

16 AVENUE NW

STREETSCAPE MASTER PLAN

The City of Calgary
Main Streets Program



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MAIN STREETS PROGRAM

16 AVENUE NW STREETScape MASTER PLAN

Owner:

Urban Initiatives

Prepared by:

ISL Engineering and Land Services Ltd.

Status:

Concept Design Phase 1

Web:

www.calgary.ca/mainstreets

EXECUTIVE SUMMARY

BACKGROUND AND PROCESS

The 16 Avenue NW Streetscape Master Plan (the Master Plan) provides an overall vision for the re-imagining of one of Calgary's 24 main streets. It was prepared concurrently with a Transportation Corridor Study for 16 Avenue NW from Sarcee Trail to Crowchild Trail (the Corridor Study). The two initiatives, collectively known as the Future of 16 Avenue project, were a collaborative effort within The City of Calgary to provide a comprehensive and consistent vision that recognizes the dual roles of 16 Avenue NW as both a significant east-west transportation corridor and an urban main street. The Master Plan addresses the segment of 16 Avenue NW between 49 Street NW and 43 Street NW, within the community of Montgomery.

With its surrounding urban context, connection with key community amenities and complementary function to the parallel Bowness Road (Montgomery) Main Street, there is good opportunity to enhance the 16 Avenue NW public realm. This Master Plan can act as a catalyst for activating the street to its full potential as a vibrant, urban commercial street that also continues to accommodate city-wide transportation needs.

A comprehensive engagement process was undertaken for the Future of 16 Avenue NW project with the overall goal of understanding stakeholder perspectives and using them to influence development of the project recommendations. Through the engagement process the project team committed to engage with stakeholders to learn about their views, concerns and ideas, consider or incorporate their input to the extent possible, and report back on how feedback impacted the decisions and outcomes. Three phases of engagement were undertaken based on the themes of Discover, Explore and Reveal, from early 2020 through mid-2021.

The overall principles for the joint Future of 16 Avenue NW project were based on the common principles of The City of Calgary Main Street Program, with project-specific goals developed and confirmed through public engagement in four areas:

- » Social + Healthy Lifestyle
- » Mobility + Function
- » Character + Identity
- » Economic Vitality

RIGHT-OF-WAY AND DEVELOPMENT CONSIDERATIONS

The City of Calgary Land Use Bylaw 1P2007 identifies a public realm setback of 10.363m along the south side of 16 Avenue NW from 46 Street NW to MacKay Road. This bylaw setback accommodates public realm improvements, pedestrian environment improvements, and context-specific mobility improvements. Once the bylaw setback is acquired by or dedicated to The City in future, a total right-of-way width of about 36.6 m will be available for the street. Council approval for the Future of 16 Avenue NW project in July 2021 re-affirmed the protection of the bylaw setback as a key recommendation to ensure future flexibility for development of the corridor. This Master Plan recognizes this opportunity for future flexibility by illustrating how the streetscape can be improved through two scenarios, one remaining within existing ROW and the other with full use of the bylaw setback.

Throughout the Future of 16 Avenue NW project, the interface with adjacent land uses was a central consideration. The lots on the south side of 16 Avenue NW are particularly affected by the bylaw setback, which will typically reduce the lot depths on two blocks from about 36.6 m to 26.4 m. To assess the redevelopment potential of the most impacted block between 46 Street NW and Monterey Avenue, a developability review was prepared including an architectural assessment and a market sounding exercise. The review concluded that, due to high traffic volumes and lack of all-day on-street parking, 16 Avenue NW is not likely to become a typical Main Street like Bowness Road in its current state. Development types normally associated with a Main Street (mixed-use, specialty retail, and residential) would likely have a low probability of success. The more likely development types are expected to be medical- and travel-oriented commercial / office uses, which is consistent with both the land use zoning and recent development activity on the street. The architectural assessment of the narrower lots did also confirm that they can accommodate viable floor plates and, if the lot is wide enough, a single level of underground parking.

While the developability review did confirm that certain development types and site plans remain viable, the lots on these blocks are nevertheless recognized to be constrained. A degree of flexibility by The City is recommended when reviewing future development applications on these blocks.

MASTER PLAN OUTCOMES

16 Avenue NW will evolve over time. The Future of 16 Avenue NW project and this Streetscape Master Plan have connected elements from prior plans on nearby streets including the Bowness Road (Montgomery) Main Street into a comprehensive corridor plan at three planning horizons – short-, medium- and long-term.

Through the project process, there was a remaining degree of uncertainty on the benefits and impacts of providing additional travel lanes on 16 Avenue NW in future, hence a flexible approach was ultimately recommended and approved by City Council which would continue to protect the development setback area through the Land Use Bylaw, but defer final decision-making on the nature of the long-term corridor. Nonetheless, the big moves and outcomes for the 16 Avenue NW Main Street remain applicable to the full range of future scenarios, and this Master Plan can provide an effective future blueprint for implementation. The Master Plan is intended to guide future redevelopment along 16 Avenue NW and provides an overall intent and vision for the street, though is not intended to be used or interpreted literally.

SHORT-TERM STRATEGIES – FOCUS ON SAFETY (0-5 YEARS)

The recommended short-term improvements have a focus on safety and were coordinated during the project with City Roads to include local-scale interventions that can be implemented in conjunction with a planned re-paving project in Montgomery in 2021, and within existing available funding envelopes.

MEDIUM-TERM STRATEGIES – FOCUS ON PUBLIC REALM AND CONNECTIVITY (5-20 YEARS)

Over time, the 16 Avenue NW corridor will continue to evolve to enhance and connect area communities. Recommended medium-term improvements focus on enhancement of the public realm and connectivity, providing public investment to spur ongoing private investment and redevelopment on the Main Street. The medium-term improvements form the basis of this Master Plan and reflect two scenarios:

Existing ROW - This scenario contemplates changes that can be made without significant new property impacts, and which can retain flexibility to respond to differing development initiatives as they unfold with time. The constraint of working within the existing road right-of-way will by necessity leave some elements of the streetscape incomplete.

With Bylaw Setback - As redevelopment occurs or The City acquires the bylaw setback, there will be the opportunity to progressively provide additional activation of the bylaw setback area on the south side of 16 Avenue NW. As more sites take part, these individual pockets of activation can work together and incorporate “linear park” elements to engage Main Street users. The Master Plan provides an overall vision for these public realm improvements while recognizing that flexible use of the bylaw setback area in response to specific land uses and development proposals remains a valued outcome.

LONG-TERM STRATEGIES – FOCUS ON COMPLETING THE CORRIDOR (20+ YEARS)

In the long-term, 16 Avenue NW is expected to continue to support significant growth in northwest Calgary. From a transportation network perspective, 16 Avenue NW is one of only two continuous east-west corridors between downtown Calgary and Stoney Trail North and is forecast by The City to have significant traffic growth into the future consisting of an ongoing mix of local, regional, and city-wide traffic. Protecting the right-of-way for 16 Avenue NW by retaining the bylaw setback on the south side from 46 Street NW to MacKay Road supports future flexibility to further develop the corridor based on how development and travel patterns evolve over the next 20+ years. Potential long-term development of 16 Avenue NW is primarily addressed in the separate Transportation Corridor Study report.

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1.0 INTRODUCTION

STREETSCAPE MASTER PLAN

The 16 Avenue NW Streetscape Master Plan provides an overall vision for the re-imagining of one of Calgary's 24 main streets. It takes the big picture macro-scale ideas of Calgary's Municipal Development Plan and applies them in a local scale plan that links land use, place making and transportation.

This Master Plan is intended as a high-level design guideline for public realm improvements such as sidewalks, landscaping, lighting, public furniture, pedestrian crossings, and other areas of urban design.

16 Avenue NW is a unique Main Street in that it is part of the wider 16 Avenue Corridor, the main east-west transportation link in north Calgary. It is a major goods movement corridor, one of only three major crossings of the Bow River in northwest Calgary, and a gateway to Calgary connecting west to the Trans Canada Highway. This Streetscape Master Plan was prepared jointly with a Transportation Corridor Study for 16 Avenue NW from Sarcee Trail to Crowchild Trail, with the combined Future of 16 Avenue NW project providing an integrated vision for the corridor and the Main Street segment in Montgomery over the short-, medium- and long-term. The transportation corridor component of the project has been separately documented in the report entitled "16 Avenue NW Corridor Study," which provides additional technical context that is complementary to this Streetscape Master Plan. Recommendations supporting the collective directions for the Future of 16 Avenue NW project were approved by City Council on July 5, 2021.

With its surrounding urban context, connection with key community amenities and complementary function to the parallel Bowness Road (Montgomery) Main Street, there is good opportunity to enhance the 16 Avenue NW public realm from 49 Street NW to 43 Street NW. This Master Plan can act as a catalyst for activating the street to its full potential as a vibrant, urban commercial street that also continues to accommodate city-wide transportation needs. It is an opportunity to make Calgary equitable by implementing best practices in accessibility and offering a range of mobility choices.

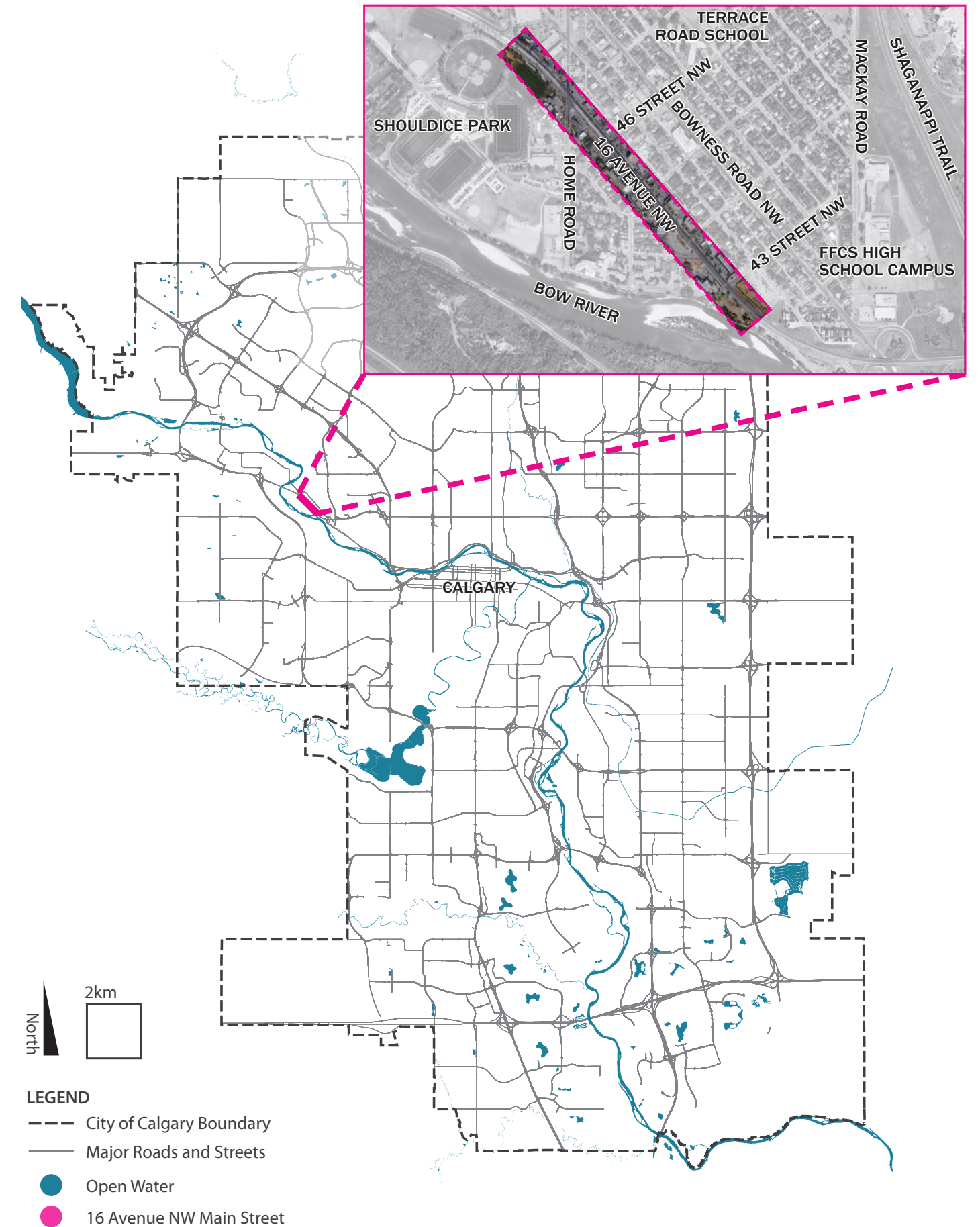
Recent work in the area includes The City's construction of the 16 Avenue NW and Home Road upgrade project in 2017, which provided operational and streetscape improvements aimed to address public concerns regarding safety and aesthetics at the intersection, and the implementation of a bikeway along Home Road. This Master Plan will also build on the work proposed in the Bowness Road (Montgomery) Main Street which started construction in 2020 (with an anticipated completion date of 2022).

MASTER PLAN OVERVIEW

The 16 Avenue NW Streetscape Master Plan:

- » Develops goals and ideas for the street through meaningful community engagement, technical review and application of City policy
- » Provides a concept plan that improves the public realm through strategic and cost-effective public investment, which in turn can act as a catalyst for private investment
- » Provides guidance to inform future development interface with the street
- » Identifies short, medium and long-term priorities for implementation

The location of the Master Plan within Calgary is illustrated on Map 1.1.



MAP 1.1 - MASTER PLAN LOCATION

1.1 MASTER PLAN CONTEXT AND PURPOSE

The 16 Avenue NW Streetscape Master Plan (the Master Plan) was prepared concurrently with a Transportation Corridor Study for 16 Avenue NW from Sarcee Trail to Crowchild Trail (the Corridor Study). The two initiatives, collectively known as the Future of 16 Avenue project, were a collaborative effort within The City of Calgary to provide a comprehensive and consistent vision that recognizes the dual roles of 16 Avenue NW as both a significant east-west transportation corridor and an urban main street. The Master Plan addresses the segment of 16 Avenue NW between 49 Street NW and 43 Street NW, within the community of Montgomery.

The Master Plan is one step of a multi-year collaborative and interdisciplinary city-building process which has included engagement, market analysis, land-use re-designations, local plan amendments, and infrastructure capacity assessments. The Master Plan communicates the big moves and provides information for future designers to apply these design moves as private development and City infrastructure investment unfold in future. As the long-term recommendations of the plan include the opportunity to retain flexibility on the long-term shape of the street, the Master Plan can also be considered a living document that will continue to be built upon as future decisions are made. The overall process for Main Street implementation on 16 Avenue NW is illustrated in Figure 1.1.



FIGURE 1.1 - 16 AVENUE MAIN STREET PROCESS

1.2 BACKGROUND REVIEW

The Master Plan was developed in the context of existing plans, policies, and data. Table 1.1 outlines the primary sources of background information that were reviewed and considered.

TABLE 1.1 - POLICY TAKEAWAYS

Report/Policy	Key Takeaways for 16 Avenue NW
Montgomery Area Redevelopment Plan (2005, Updated 2020)	Identifies 16 Avenue NW in Montgomery as a Highway Commercial area.
Land Use Bylaw (2007)	Identifies a development setback of 10.363 m on the south side of 16 Avenue NW from 46 Street NW to MacKay Road for future roadway improvements.
Municipal Development Plan (2009, Updated 2020)	Identifies 16 Avenue NW as a Neighbourhood Main Street anchored by Shouldice Park and the Bow River
Calgary Transportation Plan (2009, Updated 2020)	Identifies 16 Avenue NW as an Urban Boulevard and part of the Primary Goods Movement and Primary HOV Networks.
Cycling Strategy (2011)	Identifies a range of actions for improving the development and maintenance of bicycle-friendly infrastructure, some of which can directly inform design choices for 16 Avenue NW.
Calgary Transit – Route Ahead (2012)	Identifies the need for a bus rapid transit (BRT) Route 305 (Bowness) enhancements. No primary transit services are identified along 16 Avenue NW itself.
engage! Policy CS009 (2013)	Identifies guiding principles and procedures for meaningful public engagement, recognizing the decisions are improved by engaging citizens and stakeholder groups.
Complete Streets Guide (2014)	Gives guidance on how to incorporate Complete Streets concepts (including enhanced public realm) in the reconstruction of existing streets, which can directly inform design choices for 16 Avenue NW.
Pedestrian Strategy – Step Forward (2016)	Identifies a range of actions and priorities for improving pedestrian comfort and safety, many of which can directly inform design choices for 16 Avenue NW.
Calgary Goods Movement Strategy (2016)	Identifies 16 Avenue NW as a primary goods movement corridor and as a thoroughfare that needs improvements to facilitate such activity.
Bowness Road Streetscape Master Plan (2020)	Identifies need for public realm improvements along Bowness Road within Montgomery with enhanced connections between Bowness Road and 16 Avenue NW.

1.3 PRINCIPLES, GOALS AND EVALUATION PROCESS

The overall principles for the joint Future of 16 Avenue NW project were based on the common principles of The City of Calgary Main Street Program, which were found to align relatively well with the core principles of the Transportation Corridor Study Policy. To support each principle, project-specific goals were then developed collaboratively through workshops by City team members and through community engagement. The resulting eleven project goals addressed the needs of both the Streetscape Master Plan and the Transportation Corridor Study, and therefore notably included some goals that would not be typical of the Main Streets Program (specifically, Goals 5 and 6 below).

Detailed technical evaluations using the project goals are summarized in the “16 Avenue NW Corridor Study” report, which ultimately led to the Council-approved recommendations which retained a flexible long-term approach for development of 16 Avenue NW. For brevity, this document focuses on these outcomes as they relate to the Streetscape Master Plan and how they support the principles and goals in the context of the Main Street Program. Additional information is available in the Corridor Study report if needed for future reference.



Social and Healthy Lifestyle	Mobility and Functionality	Character and Identity	Economic Vitality
Principles			
<i>Positively impact the social environment by enhancing connections that encourage healthy lifestyles, support biodiversity, and provide access to parks and pathways.</i>	<i>Improve 16 Avenue NW for those who walk, wheel, drive, and take transit to safely connect people to community and city-wide destinations.</i>	<i>Establish a sense of place and offer memorable experiences for both residences and visitors.</i>	<i>Boost economic vitality by encouraging redevelopment opportunities, promoting investment and bringing more people to destinations along 16 Avenue NW.</i>
Goals			
<ol style="list-style-type: none"> 1. Improve the comfort of public spaces by enhancing the tree canopy. 2. Maintain the health and resilience of parks and green spaces with plants that reflect the natural landscape. 3. Design public spaces that are vibrant, feel safe and encourage social connection. 	<ol style="list-style-type: none"> 4. Improve walking and wheeling connections to key destinations along and across 16 Avenue NW. 5. Improve comfort and access to transit stops or other high occupancy vehicles. 6. Facilitate efficient movement of people and goods along and across 16 Avenue NW, and accommodate future growth and development. 7. Design walking and wheeling facilities to be safe, comfortable and accessible. 	<ol style="list-style-type: none"> 8. Provide opportunities to showcase the diversity of communities, residents and businesses. 9. Reflect the unique community identity of Montgomery in the Main Street design including fostering a sense of arrival, and encouraging people to stop, see and stay. 	<ol style="list-style-type: none"> 10. Create an adaptable public realm to improve street interface, stimulate investment and encourage business diversity. 11. Provide parking opportunities that sustain access to businesses.

2.0 EXISTING CONDITIONS ASSESSMENT

The Master Plan site is an existing roadway located along 16 Avenue NW between 49 Street NW and 43 Street NW in Montgomery.

2.1 NEIGHBOURHOOD CONTEXT

Montgomery began as a separate town that grew outside Calgary for many decades before being annexed into the city in the 1960s. It is bound by Shaganappi Trail to the east, 32 Avenue NW to the north, and the Bow River to the west and south. These major roads and natural features create boundaries around the community which require special focus on connectivity beyond. 16 Avenue NW runs through the heart of Montgomery and was originally developed as part of the historic Bowness Road corridor linking Calgary, Montgomery and Bowness.

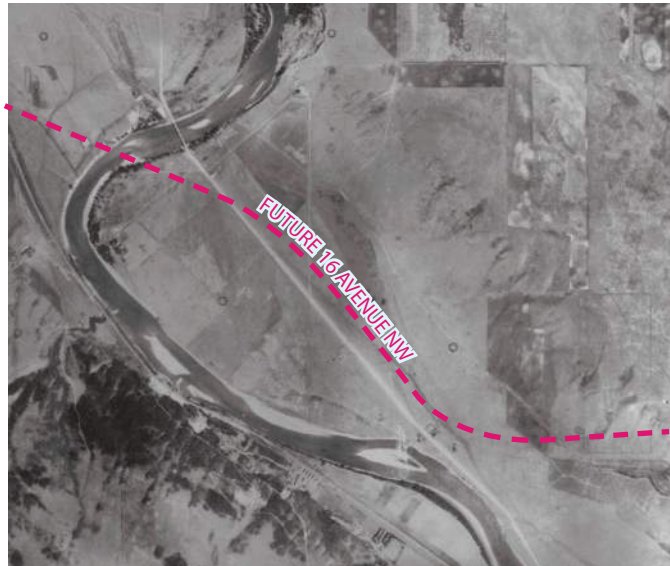


FIGURE 2.1 - 1924 AERIAL TOWN OF MONTGOMERY



FIGURE 2.2 - 1946 SHOULDICE PARK SUBDIVISION PLAN

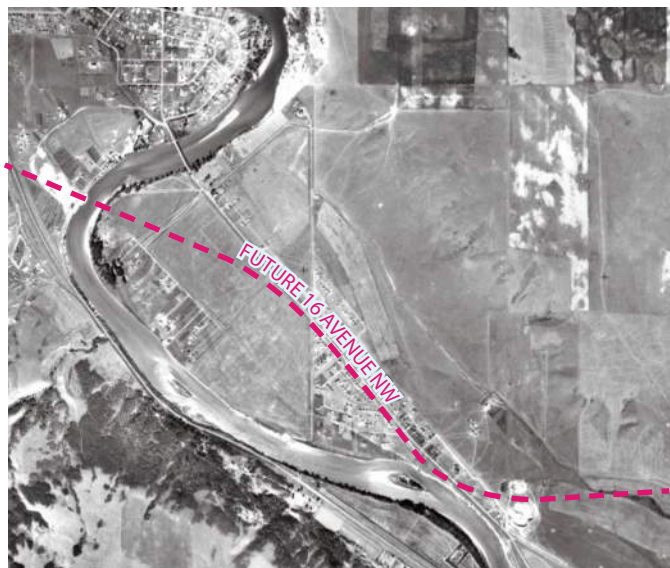


FIGURE 2.3 - 1948 AERIAL TOWN OF MONTGOMERY

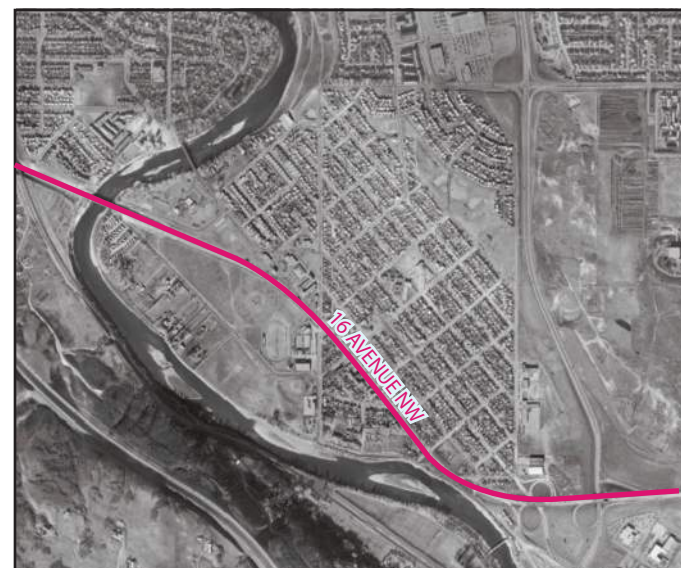


FIGURE 2.4 - 1979 AERIAL MONTGOMERY COMMUNITY

This changed significantly in the 1950s when Bowness Road was shifted two blocks north and the original road segment was connected to a new river crossing as part of the Trans Canada Highway route through Calgary.

Figure 2.1 shows a 1924 aerial of the Town of Montgomery. The future 16 Avenue NW is centred in the photo and is part of the prominent Bowness Road thoroughfare. The Town of Montgomery was established in 1911 and at this point in time is mostly open space and farm land.

Figure 2.2 is a 1946 plan for future block subdivisions in Shouldice Park. 16 Avenue NW (The Trans Canada Highway) is the main east-west road and Bowness Road NW the main residential east-west road, to the upper-right of the plan.

Figure 2.3 is a 1948 aerial photo of the Town of Montgomery with the future 16 Avenue NW and Bowness Road in the centre of the image and residential and roadway development starting in Bowness and Montgomery. Urban expansion is taking place in Montgomery in these post-war years.

Figure 2.4 is a 1979 aerial photo of the community with 16 Avenue NW in the centre of the image and Shaganappi Trail visible on the right side of the photo. After the Town of Montgomery was officially annexed into the City of Calgary in 1963, urban expansion rapidly occurred. By 1979, Montgomery is now largely built out including the north frontage along 16 Avenue NW. Development is also beginning on the south side of 16 Avenue NW. Shouldice Athletic Park has been developed with major recreational amenities.

Figure 2.5 is a 1995 aerial of the project area with 16 Avenue NW in the centre of the image and Shaganappi Trail visible on the right side of the photo. Most of the surrounding urban area is now built out including Market Mall to the northeast which was previously the landfill for the Town of Montgomery.

Figure 2.6 is a 2019 aerial photo of the community with 16 Avenue NW in the centre of the image and Shaganappi Trail visible on the right side of the photo. With the exception of continuing land use amendments and development around 16 Avenue NW, conditions here are largely as they are known today.

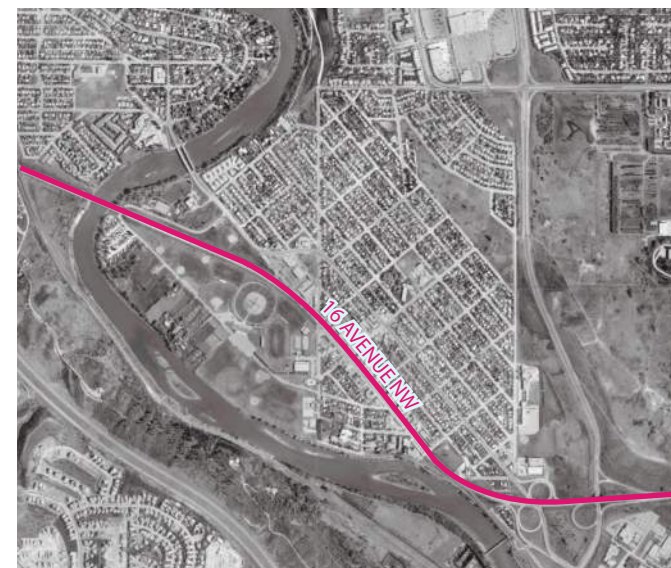


FIGURE 2.5 - 1995 AERIAL MONTGOMERY COMMUNITY



FIGURE 2.6 - 2019 AERIAL MONTGOMERY COMMUNITY

2.2 OPEN SPACE

The 16 Avenue NW Main Street is surrounded by park networks, open space and natural areas. It is bookended by Shouldice Park and the Bow River to the northwest and Edworthy Park and the Bow River to the southeast. 16 Avenue NW is a key connection to the greater Calgary Open Space network. Current streetscape infrastructure limits pedestrian and bicycle access to these open space networks as 16 Avenue NW physically separates the north and south sections of Montgomery, creating a barrier for residents living to the north side to access major park networks. Creating access to open space through linkages in circulation and infrastructure will better connect 16 Avenue NW to open space and natural features.

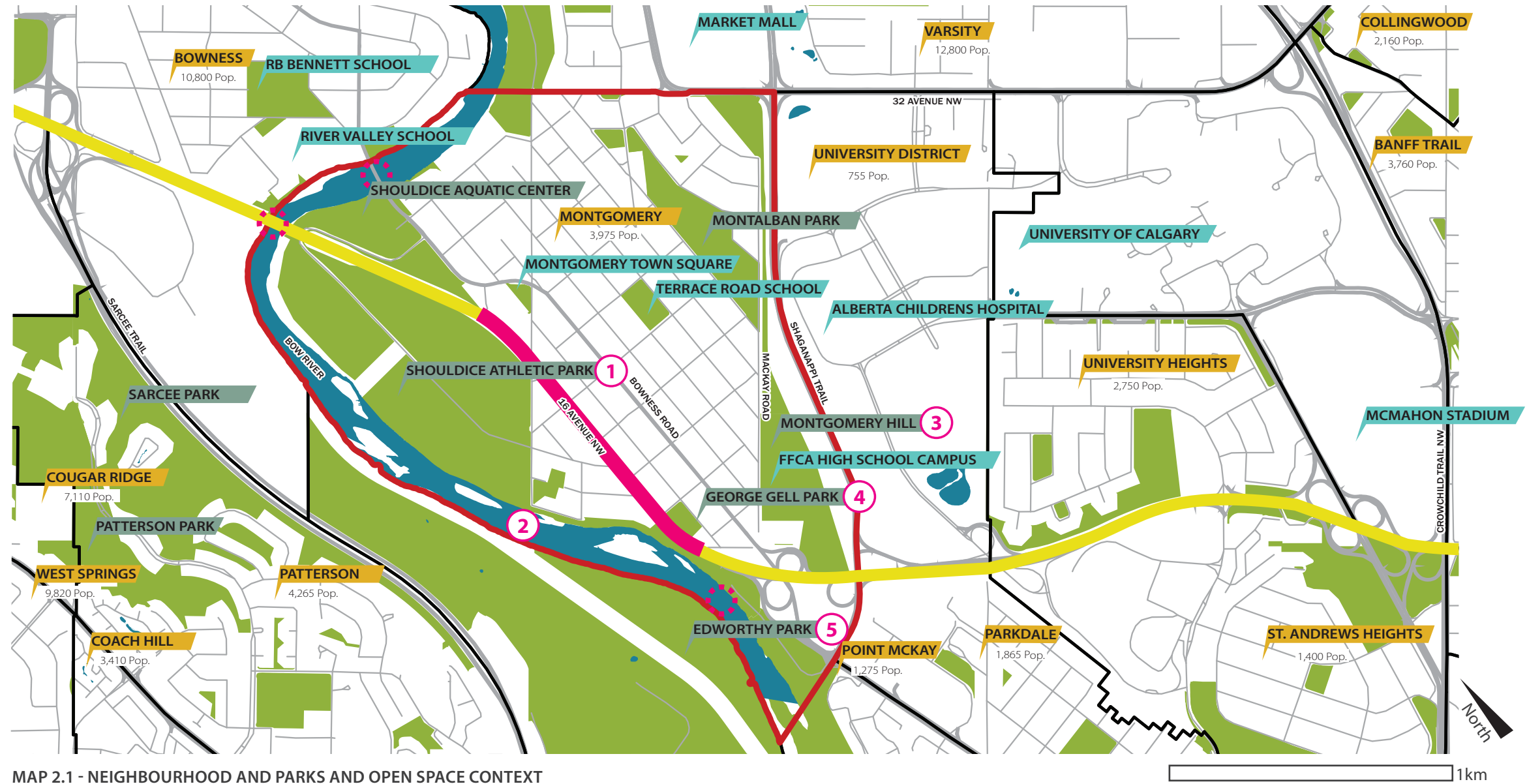
The following are the parks and green spaces in close proximity to the 16 Avenue NW Main Street as shown on Map 2.1:

- ① Both sides of 16 Avenue NW west of Home Road - Shouldice Athletic Park
- ② South of 16 Avenue NW - the Bow River and river pathway system
- ③ East of MacKay Road and west of Shaganappi Trail - Montgomery Hill Park
- ④ East of 43 Street NW - George Gell Park
- ⑤ South of Bow River - Edworthy Park

Other parks, recreation areas, and green spaces in the area include:

- » Lowery Gardens, 175 Bow River pathway (Off Map)
- » Sarcee Park, 398 Patterson Blvd SW
- » WinSport, 88 Olympic Road SW (Off Map)
- » Bowness Park, 8900 48 Avenue NW (Off Map)

Neighbourhood and open space context is illustrated in Map 2.1.



