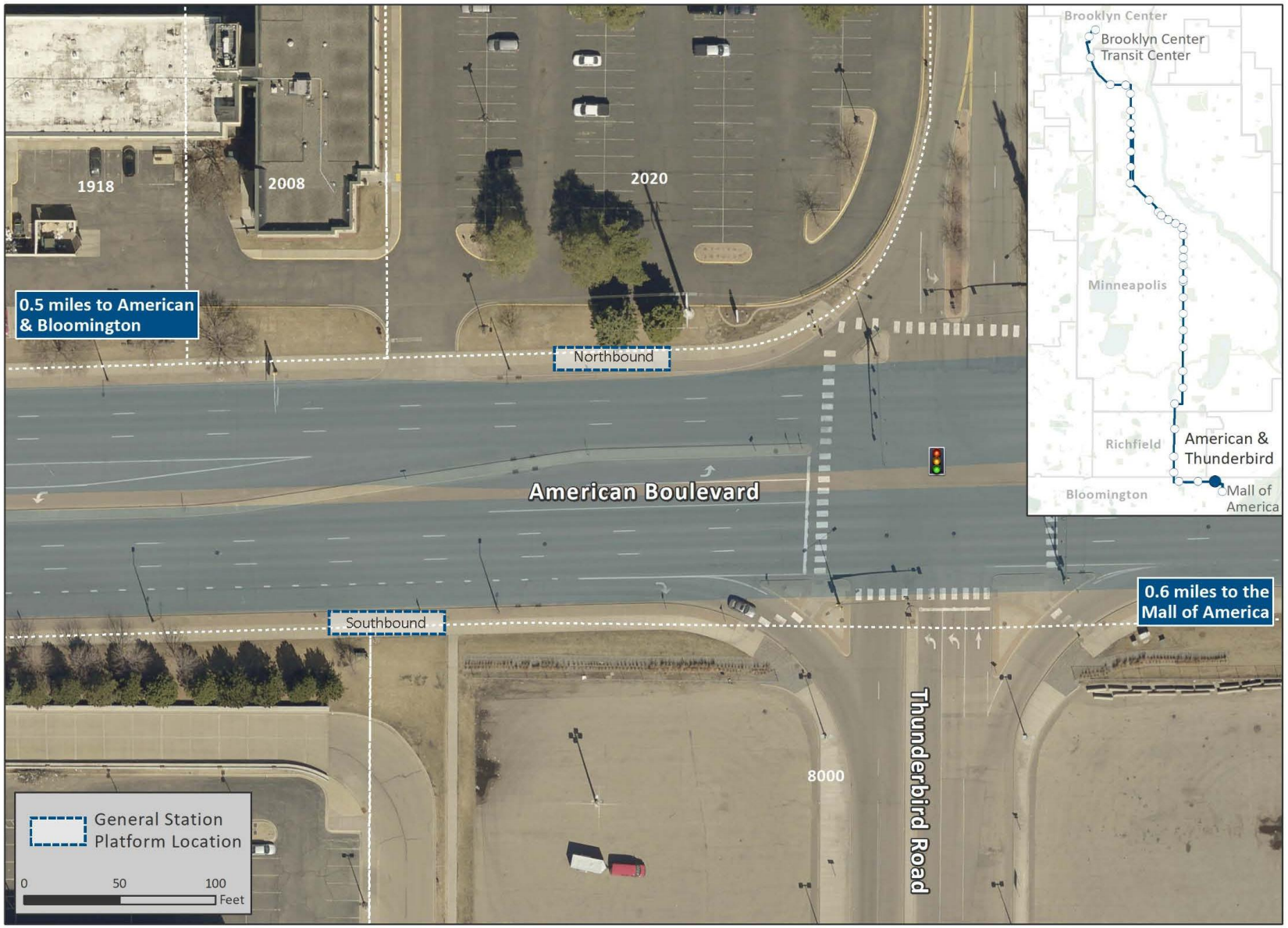
- There is long-term potential for the Mall of America to expand into the parcel immediately south of this planned platform, in addition to the removal of the southbound right turn lane from American onto Thunderbird.

- See Figure 61 for an example preliminary station concept at American and Thunderbird.

