CITY OF WORCESTER
STREETSCAPE POLICY

NOVEMBER 2012

WORCESTER
MASSACHUSETTS

STREETSCAPE POLICY

CITY OF WORCESTER, MASSACHUSETTS

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I. INTRODUCTION

Preamble

Rich in design, the distinctive quality of Worcester's architecture is evident throughout the diverse neighborhoods of the city—from the grand homes of Salisbury Street to the traditional three-deckers that line the streets of Vernon Hill. The size, type, and placement of buildings, as well as the street patterns, are all elements that define the public realm in a community, and provide a framework for how development should look, feel, and function.

The fabric of downtown is woven from its significance as the center of municipal government and the site of important business, cultural, and civic activities. Diverse uses including offices, medical services, educational institutions, residences, and retail shops are found in the city center. While the historic character of the area as a bustling hub of activity remains, the current urban design vision emphasizes the downtown as a livable, walkable, progressive, and sustainable urban community.

Similarly, the Canal District still offers a mix of uses and styles that hearken back to the geographic, entrepreneurial, and cultural forces that shaped the original development of the area. And though the historic context of the neighborhood remains strong, the loss of industry left many vacant mill buildings that are slowly being transformed through creative adaptive reuse. Within the downtown and the Canal District, new infill development and rehabilitation of existing buildings, in concert with renewed investment in streetscape, provides the opportunity to enhance the public realm and restore the urban fabric that defines these two neighborhoods and tells a story of Worcester's celebrated history.

Purpose

The City of Worcester is committed to providing a high quality, safe, pedestrian-friendly environment with multimodal accommodation and a positive experience of the street. The Downtown and Canal District, collectively the Streetscape Policy District (SPD), will be developed into a vibrant urban environment through the consistent use of durable but aesthetically pleasing materials, diligent maintenance, and targeted resources to leverage private development. The Streetscape Policy will achieve a sense of continuity on key linear corridors and provide a rational strategy for transitioning from one neighborhood to another.

Approach

Overall, it is the City's intent to use the Downtown and Canal District as a pilot for a larger citywide streetscape initiative. The Streetscape Policy addresses fundamental quality of life issues such as safety on the street, connectivity to work and activity districts, access to transportation options, and the creation of a clean and comfortable public environment. The Streetscape Policy regulates the type and use of materials as well as the dimensions and the construction of the public ways within the SPD.

This Policy applies to any construction in the public right of way, whether done by a private entity, the City, or, as appropriate, the Commonwealth's Department of Transportation. The only exceptions are for improvements to the public realm -- outside of the defined right-of-way -- that are subject to a separate, negotiated development agreement with the City of Worcester. All other projects within the District are subject to this Policy, and applied in conjunction with the City of Worcester Urban Design Guidelines.

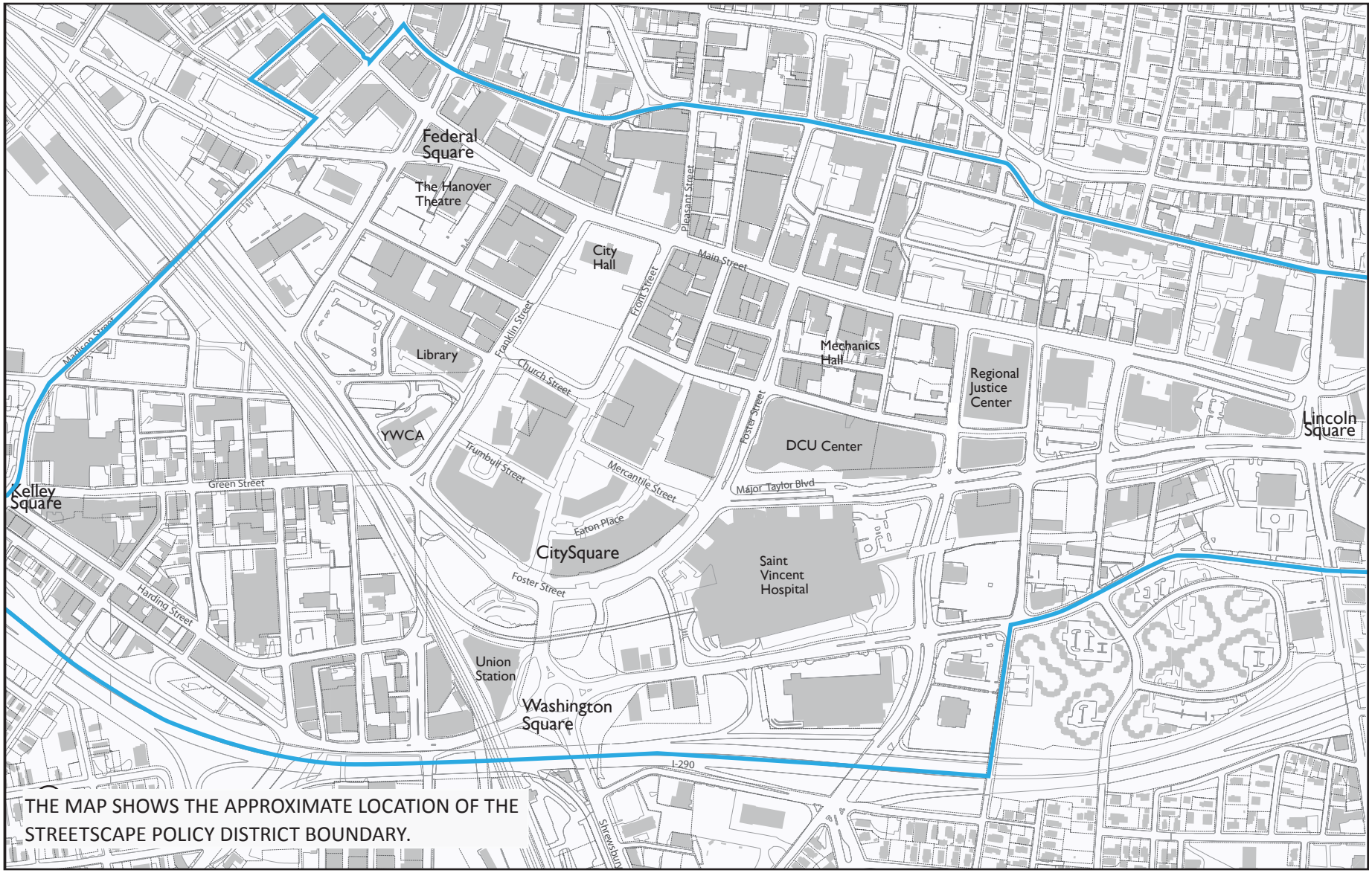
The Streetscape Policy is administered by the City of Worcester Department of Public Works and Parks (DPWP), which is responsible for implementing improvements within the City's rights-of-way. Specifically, DPWP and any design consultants under contract with the City will use this Policy to design specific projects. In some cases, the private sector may be involved with the implementation of streetscape improvements in front of a building, in which case the Policy will be applied to ensure continuity and quality.

Limitations

This document has its limitations. While the Streetscape Policy brings a sense of coherence and aesthetic standards to the District, it does not represent a full "Complete Streets" policy. A Complete Streets policy adopts an approach where road networks are safer, more livable, and welcoming to all. It is designed for all modes of transportation and provides safe access for all users -- pedestrians, bicyclists, motorists, and public transportation.

The City acknowledges this is a living document and is therefore meant to evolve over time. Additionally, dimensional criteria are descriptive in nature rather than prescriptive. Lastly, while unique categories are used rather than industry classifications (i.e. street hierarchy distinctions), all streetscape improvements within the SPD shall be consistent with American Association of State Highway and Transportation Officials (AASHTO) and Manual on Uniform Traffic Control Devices (MUTCD) specifications and guidance, as applicable.

II. STREETSCAPE POLICY DISTRICT



THE MAP SHOWS THE APPROXIMATE LOCATION OF THE STREETSCAPE POLICY DISTRICT BOUNDARY.

III. DISTRICTS

Main Street (Historic District)

Green Street (Historic District)

The character of the SPD varies, with the western side of downtown and Canal District exhibiting a more historic character and the eastern side of downtown displaying a more innovative character. Although their context and public realm may differ, a streetscape palette has been selected that acknowledges the distinctive street patterns and unique architecture of each district but also celebrates like qualities within both districts.

