APPENDIX E

Washington Street: Streetscape Vision and Conceptual Design, Hitchcock Design Group

August 2009

Washington Street

Streetscape Vision and Conceptual Design

Naperville

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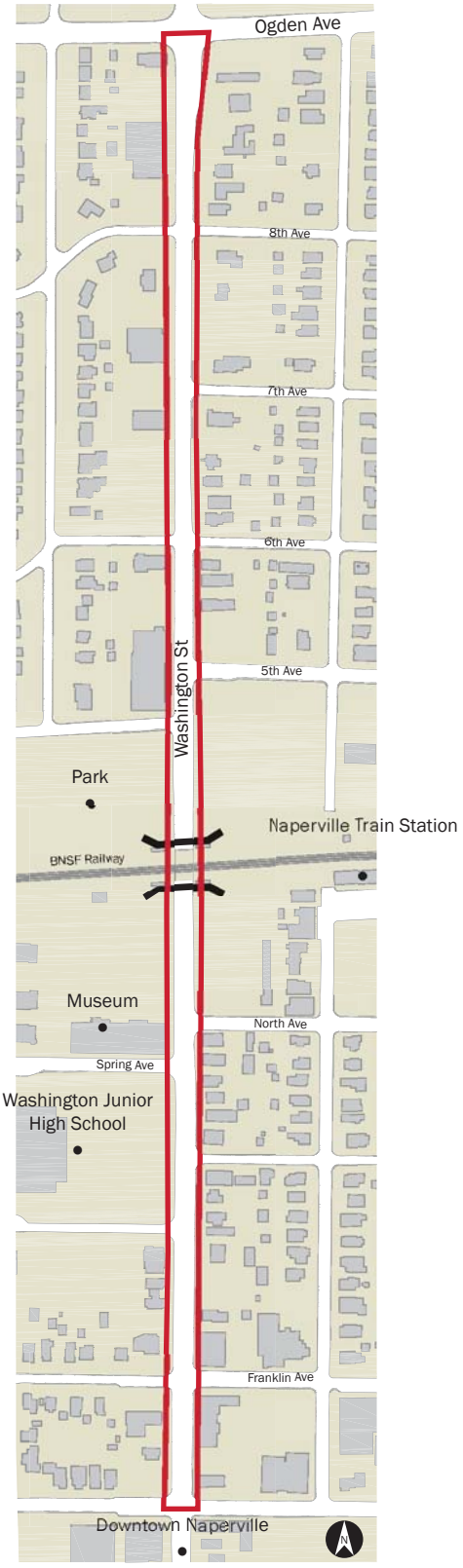
Appendix

Prepared by Hitchcock Design Group.

Introduction

The Washington Street Corridor, between Ogden Avenue and Benton Avenue, is key among the many gateways in the City of Naperville and provides a critical link between the Ogden Avenue Corridor, the Naperville Metra Station, and downtown. City leaders recognized the importance of establishing a vision for this section of Washington Street and authorized the Washington Streetscape Vision and Conceptual Design as part of the 5th Avenue Study. The purpose of the Streetscape Vision and Conceptual Design is to establish a concept for aesthetic improvements that will facilitate the implementation of a new streetscape environment that is cohesive, inviting and consistent with Downtown Naperville. Implementation of the streetscape vision is expected to occur over the next 30 years.

Streetscape includes the elements that contribute towards how a street looks, feels, and functions. Streetscape elements include sidewalks, signage, lighting, landscaping, benches, trash receptacles, bus stops, and other pedestrian amenities.



Study Area

Project Process

The Washington Streetscape Vision and Conceptual Design was included in the 5th Avenue Study by the City Council's action on April 1, 2008. The process to develop the Washington Streetscape Vision and Conceptual Design was comprehensive and open to the public. The project consisted of three phases:

November - December 2008

Background information was gathered, existing conditions were evaluated, and stakeholder interviews were conducted. A visioning workshop was held on December 9, 2008 at which participants identified and prioritized appropriate streetscape improvements for the corridor. Based on this information, a Streetscape Vision was established to guide the development of conceptual design alternatives and the selection of the preferred alternative.

January - February 2009

Based on the opportunities, constraints and priorities identified through the Existing Corridor Inventory and Visioning phase, conceptual design alternatives were developed and evaluated by the Downtown Advisory Committee (DAC), the Plan Commission (PC), the Transportation Advisory Board (TAB), stakeholders and the general public. Input received from various stakeholders was considered in selection of the preferred alternative.

March - December 2009

Through evaluation of the conceptual design alternatives, a preferred alternative was selected and final streetscape design recommendations were developed that will facilitate appropriate streetscape improvements to achieve the streetscape vision. The streetscape recommendations were further refined based on the review of the DAC, TAB and the general public. This report was incorporated as part of the 5th Avenue Study Report that was adopted by the City Council on December 1, 2009.

A summary of public input received during the December 9, 2008 visioning workshop can be viewed in further detail in Appendix A.

Existing Conditions

Washington Street

Washington Street is a major arterial roadway that carries a significant amount of vehicular traffic (33,000 average daily trips). The City of Naperville owns the public right-of-way along Washington Street which includes four vehicle travel lanes and is as narrow as 66 feet in width. In most situations, there is less than ten feet of space between the back-of-curb and right-of-way line to accommodate the streetscape elements.

Image and Identity

Although Washington Street is a critical link between Ogden Avenue, downtown and the Naperville Metra Station, the existing streetscape along Washington Street between Ogden Avenue and Benton Avenue is minimal due to the limited space available within the right-of-way. The existing streetscape consists of standard roadway elements, including five foot wide concrete sidewalks, minimal trees and landscaping, roadway lights, and no street furnishings (e.g., benches, trash receptacles). There is no consistent application of materials to create a cohesive image or identity for the corridor.

The characteristics of the adjacent properties are different north and south of the BNSF railway underpass. North of the BNSF underpass, the majority of the properties are larger, buildings are more spread out, and many of the buildings are set back from the roadway creating a more open feeling. The area south of the underpass, approaching downtown, consists of smaller properties, the buildings are closer together, and in many locations setbacks are minimal creating a more enclosed streetscape environment.

Existing Conditions Summary

- Narrow right of way limits streetscape opportunities; the existing streetscape is minimal due to the limited amount of space available
- Existing streetscape items are “basic” and do not create a meaningful image and identity for the corridor; there are very few parkway trees
- Pedestrian traffic is relatively high due to proximity to the Naperville Metra Station and downtown; high vehicular traffic volumes create an uncomfortable environment due to narrow sidewalks located at the back-of-curb
- Adjacent properties are mixed creating a variety of streetscape conditions; streetscape opportunities will be influenced by private property conditions and redevelopment over time.

Looking south from 7th Avenue

Looking north from 8th Avenue

Existing Conditions

Pedestrian Environment

Pedestrian traffic is relatively high due to proximity to the Naperville Metra Station and downtown. There are two primary sidewalk configurations along the corridor. In some areas, there is a grass parkway separating the sidewalk from the roadway. However, in most situations the sidewalk is immediately adjacent to the back-of-curb due to the limited right-of-way. These sidewalks are typically five feet wide. High vehicular traffic volumes along the street create an uncomfortable pedestrian environment due to narrow sidewalks located at the back-of-curb.

Looking south from 6th Avenue

BNSF Railway Underpass

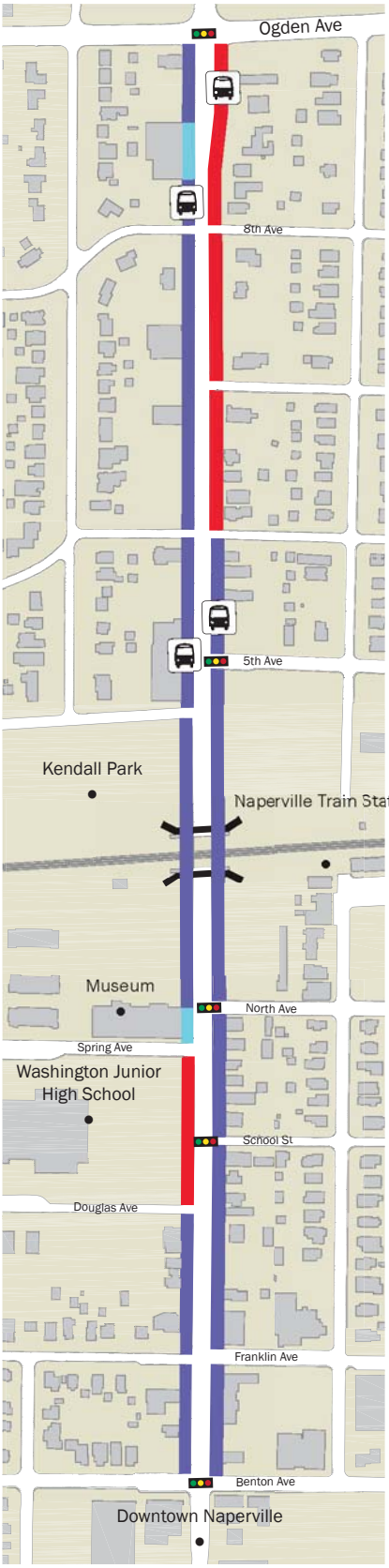
Washington Street goes under the Burlington Northern Santa Fe (BNSF) railway between North Avenue and 5th Avenue. Travelers may experience a sense of arrival to the downtown when they reach the underpass. Some landscape improvements have been installed at the underpass area, including trees and planter boxes with annual flowers on both sides of the railway bridge. Opportunities exist to further enhance the aesthetic of the underpass area as a gateway to downtown.

Looking north at railroad underpass

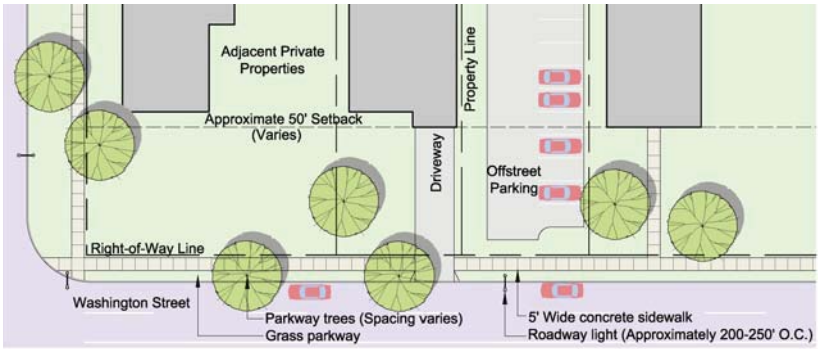
Refer to Appendix B for a detailed existing conditions inventory and analysis.

Looking north from Benton Avenue

Existing Conditions

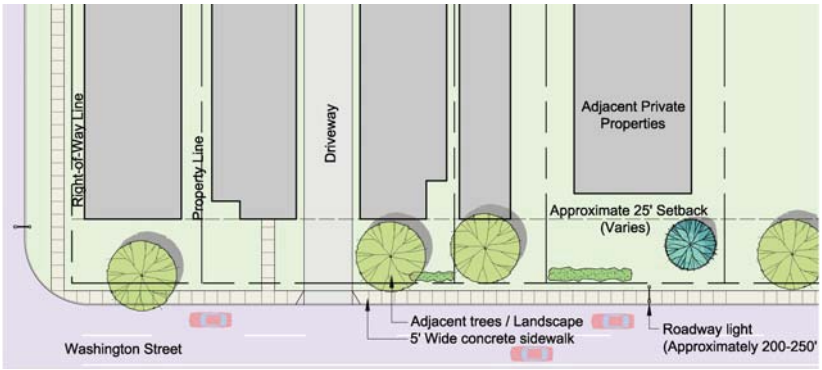


Existing Conditions: Plan View



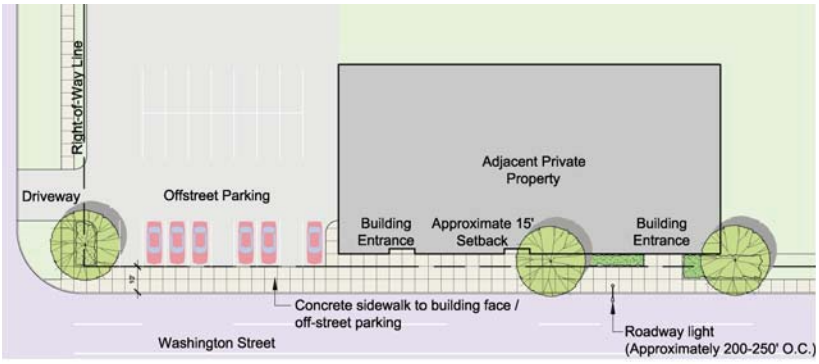
Typical Existing Conditions: Parkway

Sidewalk seperated from back of curb by grass area



Typical Existing Conditions: Carriage Walk

Sidewalk located directly adjacent to back of curb



Typical Existing Conditions: Paved Streetscape

Sidewalk continuous from back of curb to building face or parking area

Legend

- Parkway Streetscape
- Carriage Walk Streetscape
- Paved Streetscape
- Traffic Signal
- Bus Stop
- Roadway
- Offstreet Parking
- Sidewalk
- Building
- Lawn / Landscape

Streetscape Vision

The development of the Washington Streetscape Vision is based on an analysis of the existing conditions, the priorities identified through the visioning workshop and other input gathered throughout the planning process. The Streetscape Vision is a long-range document (30 year timeframe) that describes the desired streetscape environment for Washington Street, including aesthetic, pedestrian and gateway elements. It is a guide for the development and evaluation of conceptual design alternatives as well as the preparation of the streetscape recommendations.