MAP 2.1 - NEIGHBOURHOOD AND PARKS AND OPEN SPACE CONTEXT



2.3 TREES AND VEGETATION

Trees along the 16 Avenue NW Main Street are located sporadically along the full length of the streetscape and are typically in urban conditions. The existing trees are varying in success and health due to harsh pit planting conditions and proximity to traffic. This condition is detrimental to tree growth and success because of continued snow and sediment clearing onto tree areas, root compression over time and climactic effects on the trees throughout the year.

Species located along the 16 Avenue NW Main Street include american elm, brandon elm, shubert chokecherry, trembling aspen, burr oak, crabapple and green ash.

Trees along the streetscape are mainly young - intermediate elm trees, and are generally in poor to average condition. There are a few trees that offer buffering between the sidewalks and the parking lots along the commercial parcels. Further to these conditions, tree planting conditions are poor and generally located in

concrete tree pits. Construction around the trees would likely be fatal; as such it would benefit the streetscape to have new planting completed to the latest version of the City of Calgary specification. Based on these findings, tree protection is not widely recommended on 16 Avenue NW, though a final health assessment of each tree should be completed with Urban Forestry at the detailed design stage. Protection measures should be pursued if a tree is in good health and it is deemed that the tree will have a high chance of survival post-construction.

Typical tree conditions are illustrated in Figures 2.7 to 2.9.

A key exception to this assessment are the trees on the south side of 16 Avenue NW west of Home Road, adjacent to Shouldice Park (refer to Figure 2.10). As these are growing in more natural conditions, they are generally healthier and preservation of this row was prioritized in plan development.



FIGURE 2.7 - TREES IN PITS BETWEEN 43 STREET NW AND 44 STREET NW



FIGURE 2.9 - TREES IN PITS BETWEEN 44 STREET NW AND 45 STREET NW



FIGURE 2.8 - TREES IN PITS IN POOR CONDITION BETWEEN MONTEREY AVENUE NW AND 46 STREET NW



FIGURE 2.10 - TREES IN GROUND EAST OF 49 STREET NW ADJACENT TO SHOULDICE ATHLETIC PARK

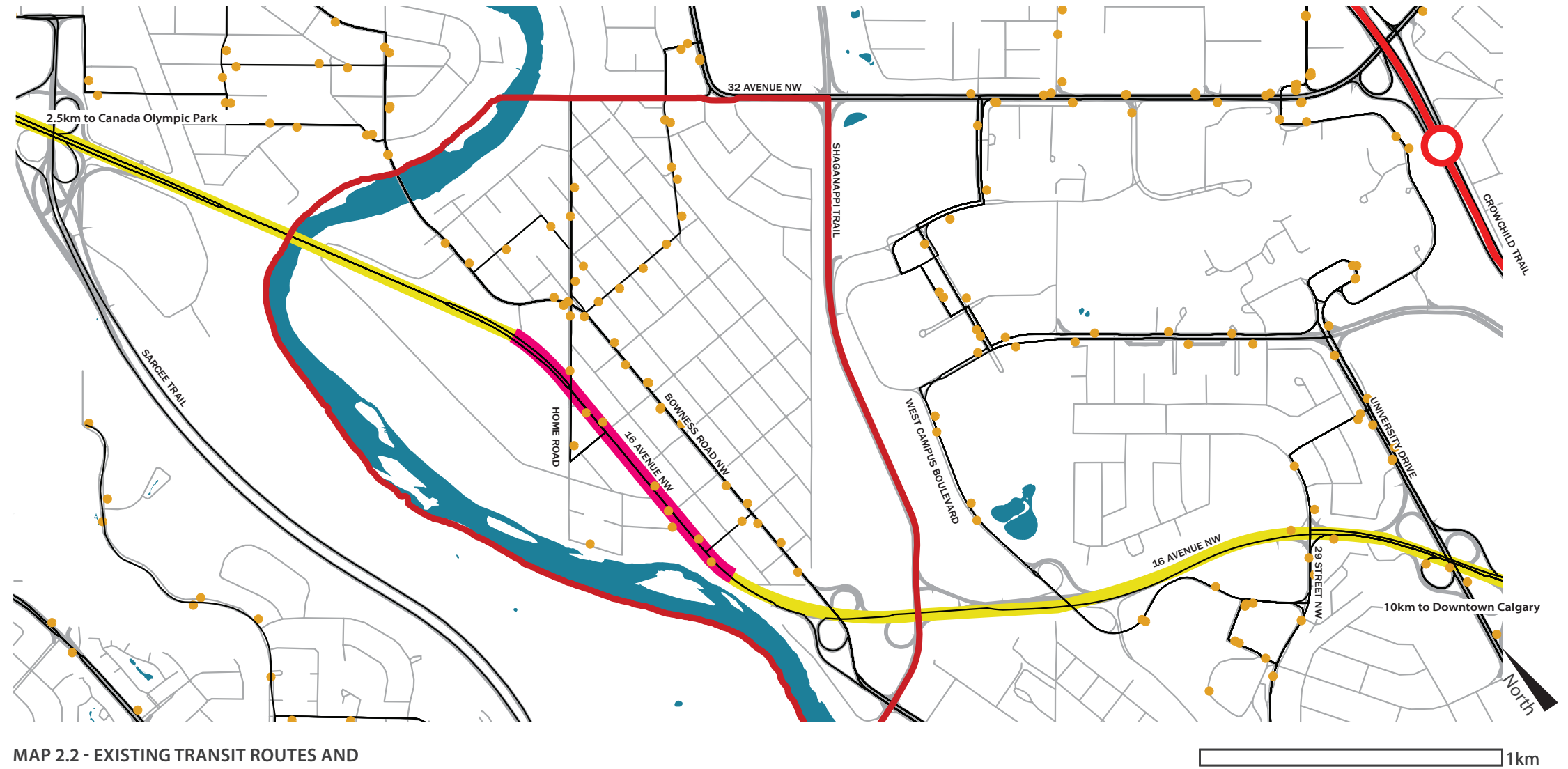
2.4 MOBILITY / GOODS MOVEMENT / TRANSIT

16 Avenue NW has been an important City-wide transportation corridor since it was connected to the Trans Canada Highway in the 1960s. While completion of the north ring road in the last decade lessened the reliance on 16 Avenue NW as a provincial highway connector, it nonetheless continues to serve a key function in Calgary's internal transportation network. It is one of the only continuous east-west roads in north Calgary, is one of just three major Bow River crossings in the northwest, and connects to major City-wide destinations including the University of Calgary and Foothills Medical Centre. The 2020 updates to the MDP and CTP affirmed this function, classifying the section of 16 Avenue NW in Montgomery as an Urban Boulevard and part of the Primary Goods Movement and Primary HOV Networks (refer to Table 2.1). 16 Avenue NW in Montgomery currently carries about 35,000 to 40,000 vehicles per day, and City modeling predicts that this could grow to between 60,000 and 70,000 vehicles per day over the next 30 years, depending on growth patterns. The reduced 50 km/h speed limit in Montgomery and the design elements recommended in this Master Plan are important to help reduce travel speeds and lessen the impact of these high traffic volumes through the community.

Primary transit service (defined as frequent, highly-connected and reliable service) in Montgomery is focused along Bowness Road, including the Bowness BRT (Route 305) between downtown and northwest communities. 16 Avenue NW features two local routes (40 and 408) with stops to service the commercial Main Street and residential areas south of 16 Avenue NW. Although it is lower-frequency, Calgary Transit continues to prioritize reliability and connectivity to nearby primary routes including the MAX Orange BRT and Red Line LRT. The CTP's identification of 16 Avenue NW as part of the future High Occupancy Vehicle (HOV) network is intended in part to facilitate good local transit service.

Existing transit service and bus stop locations are highlighted in Map 2.2.

Existing transit stops and amenities on 16 Avenue NW are in fair to poor condition, as typically shown in Figure 2.11. Upgrading and improving all stop shelters and benches is a key opportunity for Main Street development.



MAP 2.2 - EXISTING TRANSIT ROUTES AND CIRCULATION



FIGURE 2.11 - EXISTING TRANSIT STOP NEAR 46 STREET NW

TABLE 2.1 - 16 AVENUE NW CTP NETWORK CLASSIFICATIONS

CTP Network	16 Avenue NW Streetscape Master Plan Classifications
5A (Walking / Cycling) Network	Not part of the Network
Primary Transit Network	Not part of the Network
Primary Goods Movement Network	Part of the main goods movement network and dangerous goods route. Identified as a corridor requiring improvements to meet its classification in the Goods Movement Strategy
Primary HOV Network	Part of the Primary HOV Network
Road and Street Network	Urban Boulevard Classification

2.5 PEDESTRIAN AND CYCLING CIRCULATION

On-site review and public engagement both identified 16 Avenue NW as a barrier for pedestrians between the north and south areas of Montgomery. Introduction of safer pedestrian crossing opportunities is a key community priority. Prior planning in the area identified the potential for a pedestrian overpass east of 43 Street NW, although the approved Future of 16 Avenue NW project has now removed the overpass and instead prioritized signalized intersections throughout Montgomery which will provide more direct, frequent crossing opportunities along the Main Street.

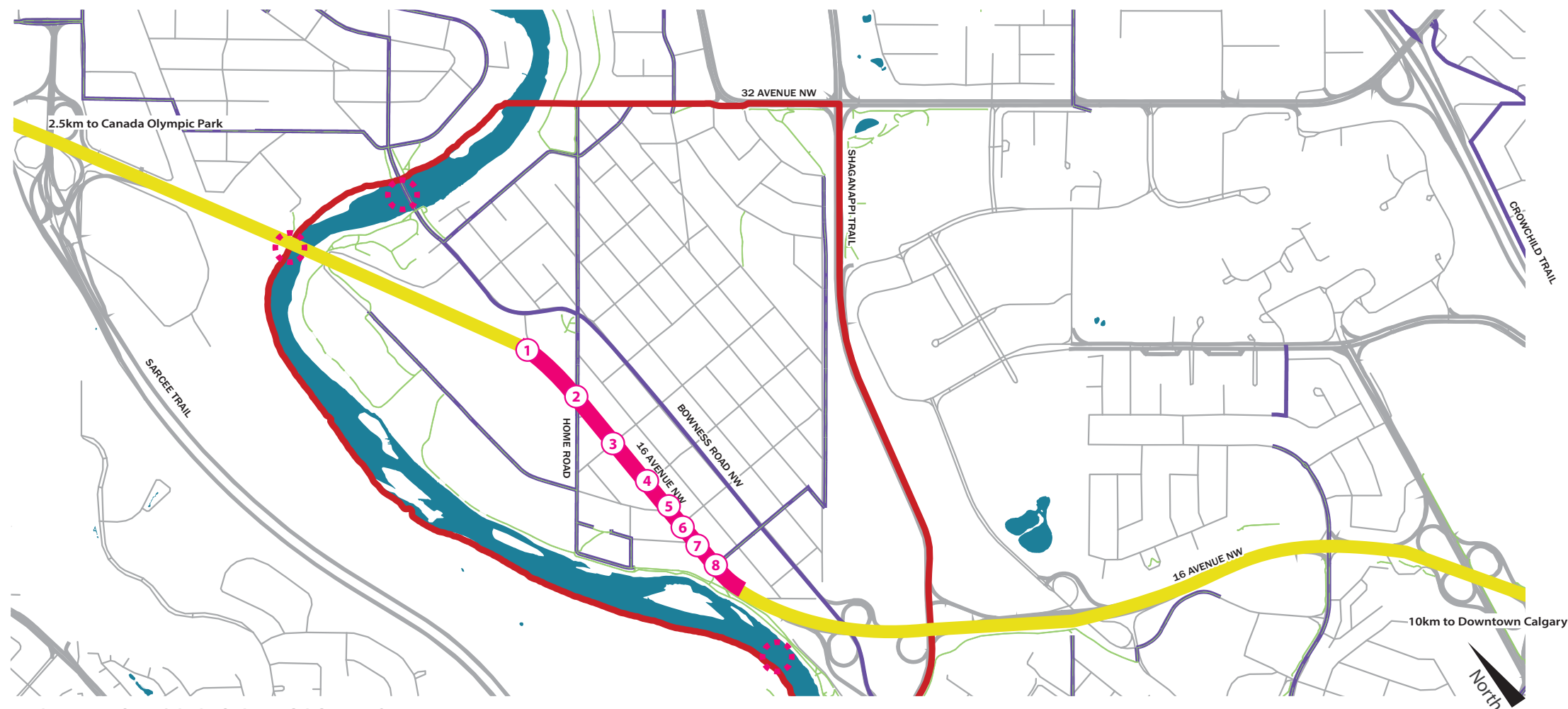
Existing pedestrian circulation and crossing features are highlighted in Map 2.3.

Existing sidewalks on 16 Avenue NW are generally narrow, in poor condition and uncomfortable, with some sections located directly adjacent to traffic. Snow clearing on 16 Avenue NW has been observed to generate windrows or other snow / ice conditions on the sidewalks. Wider, separated sidewalks are a key opportunity for improvement along the Main Street, giving pedestrians a more comfortable, year-round space for movement along the street. Existing sidewalk conditions are shown in Figures 2.12 and 2.13.

Existing conditions on 16 Avenue NW are also particularly problematic for people with mobility challenges. The narrow spaces, placement of signs and street furniture, steep curb cuts and large corner radii all contribute to these challenges, as does poor winter maintenance conditions such as those illustrated in Figure 2.12.

The CTP does not include 16 Avenue NW as part of the 5A (Always Available for All Ages & Abilities) Network for walking and cycling. Primary 5A links near 16 Avenue NW include Bowness Road to the north and the Bow River pathway to the south. This further highlights the need for strong north-south connectivity across 16 Avenue NW, to integrate the Main Street with these key community links. Home Road already features dedicated on-street bike lanes, while 43 Street NW is marked as a cycle route with shared roadway use.

Local cycling accessibility along 16 Avenue NW via a multi-use pathway is also a valuable consideration to ensure that cyclists have a safe route to access the commercial amenities of the area.



MAP 2.3 - EXISTING PEDESTRIAN CIRCULATION



FIGURE 2.12 - TYPICAL SIDEWALK CONDITION ALONG 16 AVENUE NW IN WINTER MONTHS



FIGURE 2.13 - TYPICAL SIDEWALK CONDITION ALONG 16 AVENUE NW IN SUMMER MONTHS

LEGEND

- Major Roads and Streets
- Montgomery Boundary
- Open Water
- 16 Avenue NW Main Street
- 16 Avenue NW Corridor Study
- Existing Bike Network
- Existing Pathway Network
- River Crossings

PEDESTRIAN CROSSINGS

- ① 49 Street NW - No crossing
- ② Home Road NW - Signalized intersection with traffic islands at the northwest and southeast corners.
- ③ 46 Street NW - North-south crosswalk with overhead pedestrian flashers on east side of the intersection.
- ④ 45 Street NW - No crossing
- ⑤ Monterey Avenue NW - North-south crosswalk without signals on west side of intersection.
- ⑥ 44 Street NW - North-south crosswalk with overhead pedestrian flashers on east side of intersection.
- ⑦ Montgomery Avenue NW - No crossing
- ⑧ 43 Street NW - North-south crosswalk with overhead pedestrian flashers on west side of intersection.

* For further analysis on each of the cross streets within the Main Street, please see section 2.6 of the 16 Avenue NW Transportation Corridor Study.

2.6 TRAFFIC SAFETY

A planning-level safety review of 16 Avenue NW and a formal In-Service Safety Review (ISSR) of the Home Road intersection were completed for the Future of 16 Avenue NW project. The objectives of the safety review were to observe the trends of the available recent collision data (2014 - 2018), review safety-related 311 records and observe the physical and operational conditions of 16 Avenue NW. The key findings from the safety review along 16 Avenue NW from 49 Street to 43 Street NW indicate the following:

- » There is traffic congestion and delay along 16 Avenue and crossing streets;
- » There are collisions related to pedestrian and cyclist crossings; and
- » There are a relatively high number of collisions at Home Road generally related to the skewed intersection, traffic congestion, and no protected left turns.

Collision frequency along 16 Avenue NW is illustrated in Figures 2.14 and 2.15. Refer to the “16 Avenue NW Transportation Corridor Study” report for additional information, including recommendations for providing reduced 60 km/h speed limit zones approaching the community on 16 Avenue NW so that travel speeds are further moderated as drivers transition into the main 50 km/h speed zone within Montgomery.

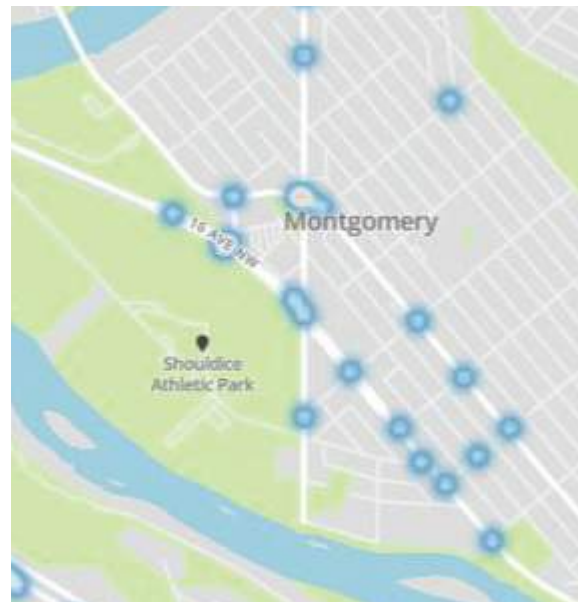


FIGURE 2.14 - MONTGOMERY TRAFFIC INCIDENTS HEAT MAP

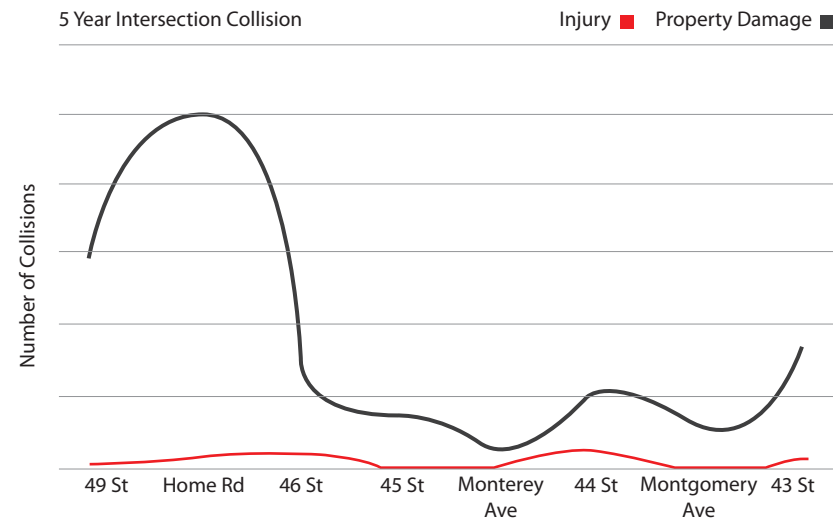


FIGURE 2.15 - COLLISION FREQUENCY BETWEEN 49 STREET NW AND 43 STREET NW

2.7 PARKING

There is no on-street parking along 16 Avenue NW. Surrounding streets provide a combination of on street parking and permit parking. Figure 2.16 and Table 2.2 show current on street parking around 16 Avenue NW. On-site parking for commercial sites along 16 Avenue NW is generally along the street frontage for older sites, with newer sites having a combination of rear-lane or below-grade parking.

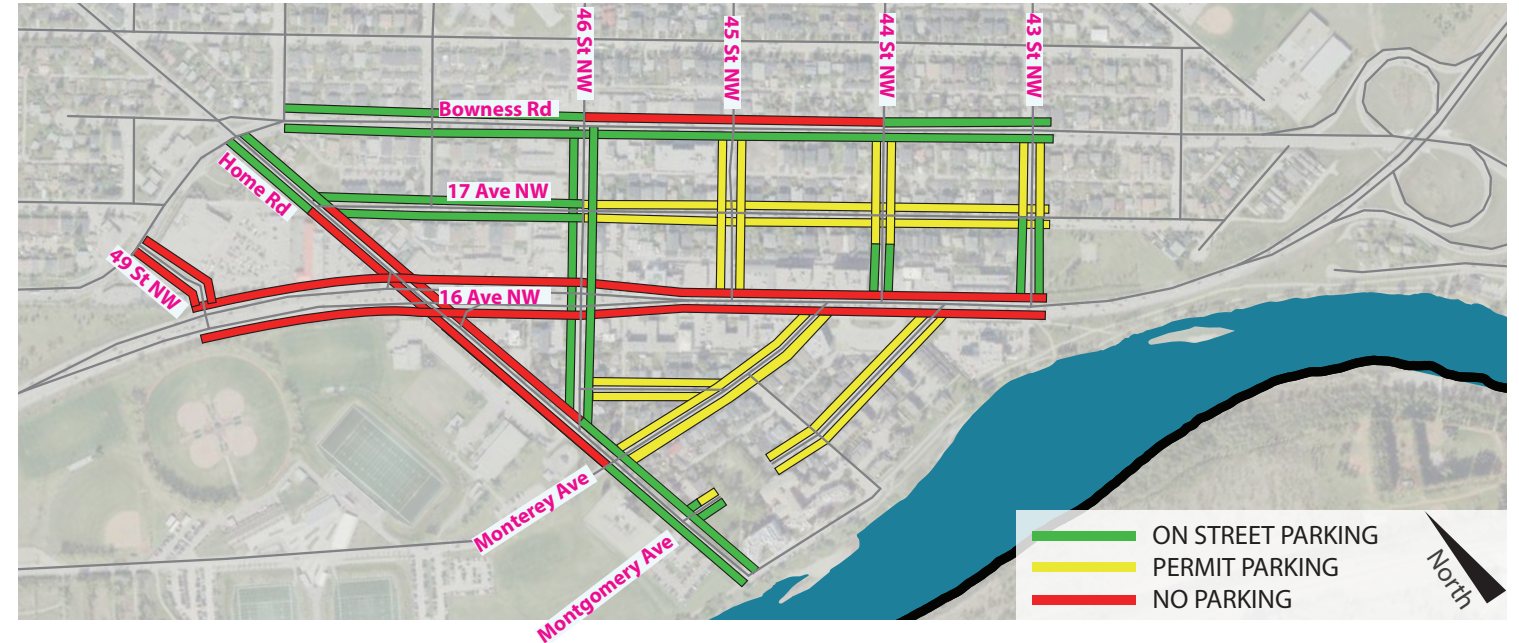


FIGURE 2.16 - CURRENT ON STREET PARKING

TABLE 2.2 - ON STREET PARKING

Cross Street	Parking Type and Location
49 Street NW	North to Bowness Road, no parking
Home Road	North to 17 Avenue NW, no parking. 17 Avenue NW to Bowness Road, on-street parking. South to Montgomery Boulevard, 1 hour parking. South on west side to 13 Avenue NW, no parking.
46 Street NW	North to 17 Avenue NW, 1 hour parking. 17 Avenue NW to Bowness Road, 2 hour parking. South to Home Road, 1 hour parking 0800 - 1600.
45 Street NW	North to Bowness Road, permit only 0700 - 1700 weekdays.
Montgomery Avenue	Permit parking only.
44 Street NW	North to alley, 1 hour parking. Alley to 17 Avenue NW permit only 0700 - 1700 weekdays. 17 Avenue NW to Bowness Road, permit only.
Montgomery Avenue	Permit parking only. 2 hour parking west of Carma House driveway.
43 Street NW	North to 17 Avenue NW, on-street parking. 17 Avenue NW - Bowness Road permit only.

2.8 EXISTING UTILITIES

16 Avenue NW through Montgomery is a relatively congested utility corridor. Key among these is the major 1950mm water feedermain under the westbound lanes, which is the key feeder line from the Bearspaw Water Treatment Plant to central Calgary.

With the feedermain located in the roadway, municipal servicing for the commercial properties along 16 Avenue NW is provided by a dual service system with twin sanitary and water service lines located on

each side of the feedermain. Local stormwater drainage also includes a main under the westbound lanes. When typical utility setbacks are considered, these utilities collectively sterilize most of 16 Avenue NW for new line assignments, for either shallow utilities or street trees. It is of note that the existing trees on 16 Avenue NW are confined to concrete planters, which is expected to have been a condition of original installation in proximity to these lines.

Most shallow utility servicing for the commercial properties is provided from their respective rear lanes. Two Enmax lines cross 16 Avenue NW - a major transmission corridor on overhead towers on the west side of Home Road, and an overhead distribution system on poles on the east side of 46 Street NW. The distribution system would ideally be relocated underground as part of the Main Street development, which should be coordinated with Enmax at the time of implementation.

Existing cross-sections illustrating the utilities under 16 Avenue NW are provided in Figures 2.17 and 2.18 for the areas west and east of 46 Street NW, respectively. Typical City utility setbacks for various tree types are summarized in Table 2.3.

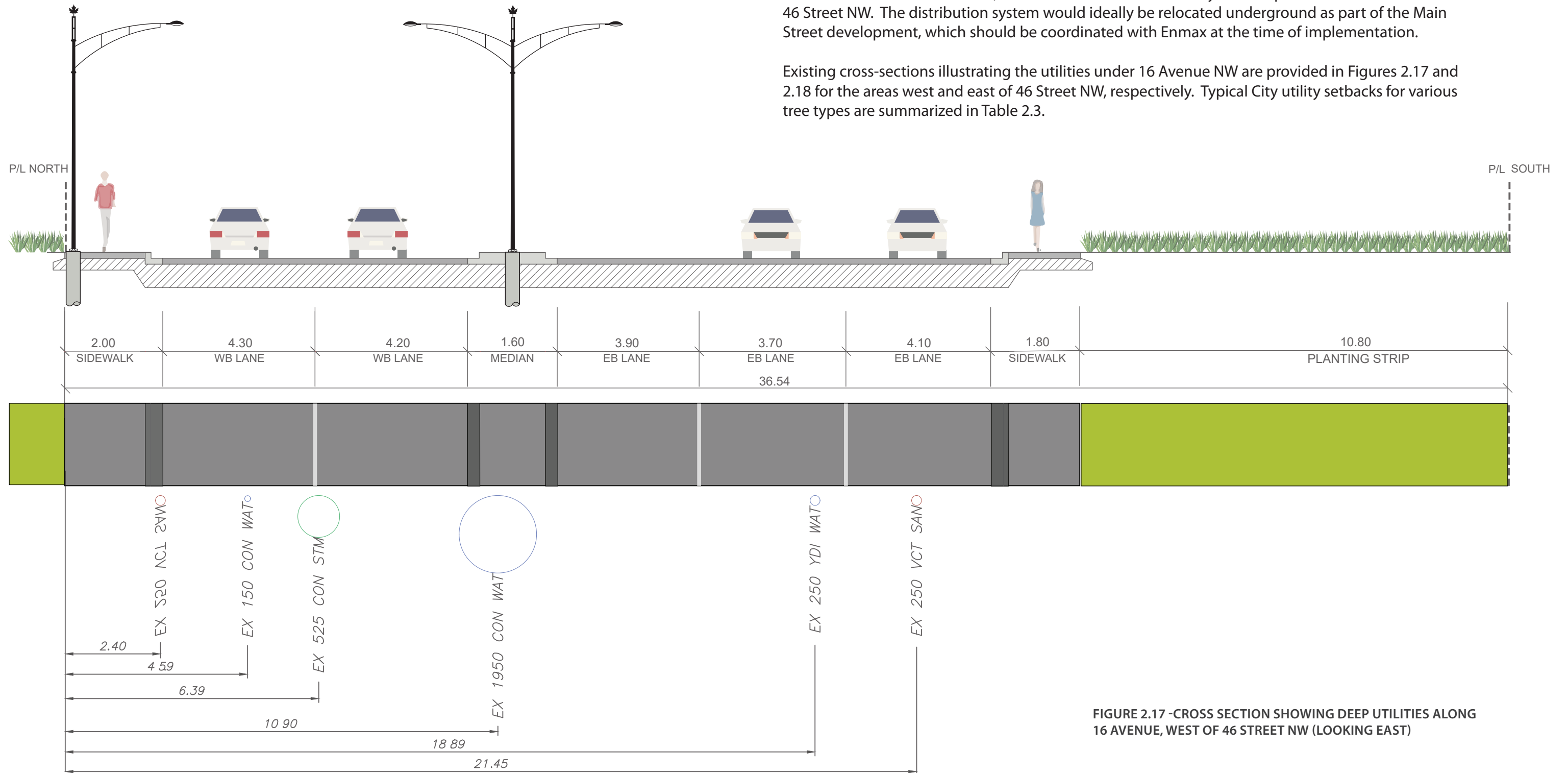


FIGURE 2.17 -CROSS SECTION SHOWING DEEP UTILITIES ALONG 16 AVENUE, WEST OF 46 STREET NW (LOOKING EAST)

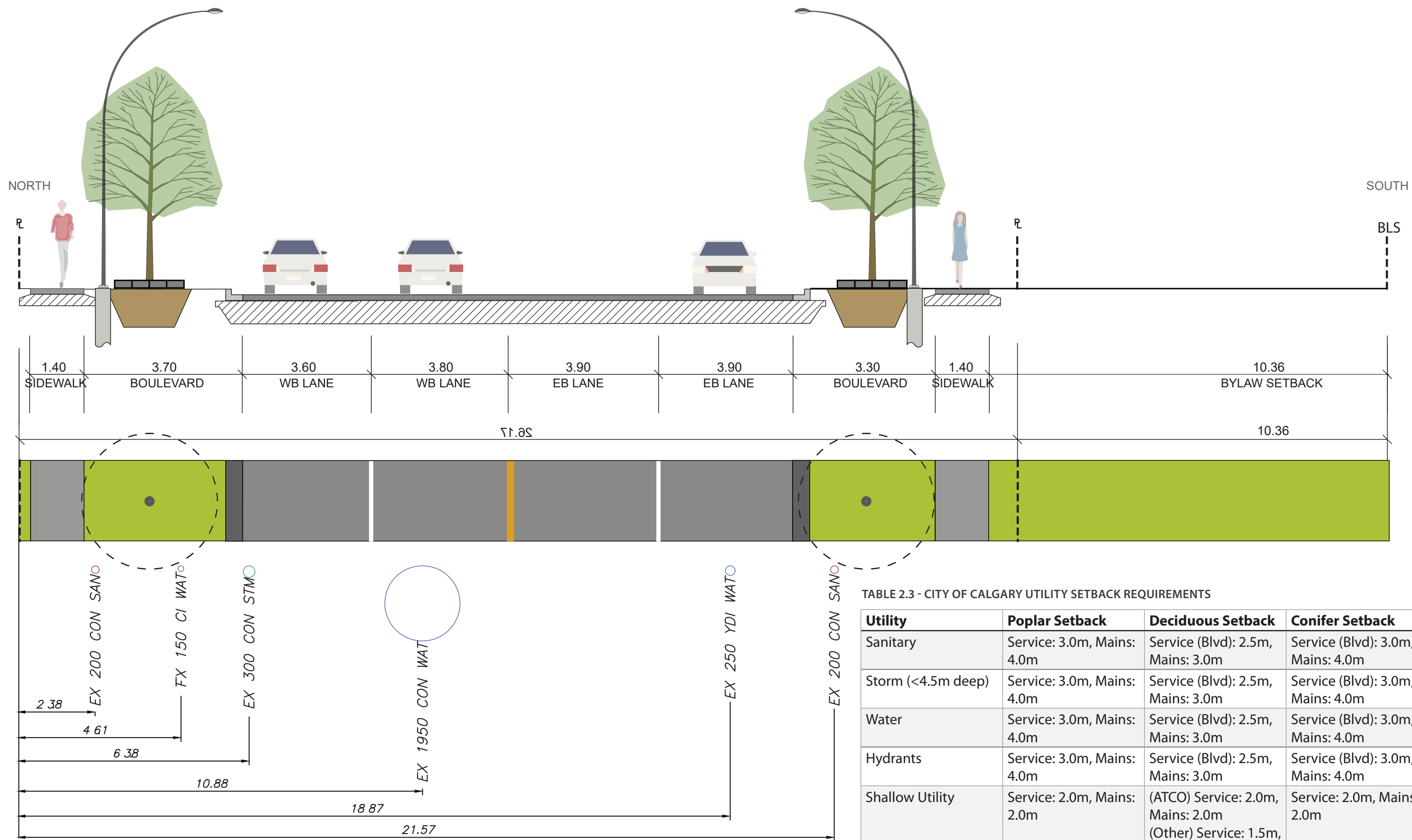


FIGURE 2.18 - CROSS SECTION SHOWING DEEP UTILITIES ALONG 16 AVENUE, EAST OF 45 STREET NW (LOOKING EAST)

TABLE 2.3 - CITY OF CALGARY UTILITY SETBACK REQUIREMENTS

Utility	Poplar Setback	Deciduous Setback	Conifer Setback
Sanitary	Service: 3.0m, Mains: 4.0m	Service (Blvd): 2.5m, Mains: 3.0m	Service (Blvd): 3.0m, Mains: 4.0m
Storm (<4.5m deep)	Service: 3.0m, Mains: 4.0m	Service (Blvd): 2.5m, Mains: 3.0m	Service (Blvd): 3.0m, Mains: 4.0m
Water	Service: 3.0m, Mains: 4.0m	Service (Blvd): 2.5m, Mains: 3.0m	Service (Blvd): 3.0m, Mains: 4.0m
Hydrants	Service: 3.0m, Mains: 4.0m	Service (Blvd): 2.5m, Mains: 3.0m	Service (Blvd): 3.0m, Mains: 4.0m
Shallow Utility	Service: 2.0m, Mains: 2.0m	(ATCO) Service: 2.0m, Mains: 2.0m (Other) Service: 1.5m, Mains: 1.5m	Service: 2.0m, Mains: 2.0m
Enmax	Overhead: 9.0m	Overhead: 7.0 - 9.0m	Overhead: 7.0 - 9.0m

2.9 RIGHT-OF-WAY AND BYLAW SETBACK

Existing road right-of-way along 16 Avenue NW in Montgomery varies between 26.2 and 36.6 m (rounded). Generally the existing cross-section has two travel lanes in each direction with additional left turn lanes and a median at the Home Road intersection. Left turn lanes are also provided at 49 Street NW and 46 Street NW. Sidewalks are provided on both sides of the street, sometimes separated but sometimes directly adjacent to the curb.