Historic

In the downtown, Main Street defines the Historic Spine with a distinctive nineteenth century architecture. The Historic District extends to the east and west of Main Street, with historic buildings lining narrow streets.

In the Canal District, Green Street is defined as a Historic Spine because of its central location and ample opportunities for both adaptive reuse of historic buildings as well as new infill development. The Historic District extends out to the west from Green Street to the railroad tracks and to the east to Interstate 290.

Innovation

With its redesign and infill development over time, Foster Street and to a lesser extent, Major Taylor Boulevard, define the spine for innovative new investment in the downtown. The Innovation District suggests a different character for streetscape details, not driven by historic preservation and infill, but rather by a more contemporary environment. Nevertheless, the redesign of Foster Street creates the same pedestrian-scaled environment that is found on Main Street. Along Foster Street are several redevelopment projects that will establish their own unique identities as places within downtown, including CitySquare, the WRTA Bus Terminal and Transfer Hub at Union Station, and the city-owned DCU Arena and Convention Center. Although these are unique and individual projects, they serve to complement each other and incorporate features that recognize their shared importance and connections from one district to another.

Foster Street (Innovation District)

IV. STREET HIERARCHY

Connector Street

Internal Street

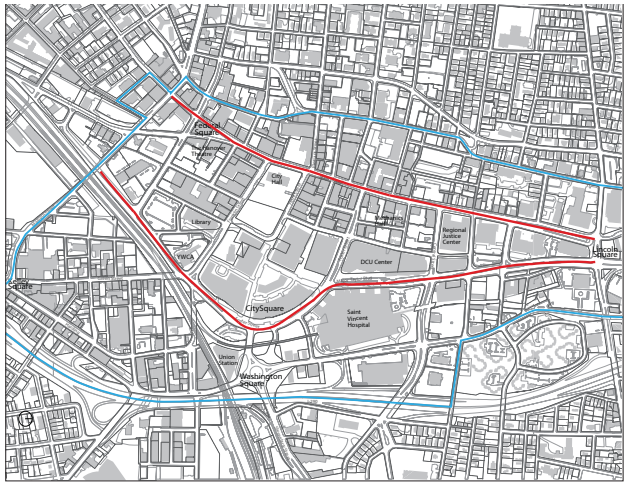
While recognizing that each street is ultimately unique, the following discussion on the classification of streets is useful to differentiate the scale and character of the public environment. The street hierarchy is a functional understanding of the SPD that primarily informs wayfinding and orientation.

The *Primary Streets* each have a continuous, distinct character throughout their entire length.

The *Gateway Streets* read as important cross streets with consistent dimensions and wayfinding signage.

The *Connector Streets* and the *Internal Streets* tend to be narrower and carry more local traffic, making them interesting environments that further contribute to the pedestrian character of the SPD.

While dimensional criteria are descriptive, the City acknowledges that they are not prescriptive and special conditions may exist. The ultimate result is the creation of a safe and efficient street network.



PRIMARY STREETS

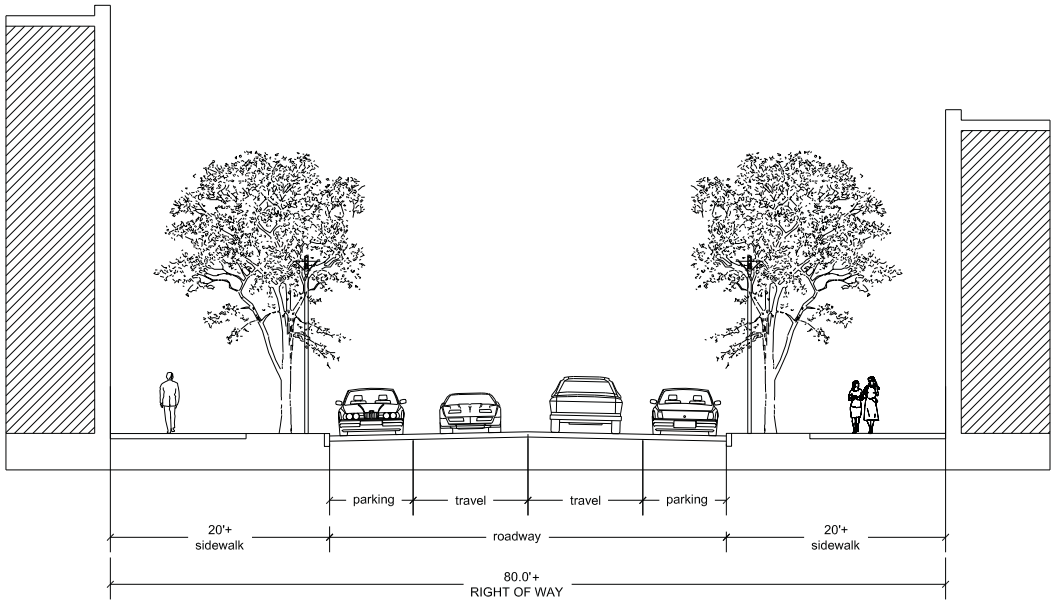
Purpose and Function

Primary Streets provide through-trips in the SPD as well as connections to activity centers and neighborhoods. Uses can change dynamically as one moves along these streets. The characters of the primary streets remain different; however, they serve as the principal commercial, business, and civic streets of the SPD. Attention to building frontage and façade treatment to improve District character and unity are important.

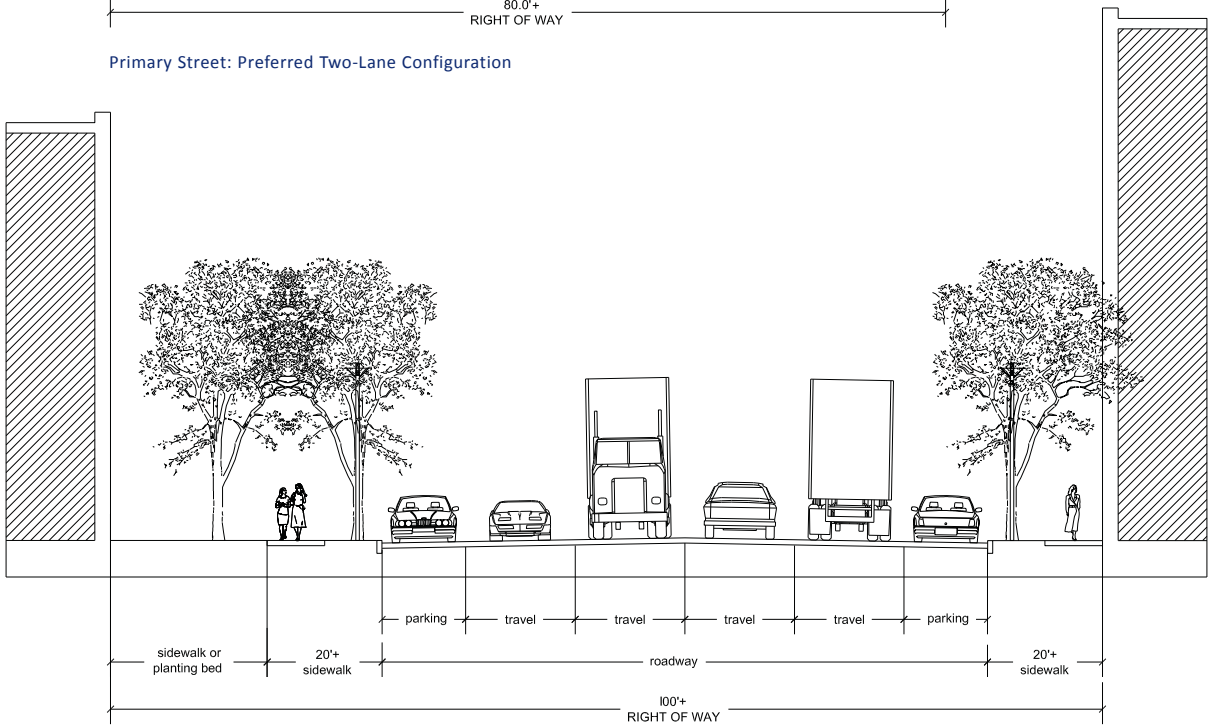
Dimensional Criteria

Very wide ROW (80'+), two or more travel lanes, on-street parking on both sides, very wide sidewalks (20'+).

