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MAPLEWOOD STATION BRTOD PLAN

City of Maplewood

GOLD LINE
PARTNERS

Acknowledgements

Gold Line Partners

Stan Karwoski, (Chair) Washington County Regional Railroad Authority

Rafael Ortega, (Vice-Chair) Ramsey County Regional Railroad Authority

Tami Fahey, City of Lakeland

Bryan Smith, City of Maplewood

Paul Reinke, City of Oakdale

Jane Prince, City of Saint Paul

Anne Burt, City of Woodbury

Maplewood City Council

Marylee Abrams, Mayor

Kathleen Juenemann

Brian Smith

Nora Slawik, former Mayor

Tou Xiong, former City Council member

City of Maplewood

Melinda Coleman, City Manager

Michael Martin, Economic Development Department Coordinator

Shann Finwall, Environmental Planner

Steve Love, Public Works Director

Ramsey County

Andy Gitzlaff, Senior Transportation Planner, Public Works Department

Frank Alarcon, Planning Specialist, Public Works Department

Scott Yonke, Director of Planning & Development, Parks and Recreation Department

Josh Olson, Planning Specialist, Community and Economic Development

Washington County Regional Railroad Authority

Jan Lucke, Planning Division Director

Hally Turner

Sara Allen

Consultants

Crandall Arambula, Lead Consultant

Carroll, Franck Associates

Sambatek

Maxfield Research & Consulting

WSB & Associates

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INTRODUCTION

The Gold Line Partners (the Partners) brings together local elected officials from the five cities and two counties along the corridor, including business and community leaders, to support the METRO Gold Line Bus Rapid Transit (Gold Line BRT) project. As part of the support for the Gold Line, the Partners commissioned the Metro Gold Line BRTOD Plan project (BRTOD Planning Project) on behalf of the Metropolitan Council and is funded by a grant from the Federal Transit Administration's Pilot Program for Transit-Oriented Development Planning with match from Ramsey and Washington Counties. Washington County Regional Railroad Authority (WCRRA) is the fiscal agent and administrative coordinator for the BRTOD Planning Project and collaborates directly with the cities along the corridor.

Over the coming years, WCRRA will periodically review the BRTOD plans developed for the Gold Line stations with each of the cities to evaluate plan effectiveness and will monitor and identify transit ridership increases resulting from implementation of the projects. Ramsey County will coordinate improvements outside the City's jurisdiction, and partner with Washington County and the Metropolitan Council on station access projects of significant regional benefit. Ramsey County and the City of Maplewood will also administer housing and economic development programs that support affordable housing opportunities and investment in the station areas.

Prior to the initiation of the BRTOD Planning Project, the City of Saint Paul completed station area plans for all of the city's stations. For stations in Saint Paul, the BRTOD Planning Project builds upon the adopted City of Saint Paul Gold Line Station Area Plans (Station Area Plans) report. BRTOD Plans for stations in the cities of Maplewood, Landfall, and Oakdale include full development and circulation plans, which capitalize on all available opportunities to improve transit access and transit-oriented development while creating conditions that ensure that transit-dependent residents will remain in the area. BRTOD Plans for stations in Woodbury are advisory only and any additional planning will be developed by City of Woodbury planning staff.



The Gold Line will connect people across the region to job centers, neighborhoods, shopping, recreation, and other key destinations in the Interstate 94 corridor.

The METRO Gold Line Bus Rapid Transit (Gold Line BRT) project is a separate project dedicated to design and engineering of the Gold Line BRT alignment, guideway, stations, and some access improvements.

The Metro Gold Line BRTOD Plan project (BRTOD Planning Project) plans for transit-oriented development around the Gold Line stations.

BRTOD combines BRT with traditional TOD strategies to create walkable and bikeable communities with housing, shopping, and employment uses concentrated within a half mile of a BRT station.

The Gold Line Corridor includes eleven stations in five cities and two counties.

MAPLEWOOD STATION BRTOD PLAN

The Maplewood Station BRTOD Plan will serve as a policy guide for the City of Maplewood and is based on:

- Consideration of the City’s adopted policies.
- Market studies of the station area and the corridor.
- Gap assessment.
- Strategies for equitable investment and policy.

This Plan identifies projects that will help realize the vision for the station. Funding sources for projects will need to be determined.

THE GOLD LINE CORRIDOR

The Gold Line corridor is the mile-wide transit-shed centered along the Gold Line BRT route, generally following Interstate 94 (I-94). The existing potential for creating BRTOD varies in each station area. Planning for a successful Gold Line corridor requires increasing the potential ridership base of the entire corridor while enabling each station area to achieve its transit-oriented, market-driven development potential.

Along the corridor, older areas are concentrated to the west—toward Saint Paul, Maplewood, Landfall and portions of Oakdale—where early 20th century development patterns include a fine-grain street grid with predominantly single-family residences mixed with multi-family housing and commercial uses. These areas are largely fully built-out with few opportunities for new development. Residents come from highly diverse ethnicities, are typically less affluent, and are more transit dependent than in other areas of the corridor.

To the east, in Oakdale and Woodbury, the corridor transitions into newer communities characterized by auto-oriented commercial centers and undeveloped land. These areas present both greater opportunity and greater need for transit-oriented development and walking and biking infrastructure improvements. Residents in these areas tend to be less ethnically diverse, more affluent, and less familiar with transit use.

STATION AREA PLANNING

When planned together, the eleven Gold Line stations assemble into a unified, diverse, and complementary corridor in which transit ridership is maximized, desirable development infrastructure and improvements are built, and vibrant and active station areas are realized.

Each Gold Line station is located within a distinct and unique context that presents both opportunities and constraints for achieving BRTOD.

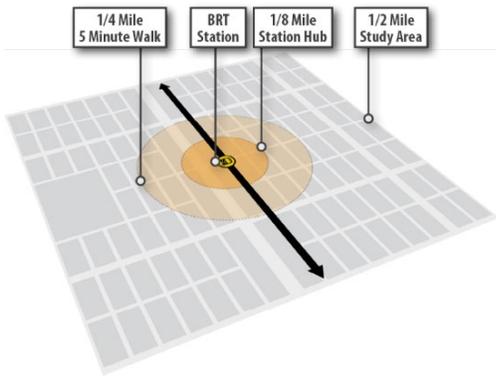
Together, the BRTOD Plans describe a corridor-wide vision that:

- **Establishes a multi-modal transportation corridor** by linking stations with a continuous biking and walking trail parallel to the BRT guideway.
- **Increases potential ridership** by providing direct access to transit-oriented uses along the corridor with strategic biking and walking improvements along existing, planned, or newly identified routes.
- **Enables station areas to achieve their development potential** by identifying substantial new infill or redevelopment opportunities for people to live and businesses to thrive near transit.

Figure 1. Gold Line Corridor Stations



While no single station will result in complete BRTOD, each of the eleven Gold Line stations plays a role in maximizing transit ridership and achieving the corridor's BRTOD potential.



First- and last-mile trip connections are particularly important in the Gold Line Corridor where many jobs and residences are along unsafe routes or are beyond comfortable walking distance from a station.

WHY PLAN FOR BRTOD?

BRTOD links trip-generating destinations with multi-modal transportation choices to increase transit ridership, provide economic benefits, support active and healthy lifestyles, and significantly reduce greenhouse gas emissions. A BRTOD plan establishes an ambitious but realistic vision for transforming the area around the station based on the specific existing character and features of each station.

BRTOD locates trip-generating uses at the station allowing surrounding residents, employees, and visitors to shorten or eliminate auto-based trips and providing a platform for local entrepreneurship and small business development. Walkable and bikeable station areas offer residents access to a variety of services and job opportunities and a diversity of housing and transportation choices.

Circulation Plans

Great station area routes should be designed to create an environment that is interesting, livable, and safe. An interconnected network of walking and biking routes ensures that all trips to or from a transit station are as short as possible.

The area within a quarter-mile of the station is typically accessible with a five-minute walk. A five-minute bike ride can typically access the station from the area within one mile. These five-minute areas are the 'rider-shed', the source of 80% of the station's transit riders. Walking and biking improvements should be focused within the relevant rider-sheds.

'First- and last-mile trips' are the trips that transit users must take between their starting or ending destination and a BRT station. When transit users have difficulty making the first- or last-mile connection due to distance, unsafe conditions, or other barriers, BRT use may be less practical.

Development Plans

In BRTOD, the area within an eighth-mile of the station is home to the highest intensity of trip-generating retail and employment uses and dense residential types, such as multi-family apartments or condominiums.

Areas within a quarter-mile of the station include the largest concentration of housing and should include a mix of rental and ownership housing to support a mix of income levels.

Existing stable and desirable uses should be preserved and strengthened, with new development and redevelopment targeted to vacant and underutilized sites and to sites with long-term redevelopment potential. Targeted development should include the type of land uses appropriate to addressing market gaps in housing, employment, or commercial uses in order to support an equitable and vital station area.

Station Environment

Conditions in the area directly adjacent to the station play an essential role in establishing BRTOD. The station environment is an opportunity to define the neighborhood character through the creation of a sense of arrival and departure. A focus on establishing a sense of place means that the station environment is designed for commuters to congregate and linger:

- **Safe** stations are highly visible—‘eyes’ on the station ensure that transit riders are seen from the street and surrounding buildings, reducing the potential for crime.
- **Comfortable** stations are accessible for people of all ages and abilities, ensuring a pleasant experience at the station.
- **Active** stations are vibrant throughout the day and during all four seasons of the year, creating a special place of arrival and departure for transit users.

BRTOD plans provide implementable design strategies for establishing the street-oriented buildings and station access improvements that will result in safer and more vibrant stations. In turn, this will result in more BRT riders and reduce the potential for crime during all times of day and year.

Land use patterns and intensities should support the day-to-day needs of BRTOD residents. Intensities and densities are greatest near the station, gradually decreasing away from the station.

The Gold Line Corridor BRTOD Plans emphasize the creation of safe, comfortable, and active station environments.





GOLD LINE CORRIDOR

To ensure that the BRTOD Plans for each station are integrated and complementary, corridor-wide approaches to development and access have been applied.