Figure 61: Preliminary American & Thunderbird platform concept

[57] More information at: https://www.metrotransit.org/Data/Sites/1/media/pdfs/atcs/american.pdf

Figure 62: Recommended station location - American & Thunderbird



Station Plan: Mall of America Transit Center

Mall of America		
	Station Consideration	***Planned Condition****
CORE STATION PLAN	**Intersection location**	Mall of America Transit Center
	Platform location	Northbound: At existing transit center Station will be located within the Mall of America Transit Center
SURROUNDING CONTEXT	**Station spacing**	Northbound: About 0.6 mi to American & Thunderbird Longer station spacing than guidelines due to land use and low-ridership segment.
	Existing ridership within a block, or about 1/8 mile (Fall 2016)	About 500 boardings per weekday
	Platform location compared to existing bus stop	Southbound and northbound: At existing transit center
	Connecting service	Connections to many routes, including METRO Blue Line, METRO Red Line, and high frequency service Route 54.
	Parking changes	Northbound: No parking changes

**Final conditions to be developed during the engineering/design process.*

Notes and Discussion

Planning consideration: Shared station with future American Boulevard rapid bus service

- The proposed station location is anticipated to also be utilized by a planned American Boulevard rapid bus service.[58] There is no project schedule or projected opening date for an American Boulevard rapid bus service.

Project coordination: Mall of America Transit Center renovation (Metro Transit)

- The D Line station will be integrated into the planned Mall of America Transit Center renovation to be completed in 2019.

Figure 63: Mall of America Transit Center renovation rendering

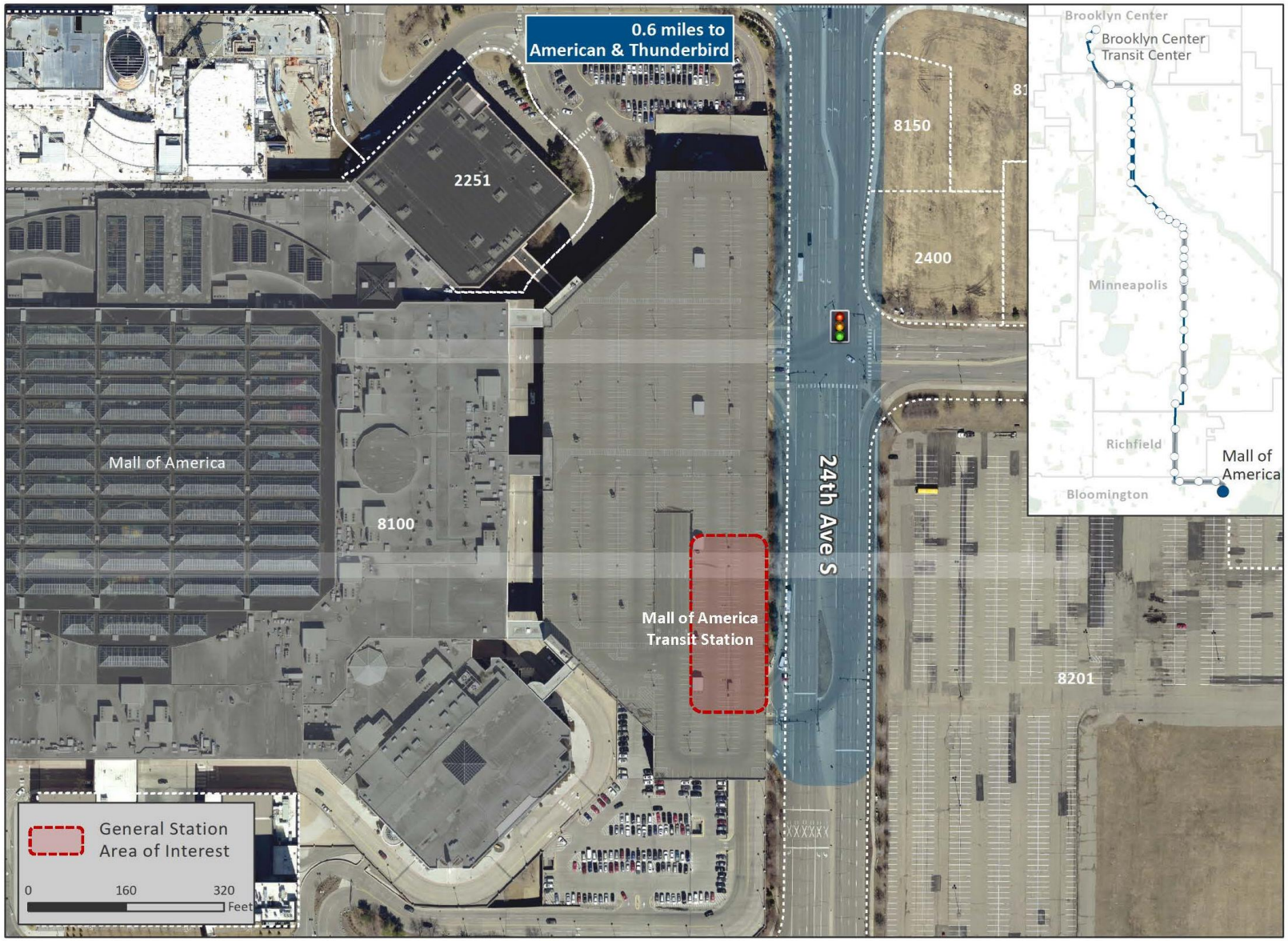
Other station locations considered: 24th Avenue and Lindau

