Chapter 4: Corridor-Wide Roadway Improvements

Roadway Improvements

Introduction

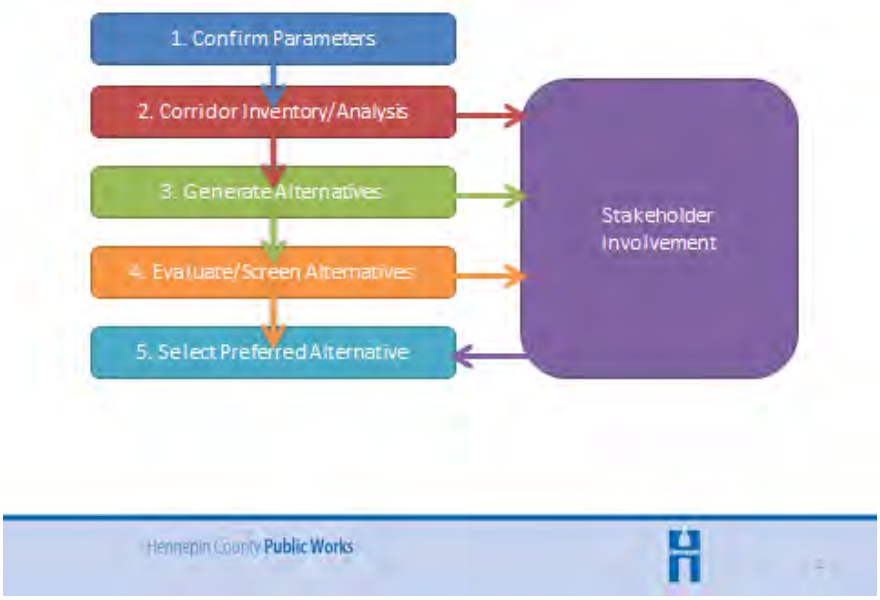
The Penn Avenue Vision and Implementation Framework project focused on developing a range of roadway concepts that addressed mobility issues as identified through the earlier Inventory and Analysis and ongoing community engagement efforts.

The roadway design process began with the development of initial parameters that provided a framework for the Inventory and Analysis. At the end of the Inventory and Analysis, key findings provided additional information that fed into the refinement of the initial parameters. The refined parameters influenced the concepts that were developed.

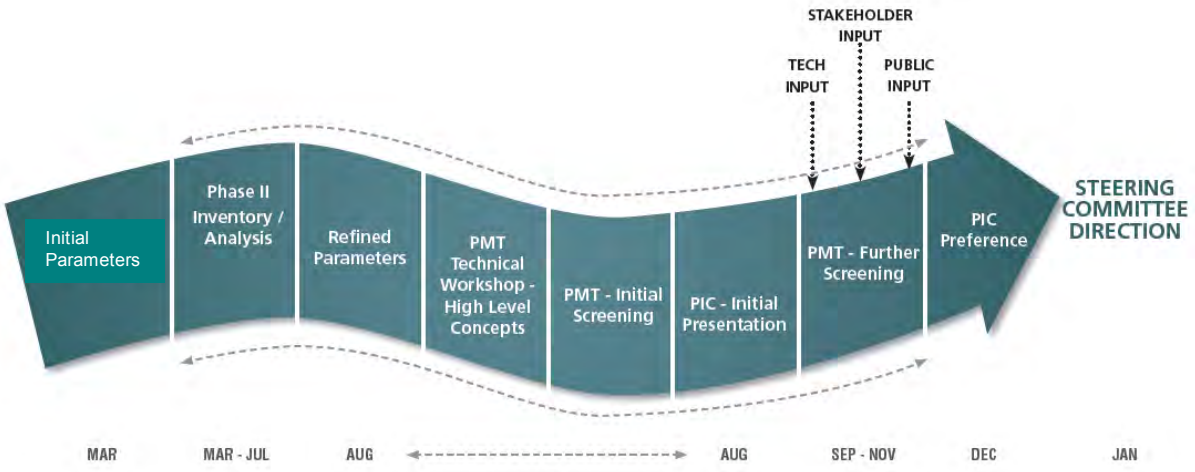
Preliminary Roadway Design Process

The Penn Avenue/Osseo Road preliminary roadway design process (see Figure 4.1 below) followed a sequence that allowed for the development of alternatives that were evaluated based on various design parameters and available corridor information/data. Preliminary roadway alternatives were developed and screened with the goal of working toward a preferred alternative. A Layout Review Sub Committee of the PMT was formed to help guide the preliminary roadway design process. This committee was comprised of representatives from Hennepin County, City of Minneapolis and Metro Transit, with assistance from the consultant team.

Figure 4.1 - Roadway Design Process



Concept development began with a technical workshop comprised of the Penn Avenue Project Management Team (PMT) members, including Hennepin County, City of Minneapolis, Metro Transit, and consultant staff. Through this workshop numerous concepts emerged that were further developed. These concepts were presented to the Project Implementation Committee (PIC) and the general public for input in fall 2014. In December 2014, the PIC identified their preferred concept; that preference was shared with the Steering Committee which ultimately chose the roadway concept to be implemented on Penn Avenue. The following diagram portrays the design process.



The Design Process

The extensive community engagement effort that was conducted to solicit input from the community on these three alternatives included three open houses, several neighborhood meetings, and an on-line survey. A summary of the Preliminary Public Input for Street Concepts can be found in Appendix A.

A separate meeting was held with City and County representatives regarding Water Resource Engineering along Penn Avenue. On-going coordination with each agency will be required as the project development process continues.

Note that concepts and estimates prepared under this study are preliminary in nature and are to be used by the partnering agencies to inform/guide future planning decisions and project development.

Preliminary Roadway Design Layout

Given the length of this corridor (approximately 5.3 miles), Penn Avenue will not be reconstructed all at once. Instead, reconstruction will occur in multiple phases over several years. Therefore, the 20 percent roadway and 30 percent intersection layouts developed for this project are meant to depict a long-term vision for Penn Avenue. More specific considerations were given for potential near-term improvements at key intersections. Primary considerations used in developing these preliminary layouts included:

- Minimizing the need for additional right of way or the need to resolve encroachments
- Analyzing spatial needs for transportation modes in the corridor including pedestrians, bicyclists, transit, and automobiles
- Accommodating the future C Line Bus Rapid Transit (BRT) route and planned station locations
- Differentiating between areas of future roadway reconstruction vs. rehabilitation in an effort to avoid over-building and to control costs
- Identifying and mitigating any fatal flaws relative to truck/bus turning movements at key intersections, should the roadway be narrowed

The information and accompanying roadway layouts are preliminary in nature but should be utilized by future designers to inform next steps in the project development process. Planning level cost estimates have also been included, but it should be noted that they are based on many assumptions and include many unknowns at this time.

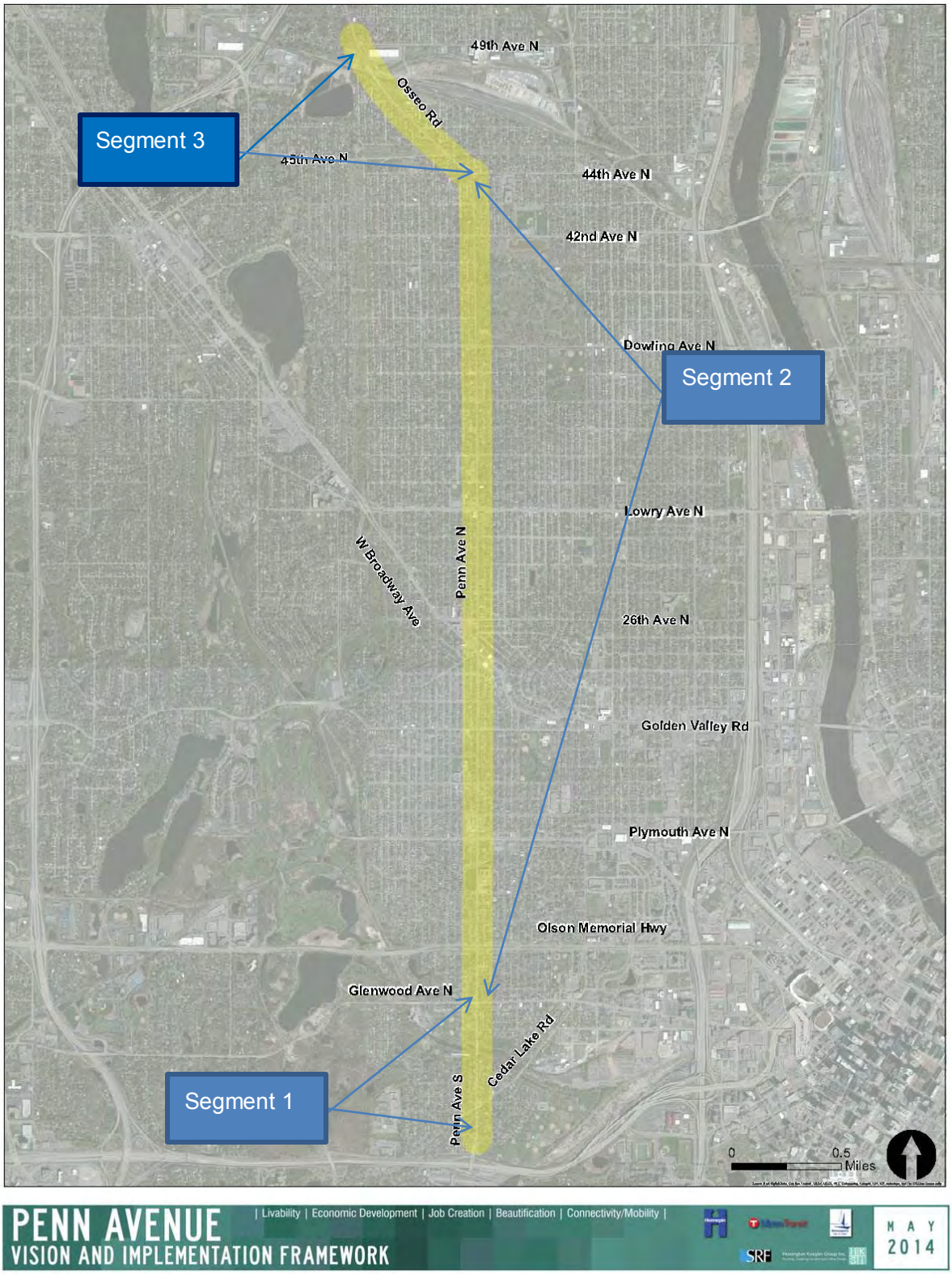
Under the 20% roadway design study, the 5.3 mile long Penn Avenue/Osseo Road corridor was split into three distinct segments in an effort to create a long-term vision for future reconstruction and/or rehabilitation needs along the corridor, as follows:

1. I-394 to Glenwood Avenue (approximately 0.7 miles) – This two-lane segment includes plans for future rehabilitation measures including a mill and overlay of the existing pavement, curb and gutter repair, sidewalk repair, and pedestrian curb ramp installations.
2. Glenwood Avenue to 44th Avenue (approximately 3.8 miles) – This two-lane segment includes plans for future reconstruction using a phased approach.
3. 44th Avenue to 49th Avenue (approximately 0.8 miles) – This three-lane segment includes plans for future reconstruction using a phased approach.

Several intersections between Olson Memorial Highway and 44th Avenue were subjected to a 30% road design analysis due to near term improvements associated with the C Line Bus Rapid Transit (BRT) stations, including:

1. Penn Avenue and Plymouth Avenue
2. Penn Avenue and Golden Valley Road
3. Penn Avenue and West Broadway Avenue
4. Penn Avenue and 29th Avenue
5. Penn Avenue and Lowry Avenue
6. Penn Avenue and 36th Avenue
7. Penn Avenue and Dowling Avenue
8. Penn Avenue and 43rd Avenue

Figure 4.2. Project Location Segment Map



Existing Roadway Conditions

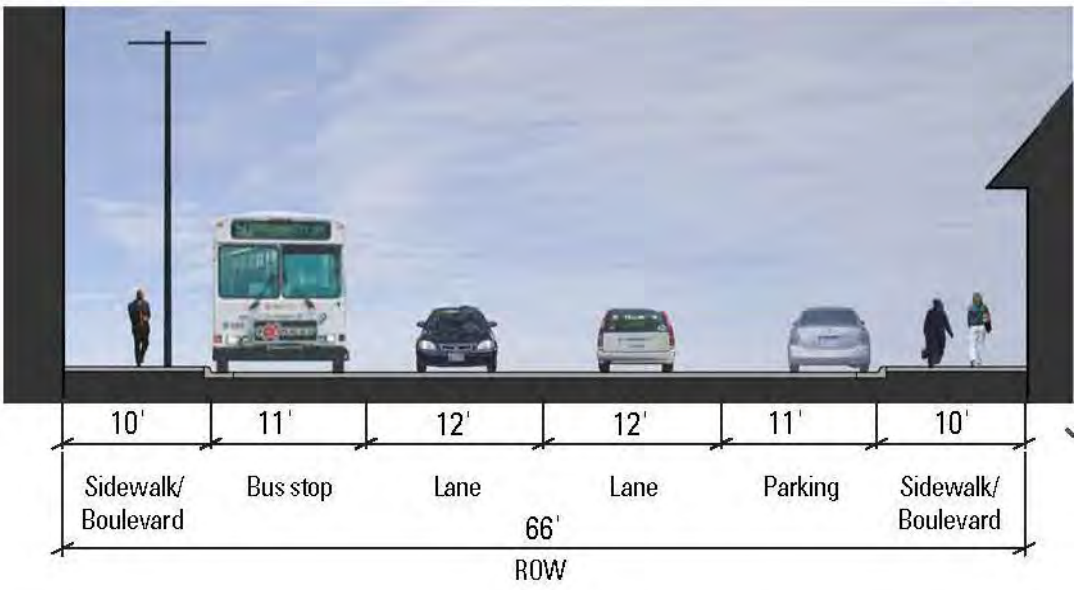
Existing conditions along the Penn Avenue/Osseo Road corridor were considered in the development of preliminary roadway alternatives. The paragraphs and table below summarize existing conditions.

» Penn Avenue is a two-lane undivided roadway (i.e., one travel lane in each direction with no median) running from I-394 to 44th Avenue. The speed limit throughout is 30 miles per hour (mph), and the typical distance from street curb to street curb is 44 feet, although that distance varies at points along the corridor. The public right of way in the corridor varies between 60 and 66 feet wide. The public right of way boundaries are not clearly visible in the corridor due to the significant number of private encroachments. Sidewalk stairs, fences, retaining walls, and other vertical elements encroach into the public right of way, reducing the actual sidewalk/boulevard area and the effective right of way.

» On-street parking is currently permitted on both sides of the street throughout the majority of the corridor. Almost every block along Penn contains bus stops, but shelters are only present at six stops due to space limitations. There are no dedicated bikeways on Penn Avenue; however, bicyclists can use existing travel lanes mixed with traffic.

Penn Avenue Existing Conditions

	Existing Conditions
Between the curbs	44' curb to curb (40' S of Glenwood) Two – 12' travel lanes Parking on both sides – 11' parking lanes No bike lanes
Behind the curbs	5' to 8' sidewalks back of curb (typically) No boulevard green space (except N of 34th Avenue) Limited streetscaping or pedestrian scale
Encroachments	Significant number of encroachments (fencing, retaining walls, stairs) into ROW 68% of properties have one or more encroachments 56' to 58' effective ROW (54' to 56' S of Glenwood) 66' ROW (60' S of Glenwood)
Pedestrian environment	Limited green space or tree canopy Utility poles, traffic signals, and other elements significantly impede the sidewalk Sidewalks missing along Crystal Lake Cemetery Ped ramps, other ADA elements are missing at numerous locations Snow impedes sidewalk in winter



wExisting Roadway Typical Section

Key Factors Influencing Development of Concepts

Confirming Roadway Design Criteria/Parameters

Penn Avenue and Osseo Road are County State Aid Highways, CSAH 2 and CSAH 152, respectively. Therefore, minimum applicable State Aid Standards were used as the basis for design, with notations made for any parameter that was not met, potentially requiring a variance request. In particular, State Aid Standard 8820.9936 "Urban Reconstruction" (Arterials with average daily traffic (ADT) > 10,000) was utilized for design speeds equal to 30 to 40 mph, including:

- Minimum Lane Width = 11 feet
- Outside Curb Reaction = 4 feet (for two-lane road)
- Parking Lane Width = 10 feet
- Minimum Width for Median = 4 feet
- On Street Bike Lanes = 6 feet or Paved Shoulder (shared use path) = 8 feet
- For ADT > 15,000 four-lanes are required, unless level of service (LOS) is proven to be acceptable for three-lane

The City of Minneapolis Street and Sidewalk Design Guidelines, as well as design standards and details from Metro Transit were also used for reference.

The following table below provides a summary of the evaluation criteria and design/control vehicles used at the key intersections. The percent of trucks and heavy vehicles and level of service were used as tolerances at each key intersection regarding opposing lane encroachments during turning maneuvers.

During Inventory and Analysis of the study, a vision traffic modeling study determined that bump outs (curb extensions) to accommodate the C Line stations could occur and still maintain an

acceptable level of service (LOS) for the affected intersections. This traffic modeling study provided a key design assumption for the 30% intersection layouts.

General Design Criteria used for Penn Avenue (CSAH 2) Intersection Design

5/13/2015

Intersection	CSAH/MSA	Existing Transit Route Turns	Design Vehicle[1]	Control	HV > 6%[3]	Overall LOS (2035)[4]	Proposed BRT on
Plymouth	Yes	N/A	School Bus	WB-50	No	C	Farside/Bumpout
Golden Valley	Yes	N/A	WB-50	WB-50	Yes	B	Farside/Bumpout
W. Broadway	Yes	N/A	WB-50	WB-50	Yes	D	Nearside/Curbside
29th	No	N/A	School Bus	School Bus	N/A	N/A	Nearside/Bumpout
Lowry	Yes	NB to W B and EB to SB	City Bus	WB-50	No	C	Nearside/Farside/Curb
36th	No	N/A	School Bus	School Bus	N/A	N/A	Farside/Bumpout
Dowling	Yes	NB to W B and EB to SB	City Bus	WB-50	Yes	C	Nearside/Bumpout
43rd	No	N/A	School Bus	School Bus	N/A	N/A	Nearside/Bumpout

Notes:
1. A large vehicle of high frequency at a particular location - opposing lane encroachments not allowed for turns.
2. A large vehicle of low frequency at a particular location - some level of opposing lane encroachments could be allowed for turns.
3. Some legs of intersection have Heavy Vehicles greater than 6% in the peak hour.
4. LOS shown for future year 2035 no-build for overall intersection.

Other Factors

The Penn Avenue PMT developed technical guidelines that provided general parameters for developing concepts. An overview of the key factors that influenced the initial concepts follows.

- **Impacts to right of way should be limited**. All roadway concepts respect the existing public right of way. Public right of way is a term used to describe the property owned by a government agency that is used for public purposes. For example, the public right of way on Penn Avenue includes the street and the adjacent sidewalks up to private property limits. While the existing right of way in the corridor is narrow, increasing the right of way by taking private property to accommodate new roadway concepts was not acceptable to stakeholders, due to related cost and disruption. The effective right of way refers to that portion of the public right of way that is usable without substantial impact or disruption to existing site improvements such as slopes, walls and landscaping.
- **Maintain existing curbs to minimize the need for major reconstruction**. The cost of a major street reconstruction is substantially higher than resurfacing a roadway and/or making spot improvements. A major street reconstruction is also more time consuming. To minimize costs and implement changes quickly, initial roadway concepts could not move the curbs other than at intersections. The design process, however, indicated that the curbs would likely require change to meet the project objectives, in particular additional space needed for greening the corridor and providing improved sidewalks.
- **Accommodate bus rapid transit (BRT) stations**. Penn Avenue is identified as the second arterial BRT line in the region, the C Line. One of the main physical features of BRT is the presence of stations with customer amenities like shelters, lighting, and real-time bus information. Bumpouts (curb extensions) at intersections are needed to provide the space needed for these stations. The roadway concepts reflect BRT bumpouts at intersections that could accommodate them.
- **Balance transportation modes in the corridor among pedestrians, bicyclists, transit, and automobiles**. Roadway concepts developed had to balance the multimodal transportation needs in the Penn Avenue corridor within a limited right of way.

Generating Alternatives

Several alternatives were developed and analyzed along the Penn Avenue/Osseo Road corridor in an effort to best balance the multimodal transportation and infrastructure needs within the available right of way. The following were key considerations used in generating alternatives:

1. Travel Lanes – Maintain one lane of travel in each direction, with turn lanes provided where necessary.
2. Parking Lanes – Consider options that maintain parking on one or both sides of the corridor.
3. Transit Stops – Analyze how BRT bump-outs and curbside stops can be integrated at key intersections and what trade-offs should be considered to accommodate truck turns and drainage.
4. Boulevards/Sidewalks – Walks exist along both sides of Penn Avenue, but gaps exist on the north end. Pedestrian mobility and safety is an issue along the corridor.
5. Bike Lanes – Consider how designated bike lanes with/without buffer zones can fit within the available right-of-way.

Evaluating/Screening of Alternatives

Alternatives were evaluated and screened by the Layout Review Committee through discussions and by using several quantitative and qualitative design parameters. Key evaluation criteria included:

1. Maintaining/Improving Safety
2. Considering Community Priorities
3. Utilizing Existing/Adopted City and County Policies
4. Analyzing Multimodal Operations and Functionality
5. Minimizing Right of Way Impacts
6. Controlling Costs

Selecting the Preferred Alternative

The preferred alternative for the Penn Avenue/Osseo Road corridor was selected because it represents an acceptable balance between the criteria listed above. Proposed Roadway Cross Sections were developed for the preferred alternative with modifications relative to the various segments of the Penn Avenue/Osseo Road corridor. These sections can be found in Appendix E. Their intent is to depict the width of proposed travel lanes, parking bays, boulevards and walkways within the available right of way. Note that the parking lane widths are proposed to be narrowed to 8 feet, possibly requiring a State Aid Variance request.

Twenty Percent Preliminary Roadway Design Layouts

The Typical Roadway Cross Sections were then applied to the corridor in an effort to develop three Preliminary Roadway Design Layouts. These layouts are considered to be a 20% complete design and are intended to be an informational guide for future design projects along the corridor. In this case 20% design means approximate roadway geometry has been established but construction limits and vertical profiles have not been analyzed. The layouts have been annotated with special notes about potential access closures/consolidations, consideration for improved pedestrian

accessibility and future considerations. Note that due to the large size of the three layouts, they are not included as an appendix, but should be reviewed in concert with this memorandum.

Bike Accommodations

Several alternatives were considered along Penn Avenue in regards to designated bike lanes. Bikes can still use Penn Avenue, however there was insufficient room to provide dedicated bike lanes while trying to maintain travel lanes, BRT stations, sidewalks, grass boulevards with lighting/landscaping, and on-street parking. Therefore, a bike boulevard concept was developed along a parallel route, Queen Avenue. Osseo Road, however, will continue to have designated on-street bike lanes as it does today. See Appendix F for the Queen Avenue Bike Boulevard Memorandum on this subject.