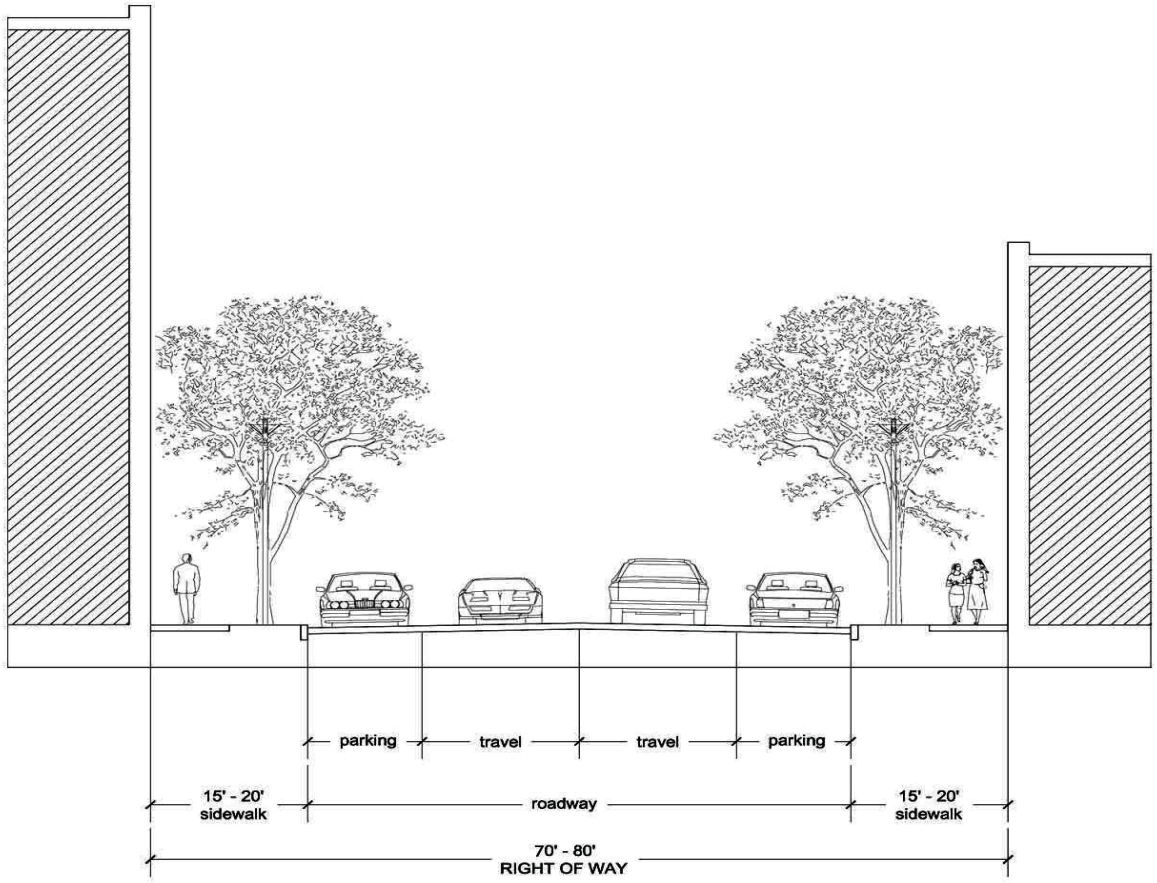
In the pictured configurations, a dedicated bike lane (4') on either side could replace one lane of parking where appropriate. If the ROW is inadequate, the bicycle lane should be shared.



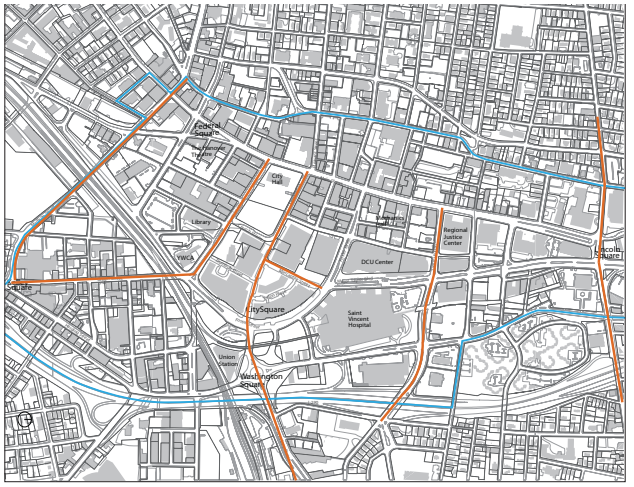
Primary Street: Preferred Two-Lane Configuration



Primary Street: Multiple Lane Configuration



Gateway Streets: Preferred Configuration



GATEWAY STREETS

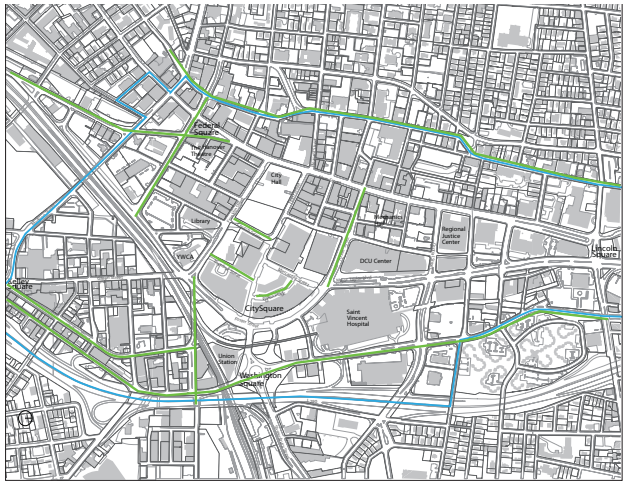
Purpose and Function

Gateway Streets are the primary entry routes to the SPD from Interstate 290 and points south and east, and provide connections to other major routes, such as Shrewsbury Street. They serve as both vehicular and pedestrian routes -- connecting Union Station, Main Street, and the Canal District -- and provide ample opportunities for retail, restaurants, and entertainment.

Dimensional Criteria

Wide ROW (60'-80'), two travel lanes, on-street parking both sides, wide sidewalks (15'-20').

In the pictured configurations, a dedicated bike lane (4') on either side could replace one lane of parking where appropriate. If the ROW is inadequate, the bicycle lane should be shared.



