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United States Environmental Protection Agency

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GREENING AMERICA'S CAPITALS

GREENING CAPITOL WAY

OLYMPIA, WASHINGTON

Office of Sustainable Communities
Smart Growth Program

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Greening America's Capitals

Greening America's Capitals is a U.S. Environmental Protection Agency (EPA) program to help state capitals develop an implementable vision of distinctive, environmentally friendly neighborhoods that incorporate innovative green infrastructure strategies. In collaboration with the U.S. Department of Housing and Urban Development (HUD) and the U.S. Department of Transportation (DOT) through the Partnership for Sustainable Communities, EPA provides design assistance to help support sustainable communities that protect the environment, economy, and public health and to inspire state leaders to expand this work elsewhere. Greening America's Capitals will help communities consider ways to incorporate sustainable design strategies into their planning and development to create and enhance interesting, distinctive neighborhoods that have multiple social, economic, and environmental benefits.

Olympia, Washington, was chosen in 2013 as one of four state capital cities to receive this assistance, along with Lansing, Michigan; Madison, Wisconsin; and Montpelier, Vermont.

Find more information about Greening America's Capitals at http://www2.epa.gov/smart-growth/greening-americas-capitals.

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Cover: Washington State Capitol viewed across Capitol Lake. (Image Credit: Urban Rain | Design)

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Executive Summary

The city of Olympia, Washington, wants to create a cohesive vision for Capitol Way, the city's main street in the downtown that links the state capitol with the popular Olympia Farmers Market. The city wishes to make the street more accommodating for pedestrians and bicyclists, add more street trees with better planting techniques to make the street more attractive and safer, and manage stormwater runoff to improve water quality and minimize localized flooding. The city hopes that the investment made in public improvements of the street will spur increased private investment and vitality in the downtown.

The city requested technical assistance from the U.S. Environmental Protection Agency (EPA) through the Greening America's Capitals Program. EPA funded a design team to assess the corridor and collaborate with city staff, local business owners, residents, and other stakeholders to develop and identify design options to revitalize and "green" Capitol Way. The team developed design options for individual focus sites that respond to site conditions and community input. The options illustrate a range of new street configurations, such as curbless "shared streets" near the existing farmers market that allow flexible use of the streets to serve all users while also increasing the amount of open space in the right-of-way for seating and public events. Design options in the main shopping area downtown illustrate how a "road diet" could reduce vehicle travel lanes to create more space to widen sidewalks and add more landscaping to improve aesthetics and absorb stormwater runoff. Options for Capitol Way closer to the state capitol campus, where traffic volume warrants four lanes, illustrate how pedestrians and bicyclists could be safely accommodated and landscaping incorporated, even with limited space by narrowing travel lane widths. Regardless of configuration, all the design options make pedestrians, bicyclists, and transit riders safer and more comfortable while accommodating desired traffic capacity and maintaining parking; increase the amount of public gathering space; and provide more landscaped areas to increase shade, absorb stormwater runoff, and reduce localized flooding.

The report includes near- and mid-term steps the city could take if it chooses to implement any of the design options, as well as potential funding sources for design implementation. These actions could catalyze improvements not just on Capitol Way, but also in all of the downtown.

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1 | Introduction

Capitol Way is Olympia's main street, connecting the state capitol campus to the downtown commercial core, the waterfront, and residential neighborhoods beyond. The city of Olympia requested assistance from the U.S. Environmental Protection Agency's (EPA's) Greening America's Capitals program to help improve Capitol Way by:

- Improving pedestrian, bicycle, transit, and vehicular facilities and circulation.
- Making Capitol Way more of a destination that supports existing businesses, is attractive to new development, and has identifiable gateways.
- Increasing landscaping and pervious areas to capture stormwater runoff, help reduce localized flooding, and improve downtown's overall appearance and identity.