Washington Streetscape Vision Statement

Create an attractive streetscape along Washington Street between Ogden Avenue and Benton Avenue that establishes a cohesive image and identity for the corridor, emphasizes its role as a key gateway to Downtown Naperville, and is accommodating for all users.

GOAL 1: Improve the Pedestrian Environment

Improve the streetscape to include a consistent application of materials such as sidewalk surface, street trees, landscape, lighting, furnishings, and other amenities that will create a better separation between pedestrians and vehicular traffic and make pedestrians feel more safe and comfortable.

GOAL 2: Establish Economically Sustainable Streetscape Improvements

Identify streetscape improvements that are economically sustainable, with emphasis on durable, quality materials and reasonable maintenance requirements.

GOAL 3: Create a Gateway to Downtown

Enhance the corridor to include attractive streetscape improvements consistent with the importance of the area as a downtown gateway. The streetscape should announce entry to the downtown environment.

GOAL 4: Create a Cohesive Image along the Corridor

Create a cohesive image and a unified look along the corridor by applying a consistent palette of materials and design elements.

GOAL 5: Enhance the Transition between the Ogden Corridor and Downtown

Create a streetscape that serves as a transition between Ogden Avenue and Downtown Naperville.

GOAL 6: Improve Identity and Way Finding Signage

Develop identity and way finding signage as a strong streetscape element both from a functional and aesthetic standpoint. The signage style and message should be clear, concise, timeless and flexible, and should clearly direct users to important community destinations.

Streetscape Recommendations

Four conceptual design alternatives were evaluated to illustrate options for placement of typical streetscape elements including sidewalks, trees/landscaping and lighting. All alternatives considered may be viewed in further detail in Appendix C.

Based on an analysis of the advantages and disadvantages of each alternative, a preferred alternative was selected, further evaluated and refined to create the streetscape recommendations for Washington Street extending from Benton Avenue to Ogden Avenue. Details about the streetscape recommendations can be viewed on pages 8-18 .

The recommended streetscape design provides a consistent application of a carriage walk along the entire length of the corridor with streetscape elements including parkway trees, roadway and pedestrian lights, signage, and paving improvements to create an attractive and inviting street environment. In addition, concepts for gateway enhancements at the BNSF railway underpass area and directional and special event signage are recommended to improve the aesthetic, functional, and user friendliness of the corridor.

Streetscape Recommendation Benefits

- Utilization of streetscape improvements, way finding signage and BNSF underpass enhancements to create a functional and visual gateway to Downtown Naperville.
- Placement of furnishings and landscape between the roadway and the sidewalk to create a more comfortable pedestrian environment with increased safety. This is consistent with the Streetscape Vision and public input received that indicates a preference for a better separation between pedestrians and vehicular traffic.
- Consistent applications of a carriage walk layout and streetscape elements (i.e. trees and tree grates, unit paving edge zone, roadway and pedestrian lights) to establish a cohesive image and identity for the corridor.
- Provision of unit paving, furnishings, and other pedestrian amenities at street corners south of the BNSF railway underpass to create a transition between the Ogden Avenue Corridor and downtown.
- A flexible layout that can be implemented consistently along the corridor. In instances where the sidewalk or the furnishings/landscape area need to be narrowed due to existing conditions, the corridor can still maintain a consistent carriage walk layout.
- An economically sustainable streetscape with reasonable maintenance requirements. Parkway trees are located four feet from the back of curb which improves the longevity of trees. The majority of the sidewalk is paved with concrete that carries relatively low construction and maintenance cost. The two foot edge zone would accommodate a wire raceway underneath to service the streetlights and traffic lights. Unit paving for the edge zone would not only improve the appearance of the corridor, but also facilitate utility work without disturbing a large sidewalk area.

Streetscape Recommendations: Prototype

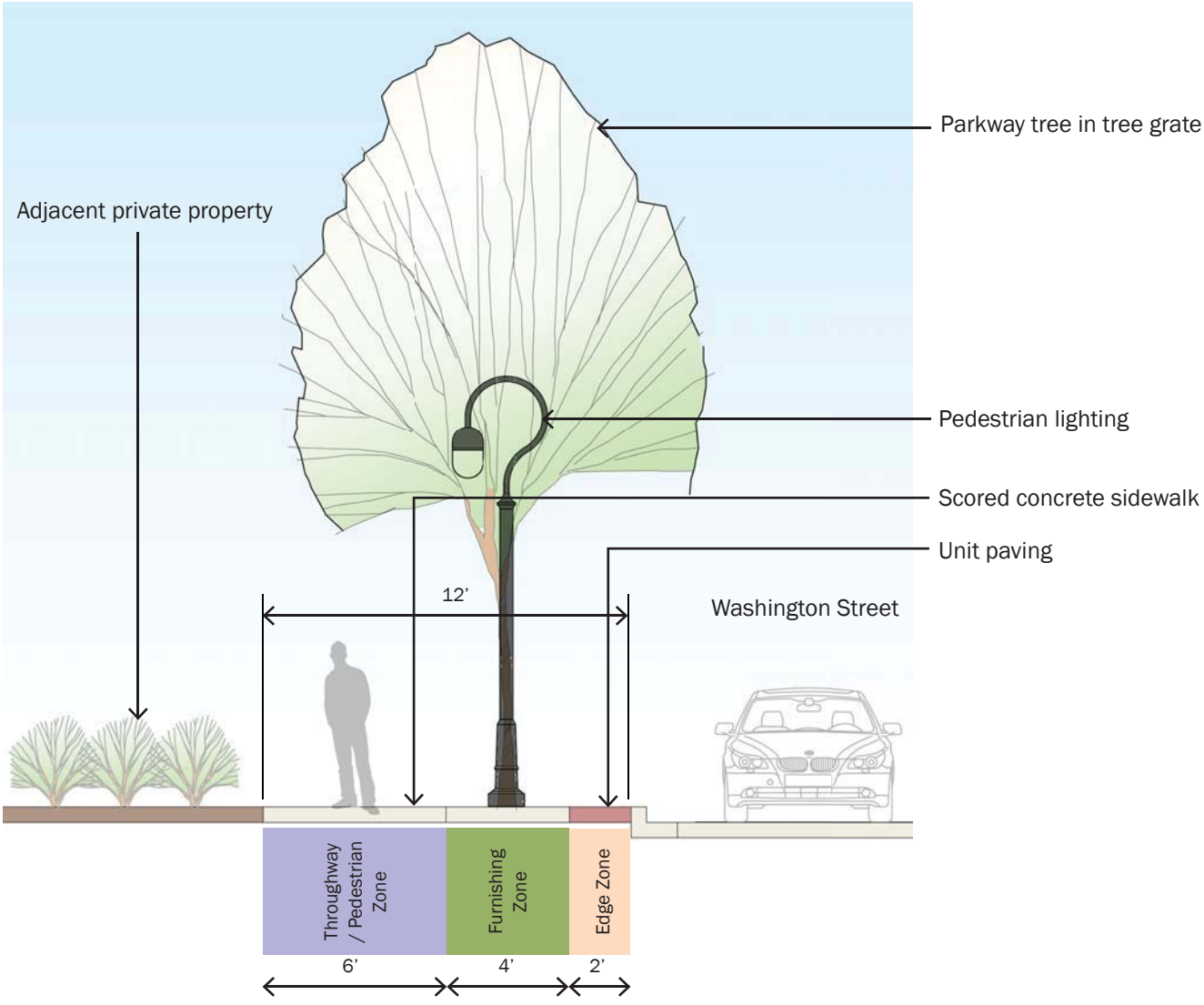
The streetscape prototype illustrates the typical placement of streetscape elements utilizing the minimum amount of space for each streetscape zone. It accounts for a twelve foot streetscape area which includes a six foot sidewalk, a four foot furnishings/ landscape zone and a two foot edge zone. The dimensions indicated represent minimum widths; more space is preferred if available.

The prototype will serve as a guide for detailed design of streetscape improvements along the corridor but should be adapted as needed to reflect specific site conditions.

Throughway/Pedestrian Zone – The area that must remain clear for the movement of pedestrians and maintenance equipment.

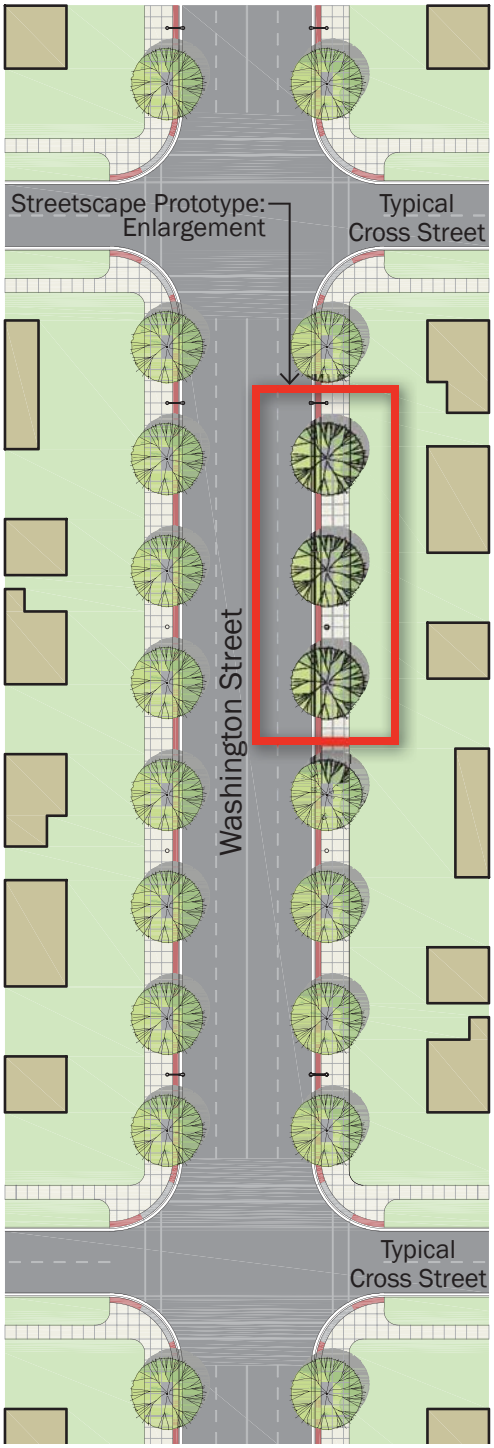
Furnishings/Landscape Zone – The area which contains street furnishings, trees, landscape, lighting, signage, trash receptacles and other pedestrian amenities.

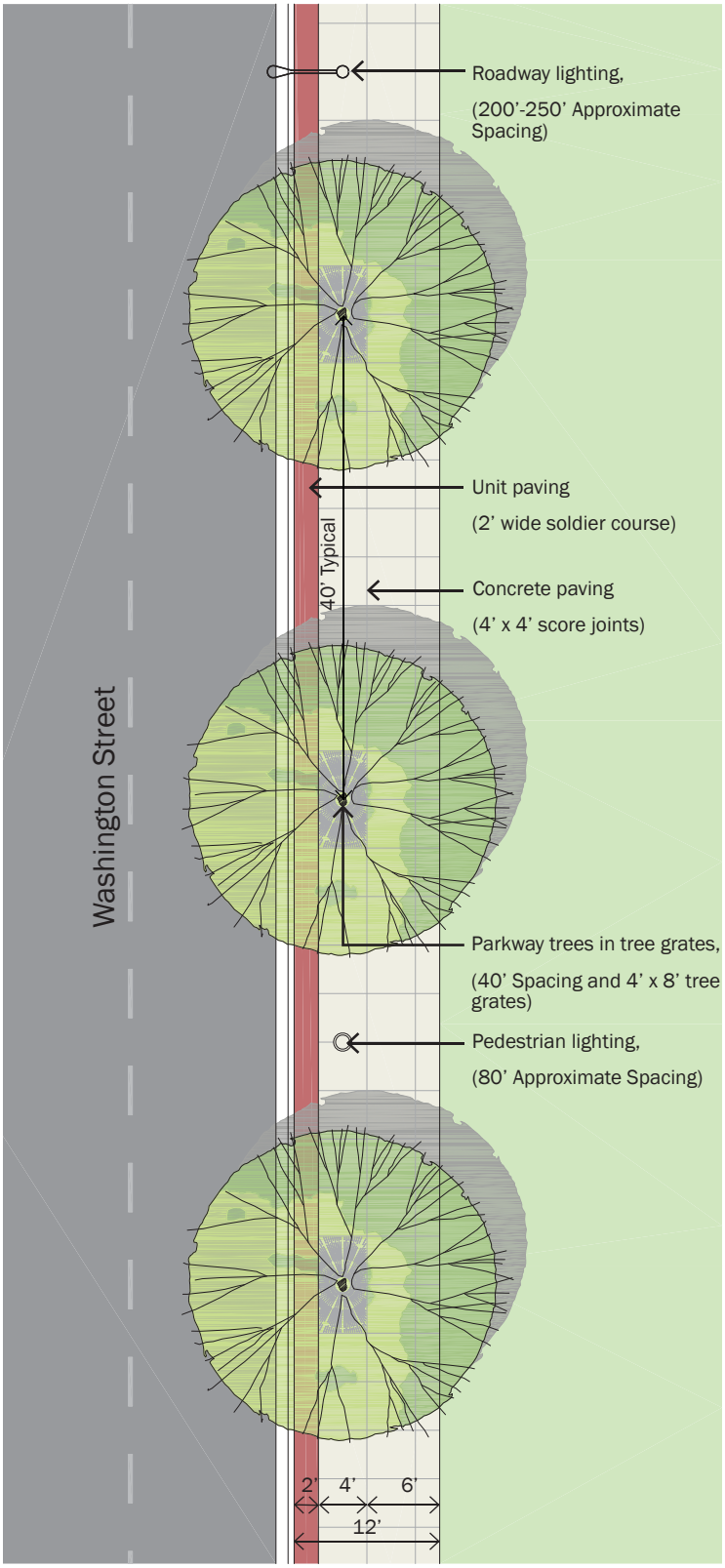
Edge Zone – The distance from the back of curb that is required to be clear of streetscape components and pedestrian movement.