CONNECTOR STREETS

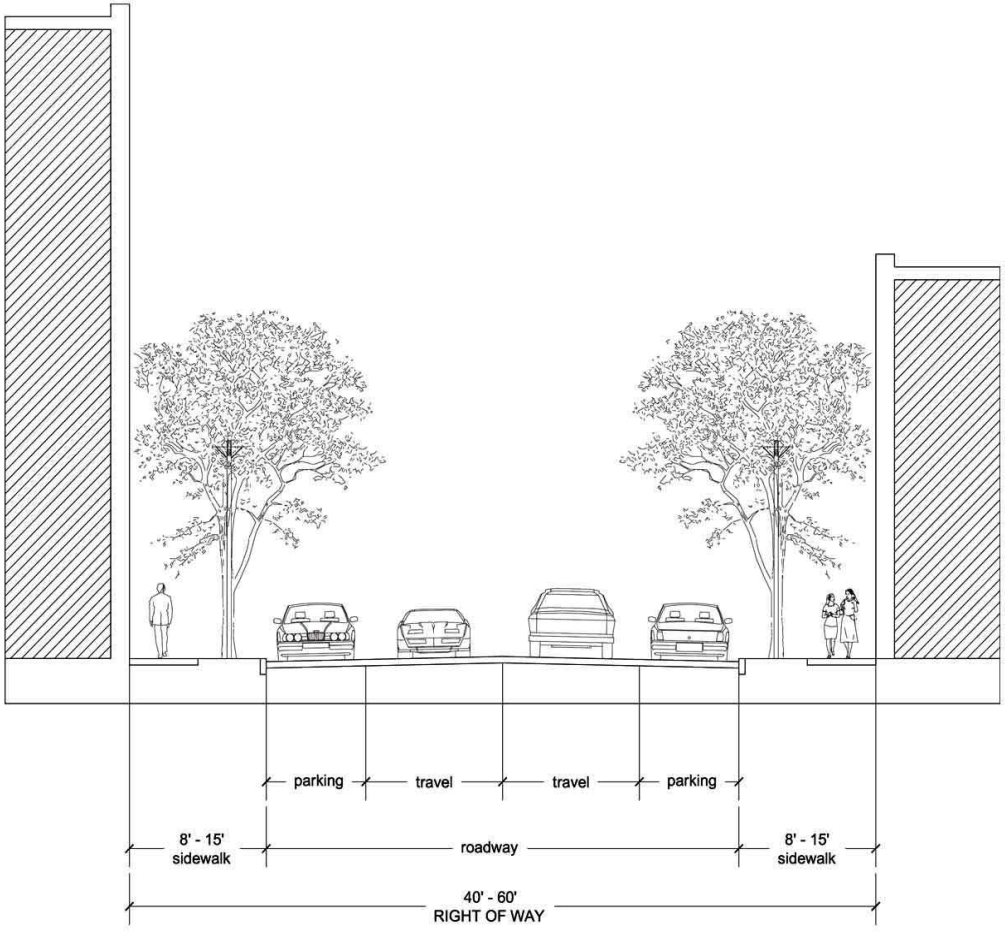
Purpose and Function

Connector Streets tie Primary Streets and Gateway Streets together. They provide secondary links in the overall street grid. They serve both vehicles and pedestrians, providing links to major shopping destinations and connections between primary vehicular routes.

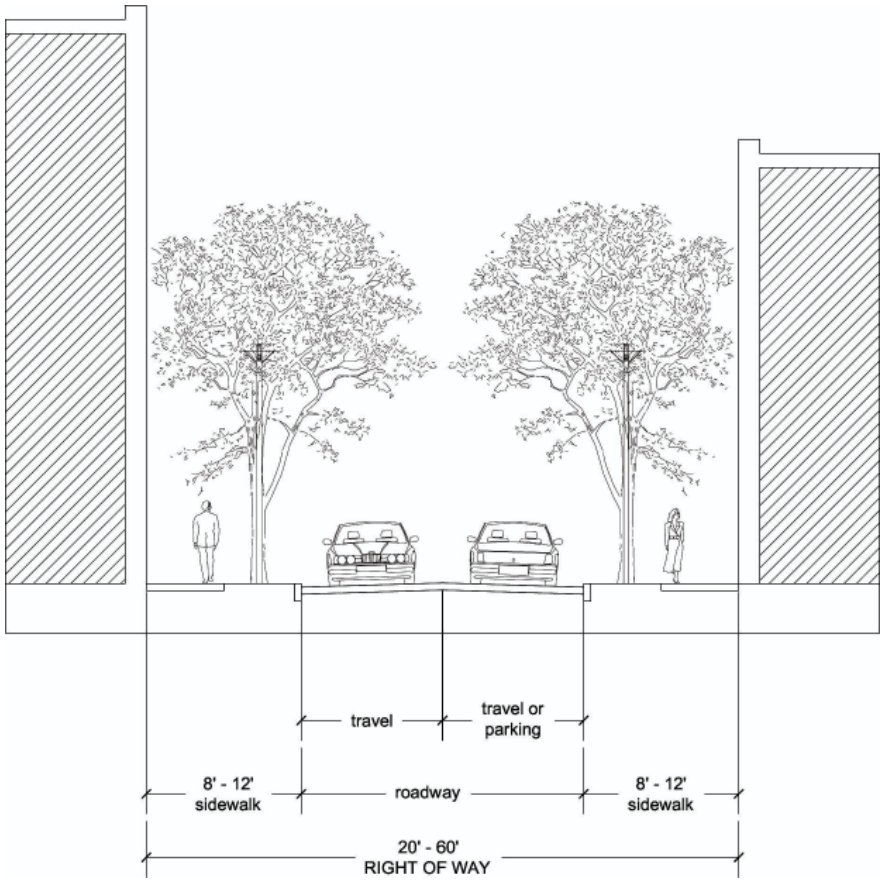
Dimensional Criteria

Medium ROW (40’-60’), two travel lanes, on-street parking on at least one side, medium sidewalk width (8’-15’).

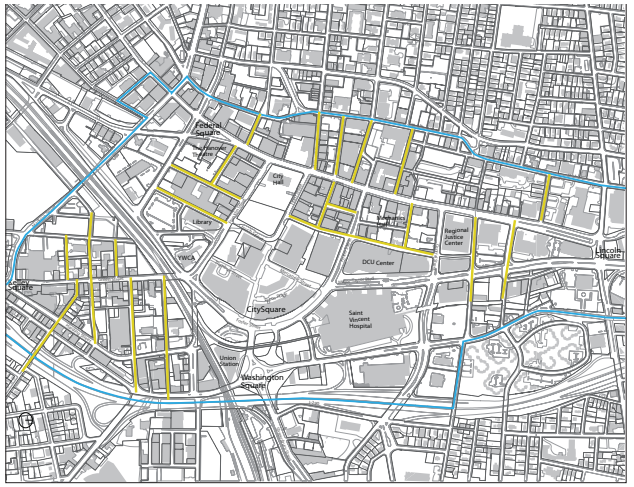
In the pictured configurations, a dedicated bike lane (4’) could replace one lane of parking where appropriate. If the ROW is inadequate, the bicycle lane should be shared.



Connector Streets: Preferred Configuration



Internal Streets: Preferred Configuration



INTERNAL STREETS

Purpose and Function

Internal Streets are small-scale tertiary streets in the overall city grid. They serve as important pedestrian connectors between civic, cultural, entertainment, and residential precincts within the SPD.

Dimensional Criteria

Variable ROW (20'-60'), two travel lanes or one travel lane and one parking lane, narrow sidewalks (less than 8') both sides, street trees where width permits, lighting on at least one side, very limited amenities. If the ROW is inadequate, the bicycle lane should be shared.

V. STREETSCAPE POLICY

Worcester Common

The placement and arrangement of the various elements that make up the streetscape has a significant impact on the appearance, usability, and function of the street and sidewalk. To be effective, the design of the streetscape must consider all the elements collectively, and place each in relation to the others in a logical fashion. This ensures that the elements function properly with respect to each other and that adequate space in the streetscape is preserved for each function.

The following section presents each of the primary components of the Streetscape Policy, and defines the primary criteria for locating each component in the public realm. The criteria indicate where flexibility is available in placement of elements to maintain the overall design goals.

STREETSCAPE

Streets in the Historic District comprise the grand-scale core of the SPD; the broad streets and historic architecture create an opportunity to evoke the storied past of Worcester. Buildings in the Historic District were primarily built prior to 1950, feature interesting architectural details, and generally front the sidewalk. This creates a more pedestrian-oriented scale and promotes the Historic District as a walkable district.

When compared to the Historic District, the Innovation District is characterized by wide streets, modern architecture, and larger-scale buildings. As such, it has a more contemporary character and a modern, clean aesthetic that responds to recent development along the corridor. Street trees and landscaped islands promote an aesthetically pleasing environment, fostering a pedestrian-friendly zone.

Streetscape Elements Palette

The illustrations at right describe the palette of materials, styles, and finishes for the streetscape furnishings in the SPD. Bicycle racks, benches, and trash receptacles will be a consistent archetype throughout the SPD. The intent is to incorporate a consistent look throughout the two districts, with slight variances in sidewalk treatments and light poles.

All materials are subject to review and approval by DPWP.