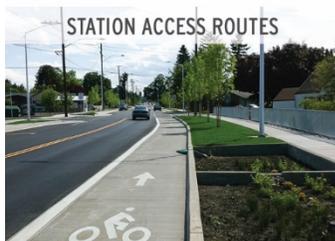
Station Typologies

Station typologies provide a common vocabulary for describing the development vision for each station area and the relationships between stations along the corridor.



Station Access Route Hierarchy

A hierarchy of walking and biking routes connect stations along the corridor and provide direct access between the station and destinations within each station area.



STATION TYPOLOGIES

Each of the eleven BRTOD Planning Project stations were assigned a typology:

Neighborhood,
Mixed-Use Neighborhood,
Employment, or
Commerce.

Station typologies reflect the complementary roles of the stations along the corridor and inform the type and intensity of transit-oriented development that is emphasized in each station's development plan.

Station typologies respond to station-specific community desires and adopted policies and plans while being consistent with best practices for transit-oriented development. Site conditions, market conditions, and demographics were considered in assigning typologies to each station.

Figure 2. Station Typologies



NEIGHBORHOOD STATIONS

In Neighborhood Station areas, strategic improvements to key multi-modal transportation routes are emphasized in order to provide safe, direct, and convenient BRT access for current residents. Where development opportunities are present, affordable and market-rate neighborhood-compatible, moderate-density apartment, condominium, and townhome development is appropriate. Policies, programs and strategies that discourage displacement of current residents and businesses ensure that transit-dependent residents receive the benefits of the Gold Line service.

Gold Line's Neighborhood Stations are Mounds Boulevard Station, Earl Street Station, White Bear Avenue Station, and Greenway Avenue Station.

Neighborhood Stations are predominantly residential areas with few opportunities for transit-oriented infill or redevelopment.



MIXED-USE NEIGHBORHOOD STATIONS

Mixed-Use Neighborhood Station areas most closely resemble ideal transit-oriented development. Higher-density affordable and market-rate apartment, condominium, and townhome development is achievable. Street-oriented retail shops, commercial uses, and neighborhood-scaled employment is fostered to create a complete and balanced station area. Neighborhood-scaled employment includes professional offices and services, which may occupy standalone buildings or the floors above ground-floor retail. These station areas should include a rich mix of urban parks, a connected street grid, and safe, direct and convenient walking and biking connections to the station.

Gold Line's Mixed-Use Neighborhood Stations are Helmo Avenue Station and Sun Ray Station.

Mixed-Use Neighborhood Stations provide the most opportunity for transit-oriented development.



Employment Stations draw transit riders from within and outside the corridor.



EMPLOYMENT STATIONS

In Employment Station areas, land use policies and plans should maintain and promote existing and new uses that provide family-wage job opportunities for Gold Line corridor residents and for commuters from outside of the corridor study area. Businesses with a high number of jobs per acre, such as medical, financial, technology, and corporate headquarters, should be fostered. These types of businesses require high levels of visibility to succeed and are most successful when located on prominent high-traffic streets, adjacent to other employment uses, and where medium to large parcels are available to accommodate buildings with larger floor areas. Development of new low-intensity uses such as manufacturing, warehousing, or other similar industrial uses should be discouraged. While these station areas have an emphasis on employment uses, residential and employee-serving commercial uses are also appropriate.

Gold Line's Employment Stations are Etna Street Station, Maplewood Station, and Tamarack Station.

Commerce Stations include BRT-trip-generating destinations used on a daily or weekly basis.



COMMERCE STATIONS

Commerce Station areas include substantial employment, high-density residential, entertainment, and dining uses. This station type is an opportunity to establish or strengthen an activity center that serves as an alternative to downtown Saint Paul for corridor residents' daily and weekly employment and shopping trips. Amenities may include a plaza or other urban gathering place. Locating park-and-ride ramps in this station area is appropriate, though they should be sited and designed for shared use if possible. While this station type may initially have greater auto-orientation, long-term planning should identify a framework for a street grid and biking and walking connections to the station and park-and-ride.

Gold Line's Commerce Stations are Woodbury Theatre Station and Woodbury I-494 Park-and-Ride Station.

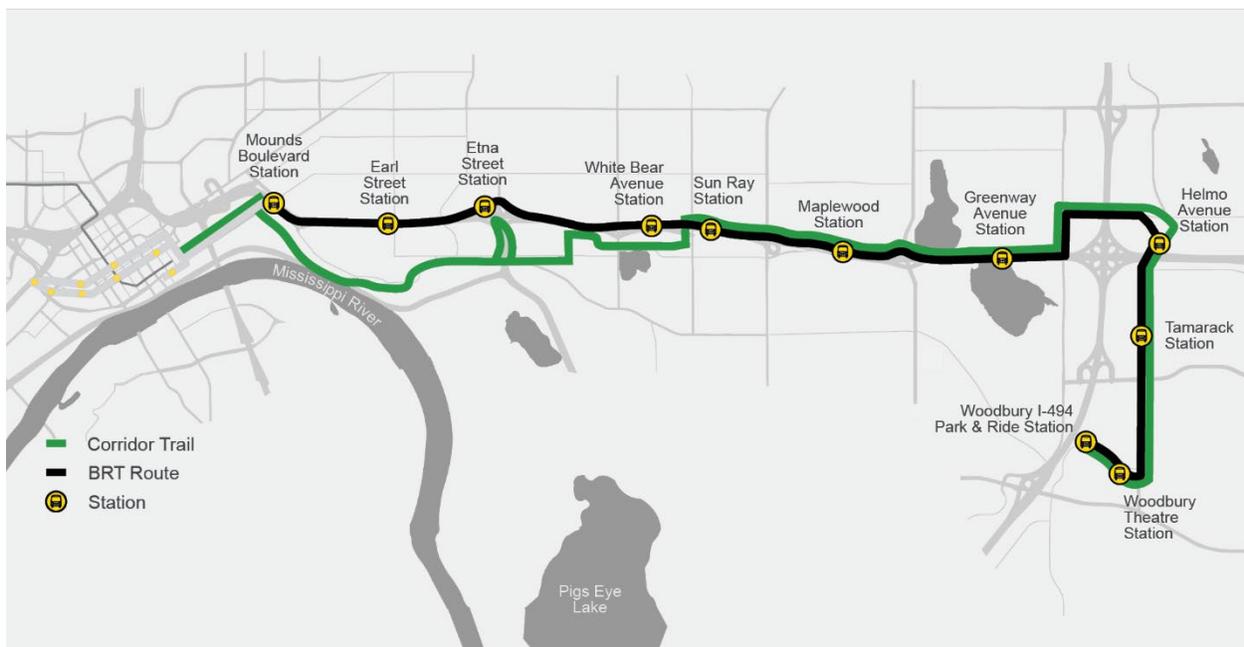
STATION ACCESS HIERARCHY

A hierarchy of complementary access route types address the need for connections between stations and within each station area. This complete and connected network serves walkers and bicyclists, along with other users who arrive on wheels—whether by wheelchair or by an emerging transportation option such as electric scooters.

Walking and biking improvements to existing public rights-of-way close gaps in existing routes and provide new routes to complete networks identified in the pedestrian and bicycle planning documents of local jurisdictions.

The Corridor Trail links all of the station along the Gold Line Corridor and is supported by a network of access routes within each station area.

Figure 3. Corridor Trail Concept



The Corridor Trail is a continuous walking and biking link between the eleven BRTOD Planning Project stations.



CORRIDOR TRAIL

The Corridor Trail serves as the primary station access route within each station area and:

- Links stations via a car-free safe, direct, and convenient walking and biking route.
- Links numerous existing destinations and proposed new transit-oriented development sites.
- Serves as both a transportation facility and a recreation amenity, connecting existing parks and civic uses to the stations.

The Corridor Trail is an asphalt or concrete walking and biking facility. The trail includes both existing and new trails and runs generally parallel to the BRT guideway from the Woodbury Theatre Station to Ruth Avenue and then adjacent to existing streets south of I- 94 to the Mounds Boulevard Station.

Collector Trails provide access into station areas from neighborhoods and destinations outside the mile-wide study area corridor.



COLLECTOR TRAILS

Collector Trails include existing and planned local, regional, and Minnesota Department of Transportation (MnDOT) facilities that feed into and through each station area. The Collector Trails:

- Are separated from auto traffic to provide a safe car-free walking and biking pathway.
- Link existing destinations and new transit-oriented development sites.
- Serve as a recreation amenity, connecting existing parks and civic uses to the stations.

Collector Trails are designed to meet regional and local jurisdiction design standards and are typically a 10- to 12-foot wide asphalt surface that is separated from the street. Collector Trails generally run perpendicular to the BRT guideway and Corridor Trail. Existing Collector Trails are located on Swede Hollow, Century Avenue, McKnight Avenue, Hadley Avenue, Hudson Boulevard, Tamarack Road, Tamarack Road, and Valley Creek Road. Planned Collector Trails include the Johnson Parkway Trail.

STATION ACCESS ROUTES

Station Access Routes are the primary walking and biking connections between stations and station area neighborhoods. These routes are typically sidewalk and bike lane improvements that take advantage of limited space. At the Earl Street and White Bear Avenue stations, Station Access Routes:

- Link existing destinations and new transit-oriented development sites.
- Incorporate designated bike lane routes identified in the bicycle plans of local jurisdictions.
- Incorporate existing bike lanes or are upgraded shared-shoulder routes.
- Incorporate existing sidewalks and, in some instances, existing bike lanes.

The design of Station Access Routes is dependent on local right-of-way-conditions. These routes include a combination of both sidewalks and bike lanes and should include, at a minimum:

- Continuous 5-foot-wide sidewalks on both sides of the street.
- 5-foot-wide one-way buffered or protected bike lanes. In some instances, bike lanes are two-way 10-foot-wide buffered facilities. Striped roadway buffer widths should be 18 inches, but with a physical barrier such as a curb can be 12 inches, minimum.