Thirty Percent Intersection Designs

Within the 20% Preliminary Roadway Design Layouts are notes regarding insets for the eight (8) key intersections that include more concentrated deign at these locations. These exhibits constitute 30% complete Intersection Design Layouts, which contain additional analysis related to heavy vehicle turning movements and potential impacts to intersection elevations/drainage caused by curb-line modifications. These Intersection Design Layouts can be found in Appendix G. These intersection designs will likely lay the foundation for design of the near-term improvement projects associated with the C Line BRT. It should be noted that the limits and magnitude of construction shown in these layouts is for planning purposes only. The actual project details and limits are to be determined by the next design team at a later date.

Near-Term Concepts

Initially, four near-term concepts were developed to explore how roadway space could be reallocated to better balance multimodal needs in the corridor. Each of the four concepts focused on different priorities (i.e., bicycle travel, parking needs, pedestrian space, etc.) to highlight the tradeoffs between potential roadway designs.

All four concepts retained existing curbs, except at intersections proposed to be future BRT station locations. At these intersections, bumpouts, in which the curb is moved into the roadway to accommodate bus shelters, are proposed.

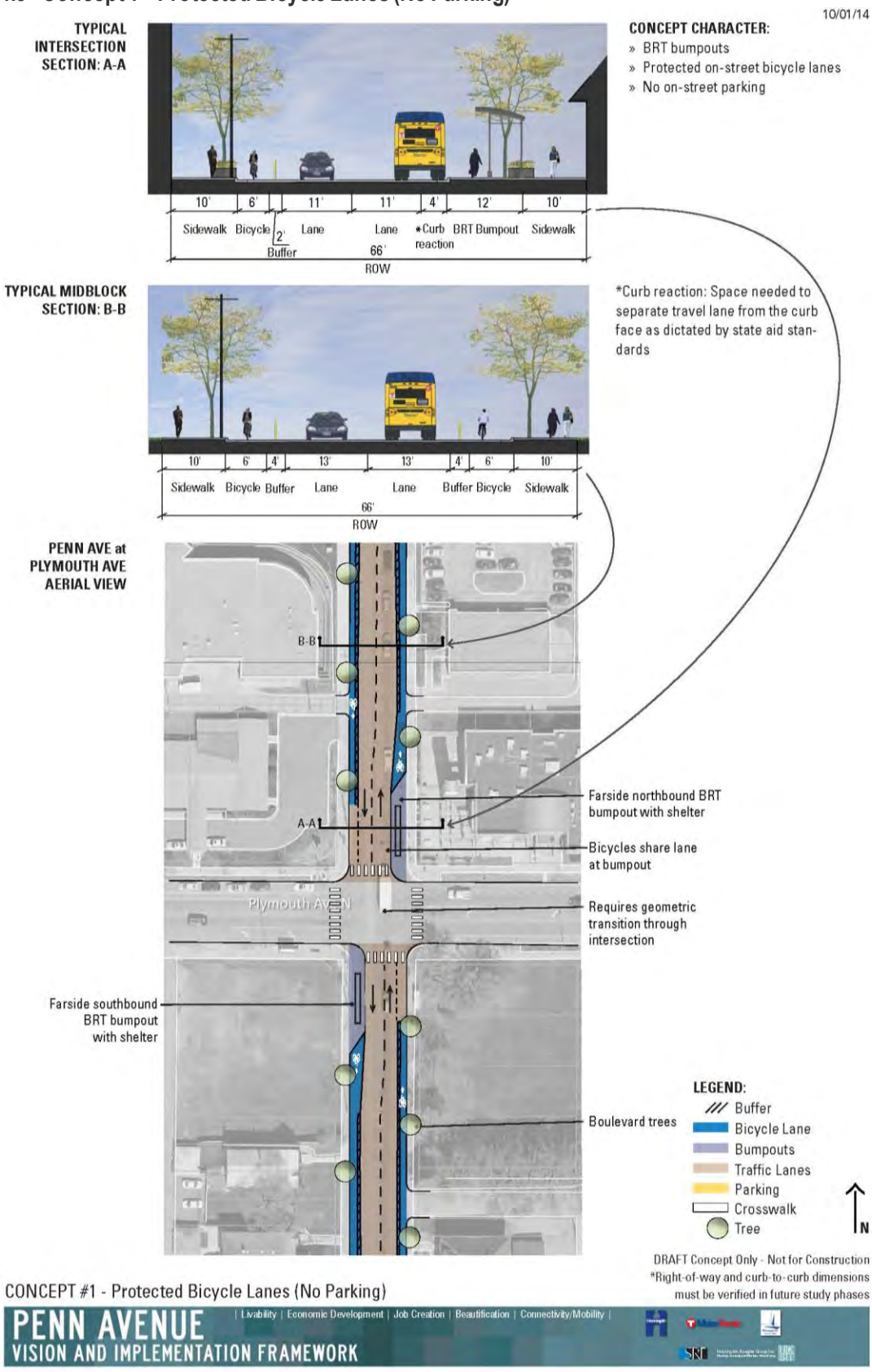
All four initial roadway concepts left existing sidewalks unchanged except at intersections. Doing so, however, limited opportunities for adding trees in the existing boulevard due to the limited space and lack of a buffer to separate the sidewalk from the street edge. The concepts are described and illustrated on the following pages.

Concept 1 - Protected Bicycle Lanes (No Parking)

Concept 1 would eliminate all on-street parking and replace it with protected bicycle lanes (Figure 4.3 - Concept 1). The protected bicycle lanes would be adjacent to the curb and separated from the general travel lanes by a vertical delineator such as marker tubes. At intersections with BRT stations, the bicycle lanes would share the lane with vehicles (including buses) for the length of the bumpout.

Opportunities	Limitations
» Protected on-street bicycle lanes » Bicycle route is the most direct north-south connection (compared to other parallel routes) » Full reconstruction not required	» Eliminates all on-street parking » BRT/bicycle conflict at BRT stations » Creates lane shift through intersections » Protected on-street bicycle lanes require higher levels of maintenance in the winter » Minimal improvements to sidewalks or boulevard

Figure 4.3 - Concept 1 – Protected Bicycle Lanes (No Parking)



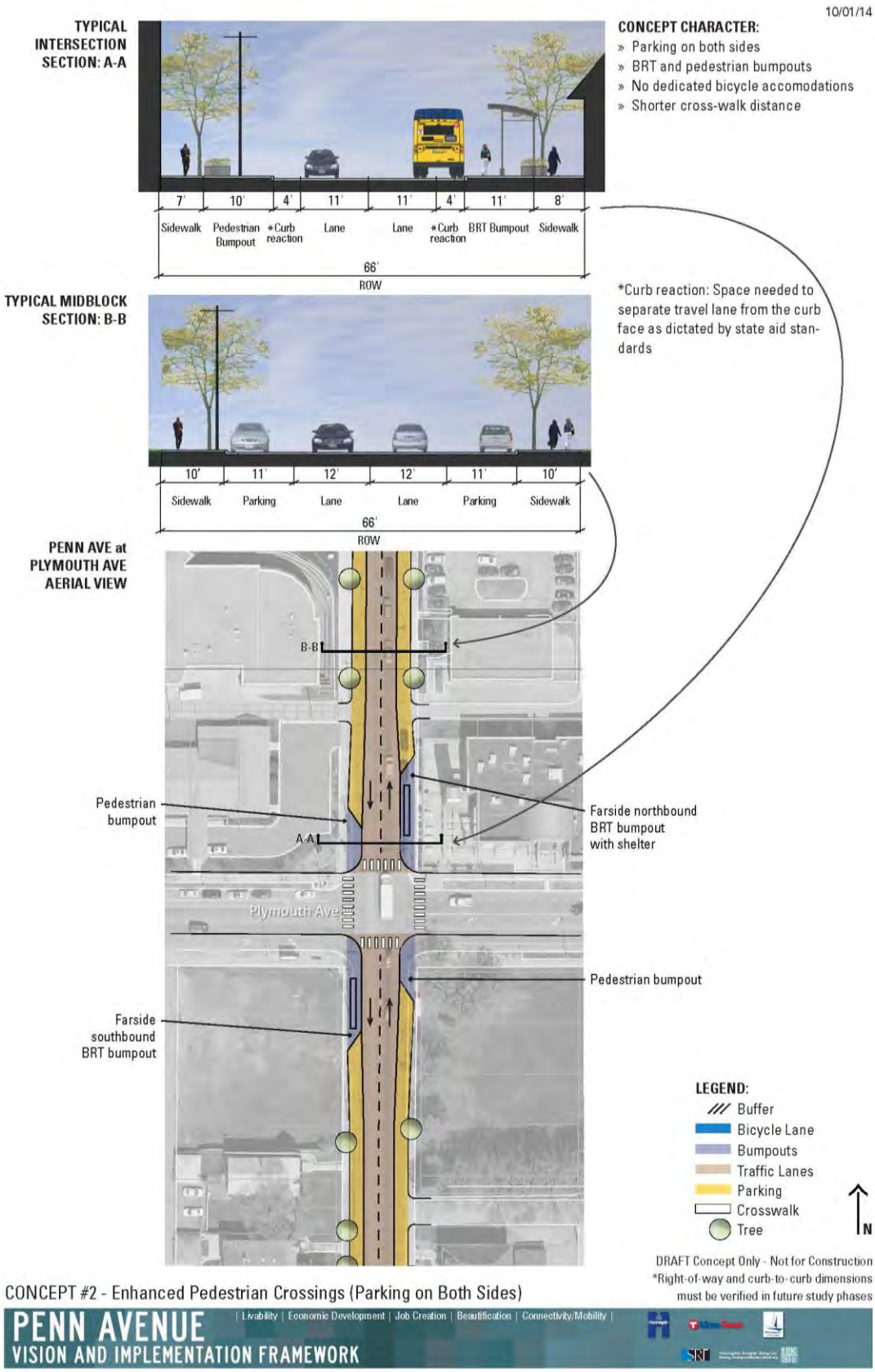
Concept 2 - Enhanced Pedestrian Crossings (Parking on Both Sides)

Concept 2 focused on enhancing pedestrian crossings at intersections by providing bumpouts on all four corners of an intersection (Figure 4.4 - Concept 2). The locations that have a BRT bumpout would be complemented on the opposite corner by a shorter and narrower pedestrian bumpout, which shortens the crossing distance for pedestrians. This concept retains parking on both sides of Penn Avenue except at intersections. Because this concept does not include dedicated bicycle accommodations, it is assumed that bicycle accommodations would be provided on a parallel street (i.e., Oliver or Queen Avenues).

While this concept would not change Penn Avenue other than at intersections, the bumpouts on both sides of the intersection make turns for large vehicles more challenging. Intersection geometry and turning movements must be analyzed in greater detail.

Opportunities	Limitations
» Retains on-street parking » Shortens pedestrian crossing distance at intersections » Full reconstruction not required	» Does not provide a marked on-street bicycle facility » Bumpouts in all four quadrants make turns for large vehicles more challenging » Minimal improvements to sidewalks or boulevard

Figure 4.4 - Concept 2 - Enhanced Pedestrian Crossings (Parking on Both Sides)



Concept 3 - Bicycle Bypass (Parking on One Side)

Concept 3 would provide bicycle lanes as well as bicycle bypasses at BRT bumpouts. It also provides parking on one side (Figure 4.5 - Concept 3). The bicycle lanes would not be protected; however they would be striped to provide a delineated space. It is assumed that the bicycle lanes would be adjacent to the curb. At the BRT stations with bumpouts a bypass would be provided for bicyclists to travel behind the station instead of in the general travel lane in front of the station. This concept would provide parking on one side of the street.

Opportunities	Limitations
» Eliminates potential BRT/bicycle conflict » On-street bicycle lanes » Bicycle route is the most direct north-south connection (compared to other parallel routes) » Full reconstruction not required » Retains parking on one side	» Creates significant lane shift through intersections » Bicycle/pedestrian conflicts at BRT stations » Minimal improvements to sidewalks or boulevard

After further analysis and evaluation of this concept, it was eliminated from consideration due to two main issues. First, to stay within existing public right of way, a significant geometric shift (i.e., jogs in the travel lane) through the intersection would be required to allow for the wider bump out that includes a bicycle bypass within the station area. This geometric shift of the driving lanes was found unacceptable due to safety reasons. To provide an adequate geometric shift through the intersection, additional right of way would be required, as shown in the accompanying figure (Figure 4.6 - Concept 3). Second, because the sidewalk for pedestrians is narrow, there were concerns over conflicts between bicycles and pedestrians at intersections.

Figure 4.5 - Concept 3- Bicycle Bypass (Parking on One Side)

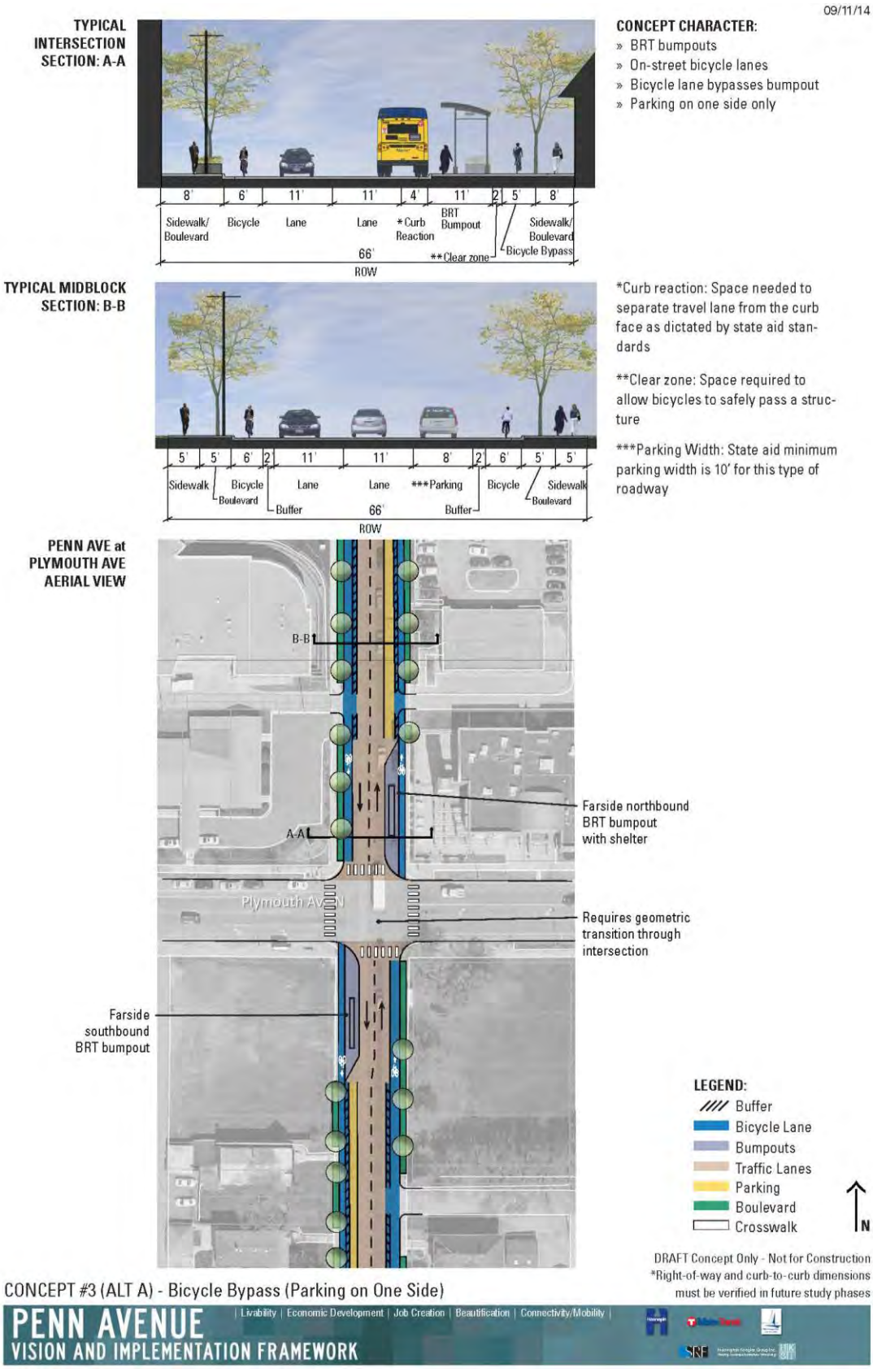
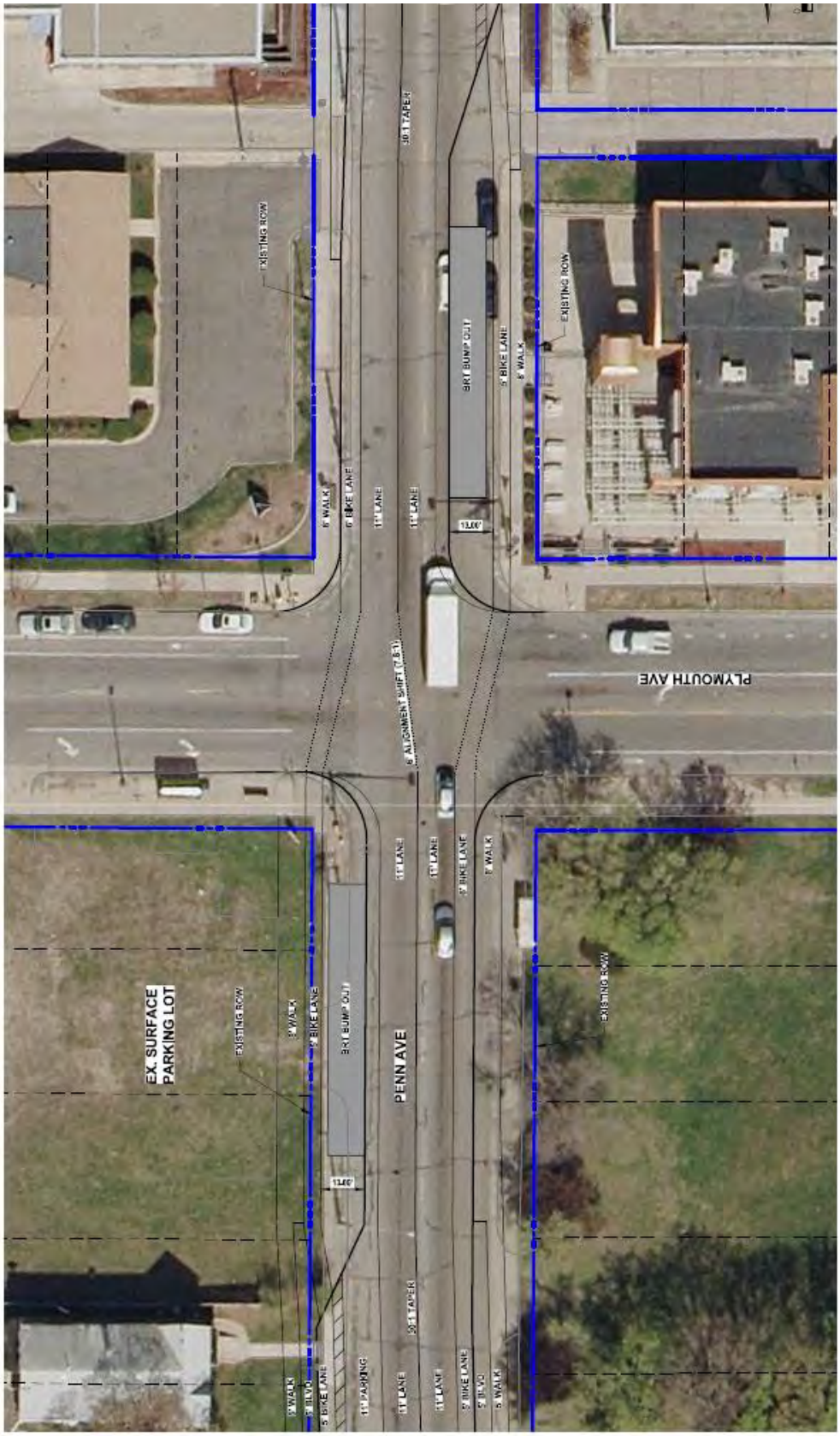


Figure 4.6. - Concept 3- Bicycle Bypass Right of Way Impacts

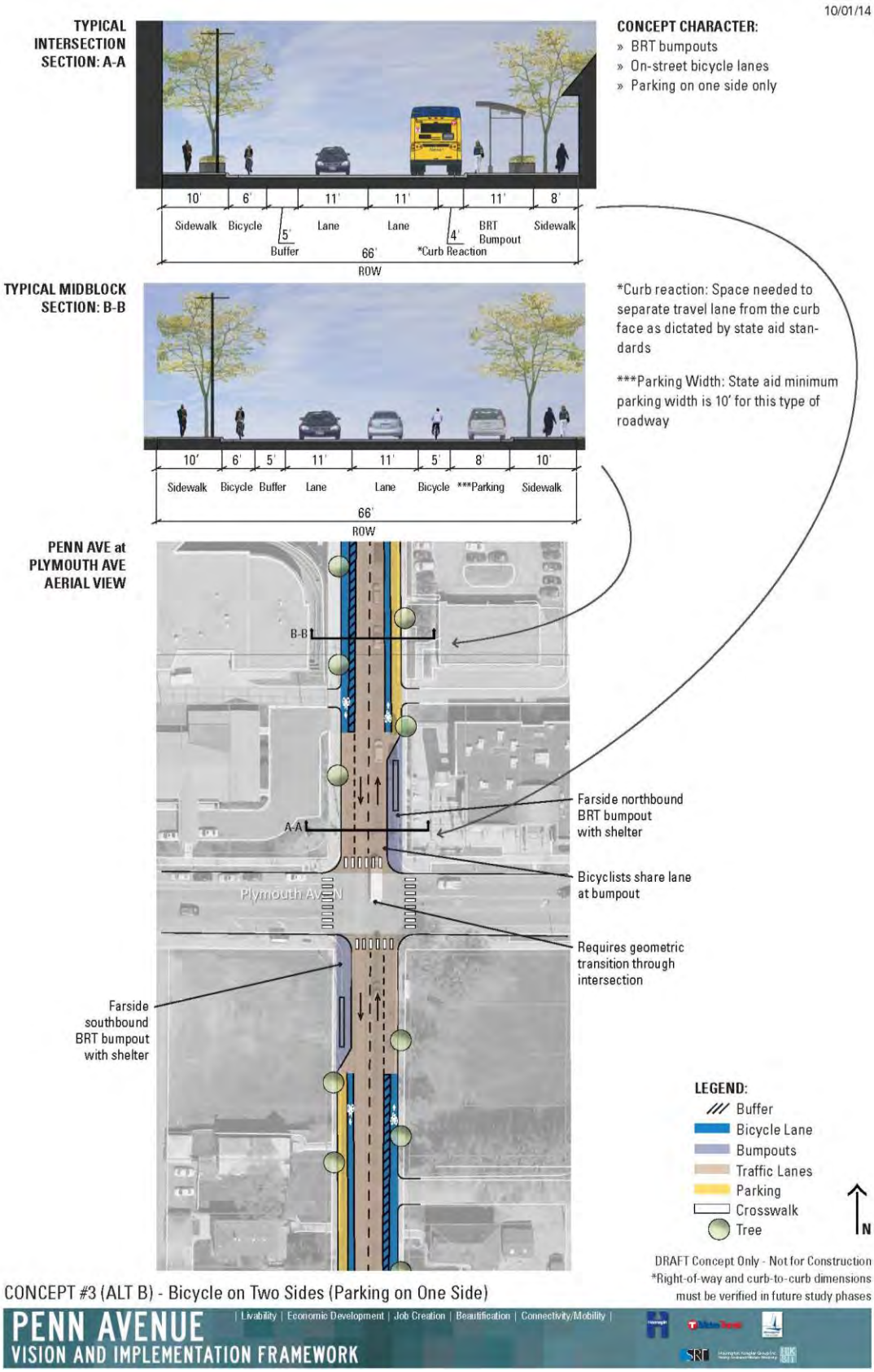


Concept 3 (Alternate B) - Bicycle on Two Sides (Parking on One Side)

A fourth concept, Concept 3 (Alternate B) (Figure 4.7 - Concept 3) was developed in response to the safety and conflict issues identified with Concept 3. Concept 3 (Alternate B) provides bicycle lanes and parking on one side, but removes the bicycle bypasses. The bicycle lanes are not protected; however, they are striped to provide a delineated space. It is assumed that in one direction the bicycle lanes would be adjacent to the curb while in the opposite direction the bicycle lanes would be adjacent to the parking lane. Similar to Concept 1, at intersections that have BRT stations, the bicycle lanes would share the lane with vehicles (including buses) for the length of the bumpout. This concept would provide parking on one side of the street; however, it would alternate sides between intersections.