Streetscape Prototype: Section

Streetscape Recommendations: Prototype

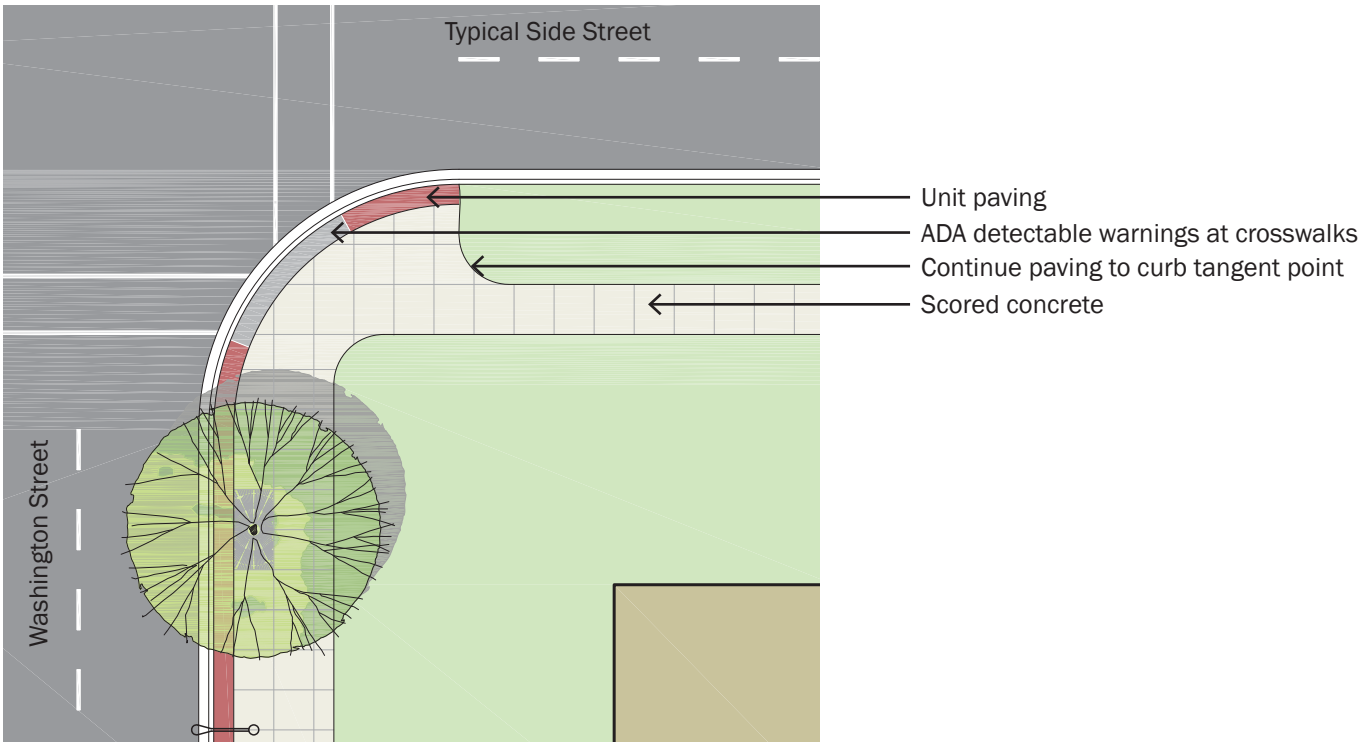




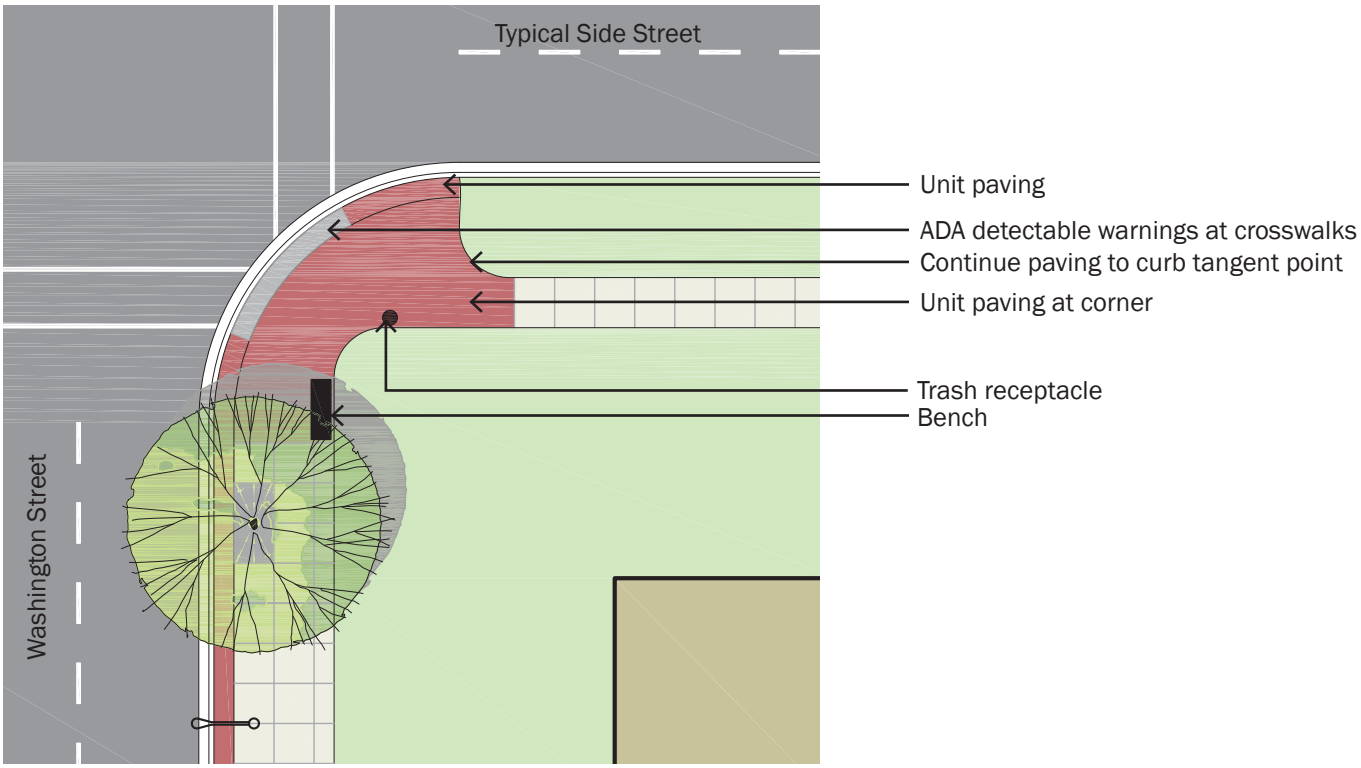
Streetscape Prototype: Plan View

Streetscape Prototype: Enlargement

Streetscape Recommendations: Prototype

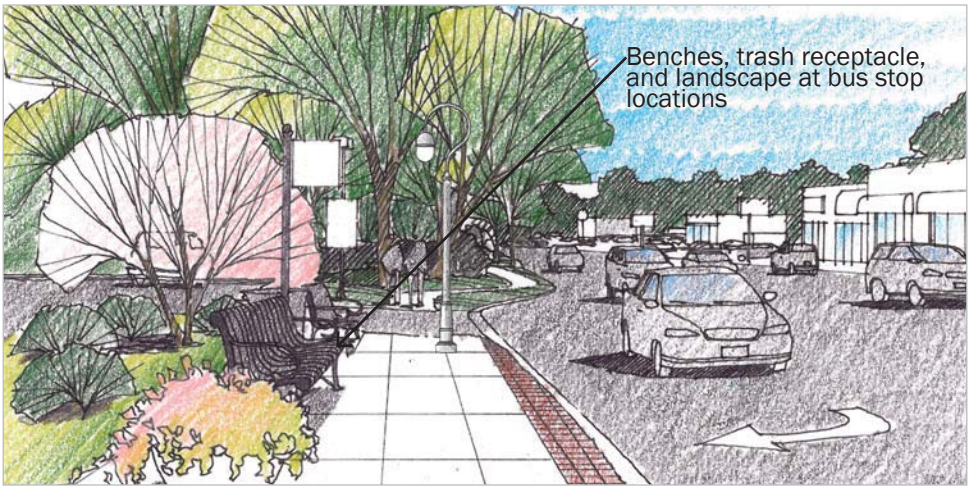


Typical Corner Enlargement: North of BNSF Railway Underpass



Typical Corner Enlargement: South of BNSF Railway Underpass

Streetscape Recommendations: Prototype



Streetscape Example: Bus Stop Location

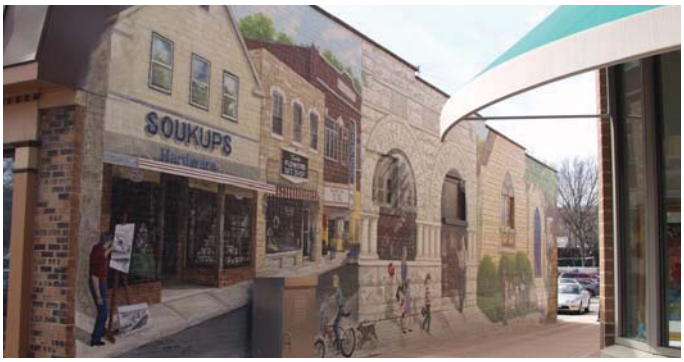
Streetscape Example: Adjacent Retaining Walls

Streetscape Example: Parking Buffer

Streetscape Recommendations: Underpass Enhancements

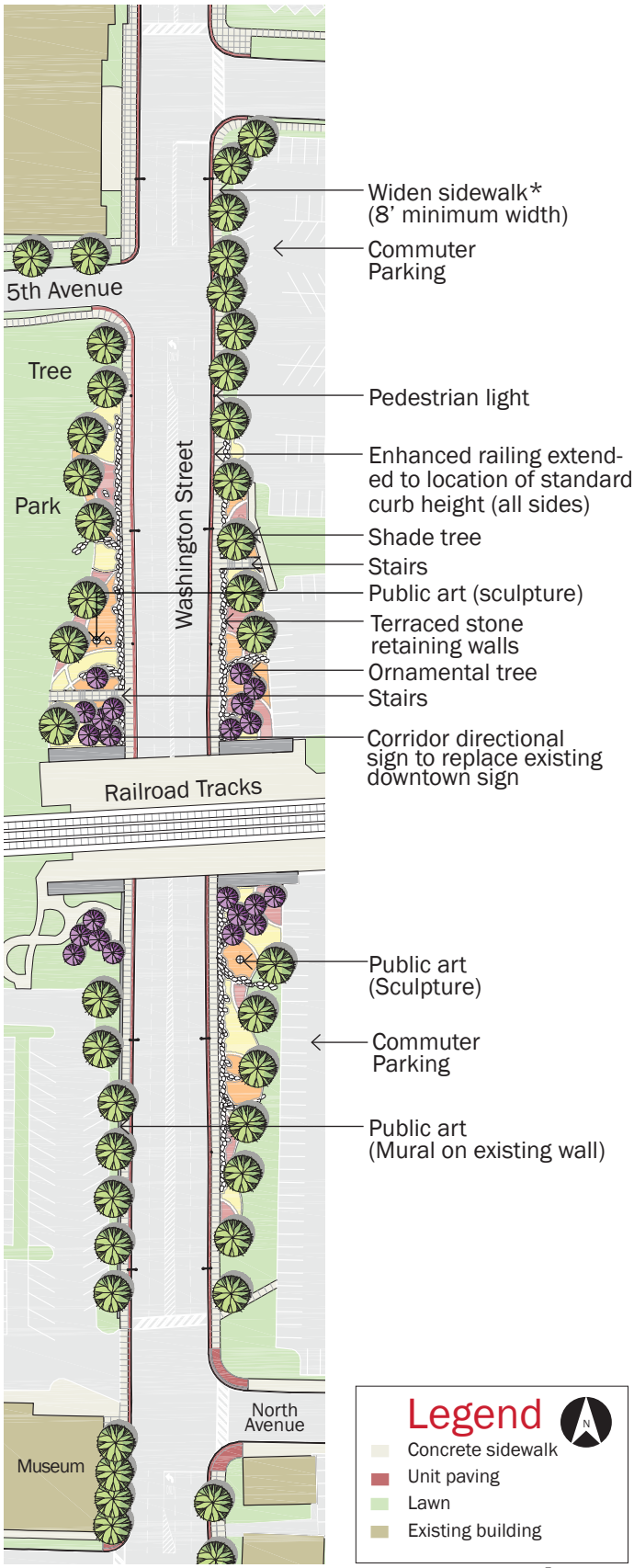
In addition to streetscape improvements, enhancements to the area surrounding the BNSF railway underpass are recommended to further establish a prominent gateway feature along the corridor and create a sense of arrival to the downtown environment. Improvements recommended at the underpass area include landscaping, stone outcropping retaining walls, widened sidewalks, and improved railings. It is also recommended that space be reserved for public art (e.g. murals, reliefs, mosaics, sculptures, and other artwork). Community participation will be encouraged in creation of the artwork to enhance the sense of place in this area.