NEIGHBORHOOD ACCESS ROUTES

Neighborhood Access Routes provide low-stress connections to station area neighborhoods. In many instances, these routes are preferred by inexperienced riders who are not comfortable riding on busy collector or arterial streets.

Neighborhood Access Routes feed into the station area along streets with existing sidewalks and designated bike routes identified in the pedestrian and bicycle plans of local jurisdictions. These routes are typically located on low traffic streets and link existing lower density residential areas to the stations.

Where Neighborhood Access Routes intersect busy streets, diverters, barriers, or other traffic-control devices may be necessary to provide safe crossings or to discourage through auto traffic. Wayfinding signs or other unifying elements, such as ornamental streetlighting, will help walkers and bikers navigate these routes.

Station Access Routes provide linkages between the Corridor Trail and stations.



Neighborhood Access Routes complete the station area network by providing connections between Station Access, Collector Trail, and Corridor Trail routes.





MAPLEWOOD STATION AREA

The Maplewood station is located on the north side of Hudson Road, a half-mile from the McKnight Road and Century Avenue intersections, adjacent to the 3M Headquarters Building. The Maplewood station area is entirely located within the City of Maplewood. Ramsey County's Battle Creek Regional Park is a significant near-by regional recreational destination.

Circulation within the station area primarily serves vehicular traffic and includes freeway and arterial roads, private driveways and streets serving the 3M Campus, and local streets serving Maplewood neighborhoods. Public access to the Maplewood Station is limited to the high traffic streets along the periphery of the station area, such as McKnight Road, Conway Avenue, Century Avenue and Hudson Road. Sidewalks are present on Conway Avenue and trails are located on McKnight Road and Century Avenue. No walking and biking facilities currently exist along Hudson Road or the future BRT alignment.

Figure 4. Maplewood Station Area



Figure 5. Maplewood Neighborhood



Figure 6. 3M Campus



Figure 7. Battle Creek Regional Park



CITY OF MAPLEWOOD

Interstate 94 (I-94) runs east-west through the station area, dividing the station area in half. North of I-94 is the 3M campus. South of I-94 are the Battle Creek Regional Park and Aquatic Center, Afton Heights Park, single family homes, and a limited amount of commercial development located at the Century Avenue and I-94 interchange.

3M

The 400-acre 3M campus, which employs over 12,000 people, is the largest land use within the station area and along the corridor. Buildings are dispersed throughout the campus and are accessed via internal roads that lack a complete network of sidewalks and designated bicycle facilities. A 3M-operated shuttle van provides access between campus buildings upon request.

BATTLE CREEK REGIONAL PARK

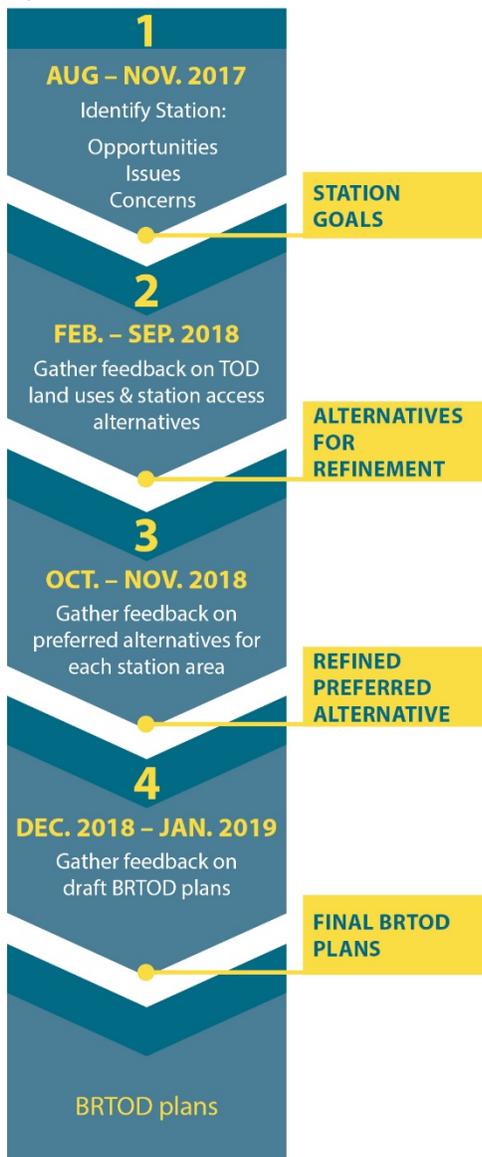
Battle Creek Regional Park, south of I-94, is a regional recreation destination offering picnicking, hike & ski trails, a dog park and the Waterworks Family Aquatic Center. In 2019, Ramsey County Parks and Recreation prepared a Battle Creek Regional Park Master Plan and the Metropolitan Council will engage cities and counties on regional parks and trail needs. The convergence of these two efforts is an opportunity for the county and regional authority to take a lead role in supporting and potentially providing funding for improvements to walking and biking access to the station.

Figure 8. Maplewood Station Area



BRTOD PLANNING PROCESS

Figure 9. Stakeholder Involvement Process



The planning process for the Maplewood Station BRTOD Plan occurred over nineteen months, beginning in May 2017 and ending in December 2018.

The process occurred concurrently with the forty-two-month BRT Project Engineering process, which advanced the Locally Preferred Alternative (LPA) concept to preliminary design. Location of the Maplewood station and guideway engineering refinement began in January 2018 and included regular coordination meetings with the BRTOD Planning project team and the Metro Transit Gold Line Project Office to ensure that the vision and development and circulation plans created for the Maplewood Station area were considered in the BRT and engineering process.

The Maplewood Station BRTOD planning process consisted of four phases:

- 1. Identification of station area opportunities, issues and concerns to establish station area goals.** Stakeholders reviewed project information, provided feedback on station specific issues, and discussed opportunities and constraints.
- 2. Development and review of preliminary BRTOD concepts for transit-oriented development and station access.** Stakeholders reviewed and provided feedback on draft alternatives.
- 3. Refinement and review of preferred development plan and circulation plan.** Stakeholders provided feedback on refined development scenarios and development and circulation plans.
- 4. Review of the BRTOD Plan document.** Stakeholders provided feedback on the draft BRTOD Plan, including implementation strategies.

STAKEHOLDER INVOLVEMENT

Stakeholder involvement in the Maplewood Station BRTOD Plan built upon extensive engagement conducted prior to the initiation of the BRTOD Planning project and focused on issues related to transit-oriented development. Stakeholder involvement was conducted in close coordination with WCCRA and the staff of the cities of Landfall and Oakdale.

Stakeholder Involvement Plan

The stakeholder involvement plan established engagement objectives; identified stakeholders, level of engagement, and outreach methods; and ensured that core values, goals, and objectives of the overall Gold Line project were addressed. The plan ensured that those affected by planning decisions had the opportunity to be involved in the decision-making process, that their contributions influenced decisions, and their needs were communicated to decision-makers. At the end of each project phase, the influence of stakeholder input was communicated back to stakeholders.

Engagement included in-person events and online engagement:

- **Four City Council work sessions** held at the City Hall in Maplewood.
- **Three engagement sessions** including a mailer to residents of the station area, and **two community meetings** with residents and property owners of Maplewood that were facilitated at the Carver Elementary School and Christ United Methodist church in Maplewood.
- **A corridor-wide open house** for station area planning and Metro Transit Gold Line engineering was held at the Grace Lutheran Church in Saint Paul. Maplewood Station circulation concepts were presented along with a survey.
- **An internal online survey of 3M employees** gathered feedback on preliminary concepts for walking and biking improvements between the station and destinations.
- **Online engagement** through all four phases was done via the Gold Line Partners website and included overviews, surveys, slideshows and engagement summaries. General project information was provided in multiple languages.

All key stakeholders were respectfully and inclusively engaged in developing the Maplewood Station BRTOD Plan.

Figure 10. Community Meetings



Metro Transit’s Gold Line Project Office in charge of BRT design engineering and the BRTOD Planning Project team met regularly to coordinate the two projects.

GOLD LINE BRT PROJECT COORDINATION

The BRTOD Planning Project occurred concurrently with the forty-two-month Gold Line BRT process, which advanced the Locally Preferred Alternative (LPA) concept to preliminary design. Station locations and guideway engineering refinement began in January 2018 and included regular coordination meetings with the BRTOD Planning Project team and the Metro Transit Gold Line Project Office to ensure that the vision, development and circulation plans created for each station area were considered in the Gold Line BRT process.

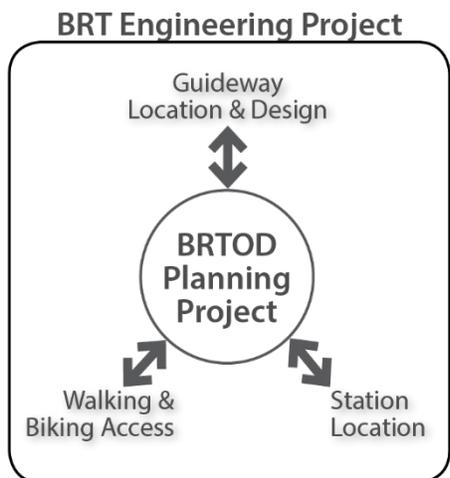
In February 2018, the Gold Line Project Office engineering team met with the BRTOD Planning Project consultants and WCRRA to discuss station location, guideway, walking and biking access design issues with the Gateway Corridor Environmental Assessment Concept Plans, as well as potential design refinements for preliminary development and circulation plans for each of the stations.

Bi-monthly meetings from June 2018 through September 2018 were attended by the BRTOD Planning Project coordinator, the deputy project manager for the Gold Line Project office, and the WCRRA. Discussions included outstanding issues with the ongoing Gold Line BRT design refinements; the extent of station, guideway, and access improvements included in the BRT project cost; and any costs attributed to each city or to partnerships with other entities outside of the Gold Line BRT project.

In October 2018, the Gold Line Project Office engineering team met with the BRTOD Planning Project consultants and WCRRA to discuss refinements to the station location, guideway, and access design and to identify any potential impacts on the preferred development and circulation plans for the station areas.