Opportunities	Limitations
» On-street bicycle lanes » Bicycle route is the most direct north-south connection (compared to other parallel routes) » Retains parking on one side » Full reconstruction not required	» BRT/bicycle conflict at BRT stations » Creates lane shift through intersections » Minimal improvements to sidewalks or boulevard

Figure 4.7 - Concept 3 (Alternative B) - Bicycle on Two Sides (Parking on One Side)



Additional Near-Term Concept

Following the development of the near-term concepts, an additional concept idea was suggested from a Project Implementation Committee (PIC) member. This PIC concept proposed maintaining the existing curb but narrowing travel and parking lanes to provide space to include a bicycle lane. The cross section is comprised of two 11-foot travel lanes, two 5-foot bike lanes, 7-foot parking lanes on each side of the street along with 5-foot boulevards and 5-foot sidewalks. While this concept attempts to fit parking, bicycle lanes and travel lanes within the existing curb, it presents significant safety challenges, because the required buffer space between modes cannot be maintained, thereby limiting space for snow storage. Inadequate snow storage forces snow and ice to occur on sidewalks behind the curb presenting safety issues. Due to these safety reasons this option was not carried forward for further consideration.

Opportunities	Limitations
» On-street bicycle lanes » Bicycle route is the most direct north-south connection (compared to other parallel routes) » Retains parking on both sides » Full reconstruction not required	» No buffer is provided between travel lane and bicycle lane (minimum 3 feet required) » Parking lane widths are too narrow and become even narrower in the winter due to snow » BRT/bicycle conflict at BRT stations » Creates lane shift through intersections » Minimal improvements to sidewalks or boulevard » Narrow travel lanes are inconsistent with current bus width

Ultimate Section Concepts

The initial concepts developed assumed some near-term reconstruction at BRT stations; however, throughout the rest of the corridor, no major reconstruction would be required. While this makes implementation of these concepts relatively simple and inexpensive, these concepts would not accommodate sidewalk improvements for pedestrian safety or convenience, or landscaping the corridor with more street trees and grass boulevard space.

Improving pedestrian circulation and greening the corridor, however, was identified as a high priority through community engagement efforts. To ensure that these two priorities were considered, additional roadway concepts prioritizing these two elements were developed.

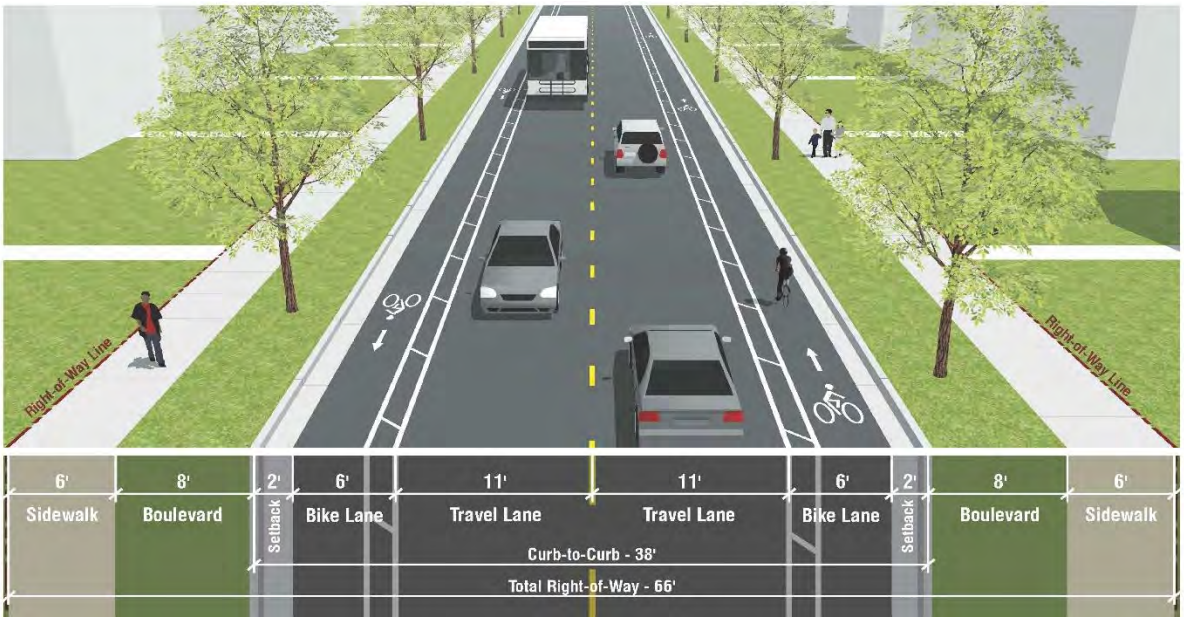
To improve sidewalks and provide the opportunity to green the corridor, these additional concepts moved the existing curb and would therefore require roadway reconstruction. They would cost significantly more and would take more time to implement than the initial concepts. One additional consideration is how well these ultimate roadway concepts would work with the impending construction of BRT stations.

Street concepts that would require additional right of way and those that would expand beyond the effective right of way were not considered due to the inherent cost, required mitigation and disruption. The ultimate section concepts are described in the following sections.

Concept A- Bicycle Lanes, No On-Street Parking

Concept A would narrow the roadway to 38 feet to provide wider sidewalks and accommodate landscaped boulevards (Figure 4.8 - Concept A). This concept provides bicycle lanes adjacent to the curb on both sides of the roadway. Bicycle lanes would not be protected with physical barriers, but they would be striped to provide a delineated space. This concept would eliminate all on-street parking. At intersections that have BRT stations, the bicycle lanes would share the lane with vehicles (including buses) for the length of the bumpout

Figure 4.8 - Concept A- Bicycle Lanes, No On-Street Parking

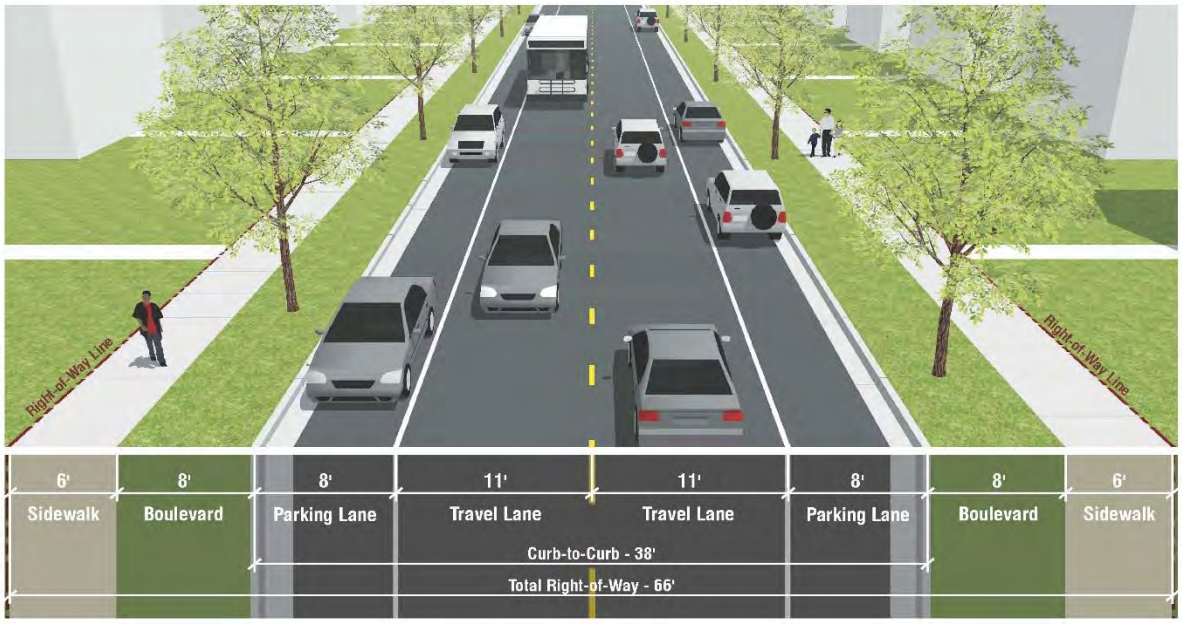


Opportunities	Limitations
» On-street bicycle lanes » Bicycle route is the most direct north-south connection (compared to other parallel routes) » Enhances sidewalks and boulevard » Provides opportunity for street trees	» Eliminates all on-street parking » BRT/bicycle conflict at BRT stations » Creates lane shift through intersections » Requires full street reconstruction » High number of encroachments into public right of way

Concept B- Parking Two Sides, Bicycle Accommodation on Parallel Streets

Concept B would narrow the roadway to 38 feet to provide wider sidewalks and accommodate landscaped boulevards (Figure 4.9 - Concept B). This concept would not provide bicycle accommodations on Penn Avenue; rather, it assumes bicycle accommodations would be provided on parallel streets. Parking would occur on both sides in this concept, except at intersections where there are BRT stations.

Figure 4.9 - Concept B- Parking Two Sides, Bicycles on Parallel Streets

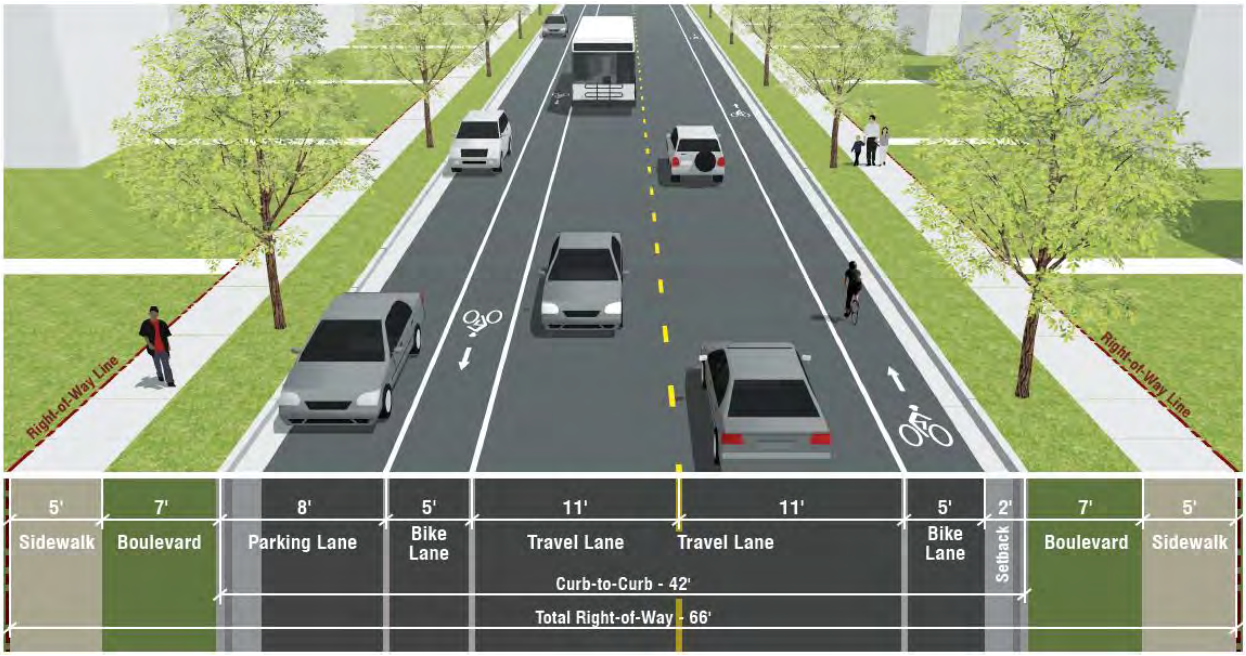


Opportunities	Limitations
» Retains on-street parking » Enhances sidewalks and boulevard » Provides opportunity for street trees	» Does not provide a marked on-street bicycle facility » Creates lane shift through intersections » Requires full street reconstruction » High number of encroachments into public right of way

Concept C- Bicycle Lanes, Parking on One Side

Concept C would narrow the roadway to 42 feet to accommodate both slightly wider sidewalks and landscaped boulevards (Figure 4.10 - Concept C). This concept would provide bicycle lanes and parking on one side. Bicycle lanes would not be protected, but they would be striped to provide a delineated space. It is assumed that in one direction the bicycle lanes would be adjacent to the curb while in the opposite direction, the bicycle lanes would be adjacent to the parking lane. At intersections that have BRT stations, the bicycle lanes would share the lane with vehicles (including buses) for the length of the bumpout. This concept would provide parking on one side of the street. Parking would alternate sides between intersections.

Figure 4.10 - Concept C- Bicycle Lanes, Parking on One Side



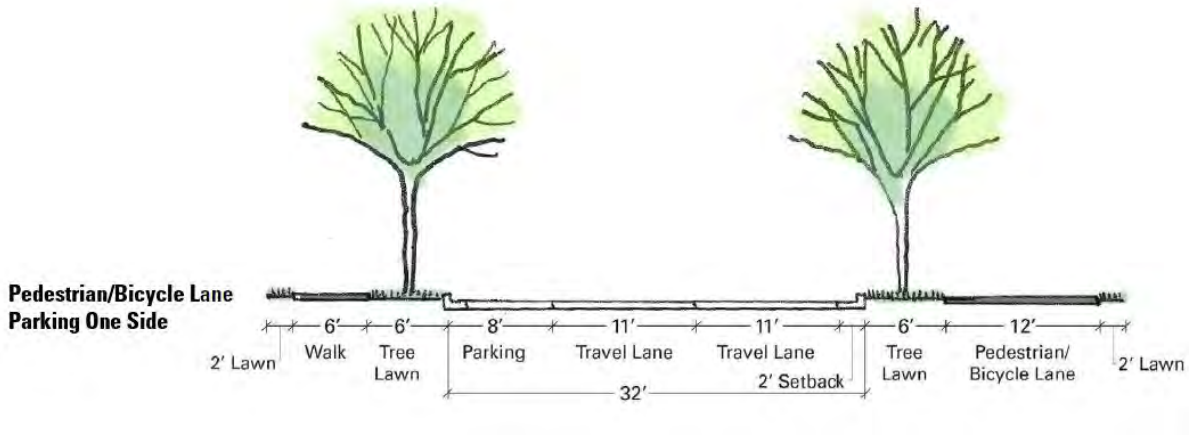
Opportunities	Limitations
» On-street bicycle lanes » Bicycle route is the most direct north-south connection (compared to other parallel routes) » Retains parking on one side » Enhances sidewalks and boulevard » Provides opportunity for street trees	» BRT/bicycle conflict at BRT stations » Creates lane shift through intersections » Requires full street reconstruction » High number of encroachments into public right of way

Additional Ultimate Concept Idea

An additional ultimate concept was considered and then dismissed by the Penn Avenue PMT (Figure 4.11). This concept narrowed the width of Penn Avenue down to 32 feet and provided parking on one side of the street. Bicycles would be accommodated in a shared pedestrian/bicycle space behind the boulevard on one side of the street.

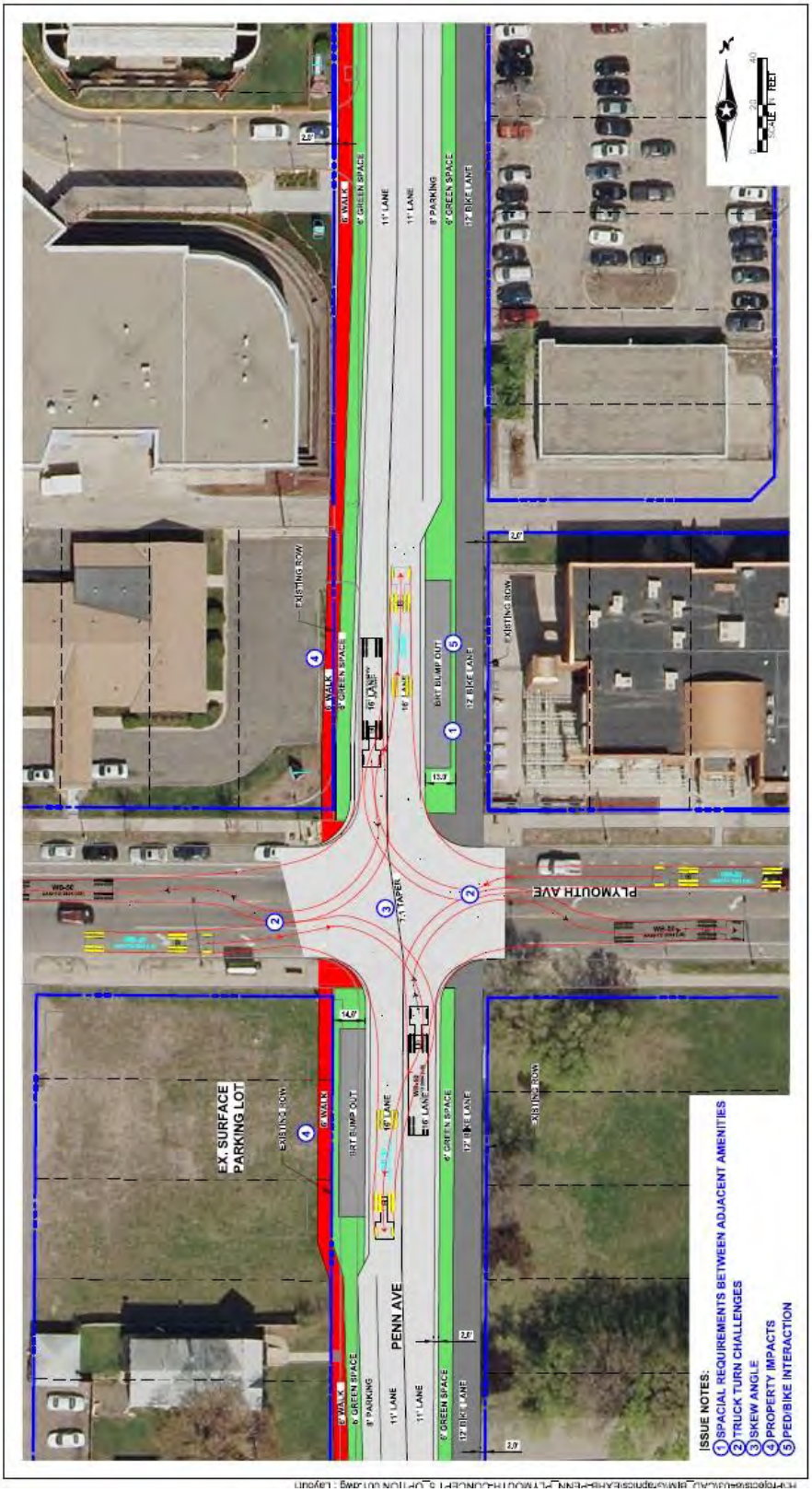
Narrowing the roadway width presents challenges for larger vehicles turning onto or off of Penn Avenue (Figure 4.12). To accommodate BRT stations and provide the space needed for the pedestrian/bicycle lane and boulevard, additional right of way would be required within the adjacent intersection quadrants. Intersections that have BRT bumpouts would require a significant geometric shift that would be unsafe and difficult to maneuver. This concept was not carried forward for further evaluation because of these significant challenges. These challenges are illustrated in the following table and in Figure 4.12.

Figure 4.11 - Pedestrian/Bicycle Lane and Parking on One Side Concept



Opportunities	Limitations
» Bicycle lane provided behind boulevard » Retains parking on one side » Enhances sidewalks and boulevard » Provides opportunity for street trees	» Significant challenges implementing BRT stations due to limited right of way; additional right of way would be needed to provide adequate space for sidewalks » No buffer is provided between travel lane and parking lane » Requires full street reconstruction » Narrow street width makes turns for large vehicles challenging » Creates significant lane shift through intersections

Figure 4.12 - Challenges with Pedestrian/Bicycle Lane and Parking on One Side Concept



Steering Committee Direction

At the February 2, 2015 Steering Committee meeting, a comprehensive presentation of the near term and ultimate roadway concepts was given. Committee discussion focused upon the accommodation of bicycles, pedestrians, parking and greening within the Penn Avenue corridor, with committee members debating the inherent tradeoffs of each element given space limitations and right of way constraints. The significant majority of the Steering Committee members favored roadway concept 1A (two travel lanes, parking both sides of the street, boulevards and sidewalks) with bicycle accommodation on a parallel route. While a small minority of the committee favored the hybrid option described earlier. The Committee requested that staff develop a recommendation of a parallel route to Penn Avenue for bike accommodation and to proceed with concept level drawings for the entire Penn Avenue corridor.

The consultant team was directed to prepare 20 percent plans for the entire corridor and 30 percent plans for key intersections with concept plan 1A used as the basis for the work. The consultant team was also directed to assist staff with the preparation of a bike boulevard concept for Queen Avenue. A subset of the PMT was assigned to provide guidance and support. The roadway plans and bike boulevard concept were presented to the City Council for review and action.

Hennepin County Board

The concept was approved by the Hennepin County Board on April 21, 2015 with the following motion.

Item Description: Support Penn Avenue Community Works conceptual roadway, pedestrian and greening layout and near term phasing strategy Resolution: BE IT RESOLVED, that consistent with the goals and principles established for the Penn Avenue Community Works program, the Hennepin County Board supports a conceptual roadway, pedestrian, and greening layout for Penn Avenue (CSAH 2) between Glenwood Avenue and 44th Avenue North; and BE IT FURTHER RESOLVED, that this conceptual layout typically includes 5-foot sidewalks, 5-foot green boulevards, and 8-foot parking lanes on both sides of the road, along with 11-foot lanes for vehicle travel including the accommodation for arterial bus rapid transit and related stations; and BE IT FURTHER RESOLVED, that the Hennepin County Board supports the advancement of planning and engineering for potential, near-term Penn Avenue intersection improvements at Plymouth Avenue and West Broadway; and segment improvements to Penn Avenue from Plymouth Avenue to Golden Valley Road, West Broadway to Lowry Avenue, 36th Avenue to Dowling Avenue, and Dowling Avenue to 44th Avenue.

City Council

The Transportation and Public Works Committee on July 28, 2015. The item was sent forward without recommendation.