EPA hired a consultant team to develop design options that the city could consider for Capitol Way. The design options presented in this report envision Capitol Way as a green and complete street—a street that is more walkable and bikeable; better connects popular destinations; supports existing businesses; helps attract new development; and manages its own stormwater, all while creating a more positive and attractive identity for downtown Olympia. A "complete street" makes the roadway and sidewalks safer for all users, including pedestrians, bicyclists, drivers, and transit riders. However, a street is not necessarily "complete" without considering its environmental performance. Incorporating green infrastructure into street design—referred to as a "green street"—adds environmental protection components. Green infrastructure includes a range of natural and built approaches to stormwater management, such as rain gardens, stormwater planters, permeable paving, and street trees that mimic natural systems by capturing and cleaning polluted stormwater and letting it absorb into the ground rather than flowing into the storm sewer system and ultimately into Puget Sound. (See Appendix A for examples of green streets and Appendix B for additional information on green infrastructure elements).

Figure 1: Capitol Way descending into the historic downtown area. (Image Credit: Community Design + Architecture)

Figure 2: Public art and an edible garden in the roundabout at the farmers market, the northern terminus of Capitol Way. (Image Credit: Community Design + Architecture)

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2 | Project Area and Existing Conditions

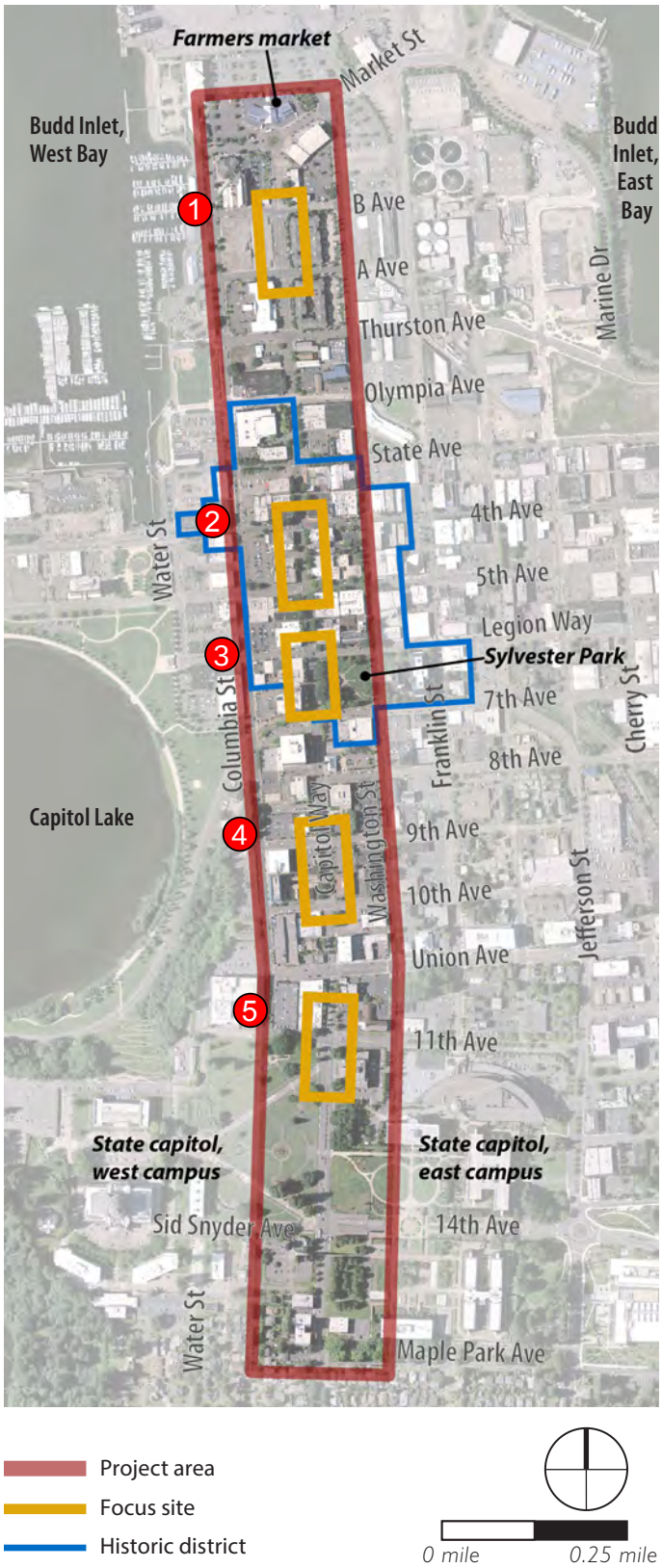

Figure 3: Greening Capitol Way study area and five focus sites. (Aerial Image Credit: City of Olympia)