The Gold Line Project Office identified the station location, guideway and access improvements to advance to the environmental assessment phase of the project and the extent of access improvements included in the BRT project cost.

Figure 11. Coordinated Engineering and Planning



3M COORDINATION

BRTOD Plan engagement with 3M employees via an internal on-line survey (679 respondents) identified a desire for frequent all-day BRT service and the potential for BRT service to ease congestion and parking concerns on campus. Trail access along the BRT route was seen as a benefit if the route was complete and connected to destinations along the corridor. An improved walking and biking crossing of I-94 was also seen as a benefit. Other ways 3M can support transit ridership are by providing an enhanced shuttle service to and from the station, subsidizing employee metro transit passes, and by limiting expansion of the on-campus parking supply.

3M can play a major role in encouraging employees to use the Gold Line BRT through a walk and bike plan and station access improvements.



STATION AREA ASSESSMENTS

Existing policies, plans, traffic data, and physical conditions relevant to the Maplewood Station area were reviewed. Assessments of the reviewed materials inform the station area vision, development and circulation plans, infrastructure plans, and implementation strategies.

CIRCULATION AUDIT ASSESSMENT

The pedestrian, bicycle, transit, and street network audit included a field survey and mapping of existing conditions and planned walk, bike, and roadway improvements affecting universal accessibility and safe access to and from the Maplewood Station. The audit also identified bus routes and stops, average daily (auto) traffic counts, high crash areas, roadway segments with traffic speeds greater than 25 miles per hour, and locations of traffic control devices such as traffic signals and stops signs.

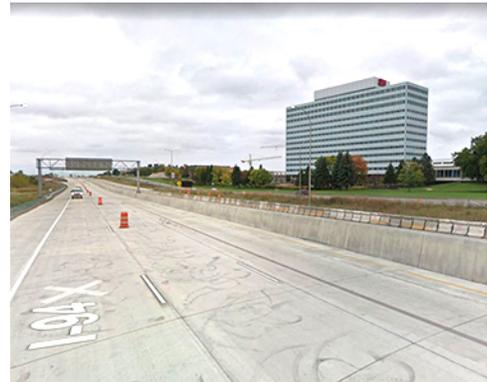
Key Findings

Significant impediments to station access include:

- Major physical barriers between potential transit ridership and the station, 3M Campus, and Battle Creek Park. I-94 creates an impassable barrier to the station from the south and bisects the station area, effectively cutting potential ridership significantly.
- The 400-acre 3M private campus restricts public access, requiring the public to navigate around the edges along high traffic and high-speed roadways at Conway Avenue, McKnight Road, and Century Avenue.
- The BRT station is located on the southern edge of the 3M campus which has limited internal sidewalk and bicycle facilities to connect employees to the station.
- Recent construction of pedestrian and bicycle trails on Century Avenue and McKnight Road will improve access to the station.
- Lack of convenient connecting transit. Express Bus 294 and three local bus routes (Routes 219, 70, and 63) stop a half mile or more from the Maplewood Station.
- Recent construction of pedestrian and bicycle trails on Century Avenue and McKnight Road will improve access to the station.

Circulation conditions such as physical barriers to station access and lack of pedestrian and bicycle infrastructure may limit ridership.

Figure 12. Interstate 94 Station Access Barrier



Development north of the station will largely be determined by 3M

Figure 13. Corporate Campus Development



MARKET AND DEMOGRAPHIC ASSESSMENT

The assessment identified real estate market conditions and demographics affecting development both for the corridor and within a half-mile radius around each station.

Key Findings

3M provides a stable base of employment and transit riders with an estimated 12,000 jobs on the 400-acre campus. The Headquarters Building located adjacent to the station includes the largest concentration of employees.

Most of the station area is situated within the 3M campus which is a major economic driver and bus rapid transit destination for the corridor and East Metro. Through its own spending and spending of its employees and visitors, it anchors the local real estate market, and future station area development will be almost exclusively determined by 3M's plans for growth. 3M has no immediate plans for redevelopment within the campus, but should it choose to redevelop, there is market potential for:

- Apartments and townhome housing
- Retail and hospitality that attracts 3M workers and those driving along I-94 or living along the corridor.

GAP ASSESSMENT

The Housing, Education, and Employment Gap Assessment addresses the redevelopment potential of the station. It identifies missing housing types, strengths and weakness, and the most advantageous sites for housing and commercial development within one-half-mile of the station.

Site Strengths

- 3M has the opportunity to build new facilities and ancillary uses (such as commercial, residential, and hotel) near the station for corporate or public use.
- Long-term redevelopment parcels exist along Century Avenue on the periphery of the station area.
- The station benefits from access and visibility to I-94.

Site Challenges

- 3M has no immediate plans for new facilities or ancillary development at or near the station.
- No suitable development sites adjacent to the station.
- Poor public pedestrian and bicycle access throughout the station area.

Development Potential

- Unmet residential demand for townhomes
- Retail and hotel development on 3M campus may be able to capture employee, visitor, and I-94-drive-by spending.
- Limited near-term demand for office uses.

If station access can be improved, Battle Creek Park can be a recreation amenity that can benefit under-served communities along the entire corridor.

Figure 14. Living Streets Policy Implementation



Some Maplewood policies and ordinances support BRTOD.

Figure 15. Mixed-use community



GOLD LINE HEALTH IMPACT ASSESSMENT

The *Gateway Gold Line Bus Rapid Transit: A Closer Look at Health and Land Use Technical Report*, completed in 2016, identified key built-environment factors considered most important to health. Four elements important to health and influenced by land use decisions are connectivity, housing, jobs, and safety.

Key Findings

- Battle Creek Regional Park is an amenity for 3M employees, and nearby neighborhoods, and a regional attraction and destination providing family-oriented aquatic center, walking, and hiking trails, snowshoeing, cross-country skiing and picnic facilities.
- The City of Maplewood Living Streets policy has set goals to enhance walking and biking conditions, enhance safety and security of streets, calm traffic, and create livable neighborhoods.
- In 2018, 3M began developing a plan for improving the bicycle and pedestrian networks on their campus.
- A 3M-sponsored employer transit pass program for Metro Transit could be a corporate benefit that increases BRT transit ridership within the 3M workforce.

REGULATORY PLANS ASSESSMENT

The City of Maplewood updated their comprehensive plan in 2018. The plan includes some policies, zoning, and facility plan elements that foster BRTOD.

Key Findings

- Policies support a walking and biking connection over I-94 between the station and the Battle Creek neighborhood.
- Mapping and classifications of westside parcels fronting Century Avenue south of I-94 were changed to a Mixed-Use Community classification which permits transit-oriented residential densities of 25-50 dwelling units per acre.

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VISION

The Maplewood Station is envisioned as an Employment Station, primarily serving 3M campus employees and clients. Neighborhoods, parks, and other outlying destinations will be linked to the station by new safe, direct, and convenient walking and biking routes.

Since the station area largely consists of the 3M campus, redevelopment opportunities are limited. Long term possibilities for new neighborhood-compatible housing within the station area should be studied.

The BRT station can provide a multi-modal front door to 3M and act as a trailhead to Battle Creek Regional Park. A potential bridge over I-94 would provide a link between the park and the station. The bridge may include interpretive elements that provide connections to the history of Battle Creek Park, 3M, and the City of Maplewood.

Figure 16. Maplewood Station Vision



BRTOD VISION

Figure 17. Safe Station Environment



Figure 18. Walking and Biking Improvements



The Maplewood Station area vision is a synthesis of corridor-wide and station-specific objectives.

SAFE STATION ENVIRONMENT

A landscaped boulevard buffers the station platform from the freeway traffic. Additional berming and landscaping along the corridor trail provide a separation from the 3M campus for trail users.

LINK RETAIL TO THE STATION

The BRT project will provide a walk and bike trail with BRT and trail bridges at McKnight Road and Century Avenue to ensure safe and direct access to the Maplewood Station and connecting the station to the Sun Ray Shopping Center to the west and to Tanner’s Lake and the Greenway Avenue station to the east.

Providing walking and biking linkages between 3M and the Sun Ray Shopping Center will ensure that the 3M workforce benefits from nearby shopping.

DIRECT NEIGHBORHOOD AND PARK ACCESS

The potential Maplewood Bridge would provide a walk and bike connection to the Battle Creek neighborhood and Battle Creek Park by way of new trail segments along Hudson Place or Sterling Street.

Figure 19. Maplewood BRTOD Station Vision





CIRCULATION PLAN

The Circulation Plan focuses on walking and biking access to the station. The Circulation Plan builds upon the suggests enhancements to the walking and biking improvements that will be provided by the Gold Line BRT project. Additional substantial improvements are proposed to ensure that direct, convenient, and safe station access is provided for walkers and cyclists.

Circulation plan improvements provide universal access for all, regardless of age and physical ability.



Key Circulation Plan Elements

Corridor Trail

Enhancements to the Corridor Trail component of the BRT project, which links stations to stations along the length of the corridor, are identified.

Collector Trails

Existing, planned, and enhanced trails connect destinations along the periphery of the station area and provide walking and biking access to the Corridor Trail.