The City Council approved the concept on August 7, 2015. Yang moved approval of the proposed Penn Avenue North Concept Plan (Option 1); and that Hennepin County be requested to work with the City of Minneapolis to identify, and support financially, new bicycle infrastructure/improvement needs for the Penn Avenue corridor, including the Thomas Avenue North bikeway. Staff should take care to maximize connections to future transit stops/stations and fill the north/south gap in the regional bikeway network.

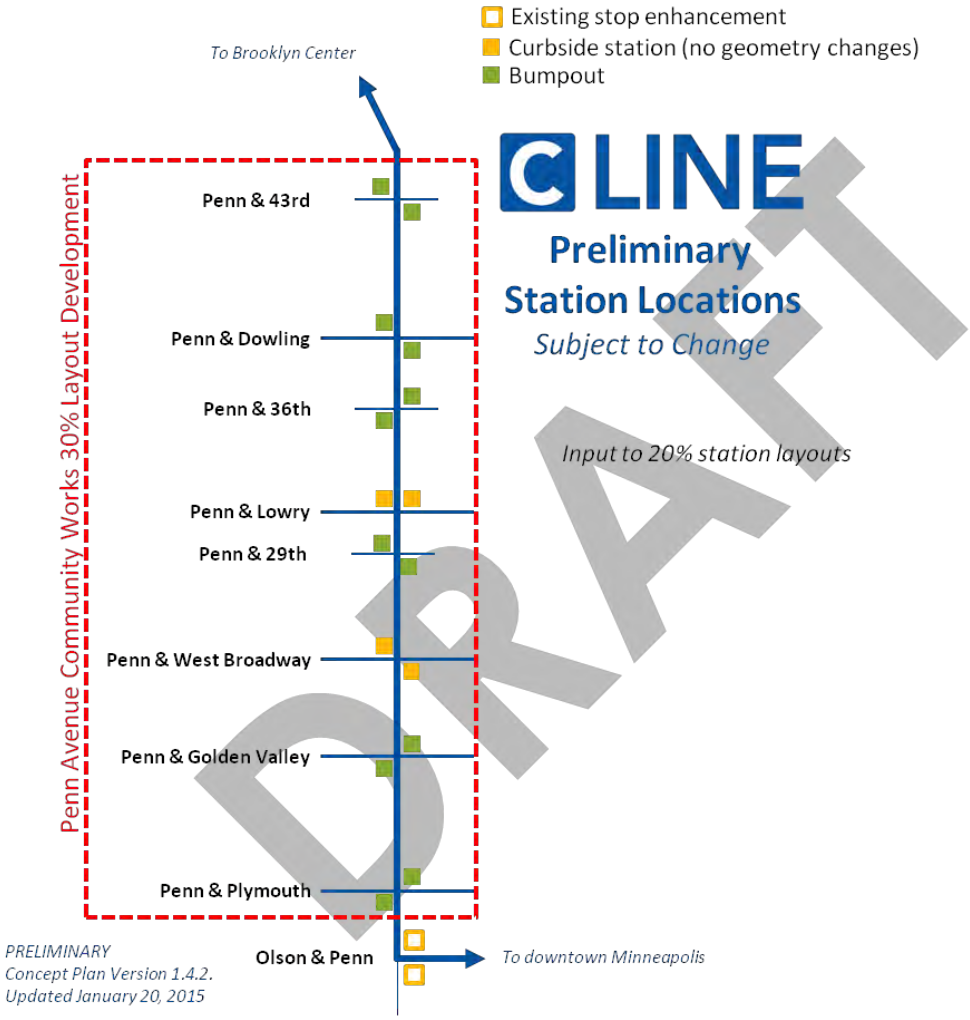
Future Considerations

The following considerations should be embraced as the project development process evolves:

» BRT stations

- BRT Stations are shown at planned locations (see Figure 4.13 below). These locations should be finalized during the design phase by Metropolitan Council action following further stakeholder review.
- Location of local bus stops at BRT intersections (whether shared with BRT or separate) should be determined during final design.

Figure 4.13 - C Line Preliminary Station Locations



» Crosswalk bump-outs

- The next stages of design should consider the feasibility of implementing crosswalk bump outs at intersections along Penn Avenue, including assessing opportunities for bump outs on east-west streets at intersections.
- Benefits may include shorter crossing distances for pedestrians, improved driver visibility of pedestrians, traffic calming effects, and increased sidewalk amenity space.
- Special considerations should be given to truck turn movements, storm water management, snow removal, and potential impacts to parking, bus stops, and bike lanes.

Planning Level Cost Estimates

Planning level cost estimates from a road design perspective were developed for each of the key intersections and for the three unique segments of Penn Avenue/Osseo Road corridor. Some areas along the corridor may undergo routine maintenance, while others may be subject to a full or partial reconstruction. The following cost estimating spreadsheets are based on average 2014 material prices and are based on many assumptions and do not include costs related to design engineering, right of way acquisition, construction administration, and utility relocations. Relative to BRT stations, the estimates do not include costs for electrical systems, communication systems, passenger shelter/pylons, or revisions to the existing traffic signal systems.

Cost Estimates 49th Avenue to 44th Avenue – Concept Cost Estimate (based on 2014 bid prices)

					44th Ave to 49th Ave	
	ITEM DESCRIPTION		UNIT	UNIT PRICE	EST. QUANTITY	EST. AMOUNT
PAVING AND GRADING COSTS						
GrP 1a	Excavation - common & subgrade		cu. yd.	$7.00	7,200	$50,400
GrP 2a	Common Borrow (CV)		cu. yd.	$12.50		
GrP 2b	Granular Subgrade (CV)		cu. yd.	$14.00		
GrP 3a	Mainline Pavement ($54 to $92)	(1)	sq. yd.	$70.00	20,820	$1,457,400
GrP 3b	Driveway Pavement	(1)	sq. yd.	$20.00	275	$5,500
GrP 4a	Concrete Walk / Trail / Median	(2)	sq. yd.	$35.00	3,520	$123,200
GrP 4b	ADA Pedestrian Curb Ramp		each	$1200.00	55	$66,000
GrP 5	Concrete Curb and Gutter		lin. ft.	$16.00	7,630	$122,080
GrP 6	Concrete Median Barrier (Permanent)		lin. ft.	$75.00		
GrP 7a	Removals - Pavement (inludes sidewalk)		sq. yd.	$7.50	24,270	$182,025
GrP 7b	Removals - Buildings		each	$50,000		
GrP 7c	Removals - Drainage		lin. ft.	$20		
GrP 7d	Removals - Curb and Gutter		lin. ft.	$3.00	7,060	$21,180
	SUBTOTAL PAVING AND GRADING COSTS:					$2,027,785
DRAINAGE, UTILITIES AND EROSION CONTROL						
Dr 1	Local Utilities - Sanitary Sewers		lin. ft.			
Dr 2	Local Utilities - Watermains		lin. ft.			
Dr 3	Drainage - urban (??% range 10-30%)		25%			$507,000
Dr 4	Turf Establishment & Erosion Control		5%			$101,000
Dr 5	Landscaping					
	SUBTOTAL DRAINAGE, UTILITIES AND EROSION CONTROL					$608,000
SIGNAL AND LIGHTING COSTS						
SGL 1	Signals (permanent, includes existing singal removal)		each	$300,000	3	$750,000
SGL 2	At Grade Intersection Lighting (permanent - non signalized)		each	$25,000		
SGL 3	Mainline Lighting (permanent)		mile	$300,000		
	SUBTOTAL SIGNAL AND LIGHTING COSTS:					$750,000
SIGNING & STRIPING COSTS						
SGN 1	Mainline Signing (C&D)		mile	$35,000	0.8	$28,000
SGN 2	Mainline Striping		mile	$5,000	0.8	$4,000
SGN 3	Mainline Signing (A, OH, Br Mtd)		each	$30,000		
	SUBTOTAL SIGNING & STRIPING COSTS:					$32,000
	SUBTOTAL CONSTRUCTION COSTS:					$3,417,785
MISCELLANEOUS COSTS						
M 1	Mobilization		5%			$171,000
M 2	Non Quantified Minor Items (10% to 30%)		20%			$684,000
M 3	Temporary Pavement & Drainage					
M 4	Traffic Control		3%			$103,000
	SUBTOTAL MISCELLANEOUS COSTS:					$958,000
ESTIMATED TOTAL CONSTRUCTION COSTS without Contingency:						$4,375,785
1	Contingency or "risk" (10% to 30%)		15%			$656,000
ESTIMATED TOTAL CONSTRUCTION COSTS PLUS CONTINGENCY:						$5,031,785
	OTHER PROJECT COSTS:					
	UTIITY AGREEMENTS		Lump Sum	TBD		
	R/W ACQUISITIONS		Lump Sum	TBD		
	DESIGN ENG. & CONSTRUCTION ADMIN.		Lump Sum	TBD		
	SUBTOTAL OTHER PROJECT COSTS					
	TOTAL PROJECT COST (based upon 2014 bid price information)					$5,031,785
	TOTAL PROJECT COST PER MILE		Miles	$5,031,785	0.71	$7,087,000
	TOTAL PROJECT COST PER BLOCK		Blocks	$5,031,785	15	$335,500

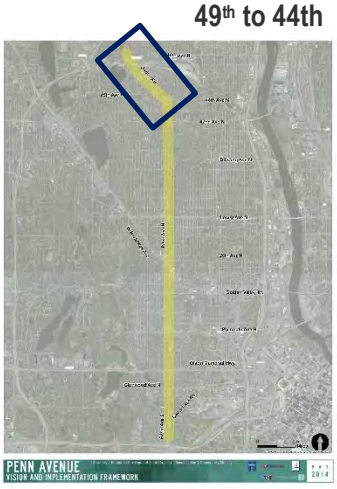
NOTE: (1) Includes aggregate base class 5 and PASB or OGAB, as appropriate.
(2) Includes aggregate base class 5.

Utility Agreements based upon:
R/W Acquisitions based upon:

Project cost does not include Design, Construction Administration, ROW, or Public Utiltiy Adjustment costs

Estimate does not include electrical systems, communication systems, passanger shelter/pylons and other station equipment, signal revisons for transit signal priority, and vehicles

49th to 44th



Cost Estimates 44th to Glenwood– Concept Cost Estimate (based on 2014 bid prices)

					Glenwood Ave to 44th Ave	
	ITEM DESCRIPTION		UNIT	UNIT PRICE	EST. QUANTITY	EST. AMOUNT
PAVING AND GRADING COSTS						
GrP 1a	Excavation - common & subgrade		cu. yd.	$7.00	28,000	$196,000
GrP 2a	Common Borrow (CV)		cu. yd.	$12.50		
GrP 2d	Granular Subgrade (CV)		cu. yd.	$14.00		
GrP 3a	Mainline Pavement ($54 to $92)	(1)	sq. yd.	$70.00	80,780	$5,654,600
GrP 3h	Driveway Pavement	(1)	sq. yd.	$20.00	1,045	$20,900
GrP 4a	Concrete Walk / Trail / Median	(2)	sq. yd.	$35.00	22,100	$773,500
GrP 4c	ADA Pedestrian Curb Ramp		each	$1200.00	263	$315,600
GrP 5	Concrete Curb and Gutter		lin. ft.	$16.00	39,935	$638,960
GrP 6	Concrete Median Barrier (Permanent)		lin. ft.	$75.00		
GrP 8a	Removals - Pavement (inludes sidewalk)		sq. yd.	$7.50	121,040	$907,800
GrP 8b	Removals - Buildings		each	$50,000		
GrP 8c	Removals - Drainage		lin. ft.	$20		
GrP 8d	Removals - Curb and Gutter		lin. ft.	$3.00	38,405	$115,215
	SUBTOTAL PAVING AND GRADING COSTS:					$8,622,575
DRAINAGE, UTILITIES AND EROSION CONTROL						
Dr 1	Local Utilities - Sanitary Sewers		lin. ft.			
Dr 2	Local Utilities - Watermains		lin. ft.			
Dr 5	Drainage - urban (??% range 10-30%)		25%			$2,156,000
Dr 7	Turf Establishment & Erosion Control		5%			$431,000
Dr 8	Landscaping					
	SUBTOTAL DRAINAGE, UTILITIES AND EROSION CONTROL					$2,587,000
SIGNAL AND LIGHTING COSTS						
SGL 1	Signals (permanent, includes existing singal removal)		each	$300,000	15	$4,500,000
SGL 3	At Grade Intersection Lighting (permanent - non signalized)		each	$25,000		
SGL 4	Mainline Lighting (permanent)		mile	$300,000		
	SUBTOTAL SIGNAL AND LIGHTING COSTS:					$4,500,000
SIGNING & STRIPING COSTS						
SGN 1	Mainline Signing (C&D)		mile	$35,000	3.8	$133,000
SGN 2	Mainline Striping		mile	$5,000	3.8	$19,000
SGN 3	Mainline Signing (A, OH, Br Mtd)		each	$30,000		
	SUBTOTAL SIGNING & STRIPING COSTS:					$152,000
	SUBTOTAL CONSTRUCTION COSTS:					$15,861,575
MISCELLANEOUS COSTS						
M 1	Mobilization		5%			$793,000
M 2	Non Quantified Minor Items (10% to 30%)		15%			$2,379,000
M 7	Temporary Pavement & Drainage					
M 8	Traffic Control		3%			$476,000
	SUBTOTAL MISCELLANEOUS COSTS:					$3,648,000
ESTIMATED TOTAL CONSTRUCTION COSTS without Contingency:						$19,509,575
1	Contingency or "risk" (10% to 30%)		15%			$2,926,000
ESTIMATED TOTAL CONSTRUCTION COSTS PLUS CONTINGENCY:						$22,435,575
	OTHER PROJECT COSTS:					
	UTIITY AGREEMENTS		Lump Sum	TBD		
	R/W ACQUISITIONS		Lump Sum	TBD		
	DESIGN ENG. & CONSTRUCTION ADMIN.		Lump Sum	TBD		
	SUBTOTAL OTHER PROJECT COSTS					
	TOTAL PROJECT COST (based upon 2014 bid price information)					$22,435,575
	TOTAL PROJECT COST PER MILE		Miles	$22,435,575	3.78	$5,935,300
	TOTAL PROJECT COST PER BLOCK		Blocks	$22,435,575	35	$641,000

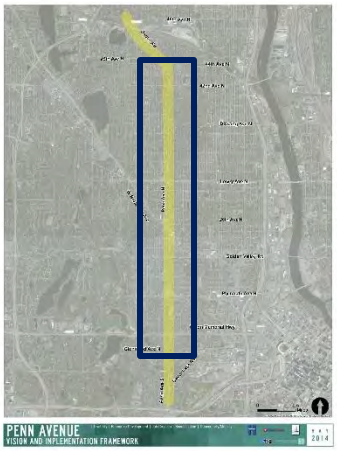
NOTE: (1) Includes aggregate base class 5 and PASB or OGAB, as appropriate.
(2) Includes aggregate base class 5

Utility Agreements based upon:
R/W Acquisitions based upon:

Project cost does not include Design, Construction Administration, ROW, OR Public Utility Adjustment costs

Estimate does not include electrical systems, communication systems, passanger shelter/pylons and other station equipment, signal revisons for transit signal priority, and vehicles

44th to Glenwood



Cost Estimates Glenwood to I-394– Concept Cost Estimate (based on 2014 bid prices)

						394 to Glenwood Ave	
	ITEM DESCRIPTION		UNIT	UNIT PRICE	EST. QUANTITY	EST. AMOUNT
PAVING AND GRADING COSTS							
GrP 1a	Excavation - common & subgrade		cu. yd.	$7.00		
GrP 2a	Common Borrow (CV)		cu. yd.	$12.50		
GrP 2d	Granular Subgrade (CV)		cu. yd.	$14.00		
GrP 3a	Mainline Pavement ($54 to $92)	(1)	sq. yd.	$35.00	13,700	$479,500
GrP 3h	Driveway Pavement	(1) (3)	sq. yd.	$20.00		
GrP 4a	Concrete Walk / Trail / Median	(2)	sq. yd.	$35.00	460	$16,100
GrP 4c	ADA Pedestrian Curb Ramp		each	$1200.00	52	$62,400
GrP 5	Concrete Curb and Gutter	(3)	lin. ft.	$16.00	3,220	$51,520
GrP 6	Concrete Median Barrier (Permanent)		lin. ft.	$75.00		
GrP 8a	Removals - Pavement (inludes sidewalk)	(3)	sq. yd.	$7.50	14,160	$106,200
GrP 8b	Removals - Buildings		each	$50,000		
GrP 8c	Removals - Drainage		lin. ft.	$20		
GrP 8d	Removals - Curb and Gutter	(3)	lin. ft.	$3.00	3,220	$9,660
	SUBTOTAL PAVING AND GRADING COSTS:						$725,380
DRAINAGE, UTILITIES AND EROSION CONTROL							
Dr 1	Local Utilities - Sanitary Sewers		lin. ft.			
Dr 2	Local Utilities - Watermains		lin. ft.			
Dr 5	Drainage - urban (??% range 10-30%)		25%			
Dr 7	Turf Establishment & Erosion Control		5%			$36,000
Dr 8	Landscaping					
	SUBTOTAL DRAINAGE, UTILITIES AND EROSION CONTROL						$36,000
SIGNAL AND LIGHTING COSTS							
SGL 1	Signals (permanent, includes existing singal removal)		each	$300,000		
SGL 3	At Grade Intersection Lighting (permanent - non signalized)		each	$25,000		
SGL 4	Mainline Lighting (permanent)		mile	$300,000		
	SUBTOTAL SIGNAL AND LIGHTING COSTS:						
SIGNING & STRIPING COSTS							
SGN 1	Mainline Signing (C&D)		mile	$35,000		
SGN 2	Mainline Striping		mile	$5,000	0.7	$3,500
SGN 3	Mainline Signing (A, OH, Br Mtd)		each	$30,000		
	SUBTOTAL SIGNING & STRIPING COSTS:						$3,500
	SUBTOTAL CONSTRUCTION COSTS:						$764,880
MISCELLANEOUS COSTS							
M 1	Mobilization		5%				$38,000
M 2	Non Quantified Minor Items (10% to 30%)		15%				$115,000
M 7	Temporary Pavement & Drainage						
M 8	Traffic Control		3%				$23,000
	SUBTOTAL MISCELLANEOUS COSTS:						$176,000
ESTIMATED TOTAL CONSTRUCTION COSTS without Contingency:							$940,880
1	Contingency or "risk" (10% to 30%)		15%				$141,000
ESTIMATED TOTAL CONSTRUCTION COSTS PLUS CONTINGENCY:							$1,081,880
	OTHER PROJECT COSTS:						
	UTIITY AGREEMENTS		Lump Sum	TBD		
	R/W ACQUISITIONS		Lump Sum	TBD		
	DESIGN ENG. & CONSTRUCTION ADMIN.		Lump Sum	TBD		
	SUBTOTAL OTHER PROJECT COSTS						
	TOTAL PROJECT COST (based upon 2014 bid price information)						$1,081,880
	TOTAL PROJECT COST PER MILE		Miles	$1,081,880	0.61	$1,773,600
	TOTAL PROJECT COST PER BLOCK		Blocks	$1,081,880	8	$135,200

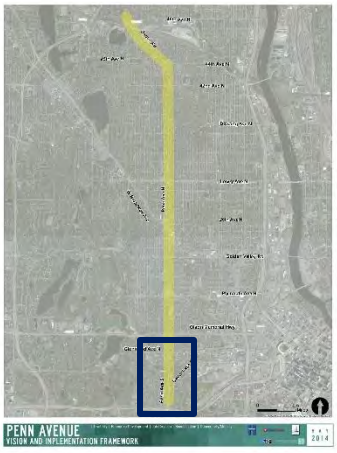
NOTE: (1) Includes aggregate base class 5 and PASB or OGAB, as appropriate.
(2) Includes aggregate base class 5.
(3) Sidewalk, Concrete Curb and Gutter, and Driveway removal calculated as 50% of the project

Utility Agreements based upon:
R/W Acquisitions based upon:

Project cost does not include Design, Construction Administration, ROW, or Public Utility Adjustment costs

Estimate does not include electrical systems, communication systems, passanger shelter/pylons and other station equipment, signal revisons for transit signal priority, and vehicles

Glenwood to I-394



Streetscape

Preliminary Streetscape Cost Estimates

The following are preliminary estimates of construction costs associated with the conceptual streetscape design of the Penn Avenue corridor. Specific intersection costs are addressed later in this document. This costs are provided for information purposes only and are not to be construed as actual construction costs.

Osseo Road – Conceptual Streetscape Cost Estimate (49th Ave to 44th Ave)

Item	Quantity	Unit	Unit Price	Amount
Removal of concrete walk	4300	SY	$6.00	$25,800.00
Removal of light pole	20	EA	$500.00	$10,000.00
4" Concrete sidewalk	39,000	SF	$6.50	$253,500.00
Pedestrian light fixture	30	EA	$7,000.00	$210,000.00
Subtotal				$499,300.00
Contingency (15%)				*$74,895.00*
Design and Engineering (8%)				*$39,944.00*
Total Cost				**$614,139.00**

Penn Avenue – Conceptual Streetscape Cost Estimate (residential blocks – 44th Ave to Glenwood Ave)

Item	Quantity	Unit	Unit Price	Amount
Removal of concrete walk	20,000	SY	$6.00	$120,000.00
Removal of light pole	100	EA	$500.00	$50,000.00
4" Concrete sidewalk	150,000	SF	$6.50	$975,000.00
Pedestrian light fixture	250	EA	$7,500.00	$1,875,000.00
Street tree	600	EA	$600.00	$360,000.00
Sod	16,650	SY	$6.00	$99,900.00
Boulevard topsoil	2500	CY	$40.00	$100,000.00
Subtotal				$3,579,900.00
Contingency (15%)				*$536,985.00*
Design and Engineering (8%)				*$286,392.00*
Total Cost				**$4,403,277.00**

Penn Avenue – Conceptual Streetscape Cost Estimate (Glenwood Ave to I-394)

Item	Quantity	Unit	Unit Price	Amount
Removal of concrete walk	4800	SY	$6.00	$28,800.00
Removal of light pole	24	EA	$500.00	$12,000.00
4" Concrete sidewalk	43,200	SF	$6.50	$280,800.00
Pedestrian light fixture	60	EA	$7,000.00	$420,000.00
Subtotal				$741,600.00
Contingency (15%)				*$111,240.00*
Design and Engineering (8%)				*$59,328.00*
Total Cost				**$912,168.00**

Introduction

The Penn Avenue Vision and Implementation Framework project includes recommendations for streetscape improvements along the length of Penn Avenue and Osseo Road in North Minneapolis, from I-394 to 49th Avenue North, including corridor-wide improvements and more detailed recommendations at several key intersections along Penn Avenue and Osseo Road. Streetscape design concepts address a range of improvements within the public right-of-way, including an enhanced pedestrian environment, improved safety/security, and greening of the corridor – important issues identified through early inventory and analysis work and community engagement efforts.