The 2012 *Arterial Transitway Corridor Study*[59] (ATCS) included a conceptual 24th Avenue & Lindau station. This station plan does not include a D Line station at 24th Avenue and Lindau.

A D Line station at 24th Avenue and Lindau would result in station spacing of about 0.3 and 0.4 mi to neighboring stations. However, the surrounding land uses, longer block lengths, ridership considerations, and station location precedents set elsewhere on the corridor do not justify station spacing closer to half-mile guidelines.

[58] More information at: https://www.metrotransit.org/Data/Sites/1/media/pdfs/atcs/american.pdf
[59] More information at: https://www.metrotransit.org/abrt-study

Figure 64: Recommended station location - Mall of America Transit Center



APPENDIX A: Other Station Locations Considered

Appendix A compiles information about other station locations considered and discussed within the individual station plans, but not included in the draft station plan.

Osseo & 47th Avenue

The 2013 Arterial Transitway Corridor Study addendum[60] (ATCS) included a conceptual Osseo & 47th Avenue station. This station plan does not include a D Line station at Osseo and 47th Avenue.

Station spacing and ridership

- The D Line planning process does not include an Osseo & 47th Avenue station because of the 44th Avenue & Penn-Oliver station recommendation. A combination of lower transit demand, limited available space at Osseo and 47th Avenue and the surrounding intersections[61], and close proximity to the Penn-Oliver area (less than a half-mile) limit the feasibility of building a second station within the area.
- Transit customers in this area will access the D Line at the 44th Avenue & Penn-Oliver area station.

44th Avenue and Morgan

Station spacing

- A 44th Avenue & Morgan station is not included because of the feasibility of a 44th Avenue & Penn-Oliver station. If building a station near the intersection of 44th Avenue and Penn had been deemed technically infeasible, a station at Morgan would be a candidate for siting a station in this area.

Access to the D Line to/from Patrick Henry High School (about two short blocks away) will be comparable to C Line access.

Fremont and 36th Avenue

Station spacing and ridership

- Ridership is slightly lower at 36th Avenue compared to 35th Avenue when including adjacent stops.
- Station spacing is more uneven compared to 35th Avenue, which provides spacing of about 0.4-mi between Lowry and Dowling.

Emerson-Fremont and 16th Avenue

The 2013 Arterial Transitway Corridor Study addendum[62] (ATCS) included a conceptual Emerson-Fremont & 16th Avenue station. This station plan does not include a D Line station at Emerson-Fremont and 16th Avenue.

Land use and station spacing

- A major consideration of a potential Emerson-Fremont & 16th Avenue station is to provide rapid bus access to North High School, located about one block west of the D Line corridor.
- Ridership data, however, suggests North High School students predominantly use the existing Route 5 bus stops at Emerson-Fremont and 15th Avenue (about 60 student-related boardings

[60] More information at: https://metrotransit.org/abrt-study
[61] More information at: https://www.metrotransit.org/Data/Sites/1/media/about/improvements/c-line/final-station-plan/04---osseo--victory-area---final-station-plan.pdf
[62] More information at: https://metrotransit.org/abrt-study

per day). Emerson-Fremont and 15th Avenue is located just 0.15 mile north of the planned Emerson-Fremont & Plymouth station, too close to sustain an additional D Line station. Emerson-Fremont & 16th Avenue is also less than a quarter-mile from the planned Emerson-Fremont & Plymouth station.