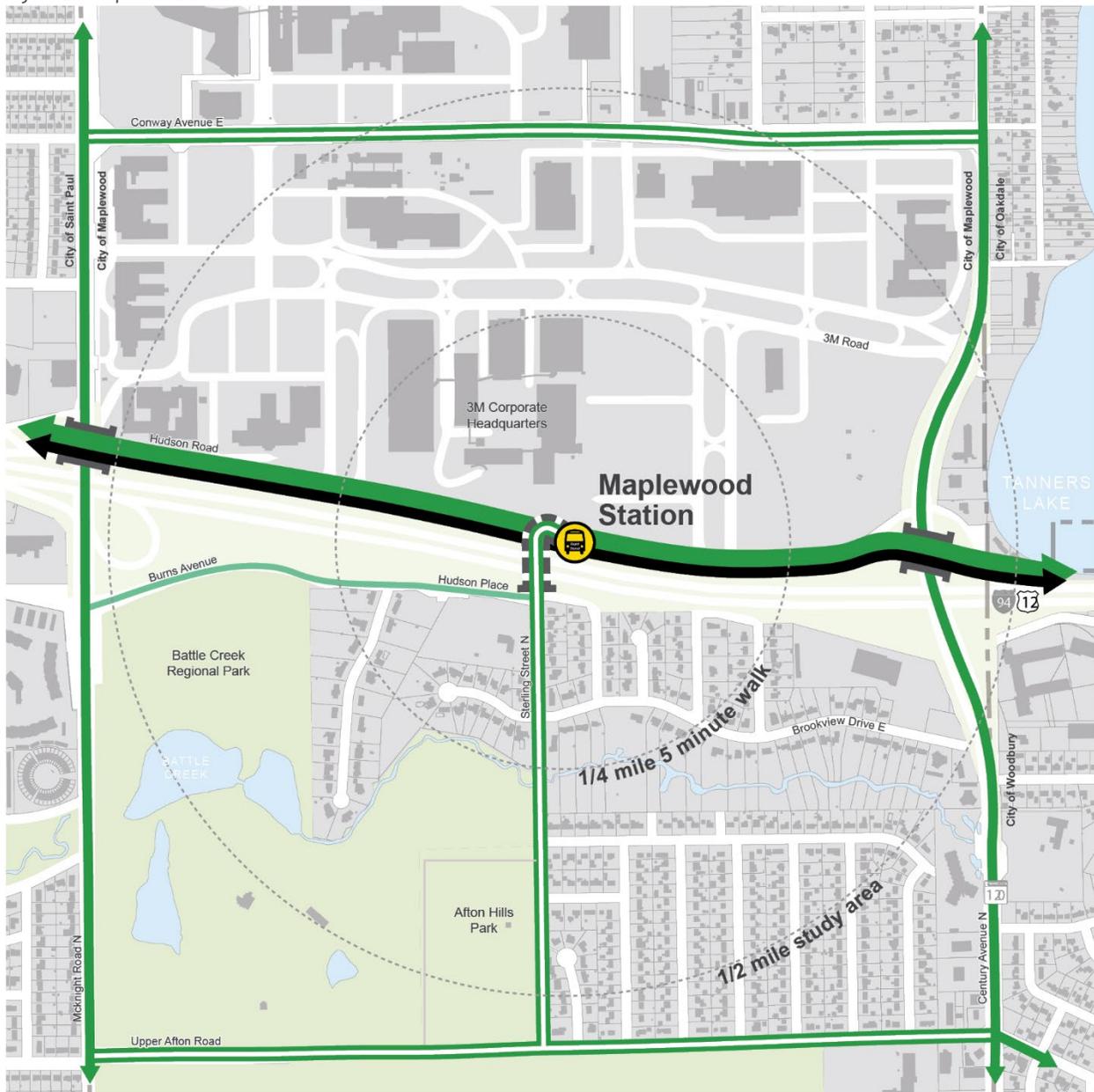
Station Access Routes

Safe and direct pedestrian and bicycle access from the station area to the station.

Neighborhood Access Routes

A new connection links the station access route to the Collector Trail.

Figure 20. Maplewood Station Circulation Plan



- | | | | |
|--|---------------------------|--|--------------------|
| | Station Location | | MnDOT Right of Way |
| | BRT Guideway | | Open Space |
| | Corridor Wide Trail | | Water Body |
| | Primary Station Access | | Building |
| | Collector Trail | | Parcel |
| | Neighborhood Access Route | | |
| | Bridge | | |
| | Potential Bridge | | |

400 ft
200 ft 800 ft

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**The Corridor Trail links the
Maplewood Station to shopping
at the Sun Ray Station.**

Figure 21. Corridor Trail Existing Conditions



Figure 22. Corridor Trail Enhanced Conditions



CORRIDOR TRAIL

The Corridor Trail runs adjacent to the BRT guideway along the north side of Hudson Road between the McKnight Road and Century Avenue intersections and is linked to the Sun Ray Station and the Greenway Avenue Station by BRT bridges over the intersections.

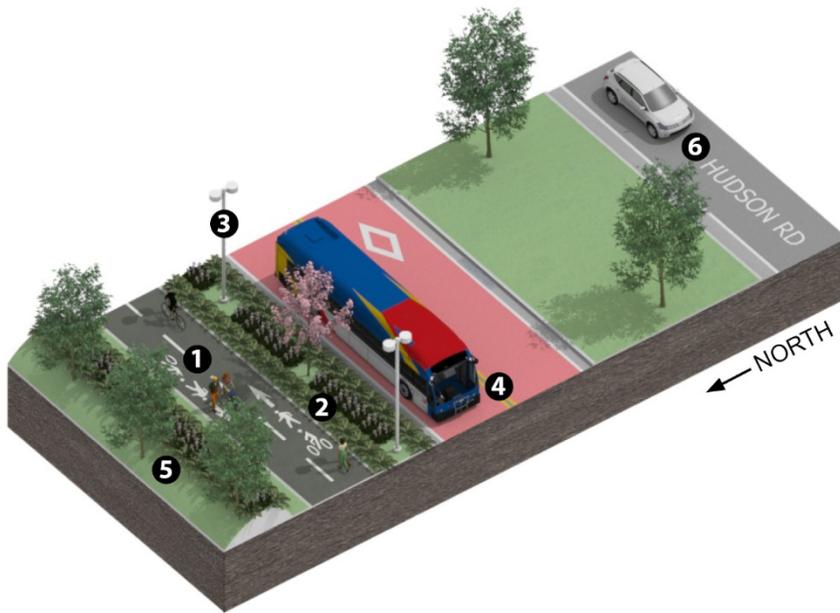
CORRIDOR TRAIL ENHANCEMENTS

The Gold Line BRT project will construct a 10-foot-wide trail Corridor Trail and a 10-foot-wide grass boulevard that provides area for snow storage.

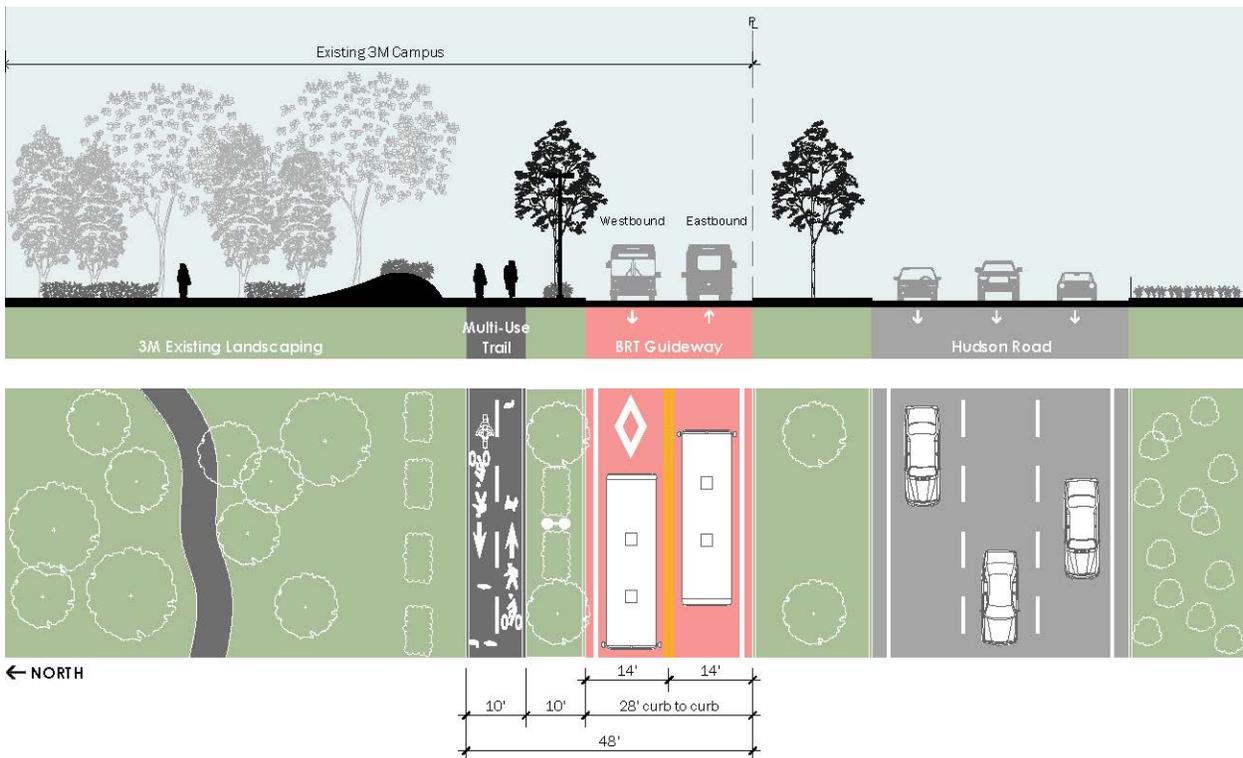
Enhancements to the Corridor Trail include:

- Trail lighting
- Boulevard trees, shrubs, and groundcover to create a more attractive route for pedestrians, and bicyclists. The landscaping should include native prairie and woodland species that are currently present on the 3M campus and in Battle Creek Regional Park.
- A landscaped berm that provides a visual and physical separation between the Corridor Trail and the 3M campus.

Figure 23. Corridor Trail Enhancements



- 1** CORRIDOR TRAIL
10-foot-wide pedestrian and bicycle trail
- 2** LANDSCAPED BOULEVARD
10-foot-wide landscaped boulevard providing visual interest and a traffic buffer for multi-use trail users
- 3** STREET LIGHTING
Pedestrian-scaled ornamental lighting for multi-use trail
- 4** BUS ONLY GUIDEWAY
Two exclusive 14-foot-wide bus lanes
- 5** 3M CAMPUS
Landscaped berm trail buffer
- 6** HUDSON ROAD



Collector Trails are existing and enhanced trails along the periphery of the station area that link the Corridor Trail, neighborhood destinations, and the regional bike network.