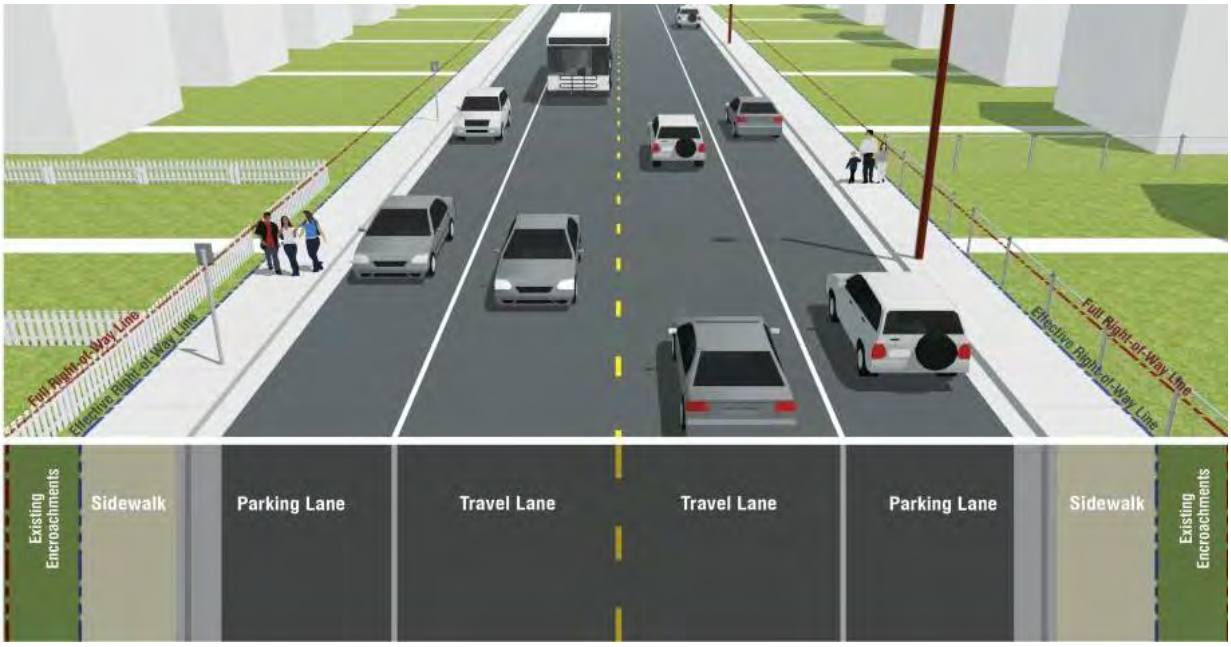
The process for developing streetscape concepts included a corridor-wide inventory and analysis of existing streetscape conditions along Penn Avenue and Osseo Road; analysis of precedent corridors and intersections located in the Twin Cities metro area; community input regarding corridor priorities, goals and objectives for streetscape design; and input from City, County and Metro Transit staff to establish design parameters.

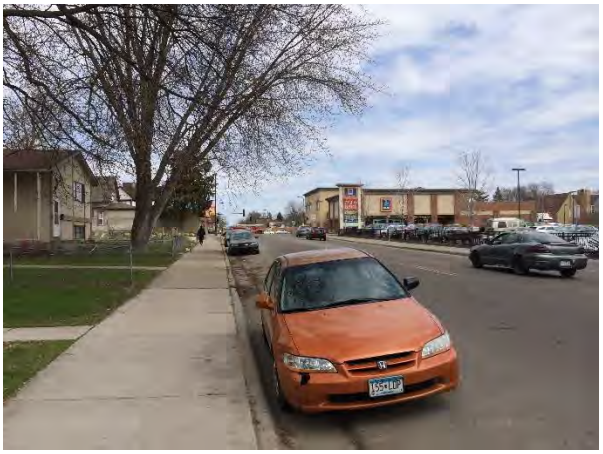
Preliminary streetscape concepts included improvements for mixed-use intersections and residential (mid-block) sections of Penn Avenue. Preliminary alternatives were vetted with the Penn Avenue Project Management Team (Hennepin County, City of Minneapolis, and Metro Transit staff), the Project Implementation Committee (PIC), neighborhood organizations, the general public and the Project Steering Committee through a series of meetings, public open houses, neighborhood meetings, community outreach and an on-line survey. The results of that input informed several key factors in the development of preliminary streetscape design concepts and led to the selection of a preferred streetscape design concept. The preferred streetscape concept provides a guide for future Penn Avenue improvements as part of a Hennepin County/City of Minneapolis project when funding is secured. These improvements should be implemented as part of larger projects rather than for specific parcels.

Source: Minnesota Historical Society. View of Penn Avenue looking north at Olson Memorial Highway (1952)

Existing Streetscape Conditions

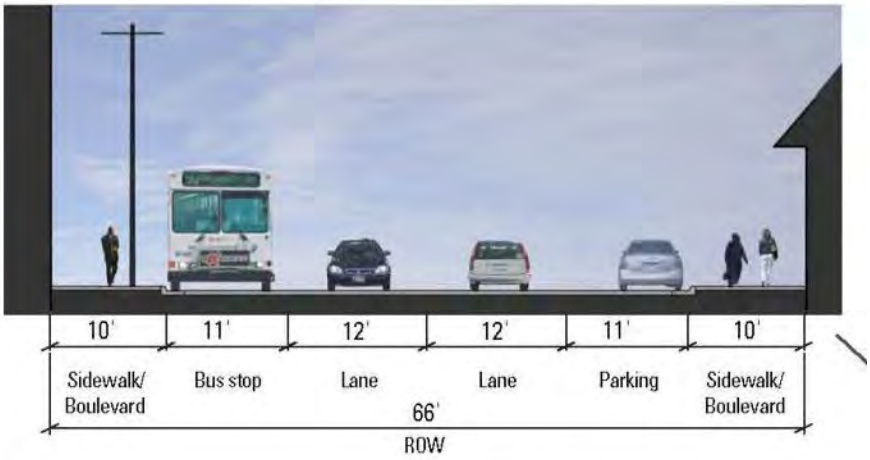
Penn Avenue is a narrow residential corridor with mixed-use intersections interspersed at major crossroads. The public right of way in the corridor varies between 60 and 66 feet but is not clearly identified in the corridor due to the significant number of private encroachments including stairs, fences, retaining walls, landscaping and other vertical elements that encroach into the right of way, reducing the actual sidewalk and boulevard space.



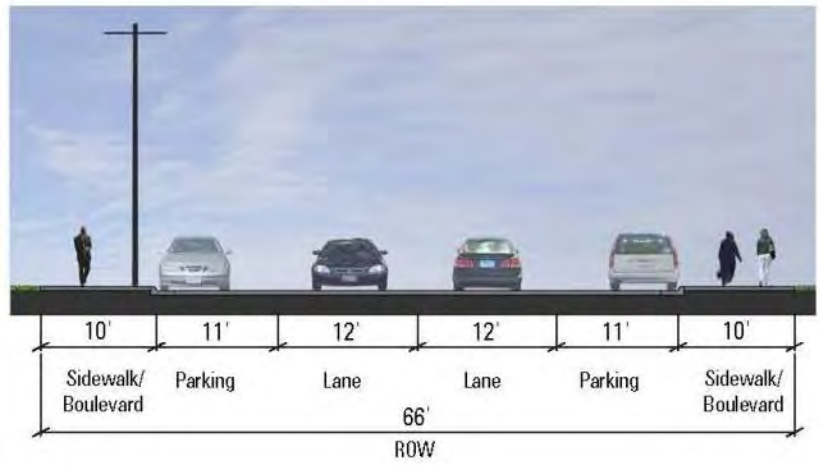


Existing sidewalk widths vary between 5 and 10 feet, depending on encroachments into the right of way. South of 34th Avenue, the sidewalks are adjacent to the roadway curb and gutter. North of 34th Avenue the streetscape includes a planted boulevard strip between the curb and the sidewalk. Power poles, street sign poles and utility boxes are located within the sidewalk in many areas, prohibiting adequate pedestrian movement. Northern sections of the corridor include gaps in the sidewalk system between Dowling Avenue and 42nd Avenue (alongside the Crystal Lake Cemetery) and along the west side of Osseo Road north of 44th Avenue.

Existing Typical Intersection Section: A-A



Existing Typical Midblock Section: B-B



As noted in the Roadway section, the narrow right of way and the number of private encroachments result in a streetscape that lacks adequate space necessary for street trees, landscaping, pedestrian lighting, seating, shelters, bicycle parking facilities, trash receptacles and other public amenities. Places in which the sidewalk is located adjacent to the curb and gutter have no room between the roadway and the sidewalk, making snow storage an additional challenge. These factors contribute to a harsh and in some instances, unsafe pedestrian environment along Penn Avenue.

Preliminary Streetscape Concepts

Penn Avenue is primarily a residential corridor that connects several neighborhoods and provides access to neighborhood serving businesses, parks and schools. Historically, Penn Avenue was once lined with green boulevards and street trees that arched over the roadway. At some point in its history, the roadway was widened, most likely to accommodate public transit and increased traffic. Many of the street trees were removed from the public right of way at this time. The intersections at Olson Memorial Highway, Plymouth Avenue, West Broadway and Lowry were also once busy and vibrant neighborhood shopping and business intersections.

Through a process of engaging the community, the residents and businesses along the Penn Avenue corridor expressed a desire to improve the pedestrian realm, restore "green" in the corridor and revitalize once busy neighborhood commercial intersections returning them to vibrant neighborhood destinations. Streetscape improvements can help address those desires. Key findings from the community engagement process influenced the establishment of design goals and parameters and provided guidance for preliminary streetscape design concepts. The following is a brief summary of those goals and parameters.

Streetscape Design Goals and Parameters

- Develop a streetscape vision for the corridor that reinforces distinct intersections, gateways and neighborhood identity.
- Enhance the quality of the pedestrian environment by providing a continuous sidewalk, safe road crossings, street plantings and lighting, and street furnishings.
- Green the corridor through the use of street trees and landscaping.
- Improve public safety and security by providing enhanced pedestrian lighting, security cameras, safe crossings and traffic calming design strategies.
- Ensure that the corridor is accessible to all people and meets ADA accessibility requirements.

- Reinforce corridor continuity while celebrating individual neighborhood identity.
- Address human comfort needs, particularly at key intersections along the corridor (seating, shelter, shade, etc.).
- Provide safe, convenient, accessible and comfortable transit stations and stops along the corridor.

» Provide adequate and identifiable wayfinding systems to orient and direct people to area destinations and amenities.

» Consider green infrastructure systems (i.e. stormwater infiltration/storage and passive irrigation techniques).

» Address needs for long-term sustainability; incorporate low or no maintenance design materials and strategies.

» Respect the existing right of way and identify where easements may be needed to address space limitations.

» Provide long-term design solutions that may require narrowing of the roadway in order to expand the available space for streetscape improvements.

» Identify opportunities to integrate public art within the public realm.

Preliminary Streetscape Alternatives

The preliminary streetscape design alternatives propose long-term concepts to address corridor-wide (primarily residential) areas as well as more intensely developed mixed-use intersections along the corridor. The design alternatives appropriately respond to adjacent land use types and densities, existing and proposed transit facilities, proposed roadway improvements, and available right of way (taking into consideration existing right of way encroachments). They also are intended to support the streetscape design goals and parameters established earlier in the design and planning process.

The concepts for the residential areas include planted boulevards, sidewalks, pedestrian lighting and enhanced intersections with curb extensions (where feasible). The concept of extending the curbs must be studied further to determine feasibility. The benefits of curb extensions include shorter intersection walking distances, traffic calming and additional areas in the public right of way for landscaping. The concepts for the mixed-use intersections offer a variety of paving and planting material alternatives, ranging from concrete paving to special unit pavers, lawn areas to rain garden plantings. They also include pedestrian lighting and site furnishings - seating, trash receptacles, bike parking and wayfinding/signage systems. Each mixed-use intersection alternative carries with it a different capital cost and long term maintenance costs. The relative costs associated with each alternative are communicated on the alternative graphics.

Special paving and site furnishings at the intersections may require the need to establish a Special Service District (SSD) to help fund and maintain those materials. A special service district is a defined area within the city where special services are rendered and the costs of the special services are paid from revenues collected from service charges imposed within that area. An SSD may be established anywhere in a city but only business property (i.e., commercial, industrial, utility, or land zoned for commercial or industrial use) will be subject to the service charge. SSDs are commonly used in areas with a concentration of retail stores. The city ordinance establishing the SSD specifies what services may be provided. In general, the services are those:

» not ordinarily provided throughout the city from general fund revenues of the city, or

» provided at an increased level than for the rest of the city.

Special services authorized in some city ordinances have included street and sidewalk cleaning, snow and ice removal, lighting, signage, parking, parking enforcement, marketing and promotion, landscaping, and security. They may also include capital improvements authorized in the special assessment statute. However, opportunities to establish SSDs at this time are limited. Another mechanism to provide street furniture is by getting an encroachment permit from the City of Minneapolis.

The following pages include illustrations and precedent images of preliminary streetscape alternatives that support the above mentioned streetscape goals and design parameters.

Figure 4.14 - Preliminary Streetscape Alternatives

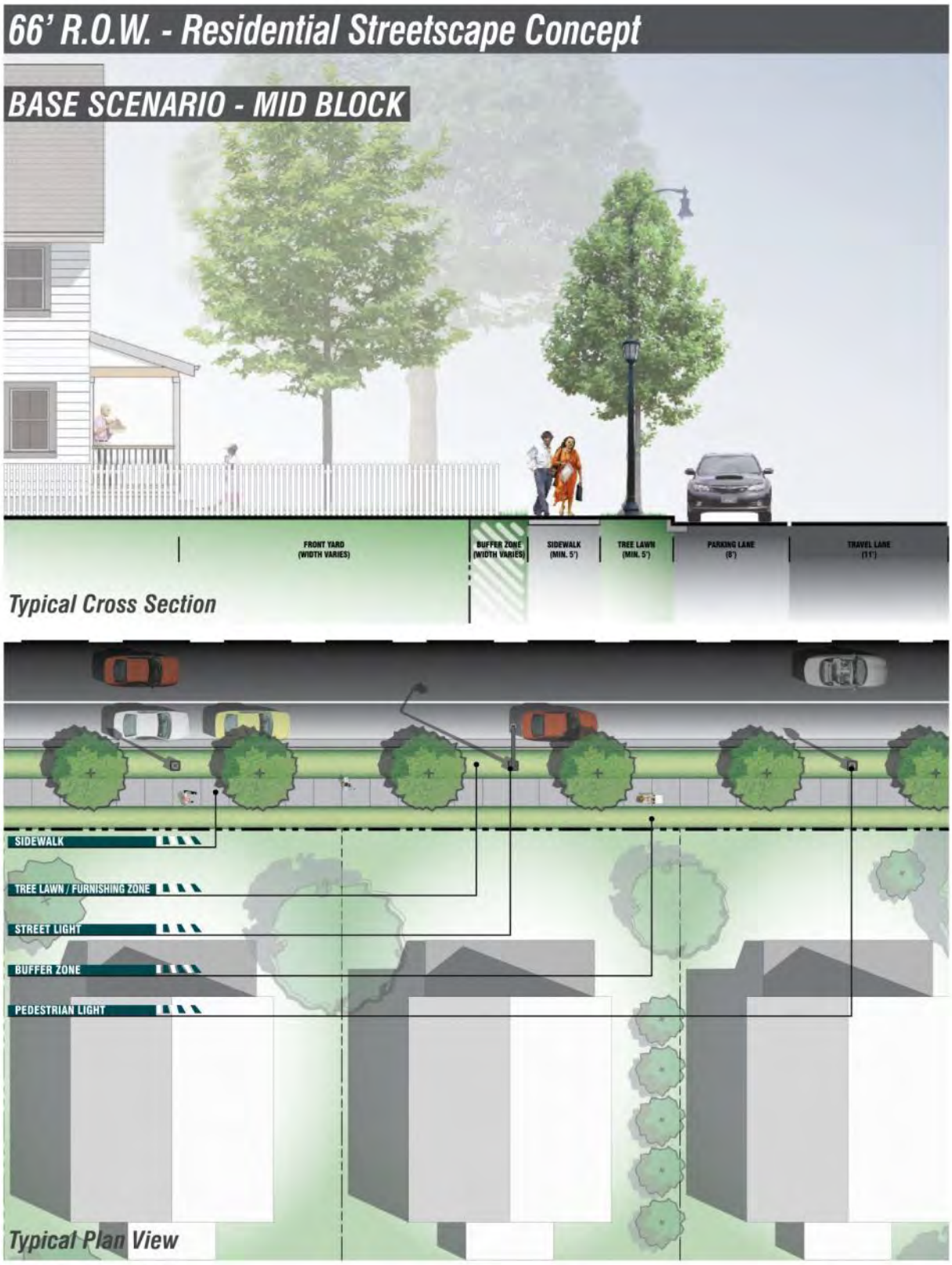


Figure 4.15 - Preliminary Streetscape Alternatives – Typical, Mid-Block

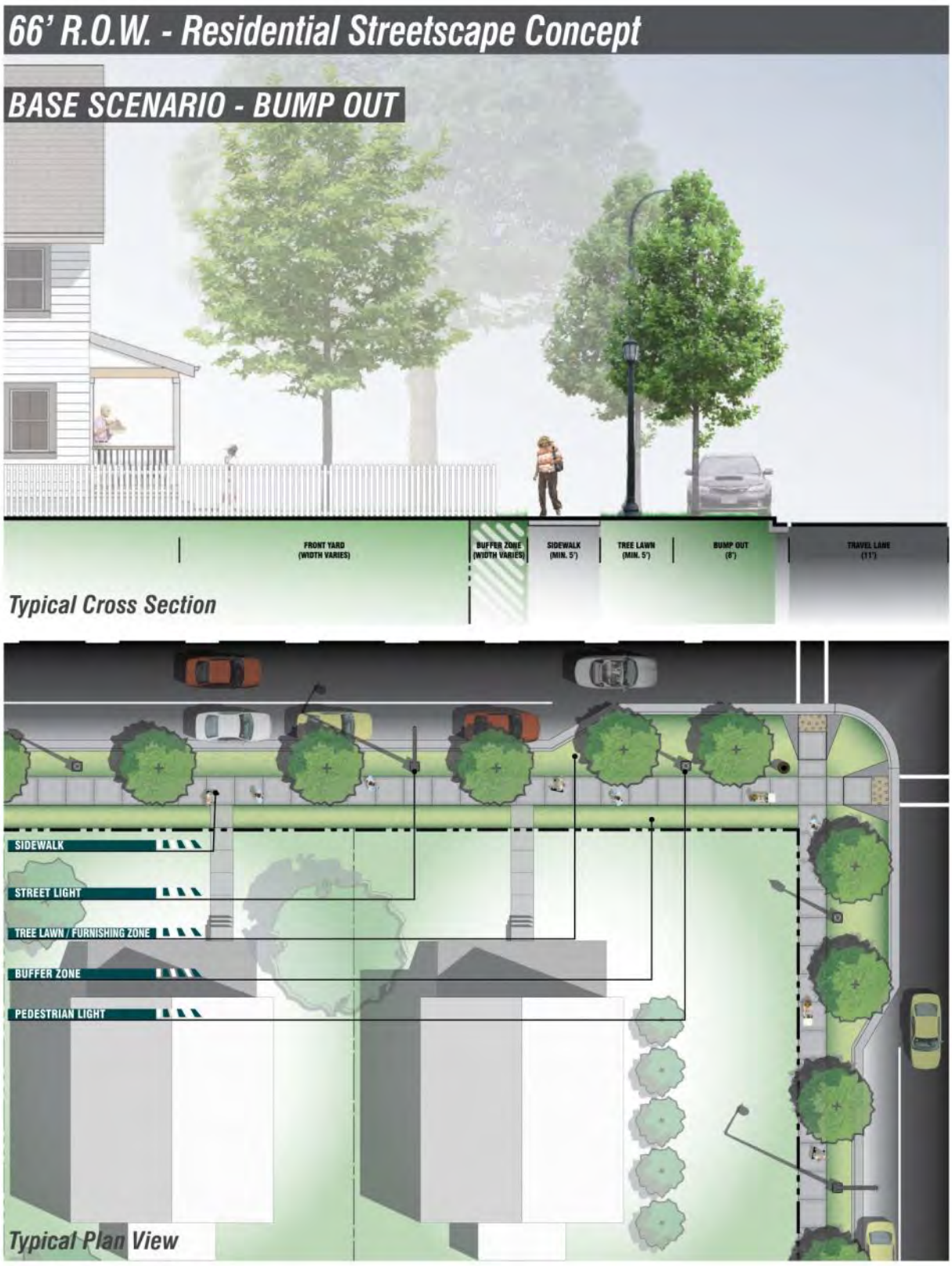


Figure 4.16 - Preliminary Streetscape Alternatives – Bump Out at Residential Intersection