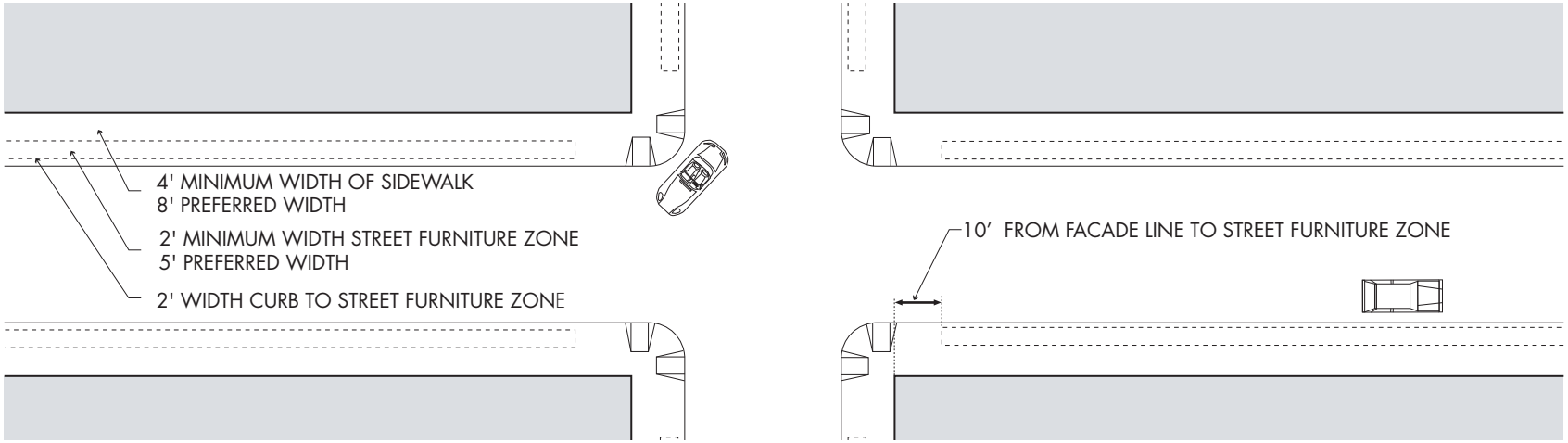
Proposed Street Furnishings: All Districts

Bus Shelter


Trash Receptacle


Bicycle Rack


Bench



Street Furniture Zones (Typical)

FURNITURE

Street furniture provides important amenities and services for pedestrians. Selection of the style of street furniture can also reinforce the character of the district. Materials for all street furniture should be steel with a black powdercoat finish for durability. The streetscape concept includes a furniture zone parallel to the curb (see diagram for size and location); all street furniture should be placed entirely within this zone to keep the pedestrian way clear and passable.

Trash Receptacles

Trash receptacles should be located at intersections; a minimum of two trash receptacles should be located at each intersection. Trash receptacles should include ash urns for cigarette disposal. For simplicity of servicing, all receptacles should have a consistent procedure for emptying and securing the bin.

Benches

Benches should be located away from intersections, to reduce clutter and to provide users with relief from the higher level of activity at the intersection. When the dimension of the sidewalk varies, benches should be placed in the wider sections to reduce conflicts with pedestrians. Benches should be oriented to provide views of interest to users. This might mean facing across the street toward a significant building, park, or other attraction; it might also mean facing toward the adjacent buildings, when façades are enlivened by retail displays or other building uses. In some situations, it may be desirable to orient the bench perpendicular to the curb, giving views along the street corridor; this orientation will limit the length of the bench to make it fit entirely within the furniture zone. Benches that are placed parallel to the curb should be set with the back edge at the limit of the furniture zone, to reduce interference with the pedestrian way. Benches with middle arms should be considered to discourage sleeping across the bench.

Bicycle Racks

Bicycle racks are a necessary component of urban street furniture, and should be included in the streetscape design. Bicycle storage tends to take up a great deal of space, so locations where larger footprints are available are preferred. Within normal sidewalk widths and furniture zones, bicycle racks that can accommodate one or two bikes should be used. The racks should be designed and placed so that the bicycle will parallel the curb and lie completely within the furniture zone. Storage for two to four bikes per block is recommended, unless building uses within a particular block suggest more storage is required.

Bus Shelters

Bus shelter locations will be controlled by two factors: ridership and available space. As bus shelters require a fairly large footprint in the streetscape, their placement is limited to those locations where other dimensional criteria can be maintained with the shelter in place (minimum clearance requirements, light pole and street tree location, etc.). Further, if few riders use a given stop, there is little demand for installing a shelter. Where full shelters cannot be accommodated at stops, benches, seat walls or other seating should be provided.

Bollards

Bollards should be used only as necessary and appropriate for public safety purposes. Curbs, planters, or other methods should be used to control vehicles in critical locations, whenever possible.

LIGHTING

Lighting is the most critical element in the development of the streetscape character. During the daytime, the size and quantity of the light fixtures are a major component in defining the style and aesthetic image of the streetscape. At night, the illumination provided to roadways and sidewalks creates perceptions about safety and usage that define the pedestrian experience.

The style of lighting is slightly different between the two districts, as shown to the right. The criteria on the following pages describe how to utilize the fixtures within the design of any given street.

Fixtures and Poles

Light fixtures and poles should be selected for durability and ease of maintenance, along with conformance to the aesthetic criteria outlined elsewhere in the Policy. The poles should be fitted with electrical connections at the luminaire to allow for the connection of seasonal lighting and other uses. Poles should also be fitted with attachments for banners or other display elements. For fixtures on Primary Streets and Gateway Streets, an electrical outlet should be provided at the top of the pole for seasonal lights and other purposes.

Fixture Height

Fixture styles, fixture height, and luminaire height should be closely matched between the two districts to ensure a consistent feel for the street hierarchy, as well as help to create more consistent illumination.

Fixture Location and Spacing

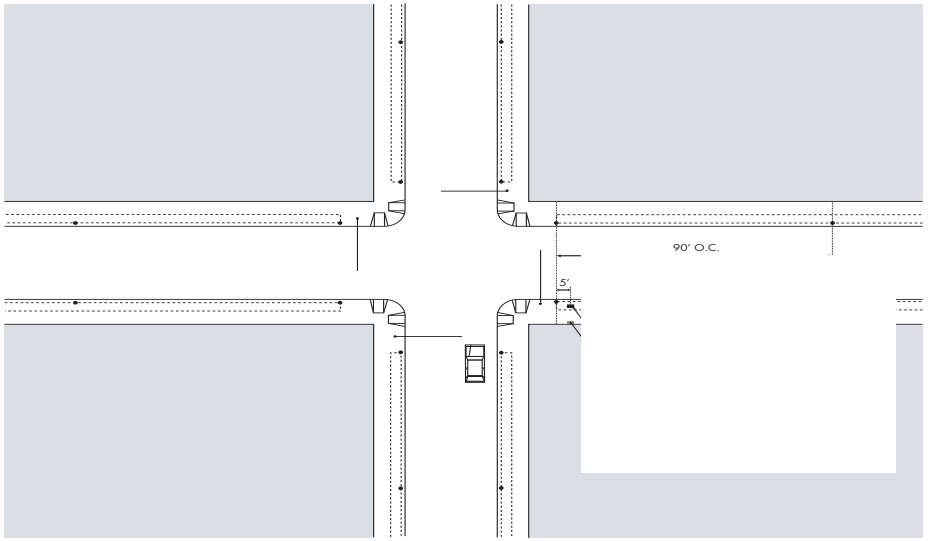
Exact fixture spacing will be driven by illumination requirements of each street, based on recommended light levels, street width, back of sidewalk conditions (presence or absence of buildings), and other conditions. In general, the selected fixtures should be installed approximately 90 feet apart to achieve appropriate illumination. However, exact spacing will be impacted by existing conditions of the street, including the location of utilities, curb cuts, doorways, and other fixed elements.

Innovation District
(Double Lamp Style)

Innovation District
(Single Lamp Style)

Historical District
(Single Lamp Style)

On limited access roadways, street lights should be closely paired across the street, whenever possible. A slight offset -- not to exceed 5 feet -- is allowable from one side of the street to the other to accommodate fixed elements on the street. Where a greater offset would be required, the pole that is constrained should be deleted, and the spacing between pairs along the street should be shortened to meet illumination criteria. The City recognizes, however, that a staggered placement of street lights often allows greater illumination coverage and therefore decreases the number of required poles resulting in energy conservation.