- It is anticipated that existing Route 5 school trips will continue to serve North High School after D Line begins operations. In addition to the school-related service, the local Route 5 service will continue operating about every 30 minutes.

Consistency

- Comparable station spacing of about half-mile will be located on the Penn Avenue corridor's C Line between Plymouth and Golden Valley. Ridership is similar on these segments between Plymouth and Golden Valley on Route 19 (future C Line) and Plymouth and West Broadway (future D Line).

7th St and 11th Ave/Bryant

The 2013 *Arterial Transitway Corridor Study* addendum[63] (ATCS) included a conceptual 7th Street & 11th Avenue/Bryant station. This station plan does not include a D Line station at 7th Street and 11th Avenue/Bryant.

Station Spacing and Other Transit Service

- Proximity to other planned transitway service, including a planned D Line Emerson-Fremont & Plymouth station, is the primary reason a station at 7th Street & 11th Avenue/Bryant is not recommended.

- While ridership at 7th Street and 11th Avenue/Bryant is substantial (about 160 boardings per weekday), customers will be within a quarter-mile of the D Line station at the Emerson-Fremont & Plymouth station. Customers will also be within a half-mile of the planned METRO Blue Line Extension at the Van White Station on Olson Memorial Highway and will also be served by the C Line on Olson Highway prior to light rail opening. Route 5 service will also continue to serve the existing stop. As a result, an additional D Line station is not recommended. Outside of downtown, this station plan limits quarter-mile station spacing to the Chicago & 24th Street station where a variety of dense land uses drive high ridership throughout the surrounding area.

Chicago and 15th Street

- Chicago and 15th Street has substantially lower ridership compared to 14th Street (about 60 boardings compared to about 280 boardings per weekday).

- Outreach and engagement suggested that community members consider Chicago and 14th Street as the center of the neighborhood compared to other intersections.

Chicago and 17th Street

- While ridership is substantial at Chicago and 17th Street (about 340 daily boardings), multiple driveway access points and the interstate highway overpass in the northbound direction severely limit constructability in this location.

[63] More information at: https://www.metrotransit.org/abrt-study

- Chicago and 17th Street is less than 1,000 ft from the recommended Chicago & 14th Street station.

Chicago and 18th Street

The 2012 *Arterial Transitway Corridor Study*[64] (ATCS) included a conceptual Chicago & 18th Street station in addition to the station at 14th Street. This station plan does not include a D Line station at Chicago and 18th Street.

Station spacing

- While ridership is substantial at Chicago and 18th Street (about 310 daily boardings), it is only about 900 ft from the recommended Chicago & Franklin station.
- Not recommending a Chicago & 18th Street station prioritizes improved travel times from stop consolidation.

Chicago and 27th Street

The 2012 *Arterial Transitway Corridor Study*[65] (ATCS) included a conceptual Chicago & 27th Street station. This station plan does not include a D Line station at Chicago and 27th Street.

- Pedestrian access is blocked east of the intersection of Chicago Avenue and 27th Street by the Abbott Northwestern hospital campus. As an alternate option, 26th Street offers better connectivity to the street grid and more typical rapid bus operations at a signalized intersection.