Cross-sections illustrating the existing right-of-way and lane widths along 16 Avenue NW are provided in Figures 2.17 and 2.18 (see previous pages) for the areas west and east of 46 Street NW, respectively.

The City of Calgary Land Use Bylaw 1P2007 identifies a public realm setback of 10.363m along the south side of 16 Avenue NW from 46 Street NW to MacKay Road. This bylaw setback accommodates public realm improvements, pedestrian environment improvements, and context-specific mobility improvements. Hence, in addition to the basic right-of-way width of 26.213 m, the setback allows for a total typical right-of-way width of 36.576 m for the entirety of 16 Avenue NW through Montgomery (rounded to 36.6 m in the balance of this report.) Council approval for the Future of 16 Avenue NW project re-affirmed the protection of the bylaw setback as a key recommendation to ensure future flexibility for development of the corridor.

The City has previously acquired the bylaw setback area in the blocks west of 46 Street NW and east of Montgomery Avenue, hence in practical terms the effective bylaw setback now primarily relates to the two blocks between 46 Street NW and Montgomery Avenue. Figure 2.19 provides a schematic illustration of the right-of-way widths and bylaw setback through Montgomery.

Through the project, it was recognized that the protection of the bylaw setback area will impact development potential on the affected blocks south of 16 Avenue NW. A comprehensive developability review was completed and is provided in Appendix A, with further discussion in Section 4.6.

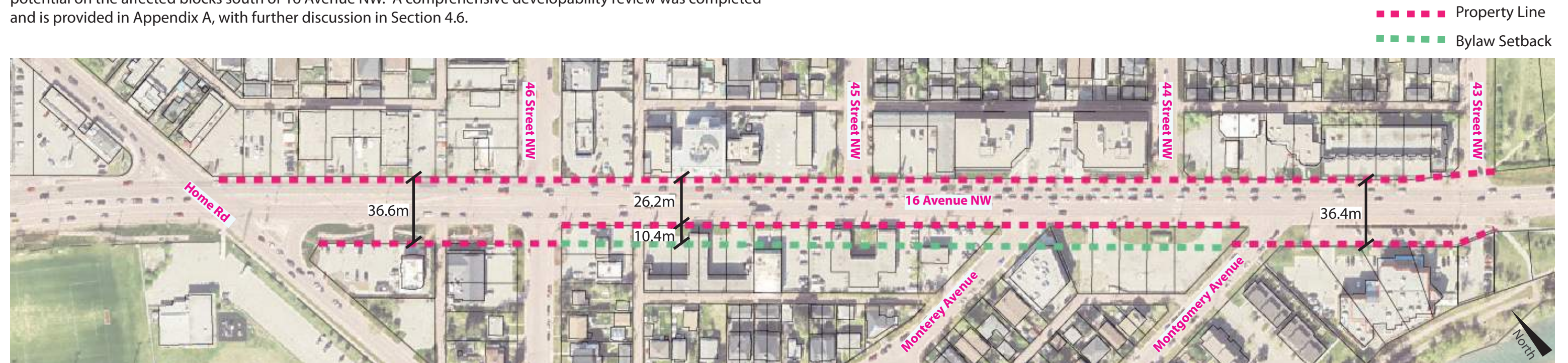


FIGURE 2.19 - 16 AVENUE NW RIGHT-OF-WAY DIAGRAM (NTS)

2.10 HERITAGE RESOURCES AND ELEMENTS

A historical resources overview was completed for the Future of 16 Avenue NW project. The overview indicated that there are seven recorded heritage structures (defined simply as structures that are 50 years old or older) within the defined study area of the Corridor Study. Four of these recorded heritage structures are within the Master Plan area, however, none of the identified historic structures within the Master Plan site are registered or have formal heritage designation by either The City or the Province. Among these structures, only one (the Traveller's Inn Motel) is potentially affected by the recommendations of the project, but it is considered to have low potential for formal designation. Nearby, there are four registered heritage structures which include the Shouldice (Hextall) Bridge, the Riley House, the S.C. Gray/Mercer Residence, and the Edworthy House.

The four recorded heritage structures within the Master Plan area include:

- ① Holiday Motel - 4540 16 Avenue NW
- ② Traveller's Inn Motel - 4611 16 Avenue NW
- ③ Montgomery Community Centre - 5003 16 Avenue NW
- ④ Residence - 4328 17 Avenue NW



FIGURE 2.20 - RECORDED HERITAGE STRUCTURES



FIGURE 2.21 - THE SHOULDICE BRIDGE AND ORIGINAL STREETCAR CIRCA 1912



FIGURE 2.22 - MONTGOMERY COMMUNITY CENTRE IN 2002 (BUILT 1964)

2.11 LAND USE

Prior Main Streets strategy development in 2017 affirmed existing land uses along 16 Avenue NW, which are entirely commercial in nature. This was consistent with the policy direction of the Montgomery Area Redevelopment Plan, which identifies the 16 Avenue NW Main Street as a “Highway Commercial” corridor with a focus on office / commercial development, complementary to Bowness Road as the more traditional mixed-use commercial / residential Main Street. Land use mapping for the 16 Avenue NW Main Street is excerpted from The City of Calgary Land Use Bylaw 1P2007 in Figure 2.4 and discussed further below.

16 AVENUE NW

Most of the parcels along 16 Avenue NW are zoned as C-COR2 commercial districts with density modifiers of f3.0/h16 or f4.5/h22, representing maximum building heights of about 4 to 6 stories. The only exceptions to these designations are the existing Montgomery Safeway (zoned as C-C1) and Bowglen Medical Centre (zoned as C-O) sites, plus George Gell Park and Shouldice with S-R municipal reserve zoning. Typical building setbacks for each land use district are summarized in Table 2.4. Note these are in addition to the bylaw setback for future road right-of-way, though consideration should be given to relaxing the building setbacks, where appropriate, on parcels that are constrained by the road plan. Refer to Section 4.6 for further discussion.

SURROUNDING AREAS

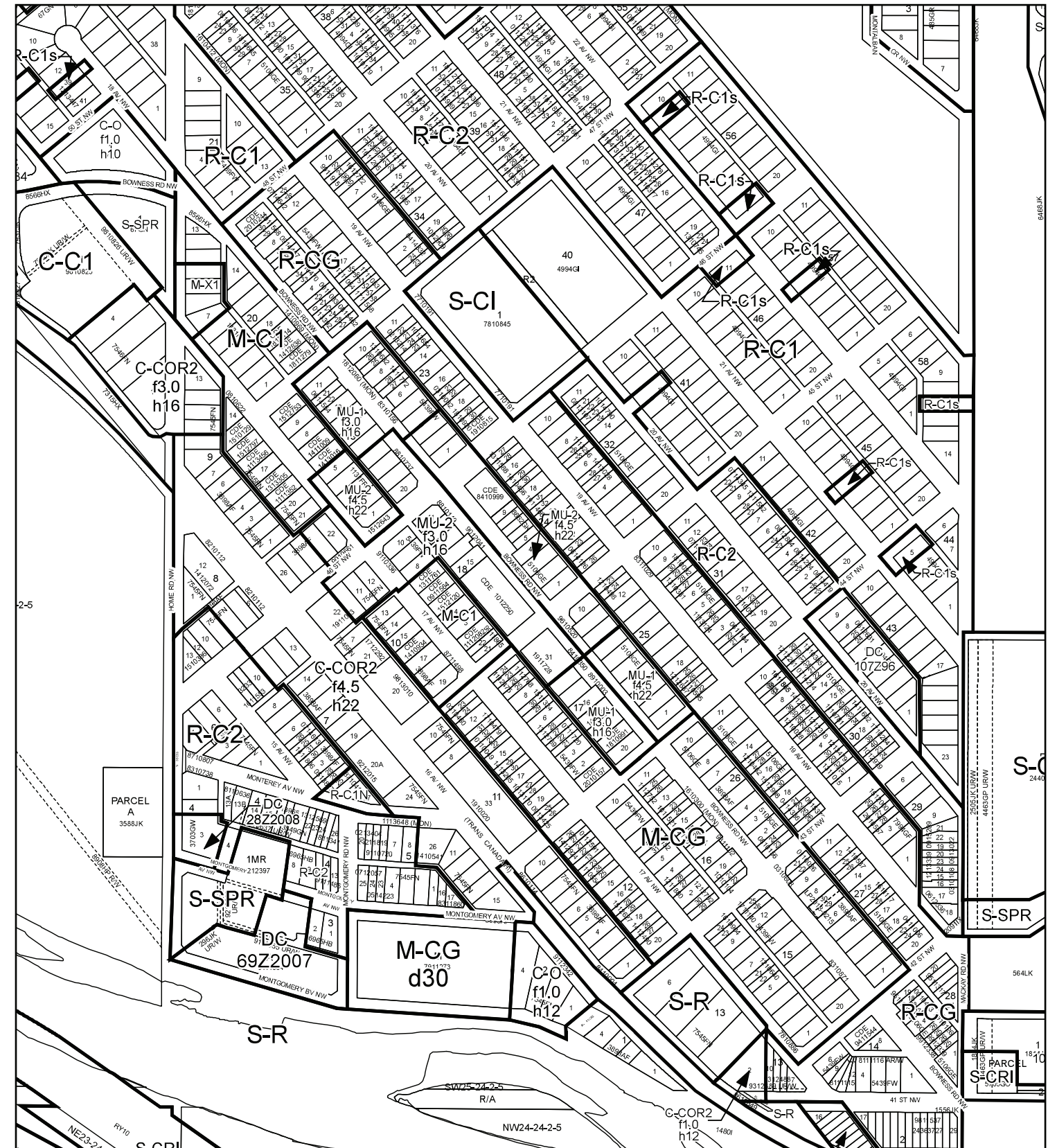
The areas surrounding 16 Avenue NW are generally zoned with mixed-use or residential designations. Notably, 46 Street NW has MU-2 (Mixed Use Active Frontage) zoning continuously from 16 Avenue NW to Bowness Road, anticipating future mixed-use redevelopment along this key north-south link.

Residential zoning between 16 Avenue NW and Bowness Road is generally M-CG (Multi-Residential – Contextual Grade-Oriented) to the east of 45 Street NW and M-C1 (Multi-Residential – Contextual Low Profile) to the west of 45 Street NW. On the south side of 16 Avenue NW, most of the area is R-C2 (Low Density Residential – Contextual One / Two Dwelling) with localized medium-density zoning on specific parcels.

Typical setbacks for residential zones are also indicated in Table 2.4.

TABLE 2.4 - LAND USE SETBACKS

LAND USE DISTRICT	FRONT BUILDING SETBACK
R-C2	Minimum front setback required, the greater of contextual front setback less 1.5m, or 3.0m
M-C1	Minimum front setback required, the greater of contextual multi-residential building setback less 1.5m, or 3.0m
M-CG	Minimum front setback required, the greater of contextual multi-residential building setback less 1.5m, or 3.0m
C-COR2	Minimum front setback required, minimum 3.0m
C-C1	Minimum 3.0m front setback required, but not more than 3.0m for parcels sharing a side property line with a C-N1 or C-COR1 parcel
C-O	Minimum front setback required, minimum 6.0m
MU-2	No minimum setback required, but a maximum of 4.5m for 60% of length of the building facade facing the street



MAP 2.4 - LAND USE IN MONTGOMERY

2.12 CHALLENGES AND OPPORTUNITIES

TABLE 2.5 - CHALLENGES AND OPPORTUNITIES

CHALLENGE	PRINCIPLE			
	SOCIAL + HEALTHY LIFESTYLE	MOBILITY + FUNCTION	CHARACTER + IDENTITY	ECONOMIC VITALITY
Lack of walkable Main Street that creates a strong centre and anchor in the community	X	X	X	
Main Street isolates access to parks and open spaces; does not form a well connected network	X	X		
Need to maintain high priority for pedestrians and transit	X	X		
Change of roadway classification along corridor (Skeletal outside Master Plan area and Urban Boulevard within Master Plan area)		X		X
Lack of overall identity, sense of place, and reasons to visit	X		X	
The neighbourhood is changing and evolving; recently updated zoning allows for higher density residential and mixed-use nodes	X		X	X
High traffic volumes and expected increase with growth		X	X	X
Number of driveway access points along 16 Avenue NW causes pedestrian conflicts, promotes shortcutting and impedes the flow of goods and services.	X	X		
Intersection comfort and experience for pedestrians is considered poor	X	X		
Limited Right of Way available for streetscape improvements at various points particularly at Home Road and 43 Street NW.	X		X	X
16 Avenue NW bisects Montgomery and is not pedestrian friendly to cross.		X	X	
Significant utility conflicts with potential tree planting				
Aging and unsafe transit infrastructure	X	X		
Multiple points of access into front parking lots, commercial buildings and residences off 16 Avenue NW and side streets.	X	X		

OPPORTUNITY	PRINCIPLE			
	SOCIAL + HEALTHY LIFESTYLE	MOBILITY + FUNCTION	CHARACTER + IDENTITY	ECONOMIC VITALITY
The enhanced Main Street can create a catalyst for development and a community destination or node that over time stitches together the neighbourhood and open space through an active, vibrant public realm.	X	X	X	
Treat the street as part of the green network by maximizing pervious surfaces for water infiltration.	X	X	X	
Provide the framework for healthy long-lived street trees by adopting best planting practices for urban tree planting	X	X		
Plant ground covers that provide ecological benefit and beauty	X		X	
Support and enhance pedestrian access to the transit network and replace aging infrastructure at bus stops	X	X	X	
Focus public realm investment dollars at transit nodes; e.g., high quality materials, safety and amenities such as seating and site furnishings		X	X	X
Focus public realm investment dollars at transit nodes; e.g., high quality materials, safety and amenities such as seating and site furnishings		X	X	X
Strengthen commercial nodes by concentrating public realm amenities around existing nodes.			X	X
Utilize potential gateways to and from Montgomery as an opportunity to create memorable placemaking experiences that signify arrival onto 16 Avenue NW as the gateway to the mountains and into the City.	X	X	X	
A reduction in the number of access points is desirable to reduce the number of conflict points with pedestrians along the street, particularly where properties have rear lanes or other alternative access opportunities	X	X		
Increased connectivity to the Bow River, parks and open space.	X	X		

3.0 COMMUNITY AND STAKEHOLDER ENGAGEMENT

A comprehensive engagement process was undertaken for the Future of 16 Avenue NW project with the overall goal of understanding stakeholder perspectives and using them to influence development of the project recommendations. Through the engagement process the project team committed to engage with stakeholders to learn about their views, concerns and ideas, consider or incorporate their input to the extent possible, and report back on how feedback impacted the decisions and outcomes. Due to the COVID-19 pandemic, in-person engagement opportunities were limited during most of the project, particularly in Phases 2 and 3. Modified engagement techniques including online portals and virtual meetings helped adapt the project to these unique circumstances.

In the Discover Phase, the project team exchanged information with stakeholders and the public regarding the project and to provide them the opportunity to share issues, ideas and desired outcomes within the project area, and to confirm community priorities both emergent and as identified in previous, recent engagements with The City. Participant feedback was used to validate the guiding principles and goals for the project.

In the Explore Phase, public feedback was obtained on preliminary design ideas and concept options developed from the technical analysis and input obtained in the Discover Phase to ensure issues and concerns were understood and considered prior to design resolution of the Master Plan.

The Reveal Phase focused on communicating the proposed Streetscape Master Plan and showing the complete plan for development and enhancement of the corridor. The information shared during this phase included reporting back on how public input influenced the design.

The Master Plan engagement process is illustrated in Figure 3.1. The overall Engagement Summary report and “What We Heard” reports for each phase of engagement are included in Appendix B.

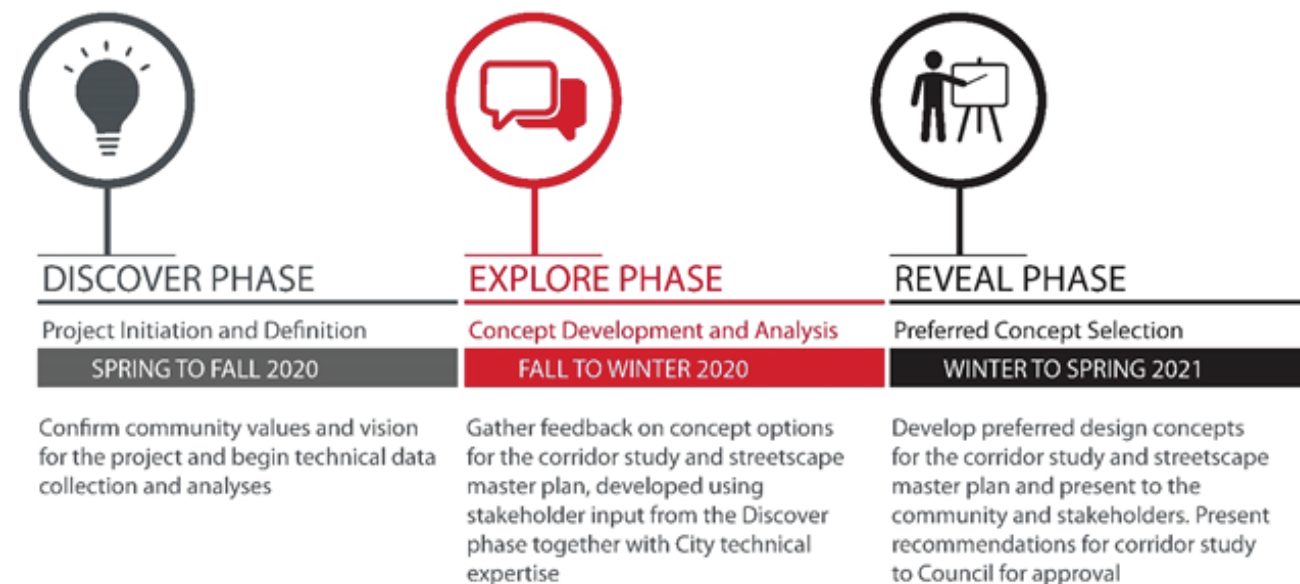


FIGURE 3.1 - ENGAGEMENT PROCESS

PHASE 1 - DISCOVER

In March - April 2020, approximately 149 people participated through in-person and online engagement opportunities to discover the character and opportunities to improve 16 Avenue NW in areas of public realm, community enhancement, cycling, transit, parking, street furniture, and pedestrian safety.

The Discover phase of engagement included:

- » A walking tour with members of the Montgomery Community Association and the Montgomery on the Bow Business Improvement Area (BIA) on February 8, 2020
- » A public Open House held at the Montgomery Community Association on March 11, 2020
- » Online engagement from March 14 – April 20, 2020 at engage.calgary.ca. The period for providing input online was extended as the COVID-19 pandemic began at about the same time that the portal went live.

Key takeaways from the Discover phase included:

- » Maintain traffic flow
- » Improve pedestrian crossings (safety, frequency)
- » Provide connections to the river pathway system
- » Provide better, wider sidewalks that are separated from the roadway
- » Provide safer turning for vehicles
- » Showcase river valley and entry into the city
- » Enhance trees, greenery and other distinguishing features

In addition to the key takeaway above, there was overall skepticism that 16 Avenue NW is an appropriate location for gathering given the volume and noise of traffic anticipated. Rather, participants expressed that Bowness Road, Edworthy Park and Shouldice Park are better locations for gathering in comparison to 16 Avenue NW and that 16 Avenue NW would be more valuable as a connector to the Bowness Road (Montgomery) Main Street and the river valley through improvements to the pedestrian, transit, and active mode environments.

As such, the key outcome from the Discover phase was the refinement of project goals to reflect the importance of 16 Avenue NW’s role in the road network and recognition that 16 Avenue NW is a unique Main Street that will offer a differing, but complementary, feel to Bowness Road.

PHASE 2 - EXPLORE

In October - November 2020, approximately 151 feedback responses were received through online engagement opportunities to Explore concept options that had been developed for 16 Avenue NW. A supplementary engagement period in January 2021 brought the total number of responses to 186.

The Explore phase of engagement included:

- » Online engagement from October 26 to November 22, 2020 and January 6 to 18, 2021 at engage.calgary.ca.
- » Two virtual meetings with adjacent property owners who RSVP'd to invitations sent by registered mail to owners of properties potentially impacted by one or more of the options.
- » Virtual meetings with the Montgomery Community Association, University Heights Community Association, and the Montgomery on the Bow Business Improvement Area.

Key takeaways from the Explore phase included:

- » Both drivers and pedestrians expressed concern about increased traffic congestion
- » There was mixed sentiment about the number of travel lanes on 16 Avenue NW, with some stakeholders preferring to minimize the number of travel lanes and others preferring to add lanes
- » Protected, separated or signalized left-turns were well-received
- » There was mixed sentiment on the idea of closing access to community streets, recognizing the trade-off between reduced short-cutting and reduced local access
- » Enhanced pedestrian and cycling crossings were well-received
- » Some desire for pedestrian overpasses near 43 Street NW and 29 Street NW
- » Enhanced trees, greenery and other distinguishing features were well-received

Outcomes and feedback from the Explore phase were built into the overall evaluation process for the project, and areas where they informed design were highlighted on engagement materials in Phase 3.

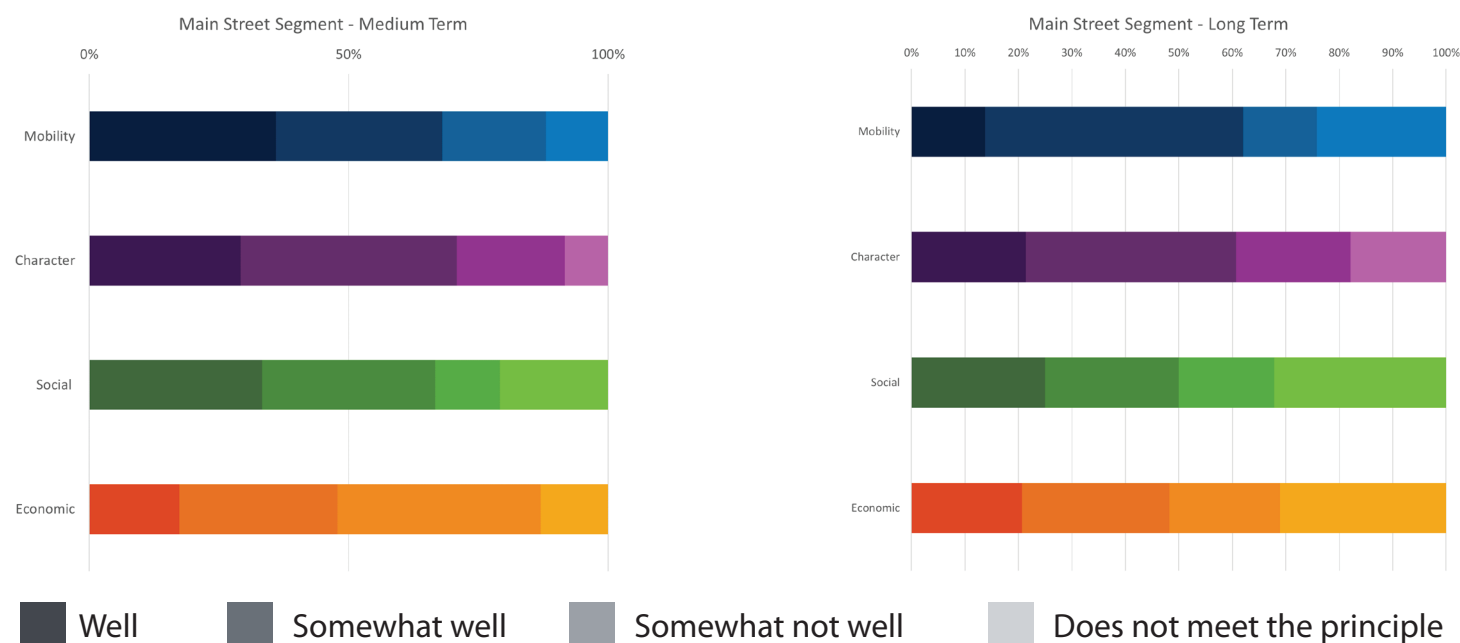


FIGURE 3.2 - PHASE 3 ENGAGEMENT SUMMARY

PHASE 3 - REVEAL

In April - May 2021, the City undertook several online engagement opportunities to Reveal draft recommendations for the evolution of 16 Avenue NW at the short- medium- and long-term horizons. The online engagement portal received 4,696 page views and 194 feedback contributions. The City also hosted a virtual open house that was attended by approximately 47 participants. At this virtual open house, citizens viewed a presentation, and were able to submit questions and comments directly to the project team.

The Reveal phase of engagement included:

- » Online engagement from April 12 to May 2, 2021 at engage.calgary.ca.
- » An online virtual open house held on April 17, 2021.
- » Twelve virtual and two in-person meetings with adjacent property owners who RSVP'd to invitations sent by registered mail to owners of properties potentially impacted by the draft recommendations.
- » Two virtual meetings with the Montgomery Community Association and the Montgomery on the Bow Business Improvement Area.

Public feedback on how well the draft recommendations met the project principles is summarized in Figure 3.3. Key takeaways from the Reveal phase include:

SHORT-TERM PLAN

- » Protected, separated or signalized left-turns were well-received
- » Traffic on Home Road remains worrisome for residents of Montgomery concerned about cut-through traffic
- » Desire for further improvements to pathways or sidewalks in the short-term

MEDIUM-TERM PLAN

- » Enthusiastic support for improvements to and better connectivity of pathways and sidewalks
- » Added trees and plantings were well-received
- » Some concern where driveway access crosses the multi-use pathway

LONG-TERM PLAN

- » Further enhancements of the pathways and sidewalks was well-received
- » Mixed sentiment about the potential for increasing the number of travel lanes on 16 Avenue NW, with some stakeholders seeing it as a way to focus travel demand on 16 Avenue NW versus Bowness Road, and others seeing it as discouraging pedestrian access and connectivity across 16 Avenue NW
- » Concern about removing driveway access to businesses who rely on pass-by traffic

A key outcome of the Reveal phase was the modification of the project recommendations to retain a flexible approach at the long-term horizon for 16 Avenue NW, by continuing to protect the existing Land Use Bylaw development setback but not committing to a specific long-term cross-section so that The City can monitor and respond to a range of potential growth and travel demand scenarios in the coming decades.

4.0 THE MASTER PLAN

16 Avenue NW will evolve over time. The Future of 16 Avenue NW project and this Streetscape Master Plan have connected elements from prior plans on nearby streets including the Bowness Road (Montgomery) Main Street into a comprehensive corridor plan at three planning horizons – short-, medium- and long-term. Except for some short-term improvements moving forward to construction starting summer 2021, the recommendations presented in this Master Plan are unfunded with no specific timeframe for implementation. However, in broad terms the short-term horizon was considered to include upgrades that could occur within the next 5 years, the medium-term within 5 to 20 years, and the long-term beyond 20 years.

Through the project process, there was a remaining degree of uncertainty on the benefits and impacts of providing additional travel lanes on 16 Avenue NW in future, hence a flexible approach was ultimately recommended and approved by City Council which would continue to protect the development setback area through the Land Use Bylaw, but defer final decision-making on the nature of the long-term corridor. Nonetheless, the big moves and outcomes for the 16 Avenue NW Main Street remain applicable to the full range of future scenarios, and this Master Plan can provide an effective future blueprint for implementation.