Figure 24. McKnight Road Collector Trail



COLLECTOR TRAILS

Located outside the five-minute walking radius, Collector Trails provide important linkages for bicyclists and walkers between the Corridor Trail, neighborhood destinations, and the regional bicycle transportation network.

Century Avenue Trail

The existing 10-foot-wide asphalt trail is located on the east side of the roadway between 4th Street and Ridge Drive.

Collector Trail improvements provided by the Gold Line BRT project include:

- A signalized crosswalk at the existing freeway ramp north of I-94.
- A new 10-foot-wide trail on the west side of Century Avenue from the existing traffic signal north of I-94 to Brookview Drive.

The Century Avenue Collector Trail should be extended from 4th Street to 1st Street and from Ridge Drive to Upper Afton Road.

McKnight Road Trail

In 2019, a 10-foot-wide asphalt trail on the west side of the roadway between Minnehaha Avenue and Burns Avenue was constructed. Existing trails are located on the east side of the street from Minnehaha Avenue to Hudson Road and south of Burns Avenue to Upper Afton Road.

STATION ACCESS ROUTES

Station Access Routes provide residents, 3M employees, and parks users access to the station and Battle Creek Regional Park. The City of Maplewood has identified the Conway Avenue, Upper Afton Road, and the Maplewood Bridge pedestrian and bicycle routes in the City's 2040 Comprehensive Plan.

Three Station Access Routes have been identified:

- **Upper Afton Road and Conway Avenue:** Bike lanes and sidewalk gap improvements between Century Avenue and McKnight Road.
- **Maplewood Bridge Concept:** A potential walk and bike bridge over I-94 linking the station to the Battle Creek neighborhood and Battle Creek Regional Park.

Station Access Routes fill in the gaps and complete the network of station area routes.

Figure 25. Upper Afton Road with Shoulders



Figure 26. Upper Afton Road Partial Shoulders



UPPER AFTON ROAD

Bike lanes on Upper Afton Road provide a link between the trails on McKnight Road and on Century Avenue. While sidewalks are present along the south-side of Upper Afton Road, sidewalks are missing on the north side of the street.

Biking improvements to Upper Afton Road should include 5-foot-wide bike lanes with a 1-foot buffer replacing existing shoulders:

- On both sides of the street between Century Avenue and the Battle Creek Regional Park entrance.
- On the south side of the street between the Battle Creek Regional Park entrance and Century Avenue.
- On the north side of the street between the Battle Creek Regional Park entrance and Century Avenue, which will require narrowing travel lanes.

Walking improvements include a 5-foot-wide (minimum) sidewalk with landscaped boulevard along the north side of the street between McKnight Road and Century Avenue. The size of the landscaped boulevard is to be determined by City of Maplewood.

CONWAY AVENUE

Conway Avenue bike lanes link between the trails on McKnight Road and Century Avenue. Adding bike lanes and a buffer will require narrowing travel lanes. While sidewalks are generally present along the route, new sidewalks are needed on the south side of the street from 3rd Street to McKnight Road and from 24th Street to Century Avenue (Mn120).

DESIGN ELEMENTS KEY

- ❶ SIDEWALKS
- ❷ LANDSCAPED BOULEVARD
- ❸ STREET LIGHTING
- ❹ BIKE LANE
- ❺ CONWAY AVENUE
- ❻ 3M CAMPUS

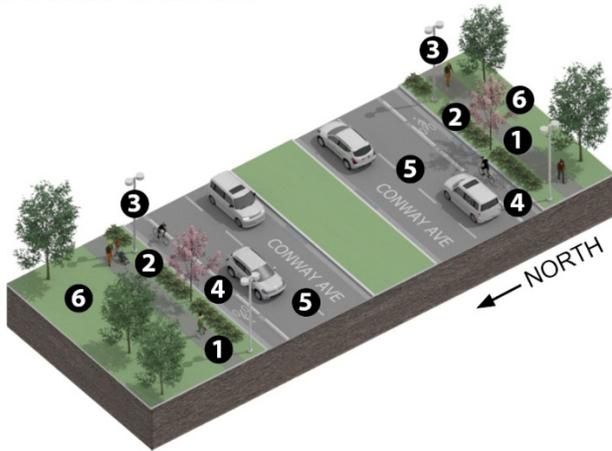
Figure 27. Conway Avenue Existing Condition (Looking East)



Figure 28. Conway Avenue with Bike Lanes (Looking East)

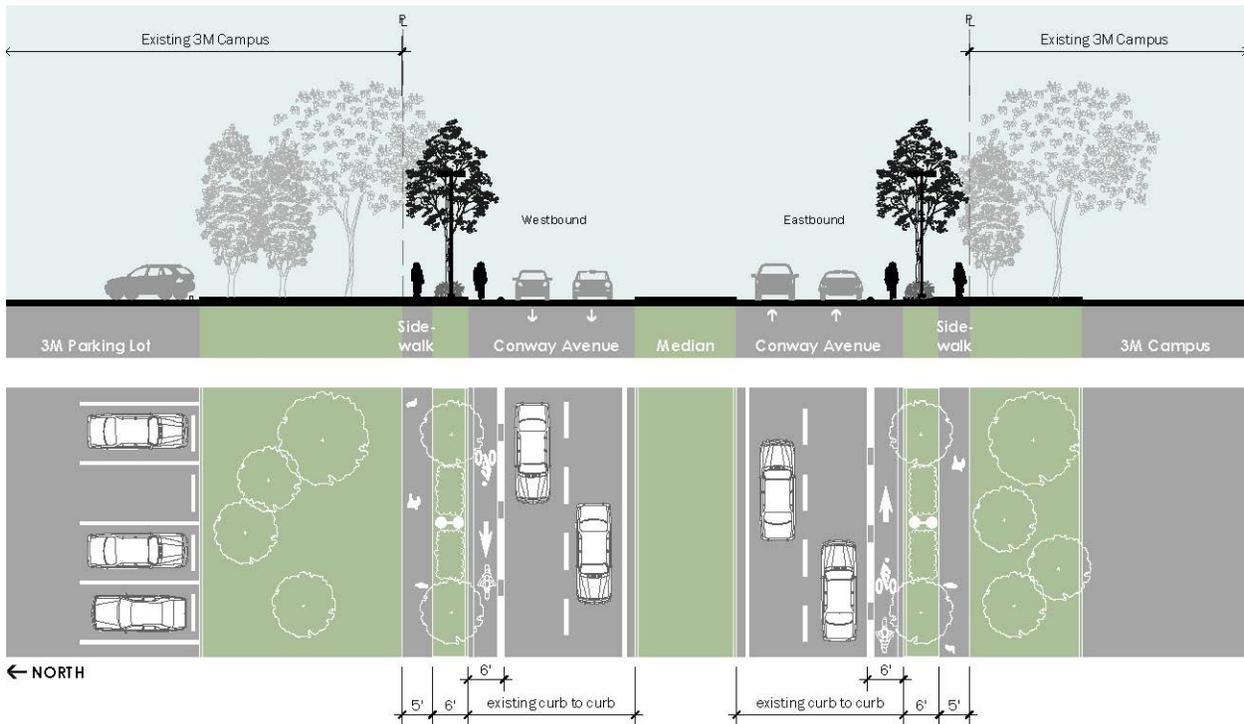
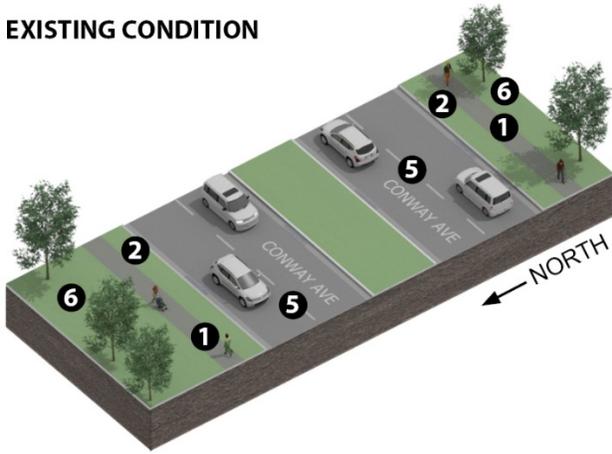


Figure 29. Conway Avenue
PLANNED CONDITION



- 1 SIDEWALK**
Fill in gaps of existing 5-foot-wide sidewalk.
- 2 LANDSCAPED BOULEVARD**
Enhance existing 6-foot-wide landscaped boulevards. Add street trees and landscaping.
- 3 STREET LIGHTING**
Lighting for pedestrians and bicyclists in landscaped boulevard.
- 4 BIKE LANE**
5-foot-wide one-way bike lane on each side of Conway Avenue with 1-foot-wide 'rumble strip' separating bike lane from automobile traffic
- 5 CONWAY AVENUE**
Car travel lanes narrowed on both side of Conway Avenue to accommodate bike lanes. Existing curb-to-curb dimensions and median to remain unchanged.
- 6 3M CAMPUS**

EXISTING CONDITION



MAPLEWOOD BRIDGE CONCEPT

The Maplewood Bridge is a grand vision that would be initiated by the City of Maplewood to connect the Battle Creek neighborhood and Battle Creek Regional Park to the station.

Potential bridge concept elements include:

- A pedestrian and bicycle trail over I-94 to earthen mounds with gently sloped ramps on the north side of the station and on the south side of the freeway along either Sterling Avenue or Hudson Place.
- Access to Battle Creek Regional Park with a trail along the west side of Sterling Avenue within an existing gas-line easement or along Hudson Place.