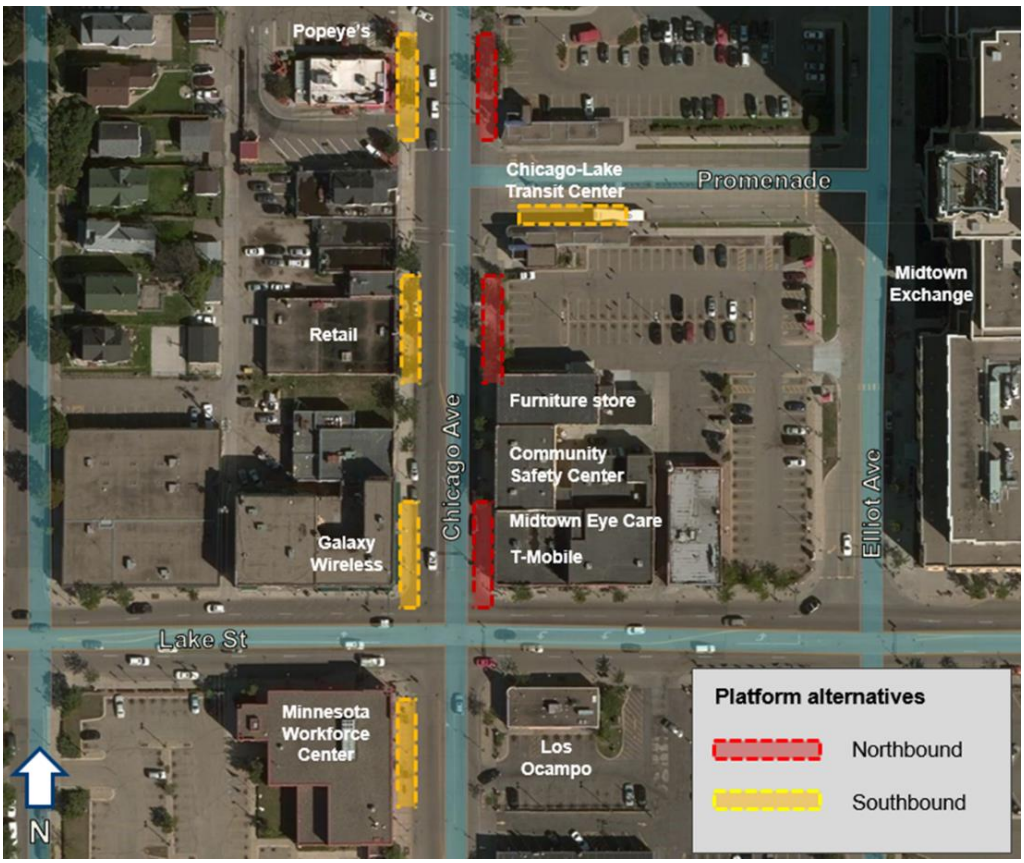
Chicago-Lake Planning Study

Background

- Today, at the Chicago-Lake Transit Center, there are 1,500 average daily weekday Route 5 boardings. This is the highest ridership point on the Route 5, outside of downtown Minneapolis.
- The Chicago-Lake Transit Center serves as a major transfer point for customers traveling on Routes 5, 21, and 53.
- The existing Route 5 southbound stop is located off Chicago Avenue on the transit center driveway entrance to the Midtown Exchange building. This requires southbound Route 5 buses to make multiple turning movements, resulting in about three minutes of travel delay and poor on-time reliability.
- Metro Transit completed a Chicago-Lake planning study to consider alternative platform options to provide a faster and more reliable trip.
- Figure 65 illustrates the location of considered alternative platform locations.

[64] More information at: https://www.metrotransit.org/abrt-study
[65] More information at: https://www.metrotransit.org/abrt-study

Figure 65: Chicago Lake area alternative platform locations



Study process

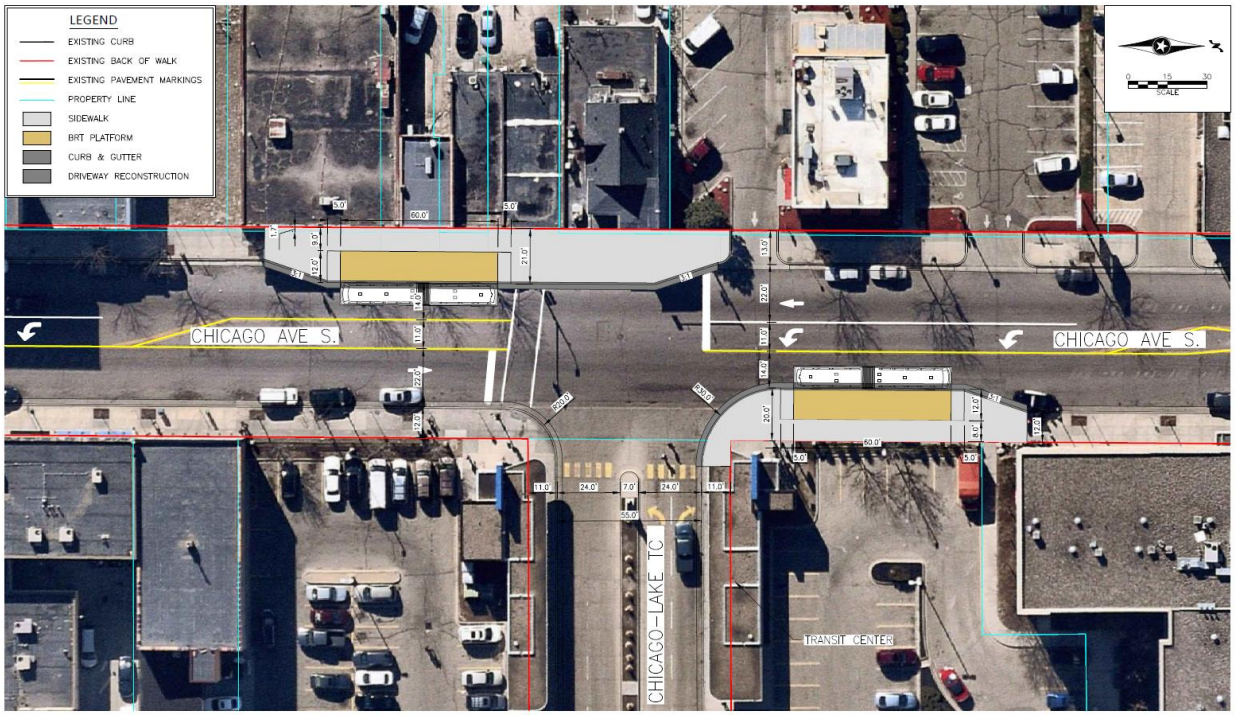
- Evaluation of travel times, traffic impacts, transfer movements across routes, and pedestrian access
- Interviews with Metro Transit police, operations, and maintenance departments about how the transit facility functions today
- Customer surveys and conversations with neighborhood groups and small businesses