The Master Plan provides a complete picture of the future scenarios and outcomes for the 16 Avenue NW Main Street. Section 4 includes:

- » A summary of the overall staging strategy of the street in the short-, medium- and long-term
- » An overview of possible long-term cross-sections, and how they relate to the design outcomes and medium-term cross-sections used to illustrate the Master Plan
- » A comprehensive Master Plan for the medium-term horizon, illustrating how the streetscape can be improved through two scenarios, one remaining within existing ROW and the other with full use of the bylaw setback
- » A design toolkit based on current Main Streets Program practices in Calgary
- » Suggested guidance for use of the Master Plan in relation to development applications along 16 Avenue NW
- » An access management strategy and principles
- » An overview of operational and maintenance considerations

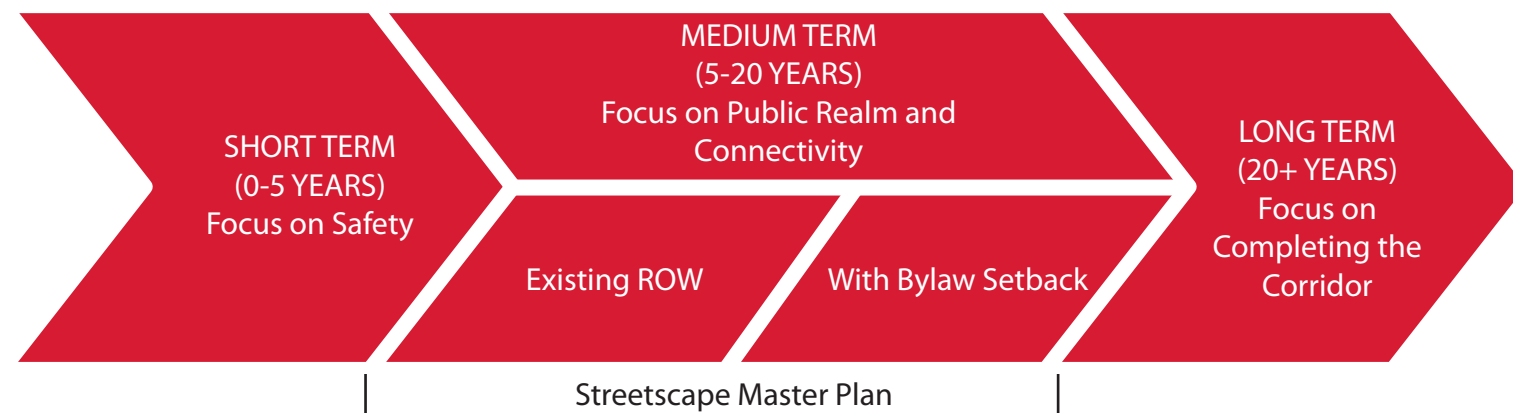


FIGURE 4.1 - STAGING OF 16 AVENUE NW

4.1 OVERALL STAGING STRATEGY

SHORT-TERM STRATEGIES – FOCUS ON SAFETY (0-5 YEARS)

The recommended short-term improvements have a focus on safety and were coordinated during the project with City Roads to include local-scale interventions that can be implemented in conjunction with a planned re-paving project in Montgomery in 2021, and within existing available funding envelopes. Components include:

- » An advanced eastbound left-turn phase is added to the existing signal at Home Road to reduce delay time and left-turn collisions
- » A new traffic signal is added at 43 Street NW improving visibility and crossing opportunities for pedestrians and cyclists
- » The existing transit shelter and benches are upgraded at the eastbound and westbound transit stops on 16 Avenue NW near Home Road and 46 Street NW
- » A radar speed sign is added on southbound Home Road
- » The pedestrian crossings at Home Road are under review by City Roads for potential additional upgrades

MEDIUM-TERM STRATEGIES – FOCUS ON PUBLIC REALM AND CONNECTIVITY (5-20 YEARS)

Over time, the 16 Avenue NW corridor will continue to evolve to enhance and connect area communities. Recommended medium-term improvements focus on enhancement of the public realm and connectivity, providing public investment to spur ongoing private investment and redevelopment on the Main Street. The medium-term improvements form the basis of this Master Plan and reflect two scenarios:

Existing ROW - This scenario contemplates changes that can be made without significant new property impacts, and which can retain flexibility to respond to differing development initiatives as they unfold with time. The constraint of working within the existing road right-of-way will by necessity leave some elements of the streetscape incomplete.

With Bylaw Setback - As redevelopment occurs or The City acquires the bylaw setback, there will be the opportunity to progressively provide additional activation of the bylaw setback area on the south side of 16 Avenue NW. As more sites take part, these individual pockets of activation can work together and incorporate "linear park" elements to engage Main Street users. The Master Plan provides an overall vision for these public realm improvements while recognizing that flexible use of the bylaw setback area in response to specific land uses and development proposals remains a valued outcome.

LONG-TERM STRATEGIES – FOCUS ON COMPLETING THE CORRIDOR (20+ YEARS)

In the long-term, 16 Avenue NW is expected to continue to support significant growth in northwest Calgary. From a transportation network perspective, 16 Avenue NW is one of only two continuous east-west corridors between downtown Calgary and Stoney Trail North and is forecast by The City to have significant traffic growth into the future consisting of an ongoing mix of local, regional and city-wide traffic. Protecting the right-of-way for 16 Avenue NW by retaining the bylaw setback on the south side from 46 Street NW to MacKay Road supports future flexibility to further develop the corridor based on how development and travel patterns evolve over the next 20+ years. Potential long-term development of 16 Avenue NW is primarily addressed in the separate Transportation Corridor Study report.

4.2 FLEXIBLE 16 AVENUE NW CROSS SECTION

The recommendation to retain a flexible approach to the long-term cross-section for 16 Avenue NW in Montgomery leaves open a number of future possibilities for development of the Main Street. The common denominator for all options will be the use of the full 36.6 m road right-of-way that would be available following purchase or acquisition of the bylaw setback area currently protected under the Land Use Bylaw, which was affirmed by City Council in approving the Future of 16 Avenue NW project recommendations.

The project recommendations highlighted three general concepts for long-term development of the widened road right-of-way:

- » Long-Term Alternate A – widen 16 Avenue NW to six travel lanes with off-peak parking and an opportunity to designate the outer lanes for high-occupancy vehicle use, including transit
- » Long-Term Alternate B – retain four travel lanes on 16 Avenue NW with additional dedicated parking lanes in both directions
- » Long-Term Alternate C – retain four travel lanes on 16 Avenue NW with an additional median but no on-street parking

At the medium-term, the recommendations are to prioritize streetscape and connectivity improvements within the existing road right-of-way. To achieve this, additional public realm space can be captured by reducing the width of travel lanes on 16 Avenue NW. Cost-effective construction of the medium-term cross-section would ideally be based on maintaining either the existing north or existing south curb line, and relocating the opposite curb. Taken together with the three long-term alternates, these two medium-term alignments combine to create a total of six design “paths” that 16 Avenue NW could take in future. These design paths are illustrated in Figure 4.2.

To inform future designers, each of the potential medium- and long-term cross sections were developed and are illustrated in Figures 4.3 and 4.4 on the following pages. Discussion of the key opportunities and constraints of each design path is provided in Table 4.1. Based on this high-level review, it is recommended that future designers focus on the design path that maintains the south curb line in the medium-term, as this approach would continue to retain the most flexibility in the long-term plan. By contrast, holding the north curb line in the medium-term would require some level of decision-making on the long-term plan at the earlier stage.

Notwithstanding the above review, illustrative graphics for the Master Plan in the remainder of this section reflect Medium Term Alternate A with retention of the north curb line, as this was the basis for the draft plan recommendations at the time the graphics were prepared for public engagement. The graphics are intended to be used by future designers as illustrations for the big moves and key outcomes of the Streetscape Master Plan, without necessarily communicating a fixed decision on the long-term cross-section. This includes a scenario and overall vision for activation of the bylaw setback area as redevelopment occurs over time.

TABLE 4.1 - SUMMARY OF FLEXIBLE CROSS SECTION OPTIONS

		MEDIUM TERM APPROACH	
		Maintain North Curb Alignment	Maintain South Curb Alignment
LONG TERM APPROACH	Alternate Option A	<ul style="list-style-type: none"> » The north public realm space developed in the medium-term is retained in the long-term » A multi-use pathway is accommodated on the south side, but only a 2.0 m wide separated sidewalk is accommodated on the north side » A small flex zone is provided on the south side of the street 	<ul style="list-style-type: none"> » The north public realm developed in the medium-term is retained in the long-term » A multi-use pathway is accommodated on the north side and a wider 2.5m separated sidewalk is provided on the south side » A flex zone is not provided
	Alternate Option B	<ul style="list-style-type: none"> » Includes reconstruction of the north curb alignment and public realm space in the long-term » A flex zone is not provided » Multi-use pathways are accommodated on both sides of the street 	<ul style="list-style-type: none"> » The north public realm developed in the medium-term is retained in the long-term » A flex zone is not provided » Multi-use pathways are accommodated on both sides of the street
	Alternate Option C	<ul style="list-style-type: none"> » Includes reconstruction of the north curb alignment and public realm space in the long-term » Flexible development space is available on both sides of the street » Multi-use pathways are accommodated on both sides of the street 	<ul style="list-style-type: none"> » The north public realm developed in the medium-term is retained in the long-term » A generous flex zone is provided on the south side » Multi-use pathways are accommodated on both sides of the street

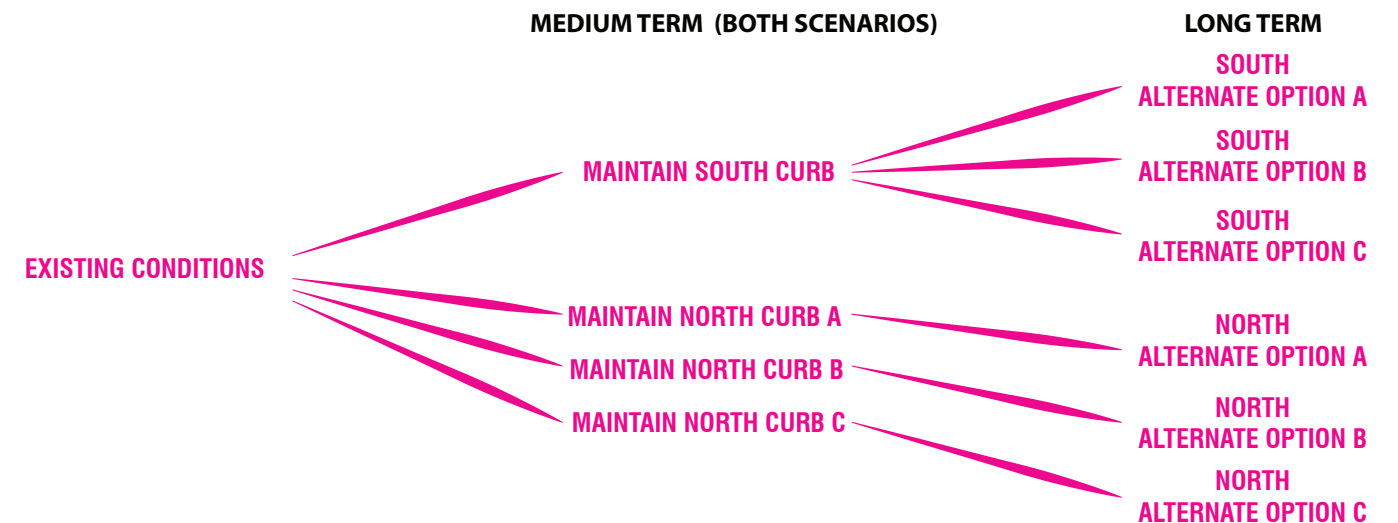




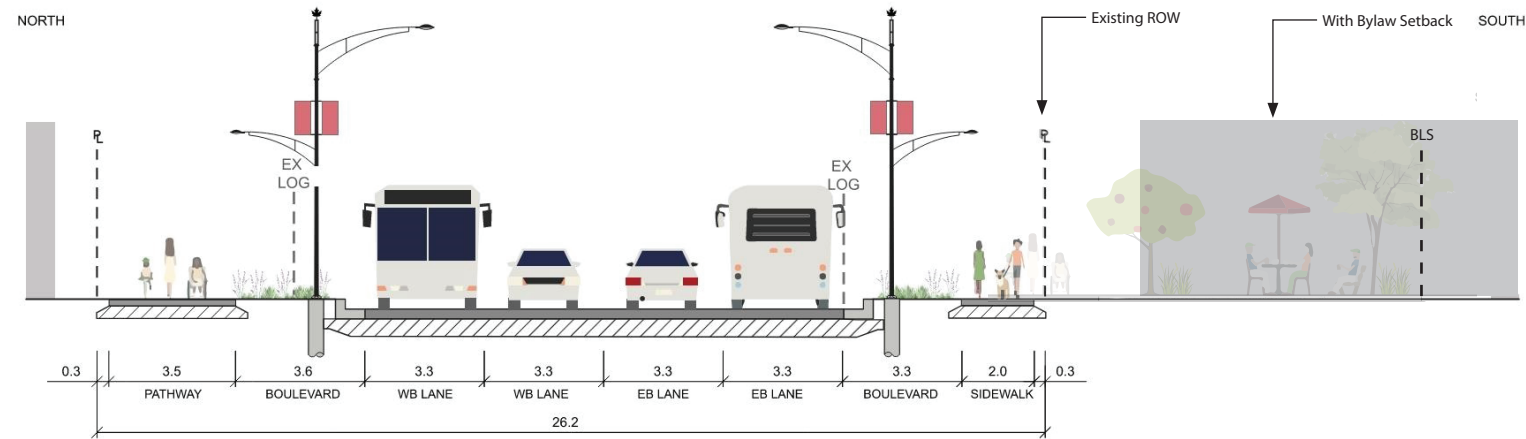


FIGURE 4.2 - POSSIBLE DESIGN PATHS FOR 16 AVENUE NW CROSS SECTION

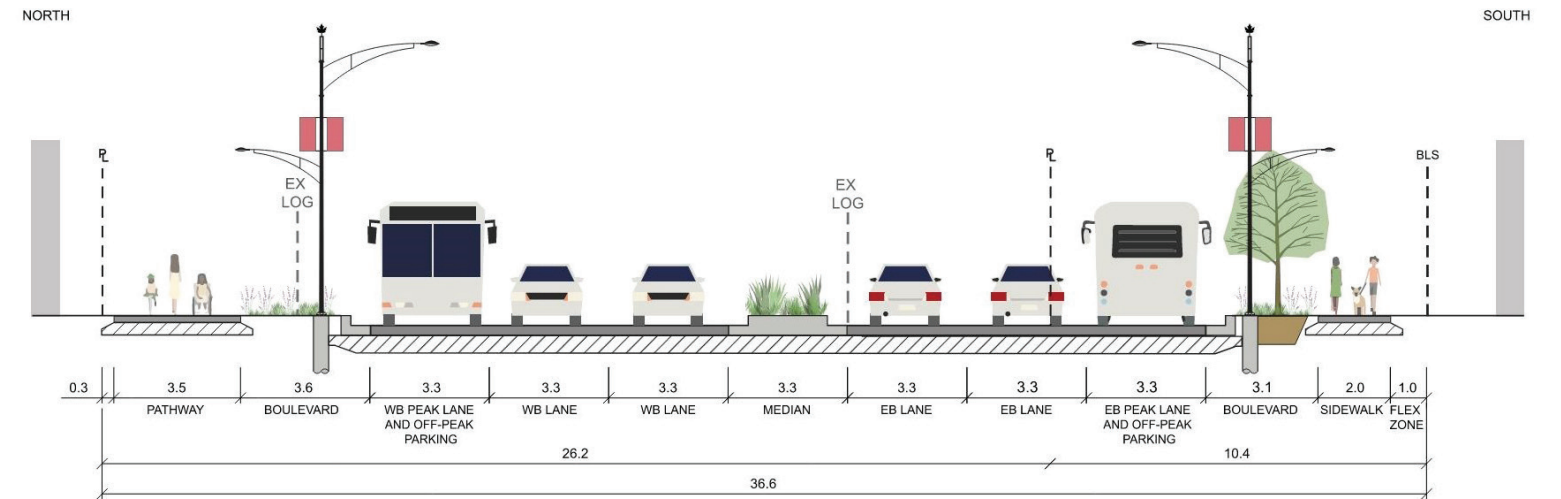
LEGEND

-  Property Line
-  Existing Lip of Gutter
-  Bylaw Setback
-  Typical Existing Building

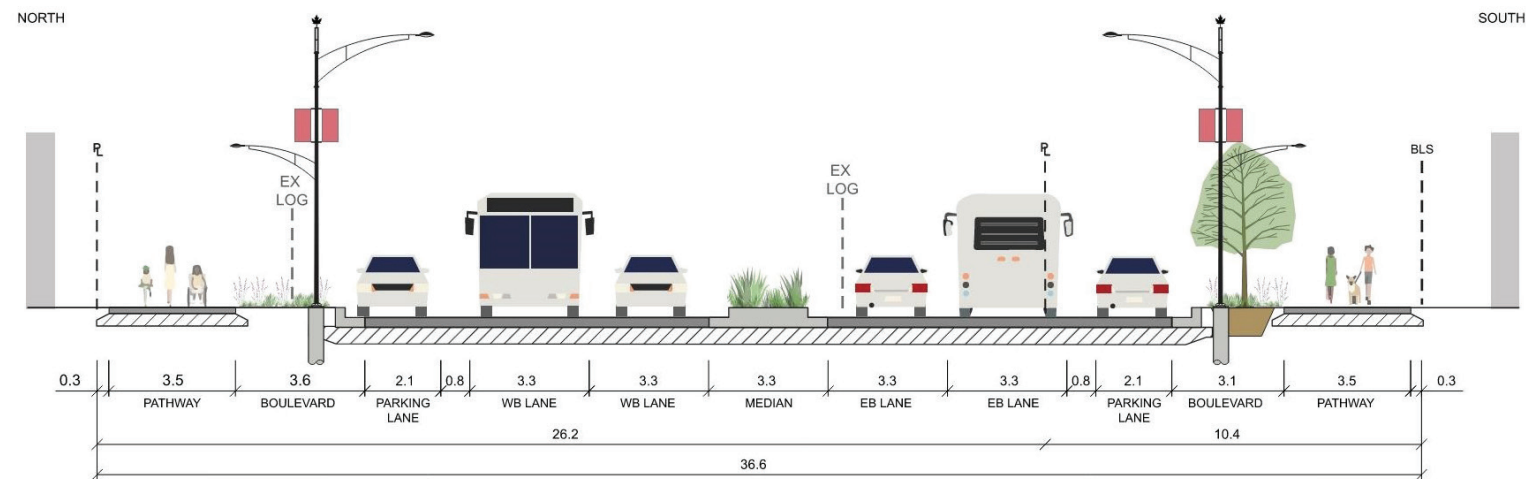
MEDIUM TERM - MAINTAIN SOUTH CURB



LONG TERM - SOUTH ALTERNATE A



LONG TERM - SOUTH ALTERNATE B



LONG TERM - SOUTH ALTERNATE C

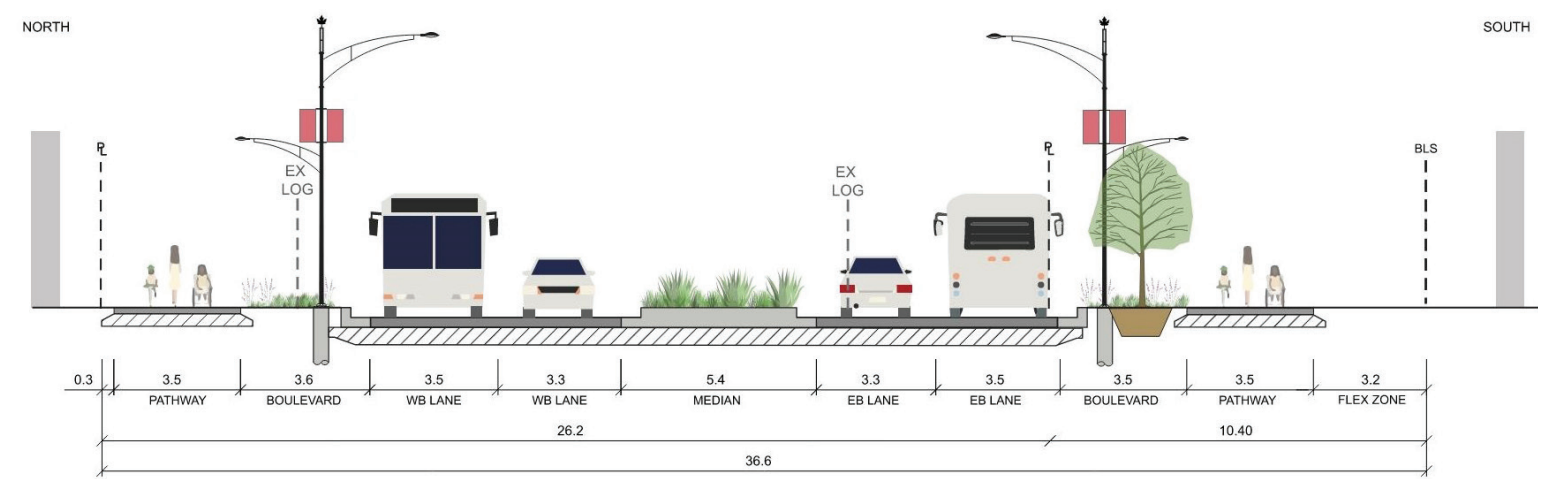



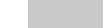


FIGURE 4.3 - FLEXIBLE CROSS SECTIONS (MAINTAINING SOUTH CURB LINE)

LEGEND

-  Property Line
-  Existing Lip of Gutter
-  Bylaw Setback
-  Typical Existing Building

MASTER PLAN ILLUSTRATIONS ARE BASED ON THIS OPTION

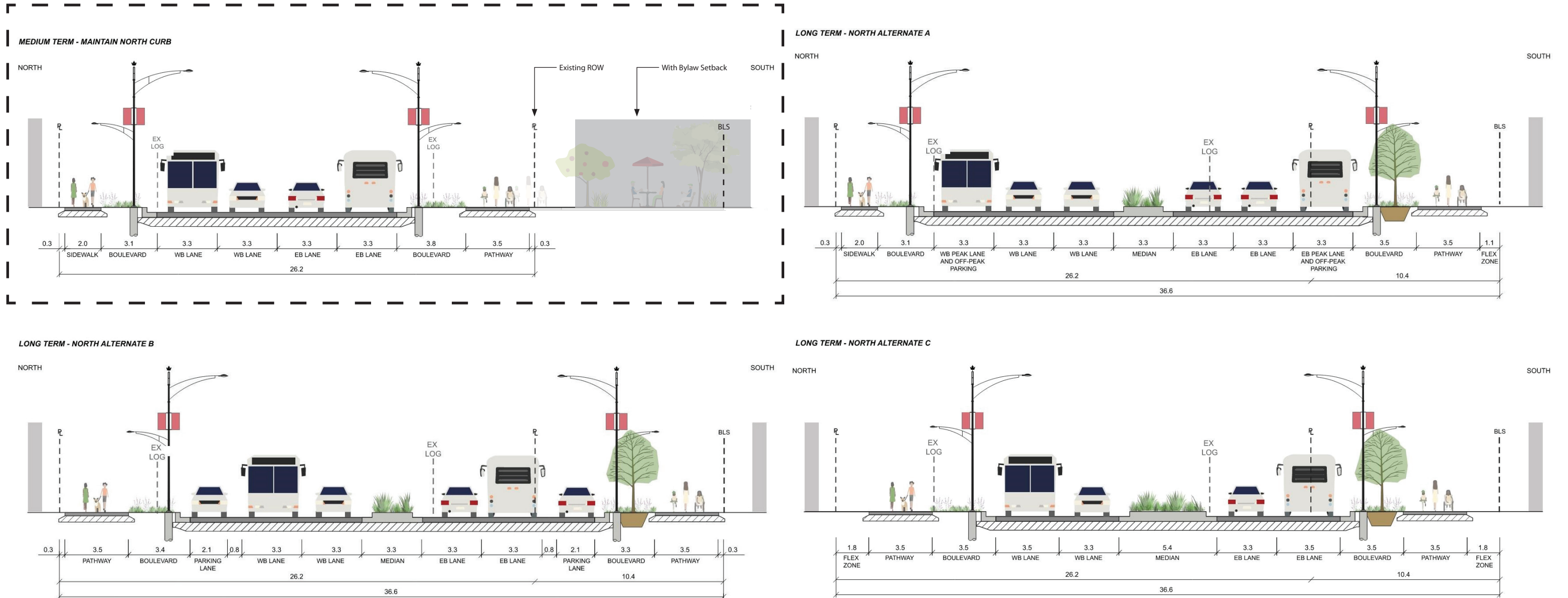


FIGURE 4.4 - FLEXIBLE CROSS SECTIONS (MAINTAINING NORTH CURB LINE)

4.3 MASTER PLAN OVERVIEW

The Master Plan is organized into three zones from west to east: the West Gateway west of Home Road; Main Street from Home Road to 43 Street NW; and the East Gateway east of 43 Street NW. Within this structure are three key intersections and connections as defined through site analysis that connect the streetscape to surrounding context and circulation. These areas of importance all have defined function within the streetscape and provide moments of strategic implementation to enhance the overall function of the streetscape, a pedestrian first approach, increased sense of place, and safer circulation.

Intersections provide strategic focal points for increased activity and enhanced interface. The key intersections that provide continuous north-south connectivity and serve specific purposes for Montgomery are Home Road NW, 46 Street NW and 43 Street NW. These warrant a higher level of public realm investment in design and circulation infrastructure to create optimal conditions for mobility impaired users, pedestrians, cyclists and development frontage.

The 16 Avenue NW Streetscape Master Plan plays a larger role within the 16 Avenue NW corridor. As such, the gateway zones are defined to create visual cues for drivers entering and exiting Montgomery.

The intention of these cues / improvements is to slow down drivers through the streetscape and create a greater sense of place. Enhanced parkland boulevards near the gateways also help transition the more urban core Main Street to the nearby park spaces at Shouldice Park and the Bow River Pathway. This site design section will move from the broad scale of individual zones and intersections, and individual streetscape elements that make up a design toolkit that can be applied across the Master Plan.

The Master Plan reflects two scenarios at the medium-term horizon, one remaining within existing ROW and the other with full use of the bylaw setback. Master Plan illustrations and elements that are common to both scenarios are labeled accordingly. The Master Plan is intended to guide future redevelopment along 16 Avenue NW and provides an overall intent and vision for the street, though is not intended to be used or interpreted literally.

The Master Plan organization is illustrated in Figure 4.5 and the Master Plan Zone and Intersection characteristics are illustrated in Figure 4.6.

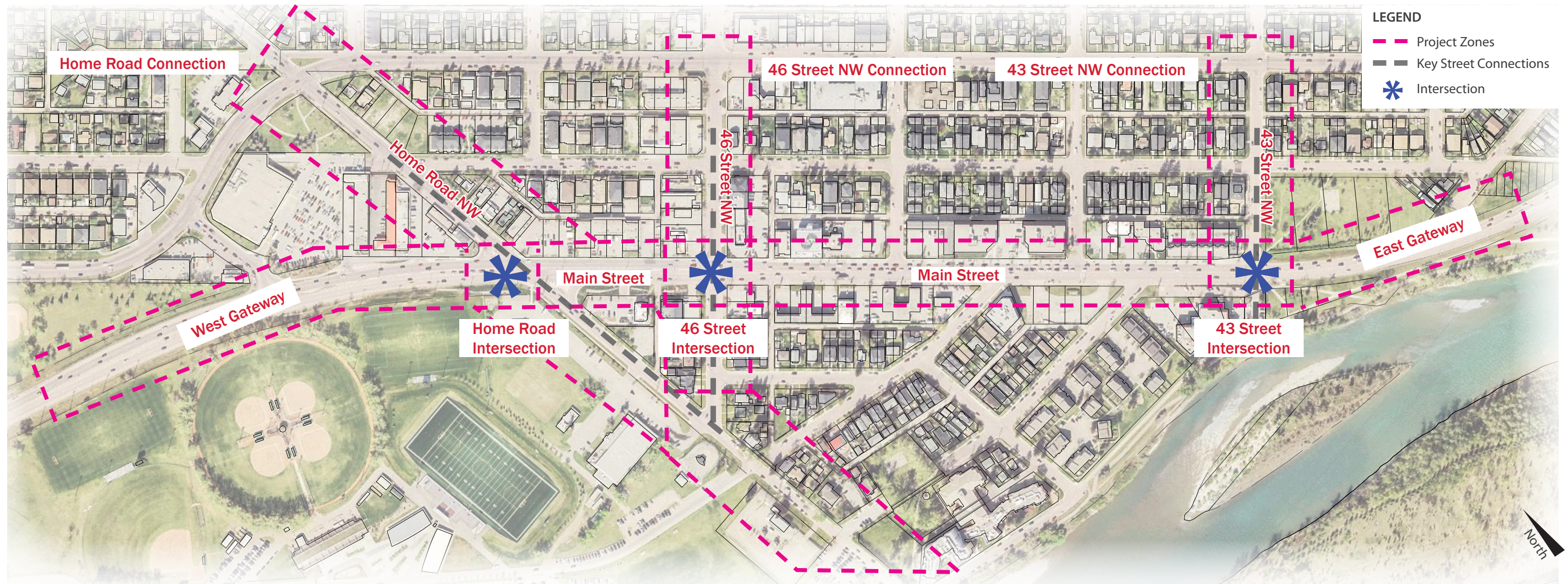


FIGURE 4.5 - MASTER PLAN ORGANIZATION

Core Main Street

The core 16 Avenue NW Main Street from Home Road to 43 Street NW provides enhanced streetscaping and crossing opportunities to connect Montgomery and support expected redevelopment along the street, complementing the more traditional mixed-use commercial / residential Main Street on Bowness Road. Key moves include wider, separated sidewalks, a new multi-use pathway, new healthy street trees, potential for a new median or on-street parking (depending on the selected long-term cross-section), and placemaking features in partnership with the Montgomery Community Association and Montgomery on the Bow Business Improvement Area.

West Gateway

Calgarians will transition into the Main Street after crossing the Bow River bridge from the west. Shouldice Park is a bordering feature, and key moves include retaining and adding trees, providing custom light standards, pageantry, hanging baskets, and a community entry feature.

Home Road NW Connection and Intersection

Improved crossing opportunities and safety are a key focus at this intersection, with key moves including squaring up the crosswalks to 90 degrees, reducing the angle and radius of the corner islands, and incorporating a new parallel multi-use pathway on the west side to supplement the existing on-street bike lanes all the way to the Bow River.

46 Street NW Connection and Intersection

Providing continuity between the Main Streets from Bowness Road to 16 Avenue NW along this redeveloping, mixed-use street is the focus at this intersection. Key moves include wider, separate sidewalks, a new parallel multi-use pathway, and streetscaping with a common design language linking Montgomery's Main Streets.

43 Street NW Intersection

Respecting the character of the residential street and improved crossing opportunities to the Bow River pathway are the key focus at this intersection. Key moves include a traffic calming roundabout, improved streetscaping, and new traffic signal with separated walking and cycling crossings.

East Gateway

Calgarians will transition into the Main Street after crossing the Shaganappi Trail interchange from east. George Gell Park and the Bow River Pathway are bordering features, and key moves include retaining and adding trees, providing custom light standards, pageantry, hanging baskets, and a community entry feature.