Figure 30. Maplewood Bridge Crossing

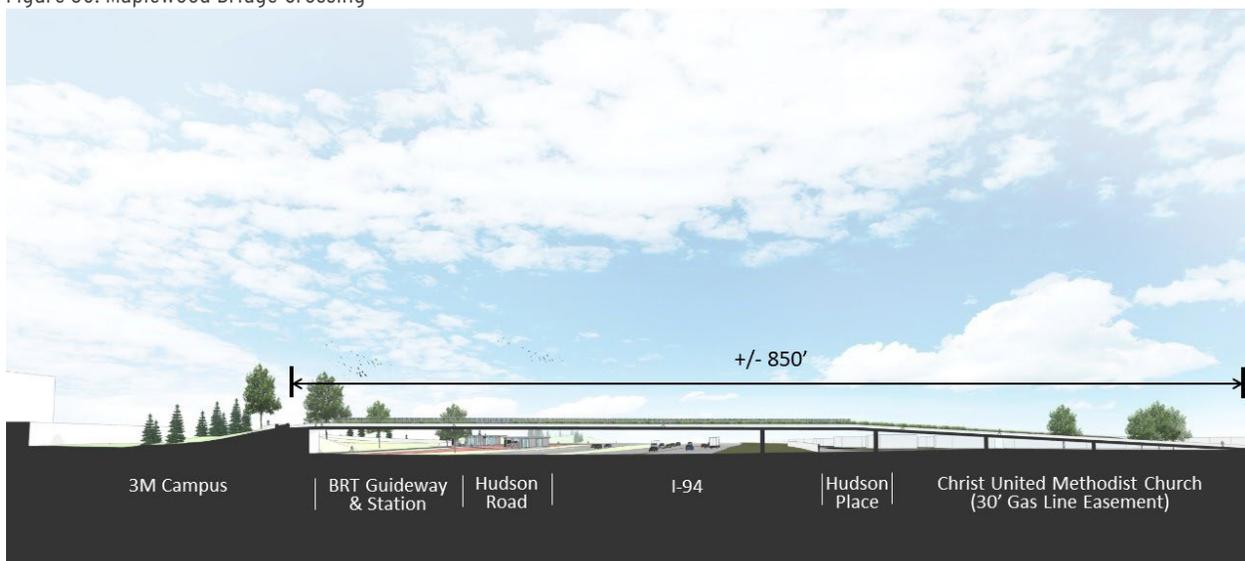


Figure 31. Maplewood Bridge Concept Plan and Elements

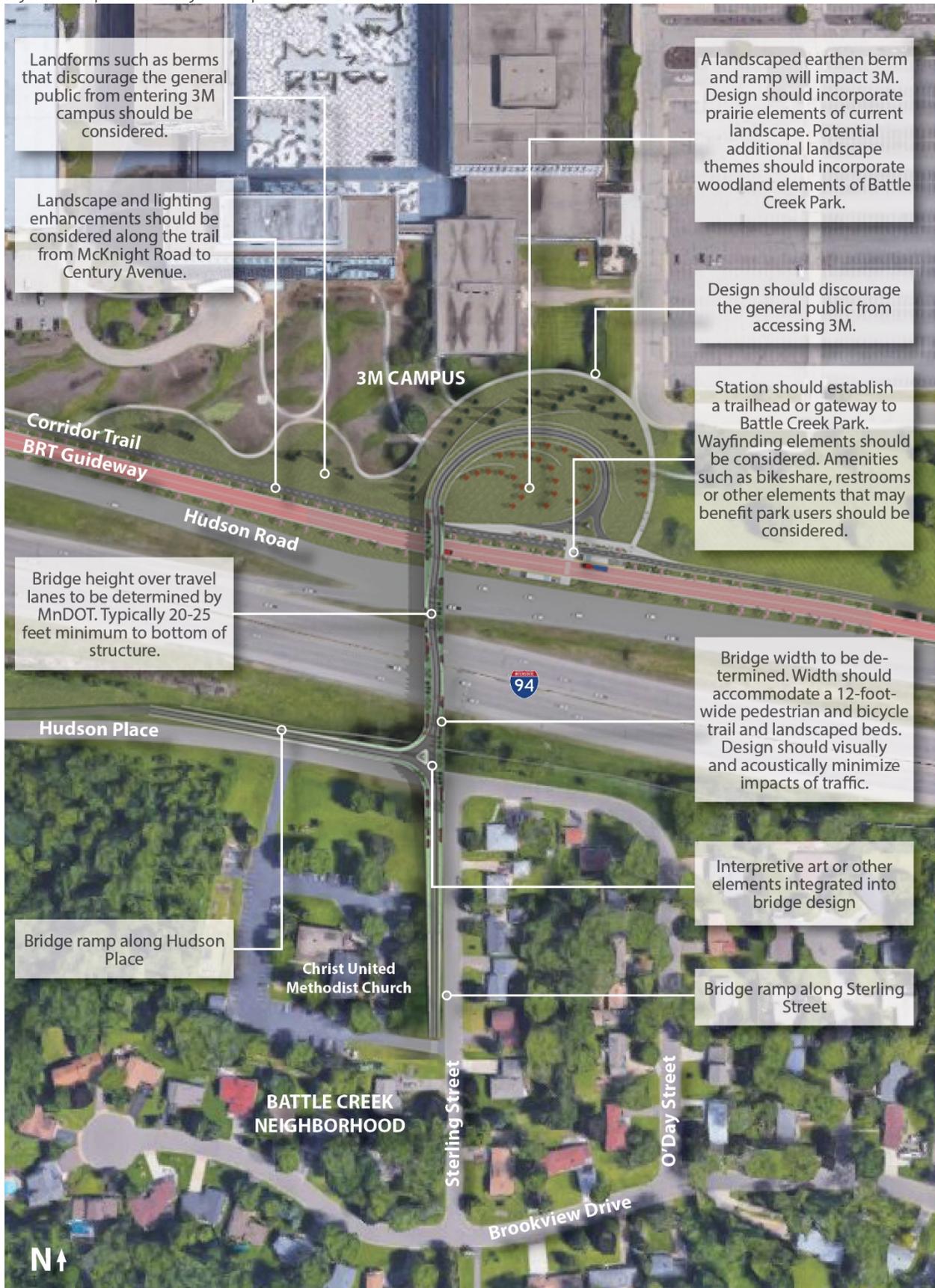


Figure 32. Maplewood Station

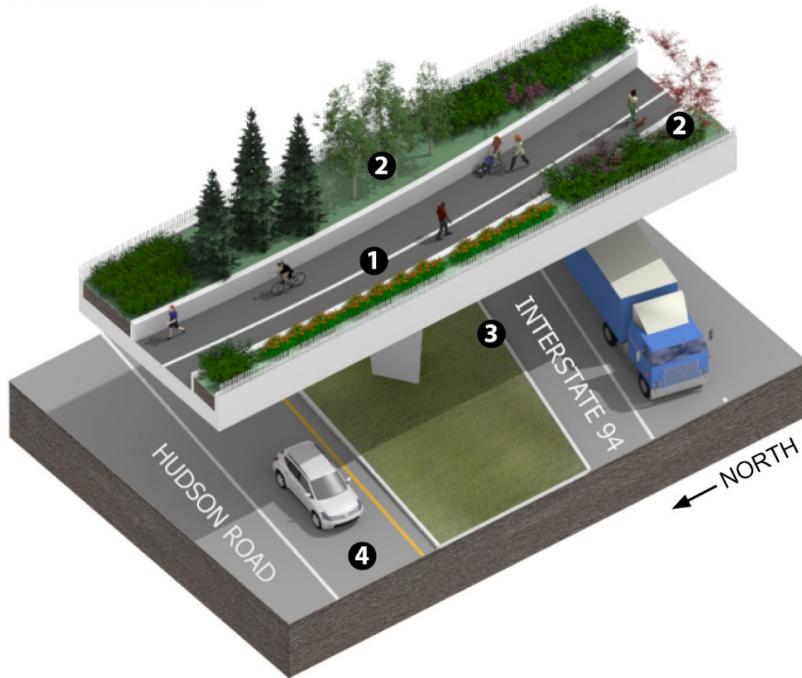


Figure 33. Maplewood Bridge Concept



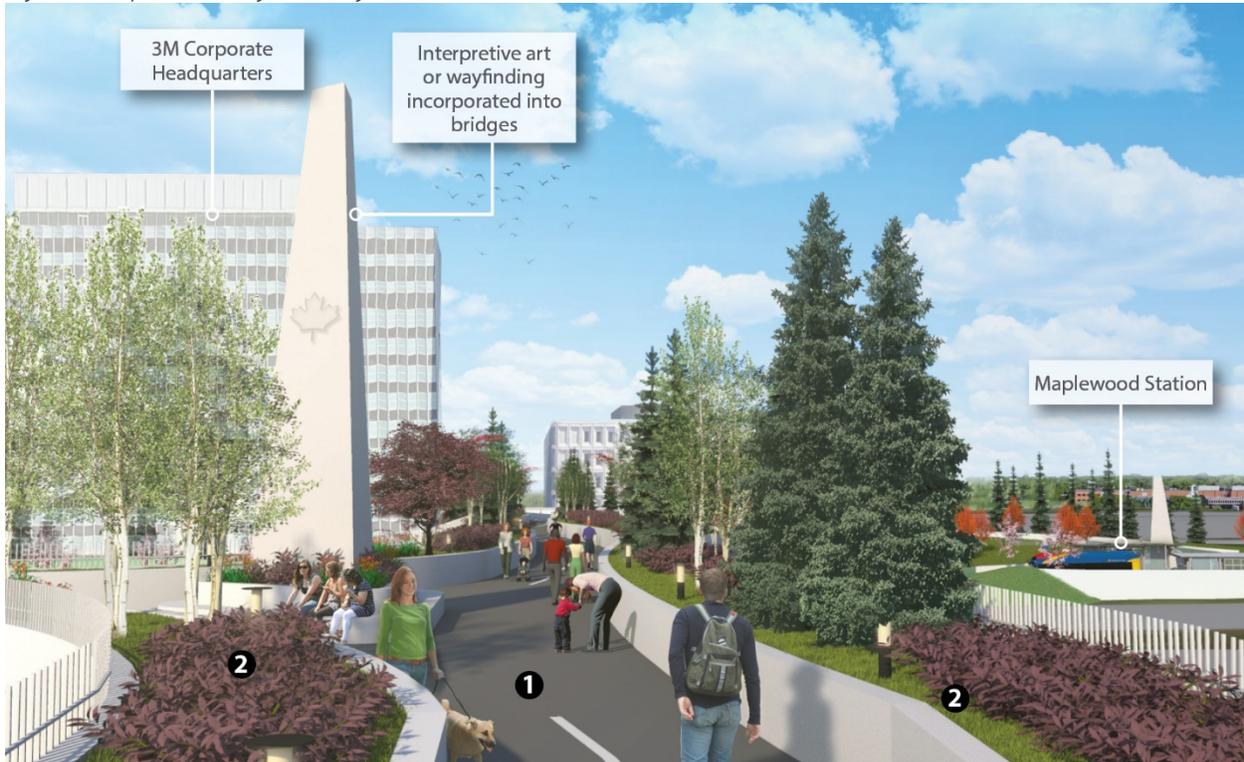
Figure 34. Maplewood Bridge Section

PLANNED CONDITION



- 1** MULTI-USE TRAIL
12-foot-wide pedestrian and bicycle trail that can accommodate service and emergency vehicles only.
- 2** BRIDGE LANDSCAPING
Landscaping in planting beds screens trail users from I-94.
- 3** INTERSTATE 94
Bridge height over Interstate 94 to be determined by MnDOT.
- 4** EXISTING HUDSON ROAD