Further study is required to evaluate the feasibility and placement of the recommended improvements. Any modifications to or around the underpass would be subject to the review and/or approval from BNSF Railway Company and Metra.



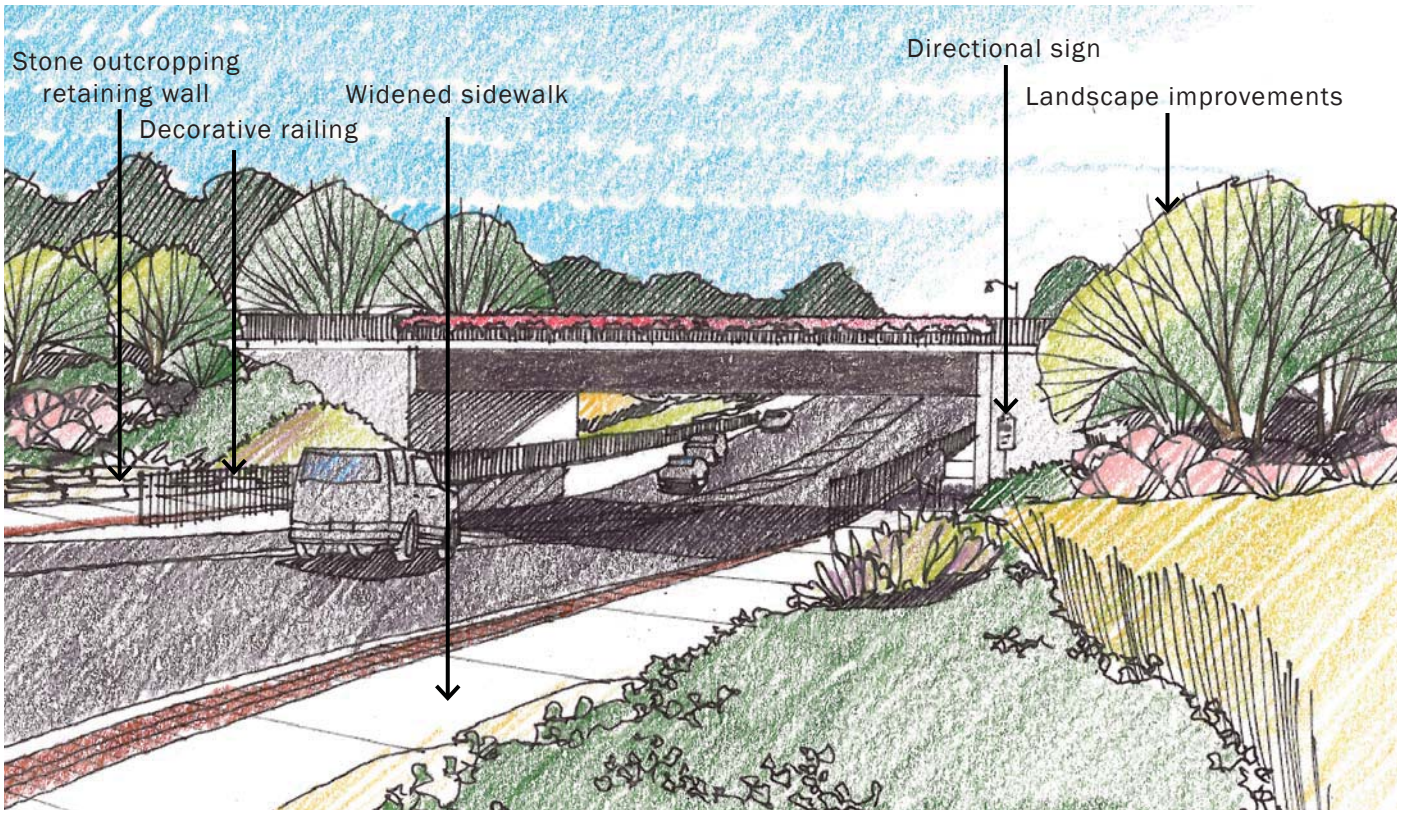
Public Art Examples

* Widen sidewalks where feasible. In areas fronting the city's commuter parking lots and Kendall Park, sidewalks could potentially be widened with construction of retaining walls. However, sidewalk directly underneath the underpass and fronting the Museum parking lot would likely stay the same width due to the space constraints and the presence of an existing retaining wall.

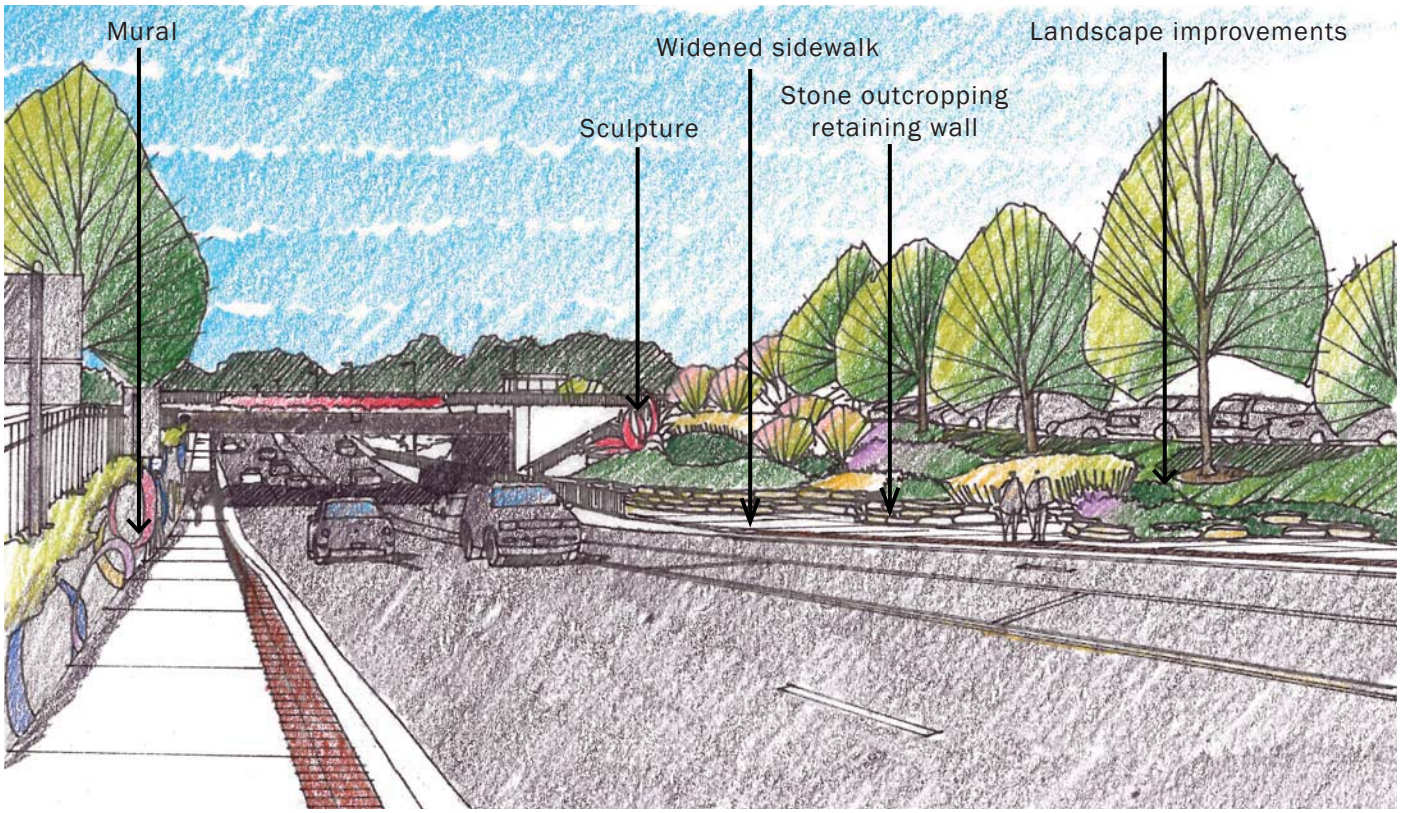


Underpass Enhancements: Plan View

Streetscape Recommendations: Underpass Enhancements



Underpass Enhancements: Looking South



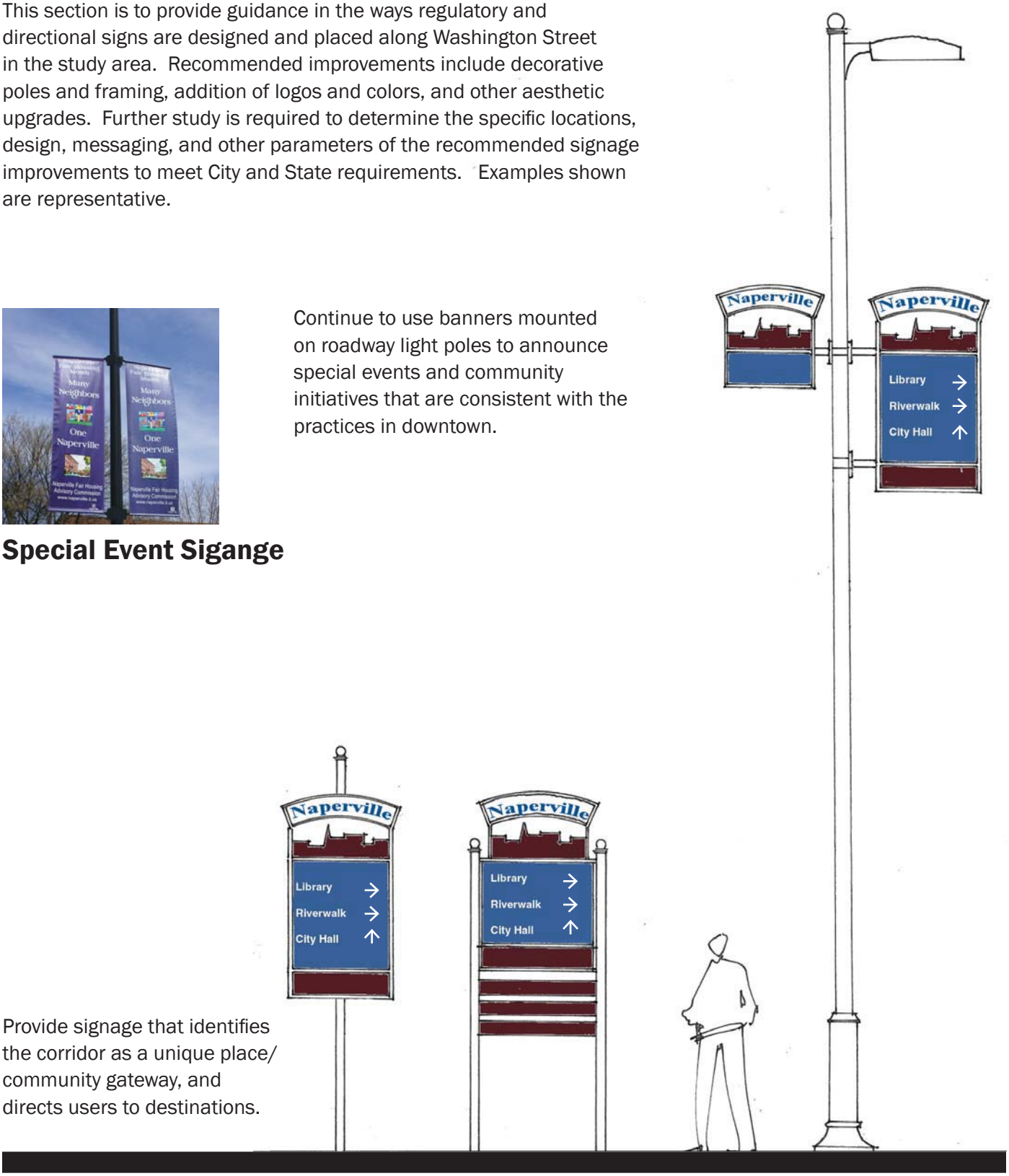
Underpass Enhancements: Looking North

Streetscape Recommendations: Signage

This section is to provide guidance in the ways regulatory and directional signs are designed and placed along Washington Street in the study area. Recommended improvements include decorative poles and framing, addition of logos and colors, and other aesthetic upgrades. Further study is required to determine the specific locations, design, messaging, and other parameters of the recommended signage improvements to meet City and State requirements. Examples shown are representative.

Continue to use banners mounted on roadway light poles to announce special events and community initiatives that are consistent with the practices in downtown.