Project Area

The Greening Capitol Way project focused on Olympia's main street from Market Street in the north, where the farmers market is located, to the capitol campus ending at Maple Park Drive in the south. City staff selected five focus sites (see Figure 3) that represented the various conditions along Capitol Way. The design team also found it constructive and informative to discuss the challenges, issues, and design options for Capitol Way in regards to general areas of the downtown and capitol campus that Capitol Way links together.

The five focus sites and site-specific concerns are:

1 Capitol Way between B and A Avenues

This focus site is representative of the northernmost portion of Capitol Way, between Market Street and Olympia Avenue. The area is transitioning from an older, single-story industrial area into a mixed-use district with mid-rise residential complexes and a hotel. Two of the residential buildings are senior residences. One large parcel is currently vacant and zoned for residences, businesses, and ground-floor retail. The farmers market is a major draw and is adjacent to Percival Landing, which has a park, marina, and boardwalk with restaurants, shops, and other attractions. Vehicle traffic in this area is primarily local, mainly accessing the parking lots at the attractions and other uses during business hours; there is very little through traffic. Capitol Way in this location was recently reduced from four to three travel lanes and added bicycle lanes, but the curb-to-curb street width remained the same (Figure 4). Pedestrians therefore still have to cross a wide street, and the design team was told residents of the senior residences find it particularly challenging, which can discourage them from walking to nearby destinations.

Figure 4: Capitol Way from B Avenue looking south. (Image Credit: Community Design + Architecture)

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Figure 5: Capitol Way looking north from 5th Avenue.
Figure 6: Capitol Way looking south from Legion Way.
(Image Credit: Community Design + Architecture)

2 Capitol Way between 4th and 5th Avenues and 3 Intersection of Capitol Way and Legion Way

These two focus sites are in Olympia's historic downtown and are characteristic of the blocks between Olympia Avenue and Legion Way. The buildings vary in height from one to eight stories. The ground floors have shops and restaurants, so the street has many pedestrians. Many of the buildings have permanent, low-slung awnings that project over the sidewalk and work well in providing shade and protection from the rain, but, along with the relatively narrow sidewalks, preclude street trees in some places. Sidewalks are typically too narrow for large numbers of pedestrians, outdoor seating, or sidewalk retail displays. Sylvester Park, at the intersection of Capitol Way and Legion Way, is a primary public open space in downtown.

Figure 7: Capitol Way looking north from 10th Avenue.
(Image Credit: Community Design + Architecture)

4 Capitol Way between 9th and 10th Avenues

This section of Capitol Way transitions from the historic downtown to a more office-oriented district with only a few shops and cafes leading to the capitol campus. Focus site 4 is typical of the conditions found from Legion Way to 11th Avenue. Many buildings are set back from the street, and some have parking lots in front of them, so the street is not particularly welcoming to pedestrians (Figure 7). The street slopes up from north to south (the capitol campus sits on a bluff). The design team and residents noted that drivers tend to drive faster along this stretch of street than elsewhere, particularly going northbound down the hill. The wide street and speeding vehicles make it unsafe for pedestrians to cross Capitol Way.

Figure 8: Capitol Way looking north from 11th Avenue.
(Image Credit: Community Design + Architecture)

5 Intersection of Capitol Way and 11th Avenue

This focus site is in the southernmost portion of the project area and is where Capitol Way transitions from the capitol campus to a mixed-use office district (Figure 8). The intersection has little to define it, but it has partial views of the waterfront and downtown to the north. A new state government building is being planned for the northwest corner. Most pedestrian movement is across Capitol Way (to get from one side of the campus to the other) and occurs at a mid-block crossing; the street itself does not have much pedestrian activity. The intersection is signalized, but as the street is wide and pedestrians have a long wait to get a 'walk' signal, crossing remains difficult for some.

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Existing Conditions

These conditions were the most pertinent to developing the design options and were the general topics of focus group meetings held at the workshop (discussed in Chapter 3).