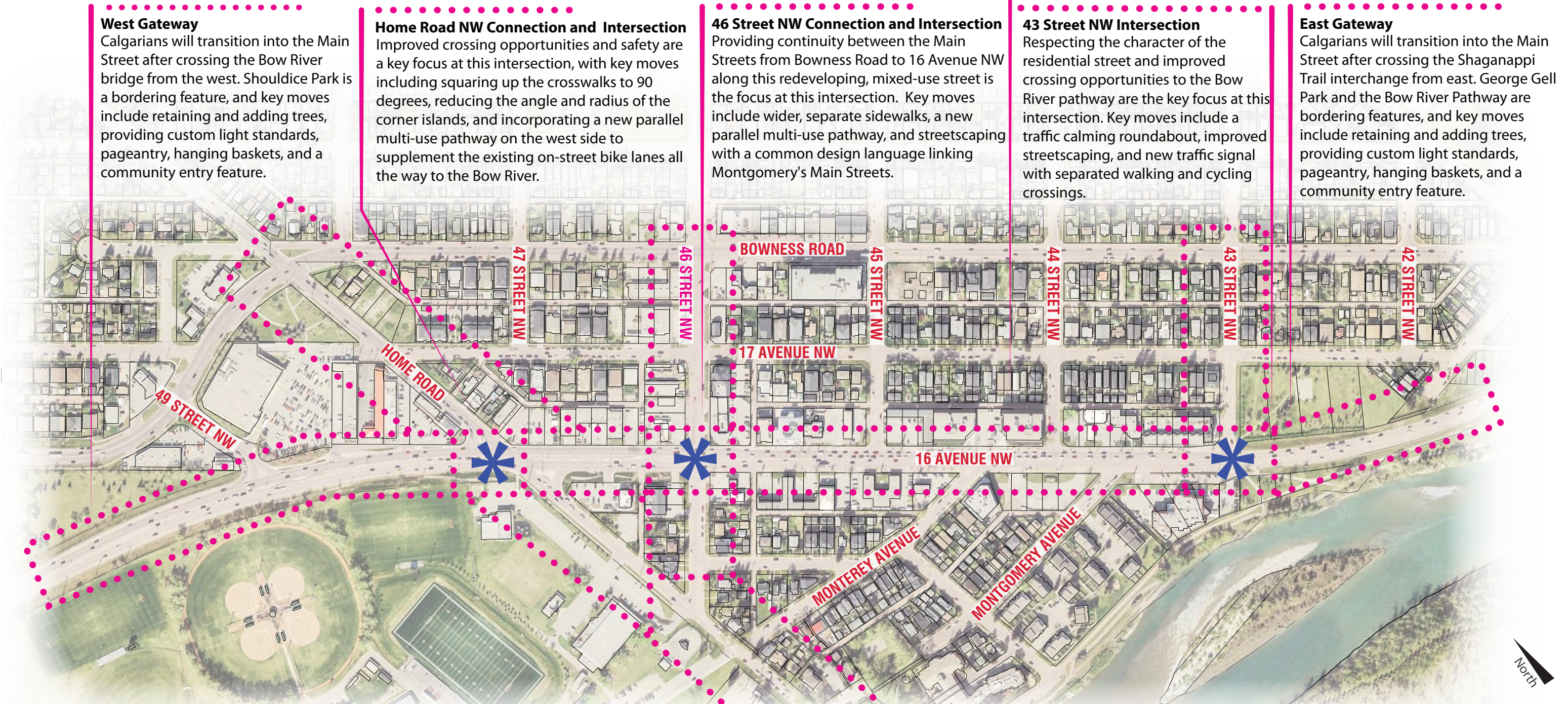


FIGURE 4.6 - INTERSECTION AND ZONE CHARACTERISTICS

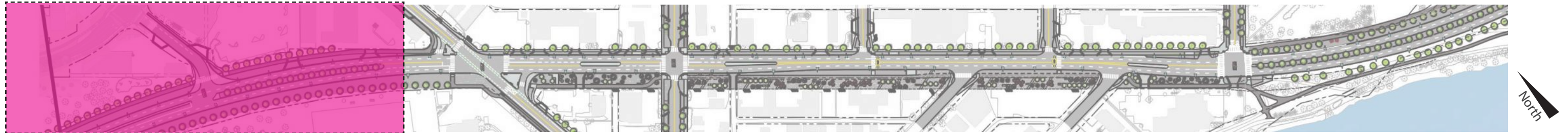
4.4 MASTER PLAN DESIGN

WEST GATEWAY

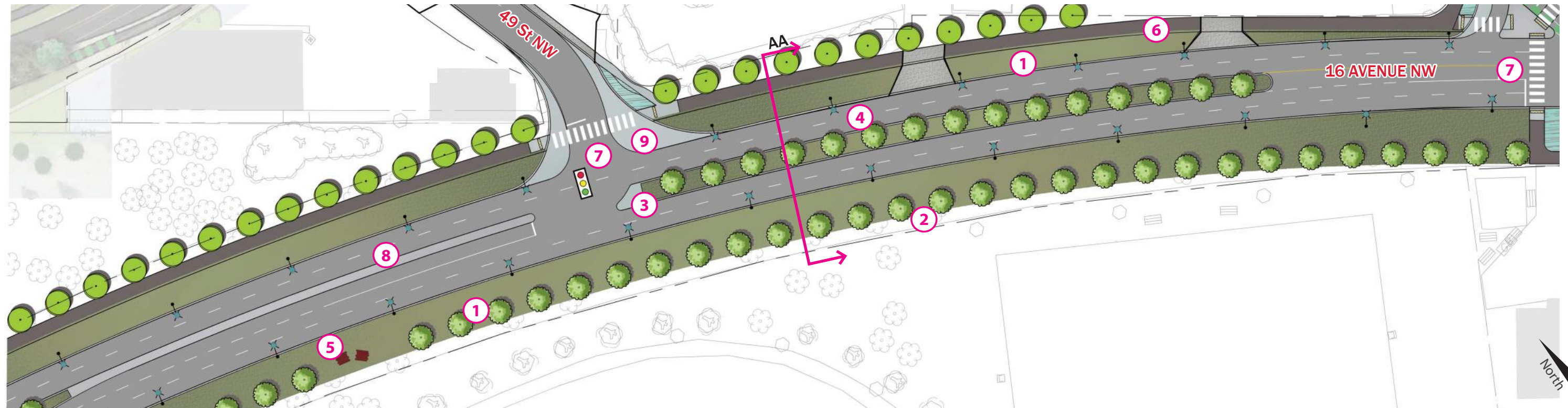
The West Gateway transitions the 16 Avenue NW corridor into Montgomery east of the Bow River bridge, transitioning to a more distinctly urban environment on the approach to 49 Street NW and onward to Home Road. The recommended plan is intended to create a visual transition and feeling that you have arrived in the community of Montgomery with a grand boulevard of large trees, Montgomery-specific wayfinding and banners, slower vehicle speeds, a transition into a pedestrian oriented public realm, and a vibrant mix of businesses along 16 Avenue NW.

The plan provides a new east-west pathway on the north side of 16 Avenue NW. There is potential to include a second additional pathway on the south side, depending on the long-term development of the corridor. Future designers should consider this opportunity once the long-term plan is known, and in consideration of such factors as the retention of mature trees, the boundary interface with Shouldice Park, and connectivity further west across the Bow River.

The West Gateway area is illustrated in Maps 4.1 and 4.2 at the medium- and long-term horizons, respectively. Key features and moves are summarized in Table 4.2.



Context Plan - 16 Avenue NW



MAP 4.1 - WEST GATEWAY - MEDIUM TERM (BOTH SCENARIOS)

TABLE 4.2 - WEST GATEWAY IMPROVEMENTS - MEDIUM TERM (BOTH SCENARIOS)

Proposed Design Element	
1	Wider landscapes boulevards with trees
2	Preserved trees along Shouldice Park where feasible
3	Landscaped median in gateway zone
4	New unique streetlights with opportunity for pageantry and hanging baskets
5	Opportunity for community entry feature
6	New multi-use pathway
7	Enhanced crosswalks
8	Narrower travel lanes (3.3m)
9	Concrete turning aprons at 49 Street NW to provide squared-off intersection

LEGEND

-  Proposed Trees
-  Proposed Tree on Private Lands
-  Proposed Street Lighting
-  Proposed Pedestrian Beacon
-  Proposed Traffic Signal
-  Proposed Driveway Closure
-  Enhanced Parkland Boulevard
-  Concrete Paving
-  Visual Impairment Tactile Strip
-  Asphalt Pathway
-  Roadway
-  Driveway
-  Boulevard / Median Planting
-  Enhanced Planting

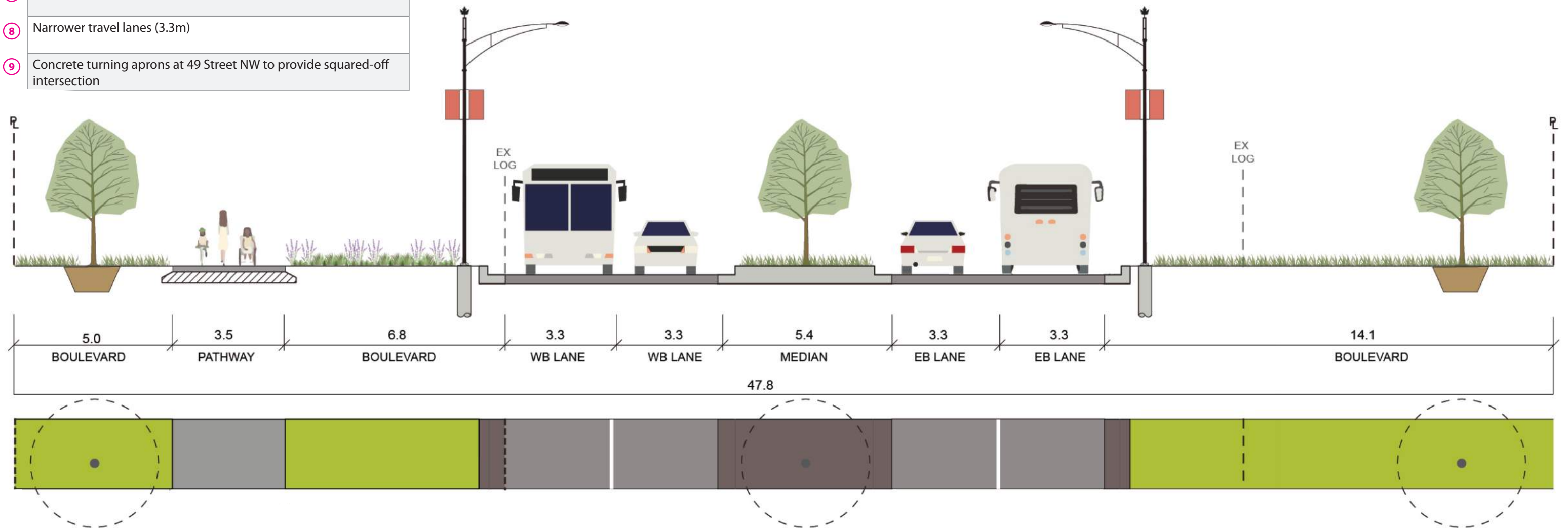
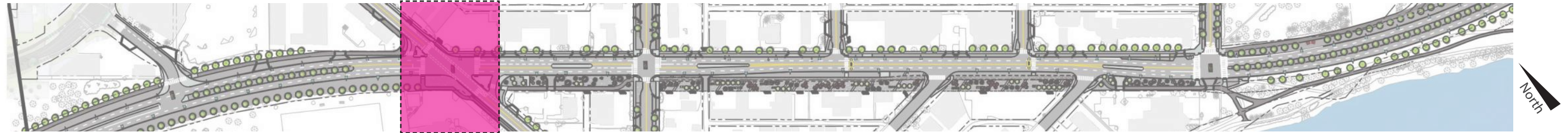


FIGURE 4.7 - WEST GATEWAY SECTION 'AA' - MEDIUM TERM (BOTH SCENARIOS)



Context Plan - 16 Avenue NW

HOME ROAD NW INTERSECTION

The Home Road NW intersection is the first key intersection in Montgomery, and a formal delineation point from the transitional West Gateway to the core Main Street further east. Pedestrian crossing, wayfinding and traffic safety improvements are proposed to improve the legibility and comfort of this skewed intersection. Shorter, 90 degree pedestrian crossings are proposed with a new multi-use pathway crossing on the west side of the intersection, providing an alternative crossing option to the existing on-street bike lanes for cyclists of differing comfort levels.

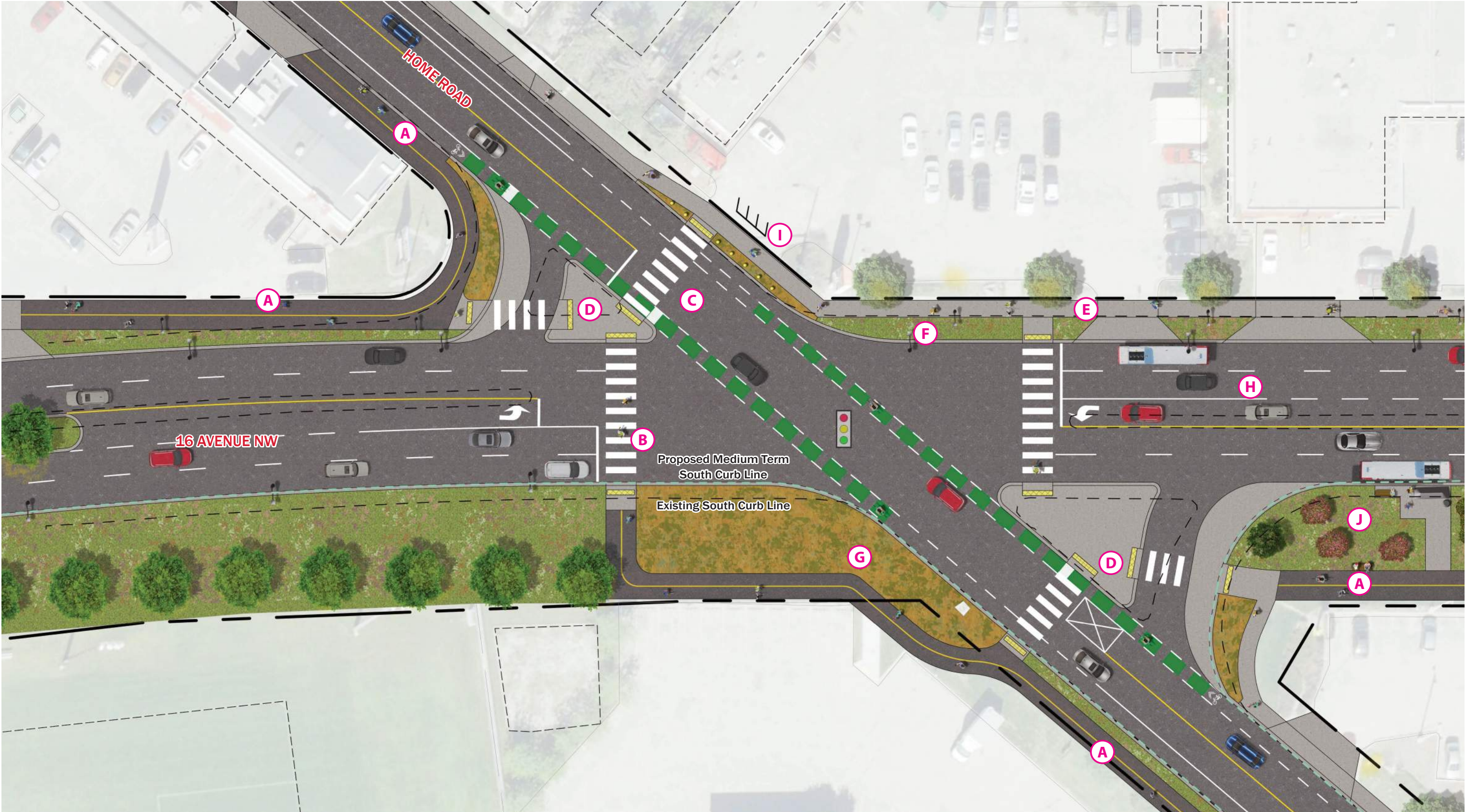
Site analysis of this area indicated several constraints that influenced the streetscape plan shown. These included a need to:

- » Increase user safety while crossing the intersection on foot and while cycling by shortening crossing distances, improving crossing geometry and improving cycle infrastructure
- » Address narrow monolithic sidewalks on the north and south sides
- » Address and adapt to private property constraints on all four corners
- » Retain or consolidate existing driveways to minimize streetscape interruptions

Public realm streetscape improvements in this area include:

- (A) Providing safer off-street cycling space on multi-use pathways
- (B) Enhancing marking and signage for all crosswalks to improve their visibility and accessibility
- (C) Providing separate crossing facilities for cyclists and pedestrians at the intersection to allow for safer crossing
- (D) Modifying the right-turn island at Home Road to:
 - » provide additional space for pedestrian refuge and shorten crossing distances
 - » improve sight lines and visibility for pedestrians and drivers
 - » encourage slower travel speeds
- (E) Providing wider separate sidewalks to create a more comfortable walking experience
- (F) Upgrading streetlights to provide a consistent, aesthetic and comfortable environment during evening hours, and to provide opportunity for pageantry to enhance the identity of the main street
- (G) Enhancing planting within available space to increase the buffer between vehicles and pedestrians
- (H) Encouraging slower and safer traffic speeds and safety for all through right-sizing vehicle lanes (3.3m)
- (I) Removing some existing driveways to minimize streetscape interruptions
- (J) Enhanced parkland boulevard

A proposed site plan of the Home Road Intersection is illustrated on Map 4.2 and is identical for both medium-term scenarios.



1m 2.5m 5m 10m



CORE MAIN STREET - HOME ROAD TO 43 STREET NW - MEDIUM TERM (EXISTING ROW)

The core 16 Avenue NW Main Street will evolve over time, with the priority in the medium-term being to enhance the streetscape and connectivity within existing road right-of-way. While much of the longer-term streetscape vision can be implemented at this horizon, the constraint of working within the more confined space does mean that some components can not yet be fully completed. Activation of the bylaw setback area in a coherent manner in response to redevelopment opportunity over time will ensure that the street interface remains active and vibrant at all stages of corridor development.

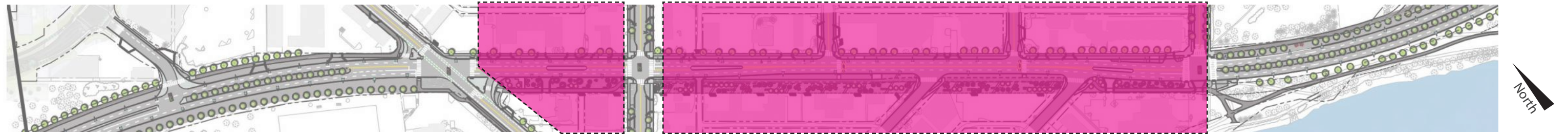
Notwithstanding the right-of-way constraints, additional public realm space is gained in the medium-term by narrowing the existing travel lanes on 16 Avenue NW, removing the median at Home Road, and removing left-turn lanes at 46 Street NW. These moves are necessary to address the existing monolithic sidewalks from Home Road to east of 46 Street NW, providing wider separated sidewalks and landscaped boulevards along the entire section. If land in the bylaw setback area becomes available, the left-turn lanes at 46 Street NW can also be restored at that time.

Community access will be prioritized at Home Road, 46 Street NW and 43 Street NW with other intersections reduced to right-turn-only movements over time. Curb extensions are ideally provided on all side-street intersections, to minimize pedestrian crossing distances. Commercial driveways are also closed or consolidated on an opportunity basis as sites redevelop with a more urban form, to minimize conflict points with the public realm.

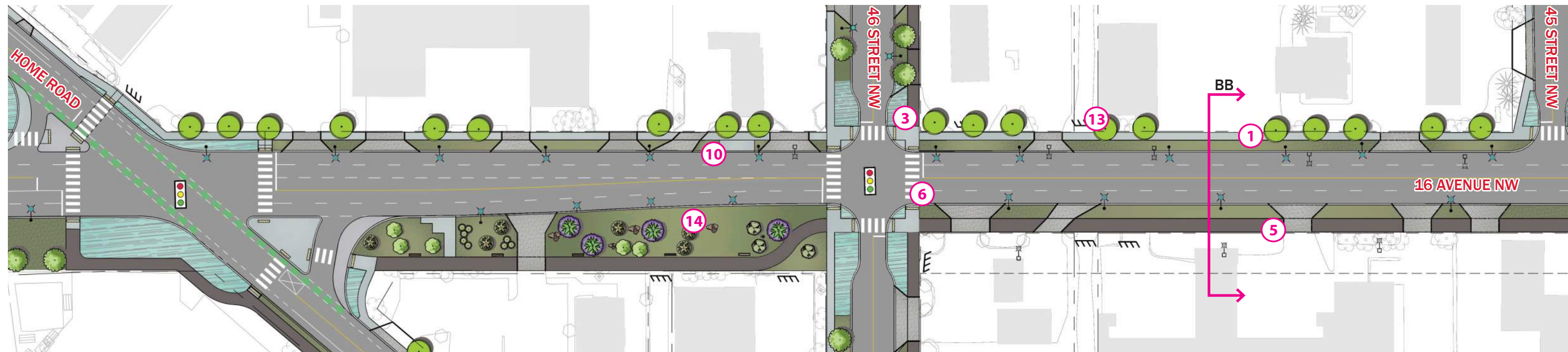
Opportunity to plant new street trees is limited in the medium-term due to utility line assignments, but can be progressively planted in the bylaw setback area as it becomes available. On the north side of 16 Avenue NW, the plan encourages planting adjacent trees on private property, providing a comparable tree canopy.

The following graphics illustrate key features and moves of the medium-term plan:

- » Map 4.3 - Main Street Plan - Medium Term (Existing ROW)
- » Figure 4.8 - Typical Main Street Cross-Section.



Context Plan - 16 Avenue NW

















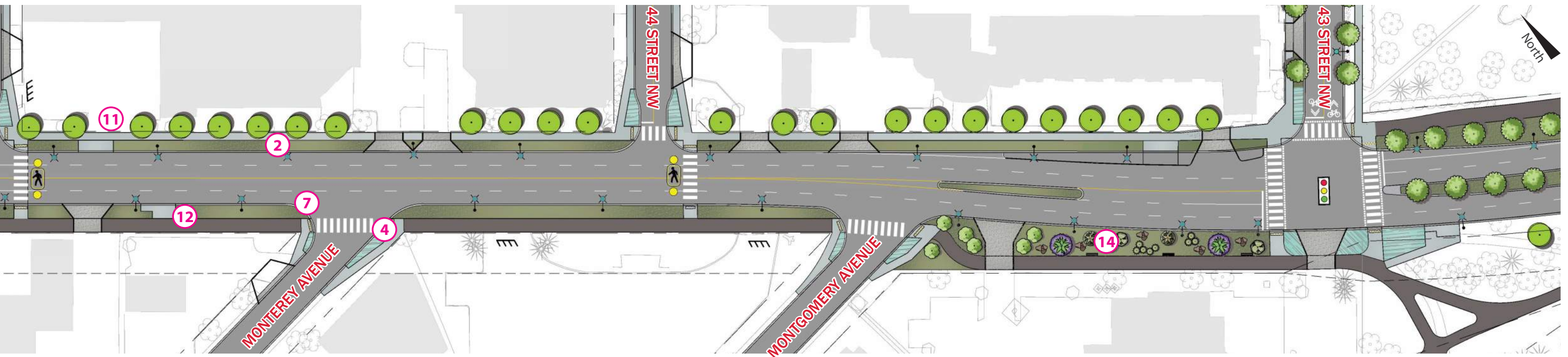
MAP 4.3 - MAIN STREET PLAN - MEDIUM TERM (EXISTING ROW)

TABLE 4.3 - MAIN STREET SITE IMPROVEMENTS - MEDIUM TERM (EXISTING ROW)

Proposed Design Element	
1	Wider sidewalks, separated from the curbs by a landscaped boulevard
2	Wider landscaped boulevards
3	Curb extensions on side streets where turning radius' permit
4	Narrower vehicle lanes (3.3m)
5	Addition of a new multi-use pathway on the south side within streetscape and on the north side in transition zones.
6	Enhance pavement markings at crosswalks to improve visibility
7	Median separation where feasible
Proposed Design Element	
8	On-street parking (dependent on long-term cross section)
9	Placemaking opportunity (if median is added)
10	New unique streetlights
11	New street trees along length of corridor
12	New site furnishings along length of corridor
13	Remove driveways at high-conflict locations, if properties have adequate alternative access
14	Enhanced parkland boulevard

LEGEND

-  Proposed Trees
-  Proposed Tree on Private Lands
-  Proposed Street Lighting
-  Proposed Pedestrian Beacon
-  Proposed Traffic Signal
-  Proposed Driveway Closure
-  Enhanced Parkland Boulevard
-  Concrete Paving
-  Visual Impairment Tactile Strip
-  Asphalt Pathway
-  Roadway
-  Driveway
-  Boulevard / Median Planting
-  Enhanced Planting



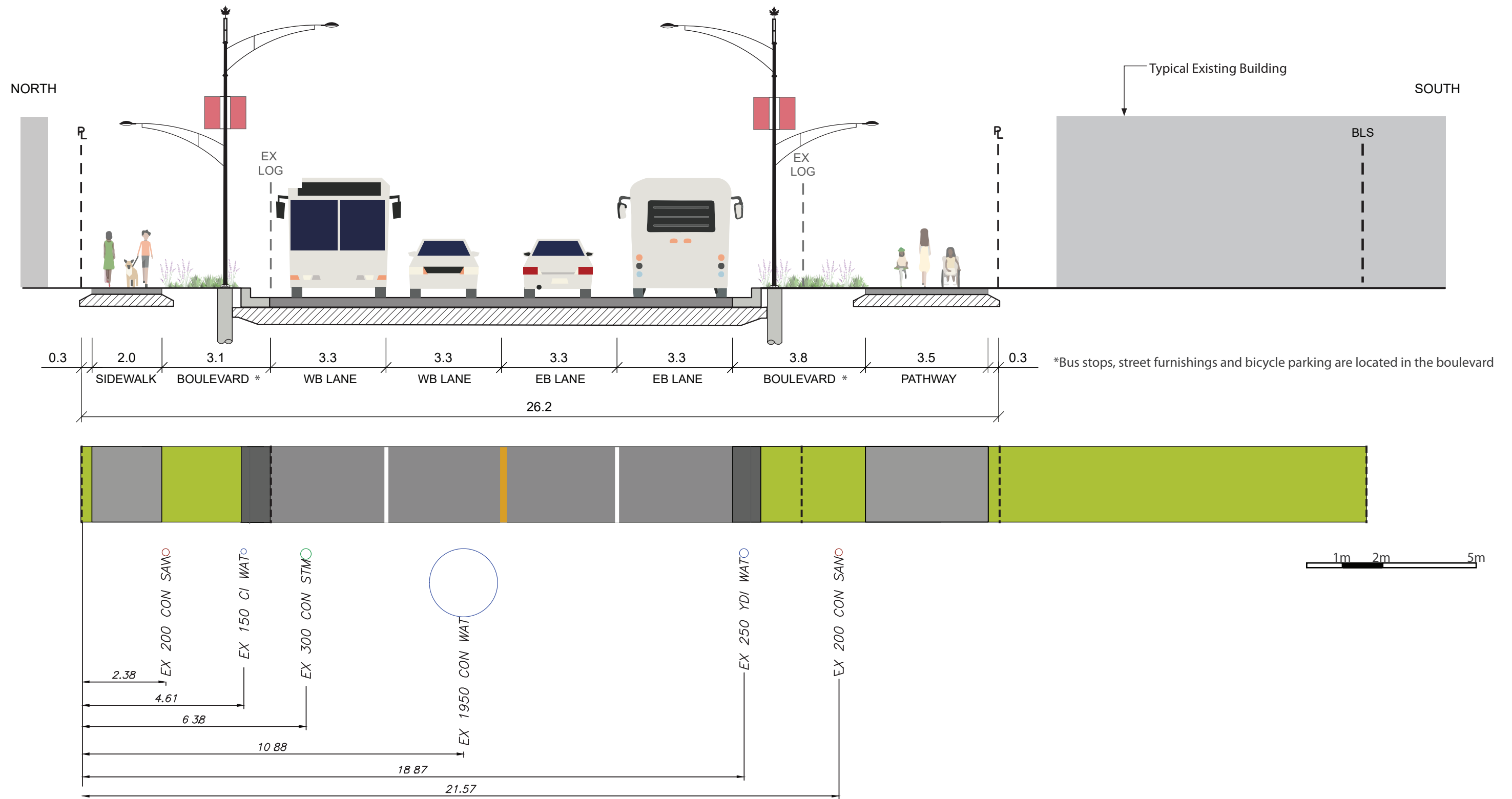


FIGURE 4.8 - SECTION 'BB' MAIN STREET CROSS SECTION - MEDIUM TERM (EXISTING ROW)



FIGURE 4.09 - TYPICAL EXISTING CONDITION, NORTH SIDE OF 16 AVENUE NW LOOKING EAST BETWEEN 46 STREET NW AND 45 STREET NW



FIGURE 4.11 - TYPICAL MEDIUM TERM CONDITION (EXISTING ROW), NORTH SIDE OF 16 AVENUE NW LOOKING EAST BETWEEN 46 STREET NW AND 45 STREET NW



FIGURE 4.10 - TYPICAL EXISTING CONDITION, SOUTH SIDE OF 16 AVENUE NW LOOKING EAST BETWEEN 46 STREET NW AND 45 STREET NW



FIGURE 4.12 - TYPICAL MEDIUM TERM CONDITION (EXISTING ROW), SOUTH SIDE OF 16 AVENUE NW LOOKING EAST BETWEEN 46 STREET NW AND 45 STREET NW

CORE MAIN STREET- HOME ROAD TO 43 STREET NW - MEDIUM TERM (WITH BYLAW SETBACK)

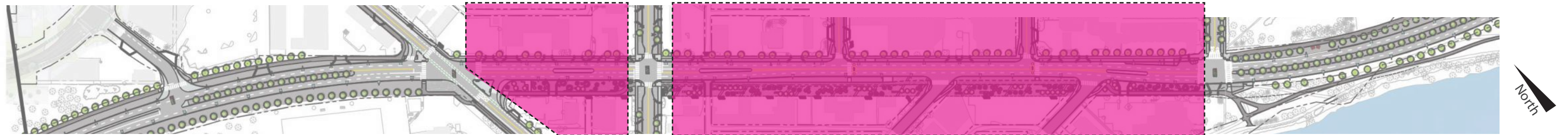
While the medium term plan will initially be restricted by available right-of-way, there is an opportunity to progressively activate additional streetscaping within the bylaw setback area as sites redevelop or as The City acquires the bylaw setback over time. As more sites take part, there is opportunity for these individual pockets of activation to work together and incorporate “linear park” elements to engage Main Street users. To provide guidance for individual sites there is value in having an overall vision for the street, hence a plan illustrating complete activation of the medium term scenario is provided here.

There are two distinct boulevard typologies along the south boulevard of the Main Street: the parkland boulevard and the urban boulevard. The parkland boulevard typology features a soft boulevard with naturalized clusters of tree planting, bench seating and large rock clusters. These spaces, located at the far west and east of the Main Street, act as gateways into the activated urban boulevard and connect the street to the parkland areas at Shouldice Park and the Bow River pathway. While maintaining a large separation between vehicles and pedestrians, these park spaces are accessible and are adjacent to the multi-use pathway for easy access and safe use.