Study recommendation

- The study recommendation locates both the northbound and southbound platforms on the farside of the existing transit center driveway. Three primary considerations of this recommendation include:
    - **Maintaining the ease of existing transfer activity:** It is estimated that about 50-75 percent of existing customers transfer between routes at this location. The proximity of recommended D Line platforms to the transit center prioritizes the continued ease of these transfers.
    - **Positioning with long-term transitway planning:** Recommended D Line platforms are located between the planned B Line rapid bus (Lake Street corridor) and Midtown rail (Midtown Greenway corridor) services.

- **Minimizing traffic impacts:** Traffic evaluation indicated minimized traffic impacts by locating platform north of congestion at Chicago and Lake, especially in the southbound direction.

Figure 66: Preliminary Chicago-Lake Transit Center platform concept



Chicago and 33rd Street and Chicago and 35th Street

The 2012 *Arterial Transitway Corridor Study*[66] (ATCS) included conceptual Chicago & 33rd Street and Chicago & 35th Street stations. This station plan does not include D Line stations at Chicago and 33rd or 35th Streets.

Station spacing and consistency

- Stations at both 33rd Street and 35th Street would result in station spacing of about 0.25- to 0.33 mile, too close when considering ridership and spacing trends elsewhere on the D Line corridor. Outside of downtown, this station plan limits quarter-mile station spacing to the Chicago & 24th Street station where a variety of dense land uses drive high ridership throughout the surrounding area.

- Other segments on the D Line corridor have higher ridership with stations planned closer to half-mile station spacing, like segments between Chicago and 14th Street and 18th Streets or Chicago and 26th and the Chicago-Lake Transit Center.

Access to destinations

- In addition, access to the Minneapolis Public Schools Wilder Complex is currently provided at the bus stop located at Chicago and 33rd Street. This educational facility includes the Wellstone International High School.

[66] More information at: https://www.metrotransit.org/abrt-study

- Ridership data indicates seasonal increases in daily ridership up to about 150 boardings when school is in session.
- Service to the Wilder Complex can be maintained by a Chicago & 34th Street station without introducing additional pedestrian crossings of Chicago Avenue.

Chicago and 48th Street

This station plan does not include a station at Chicago and 48th Street. The 2012 *Arterial Transitway Corridor Study*[67] (ATCS) did not include a conceptual Chicago & 48th Street station.

Substantial consideration was given to a potential Chicago & 48th Street station. In addition to conversations with neighborhood groups and business owners, a community workshop was held in the area to discuss a variety of planning considerations, including a potential Chicago & 48th Street station[68]. Attendees included both residents and business owners in the surrounding community. Input was mixed supporting and opposing a variety of potential station locations between 46th and 56th Streets.