Walking, Biking, Transit, and Parking

While the downtown area has an interconnected street grid, Capitol Way is one of only two major streets that connect downtown to the capitol campus and points south. On Capitol Way, the highest average daily traffic counts are found at the southern end, and traffic decreases in volume as one moves northward, with a significant drop north of State Avenue.

Capitol Way in the downtown and along the street north of downtown has on-street parking; small pockets of parking occur south of downtown. The side streets also have on-street parking, and many parking lots are close by.

Sidewalks along Capitol Way are typically 10 to 12 feet wide but get significantly narrower where there are street trees (Figure 9). There is currently limited space for outdoor displays, seating, and places for people to congregate comfortably. At many intersections, crossing Capitol Way can be difficult, especially for older residents, given the street width, traffic speed, and lack of signals at some intersections. Capitol Way has few bicycle facilities; those that exist occur in short, disconnected segments. Frequent driveways and parking lots along Capitol Way interrupt the sidewalk and make walking less pleasant. The intersection of Capitol Way and 14th Avenue has no pedestrian crossings with the exception of one along the western side. There are also no sidewalks along the eastern side of Capitol Way in this area. North of this intersection is a street-level, mid-block pedestrian crossing with flashing signal beacons to allow people to walk between both sides of the capitol campus. South of the intersection is a pedestrian bridge. This connection is inconvenient for pedestrians, as people can access the bridge only from deep within the campuses, and the western end of the bridge lands in the visitor center parking lot at 14th Avenue and Sid Snyder Way. Signage to provide information and direct pedestrians is also lacking.

Downtown Olympia is well served by transit. Several local and express bus routes run along Capitol Way, including a free downtown shuttle called the Dash (Figure 10). A regional transit center is one block off of Capitol Way and is planned for expansion. Ridership is high to moderate, and many riders are "choice riders," meaning they have cars but choose to take transit rather than drive to or through downtown. Bus stops for local routes and the Dash occur approximately every two blocks along Capitol Way between the farmers market and the capitol campus. Buses typically stop in the outer travel lane at the curb, where there is no on-street parking, or stop in the parking lane, at designated stop zones. In a few instances, the bus stop is a transit bulb-out that extends the sidewalk across the parking lane, with the bus stopping in the travel lane. Due to the numerous and competing demands for uses within the Capitol Way roadway in the historic district, the travel lanes are 9 feet wide, not the 11 feet preferred by Intercity Transit for their buses. Therefore, the buses tend to straddle both travel lanes in the same direction, leading to back-ups.

Figure 9: Pedestrians are most frequent in the historic downtown core. (Image Credit: Community Design + Architecture)

Figure 10: Downtown has many bus stops and a few bicycle racks. (Image Credit: Urban Rain | Design)