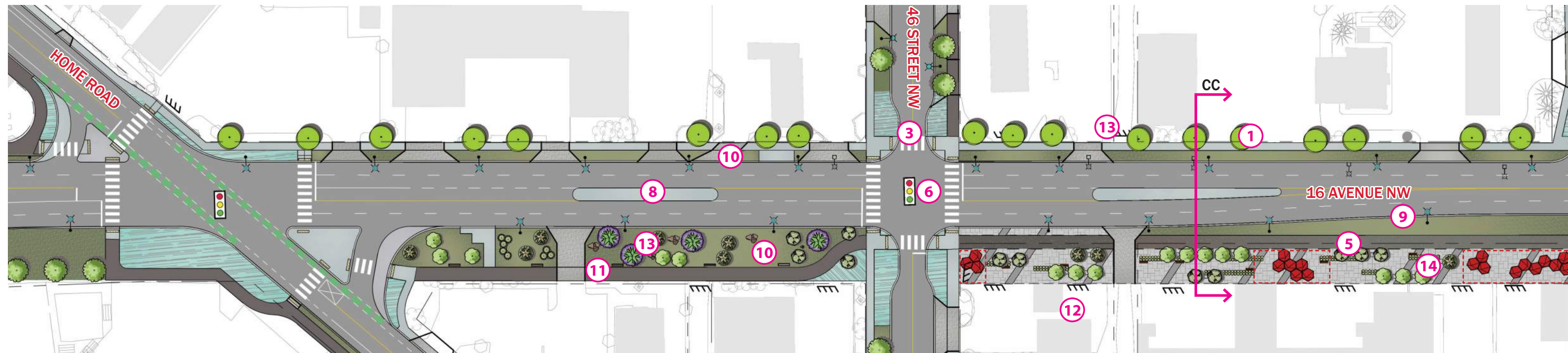
The urban boulevard typology is located within the south boulevard between 46 Street NW and Montgomery Avenue. These spaces are hardscaped with a distinguishable finish to delineate the adjacent multi-use pathway and create easy-to-navigate throughways. Within the hardscape are rows of trees and grasses to create a large canopy mixed with gathering areas where users can pause for meetings, coffee or a rest from the path network. Bench seating is situated throughout the plaza beneath the plantings and ample space is available for adjacent local businesses to spill over into the public realm (e.g. patio space for cafes, retail display areas, etc.). To the north of the multi-use pathway there is a planted boulevard to separate the space from the roadway. The boulevard adjacent to the street cannot be planted with trees due to utility conflicts.

Distinct community place-making opportunities are available within the hardscaped plaza areas, and in the short added medians on 16 Avenue NW near 46 Street NW and 43 Street NW. This and other community branding opportunities including pageantry and hanging baskets can be provided in partnership with the Montgomery Community Association and Montgomery on the Bow Business Improvement Area.

Flexibility is encouraged for activation of the bylaw setback area within the overall vision, recognizing that site-specific land uses and interfaces can best inform particular design elements. Refer to Section 4.6 for additional information.



Context Plan - 16 Avenue NW



MAP 4.4 - MAIN STREET PLAN - MEDIUM TERM (WITH BYLAW SETBACK)

The following graphics illustrate key features and moves of the medium term plan with full activation of the bylaw setback:

- » Map 4.4 - Main Street Plan - Medium Term (With Bylaw Setback)
- » Map 4.5 - Typical Main Street Plan Visualization - Medium Term (With Bylaw Setback)
- » Figure 4.13 - Typical Main Street Cross-Section - Medium Term (With Bylaw Setback)

TABLE 4.4 - MAIN STREET SITE IMPROVEMENTS - MEDIUM TERM (WITH BYLAW SETBACK)

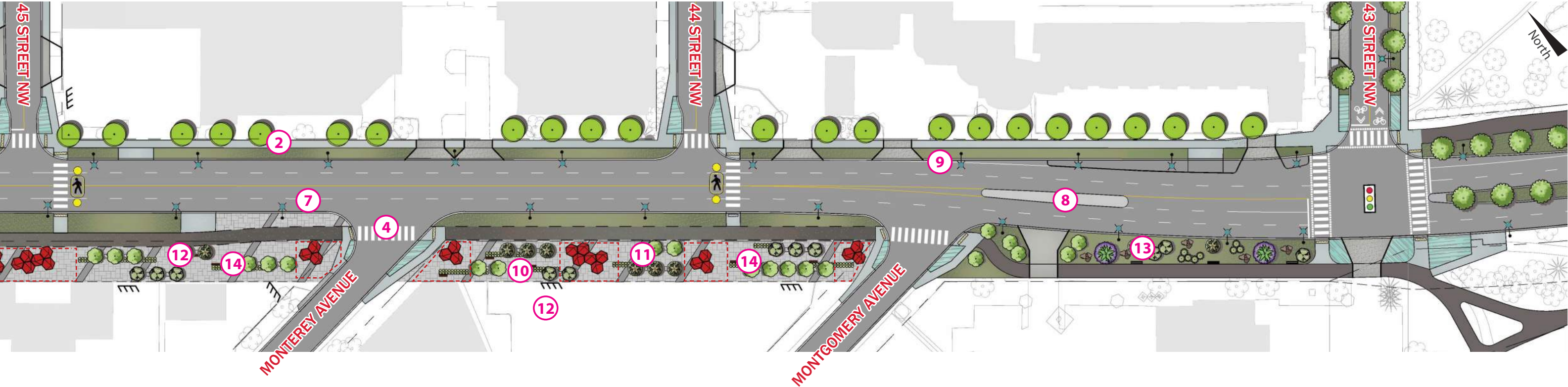
Proposed Design Element	
1	Wider sidewalks, separated from the curbs by a landscaped boulevard
2	Wider landscaped boulevards
3	Curb extensions on side streets where turning radius' permit
4	Narrower vehicle lanes (3.3m)
5	Addition of a new multi-use pathway on the south side within streetscape and on the north side in transition zones.
6	Enhance pavement markings at crosswalks to improve visibility
7	Median separation where feasible
Proposed Design Element	
8	Placemaking opportunity (if median is added)
9	New unique streetlights
10	New street trees along length of corridor (within urban and parkland boulevards)
11	New site furnishings along length of corridor (within urban and parkland boulevards)
12	Remove driveways at high-conflict locations, if properties have adequate alternative access
13	Enhanced Parkland Boulevard
14	Enhanced Urban Boulevard

LEGEND

-  Proposed Trees
-  Proposed Tree on Private Lands
-  Proposed Street Lighting
-  Proposed Pedestrian Beacon
-  Proposed Traffic Signal
-  Proposed Driveway Closure
-  Proposed Placemaking / Activation Zone
-  Concrete Paving
-  Visual Impairment Tactile Strip
-  Asphalt Pathway
-  Roadway
-  Driveway
-  Boulevard / Median Planting
-  Enhanced Planting

 Enhanced Parkland Boulevard

 Enhanced Urban Boulevard



Public realm streetscape improvements in this option include:

PRINCIPLE: SOCIAL & HEALTHY LIFESTYLE

- (A) Enhanced north-south connections and streetscaping on Home Road, 46 Street NW and 43 Street NW, provide unified public realm in Montgomery linking Bowness Road, 16 Avenue NW and the Bow River
- (B) Boulevards, curb extensions and medians enhanced with naturalized, low-maintenance grass and shrub plantings
- (C) Opportunity for trees to be planted on private property to further enhance the public realm
- (D) New, healthier street trees planted on the south side of 16 Avenue NW

PRINCIPLE: MOBILITY & FUNCTIONALITY

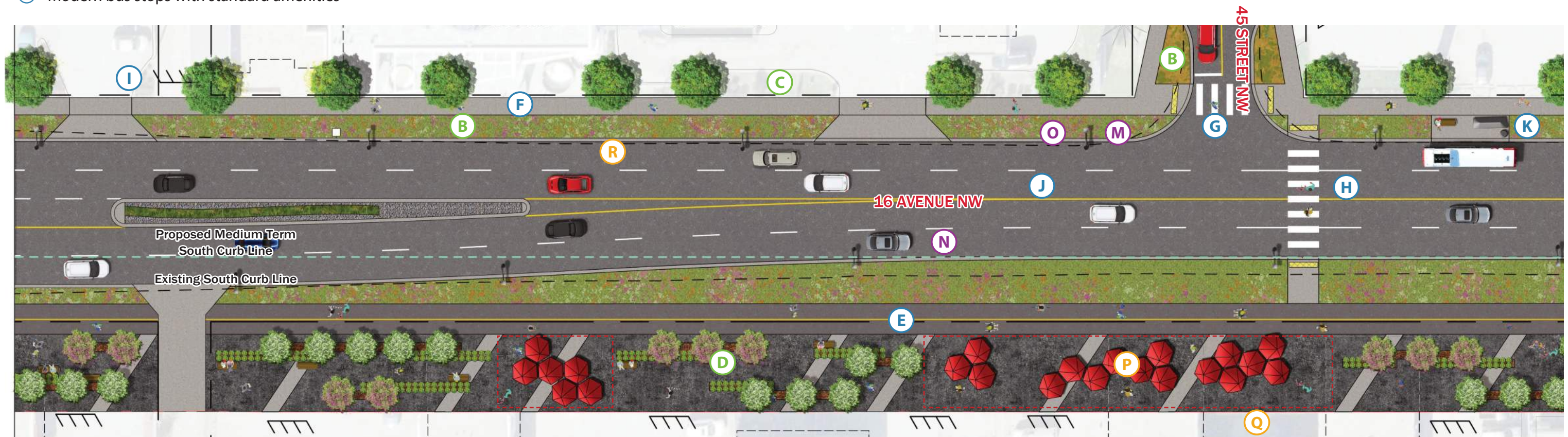
- (E) New multi-use pathway provided with separation to roadway
- (F) Sidewalk widened with separation to the roadway
- (G) Shorter crossing distances, enhanced pavement markings and traffic signals provide safer crossing opportunities for all ages and abilities
- (H) Intersections serving residential areas limited to right-turns only
- (I) Driveway access removed and reoriented to side streets and back lanes as properties redevelop
- (J) Vehicle lanes narrowed to encourage slower vehicle speeds
- (K) Modern bus stops with standard amenities

PRINCIPLE: CHARACTER & IDENTITY

- (L) Enhanced gateway features provided at west and east entrances to Montgomery including a grand boulevard of large trees and Montgomery-specific wayfinding and banners
- (M) Opportunity for Montgomery BIA to add branding, banners and other enhancements to the corridor
- (N) Opportunity for artistic features to showcase the community (if median is added)
- (O) Streetlights upgraded to evoke the common "Trans Canada" theme of the 16 Avenue NW corridor

PRINCIPLE: ECONOMIC VITALITY

- (P) Public realm enhancements shifted south when right-of-way is available
- (Q) Lot depths on south side are reduced, but still viable for redevelopment
- (R) New on-street parking provided along 16 Avenue NW (depends on long-term cross-section)



MAP 4.5 - TYPICAL MAIN STREET VISUALIZATION - MEDIUM TERM (WITH BYLAW SETBACK)

1m 2.5m 5m 10m



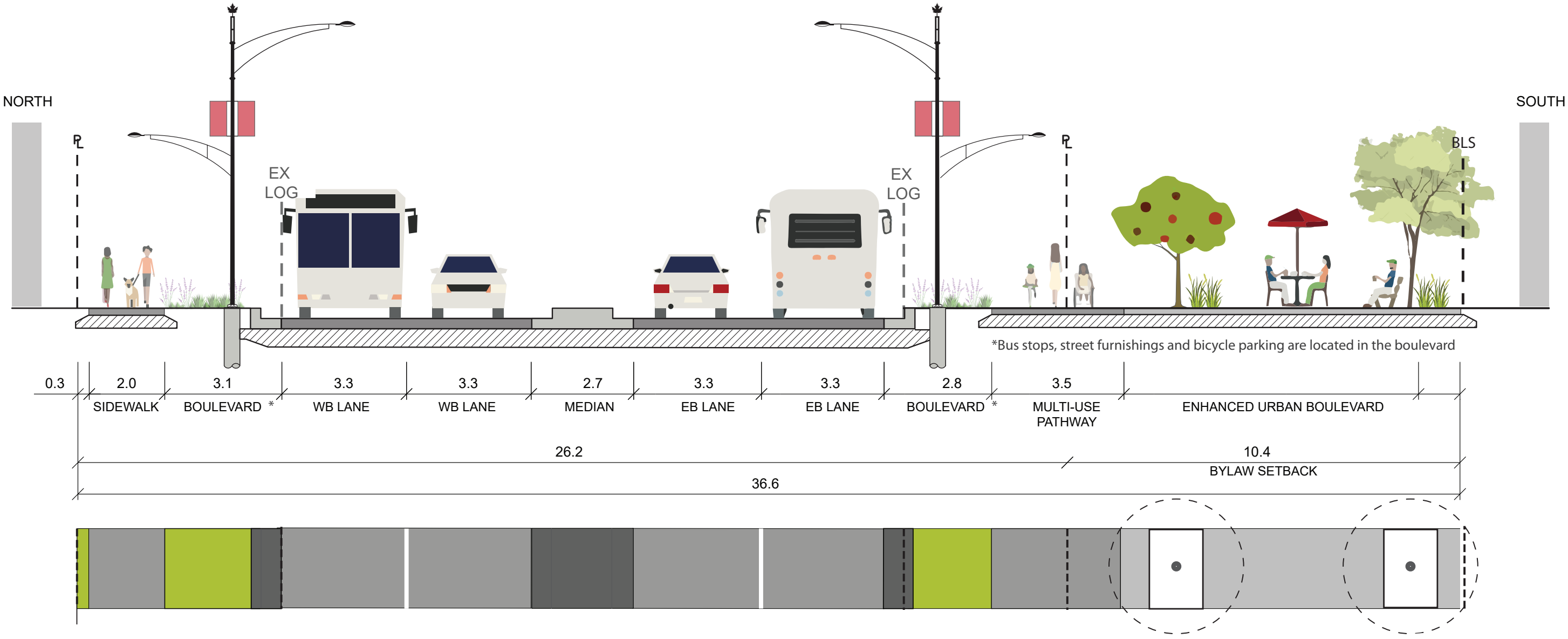
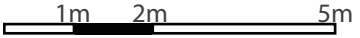
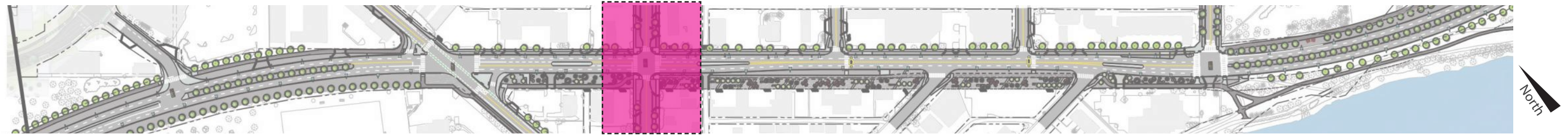


FIGURE 4.13 - SECTION 'CC' TYPICAL MAIN STREET CROSS SECTION - MEDIUM TERM (WITH BYLAW SETBACK)





Context Plan - 16 Avenue NW

46 STREET NW INTERSECTION

The 46 Street NW intersection is the central focal point of the Master Plan, and is the main connection point between the 16 Avenue NW and Bowness Road Main Streets, with contiguous mixed-use zoning along the north-south street. Future redevelopment of adjacent parcels will focus on addressing the corner and frontage on both streets, with a common streetscape design language connecting Montgomery at the key community hub. Wide public realm, enhanced pedestrian crossings and community branding opportunities will further enhance the corner.

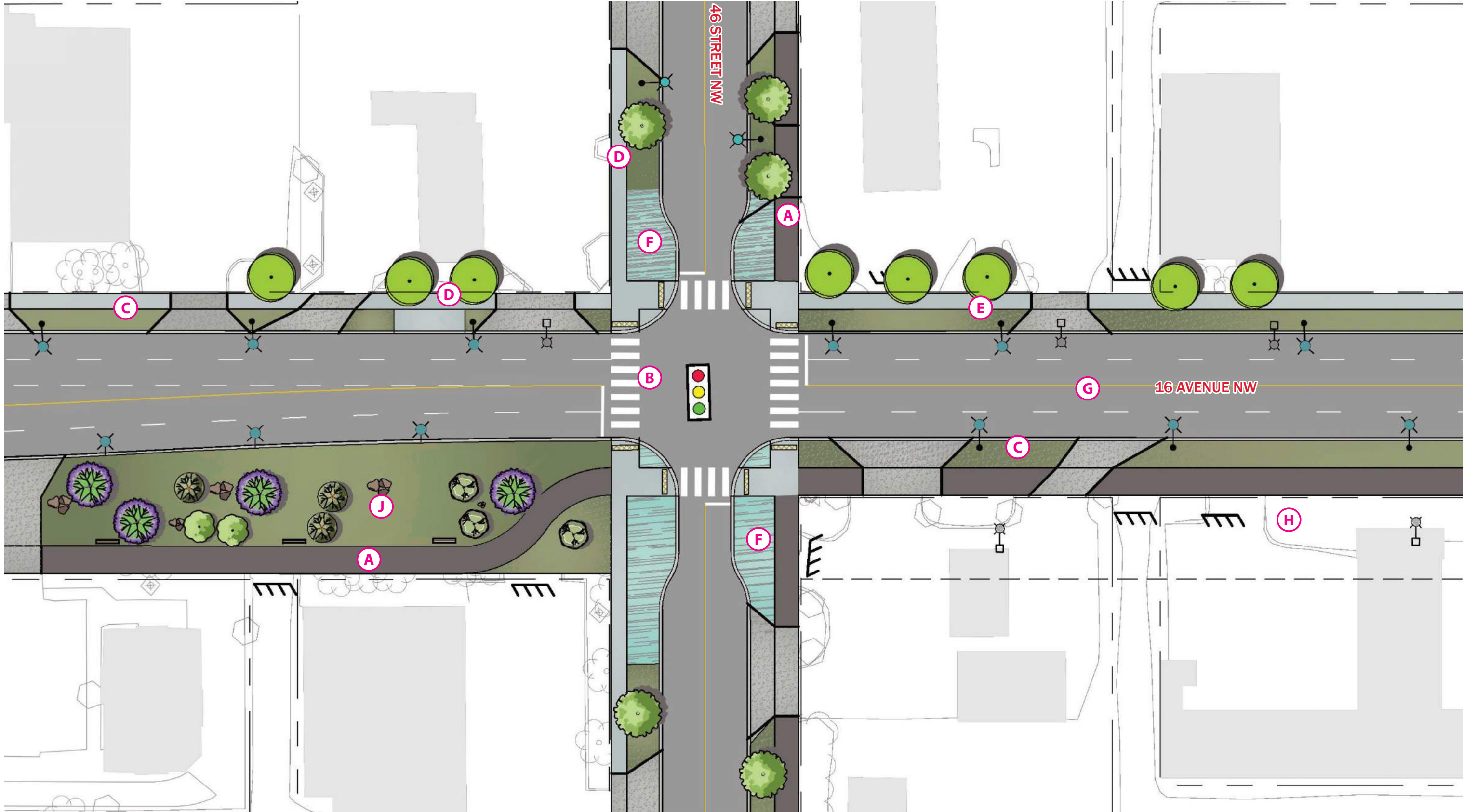
Site analysis of this area indicated several constraints that influenced the streetscape plan shown. These included a need to:

- » Interface with commercial lots, specifically on the south east corner
- » Address future development and potential interfacing strategies
- » Address long existing crossing distances for pedestrians and cyclists
- » Address narrow monolithic sidewalks on north and south sides
- » Retain or consolidate existing driveways to minimize streetscape disruptions

Public realm streetscape improvements in this area include:

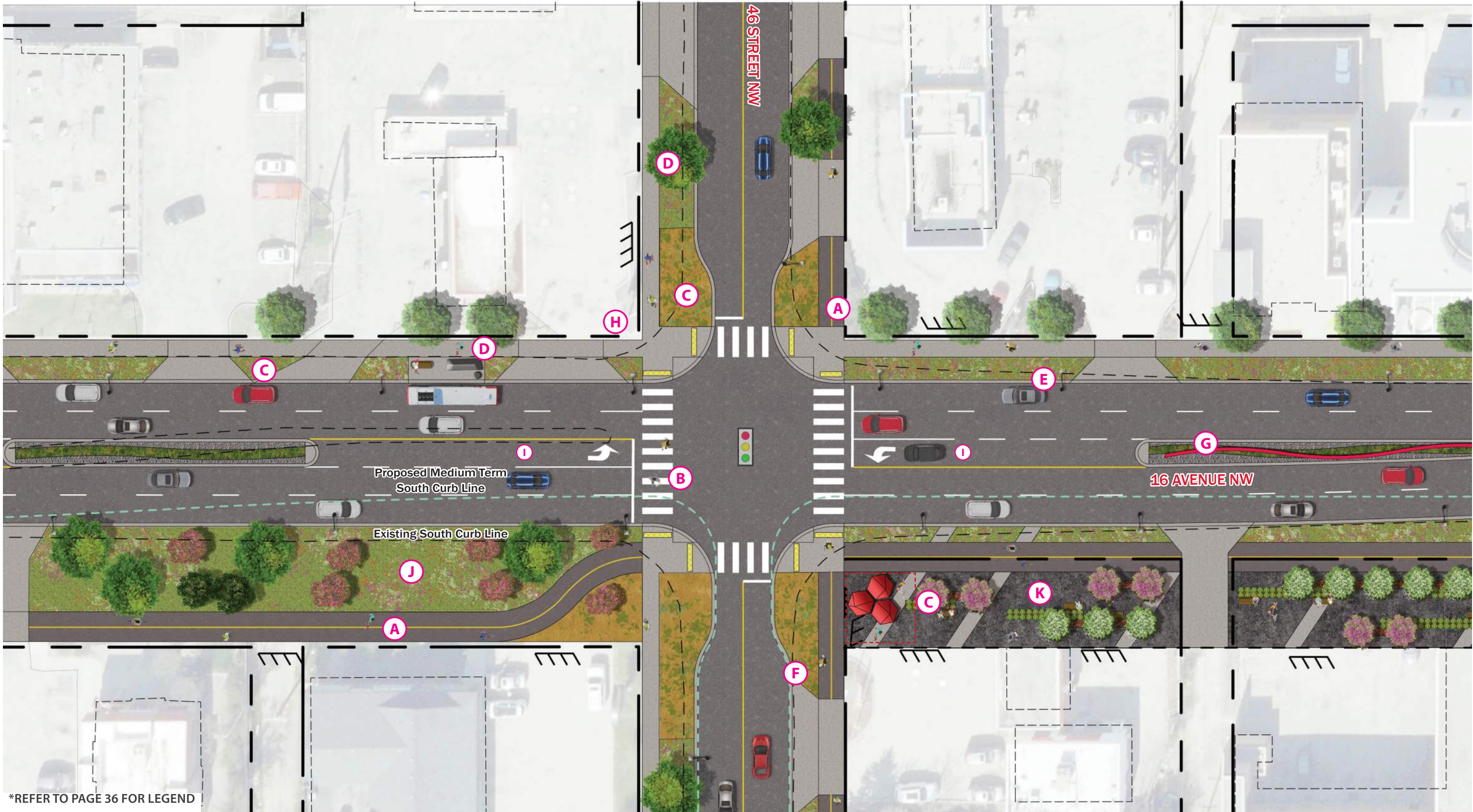
- (A) Providing safer off-street cycling space on multi-use pathways
- (B) Enhancing marking and signage for all crosswalks to improve their visibility and accessibility and providing improved crossing facilities for pedestrians at the intersection to allow for safer crossing
- (C) Adding wider landscaped boulevards between sidewalks and travel lanes to:
 - » make walking more comfortable
 - » make waiting at transit stops more comfortable
 - » provide space for snow storage
 - » promote a healthy tree canopy by adding soil and supporting water filtration
- (D) Providing wider separate sidewalks to create a more comfortable walking experience
- (E) Upgrading streetlights to provide a consistent, aesthetic and comfortable environment during evening hours, and to provide opportunity for pageantry to enhance the identity of the main street
- (F) Enhancing planting within available space to increase the buffer between vehicles and pedestrians
- (G) Encouraging slower and safer traffic speeds and safety for all through right-sizing vehicle lanes (3.3m)
- (H) Removing some existing driveways to minimize streetscape interruptions
- (I) Left turn lane (with bylaw setback only)
- (J) Enhanced parkland boulevard
- (K) Enhanced urban boulevard

A proposed site plan of the 46 Street Intersection is illustrated on Map 4.6 and Map 4.7 with existing ROW and full use of the bylaw setback, respectively.



MAP 4.6- 46 STREET NW INTERSECTION - MEDIUM TERM (EXISTING ROW)

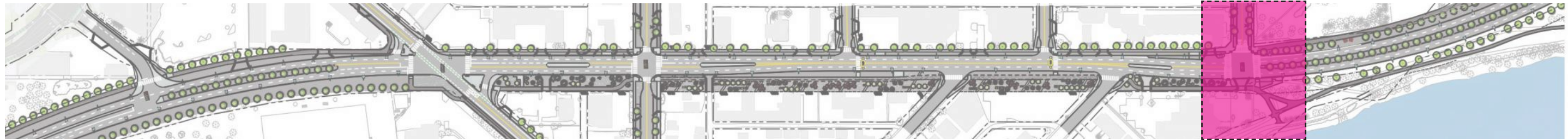




*REFER TO PAGE 36 FOR LEGEND

MAP 4.7 46 STREET NW INTERSECTION - MEDIUM TERM (WITH BYLAW SETBACK)

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Context Plan - 16 Avenue NW

43 STREET NW INTERSECTION

The 43 Street NW intersection is the first key intersection in Montgomery, and a formal delineation point from the transitional East Gateway to the core Main Street further west. Pedestrian crossing safety is a key community priority, connecting residential areas of Montgomery across 16 Avenue NW to the Bow River Pathway. A new traffic signal is being installed at this intersection as a key short-term safety priority, which will help provide safer, direct access across the street and provide more positive reinforcement to drivers that they are entering a slower urban area.

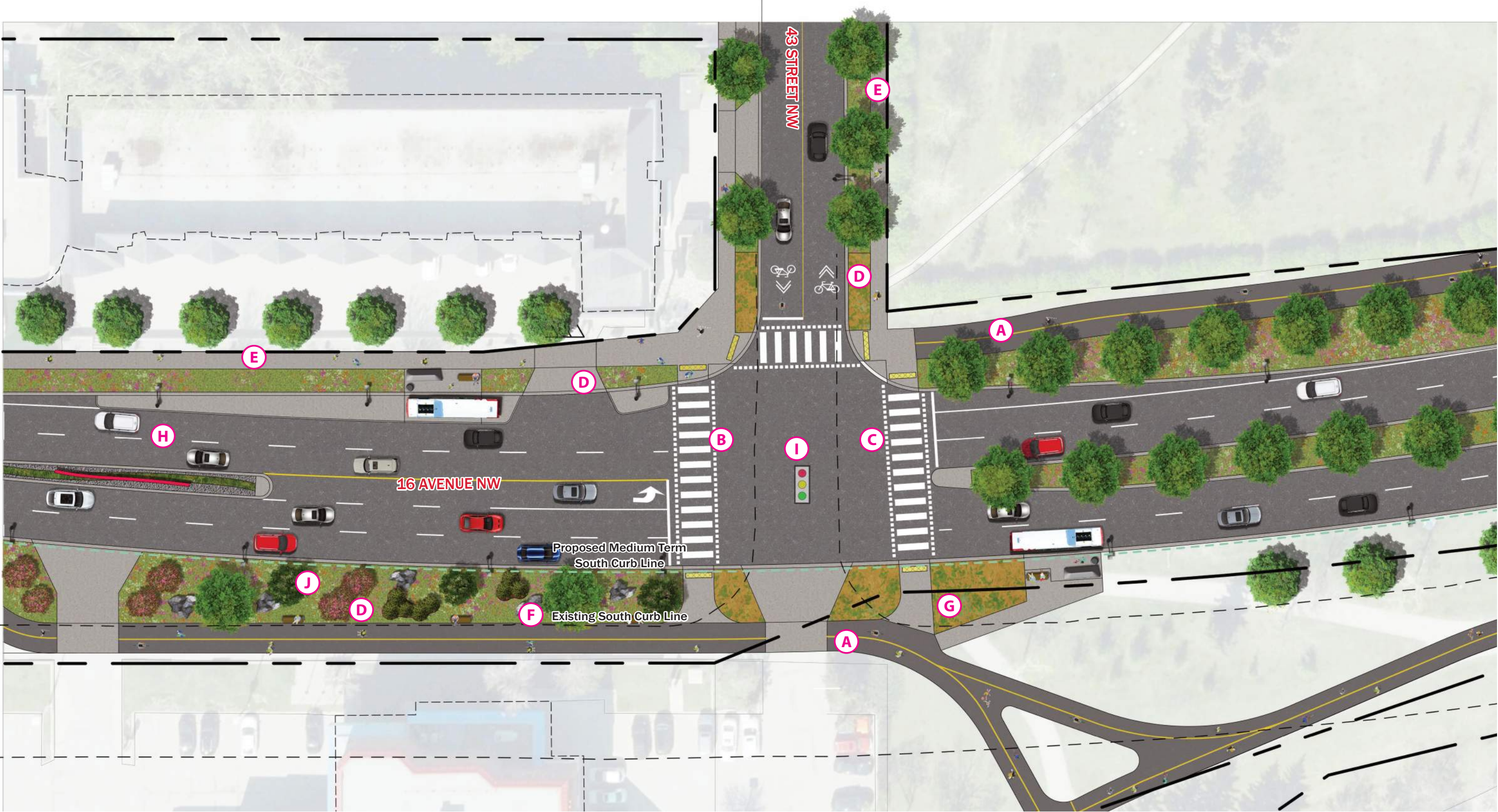
Site analysis of this area indicated several constraints that influenced the streetscape plan shown. These included a need to:

- » Address higher travel speeds approaching Montgomery from the east
- » Address pedestrian and cyclist safety at crossing and improve connections to the Bow River Pathway
- » Allow for community access via 43 Street NW while discouraging non-local travel

Public realm streetscape improvements in this area include:

- (A) Providing safer connection to the Bow River pathway on the south side and to the new multi use pathway along 16 Avenue NW
- (B) Enhancing marking and signage for all crosswalks to improve their visibility and accessibility
- (C) Providing separate crossing facilities for cyclists and pedestrians at the intersection to allow for safer crossing
- (D) Adding wider landscaped boulevards between sidewalks and vehicle lanes to:
 - » make walking more comfortable
 - » make waiting at transit stops more comfortable
 - » provide space for snow storage
 - » promote a healthy tree canopy by adding soil and supporting water filtration
- (E) Providing wider separate sidewalks to create a more comfortable walking experience
- (F) Upgrading streetlights to provide a consistent, aesthetic and comfortable environment during evening hours, and to provide opportunity for pageantry to enhance the identity of the main street
- (G) Enhancing planting within available space to increase the buffer between vehicles and pedestrians
- (H) Encouraging slower and safer traffic speeds and safety for all through right-sizing vehicle lanes (3.3m)
- (I) Introducing new traffic signals to increase overall safety at the intersection
- (J) Enhanced parkland boulevard

A proposed site plan of the 43 Street NW Intersection is illustrated on Map 4.8 and is identical for both medium-term scenarios.