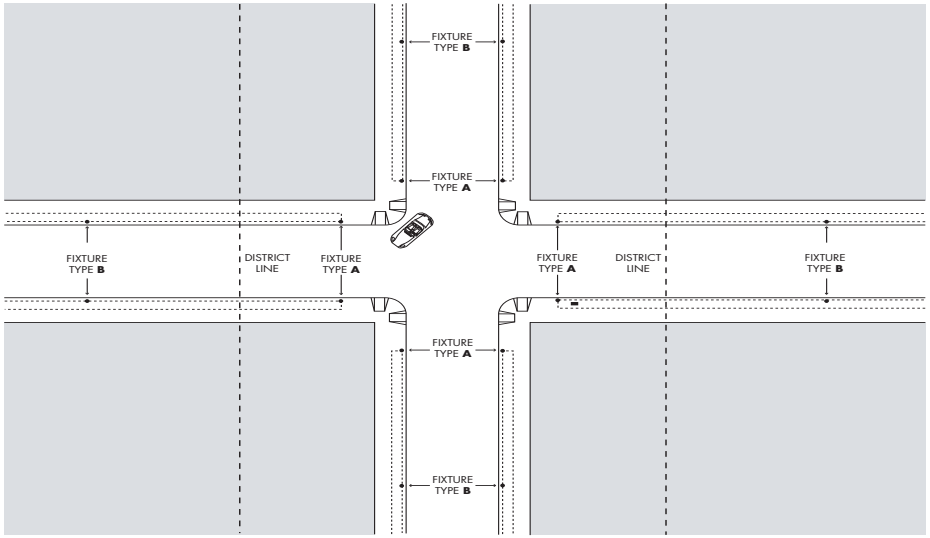
Street Light Locations
(Typical Layout)

Fixture Location at Intersections

Street intersections require a higher level of illumination for vehicular and pedestrian safety. They are also important nodes in the overall urban design of the SPD, and therefore benefit from increased light levels that accent them. To meet these objectives, and to establish a consistent streetscape treatment in both daytime and nighttime conditions, the street lights should be installed as pairs at each street entering the intersection. This will result in a total of eight fixtures around a two-street crossing intersection.

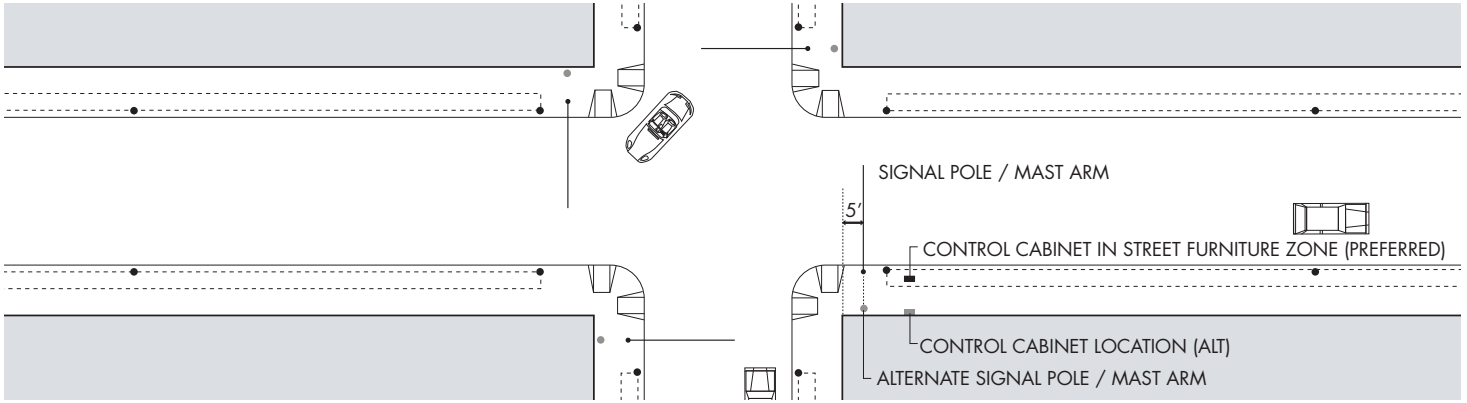
Interface between Districts

Where a block is split between two districts, the transition between light fixture types should occur between the intersection and the first pair of poles along the block. This is to keep the intersection a single, consistent fixture. By transitioning immediately behind the intersection, the block will have a consistent fixture down its entire length.



Street Lights: Interface between Districts
(Typical Layout)

Traffic Equipment Locations
(Typical Layout)



TRAFFIC EQUIPMENT AND SIGNAGE

The location of traffic signalization equipment (traffic light poles and mast arms, signal control cabinets) is highly dependent on the signalization design for a given intersection. Locations can also be constrained by underground utilities and other obstructions; the size of foundations required to support mast arms adds to the complexity of siting these fixtures. Visibility of signage and signal heads is also a factor, as guidelines directing their location set specific criteria on sight distances.

Pole, Mast Arm, and Cabinet Locations

Poles and mast arms should be located at the end of the furniture zone, bringing them to the edge of the intersection where they can be used to co-locate other elements (street signs, walk buttons, etc.). This will also help maintain visibility to the signal heads and signs. The number of poles required to signalize an intersection should be carefully studied to minimize the total count. The poles can become an obstruction in the sidewalk, so reduction in numbers of poles has a significant benefit to keeping a clear pedestrian environment.

Control cabinets should be located immediately behind the poles at the end of the furniture zone. This location will service the signal poles while remaining out of the way of the pedestrian zone.

If it is not possible to locate the signal poles and cabinets at the end of the furniture zone, they should be located at the back of the sidewalk as tight to the building façade as possible, to maintain free pedestrian space.

Sign Post Locations

Sign posts for fixed regulatory signage and parking meter posts should be located at the edge of the furniture zone closest to the curb.

Street Signs

Street identification signs should be located at two opposite corners of every intersection and should give the names of both cross-streets at each location. Where there is a change in street name from one side of the intersection to the other, double signs are required. The sign blades should be attached to the back side of the post, away from the intersection.

Co-location of Signs, Lights, and Traffic Signals

Wherever possible, regulatory signage should be attached to vertical supports that already exist in the streetscape, rather than on new, independent posts. Traffic signal posts, mast arms, and street lights are the preferred locations for many signs, such as street identification and parking controls. Mounting hardware to attach signs to light poles should be color-matched to the poles to make them disappear visually. Where separate posts are required, painting the posts to match the light pole finish will help make them less obtrusive.

SIDEWALKS AND SURFACES

A key character-giving component of any streetscape is the surface used for sidewalks and crosswalks. Street pavements are also important, but have less flexibility due to maintenance and safety concerns.

Paving Materials

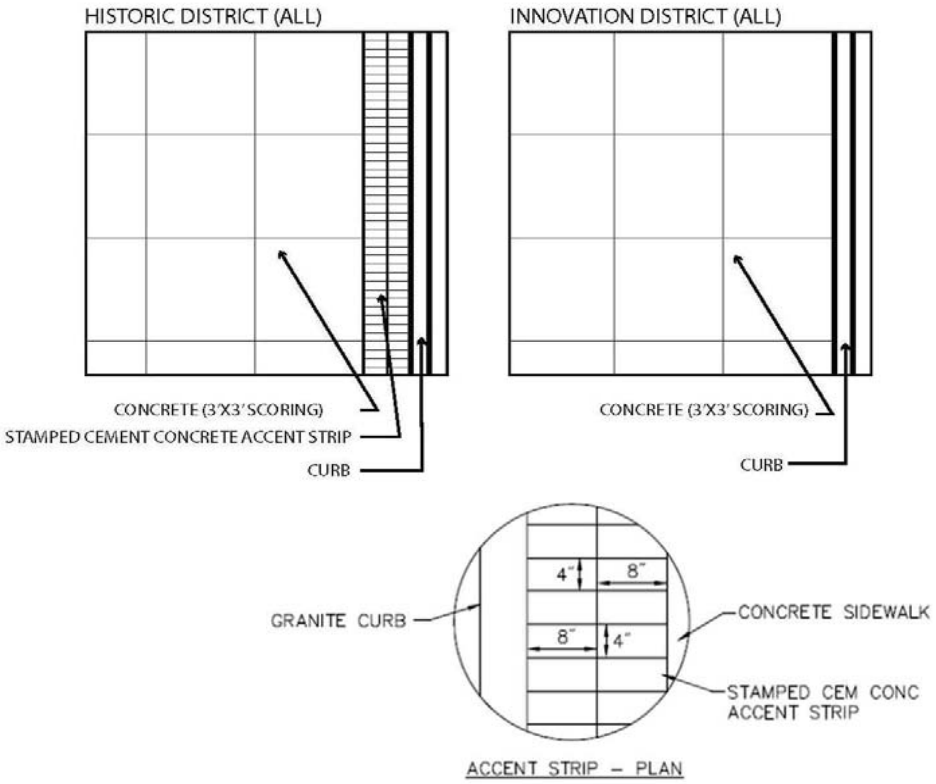
The sidewalk and pavement type shall be uniform throughout the SPD. The sidewalk and pavement type will be a scored (3'x3') concrete field with granite curbing. The City's preference is for the scoring to be tooled joints rather than sawcut joints.