Figure 35. Maplewood Bridge (Looking North)



NEIGHBORHOOD ACCESS ROUTE

Improvements to the Burns Avenue/Hudson Place Neighborhood Access Route should include a 6-foot-wide sidewalk on the south side of Burns Avenue, crossing to the north side at Crestview Drive to then connect to the Maplewood Bridge. Other enhancements on this route should include wayfinding signs at intersections with existing trails and bicycle 'sharrow' lane markings at intersections.

The Burns-Hudson Place route is a low-stress walk and bike connection from Battle Creek Regional Park to the Maplewood Bridge.

Figure 36. Hudson Place Existing Conditions





DEVELOPMENT PLAN

The Development Plan identifies the type, arrangement, intensity, and character of land uses that contribute to the creation of an Employment Station. Each of the station area cities are addressed separately. The Development Plan should serve as the template to guide new BRTOD policies and regulations.

The Maplewood Station has been identified as an Employment Station.

The Development Plan includes transit-oriented employment, regional park recreational amenity and transit-supportive mixed-use commercial and multi-family uses.

EMPLOYMENT

The existing campus was designed and developed for access by car. In the future, building siting and campus pedestrian and bicycle circulation should capitalize on the BRT station and trail access to and from campus. With improved connection between the station and existing and future campus development, BRT offers an opportunity to reduce the amount of employee parking. The type, amount, and location of future development will be determined by 3M.

PARKS AND RECREATION

Planned Battle Creek Regional Park enhancements should consider the needs of those arriving from the Maplewood station. Existing facilities and the siting of new facilities should provide direct and accessible connections to station access routes. Amenities that support park users coming by transit should consider locating additional bike racks, secured bike parking areas, restrooms and other facilities.

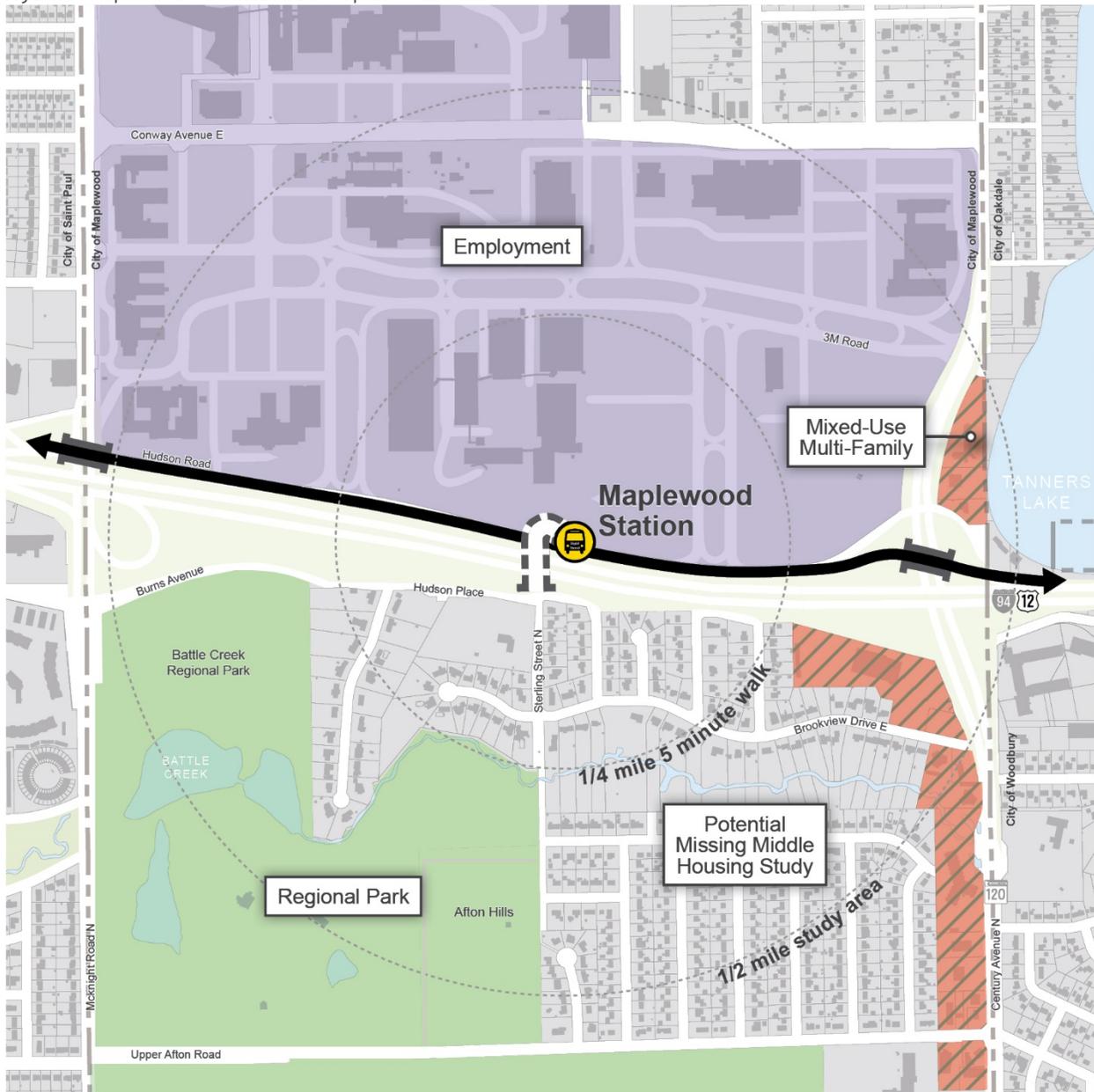
MIXED-USE COMMERCIAL AND MULTI-FAMILY

The 2040 Comprehensive Plan envisions 50 percent of sites utilized for multi-family and 50 percent of sites utilized for commercial development.

MISSING MIDDLE HOUSING STUDY

To support additional transit riders and increased housing density near the station, the City of Maplewood should initiate a housing study and establish a stakeholder committee to explore infill housing, accessory dwelling units (ADU), duplex, triplex, and townhomes for existing single-family residential neighborhoods within a half-mile of the station.

Figure 37. Maplewood Station Area Development Plan



- | | | | |
|--|---------------------|--|--------------------|
| | Station Location | | MnDOT Right of Way |
| | BRT Guideway | | Open Space |
| | Mixed-use Community | | Water Body |
| | Employment | | Building |
| | Park | | Parcel |
| | Bridge | | |
| | Potential Bridge | | |

400 ft
200 ft 800 ft

GOLD LINE
PARTNERS



IMPLEMENTATION STRATEGY

The Implementation Plan identifies the strategies needed to realize the Maplewood station Circulation and Development Plans.

Projects

Implementation projects are organized into two categories—circulation projects and development projects.

- Circulation projects provide safe and direct neighborhood access to the station and improve the comfort and character of access routes.
- Development projects are regulatory recommendations for the policy updates and additional planning or technical studies that are necessary to allow for circulation projects and to enable transit-oriented development.

Action Plan and Schedule

The actions necessary to initiate and complete the implementation projects within specific timelines are identified.

CIRCULATION PROJECTS

Station Access Improvements

Maplewood Bridge Feasibility Study

Station Access Project Actions

1. Identify funding for Conway Avenue and Upper Afton Road streetscape design and engineering.
2. Prepare work scope, issue RFP and select consultants.
3. Prepare and review 30% Maplewood Bridge design, streetscape design and preliminary cost estimate.
4. Identify streetscape funding.
5. Prepare contract documents, approvals, and finalize cost estimates.
6. Issue RFP and select contractor.
7. Build station access improvements.

Schedule

The City will determine timing for station access improvements.

Maplewood Bridge Feasibility Study Project Actions

1. Identify funding for Maplewood Bridge Feasibility Study and outreach to potential partners.
2. Initiate partners outreach and Feasibility Study
3. Prepare Feasibility Study work scope, issue RFP and select consultants.
4. Prepare and review 30% Maplewood Bridge design, streetscape design and preliminary cost estimate.
5. Identify Maplewood Bridge and streetscape funding.
6. Finalize Feasibility Study and recommendations for next steps.

Schedule

The City will determine timing for initiating and completing the Maplewood Bridge Feasibility Study.

DEVELOPMENT PROJECTS

Project Actions

1. Identify funding for a Missing Middle Housing Study and preparation of Comprehensive Plan and Zoning amendments.
2. Prepare work scope, issue RFP and select consultant(s).
3. Prepare study, draft and finalize policies, and ordinances.
4. Planning Commission and public review drafts and final recommendation to City Council.
5. Metropolitan Council provides Comprehensive Plan administrative review.
6. Council approves and adopts Comprehensive Plan and Zoning Ordinance amendments.

Schedule

The City will determine timing for initiating and completing Missing Middle Housing Study, and Residential Infill Comprehensive Plan and Zoning Amendments.

Missing Middle Housing Study

Policy and Regulatory Amendments

Figure 38. Maplewood Station Area Projects