Special Event Sigange



Provide signage that identifies the corridor as a unique place/ community gateway, and directs users to destinations.

Corridor Identity and Directional Sigange

Streetscape Recommendations: Materials Guidelines

The materials guidelines are provided to guide future design and selection of streetscape elements. Implementation of the following recommendations is subject to further review. All metal products should have a gloss black polyester epoxy powder coat to enhance the durability of the products.

Paving Materials (Accent Areas)

Walkways	
Description	Standard concrete paving with broom finish
Materials/Products	Standard concrete
Location/Spacing	All sidewalk areas excluding the edge zone and accent areas; typical 4 foot square scoring pattern
Accent Areas	
Description	Concrete unit pavers
Materials/Products	4 inch x 8 inch, solid red; match the downtown streetscape or approved equal
Application Criteria	Use within clear zone and for streetscape corners south of railroad underpass
Location/Spacing	2 foot wide area within edge zone (triple soldier course); apply at corners to curb tangent point, typical; apply to sidewalk area at corners south of railroad underpass; apply to other accent areas to be determined on a case-by-case basis

Tree Grate

Description	Decorative cast iron tree grate that complies with Americans with Disabilities Act (ADA)
Manufacturer	Olympic Foundry, Neenah Foundry, East Jordan Iron Works, and others.
Materials/Products	Grey cast iron 4'x8' tree grate with bituminous or Corroseal finish to prevent rusting
Location/Spacing	Provide throughout streetscape area; locate directly adjacent to edge zone (2 feet from back of curb); trees located 40 foot on-center, typical

*Photo represents Downtown Streetscape Standard. Recommended tree grates are 4'x8'.

Streetscape Recommendations: Materials Guidelines

Bench

Description	Commercial grade steel bench
Materials/Products	5 foot length; black polyester epoxy powder coat finish; match the downtown streetscape or approved equal.
Location/Spacing	Use south of the railroad underpass at corner locations where appropriate, and at bus stops along the corridor; other areas to be determined on a case-by-case basis

Trash Receptacle / Recycling

Description	Commercial grade steel trash receptacle
Materials/Products	36 gallon capacity; black polyester epoxy powder coat finish; match the downtown streetscape or approved equal.
Location/Spacing	Use south of the railroad underpass at corner locations where appropriate and at bus stops along the corridor; other areas to be determined on a case-by-case basis

Streetscape Recommendations: Materials Guidelines

Roadway Lighting

Description	High level light poles and fixtures to provide roadway lighting (final selection of the roadway lights are subject to further review and approval of the city)
Materials/Products	Roadway light pole with decorative base, gfi duplex power outlet, and banner arms; black powder coat finish
Location/Spacing	Locate in line with trees, approximately 200-250 foot spacing (to be determined based on photometric requirements and site conditions)

Pedestrian Lighting

Shepherd's Crook Light

Description	Shepherd's Crook style light pole and fixture
Manufacturer	Architectural Area Lighting
Materials/Products	Shepherd's Crook light pole and fixture; black powder coat finish; match the downtown streetscape or approved equal
Location/Spacing	Locate in line with trees, approximate 50 foot spacing (specific spacing to be determined based on photometric requirements and site conditions)

Acorn Light

Description	Acorn style light pole and fixture
Manufacturer	Match historic district
Materials/Products	Acorn light pole and fixture: black concrete pole; match historic district style or approved equal
Location/Spacing	Locate in line with trees, approximate 50 foot spacing (specific spacing to be determined based on photometric requirements and site conditions)

Streetscape Recommendations: Materials Guidelines

Parkway Trees

Provide parkway trees tolerant of urban conditions with branching habit that will not interfere with roadway traffic and throughway/pedestrian zone. Use salt tolerant species and species for confined root space per the City's parkway tree species suggestions.

Recommended species list:

Common Name	Botanical Name
Freeman Maple	Acer x freemanii 'Autumn Blaze'
Hackberry	Celtis occidentalis
Ginko (male)	Ginko biloba
Honeylocust (thornless)	Gleditsia triacanthos var. inermis
Swamp White Oak	Quercus macrocarpa
Red Oak	Quercus rubra
Redmond American Linden	Tilia americana 'Redmond'
Little Leaf Linden	Tilia cordata
Hybrid Elm (disease resistant)	Ulmus (disease resistant species)
Japanese Zelkova	Zelkova serrata

Notes:

Parkway trees are subject to city code requirements. Minimum tree caliper to be 2-1/2 inches. Other tree species and cultivars may be appropriate based on availability and specific site conditions. Final tree selections will be subject to city review and approval.

Plant Materials

Shrubs and perennials are not a basic element of the recommended streetscape improvements. However, if used they should be selected from the following recommended species that are tolerant of urban conditions and don't require irrigation for survival.

Recommended species list (shrubs):

Common Name	Botanical Name
Dwarf Forsythia	Forsythia x intermedia
Hydrangea varieties	Hydrangea arborea
Dwarf Juniper varieties	Juniperus varieties
Gro-low Sumac	Rhus aromatica 'Gro-low'
Greenmound Alpine Currant	Ribes alpinum 'Greenmound
Dwarf Lilac	Syringa microphylla
Viburnum varieties	Viburnum species

Recommended species list (perennials):

Common Name	Botanical Name
Coreopsis	Coreopsis species
Coneflower	Echinacea species
Perennial Geranium	Geranium species
Daylily	Hemerocallis species
Catmint	Nepeta species
Russian Sage	Perovskia species
Obedient Plant	Physostegia species
Black-eyed Susan	Rudbeckia species
Sedum	Sedum species

Notes:

Shrubs and perennials subject to city code requirements. Other species and cultivars may be appropriate based on availability and specific site conditions. Final plant material selections will be subject to city review and approval.

Implementation

Implementation Strategies

The Washington Streetscape Vision and Conceptual Design document provides a framework to guide decision making regarding streetscape improvements along Washington Street. The Vision and Conceptual Design will allow for the city to act on opportunities for streetscape improvements as private redevelopment occurs, and to plan for future public improvements.

Implementation of streetscape enhancements for areas fronting private properties is expected to be largely funded through a fee-in-lieu program as redevelopment occurs over an extended period of time. With private redevelopment, property owners will be required to either install streetscape improvements that are consistent with the recommendations of this report or to pay a fee in-lieu.

Streetscape enhancements for the areas fronting publicly-owned properties (including the area surrounding the BNSF underpass) shall be further evaluated. Depending on feasibility and public funding availability, future capital improvement program projects may be undertaken for installation of the streetscape enhancements in these areas along Washington Street. The city may also consider the initiation of studies and design of certain improvements along the whole corridor to better guide redevelopment efforts. For example, roadway lighting must be designed for the entire corridor in order to determine the proper photometric requirements.

Public Right-of-Way and Easements

The existing right-of-way throughout the majority of the corridor is inadequate to accommodate the recommended streetscape improvements. The minimum width needed to accommodate the recommended streetscape improvements is 12 feet. For the majority of the corridor, approximately two to four feet of additional space is needed. As such, implementation of the streetscape recommendations will require sidewalk easements. In most situations, sidewalk easements will be able to accommodate the proposed streetscape improvements without significant impact on the existing conditions. However, to mitigate the impact on future redevelopment, the city will evaluate a reduction of the regulatory setback and landscape requirements for properties along Washington Street.

In some locations, physical impediments on private properties, such as retaining walls and off-street parking areas, must be accommodated. These areas will need to be considered on a case-by-case basis in order to determine a strategy to provide the streetscape improvements while respecting private property interests. In general, where a 12 foot streetscape area is not available, the following guidelines should be considered:

- Passable sidewalk area should not be reduced to less than five feet minimum. If further reduction is needed, trees may be eliminated or moved behind the sidewalk.
- If at all possible, lights should be installed consistently at two feet from the back of curb. With a minimum five foot passable sidewalk area, the minimum streetscape width is eight feet (including two foot clearance, one foot light pole base, and five foot sidewalk). If eight foot width is not available, then lights should be moved behind the sidewalk.

Implementation

Design and Engineering

The Conceptual Streetscape Design is based on information combined from a variety of sources including aerial photography, GIS information, previous topographic surveys, and on-site observations. The Conceptual Design represents a realistic expectation for what should be accomplished. However, further design and engineering is necessary to establish the construction details, material specifications and quantities of the streetscape improvements prior to construction.

Maintenance

Currently, routine maintenance of the streetscape along Washington Street in the project area is shared among the private property owners (responsible for the area north of 5th Avenue) and the city (responsible for the area south of 5th Avenue). Routine maintenance includes keeping walks clean, clearing snow, and cutting grass. The City of Naperville maintains street lights and parkway trees and repairs sidewalks when needed. The recommended streetscape improvements will not require a significant increase to the routine maintenance that is currently required from private property owner. However, the city's maintenance responsibility for Washington Street will increase to cover additional streetscape elements including the two foot paver edge, street lights, roadway lights, and landscaping.

Implementation Items

- Establish material specifications for streetscape.
- Review and consider amending the landscaping requirements for private properties along Washington Street to mitigate the impact of the sidewalk easement requirement.
- With redevelopment, require dedication of sidewalk easements.
- Establish and implement a fee-in-lieu for streetscape along Washington Street.
- Install a railing extension on Washington Street near the BNSF underpass.
- Evaluate installation of the streetscape enhancements fronting public property.
- Coordinate with Metra and BNSF to evaluate the feasibility and location of streetscape enhancements for the area surrounding the BNSF railway underpass. The BNSF underpass enhancements include streetscape improvements along Washington Street between North Avenue and 5th Avenue.
- Conduct a study to evaluate the location, spacing and the appropriate approach to installation of roadway lighting and pedestrian lighting.
- Following installation of streetscape enhancements for the area surrounding the BNSF railway underpass, coordinate with private organizations to identify opportunities for public art.

Preliminary Budget Costs

Preliminary budget costs were calculated based on the recommended streetscape prototype and conceptual design recommendations. The average cost per linear foot was multiplied by the total length of the project area to determine the overall project costs. It is important to note that these costs are provided for preliminary budgeting purposes only. Actual costs will vary based on a number of factors, such as existing site conditions, scale of individual projects (if phased), final design and material selections, and escalation due to project timing.

Preliminary Budget Cost Summary	Area (linear feet)	Cost (per linear foot)	Total Cost
Streetscape Prototype (North of Tracks)	2,800	$660	$1,848,000
Streetscape Prototype (South of Tracks)	2,200	$720	$1,584,000
BNSF Railway Underpass Enhancements			$450,000
Identity and Wayfinding Signage			$75,000
		TOTAL	**$3,957,000**

Notes: Summary costs have been rounded to reflect the level of accuracy that can be expected at the conceptual design phase and may not match the detailed prototype cost spreadsheets exactly. Costs are provided for general budgeting purposes only. Actual costs will vary based on the specific results of preliminary and final design and engineering studies.

Costs are based on a 100 foot prototype streetscape section and are provided for general budgeting purposes only. Actual quantities and costs will vary based on specific site conditions and final material selections.

Prototypes are based on GIS information provided by the City of Naperville. Actual quantities and costs will vary based on actual survey information.

Costs do not account for work that may be necessary related to adjacent private properties to accommodate the proposed streetscape improvements (i.e., removals, adjustments, grading, retaining walls,etc.)

Costs shown assume delivery through a general contractor public bidding process, including material purchase, installation, 15% design/bid contingency, and 5% construction contingency.

Costs shown do not include fees for design and engineering. A 10% allowance for preliminary/final design and engineering fees, and 5% allowance for construction engineering fees can be considered an average for City initiated projects.

Costs shown do not include an escalation factor, although an escalation factor should be included when budgeting based on the anticipated timing of construction. Escalation will vary based on specific economic conditions at the time of budgeting. An allowance of 5% per year can be considered an average escalation factor.

Refer to Appendix D: Preliminary Budget Costs for more information.

Appendix A: Existing Conditions Inventory and Analysis

Existing conditions information was compiled from information provided by the City of Naperville including aerial photographs, GIS information, and historic as-built construction drawings. Information was evaluated based on site observations by Hitchcock Design Group representatives in December 2008. The summary that follows is for planning purposes only and does not necessarily represent a comprehensive survey of all existing conditions on-site. Once the streetscape moves beyond the conceptual design phase to preliminary design and engineering, a complete topographic survey will be completed for the project area.

Image and Identity

The existing streetscape along Washington Street can be described as basic. It does not contain streetscape elements beyond those of a standard roadway and there is no consistent application of materials to create a coherent image or identity for the corridor. The street is dominated by vehicular traffic, and there is limited space for streetscape enhancements. The existing streetscape consists of standard utilitarian elements, including 5 foot wide concrete sidewalks, few trees and landscaping, standard utilitarian street lights, and no street furnishings.

While the actual streetscape elements do not differ significantly along the corridor, the image and identity of the corridor differs from north to south due to the different characteristics of the adjacent land uses. North of the railway underpass, near Ogden Avenue, the parcels are slightly larger and many of the buildings are set back from the roadway, creating a more open feeling. The area south of the underpass, approaching downtown, consists of smaller properties and the buildings are closer to the street, creating a more enclosed streetscape environment that is perceived as being more pedestrian friendly.

Land Use and Zoning

The corridor is comprised of various small-scale commercial and office uses, as well as open space and institutions (e.g. Washington Junior High School, Kendall Park, and DuPage Children's Museum). Because of the proximity to these institutions and the Metra Station, this corridor attracts a significant amount of pedestrian traffic.