Banding Detail

The Innovation District will not have any edging or banding. However, the Historic District will have a stamped cement concrete accent strip banding measuring sixteen inches (16") in width. This decorative banding shall be located between the concrete scoring field and the granite curbing. The banding shall be cement concrete colored throughout and stamped/imprinted with a brick pattern. The brick pattern will consist of two strips of 4"x8" banding (see image, Accent Strip - Plan, to the right).

Crosswalks

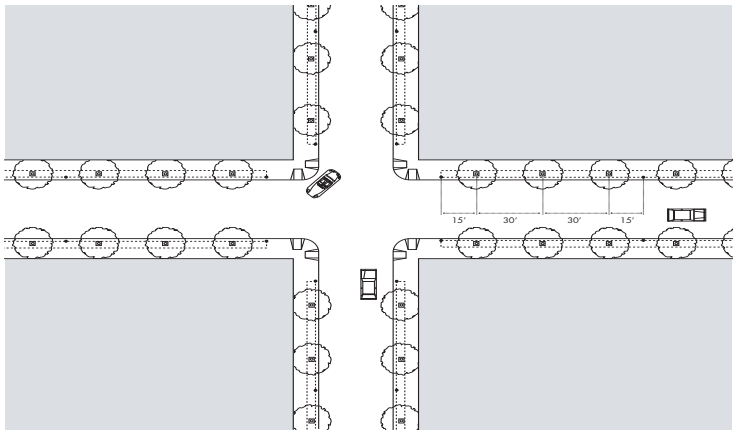
Crosswalks are an important part of the streetscape realm, particularly at intersections with heavy pedestrian volumes or where the continuity of materials across the street is important in reinforcing the character of a district. In general, it is recommended that crosswalk treatments in the SPD be cement concrete colored throughout, stamped/imprinted with a brick pattern, and lined with white thermoplastic paint.



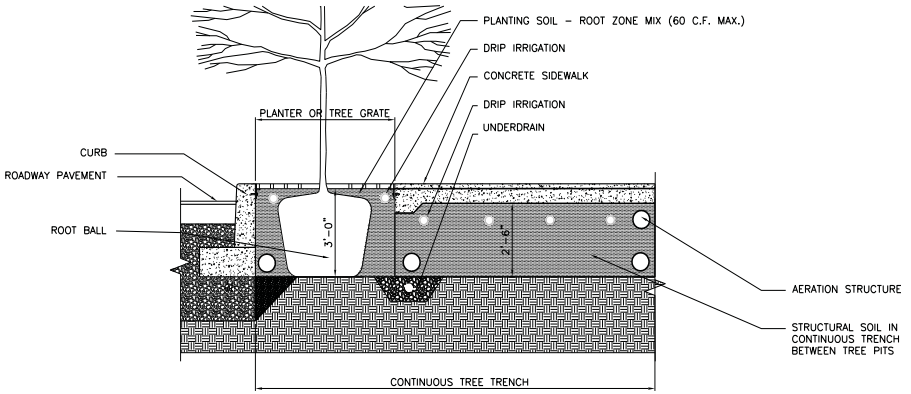
Crosswalks should be a minimum of eight feet (8') wide. However it is preferred that the crosswalks be twelve feet (12') wide where high pedestrian traffic volumes are expected. Crosswalk alignment on "pedestrian desire lines" is critical to keep pedestrians within the marked limits of the crosswalk. (Pedestrian desire lines are preferred walking paths, and are often the shortest or most convenient path between two points.) Careful coordination of curb ramps and street furnishings, particularly traffic equipment and light poles, is necessary to achieve this goal. Expansion of the crosswalk width to incorporate the desire lines is encouraged when other techniques cannot achieve the desired alignment.

Sidewalk and Crosswalk Accessibility

The City of Worcester is committed to meeting all standards of public accessibility for persons with physical disabilities. All Streetscape Policy guidelines incorporate the Americans with Disabilities Act criteria for accessible design. We encourage all public and private planners and architects to carefully consider the experience of physically disabled persons when designing new streetscape projects and to make every effort to maximize the safety and satisfaction of all travelers.



Street Tree Locations
(Typical Layout)



Street Trees:
Typical Planting Installation

STREET TREES AND PLANTINGS

Tree Spacing

Tree spacing will be dependent on several variables: tree species, street dimensions, and street light spacing. Typically, street trees should be installed in such a manner as to allow full crown development based on the species and variety. Street trees should also be installed at a rate of two to three trees between each pair of street lights. These rules will result in typical spacings of approximately 30 feet. In some instances, spacings will need to be adjusted to accommodate fixed elements in the street (utilities, curb cuts, etc.), but in no instance should trees be installed at a spacing of less than 25 feet.

Traffic and Pedestrian Visibility

Street trees should be installed at a size and configuration to prevent obstruction of the pedestrian way or vehicular sight lines. This means that all street trees should be limbed up to a minimum of eight feet above the pavement at the time of installation; material should be sized at installation to allow for this criterion to be met. Street trees should be held well back from intersections and major driveways to prevent obscuring the vehicle sight lines. Placement of the initial tree on a block within the prescribed furniture zone should be adequate to meet this criterion at intersections, but all locations should be carefully reviewed to ensure that views of signal heads and side street traffic are not obstructed.

Plant Pits and Support Systems

Street trees require a significant investment in the planting method to ensure their survival and healthy development. All street trees should be provided with adequate irrigation, drainage, and aeration of the soil. Of these three, drainage is the most critical; most street trees that die or do not develop properly are victims of poor drainage. Street trees also require an adequate amount of growing medium to ensure good development. Studies vary on how much should be provided, but as a rule of thumb 800 to 1,000 cubic feet of growing medium per tree should be considered to provide adequate growing conditions. To accommodate this much medium, it may be necessary to use a structured sidewalk system that provides growing medium beneath the sidewalk and not just within the tree pit. The design of these systems needs to adequately respond to structural loads placed on the sidewalks as well as the needs of the tree.

Tree Pit Openings

In most streets within the SPD, tree pit openings vary in size from 3’x5’ to 6’x6’. Tree pit openings should contain, at a minimum, three inches (3”) depth of mulch, held back four inches (4”) from the trunk. Tree grates are discouraged within the sidewalk realm as they pose a maintenance problem. In addition, low planters around the base of street trees is not recommended.

Tree Lighting

While the lighting of trees can create a dramatic visual effect, it should be done only under the optimal circumstances. There are two methods of lighting trees: uplighting, from ground-mounted fixtures, and string lighting, such as holiday tree lights. If light receptacles are placed in the tree pit opening, they should be located twelve (12”) inches from the edge of the tree pit, placed to face the trees, and the receptacles should be duplex, 20 amp, weatherproof, and lockable.

Tree Maintenance

Street trees must be maintained regularly to keep the trees in good health. This maintenance includes pruning, fertilization, watering, and, ultimately, replacement.

Invasive Species

The City has suffered severe tree loss due to the efforts to eradicate infestation by invasive species, particularly the Asian Longhorned Beetle. At this time, where possible, it is recommended that no more than 10% of all trees be of the same species to avoid large die-off in areas due to monotonous plantings.

Recommended Street Tree Species

The number of trees that will survive the conditions of urban streets in northern climates is very limited. The narrow dimensions of many streets in Worcester place further constraints on street tree size. To protect from invasive species the type of trees planted within each SPD must vary and be Asian Longhorned Beetle (ALB) Resistant.