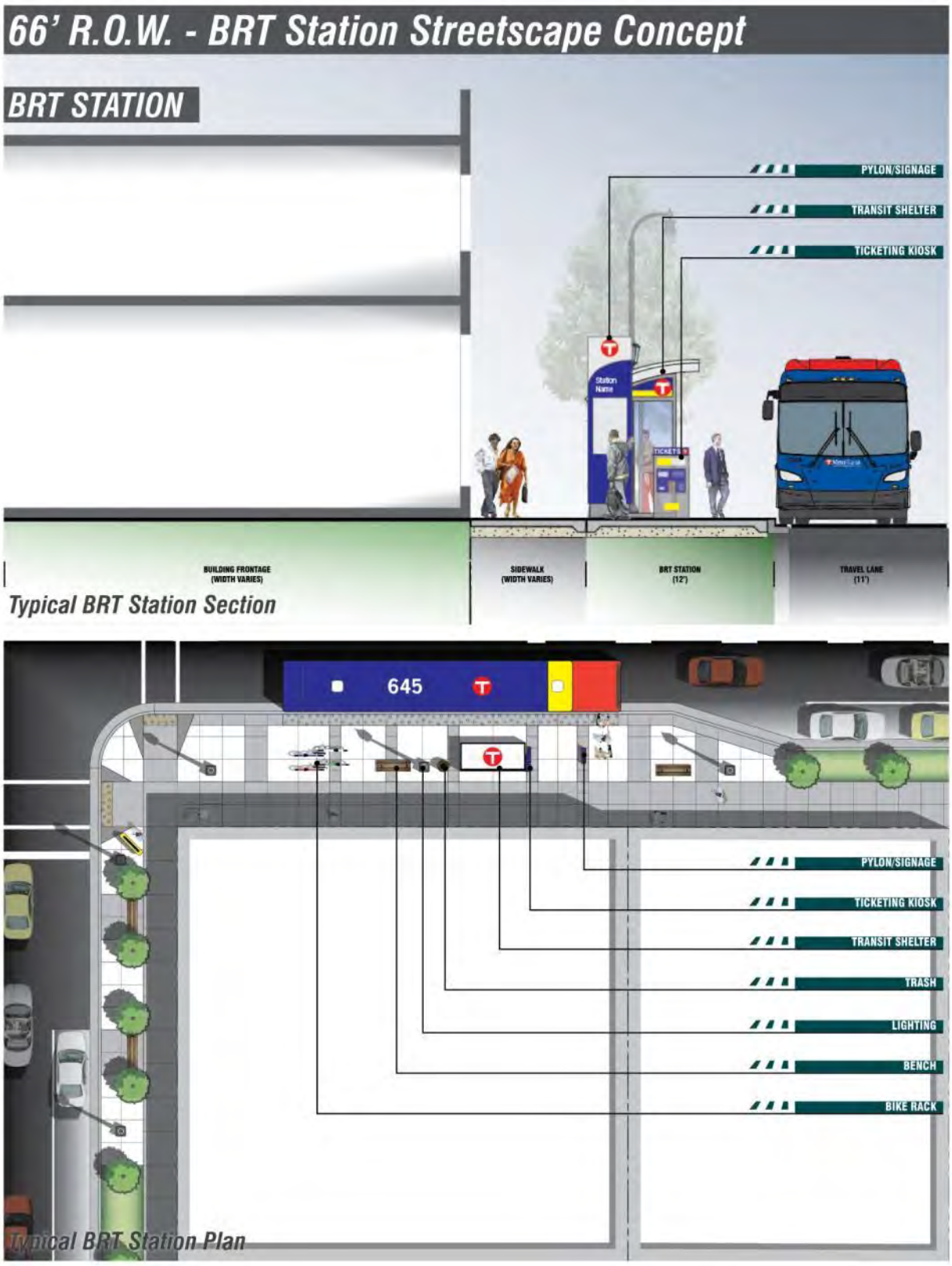


Figure 4.17 - Preliminary Streetscape Alternatives – BRT Station

Intersection Streetscape Character

Figure 4.18 - Preliminary Streetscape Alternatives

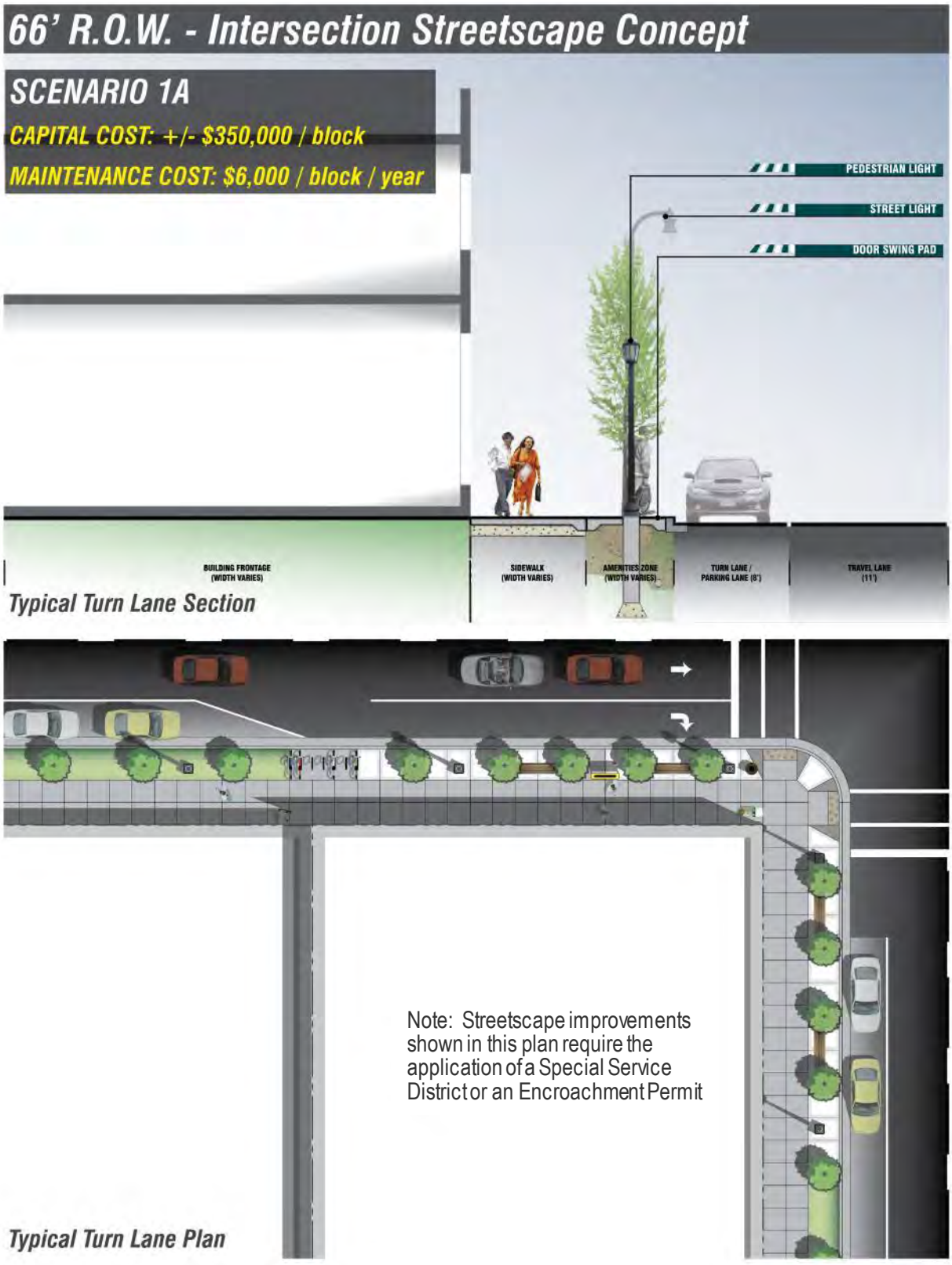


Figure 4.19 - Preliminary Streetscape Alternatives – Commercial Intersection, Scenario 1A

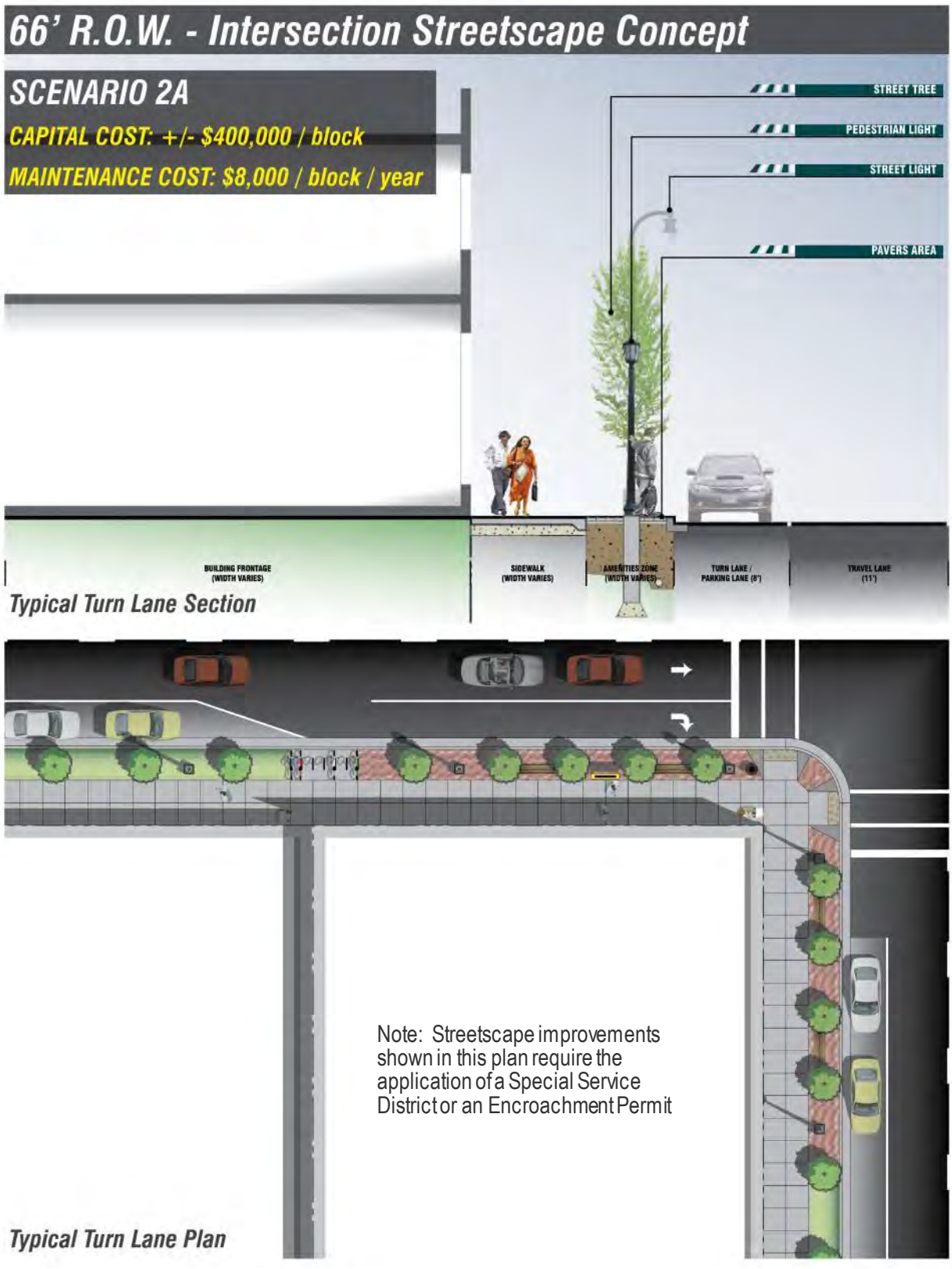


Figure 4.20 - Preliminary Streetscape Alternatives – Commercial Intersection, Scenario 2A

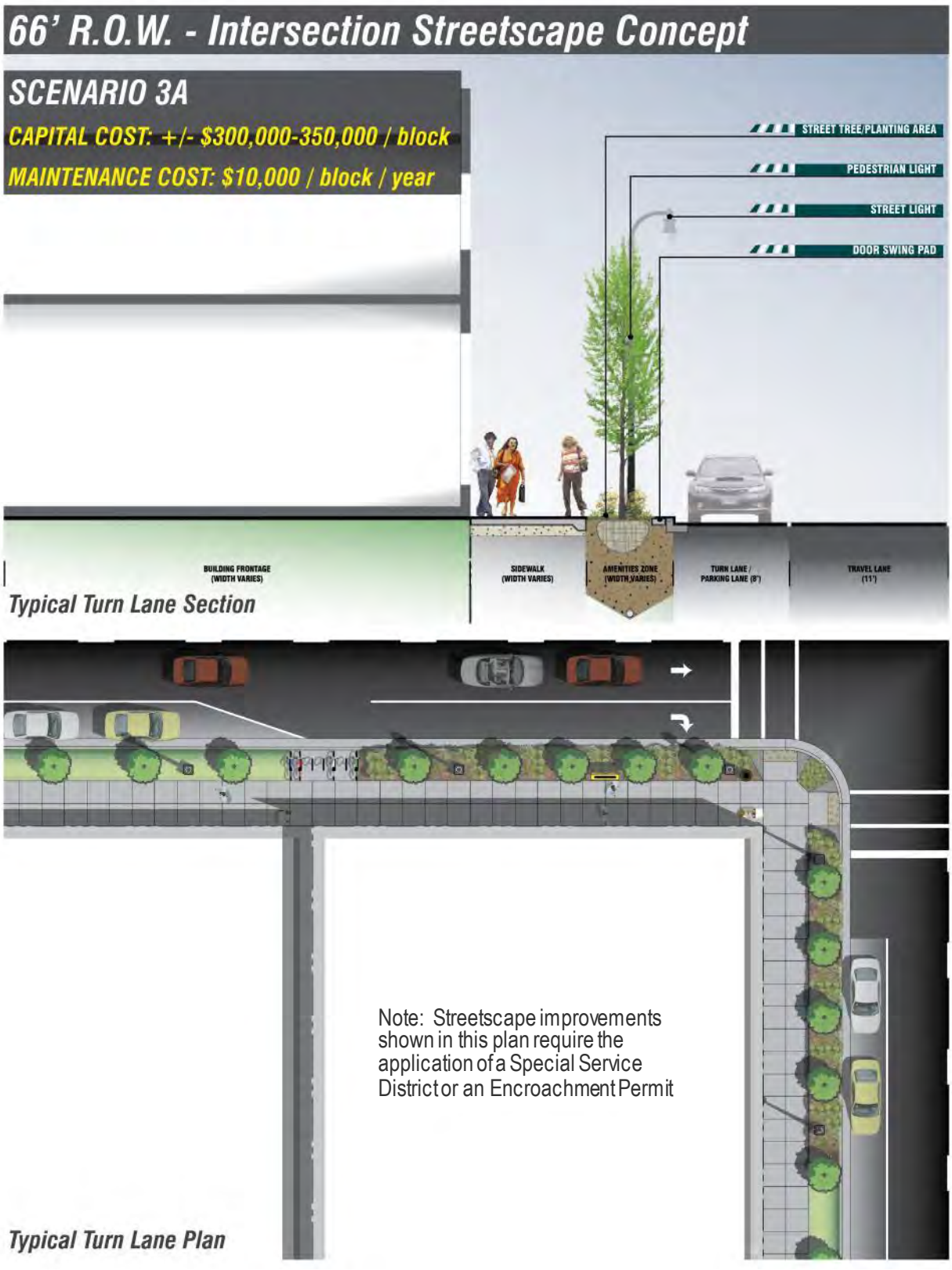


Figure 4.21 - Preliminary Streetscape Alternatives – Commercial Intersection, Scenario 3A

Recommended Streetscape Design Concept

The Preliminary Streetscape Design Alternatives were presented to the PIC and to the North Minneapolis community through several neighborhood meetings in the spring of 2015. They were also vetted with the Project Management Team (PMT). The feedback received from the PMT, PIC, and community members has resulted in consensus around a preferred (recommended) long-term streetscape design concept, which integrates recommendations from the various preliminary streetscape design alternatives.

Many of the streetscape elements shown in the artistic renderings will require further discussions between the City of Minneapolis, Hennepin County, and adjacent property owners to identify operations and maintenance funding. Special Service Districts have been successfully implemented throughout the city in commercial areas, however current state statutes prevent special service districts in residential areas.

Penn Avenue is a pedestrian priority corridor. Current policy states that street lighting on pedestrian priority corridors will be funded as part of reconstruction project budget rather than through a special assessment. Banners, street benches, colored pavement, pavers, plantings, and trash receptacles may be funded through special service districts or by encroachment permit. Adjacent property owners in residential areas or in commercial areas without special service districts may work with the city to secure encroachment permits or may enter into agreements with the city to operate and maintain a streetscape element. In addition, it is recommended that the existing power lines (including power and other utilities located on the pole) be removed throughout the corridor to facilitate the new sidewalk and streetscape and that the project budget include these costs.

The Recommended Streetscape Design Concept includes the following Corridor-Wide (primarily residential areas) Streetscape Design recommendations:

Corridor-Wide Streetscape Design Recommendations

1. Enhance the pedestrian realm
   - Install new concrete sidewalks. Separate the sidewalk from the roadway with a green boulevard and street trees.
   - Ensure sidewalks are a minimum 5 foot width.
   - Ensure sidewalks and pedestrian crossings are ADA compliant by installing directional pedestrian ramps and detectable warning pavers at each intersection.
   - Improve pedestrian crossings with visible markings and countdown traffic signals where intersections are signalized.
   - Consider curb extensions (bumpouts) to shorten pedestrian crossing distances. This will require further and more detailed study at each intersection to determine feasibility.
   - Provide enhanced street lighting for pedestrian safety.
   - Provide seating and shelter at key locations.

2. Green the corridor
   - The greening of the corridor should be a powerful aesthetic that drives streetscape design.
   - Install boulevard landscaping and street tree plantings.
   - Install street trees regularly spaced, but no further than 40 feet apart.
   - Incorporate stormwater treatment strategies in the boulevard (rain gardens, stormwater infiltration and passive irrigation) where feasible and desired by the community.
   - The 37th Avenue greenway should serve as a model for greening design strategies.
   - Where curb extensions are found to be feasible, incorporate landscape planting areas.

3. Improve public safety and security
   - Provide adequate street lighting for safety of pedestrians, bicyclists, transit users and motorists.
   - Install City of Minneapolis standard pedestrian-scaled street light poles and luminaires, regularly spaced along the corridor.
   - Install security cameras at major intersections and transit stations.
   - Improve pedestrian crossings with visible markings and countdown traffic signals where intersections are signalized.
   - Incorporate traffic calming strategies such as on-street parking, narrower travel lanes, streetscape plantings, and curb extensions (where feasible).

4. Provide safe crossings to neighborhood destinations
   - Incorporate traffic calming design strategies such as bumpouts, on-street parking, and pedestrian scaled streetscape elements.
   - Consider bumpouts (on Penn Avenue and cross streets) at intersections to reduce pedestrian crossing distances.
   - Ensure pedestrian crossing markings are highly visible.
   - Add pedestrian scaled lighting along the corridor. Concentrate additional lighting at intersections where pedestrians are crossing busy roadways.

5. Enhance wayfinding
   - Design and install signage and wayfinding systems at key locations to orient and direct people to area businesses, destinations and amenities.

6. Reflect neighborhood identity
   - Communicate neighborhood and intersection identity along the corridor with banners, signage/wayfinding, gateway monuments and enhanced landscaping.

7. Integrate public art
   - Encourage opportunities to integrate public art in the streetscape. This could include public artist participation in street furnishings, pavement, signage, etc. and/or commissioned public art installations.
   - Consider right of way acquisition at key intersections to create the space necessary to include public art.

8. Provide demonstration/education elements
   - Incorporate interpretive/story-telling opportunities to bring the history of North Minneapolis and its neighborhoods into the fabric of the public realm.
   - Incorporate environmental demonstration plantings (raingardens, etc.).

9. Create a healthy corridor
   - Create an urban forest with street trees and landscape plantings.
   - Enhance human comfort of the corridor by providing shade, shelter, seating, and lighting alternatives.
   - Reduce heat island effects through tree planting.
   - Design a continuous and accessible sidewalk system throughout the corridor with cross corridor links to area destinations and amenities.

10. Include transit shelters that serve local bus service
    - Where there is space and transit ridership warrants, add new bus shelters for local bus stops to enhance the transit user experience.

11. Provide operations and maintenance strategies
    - Incorporate low maintenance design strategies and materials, such as native and tolerant plant materials, locally-sourced materials and furnishings, etc.
    - Prepare/provide an operations and maintenance manual to ensure proper care of streetscape improvements

12. Consider snow storage and snow cleaning/sweeping
    - Provide separation between the sidewalk and roadway to accommodate snow storage in winter months.
    - Design curb extensions and bumpouts to reduce negative impacts to snow plowing.

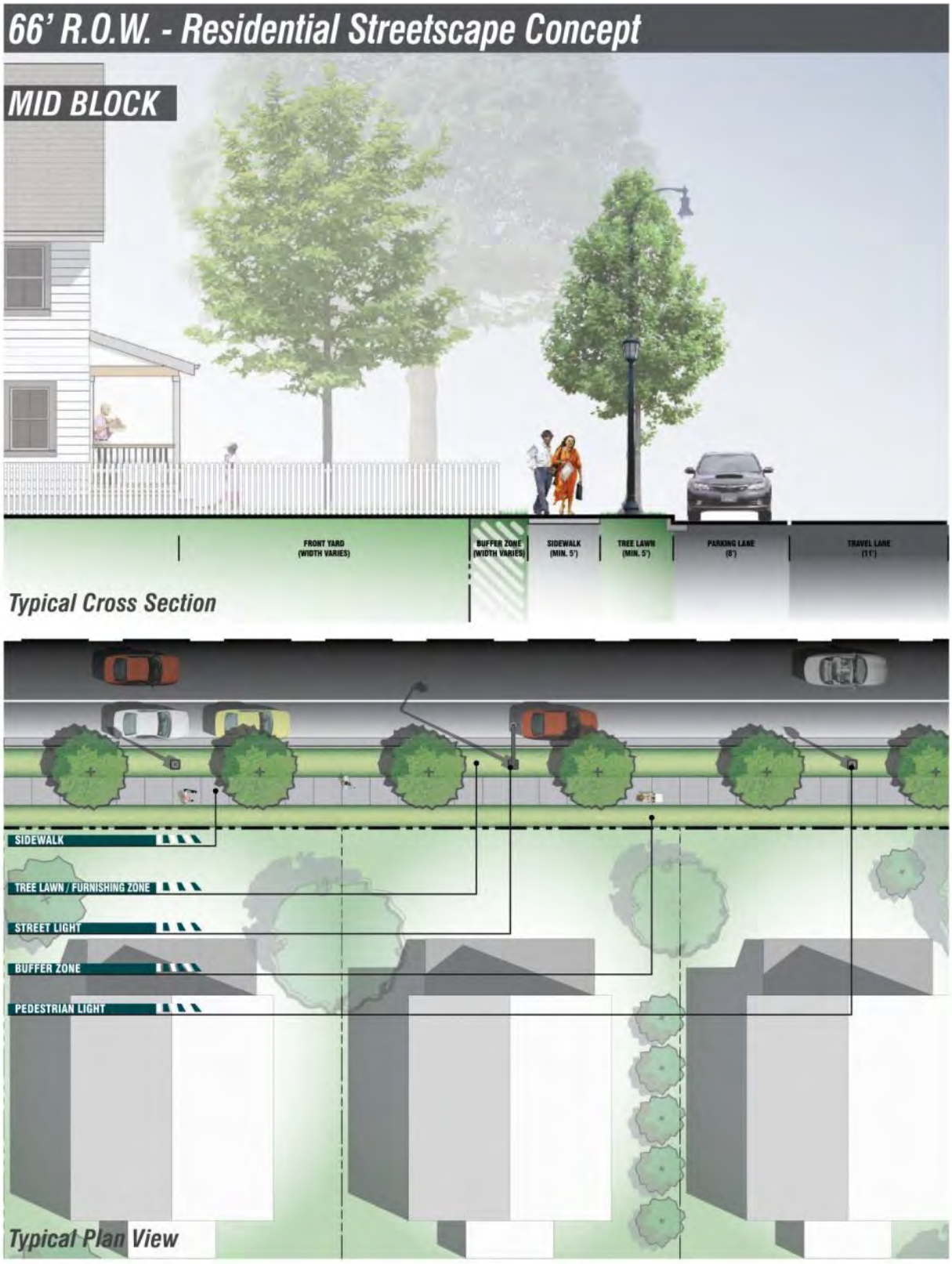


Figure 4.22 - Recommended Streetscape Design – Residential Mid-Block

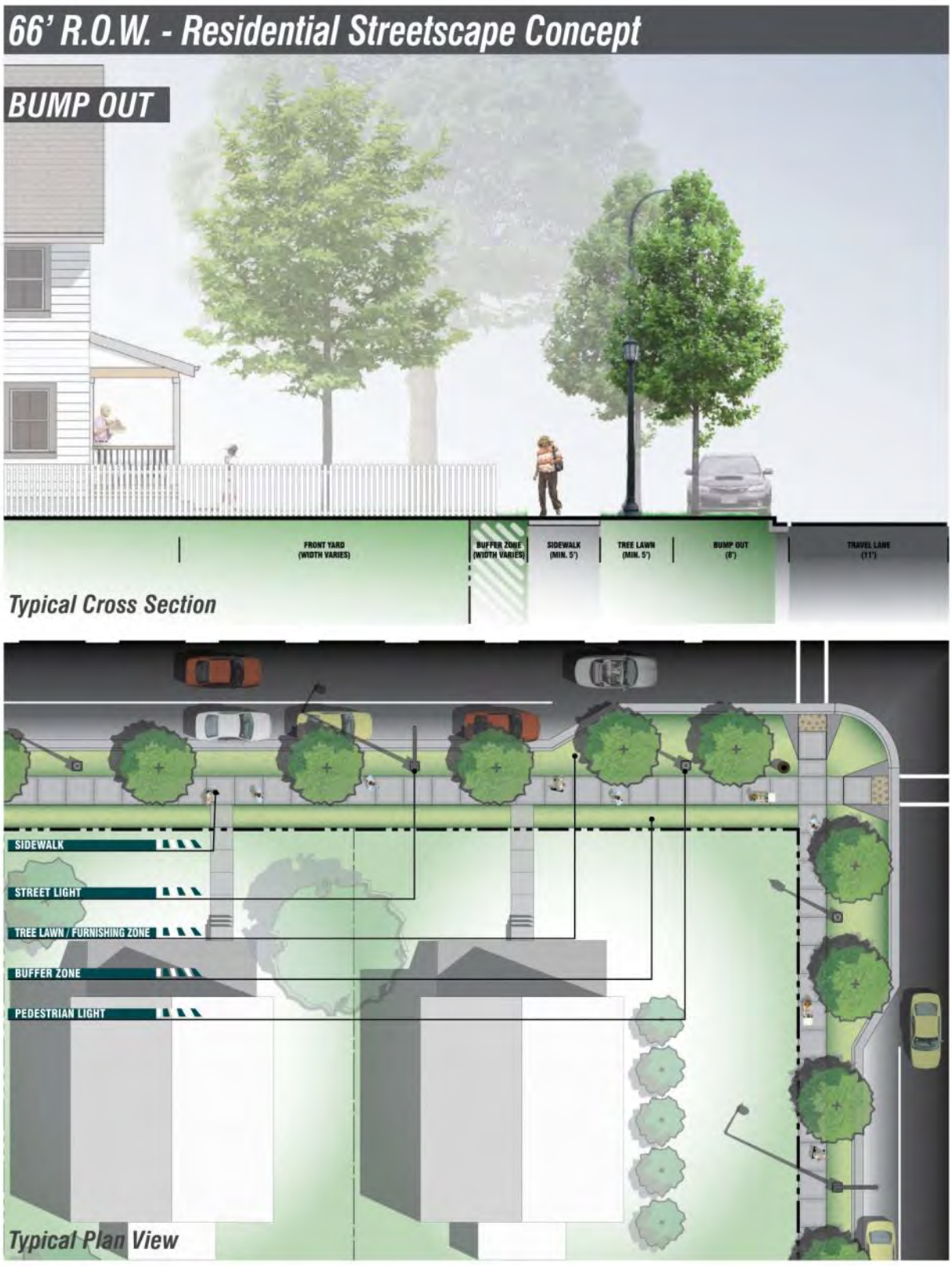


Figure 4.23 - Recommended Streetscape Design – Bump Out at Residential Intersection

Example Corridor-Wide Streetscape Improvements – Before Photo (top) and After Rendering (bottom)

Placemaking and Wayfinding

Introduction

One of the purposes of this study is to present a range of suitable recommendations for wayfinding and placemaking strategies on Penn Avenue. Wayfinding and placemaking strategies will be employed to achieve these following objectives:

» Orient newcomers and or new transit users to Penn Avenue and its surrounding neighborhoods.
» Help existing residents navigate within and to destinations outside of the study area.
» Bring people together by encouraging use of public transportation, promoting use of public spaces and streets, and direct people towards the proposed bicycle route on Queen Boulevard.