There are a variety of zoning classifications along Washington Street, each with different setback and landscaping requirements. The following zoning classifications exist along Washington Street within the project area:

- B3 - General Business District
- B5 - Secondary Commercial Business District
- OCI – Office, Commercial & Institutional District
- I – Industrial District
- R2 – Single-Family & Low Density Multi-Family Residence District
- R1B – Medium Density Single-family Residence District
- TU – Transitional Use District

Property Ownership, Easements, Access

The City of Naperville owns the public right-of-way along Washington Street which includes four vehicle travel lanes and in some areas is as narrow as 66 feet, resulting in small streetscape areas on either side of the street. In most situations there is less than ten feet of space between the back-of-curb and right-of-way line to accommodate the streetscape elements. It does not appear that there are permanent easements along the corridor to accommodate public improvements, although further study may be required to verify if easements exist.

Appendix A: Existing Conditions Inventory and Analysis

Many properties have primary access from Washington Street, although the corridor is also serviced by back alleys in most locations. Side street access is available to some properties along the corridor. These vehicular access points can create conflicts and safety concerns for pedestrian and bicycle travelers.

Property owners along Washington Street within the project area include:

- City of Naperville
- BNSF Railroad
- Naperville School District 203
- DuPage Children's Museum
- Park District
- Various private property owners

Transportation and Mobility

Transportation and mobility are specifically excluded from the streetscape study, although similar to the land use component, transportation and mobility does have an impact on the streetscape environment. The following items related to transportation and mobility were factored into the recommendations for streetscape improvements:

- High traffic volumes (33,000 ADT)
- Traffic patterns
- Signalized, non-signalized intersections
- Bus routes, bus stops
- No on-street parking
- Multiple curb-cuts
- Cross-access and side street access
- No bicycle routes identified along Washington Street

Curbs, Driveways, and Roadway Pavement

Based on a visual analysis, there does not appear to be significant issues related to the condition of curbs and pavement along the corridor. The City has recently improved many curb ramps to meet current ADA requirements south of the BNSF underpass. Proposed streetscape recommendations will also meet current ADA requirements for curb ramps.

Driveways cross the sidewalks in numerous locations for access to adjacent properties. In the majority of locations where the driveway crosses the sidewalk a clear pedestrian crossing area is maintained. Streetscape recommendations should maintain a clear crossing zone at driveway crossings.

It is not anticipated that the streetscape improvements will have a significant effect on the roadway pavement.

Sidewalks and Crosswalks

There are two primary sidewalk configurations along the corridor. In some areas there is a traditional five foot wide sidewalk separated from the roadway by a grass parkway. This creates a typical low impact streetscape environment that may or may not be appropriate along the corridor. In other areas the sidewalk is directly adjacent to the back-of-curb due to the limited right-of-way. These sidewalks are also five feet wide, but are too narrow to be comfortable given the proximity to high volume vehicular traffic.

Painted crosswalks along the corridor meet City of Naperville standards. The location of crosswalks is being addressed as part of the transportation component of the 5th Avenue Study.

Appendix A: Existing Conditions Inventory and Analysis

Topography and Vegetation

The majority of the corridor is relatively flat with the exception of the railroad underpass and some relatively low retaining walls on adjacent private properties. It does not appear that there are significant issues related to topography.

The only place there are trees within the public right-of-way is between 6th Street and Ogden Avenue on the east side of the street. This location and the area along Washington Junior High School are the only areas where there is a grass parkway area between the curb and sidewalk. There are no shrubs, perennials, or other ornamental landscape materials within the right-of-way except at the underpass area. The existing streetscape environment is influenced by trees and plants on adjacent private properties.

Utilities

The majority of the public utilities including water, storm sewer, sanitary sewer, gas, and electric are located either under the roadway surface or serviced from the back alleyways. Private utilities such as telephone, cable, and other communications are serviced primarily from back alleyways. Electrical and private utilities are typically above ground along the alleys. It does not appear that utility placement will have a significant impact on the streetscape improvements. However, utility service connections to individual properties will need to be considered when streetscape improvements are implemented.

Lighting and Signals

Street lighting along this section of Washington Street consists of typical utilitarian cobra head style light fixtures. The street lights are located primarily on the east side of the street between Ogden Avenue and the railway underpass and are spaced approximately 200 to 250 feet apart. From the railway underpass south to Benton Avenue, street lights are located on both sides of the street and are also spaced approximately 200 to 250 feet apart. The street lighting provides an acceptable level of light for the roadways, but very little light for the sidewalks.

Traffic signals can affect the streetscape from an aesthetic standpoint, and impact accessibility due to placement within sidewalk areas of the limited right-of-way. The existing traffic signals are typical utilitarian fixtures that serve a needed purpose but do not add to the aesthetic quality of the corridor.

Signage

Regulatory signs along the corridor include speed limit signs, no parking signs, and turn indication signs. There is an opportunity for aesthetic improvements to regulatory signs, as long as the improvements meet City and State requirements. Improvements could include more decorative poles and framing, the addition of logos or colors, and other aesthetic upgrades.

Beginning near the railroad underpass and heading south, the City installs banners on the existing light poles. This is one of the most striking visual elements within the project area.

The only identity or way finding sign within the corridor is the “Downtown Welcomes You” sign near the railway underpass. Although this sign is oriented towards vehicles, it is small and easy to miss.

Appendix A: Existing Conditions Inventory and Analysis

Bus Stops

There are four bus stops along Washington Street between Ogden Avenue and Benton Avenue; two northbound and two southbound. They are located near Ogden Avenue, and near 5th Avenue. The bus stops consist of a standard Pace sign with no other pedestrian accommodations.

Railway Underpass

Washington Street goes under the Burlington Northern Santa Fe railway between North Avenue and 5th Avenue. Five foot wide sidewalks follow the street on both sides through the underpass with railings and retaining walls due to the topography. Unit paver blocks have been added next to the sidewalks to create more width to accommodate maintenance equipment. There are stairways for pedestrians to access the Naperville Metra Station platform at the underpass which are heavily used by commuters. Bicycle parking is located on top of the overpass, near the train platform. No bicycle parking is allowed along the lower area of the underpass.

There are shade trees, ornamental trees, evergreen trees, and other landscape around the overpass. Some of the plant materials are overgrown or in poor condition and are in need of improvement. For the past few years the City has installed planter boxes with annual flowers along both sides of the overpass.

References

City of Naperville GIS information

Aerial photography

Zoning map

Design Guidelines for Transitional Use Districts

Comprehensive Transportation Plan

Washington Street Corridor Study

City of Naperville Downtown Plan

Ogden Avenue Corridor Enhancement Initiative

Spring Avenue Plan

Washington Street As-Built Construction Drawings (1969-1992)

CIP Schedule

Appendix B: Summary of Washington Streetscape Visioning Workshop

At the December 9, 2008 public meeting, approximately 25 people participated in a visioning exercise to identify the appropriate types of improvements for the Washington Streetscape. A focus question was presented: "What is your vision for the Washington Street Corridor in 2030?". Meeting participants were asked to brainstorm ideas individually, and then share their ideas in a small group. Following the small group discussion, a representative from each of the four groups presented the most common ideas. These ideas were then organized by category (e.g., sidewalks/crosswalks, signage, landscape, etc.), and meeting participants were asked to identify the categories which were most important to them. Meeting participants were given three stickers, and were invited to place the stickers next to the comments which were most important to them (all three stickers could be placed on the same comment). The categories and specific ideas for the Washington Streetscape in 2030 were then discussed in a large group setting. A summary of the responses is provided below.

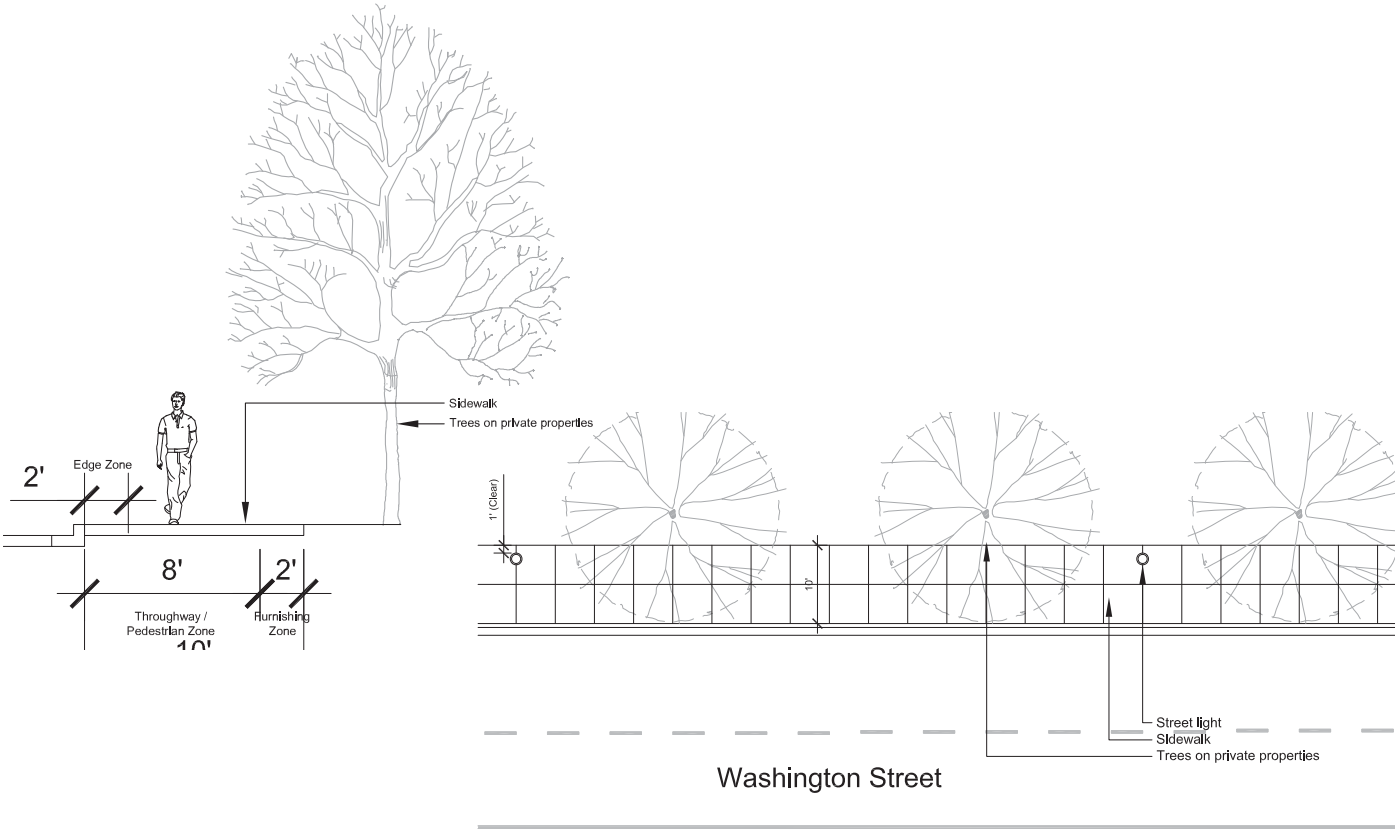
Category	Total Number of Stickers (Identified as an Important Comment)	Participant Comments for this Category
Sidewalks/Crosswalks	21	▪ City relocate sidewalks away from street – create green space ▪ Relocate sidewalk; where needed, work with private property owners to obtain easements to keep sidewalk away from the street ▪ Minimize the number of driveways (i.e., curb cuts) ▪ Pavers/stamped concrete to define crosswalks ▪ Barriers to improve pedestrian safety ▪ Improve sidewalk drainage ▪ Sidewalks not cement color ▪ Buffer for pedestrians ▪ Wider sidewalks where possible ▪ Better defined crosswalks for pedestrians ▪ City should help create alleyways ▪ Highlighted crosswalks (brick, stone, etc)
Consistent Image	14	▪ Integrated look across properties ▪ Emulate Riverwalk ▪ Directional landmark ▪ Lighting like Riverwalk ▪ Old fashioned street lights ▪ Build on historic feel ▪ Banners ▪ Tie theme in with Downtown Naperville
Underpass Improvements	11	▪ Add color and texture to underpass ▪ Underpass like Riverwalk ▪ Public art on overpass ▪ Art/mural at viaduct
Landscape	7	▪ Uniform landscape at Metra station ▪ Trees to provide beauty ▪ Plantings to soften appearance wherever possible ▪ Trees ▪ Low natural barriers where parking lots are nearby

Appendix B: Summary of Washington Streetscape Visioning Workshop

Category	Total Number of Stickers (Identified as an Important Comment)	Participant Comments for this Category
Signage	4	▪ Signage for train station and downtown parking ▪ Directory signage (Riverwalk, Children's Museum) ▪ Informative signage for points of interest ▪ Monument signage at Ogden and Washington
Bicycle Improvements	3	▪ Add bicycle friendly space ▪ Alleys as alternate pedestrian / bicycle route
Bus Stops, Furnishings	2	▪ Bus enclosures/benches ▪ Pedestrian seating at bus stops and parks
Business Involvement	2	▪ Business involvement in beautification
Business Requirements	2	▪ Uniform look / codes for businesses

Appendix C: Conceptual Design Alternatives

Design Alternative: Option 1A



Description

Locate the Throughway/Pedestrian zone adjacent to the curb with the trees located on private properties. Furnishings zone (e.g. street lights) are located adjacent to private properties. The Furnishings zone is reduced to 2 feet and the Throughway/Pedestrian zone increased to 10 feet due to the high volume of vehicular traffic.