Red Oak
Quercus rubra

Redmond Linden
Tilia americana ‘Redmond’

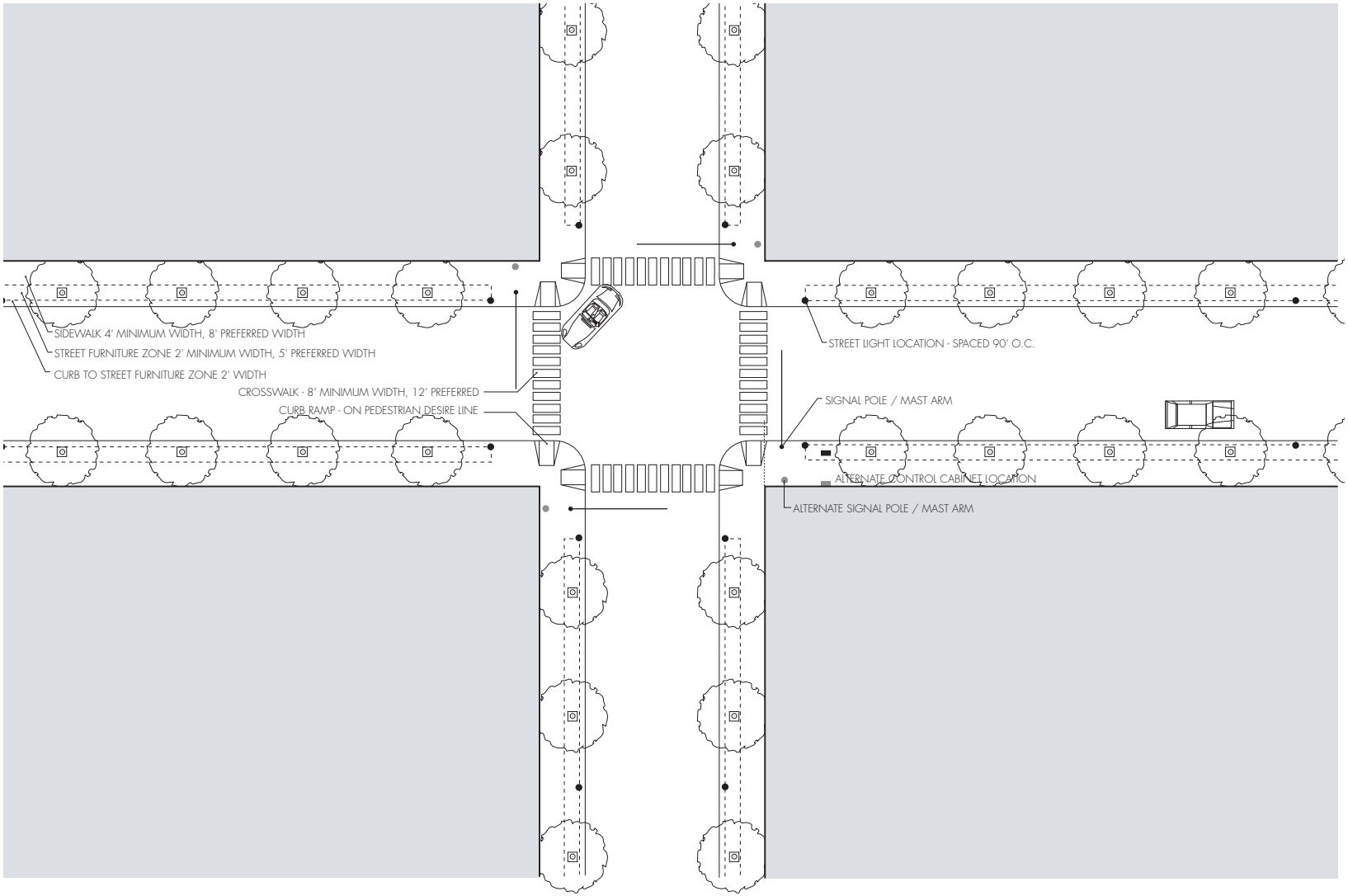
Shademaster Honeylocust
Gleditsia triacanthos ‘Shademaster’

List of Acceptable Species*

To maintain consistency in the visual appearance of the SPD, a listing of acceptable ALB resistant street tree species follows:

Blackgum
Cherry
Crabapple
Dogwood
Gingko
Honeylocust
Linden
Pin Oak
Red Oak
Serviceberry
Sweetgum
Tulip Tree

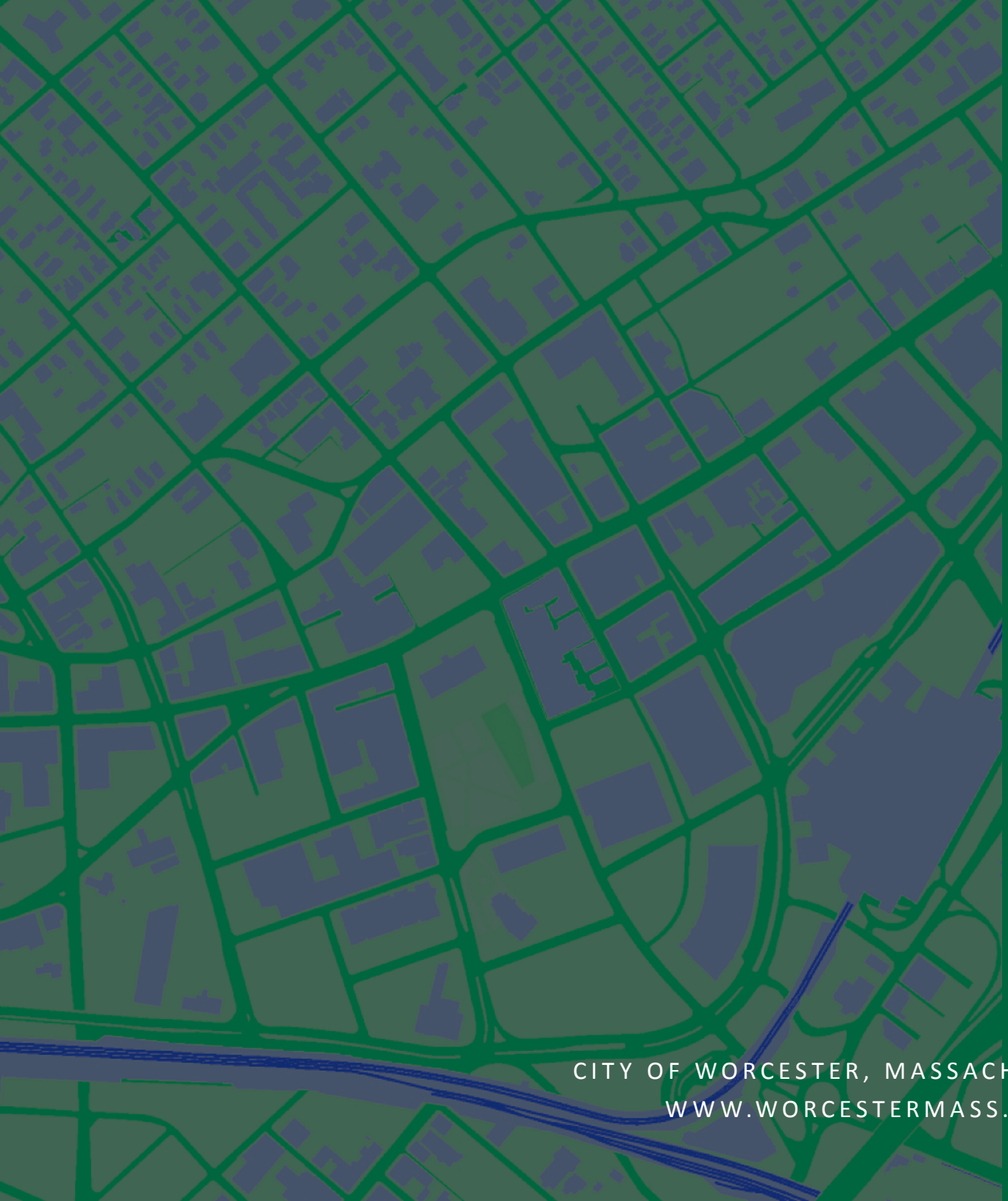
*Acceptable species are subject to change based on ecological conditions. To confirm the above information is current and the most up-to-date, or have questions answered, contact the Department of Public Works and Parks at (508) 929-1300.



Combined Street Furnishing Diagram (Typical Layout)

For More Information:

City of Worcester, Massachusetts
Department of Public Works and Parks
20 East Worcester Street
Worcester, MA 01604
(508) 929-1300
dpw@worcesterma.gov



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