MAP 4.8 - 43 STREET NW INTERSECTION - MEDIUM TERM (BOTH SCENARIOS)

1m 2.5m 5m 10m

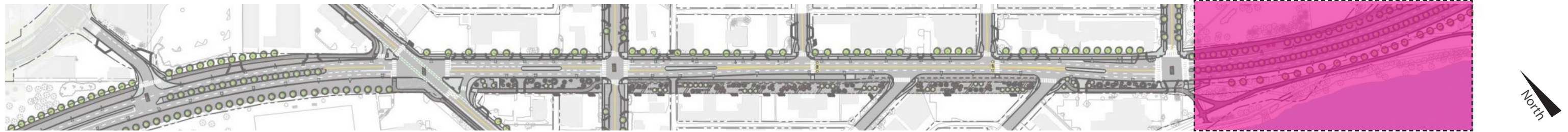


EAST GATEWAY

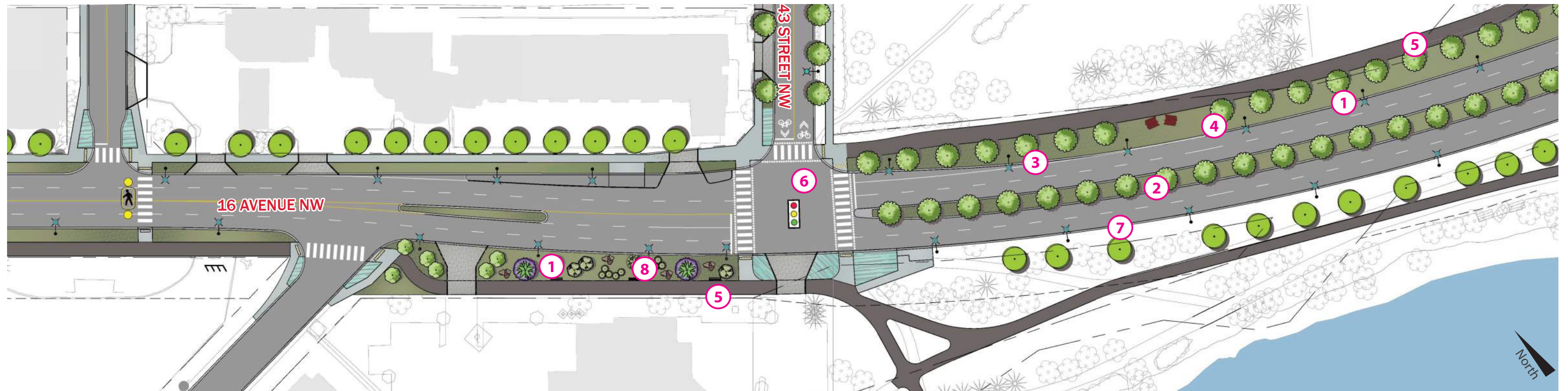
The East Gateway transitions the 16 Avenue NW corridor into Montgomery west of Shaganappi Trail, transitioning to a more distinctly urban environment on the approach to 43 Street NW.

The Montgomery ARP states: "The Plan encourages tree planting to enhance gateways into Montgomery. Gateway priorities include lands adjacent to the Trans Canada Highway and Bowness Road. The Community Association is encouraged to install community identification signs at all entry points."

The East Gateway area is illustrated in Map 4.9 and Map 4.10 with existing ROW and full use of the bylaw setback, respectively. Key features and moves are summarized in Table 4.5.



Context Plan - 16 Avenue NW



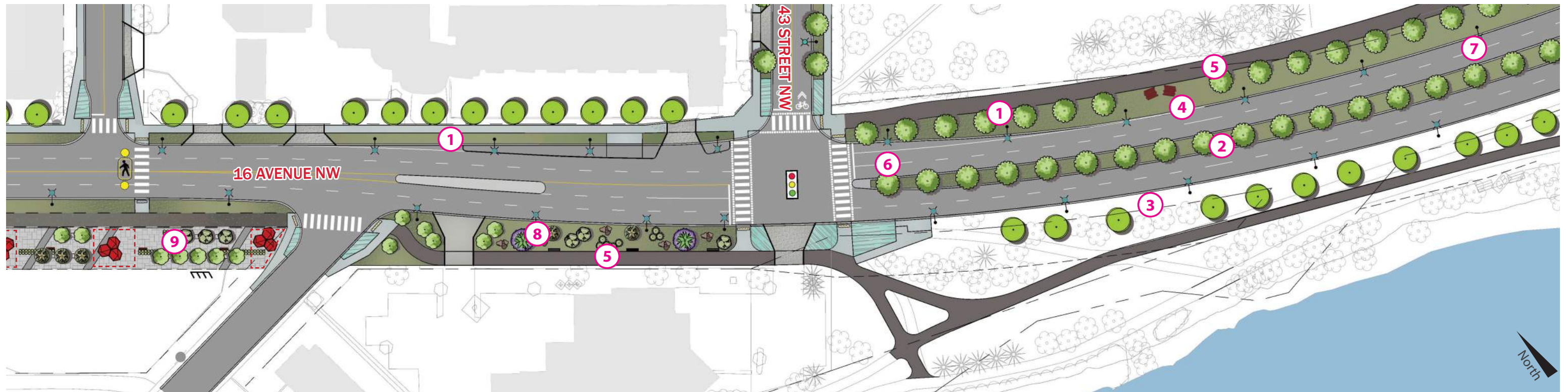
MAP 4.9 - EAST GATEWAY- MEDIUM TERM (EXISTING ROW)

TABLE 4.5 - EAST GATEWAY IMPROVEMENTS
- MEDIUM TERM (BOTH SCENARIOS)

Proposed Design Element	
1	Wider landscaped boulevards with trees
2	Landscaped median in gateway zone
3	New unique streetlights with opportunity for pageantry and hanging baskets
4	Opportunity for community entry feature
5	New multi-use pathway
6	Enhanced crosswalks
7	Narrower travel lanes (3.3m)
8	Enhanced Parkland Boulevard
9	Enhanced Urban Boulevard

LEGEND

	Proposed Trees		Concrete Paving
	Proposed Tree on Private Lands		Visual Impairment Tactile Strip
	Proposed Street Lighting		Asphalt Pathway
	Proposed Pedestrian Beacon		Roadway
	Proposed Traffic Signal		Driveway
	Proposed Driveway Closure		Boulevard / Median Planting
	Proposed Placemaking / Activation Zone		Enhanced Planting
	Enhanced Parkland Boulevard		
	Enhanced Urban Boulevard		



MAP 4.10 - EAST GATEWAY - MEDIUM TERM (WITH BYLAW SETBACK)

NORTH / SOUTH CONNECTIONS

The Future of 16 Avenue NW project took a complete view of the 16 Avenue NW corridor and Main Street, looking beyond the boundaries of the street to consider how it connects with and serves the community. Both the land use and mobility reviews confirmed that 16 Avenue NW has a differing, but complementary, role to the Bowness Road (Montgomery) Main Street. Strong connections between 16 Avenue N and Bowness Road are an essential component of the Master Plan, using a common design language to achieve a consistent and well-connected community core in Montgomery.

The plan identifies and highlights three important connections, which will also remain as the only three all-turns intersections on the 16 Avenue NW Main Street over time:

- » Home Road NW
- » 46 Street NW
- » 43 Street NW

HOME ROAD NW

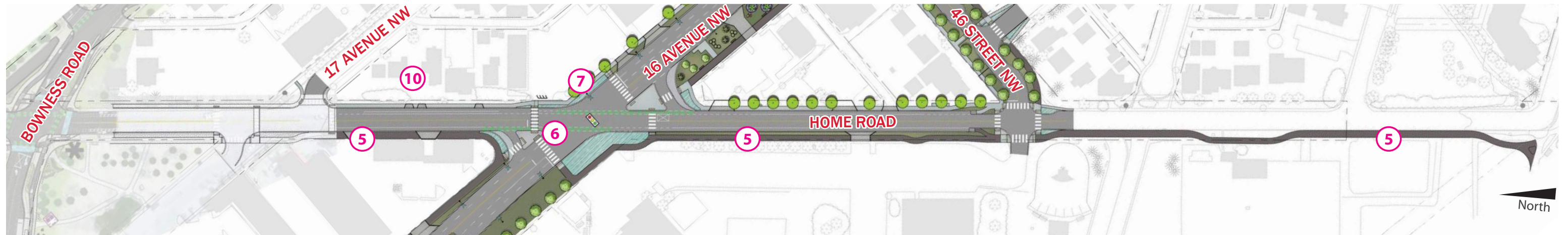
Home Road is the primary north-south collector street in Montgomery, connecting continuously from 32 Avenue NW to the Bow River. It is a transit route and the main access point to Shouldice Park and the Montgomery Community Association. Given the limited available right-of-way and the Enmax transmission corridor, streetscaping improvements will be relatively modest with a focus on improved pedestrian and cyclist accessibility. In addition to the changes at 16 Avenue NW, the improved Home Road will include squared-off intersections at 17 Avenue NW and 46 Street NW to improve sightlines and reduce crossing distances.

Key moves on Home Road are illustrated on Map 4.11.

TABLE 4.6 - NORTH / SOUTH CONNECTIONS SITE IMPROVEMENTS

	Proposed Design Element
①	Wider sidewalks, separated from the curbs by a landscaped boulevard
②	Wider landscaped boulevards
③	Curb extensions on side streets where turning radius' permit
④	Narrower vehicle lanes (3.3m)
⑤	Multi-use pathway to provide safer off-street cycling space
⑥	Enhance pavement markings at crosswalks to improve visibility
⑦	New unique streetlights
⑧	New street trees along length of corridor
⑨	New site furnishings along length of corridor
⑩	Remove driveways at high-conflict locations, if properties have adequate alternative access

LEGEND



MAP 4.11 - HOME ROAD - MEDIUM TERM (BOTH SCENARIOS)

46 STREET NW

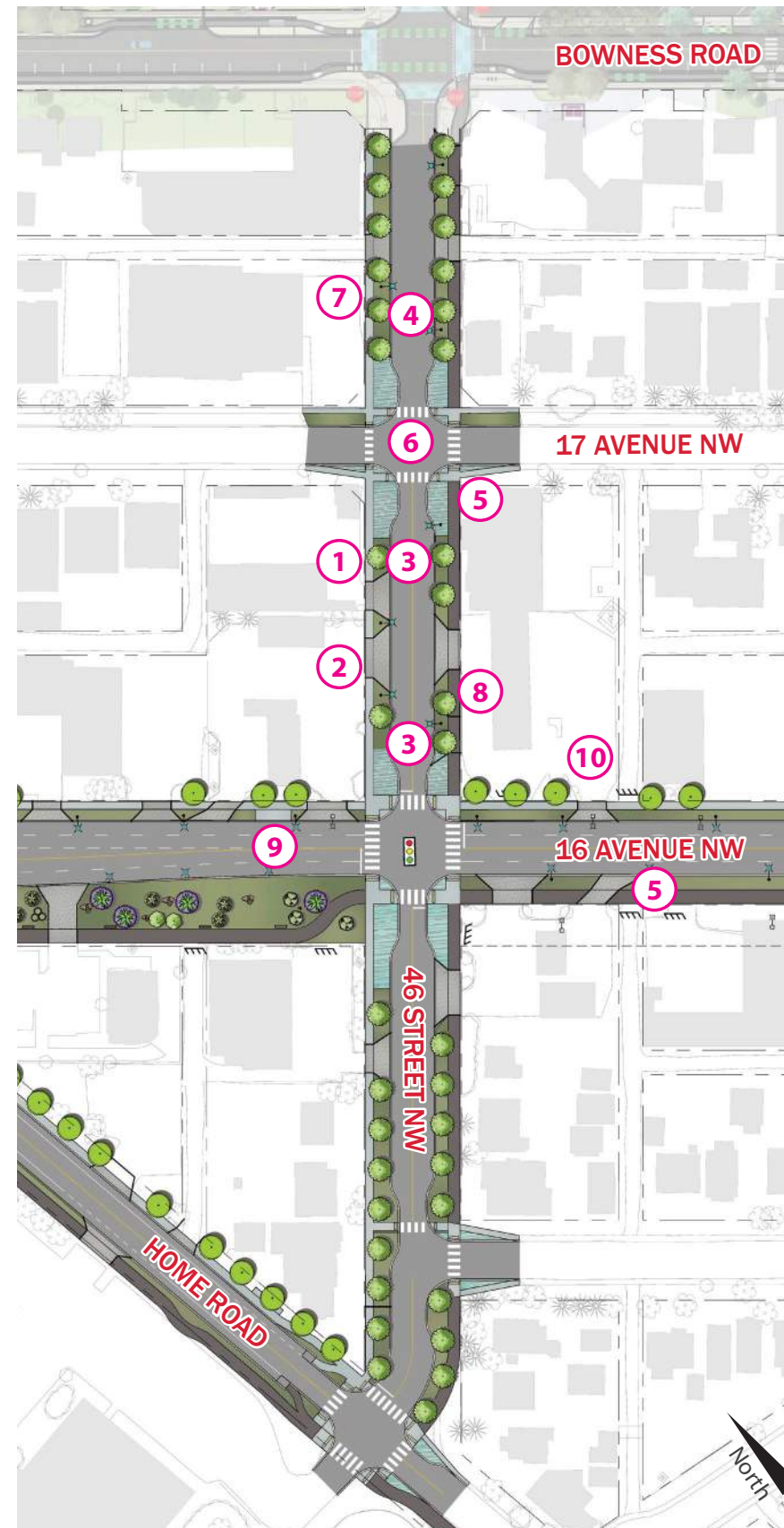
46 Street NW is a focal point of the community. With a common design language linking Bowness Road to 16 Avenue NW, residents and visitors alike will enjoy new mixed-use amenities as the street redevelops as a connecting Main Street over time. South of 16 Avenue NW, the improved streetscape will connect users to Home Road and onward to the Bow River Pathway.

Key moves on 46 Street NW are illustrated on Map 4.12.

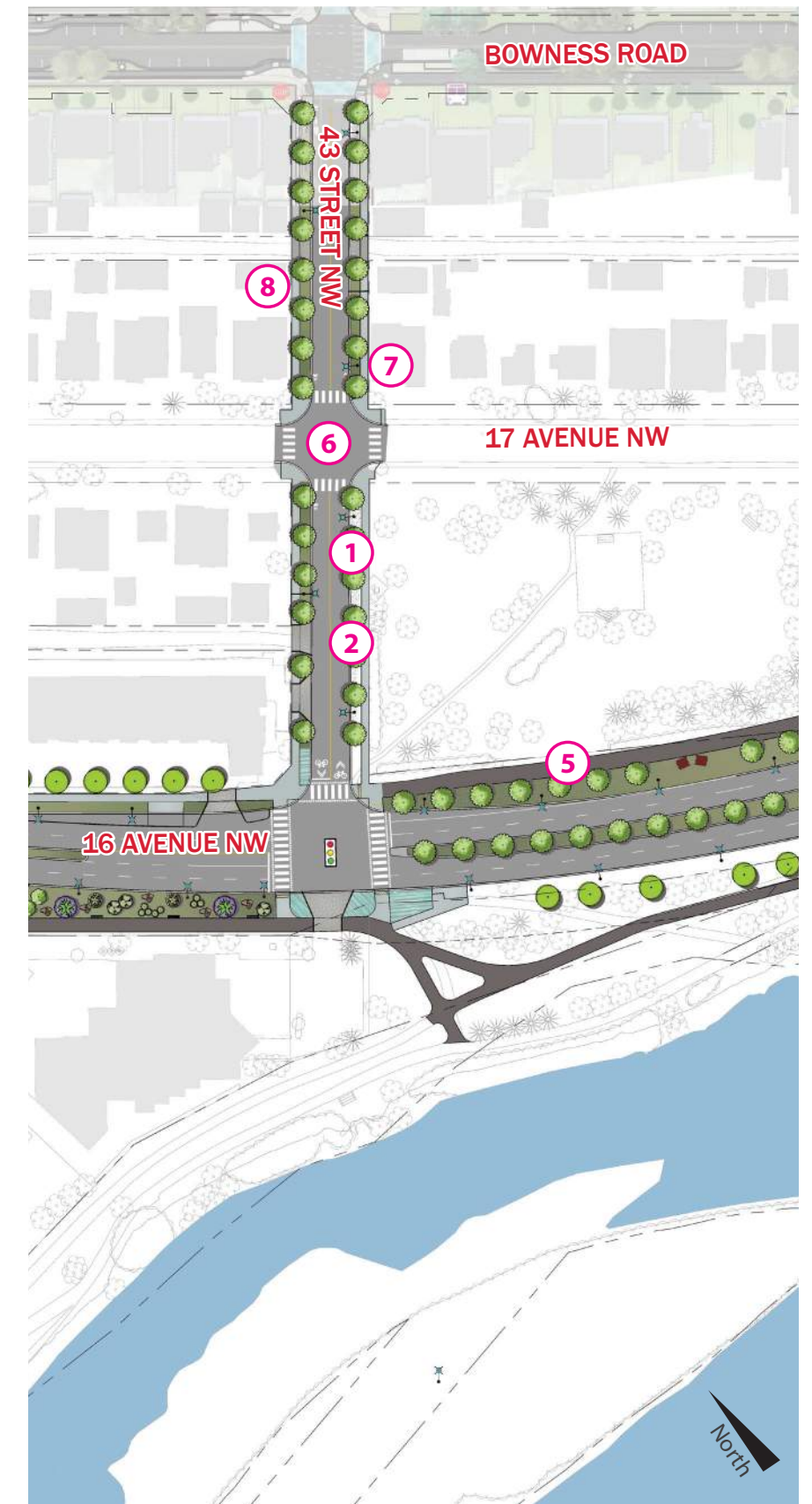
43 STREET NW

43 Street NW is a residential street that accommodates local access to the eastern side of the community. Improved crossing opportunities and accessibility for pedestrians and cyclists using the shared on-street bikeway are balanced with design that respects the local character of the street. A traffic-calming roundabout at 17 Avenue NW helps moderate traffic speed and discourage non-local use.

Key moves on 43 Street NW are illustrated on Map 4.13.



MAP 4.12 - 46 STREET NW - MEDIUM TERM (EXISTING ROW)



MAP 4.13 - 43 STREET NW - MEDIUM TERM (BOTH SCENARIOS)

4.5 DESIGN TOOLKIT

The Design Toolkit aims to add further detail to the streetscape plan. It takes specific design features established in the plans and explores feature visualization to further determine how these specific elements will look within the constructed enhanced streetscape. The primary Design Toolkit features explored for the 16 Avenue NW Streetscape Master Plan include:

- » Enhanced boulevards (Parkland and Urban)
- » Pedestrian and bicycle crossings
- » Urban design elements (enhanced amenity opportunities, lighting opportunities, site furnishings and material palettes)
- » Placemaking opportunities

ENHANCED BOULEVARDS (PARKLAND AND URBAN)

As a part of the Master Plan, enhanced boulevard typologies will be implemented along the corridor: Parkland and Urban.

PARKLAND BOULEVARDS

Parkland boulevards are located in the medium term (both scenarios) within the boulevard between Home Road and 46 Street NW and again between Montgomery Avenue and 43 Street NW. They are soft boulevards with seating elements, natural tree clusters and boulder features intended to frame the streetscape with accessible park space. The boulevards act as gateways into the activated urban boulevard and connect the street to the parkland areas at Shouldice Park and the Bow River pathway.

URBAN BOULEVARDS

Urban boulevards are located within the south boulevard in the medium term (with bylaw setback) between 46 Street NW and Montgomery Ave. These boulevards are hardscaped with in ground planting, seating areas, activation space and placemaking features. The urban boulevard is intended to interface future business and land use along the streetscape, creating a place for users to pause, congregate and experience Montgomery while activating spill out from adjacent businesses (e.g. patio space, retail displays, etc.). Circulation and activation are the main goals for the urban boulevard. Ensuring that pedestrian movement is not hindered while maintaining potential for programming on site drives the function of these spaces.

LEGEND

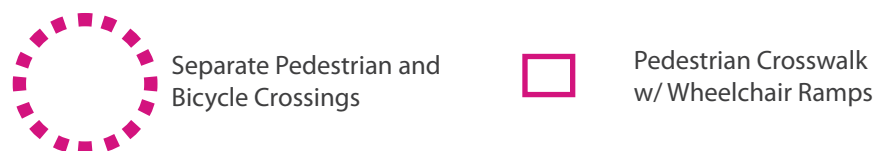


FIGURE 4.14 - PEDESTRIAN CROSSING KEY MAP

PEDESTRIAN AND BICYCLE CROSSINGS

Enhanced pedestrian crosswalks with ladder-style markings are recommended at all intersections. Full-traffic signals are recommended at 49 Street NW, Home Road, 46 Street NW and 43 Street NW by at least the medium-term horizon, with additional pedestrian-only signals recommended at 45 Street NW and 44 Street NW in the long-term. Any of the signals may also be staged as overhead pedestrian flashers.

It is recognized that all traffic control recommendations are subject to future review and confirmation by City Roads. Nevertheless, these recommendations are highlighted as aspirational objectives for the 16 Avenue NW, recognizing the unique importance of accommodating safe, comfortable pedestrian crossings on a Main Street.

Directional wheel chair ramps are proposed for all crossings. These ramps differ from standard City of Calgary crossings by providing a square and straight ramp in the direction of the crosswalk, without side flares. This is the same detail implemented on the 37 Street SW Main Street project. Ramps are also provided distinctly for each crosswalk, with two ramps in each corner of an intersection, rather than merging the ramps as one. This helps ensure true guidance in the direction of the crosswalk for visually impaired pedestrians and improves accessibility for all users.

The crossings at Home Road and 43 Street NW will also accommodate bicycle crossings for on-street cycling routes. Additional “elephants foot” markings should be considered for all crossings. The bicycle crossings help enhance connectivity between the 5A network routes on Bowness Road and the Bow River pathway.

Pedestrian crossing locations are indicated in Figure 4.14. Visualizations of typical pedestrian and combined bicycle crossings are illustrated in Figures 4.16 and 4.17, respectively.



FIGURE 4.15 - PARKLAND / URBAN BOULEVARD PRECEDENTS

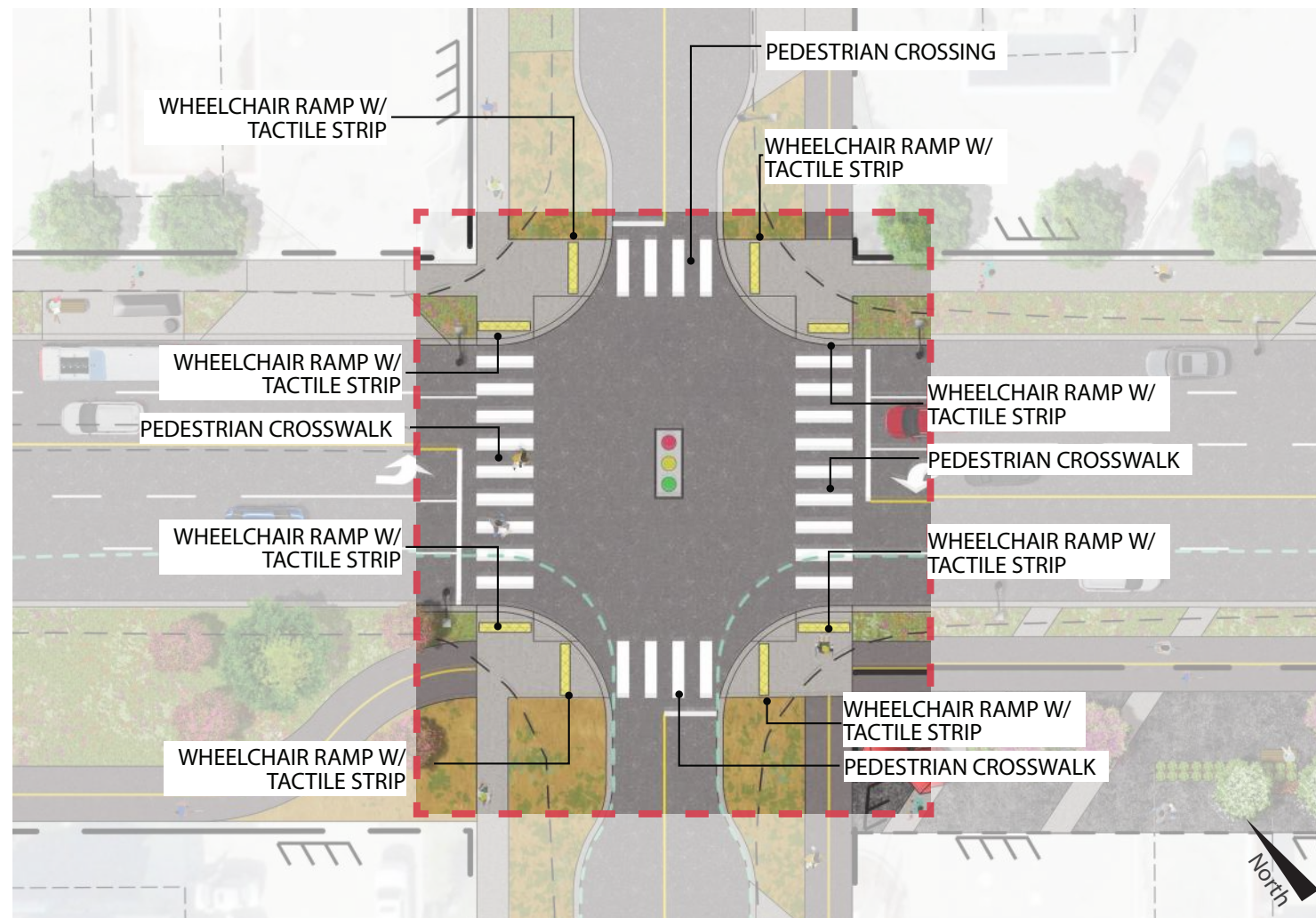


FIGURE 4.16 - TYPICAL PEDESTRIAN CROSSING

NOTE: MEDIUM TERM (WITH BYLAW SETBACK) PLAN USED FOR ILLUSTRATION
 NOTE: ALL TRAFFIC CONTROL RECOMMENDATIONS ARE SUBJECT TO FUTURE REVIEW AND CONFIRMATION BY CITY ROADS

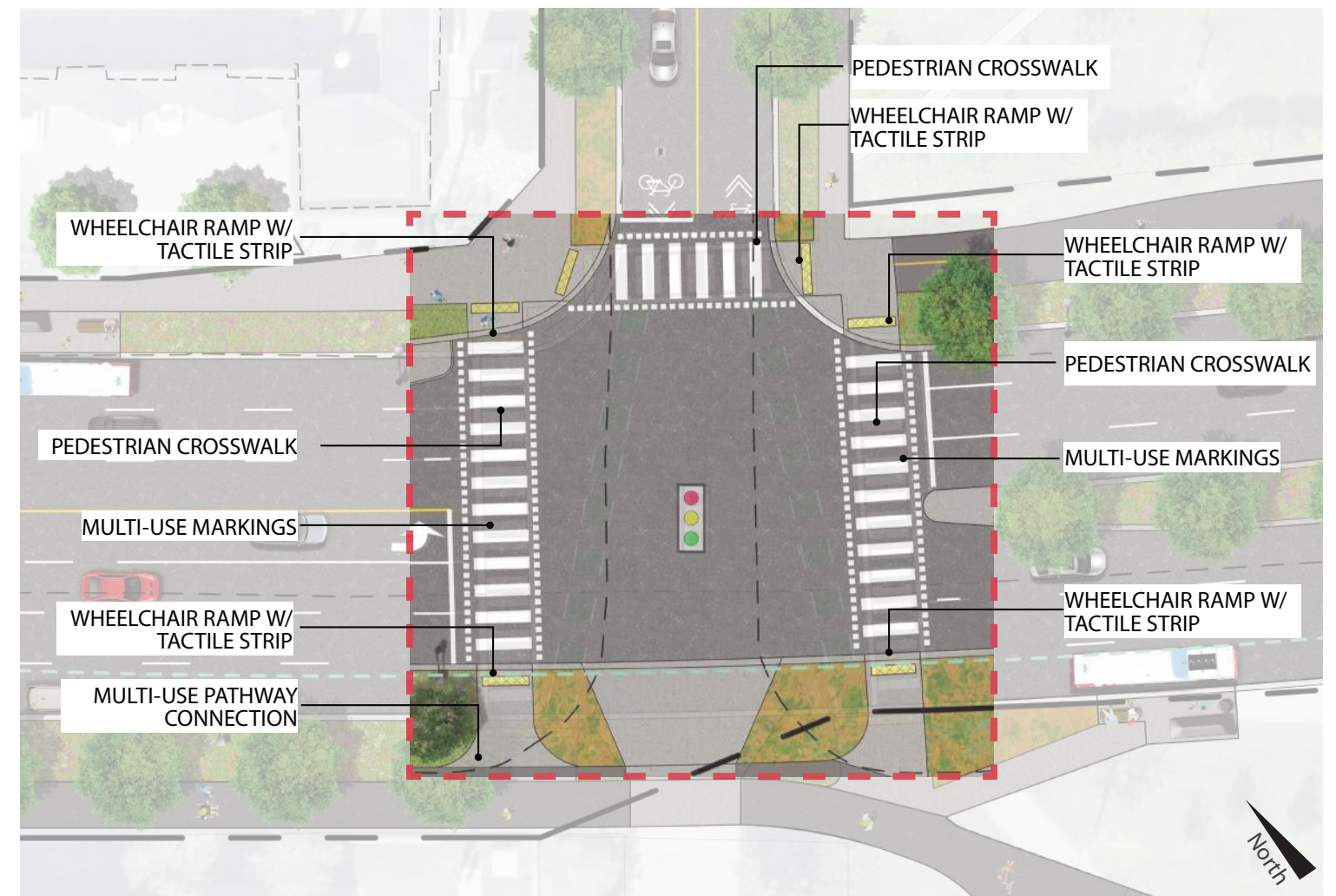


FIGURE 4.17 - TYPICAL COMBINED PEDESTRIAN AND BICYCLE CROSSINGS

LIGHTING

With the addition of the multi-use pathway, widened sidewalks, and enhanced public realm along the 16 Avenue NW corridor, the need for enhanced lighting is amplified to satisfy the functional needs of vehicular, cycle and pedestrian safety while using the streetscape. The following are selected example fixtures that satisfy these needs and build upon the design aesthetic of the streetscape and existing Trans Canada-themed aesthetics along the 16 Avenue NW corridor.

Conceptual scaling for light standards is illustrated in Figure 4.17.