Pros

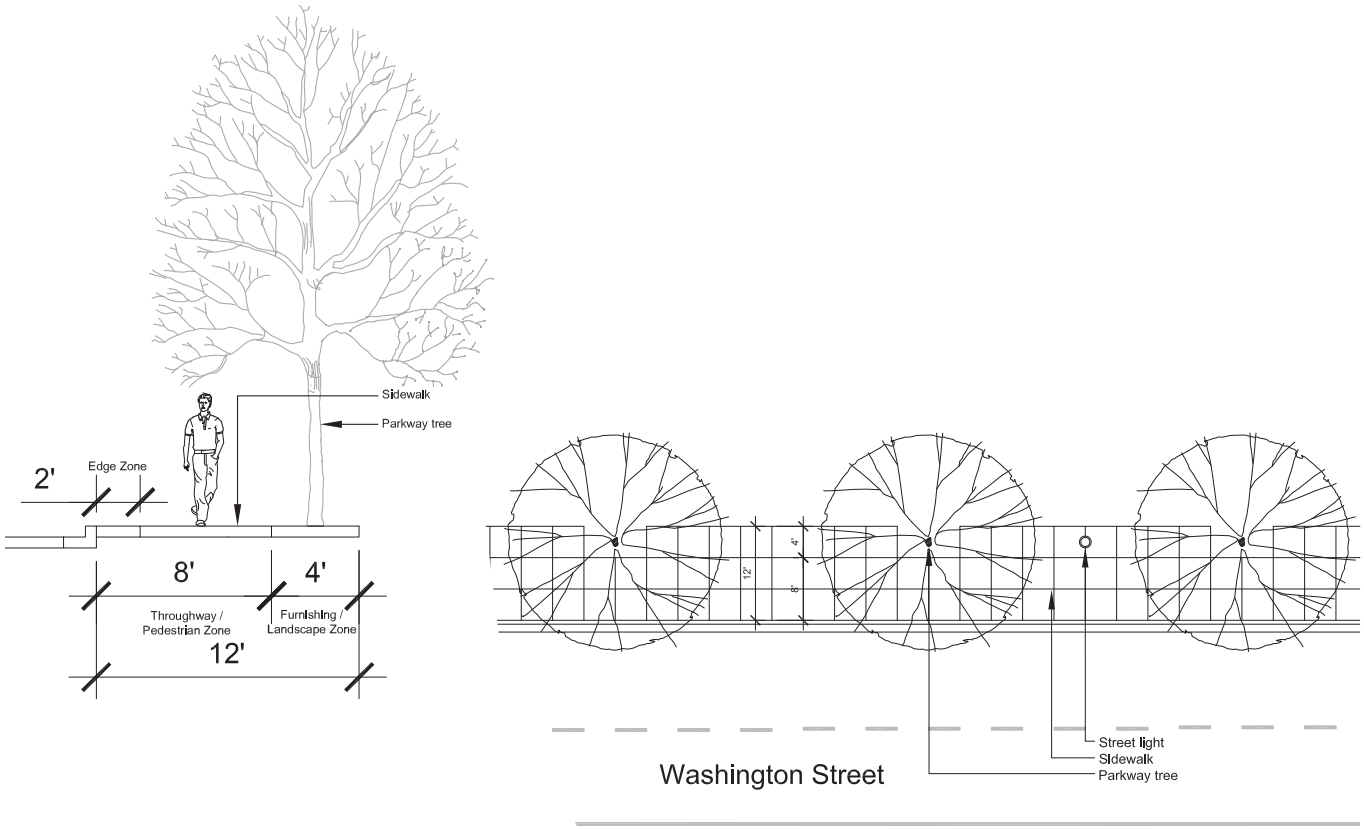
- Most compatible with existing conditions and straight forward to construct short-term
- Wider sidewalk width
- Can be implemented on a property-by-property basis without significant complications
- Furnishings/landscape separated from vehicular lanes improves longevity, reduces maintenance
- Reduced easement requirement.
- Lowest construction cost ($478/linear foot)

Cons

- Pedestrians not separated from vehicular traffic
- Private property owners responsible for trees.
- May not produce significant enough improvements to achieve the desired Streetscape Vision
- 2’ furnishing zone could be too narrow to accommodate meaningful furnishings
- Landscaping may not be installed consistently by private property owners along the corridor.
- Trees need to be pruned where close to buildings.

Appendix C: Conceptual Design Alternatives

Design Alternative: Option 1B



Description

Locate the Throughway/Pedestrian zone adjacent to the curb with the Furnishings/Landscape zone located adjacent to private properties. Use trees within the furnishings/landscape zone to create the separation from private properties.

Pros

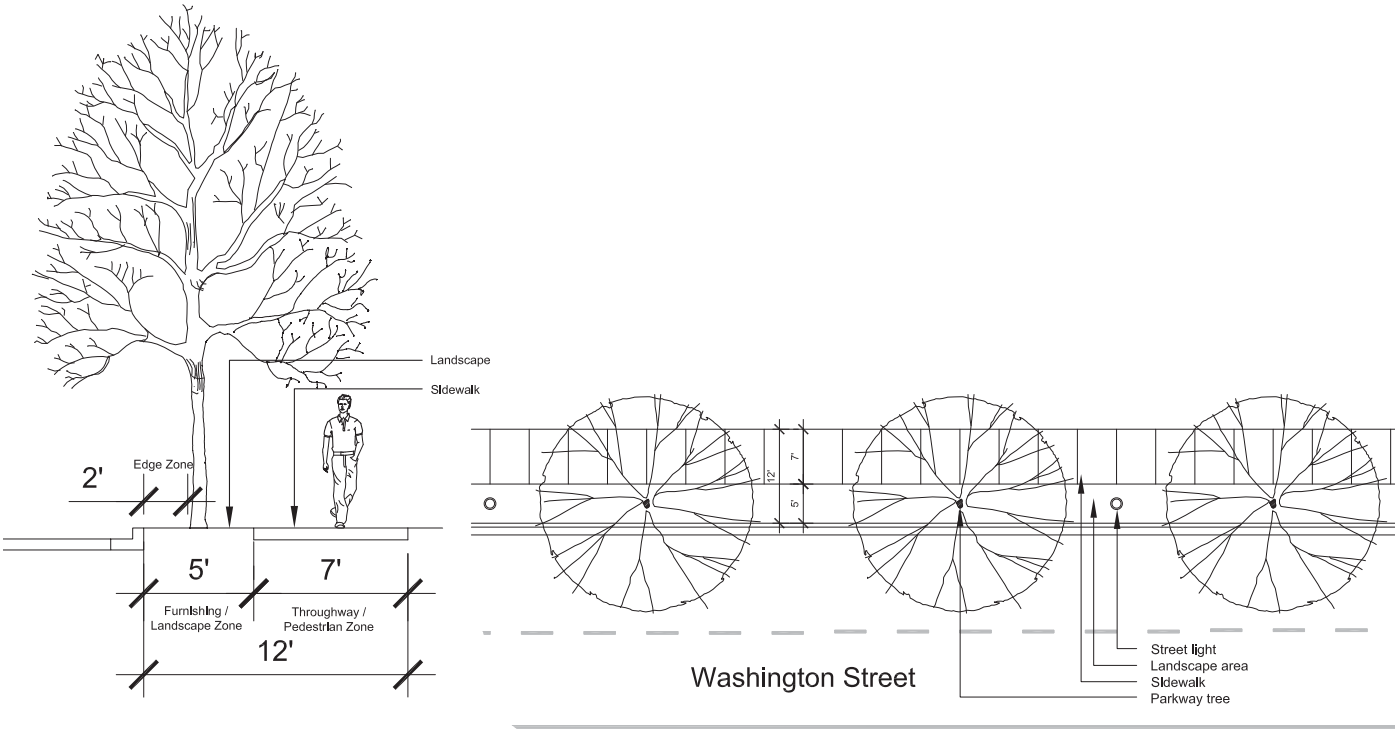
- Wide sidewalk width and furnishing zone for pedestrian amenities
- Furnishings/landscaping separated from vehicular lanes improves longevity, reduces maintenance
- All landscape/furnishings located within easement

Cons

- Pedestrians not separated from vehicular traffic
- Trees need to be pruned where close to buildings on private properties
- Increased easement requriement compared to Option 1A.
- Higher construction cost as compared to Option 1A ($535/linear foot)

Appendix C: Conceptual Design Alternatives

Design Alternative: Option 2A



Description

Use the furnishings/landscape zone to create a separation between the roadway and the throughway/pedestrian zone. Use turf grass within the furnishings/landscape zone to create the separation.

Pros

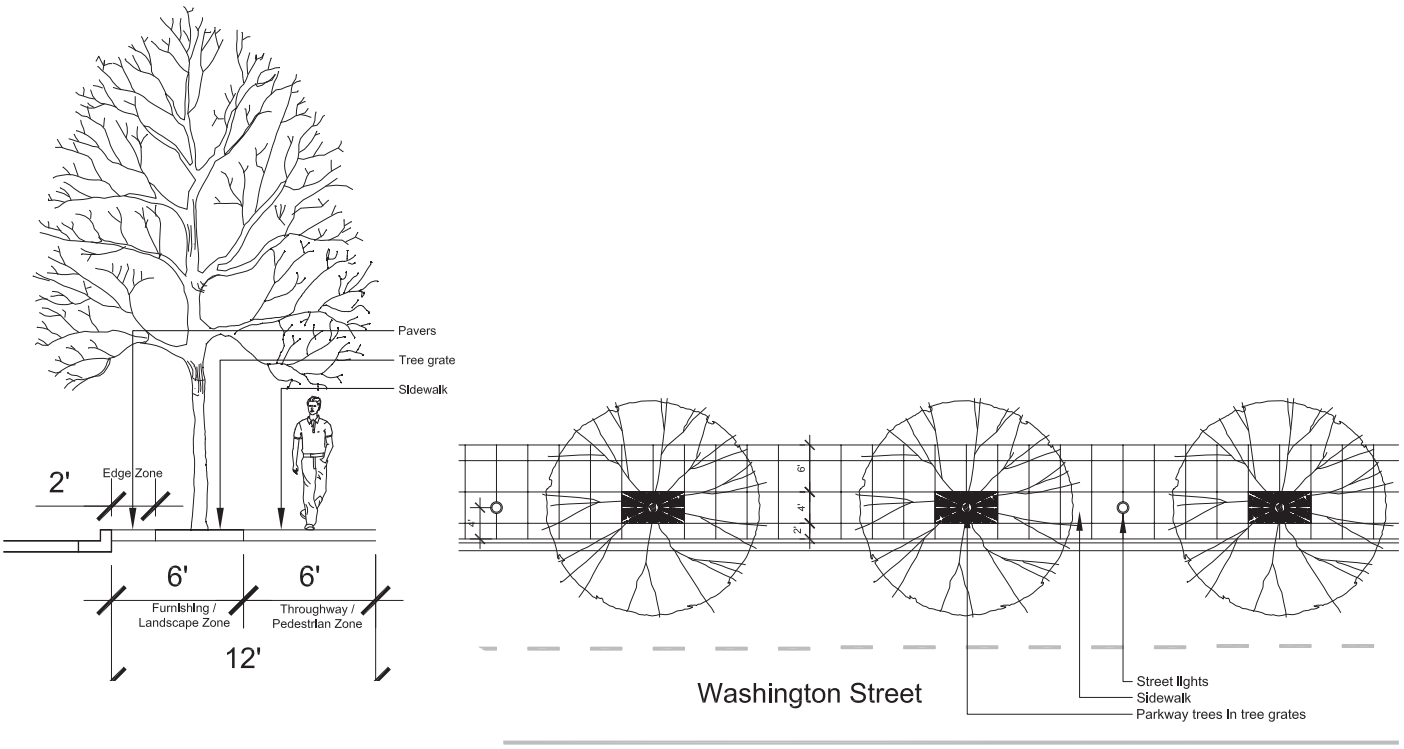
- Consistent with the Streetscape Vision
- Creates separation between pedestrians and vehicular traffic
- Landscape adjacent to roadway creates a softer streetscape environment
- Lowest construction cost ($478/linear foot)

Cons

- Inconsistent with the downtown streetscape
- Challenging to construct given certain existing conditions
- Inflexible layout and difficult to implement on a property-by-property basis without creating an inconsistent streetscape
- May result in varied sidewalk widths and a mixture of carriage walk and parkway if there is not sufficient room for a 5’ sidewalk
- Longevity issues for furnishings/landscaping due to close proximity to major arterial
- Tree survival issues in a 5’ wide parkway

Appendix C: Conceptual Design Alternatives

Design Alternative: Option 2B



Description

Use the furnishings/landscape zone to create a seperation between the roadway and the throughway/pedestrian zone. Use trees in tree grates within the furnishings/landscape zone to create the seperation, similar to the downtown streetscape style.