Wayfinding and placemaking methods that might be used throughout the corridor are illustrated on the figures at the end of this section.

In a community engagement event held in March, 2015, the community engagement team presented a map of the study area and asked for feedback concerning where and how community members would like to see placemaking and wayfinding strategies employed. During this activity and consequent engagement activities, it was useful to understand the study area of Penn Avenue as a series of connected intersections. Each of these intersections corresponds to a specific function or characteristic of an area around an intersection, and their full definitions can be found in the "Streetscape" section of this memo. These corresponding intersection types are as follows:

» Neighborhood Destination: at the Glenwood Avenue intersection
» Neighborhood Business: at the Lowry Avenue intersection
» Multimodal Transit: at the Olsen Memorial Drive intersection
» Health and Wellness: at the Plymouth Avenue intersection
» Arts, Culture, and Entertainment: at the West Broadway intersection

The result of this engagement activity provided the basis for the development of a wayfinding system map. (Figures 4.25 and 4.26). The map shows Penn Avenue with its intersections highlighted. The numbers at each intersection represents the type of wayfinding elements the community felt should be present (Figure 4.24). These numbers are as follows:

1. Small park or trail marker
2. Directional signage
3. Interpretative signage
4. Informational or Educational kiosk
5. Gateway Signage

As seen in the community engagement exercise, the most commonly suggested wayfinding element is 2, or directional signage, followed closely by 4, interpretative or educational kiosk. It is also useful to note that the community recommended wayfinding elements at the outer boundaries of the study corridor as well as at the intersections. These outlying wayfinding elements include signage for the Green Line, signage to Theodore Wirth Park, and signage to the Jewish Community Settlement on Plymouth. With these recommendations in hand, we can apply the collective intuitive understanding of the community about wayfinding to Penn Avenue.

Figure 4.24 Wayfinding Elements Key – Use with Figures 4.25 and 4.26

1

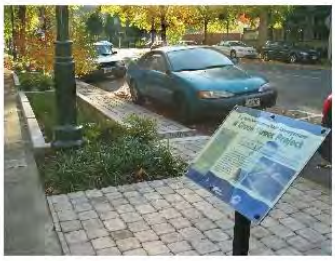
Park and Trail Signage

2

Directional Signage

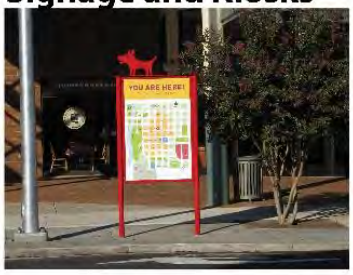
3

Interpretive Signage



4

Informational/Educational Signage and Kiosks



5

Gateway/Entry Signage

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Figure 4.25 – Corridor Wayfinding Signage and Destinations – Northern Half of Corridor

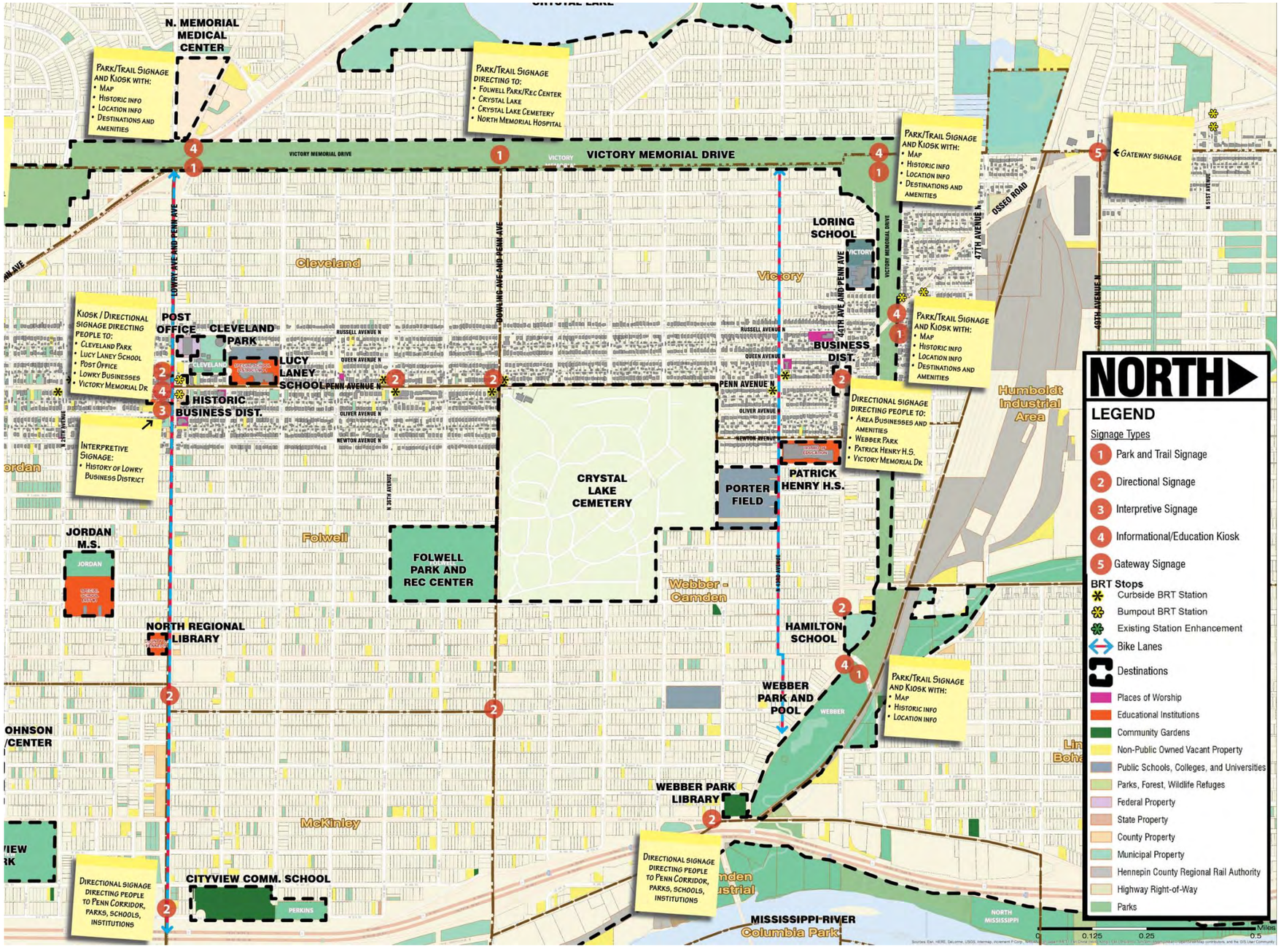
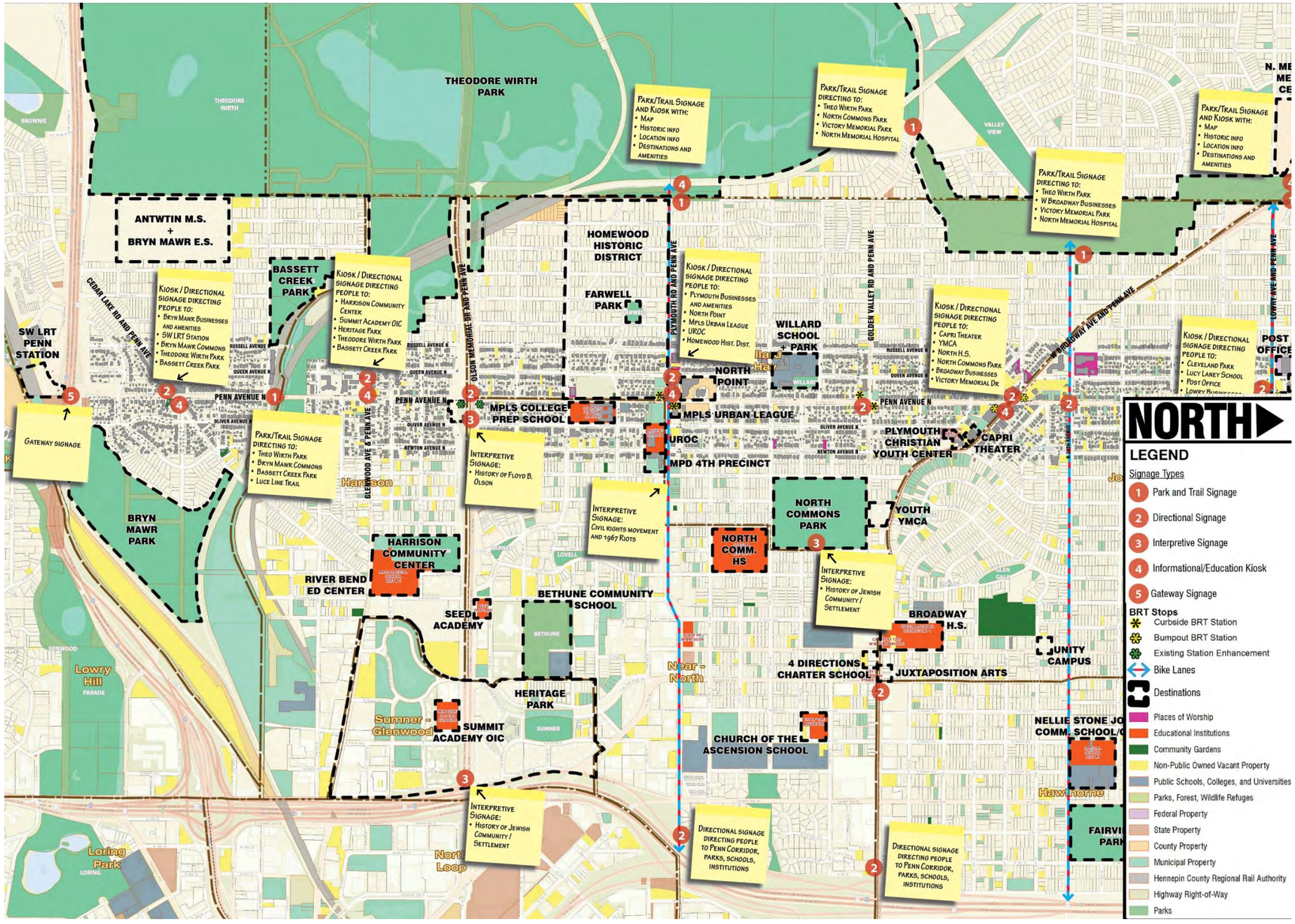


Figure 4.26 – Corridor Wayfinding Signage and Destinations – Southern Half of Corridor



Wayfinding

Wayfinding is the act of making geographic information, traditionally available through maps, schedules and images, accessible to the people who need them. Anyone who is travelling to or through Penn Avenue and its surrounding neighborhoods, whether by walking, biking, driving, or riding public transit, should be able to quickly and intuitively navigate to and from their destination.

As a result, wayfinding elements should adhere to the following recommendations:

» Accessible: wayfinding elements should be easy to locate, easy to read, and intuitive.

» Consistent: wayfinding elements should be consistent in appearance, location, and labelling.

» Engaging: wayfinding elements should draw in users by being bold and eye-catching. Whenever possible they should allude to the cultural and historical elements of Penn Avenue. The interpretive sign detailing the historical importance of the Capri Theater as a jazz performance space is a good example.

Wayfinding Elements

Due to the diversity of transit options on Penn Avenue, different wayfinding elements should be considered to appropriately serve the different transit users present. These wayfinding elements, illustrated on Figure 4.27, could include:

» Road signs: targeting drivers and bicyclists, these signs are sized and located adjacent to roads and at intersections where appropriate. They should:
  - Indicate the name of the road or trail
  - Alert drivers and cyclists of incoming intersections and connections
  - Point to neighborhood destinations or locations of interest, e.g. Bassett Creek Trail

» Pavement markings: aimed at bicyclists and pedestrians, these human-scaled signs are located on the horizontal surfaces of pavement or sidewalks. Pavement markings are ideally used on city owned parcels or at Special Service Districts due to their required maintenance. Where possible, however, they are a bold way to:
  - Notify cyclists and pedestrians of bike lanes or designated sidewalks
  - Alert bicyclists and pedestrians of incoming intersections and connections
  - Point to destinations or locations of interest, e.g. markings at West Broadway pointing to the Capri Theater further down the block.

» Totems or Kiosks: appropriately-scaled informational kiosk located at transit stops or adjacent to trails or sidewalks. Kiosks will be installed at proposed BRT stops but may occur as “interpretive signage” also. Their content may include:
  - Transit system map and schedule if located at a transit stop (provided by Metro Transit)
  - Direction to points of interest or neighborhood destinations, e.g. Folwell Park
  - Localized detail map or diagram

» Banners: indicate location or area of interest and reference the unique identity and history of the neighborhood intersection at which they are located. An example are the new, colorful banners that feature arts and theater imagery at the intersection of Penn and West Broadway. A business

improvement district and design guidelines have already been established for this intersection. Regardless of where they may be, banners such as these should:

- Be colorful, bold, eye-catching
- Celebrate a place or location of interest
- Be created by a local artist when possible

Pavement markings, Kiosks (with the exception of those installed by Metro Transit at BRT stops), and Banners are not standard wayfinding elements and will require the establishment of a Special Services District (SSD) or the use of encroachment permits. However, there are places where some of these elements may exist today without the need of a SSD. Examples include:

» Pavement Markings on city owned parcels: West Broadway and Penn is a good place for this type of feature. These markings can also be temporary chalk drawings done by neighborhood groups or students from local schools at special events.

» Interpretive totems or kiosks installed by local organizations: The park board may find that it is useful to have interpretive signage at trail heads or local parks. Local community organizations might also want to sponsor and maintain an interpretive sign, e.g. the Jewish Community Settlement on Plymouth.

» Banners sponsored by local community groups.

Finally it is important to recognize that during a single trip a typical traveler will interface with more than one of these wayfinding elements during their commute. Therefore, although some details may vary, wayfinding elements should maintain some consistent design elements. Wayfinding elements should also be durable, easy to update, and easy to maintain. Careful attention should be paid to the specifications of technologies and materials used in making and installing these wayfinding elements to ensure both their longevity and ease of maintenance.

Wayfinding Elements

Signage & Banners

targeting drivers and bicyclists, these signs are sized and located adjacent to roads and at intersections where appropriate

Pavement Markings

aimed at bicyclists and pedestrians, these signs are markings, at the scale of a person, on the horizontal surfaces of pavement or sidewalks

Kiosks

appropriately scaled informational kiosk located at transit stops or adjacent to trails or sidewalks

Figure 4.27 - Wayfinding Elements and Strategies

Placemaking

Placemaking is the act of promoting the use of public spaces by paying close attention to their design and construction. Successful placemaking brings people together and contributes to vibrant and robust environments. To ensure success, the following goals should be set as part of the overall placemaking strategy:

» Uniting: placemaking strategies should be inclusive, providing for the needs of many different kinds of users and bringing people together

» Crowd-sourced: placemaking ideas should originate with the community that lives near and uses the public spaces being designed

» Contextual: although a consistent strategy may be required, placemaking is most successful when it works closely with the unique context of the place in which it is located

Placemaking Process

A truly successful placemaking process starts with community input because the community possesses the latent knowledge needed to solve the design challenges that planners face. The community is also a necessary ally in the creation of successful public places. Community members, as stakeholders, will be the ones to activate and put into action the intended uses of public places. The following are suggested steps to take in working with local communities throughout the placemaking process.

» Identify stakeholders: who in the community will be the primary users of these public spaces and how might they be best served

» Listen and evaluate: listen to the community's input and evaluate how it fits into the goals of placemaking

» Create a vision: together with the community, create a vision and a plan of action to achieve the vision (short term and long term)

» Re-assess: revisit and evaluate whether or not the vision was achieved

Placemaking Elements

Placemaking elements can be organized into two categories: active and passive. Active placemaking elements directly encourage and promote the use of public spaces, whereas passive placemaking elements require programming to activate. Although they are thought of as separate categories, active and passive placemaking elements should work together to create successful public spaces.

The following placemaking elements are intended to provide a range of possibilities and are not intended to be detailed recommendations. Some of these recommendations are not compliant with the City of Minneapolis' current standards and will therefore require the establishment of a Special Service District or encroachment permits. However, these placemaking elements have the potential to transform space and bring people together, and therefore they should be considered for implementation where appropriate.

Active Placemaking Elements (Figure 4.28)

» Parklets: semi-permanent or permanent structures that create a public space with landscaping elements and other amenities. (please see Appendix K for more detail)

- Recapture public spaces and turn them into green urban spaces
- Foster community interactions and promote local businesses
- The City of Minneapolis' "Parklet Pilot" program is a great resource to use

» Public Spaces: a designated public space created through the use of amenities such as street furniture, designated pavement, and plantings.
- Can be as simple as a bench
- Can leverage technology e.g. Wi-Fi or cellphone charging stations
- Can be good opportunity for public art integration

» Outdoor Programming: activities, planned or spontaneous that take place outside in public spaces such as sidewalks, parks, or streets
- Benefits local businesses, community organizations, religious organizations, etc.
- Brings people together and creates meaningful interactions
- Relies on passive placemaking elements in order to work
- Examples are: Urban League Family Day, Play on Penn, Open Streets, etc.

Passive Placemaking Elements (Figure 4.29)

» Paving: changes in paving, width, and zones of paving can effectively divide up usable sidewalk area and provide for passive zoning of sidewalk uses. Implementation will require SSD or encroachment permit.
- Color and material can be used to better define or encourage public use

» Lighting: the scale and appearance of lighting fixtures has a large impact on how users view Penn Avenue, especially at night. Refer to Streetscape chapter for examples of street lighting.
- Pedestrian-scaled lighting should be employed where possible, especially in areas where public interactions are desired

» Street furnishing: furniture, receptacles, and simple bike racks deployed strategically can encourage pedestrian use of Penn Avenue. Implementation will require SSD or encroachment permit. Refer to Streetscape chapter for examples.
- Street furnishing should be durable, easy to maintain, and easy to use

» Planting: plantings help slow water run-off and can be attractive amenities for pedestrians. Will require SSD or encroachment permit. Refer to Streetscape chapter for examples.
- Native or drought resistant plants should be used where ever possible to reduce maintenance needs and ensure healthy plant growth

» Utilities: electrical boxes, manhole covers, drains, tree grates, all can be beautified by art
- Use these everyday objects as opportunities for public art
- Done correctly, these utilities can transform and provide identity to their settings

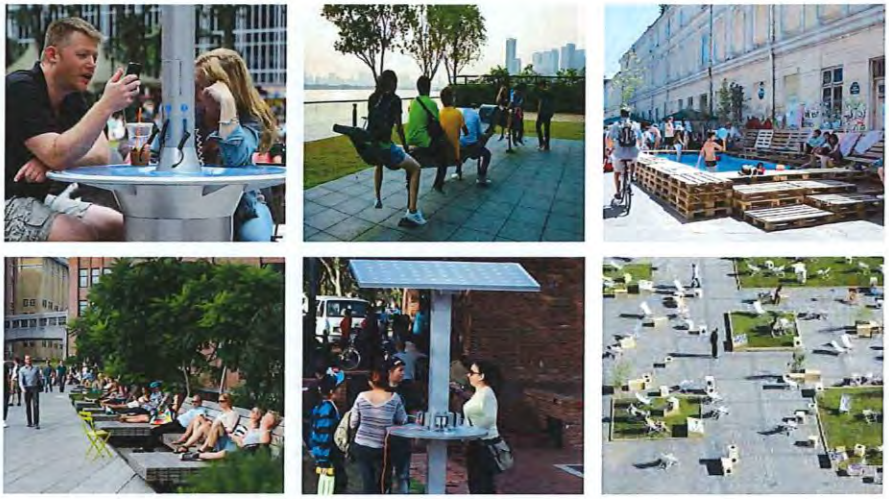
Active Placemaking

Parklets

semi-permanent or permanent structures that create a public space with landscaping elements and other amenities.

Nodes

a designated public space with amenities that is created by street furniture, designated pavement, and or plantings.