Pedestrian level pathway lighting



Pole top luminaire with two scales of lighting

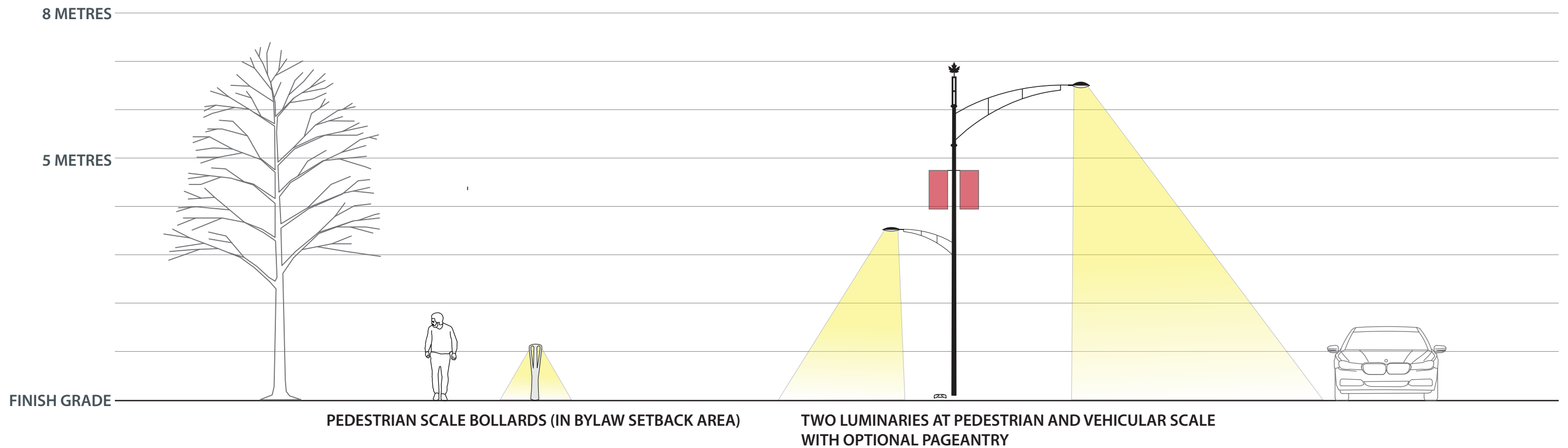
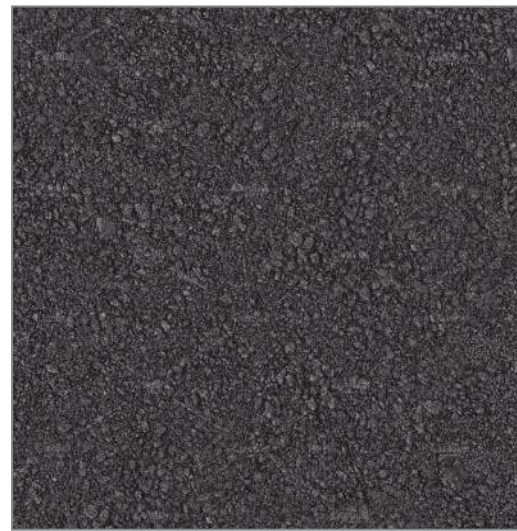
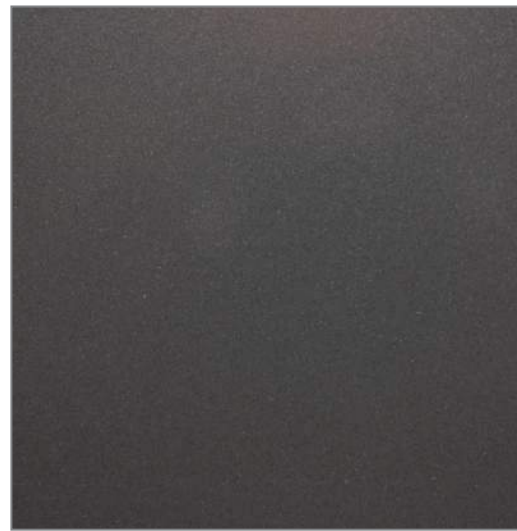
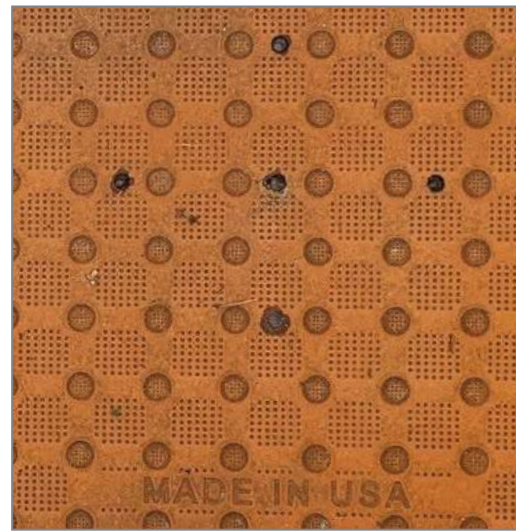


FIGURE 4.18 - LIGHT STANDARDS SCALE

MATERIALS PALETTE

A simple yet purposeful material palette was selected to strategically identify public space and modal corridors based on a combination of City standards, design intent, other Main Streets projects context, community character and identity. The following treatments are represented on surface conditions and on site furnishings.



CONCRETE / SIDEWALK

ASPHALT

STEEL

WOOD

SUGGESTED PLANTING

Building upon the existing palette of vegetation on site and the desire to retain healthy trees where possible, the following species have been selected for street tree planting and boulevard planting.



Ulmus americana spp.
AMERICAN ELM



Populus tremuloides
TREMBLING ASPEN



Fraxinus pennsylvanica spp.
GREEN ASH



Malus
CRABAPPLE



Pyrus ussuriensis
USSURIAN PEAR



Tilia x flavescens 'Dropmore'
DROPMORE LINDEN



Leymus arenarius 'Blue Dune'
BLUE DUNE LYME GRASS



Native Grasses + Perennials
GRASS



Fescue Sod
SOD

SITE FURNISHINGS

Benches, bike racks, planters and waste bins for 16 Avenue NW will be selected with an elegant modern feel with ornamental features. They are recommended to reflect a future optimism about an up and coming area as well as tie into the existing feel and placemaking along the Trans Canada Highway corridor and other completed Main Street projects in Calgary. It is recommended that all furnishings be selected from a family of products from a reputable distributor.

Options for benches that allow for easy maintenance and replacement of wood slats over time should be considered

Bike racks are a great place-making opportunity. The Montgomery community already has a custom bike rack design that has been used on the Bowness Road Main Street, so this should be adopted on 16 Avenue NW for consistent design. The rack can be branded with the community's colours and has effective functionality, allowing a bike tire and frame to be secured simultaneously with a U-lock.

Waste receptacles should be consistent with other Main Streets and the City Centre which have adopted a simple circular bin design. This allows for ease of maintenance and relocation of available bins, when needed. Multiple bins should be provided to allow for sorting of waste (general refuse, recyclables and organics). Consideration may also be given at the design stage to adopting new sustainable alternatives such as compaction garbage cans, which are currently being piloted by The City's operational team

Furnishing selection will maintain a consistent approach with other Main Streets and provide a higher quality public realm. This will create easier operations and maintenance by coordinating product lines installed across all Main Streets.

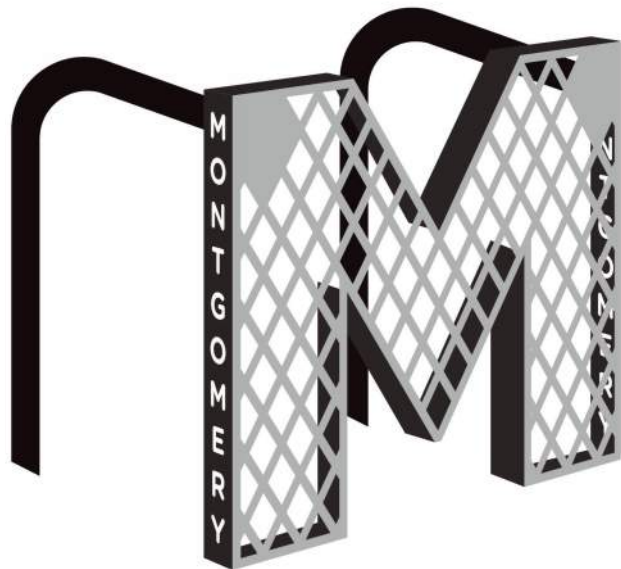
The images shown are used to suggest a style, but are not intended to be indicative of particular products. Some products are pre-approved by The City of Calgary and are identified as standard furnishings.



Victor Stanley RB-36 Waste Receptacle



Wishbone Site Furnishings West Coast Planter



Montgomery Custom Bike Rack
Install per City of Calgary Standard



Maglin Ogden Series 1900 Backed Bench



Maglin Series 1100 Backed Picnic Table - Wheelchair Accessible Model



Maglin Series 1100 Picnic Table

ADDITIONAL PLACEMAKING OPPORTUNITIES

Opportunities for placemaking along 16 Avenue NW exist in four potential locations: the east and west gateways and within the medians located west of 45 Street NW and east of 44 Street NW, if a long-term median is added.

These locations not only serve a purpose in establishing a sense of place but they also hold a significance to user safety and the potential facilitation of placemaking. The gateways are the initial entry points into the streetscape area. These locations are ideal for entry features that showcase the character and identity of Montgomery and the Trans Canada Highway corridor. These locations are well-suited for a sign or monument feature.

Gateways

Each gateway has widened boulevards with tree planting along either side to act as a buffer to surrounding infrastructure. These locations are the first visuals as vehicles enter the streetscape area. These locations are ideal for entry features that showcase the character and identity of Montgomery and the Trans Canada Highway corridor. These locations are well-suited for a sign or monument feature.

NOTE: MEDIUM TERM (WITH BYLAW SETBACK) PLAN USED FOR ILLUSTRATION

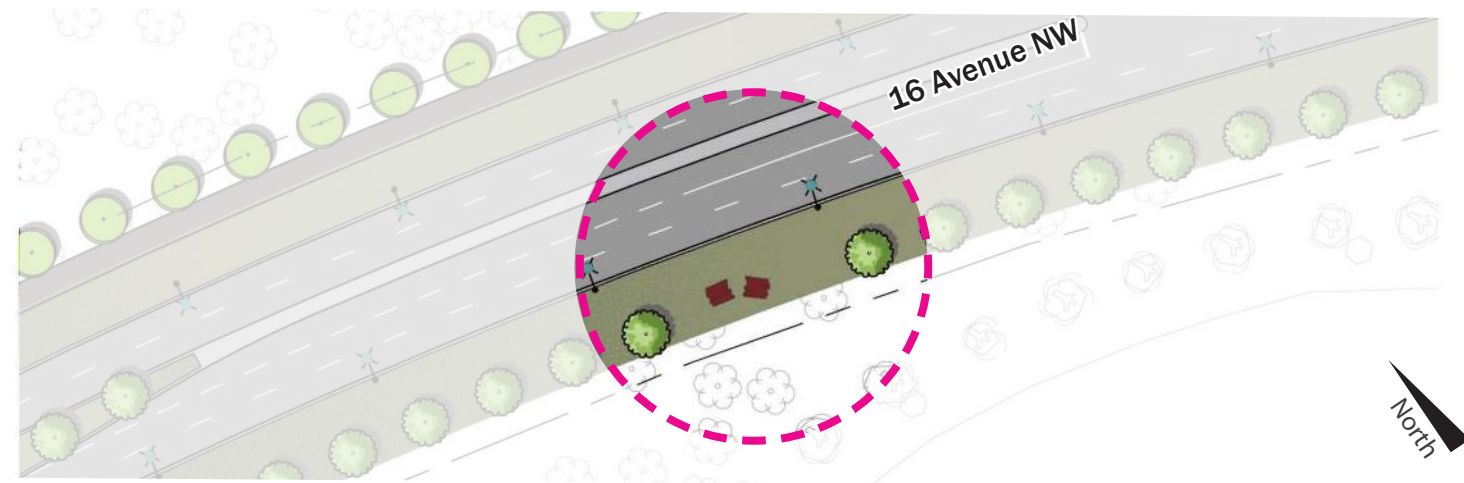


FIGURE 4.19 - WEST GATEWAY - POTENTIAL PLACEMAKING LOCATION

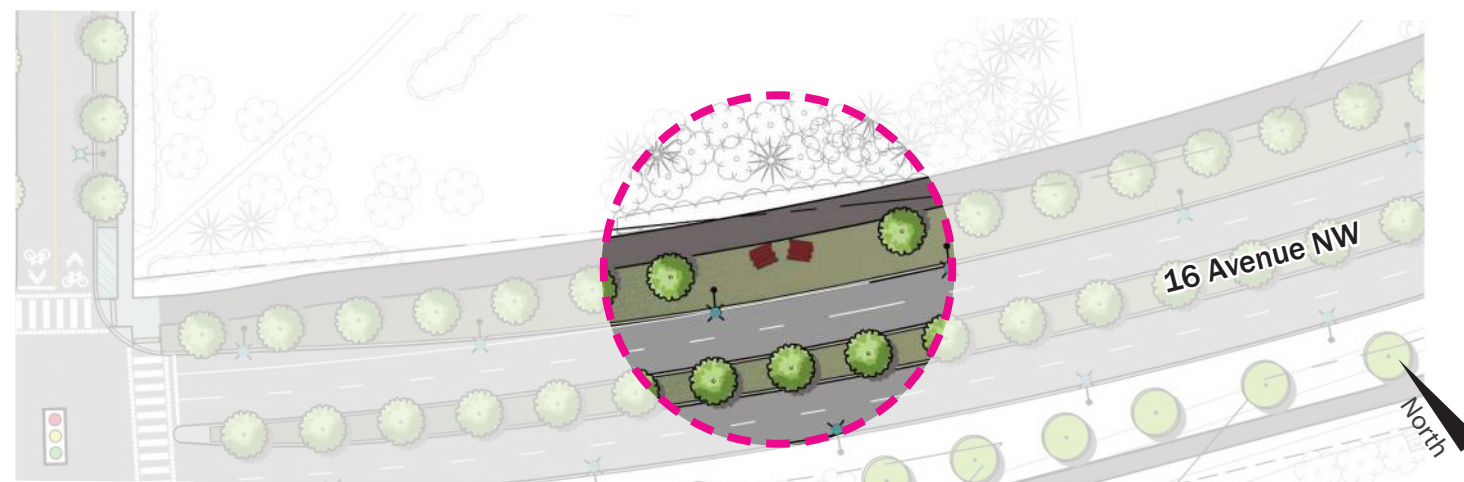


FIGURE 4.21 - EAST GATEWAY - POTENTIAL PLACEMAKING LOCATION

Medians

If medians are provided in the long-term cross-section, they can provide opportunities for placemaking with longer, linear features. The features may also enhance public safety by discouraging jaywalking and creating focal points at the signalized crosswalk locations recommended at each block.

Each of the four potential placemaking locations are highlighted in Figures 4.18 to 4.21 below. Examples of placemaking features are provided in Figure 4.22.

The images shown are used to suggest ideas only. All placemaking to be implemented is subject to technical review and community engagement.

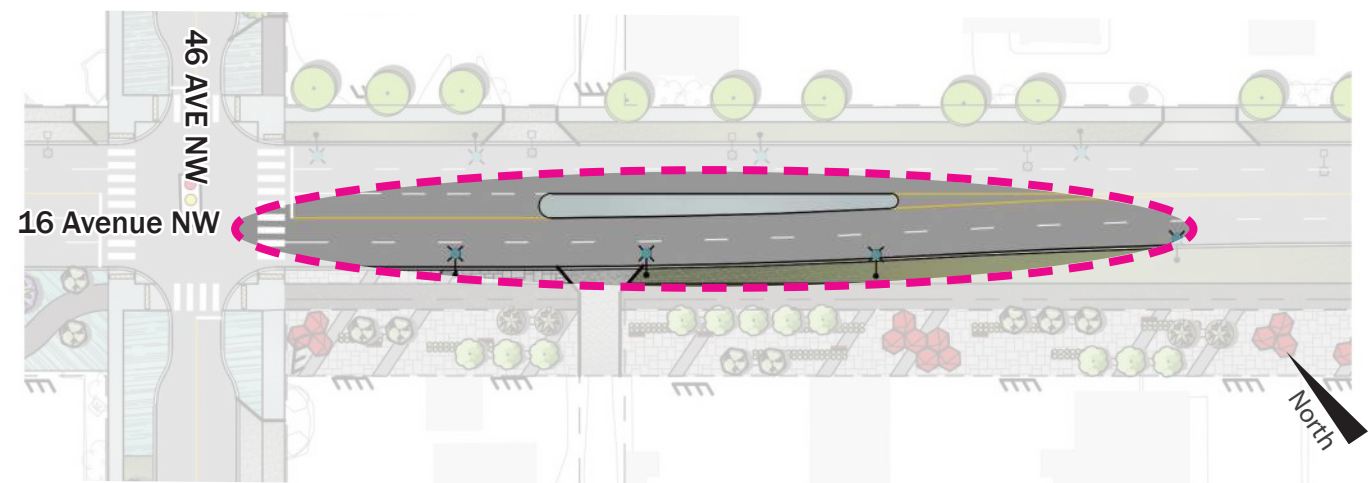


FIGURE 4.20 - MEDIAN WEST OF 45 STREET NW - POTENTIAL PLACEMAKING LOCATION

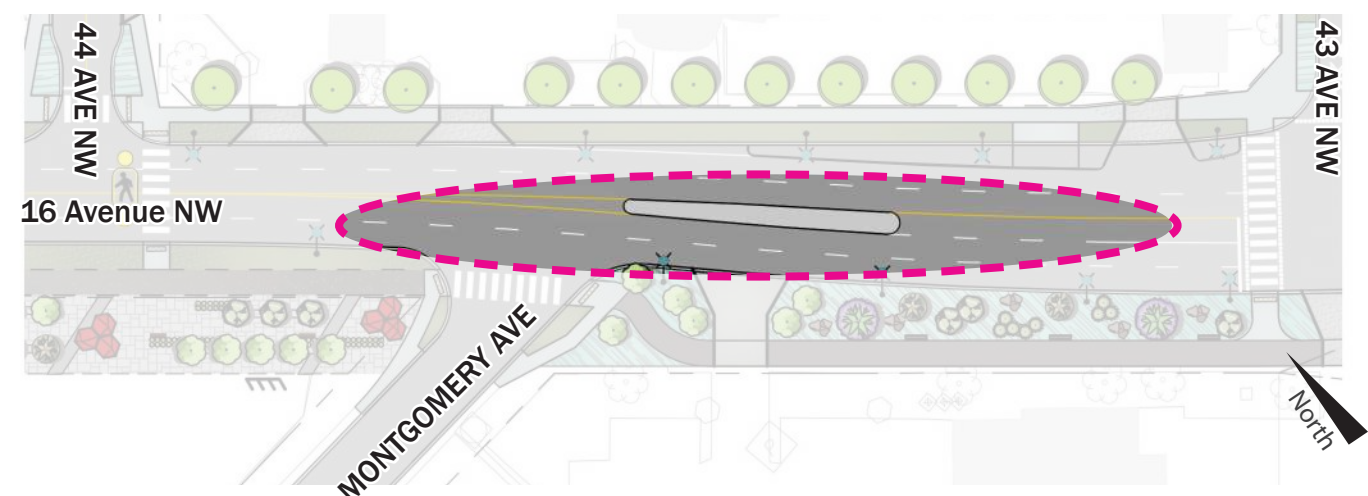
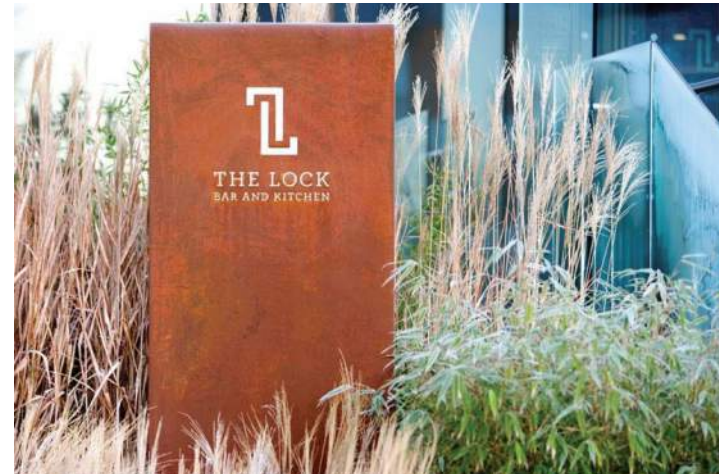


FIGURE 4.22 - MEDIAN EAST OF 44 STREET NW - POTENTIAL PLACEMAKING LOCATION



Gateways: Potential Placemaking Example



Medians: Potential Placemaking Example



LID: Potential Placemaking Example



FIGURE 4.23 - PLACEMAKING EXAMPLES

4.6 DEVELOPMENT REVIEW CONSIDERATIONS

Throughout the Future of 16 Avenue NW project, the interface with adjacent land uses was a central consideration. The lots on the south side of 16 Avenue NW are particularly affected by the protection and future acquisition of the bylaw setback area, which will typically reduce the lot depths on two blocks from about 36.6 m to 26.4 m. To assess the redevelopment potential of the most impacted block between 46 Street NW and Monterey Avenue, GEC Architecture completed a developability review including an architectural assessment of the block and a market sounding exercise. The complete review report can be found in Appendix A.

The developability review concluded that, due to high traffic volumes and lack of all-day on-street parking, 16 Avenue NW is not likely to become a typical Main Street like Bowness Road. Development types normally associated with a Main Street (mixed-use, specialty retail, and residential) would likely have a low probability of success. The more likely development types are expected to be medical- and travel-oriented commercial / office uses, which is consistent with both the land use zoning and recent development activity on the street. The architectural assessment of the narrower lots did also confirm that they can accommodate viable floor plates and, if the lot is wide enough, a single level of underground parking.

While the developability review did confirm that certain development types and site plans remain viable, the lots on these blocks are nevertheless recognized to be constrained. A degree of flexibility by The City is recommended when reviewing future development applications on these blocks, recognizing the need the work with property owners to find optimal solutions that meet the intent of the Montgomery ARP and this Streetscape Master Plan. Specific considerations that are recommended when reviewing development applications include:

- » Flexibility in supporting sites with a lower number of parking stalls, consistent with the recent City-wide amendments to the Land Use Bylaw which provide greater flexibility for commercial parking requirements. This includes recognizing a more collective approach to parking availability including the potential future availability of on-street parking on 16 Avenue NW (depending on the long-term cross-section)
- » Flexibility in reducing the front building setback on the south side of 16 Avenue NW, so that buildings (or portions of buildings) can be located nearer to (or directly on) the future property line without an additional setback space needed beyond the development setback being retained for 16 Avenue NW widening. This would allow buildings to make the best use of the remaining site footprint, without necessarily needing an additional setback beyond the development setback. This variance is most viable if the long-term cross-section includes any development “flex space” adjacent to the property line.
- » Flexibility in the use of the space on the outer edges of the public realm, between the pathways and the extents of the road ROW. These regions have been designated as “flex-space” in the long-term cross section alternatives and could be used to help mitigate the impact of reduced lot depths by allowing development to “spill out” into this part of the public realm.
- » Flexibility to allow for interim parking laybys on the south side of 16 Avenue NW, for sites which redevelop behind the development setback line prior to widening the street.
- » As sites redevelop on the north side of 16 Avenue NW, encourage the planting of trees in the front setback area of the lots to enhance the tree canopy (given the utility restrictions in the north boulevard)

The Master Plan is intended to guide future redevelopment along 16 Avenue NW and provides an overall intent and vision for the street, though is not intended to be used or interpreted literally. Flexibility is encouraged for activation of the bylaw setback area within the overall vision, recognizing that site-specific land uses and interfaces can best inform particular design elements. Precedents for activation are illustrated in Figure 4.23 and could include:

- » Bench seating
- » Hardscaped plaza space
- » Shaded spaces for gathering
- » Urban plantings and natural area plantings
- » Softened boulevards with pedestrian access
- » Direct access to storefronts from wide, urban boulevards
- » Pedestrian level lighting
- » Placemaking elements
- » Bicycle parking
- » Spill over activation space for local business (e.g. patio space for cafes, retail display areas, etc.)

Given the long-term nature of the study, several design elements remain open for future design or design consideration. These are best addressed in future when additional context is known or when greater levels of design detail are developed. Known considerations are summarized below for reference by future designers.

- » Review long-term cross-section prior to implementation of the medium-term plan, consistent with the “design paths” discussed on Section 4.2.
- » If properties are acquired by The City over time, consider consolidation of multiple lots on a single block prior to returning the sites to market, to improve development flexibility on the sites (and subject to future market considerations to maximize return to The City from sale of land).
- » Review need for transit priority measures at signalized intersections, when new signals are installed.
- » Consider advancing a complete preliminary grading and stormwater design for 16 Avenue NW from Home Road to 43 Street NW, in order to verify the needed lot line elevations for redevelopment applications.
- » Complete supporting studies including a Climate Assessment and Phase 2 Environmental Site Assessment.



FIGURE 4.24 - POTENTIAL ACTIVATION PRECEDENTS

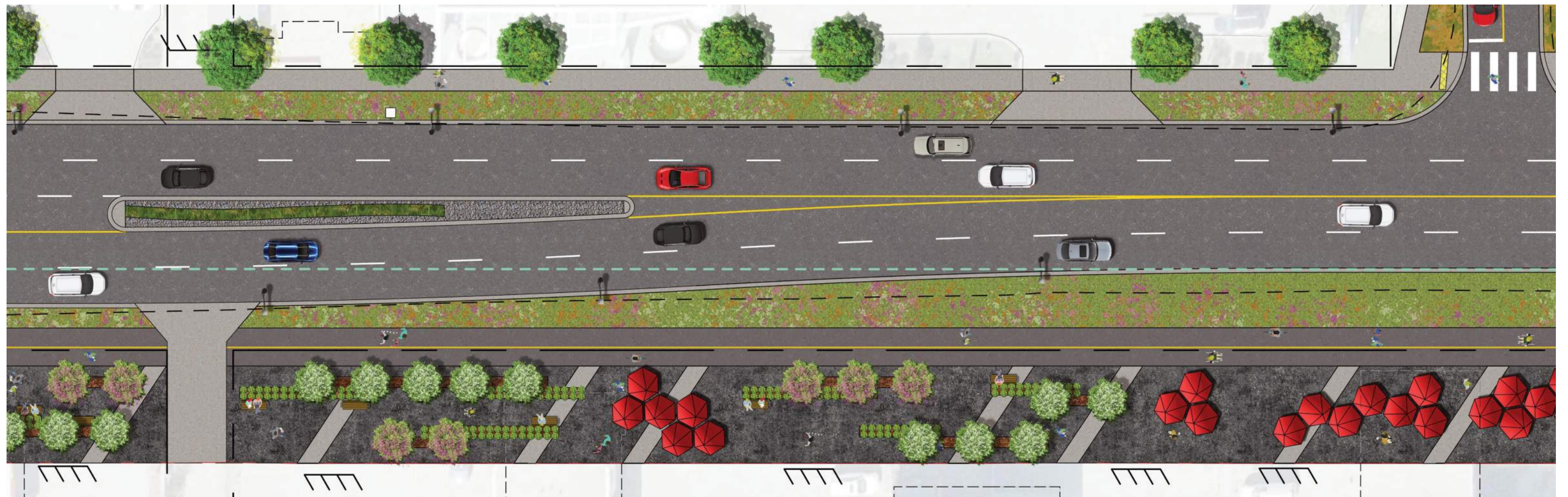


FIGURE 4.25 - POTENTIAL ACTIVATION PLAN - MEDIUM-TERM (WITH BYLAW SETBACK)

4.7 ACCESS MANAGEMENT STRATEGY

With land use designations that encourage front-facing development along the frontage of 16 Avenue NW, direct driveway access to commercial sites will ideally be removed, consolidated or relocated to rear lanes over time. This better encourages street-front activation and improves safety by reducing conflict points in the public realm. However, it recognized that it is not practical to remove all driveways, and that the access and circulation needs of each site will need to be considered on an individual basis as they develop over time.

As part of the Future of 16 Avenue NW project, a comprehensive review was completed of all access locations at the medium- and long-term horizons, which confirmed that there is potential to close up to 30 of 77 existing access locations, depending on site redevelopment. All potential closures are illustrated in the Transportation Corridor Study report, while nearer-term closure opportunities are illustrated in the master plans (Section 4.4).

In general, it is recommended that driveways be closed as soon as possible if they meet both of the following criteria:

1. The driveway is at a high-conflict location
2. There is a clear existing alternative

Based on review, there are 7 driveways which meet these criteria and would be strong candidates for proactive nearer-term closure.

4.8 OPERATIONS AND MAINTENANCE CONSIDERATIONS

Implementation of the 16 Avenue NW Streetscape Master Plan will require some additional operational and maintenance commitment by The City of Calgary for 16 Avenue NW relative to the existing street.

It is understood that an overall maintenance strategy for all Main Streets will be cooperatively developed by the relevant City of Calgary Business Units. Within this global strategy, specific areas of 16 Avenue NW where additional operational needs will be required include:

- » Snow clearing of the multi-use pathway
- » Preservation and maintenance new street trees
- » Maintenance of native planting areas and beehive LID infrastructure
- » Maintenance and retention of replacement stock for street lighting and furnishings

One opportunity for maintenance costs to be reduced is by using the new, wider landscaped boulevards and medians for snow storage in winter months. Presently, the corridor has a number of blocks with monolithic sidewalks where full snow removal is needed. This will no longer be the case in future.

Maintenance may also be aided by implementing innovative or sustainable technologies. The City has recently piloted amenities such as compaction garbage receptacles and self-watering flower pots which may become standard amenities by the time the project is implemented.

Finally, The City may consider continuing or enhancing existing maintenance agreements with the Montgomery on the Bow BRZ, which can allow for installation and maintenance of community-branded elements such as banners, hanging baskets, wayfinding and entrance features.

5.0 CONCLUSION

5.1 KEY OUTCOMES

The following are key design decisions and outcomes achieved by the Master Plan:

PRINCIPLE 1 - SOCIAL + HEALTHY LIFESTYLE

- » Wider sidewalks and a new multi-use pathway, separated from the curbs by a landscaped boulevard
- » New healthier street trees on the south side of 16 Avenue NW
- » Identification of areas where private trees can enhance the public realm, especially on the north side of 16 Avenue NW
- » Enhanced north-south connections on Home Road, 46 Street NW and 43 Street NW, directly linking Bowness Road, 16 Avenue NW and the Bow River

PRINCIPLE 2 - MOBILITY + FUNCTION

- » Narrower vehicle lanes
- » Curb extensions
- » Wider sidewalks and a new multi-use pathway on the south side of 16 Avenue NW
- » Enhanced pavement markings at crosswalks to improve visibility
- » New traffic signals at intersections to promote traffic calming and safe crossings for pedestrians
- » Future flexibility to accommodate changed land use and travel patterns (refer to Section 2.4)
- » Improved transit stops and amenities located near signalized pedestrian crossings
- » Enhanced north-south connections on Home Road, 46 Street NW and 43 Street NW providing safe active modes routes to link Bowness Road, 16 Avenue NW and the Bow River
- » Removal of driveways at high-conflict locations, if properties have adequate alternative access

PRINCIPLE 3 - CHARACTER + IDENTITY

- » Landscaped boulevards and a wider boulevard south of 16 Avenue NW on both sides of 16 Avenue NW
- » New healthier street trees on the south side of 16 Avenue NW
- » Identification of areas where private trees can enhance the public realm, especially on the north side of 16 Avenue NW
- » Grass, shrub and forb planting along length of corridor on north side of 16 Avenue NW
- » Upgraded streetlights that evoke the common “Trans Canada” theme of the 16 Avenue NW corridor
- » New site furnishings along length of corridor
- » Enhanced pavement markings at crosswalks to improve visibility
- » Enhanced gateway features at west and east entrances to the 16 Avenue NW main street in the form of boulevard planting, pageantry and median design features
- » Consistent aesthetic creating sense of place

PRINCIPLE 4 - ECONOMIC VITALITY

- » New on-street parking along 16 Avenue NW during off-peak periods
- » Enhanced public realm adjacent to business frontages
- » Enhanced north-south connections on Home Road, 46 Street NW and 43 Street NW, directly linking Bowness Road, 16 Avenue NW and the Bow River
- » Ability to support comprehensive planning and redevelopment by block
- » Integrated Streetscape Master Plan and Transportation Corridor Study give landowners certainty for future redevelopment planning