Station spacing, customer access and consistency

- A station at Chicago and 48th Street would be about a quarter-mile from the Chicago & 46th Street station. An additional D Line station is not recommended at this location. Outside of downtown, this station plan limits quarter-mile station spacing to the Chicago & 24th Street station where a variety of dense land uses drive high ridership throughout the surrounding area.
- A station at this location would provide access to a neighborhood commercial node with transit-supportive land uses. Elsewhere in the corridor, this Station Plan has considered but ultimately not recommended several stations near transit-supportive land uses despite strong ridership because of access to nearby planned D Line stations about a quarter-mile away. Examples of these considered but not recommended locations include 7th Street and 11th Avenue-Bryant and Chicago and 18th Avenue. Without a station at Chicago and 48th Street, the majority of customers between 46th and 56th Streets (about 160 total boardings per weekday) will be within a quarter-mile walk of the nearest D Line station. Riders currently boarding at Chicago and 49th Street (about 15 total boardings per day) would be able to access the D Line station by walking about a third of a mile. Access to Route 5 will remain at bus stops on every block.

Parking considerations

- A station at Chicago and 48th Street would require changing curbside use from parking to transit boarding.
- Impacts could be reduced by locating a southbound platform at the existing bus stop located just north of the Chicago and 48th intersection. However, this is less than two blocks from the recommended Chicago & 46th Street station. The potential consolidation of existing bus stops in the vicinity of Chicago and 48th Street could also mitigate any on-street parking reduction from the placement of a D Line station.

[67] More information at: https://www.metrotransit.org/abrt-study
[68] More information at: https://www.metrotransit.org/d-line-meetings

Chicago and 54th Street

The 2012 *Arterial Transitway Corridor Study*[69] (ATCS) included a conceptual Chicago & 54th Street station. This station plan does not include a D Line station at Chicago & 54th Street.

Constructability

- Driveway access substantially limits available platform length at three out of four corners at Chicago and 54th Street. As a result, a station at this location is not feasible.

Ridership

- In addition, ridership is substantially lower at 54th Street (about 20 total daily weekday boardings) compared to 56th Street (about 70).

Chicago and 60th Street

The 2012 *Arterial Transitway Corridor Study*[70] (ATCS) included a conceptual Chicago & 60th Street station. This station plan does not include a D Line station at Chicago and 60th Street.

Ridership and station spacing

- Existing ridership and lower-density residential land uses in this segment of the D Line corridor do not support the inclusion of a station at Chicago and 60th Street.

- All customers except those currently boarding at Chicago and 59th Street would be within a quarter-mile walk to a D Line station. Riders currently boarding at Chicago and 59th Street (about five total boardings per day) would be able to access the planned Portland & 60th Street D Line station by walking about a third of a mile. Access to Route 5 will remain at bus stops on every block.

Portland and 70th Street

The 2012 *Arterial Transitway Corridor Study*[71] (ATCS) included a conceptual Portland & 70th Street station. This station plan does not include a D Line station at Portland & 70th Street.

Ridership

- A single station is being recommended between 66th and 77th Streets due to low existing Route 5 ridership, which does not support station spacing closer than the half-mile spacing guidelines.

- Most customers would be within a quarter-mile walk to a D Line station, and riders currently boarding at 69th and 70th Streets (about 35 total boardings per day) would be able to access the D Line station by walking about a third of a mile. Access to Route 5 will remain at bus stops on every block.

Consistency

- A single station recommendation is consistent with other segments on the corridor where additional intersections with substantially higher existing ridership are not being recommended, like 7th Street and 11th Avenue-Bryant. There are about 160 boardings per weekday at 7th

[69] More information at: https://www.metrotransit.org/abrt-study
[70] More information at: https://www.metrotransit.org/abrt-study
[71] More information at: https://www.metrotransit.org/abrt-study

Street and 11th Avenue-Bryant compared to about 80 total boardings for all stops on Portland between 66th and 73rd Streets.