Programming

activities, planned or spontaneous that takes place outside either on the sidewalks, at parks, or the streets

Figure 4.28 - Active Placemaking Precedents and Strategies

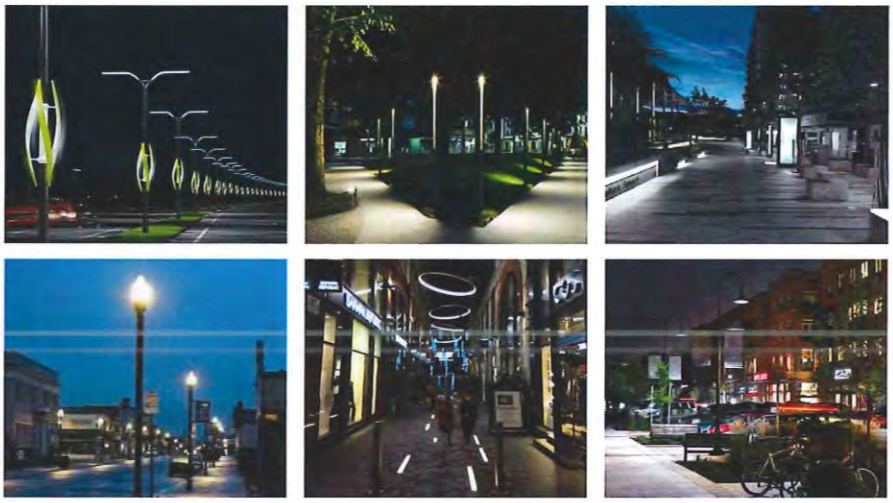
Passive Placemaking

Paving

changes in paving, width, and zones of paving can effectively divide up usable sidewalk area and provide for passive zoning of sidewalk uses

Lighting

the scale and appearance of lighting fixtures has a large impact on how users view Penn Avenue, especially at night



Street Furnishing

furniture, receptacles, simple bike racks deployed strategically can encourage pedestrian use of Penn Avenue

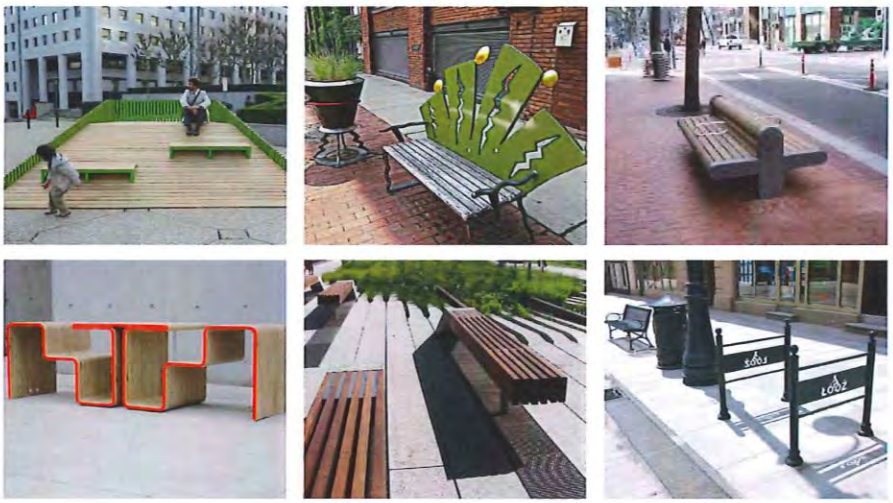


Figure 4.29 - Passive Placemaking Precedents and Strategies

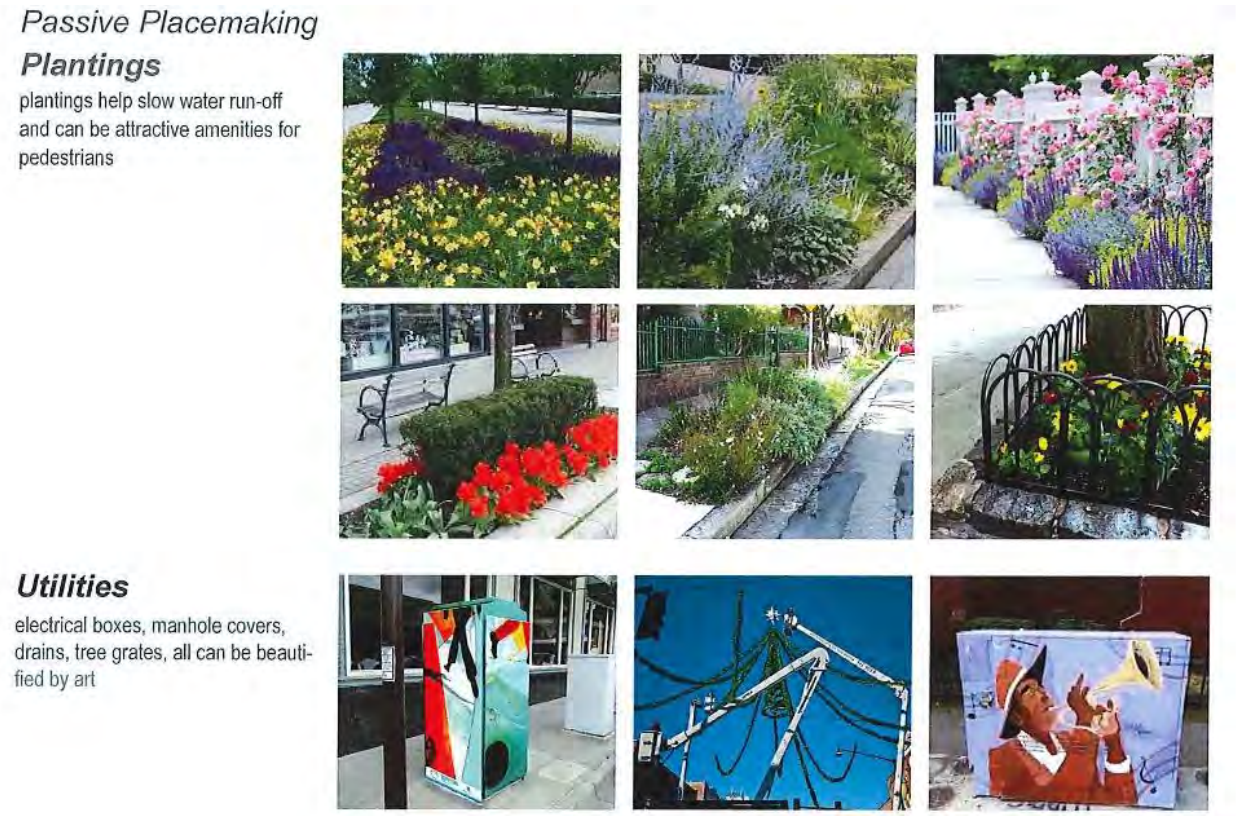


Figure 4.29 - Passive Placemaking Precedents and Strategies

Corridor Wide Recommendations

Alongside the long-term streetscape recommendations outlined earlier in this chapter, the following is a list of recommendations regarding wayfinding and placemaking that apply to the entire length of the study corridor:

- Addressing the intersections: Since Penn Avenue is a corridor consisting of different intersections, each with its own distinct character, a successful wayfinding and placemaking strategy will change and adapt to address these different intersections in a distinct way. For instance, wayfinding and placemaking strategies will be different for a residential corridor versus a mixed-used intersection. Refer to Figure 4.25 and 4.26 to see wayfinding recommendations.
- Keeping the language consistent: Road signs, totems, banners, and all other wayfinding elements should strive towards a consistent visual language. Although Penn Avenue is a long corridor made up of different parts, wayfinding should be simple and easy to follow.
- Coordinate with the Lowry Avenue Strategic Plan and West Broadway Alive recommendations
- Place-make wherever possible: Since some of the streetscape recommendations call for street improvements like wider sidewalks or safer intersections, efforts should be made to capture space for pedestrian use whenever possible. Because these improvements will often require an SSD or encroachment permits, West Broadway, where an SSD already exists, can provide a good starting point.

» Think of Penn Avenue as a community connector: wayfinding elements should not only orient users to places along or near Penn Avenue, but also to locations beyond the study corridor such as Downtown Minneapolis, Theodore Wirth Regional Park, Robbinsdale, etc.

» Celebrate identity: Wayfinding and placemaking elements should strive to celebrate the rich cultural history that exists on Penn Avenue. Neighborhood banners where possible should be encouraged. Interpretative kiosks near trail heads, parks, or historical destinations should be erected.

Highlighted Strategies

Strategy A: Create/Enhance Retail Intersection Identities

The Context

People are drawn to dynamic commercial locations that are also cohesive and express a "sense of place." Land use planners often use these types of locations as examples for other areas and communities to use as models or to inspire ideas for placemaking, improving the visual impact of a location, or creating a desirable place to shop, play, or come together.

Commercial districts that focus on improving their retail districts through various types of initiatives are usually rewarded with higher business retention rates, increased customer traffic, and more new business inquiries.

Not every intersection on Penn Avenue has sufficient commercial critical mass to implement actions to improve the retail identity, but for those that already have a cluster of retail businesses, creating a specific identity and then working to attract businesses that are complementary or compatible with the existing business mix can improve the ability to attract more customers for all businesses.

Goals and Expected Outcomes

» Create a stronger "sense of place" for intersections that already have a cluster of retail businesses. Community members indicated that they want retail areas to be more visually inviting (placemaking).

» Raise awareness among prospective customers of the businesses located at commercial intersections. Keep businesses "top of mind" within their customer pool.

» Increase sales for existing businesses by improving the shopping/service environment.

» Improvements will foster interest among other businesses to co-locate in an area that enjoys increased pedestrian and shopper traffic.

Program Description

There are a myriad of actions that can be taken to establish and promote a coherent business district identity. The foundation of successful placemaking is grounded in a shared understanding of the economic niche of a place among business and property owners. Understanding of the economic niche determines the visual image projected in logos, banners, and streetscape design and guides the character of special events and promotions. It also enables property owners to make choices that strengthen the tenant mix, building the vitality of the district for all business and property owners.

Simple things can have a strong impact on the way that people perceive a location. Improved signage (store and wayfinding), lively colors (banners, flowers, kiosks, logos), interesting visual displays, and effective lighting can create an inviting space and tell customers that they have "arrived" at a specific destination and that someone (the business) cares about its customers and attracting them to their location. As an example, the community mentioned that the West Broadway façade improvement program had helped and that the Five Points building changed the landscape on West Broadway Avenue.

Improving signage, not only for businesses but also for nearby features and amenities that customers may connect to outside of the corridor, can improve shoppers' connections to the location. Features and amenities might include bike lanes, trails and paths, major thoroughfares, and areas of interest.

Logos or banners provide the location with a common brand for the entire area. Local business associations can be highly instrumental in creating and maintaining their area's unique character.

Flower pots create color. Placemaking elements, such as bike racks, technology plug-ins, and public seating areas, can be functional as well as creative and interesting. Placemaking ideas such as these can turn a "placeless" location into a "place" that people learn to associate with the color, branding items, or signage, even if they are seen out of their original physical context.

Retail districts may take action to support physical improvements such as façade improvements, coordination of maintenance, or clean-up efforts. They may attend to issues of crime prevention through installation of lights or windows, or joint funding of security personnel. They may coordinate on marketing efforts, or sponsor events that bring people into the district. Costs for placemaking installations may range from $25,000 to $75,000, depending on the piece and its requirements. An encroachment permit is required for items that would be situated in the pedestrian right-of-way.

Coordinated actions in retail districts require a measure of communication and organizational capacity among the business and property owners in the district—whether formal or informal. An active stakeholder group, whether a business association or breakfast club, can establish its own priorities and reinforce a culture of collective action. The group may tap into an established model for invigorating the district—such as the local Great Streets Program or the national Vibrant Streets program. The National Main Streets program provides guidelines on effective marketing and communications techniques to reach out to customers.

The largest Penn Avenue business intersections (Lowry and West Broadway) are already characterized by a set of engaged business owners, but efforts to broaden that engagement can be encouraged or funded. Less developed intersections can benefit from the structure of the local Great Streets Program.

Precedents

Banners and logos are used for many retail commercial districts to identify the area and let customers know they have arrived at a special place.

The Great Streets Program provides funding through Business District Support Grants, Façade Improvement Matching Grants, Real Estate Development Gap Financing Loans, Small Business Technical Assistance Grants and Small Business Loans. In its first six years, façade improvements stimulated nearly $4 million of investment in commercial facades. Grant administrators worked on w393 façade improvement projects, provided $1.2 million in matching grants, and leveraged $2.6

million in private investment. In seven years, the City provided $3.0 million in strategic real estate development gap financing loans to eight projects worth $22 million. Hawthorne Neighborhood and West Broadway Coalition provide matching funds to commercial businesses for façade improvements. The Great Streets Program identifies three avenues, Lowry, West Broadway, and Plymouth as locations for intervention. These designations could be leveraged to secure additional resources and funding to visually enhance and strengthen the Lowry/Penn and Broadway/Penn intersections.

In 2015, Open Streets in Minneapolis will occur in eight different urban districts in Minneapolis including Lowry Avenue North between Emerson and Vincent Avenues North. The Open Streets festival closes the streets to vehicles and opens the streets for food, fun and community gathering, improving awareness of local urban shopping districts. Lowry Avenue North has successfully hosted this event in previous years.

The Local Initiatives Support Corporation (LISC) has a similar model for commercial revitalization, which was employed on Central Avenue and West Broadway Avenue in Minneapolis for a number of years, supported by Twin Cities LISC, the City of Minneapolis, and foundation partners. Key components of this strategic approach to revitalization include:

» Engaging and organizing business and property owners
» Creating a shared understanding of the area's economic niche
» Creating a safe environment and strengthening the perception of safety
» Enhancing design and appearance consistent with the area's economic niche
» Marketing and promoting the area in alignment with the area's economic niche

The Vibrant Streets model was developed at the request of the City of Washington D.C. The City had identified significant purchasing leakage from its commercial districts to suburban shopping destinations, and sought a methodology that could be applied to all of its retail areas throughout the City. The Vibrant Streets program was the result, and it has had positive results throughout Washington. Vibrant Streets takes a methodical approach to evaluating and improving the characteristics of retail nodes such as:

» Business mix and anchors
» Sense of safety
» Walkability
» Branding and unifying themes

Bike Connections

Parallel Bicycle Routes

Several of the roadway concepts discussed in the Roadway section assumed that bicycle accommodations would be provided on parallel routes. An analysis of Penn, Queen and Oliver Avenues was completed to identify the pros and cons of a bicycle facility on each street. The analysis consisted of the following:

» Analysis of Penn Avenue versus a Parallel Route (Queen or Oliver Avenues) – While Penn Avenue provides the most direct north-south route, it has a greater amount of traffic (including transit) than either Queen or Oliver Avenue. To provide bicycle accommodations on Penn Avenue and achieve space to green the corridor, some parking would have to be removed on one or both sides of the street for the necessary bike lane space.

» Analysis of Parallel Routes – Queen Avenue and Oliver Avenues – The analysis of parallel routes concluded that neither Queen nor Oliver Avenue have fatal flaws that would preclude the implementation of a bicycle facility on either route. However, both Queen and Oliver Avenues have many physical breaks in the street grid that would require more circuitous routing than a Penn Avenue bicycle facility. These parallel routes may include some parking loss on one-way street segments and at park and school properties, and will involve indirect connections to some destinations on Penn Avenue rather than the preferred direct connections. The potential for parking loss is contingent upon the bike accommodation that is ultimately proposed, either formal bike lanes or a bike boulevard.

The following matrix summarizes some of the characteristics of each bicycle route (Penn, Queen and Oliver Avenues).

Bicycle Route Characteristics

	Penn Avenue	Queen Avenue	Oliver Avenue
Policy Plan Consistency	Penn is identified as one of the Top 25 planned bikeway corridors in the Hennepin County Draft 2040 Bicycle Transportation Plan. The 2011 Minneapolis Bicycle Master Plan proposes bike lanes on Penn Avenue.	Both the Hennepin County Draft 2040 Bicycle Transportation Plan and the 2011 Minneapolis Bicycle Master Plan propose on-street bike routes on Penn Avenue.	Both the Hennepin County Draft 2040 Bicycle Transportation Plan and the 2011 Minneapolis Bicycle Master Plan propose on-street bike routes on Penn Avenue.
Directness – no route breaks	Direct route – no breaks or indirect routing necessary	Multiple indirect segments due to street grid breaks	Multiple indirect segments due to street grid breaks
Traffic levels (ADT)	High traffic	Low traffic	Low traffic
Connections to Penn Avenue destinations	Direct connections to destinations on Penn Avenue	Indirect connections to destinations on Penn Avenue via east-west streets	Indirect connections to destinations on Penn Avenue via east-west streets
Bicycle experience – perceived safety and comfort level	Bicycle accommodations targeted towards more experienced cyclists comfortable riding next to traffic.	Bicycle accommodations targeted towards varying experience levels; however, connections to Penn Avenue destinations encounter more traffic.	Bicycle accommodations targeted towards varying experience levels; however, connections to Penn Avenue destinations encounter more traffic.
Parking impacts *(assumes a two way bicycle route – not a one-way pair)*	Potential complete loss of parking. May retain one side of parking depending on chosen concept for Penn Ave.	Some parking spaces will be converted to bicycle lanes along existing one-way street segments	Some parking spaces will be converted to bicycle lanes along existing one-way street segments
Existing signals at high traffic roadway crossing	Yes - all	Limited	Limited
Existing street lighting	Some street lights	Few existing human scale light posts	Few existing human scale light posts
City of Minneapolis Bicycle network spacing guidance	Meets spacing guidance	Meets spacing guidance	Meets spacing guidance
Break at W. Broadway Ave.	Continuous route at W. Broadway Ave.	Break in the street grid at W. Broadway Ave. requires indirect routing.	Significant break in the street grid at W. Broadway Ave. requires indirect routing.
Break at Highway 55	Continuous route with a signal at Highway 55	Break in the street grid requires indirect routing or a grade separated crossing	Break in the street grid requires indirect routing or a grade separated crossing
Break at Glenwood Ave. / Bassett Creek	Continuous route at Glenwood Ave. and Bassett Creek Ave.	Continuous route at Glenwood Ave. Break in the street grid at Bassett Creek require indirect routing or a grade separated crossing.	Breaks in the street grid at Glenwood Ave. and Bassett Creek both require indirect routing.
One-way street segments	No one-way street segments	Multiple one-way street segments. Requires contraflow bicycle lanes.	Multiple one-way street segments. Requires contraflow bicycle lanes.

Hybrid Option

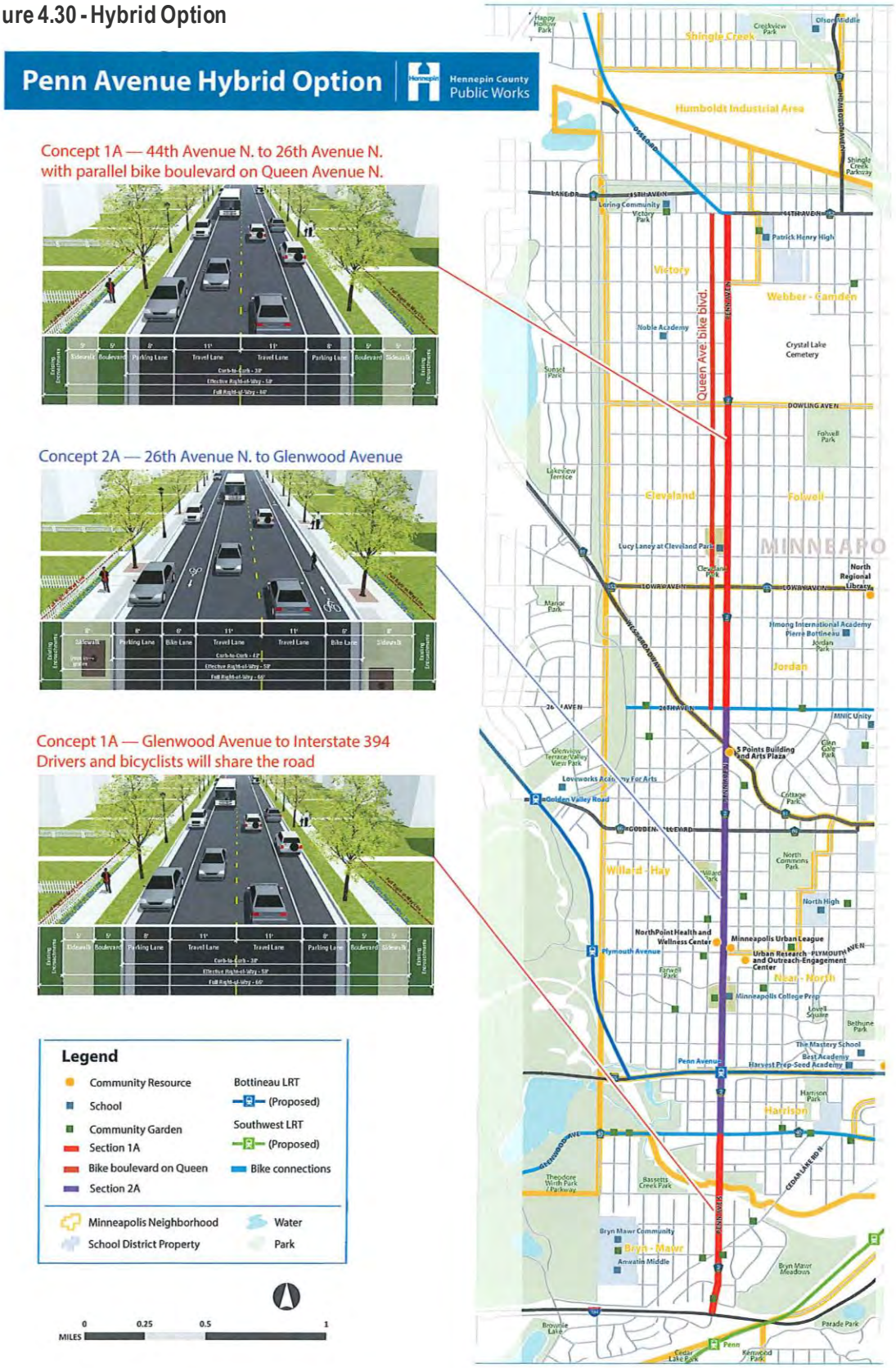
Further discussions with the Project Management Team (PMT) arrived upon a hybrid option which would vary the location of bike accommodation within the broader study area corridor. The option's basic premise is as follows;

1. Between 44th Avenue North to 26th Avenue North, a bike boulevard would be established on Queen Avenue while Penn Avenue would employ concept 1A, which consists of two travel lanes, parking on both sides, boulevards and sidewalks.
2. Between 26th Avenue North to Glenwood Avenue, there would be dedicated bike lanes on Penn Avenue. Concept 2A would be applied, consisting of two travel lanes, dedicated bike lanes on both sides of the street, and parking on one side. Eight foot wide sidewalks would occur from the back of the curb to the edge of the effective right of way.
3. Between Glenwood Avenue to Interstate 394, roadway concept 1A would be applied with vehicles and bicyclists sharing the roadway. This approach responds to the narrowed right of way south of Glenwood.

Refer to Figure 4.30 on the next page for a graphic depiction of the hybrid option.

Please refer to Appendix F for the status of bicycle alternatives analysis and recommendations.

Figure 4.30 - Hybrid Option



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