Pros

- Consistent with the Streetscape Vision
- Improves the image and identity of the corridor to be more consistent with downtown
- Creates separation between pedestrians and vehicular traffic
- Generous sidewalk widths and space for pedestrian amenities
- Flexible to implement
- Location of trees further from the back of the curb compared to Option 2A (2')

Cons

- Difficult to implement on a property-by-property basis
- Tree grates and sidewalk adjacent to roadway creates a "hard" appearance with less opportunity for landscape compared to Option 2A.
- Trees close to major arterial
- Highest construction cost ($611/linear foot)

Appendix D: Preliminary Budget Costs

Washington Street: Budget Cost Summary

Description	Area (linear feet)	Cost (per linear foot)	Total Cost
Streetscape Prototype (North of Tracks)	2,800	$660	$1,848,000
Streetscape Prototype (South of Tracks)	2,200	$720	$1,584,000
BNSF Railway Underpass Enhancements			$250,000
Identity and Wayfinding Signage			$75,000
		Total:	**$3,757,000**

Notes:

Summary costs have been rounded to reflect the level of accuracy that can be expected at the conceptual design phase and may not match the detailed prototype cost spreadsheets exactly. Costs are provided for general budgeting purposes only. Actual costs will vary based on the specific results of preliminary and final design and engineering studies.

Costs are based on a 100 foot prototype streetscape section and are provided for general budgeting purposes only. Actual quantities and costs will vary based on specific site conditions and final material selections.

Prototypes are based on GIS information provided by the City of Naperville. Actual quantities and costs will vary based on actual survey information.

Costs do not account for work that may be necessary related to adjacent private properties to accommodate the proposed streetscape improvements (i.e., removals, adjustments, grading, retaining walls,etc.)

Costs shown assume delivery through a general contractor public bidding process, including material purchase, installation, 15% design/bid contingency, and 5% construction contingency.

Costs shown do not include fees for design and engineering. A 10% allowance for preliminary/final design and engineering fees, and 5% allowance for construction engineering fees can be considered an average for City initiated projects.

Costs shown do not include an escalation factor, although an escalation factor should be included when budgeting based on the anticipated timing of construction. Escalation will vary based on specific economic conditions at the time of budgeting. An allowance of 5% per year can be considered an average escalation factor.

Appendix D: Preliminary Budget Costs

Washington Street: Streetscape North of BNSF Underpass
(Per 100 feet, based on the proposed streetscape prototype)

Description	Qty.	Unit	Unit Cost	Extended Cost	
General Conditions					
traffic control and protection	1	LS	$1,000	$1,000	
construction layout and staking	1	LS	$500	$500	
temporary environmental controls	1	LS	$100	$100	
mobilization and contractor general conditions	1	LS	$1,000	$1,000	
				Subtotal:	$2,600
Site Preparation and Removals					
tree removal	1	LS	$250	$250	
remove shrubs/planting beds	1	LS	$100	$100	
remove and salvage light pole assembly	0.5	EA	$500	$250	
remove light pole foundation and conduit	1	LS	$250	$250	
remove concrete paving-sidewalk	500	SF	$2	$1,000	
misc. removals and preparation allowance	1	LS	$1,000	$1,000	
				Subtotal:	$2,850
Site Grading and Earthwork					
grading allowance	1	LS	$1,500	$1,500	
				Subtotal:	$1,500
Storm Drainage and Utilities					
utility adjustments allowance	1	LS	$1,500	$1,500	
				Subtotal:	$1,500
Curbs and Paving					
concrete curb and gutter (remove and replace)	15	LF	$30	$450	
unit paving-pedestrian (incl. sub-base)	200	SF	$12	$2,400	
concrete sidewalk paving	1104	SF	$7	$7,728	
detectable warnings	10	SF	$35	$350	
retaining wall (allowance to meet grade at adjacent properties)	5	LF	$150	$750	
				Subtotal:	$11,678
Site Furnishings					
tree grate	3	EA	$2,500	$7,500	
				Subtotal:	$7,500
Signage					
regulatory signage w/ decorative pole - primary	1	EA	$1,500	$1,500	
regulatory signage w/ decorative pole - seconda	1	EA	$750	$750	
street sign	1	EA	$500	$500	
				Subtotal:	$2,750
Landscape					
parkway tree	3	EA	$600	$1,800	
topsoil	5	CY	$50	$250	
				Subtotal:	$2,050
Lighting and Electrical					
light pole assembly-roadway (allowance for typical assembly as shown in streetscape prototype)	0.5	EA	$7,500	$3,750	
Roadway assembly electrical allowance (incl. allowance for foundation, conduit, wiring, controller, service upgrades)	0.5	EA	$5,000	$2,500	
light pole assembly-pedestrian (allowance for shepherd's crook or acorn assembly as shown in streetscape prototype)	2	EA	$4,500	$9,000	
Pedestrian assembly electrical allowance (incl. allowance for foundation, conduit, wiring, controller, service upgrades)	2	EA	$3,500	$7,000	
				Subtotal:	$22,250
				Improvements Subtotal:	**$54,678**
Contingencies					
design and bid contingency (15%)	1	LS	$8,202	$8,202	
construction contingency (5%)	1	LS	$2,734	$2,734	
				Subtotal:	$10,936
				Project Total:	**$65,614**
				Square Feet:	1,200
				Cost per Square Foot:	**$55**
				Prototype Linear Feet:	100
				Cost per Linear Foot:	**$656**

Appendix D: Preliminary Budget Costs

Washington Street: Streetscape South of BNSF Underpass
(Per 100 feet, based on the proposed streetscape prototype)

Description	Qty.	Unit	Unit Cost	Extended Cost	
General Conditions					
traffic control and protection	1	LS	$1,000	$1,000	
construction layout and staking	1	LS	$500	$500	
temporary environmental controls	1	LS	$100	$100	
mobilization and contractor general conditions	1	LS	$1,000	$1,000	
				Subtotal:	$2,600
Site Preparation and Removals					
tree removal	1	LS	$250	$250	
remove shrubs/planting beds	1	LS	$100	$100	
remove and salvage light pole assembly	0.5	EA	$500	$250	
remove light pole foundation and conduit	1	LS	$250	$250	
remove concrete paving-sidewalk	500	SF	$2	$1,000	
misc. removals and preparation allowance	1	LS	$1,000	$1,000	
				Subtotal:	$2,850
Site Grading and Earthwork					
grading allowance	1	LS	$1,500	$1,500	
				Subtotal:	$1,500
Storm Drainage and Utilities					
utility adjustments allowance	1	LS	$1,500	$1,500	
				Subtotal:	$1,500
Curbs and Paving					
concrete curb and gutter (remove and replace)	15	LF	$30	$450	
unit paving-pedestrian (incl. sub-base)	500	SF	$12	$6,000	
concrete sidewalk paving	1104	SF	$7	$7,728	
detectable warnings	10	SF	$35	$350	
retaining wall (allowance to meet grade at adjacent properties)	5	LF	$150	$750	
				Subtotal:	$15,278
Site Furnishings					
bench	0.5	EA	$1,500	$750	
trash receptacle	0.5	EA	$1,200	$600	
bike rack	0.5	EA	$500	$250	
tree grate	3	EA	$2,500	$7,500	
				Subtotal:	$9,100
Signage					
regulatory signage w/ decorative pole - primary	1	EA	$1,500	$1,500	
regulatory signage w/ decorative pole - seconda	1	EA	$750	$750	
street sign	1	EA	$500	$500	
				Subtotal:	$2,750
Landscape					
parkway tree	3	EA	$600	$1,800	
topsoil	5	CY	$50	$250	
				Subtotal:	$2,050
Lighting and Electrical					
light pole assembly-roadway (allowance for typical assembly as shown in streetscape prototype)	0.5	EA	$7,500	$3,750	
Roadway assembly electrical allowance (incl. allowance for foundation, conduit, wiring, controller, service upgrades)	0.5	EA	$5,000	$2,500	
light pole assembly-pedestrian (allowance for shepherd's crook or acorn assembly as shown in streetscape prototype)	2	EA	$4,500	$9,000	
Pedestrian assembly electrical allowance (incl. allowance for foundation, conduit, wiring, controller, service upgrades)	2	EA	$3,500	$7,000	
				Subtotal:	$22,250
				Improvements Subtotal:	**$59,878**
Contingencies					
design and bid contingency (15%)	1	LS	$8,982	$8,982	
construction contingency (5%)	1	LS	$2,994	$2,994	
				Subtotal:	$11,976
				Project Total:	**$71,854**
				Square Feet:	1,200
				Cost per Square Foot:	**$60**
				Prototype Linear Feet:	100
				Cost per Linear Foot:	**$719**

Appendix D: Preliminary Budget Costs

Washington Street: Streetscape Specialty Items

Description	Qty.	Unit	Unit Cost	Extended Cost	
BNSF Railway Underpass Enhancements					
removals allowance	1	LS	$10,000	$10,000	
concrete sidewalk paving	6000	SF	$7	$42,000	
concrete stairs (including cheekwalls, handrails)	1	LS	$30,000	$30,000	
stone retaining walls	200	TON	$275	$55,000	
shade trees	10	EA	$600	$6,000	
ornamental trees	12	EA	$400	$4,800	
shrubs	500	EA	$40	$20,000	
perennials	2500	EA	$15	$37,500	
decorative railing	500	LF	$150	$75,000	
accent lighting	1	LS	$10,000	$10,000	
				Subtotal:	$205,300
Contingencies					
design and bid contingency (15%)	1	LS	$30,795	$30,795	
construction contingency (5%)	1	LS	$10,265	$10,265	
				Subtotal:	$41,060
Note:				**Item Total:**	**$246,360**
Does not include costs for public art as represented in the conceptual design recommendations.					
Bus Stop					
removals and preparation allowance	1	LS	$3,500	$3,500	
landscape allowance	1	EA	$5,000	$5,000	
bench	1	EA	$1,500	$1,500	
trash receptacle	1	EA	$1,200	$1,200	
				Subtotal:	$11,200
Contingencies					
design and bid contingency (15%)	1	LS	$1,680	$1,680	
construction contingency (5%)	1	LS	$560	$560	
				Subtotal:	$2,240
				Item Total:	**$13,440**
Identity and Wayfinding Signage					
identity signage	22	EA	$1,500	$33,000	
wayfinding signage	10	EA	$2,500	$25,000	
wayfinding signage	4	EA	$1,000	$4,000	
				Subtotal:	$62,000
Contingencies					
design and bid contingency (15%)	1	LS	$9,300	$9,300	
construction contingency (5%)	1	LS	$3,100	$3,100	
				Subtotal:	$12,400
Note:				**Item Total:**	**$74,400**
Assumes majority of signs are mounted on light poles.					

Appendix D: Preliminary Budget Costs

Washington Street: Lighting Replacement Only
(Represents replacement of lighting as a separate project; note that lighting is also included in prototype costs)

Description	Qty.	Unit	Unit Cost	Extended Cost	
General Conditions					
traffic control and protection	1	LS	$25,000	$25,000	
construction layout and staking	1	LS	$10,000	$10,000	
mobilization and contractor general conditions	1	LS	$20,000	$20,000	
				Subtotal:	$55,000
Site Preparation and Removals					
remove and salvage light pole assembly	27	EA	$500	$13,500	
remove light pole foundation and conduit	27	EA	$250	$6,750	
remove concrete paving-sidewalk	5000	SF	$2	$10,000	
misc. removals and preparation allowance	1	LS	$10,000	$10,000	
				Subtotal:	$40,250
Curbs and Paving					
concrete sidewalk paving	5000	SF	$7	$35,000	
				Subtotal:	$35,000
Lighting and Electrical					
light pole assembly-roadway (allowance for typical assembly as shown in streetscape prototype)	26	EA	$7,500	$195,000	
Roadway assembly electrical allowance (incl. allowance for foundation, conduit, wiring, controller, service upgrades)	26	EA	$5,000	$130,000	
light pole assembly-pedestrian (allowance for shepherd's crook or acorn assembly as shown in streetscape prototype)	80	EA	$4,500	$360,000	
Pedestrian assembly electrical allowance (incl. allowance for foundation, conduit, wiring, controller, service upgrades)	80	EA	$3,500	$280,000	
				Subtotal:	$965,000
				Improvements Subtotal:	**$1,095,250**
Contingencies					
design and bid contingency (15%)	1	LS	$164,288	$164,288	
construction contingency (5%)	1	LS	$54,763	$54,763	
				Subtotal:	$219,050
Design and Engineering					
preliminary/final design and engineering (10%)	1	LS	$109,525	$109,525	
construction engineering (5%)	1	LS	$54,763	$54,763	
				Subtotal:	$164,288
				Project Total:	**$1,478,588**

Notes:

Quantities and costs are based on the recommended prototype streetscape with roadway lights placed approximately 250 feet apart and pedestrian lights placed approximately 80 feet apart on both sides of the roadway. Actual quantities will vary based on specific lighting layout and site conditions.

Costs shown are estimated allowances provided for preliminary budgeting purposes only. Actual quantities and costs will vary based on specific light pole/fixture selections, and site specific electrical design and engineering.

Costs shown assume delivery through a general contractor public bidding process, including material purchase, installation, 15% design/bid contingency, and 5% construction contingency.

Costs shown include a 10% allowance for preliminary/final design and engineering fees, and 5% allowance for construction engineering fees. Actual design and engineering fees will be based on the specific project conditions.

Costs shown do not include an escalation factor, although an escalation factor should be included when budgeting based on the anticipated timing of construction. Escalation will vary based on specific economic conditions at the time of budgeting. An allowance of 5% per year can be considered an average escalation factor.