Portland and 72nd Street

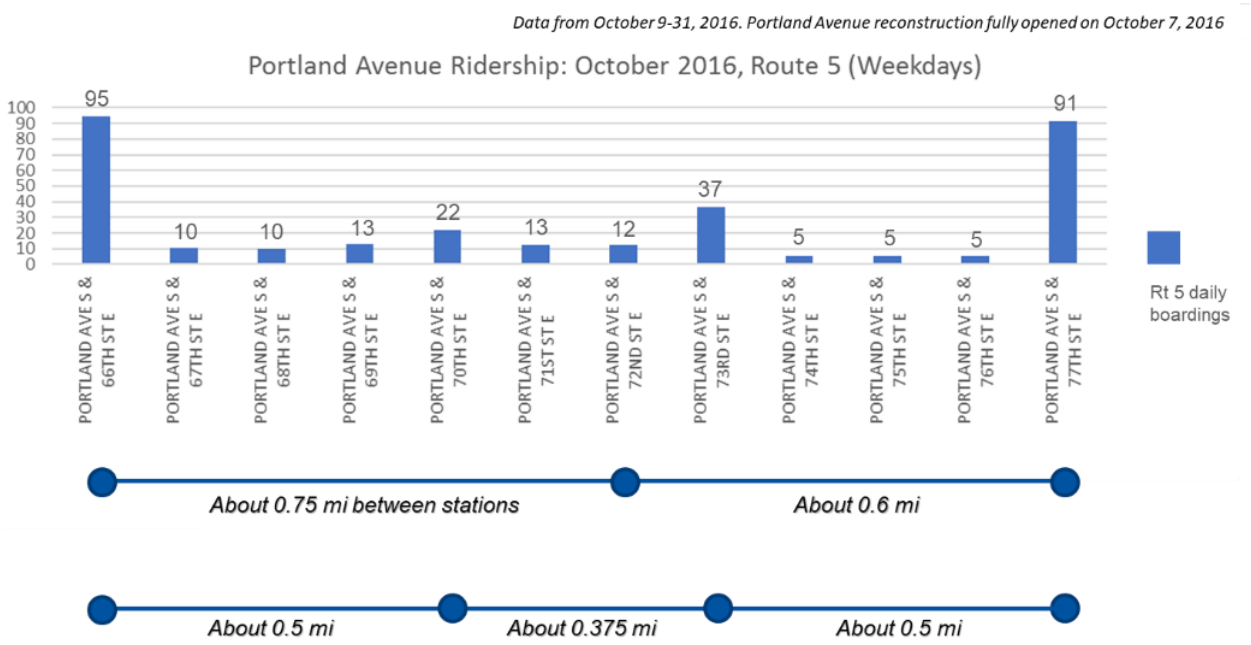
Ridership

- Ridership between 66th and 77th Streets is highest at 73rd Street and not at 72nd Street. See Figure 67 for more information.

Connectivity

- The large block west of Portland and 72nd Street disconnects the street grid and limits pedestrian access for neighborhoods to the west.

Figure 67: Existing Route 5 ridership on Portland Avenue



American and Portland

The 2012 *Arterial Transitway Corridor Study*[72] (ATCS) included a conceptual American & Portland station. This station plan does not include a D Line station at American and Portland.

- Ridership and pedestrian movements are more focused eastward from Portland.
- Coordination with the City of Bloomington indicates a preference to locate rapid bus platforms away from the busy intersection of Portland and American to reduce traffic complications and improve overall safety.

[72] More information at: https://www.metrotransit.org/abrt-study

American and 12th Avenues

The 2012 *Arterial Transitway Corridor Study*[73] (ATCS) included a conceptual American & 12th Avenue station. This station plan does not include a D Line station at American and 12th Avenue.

Station spacing, ridership, and land use

- A D Line station at American and 12th Avenue would result in station spacing of about 0.25 and 0.33 mi to neighboring stations. However, the surrounding land uses, longer block lengths, ridership considerations, and station location precedents set elsewhere on the corridor do not support station spacing closer than half-mile guidelines.

Constructability

- Limited right-of-way is available at 12th/13th Avenues compared to Bloomington Avenue, likely requiring design mitigations to ensure transit operations needs are met.
- An existing midblock crossing at American and Bloomington can be utilized to assist pedestrians and customers with safe crossings of American.

24th Avenue and Lindau

The 2012 *Arterial Transitway Corridor Study*[74] (ATCS) included a conceptual 24th Avenue & Lindau station. This station plan does not include a D Line station at 24th Avenue and Lindau.

- A D Line station at 24th Avenue and Lindau would result in station spacing of about 0.3 and 0.4 mi to neighboring stations. However, the surrounding land uses, longer block lengths, ridership considerations, and station location precedents set elsewhere on the corridor do not justify station spacing closer to half-mile guidelines.

[73] More information at: https://www.metrotransit.org/abrt-study
[74] More information at: https://www.metrotransit.org/abrt-study