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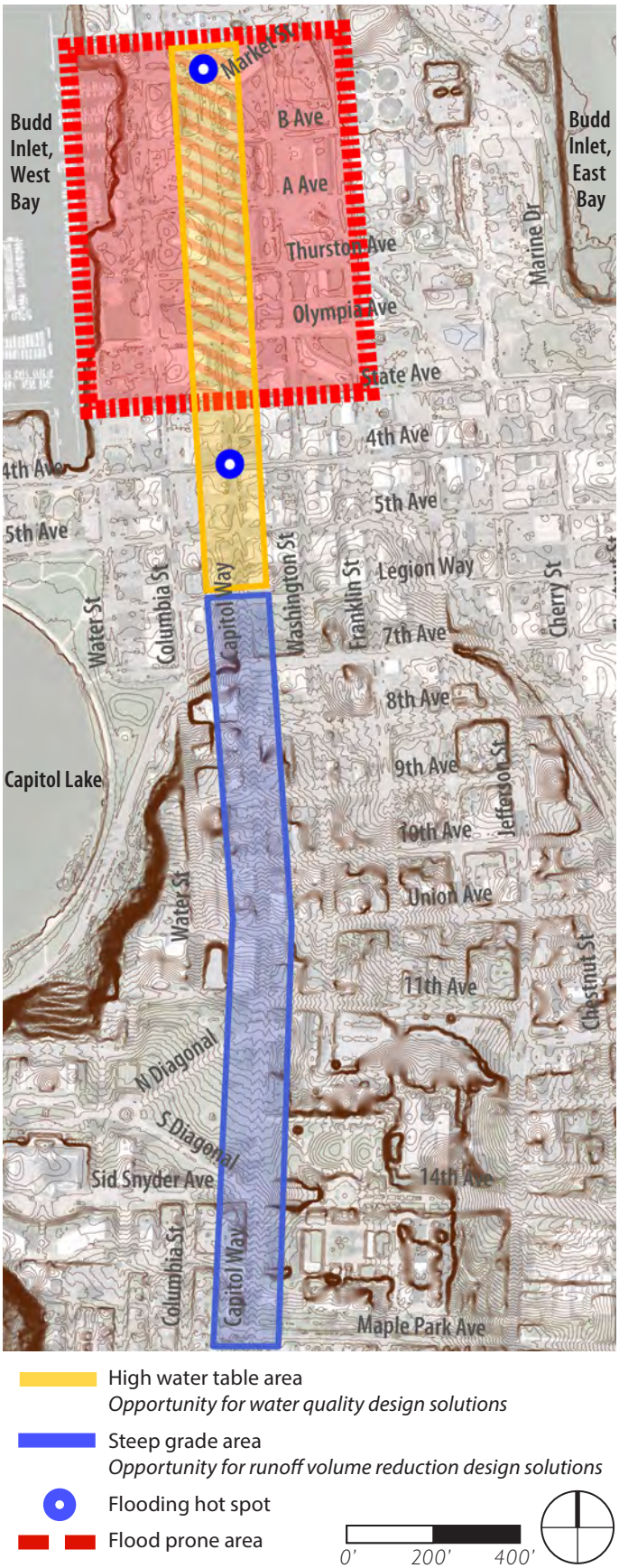

Figure 11: Hydrology and topography relationship along Capitol Way, showing steep slopes, high water table, and flood-prone areas in the project area. (Aerial Image Credit: City of Olympia)

Storm Sewer Infrastructure, Topography, and Sea Level Rise

In downtown Olympia, the stormwater system, site topography, and potential sea level rise are all interconnected (Figure 11). The project area along Capitol Way collects surface stormwater flow from buildings, streets, and parking lots into the underground pipe system. Many buildings, especially in the historic district, have downspouts that cross under the sidewalk and release stormwater into the gutter. There is little opportunity for rainfall to soak into the ground because a high percentage of the area has impervious cover.

In 2011, the city of Olympia published the *Engineered Response to Sea Level Rise*,[1] which provides an analysis of flooding potential, evaluation of flood damage vulnerability, engineered response to flooding risk, flood protection strategies and implementation sequence, and recommendations. That report indicated that parts of lower downtown Olympia are currently not protected from inundation by the 100-year flood, also referred to as the one percent-annual-chance flood. The combination of high tides, heavy rainfall, and sea level rise can prevent upstream stormwater from entering the piped system and discharging into Budd Inlet, which ultimately could cause more severe and more frequent flooding in downtown Olympia.

From the boundaries of the farmers market to Legion Way, the topography of Capitol Way is relatively flat. The downtown core from 5th Avenue north to the farmers market is a low point within the overall watershed and has an underground water table located close to the surface. This low zone that extends westward to the West Bay of Budd Inlet is susceptible to flooding and the effects of sea level rise. Capitol Way, from Legion Way south to 11th Avenue, maintains a relatively consistent and steep slope. During moderate to strong rainfall events, surface runoff flows down the street very fast and could exacerbate flooding in the northern portion of Capitol Way.

The piped underground stormwater system in downtown Olympia is a combined sewer system with outfalls leading into both the East Bay and West Bay of Budd Inlet. This stormwater infrastructure is often overwhelmed during large rainfall runoff, high tides, or a combination of those events, and future sea level rise due to climate change will exacerbate this problem.

[1] Coast & Harbor Engineering, *Engineered Response to Sea Level Rise* December 30, 2011.

Street Trees and Landscaping

Olympia has a strong commitment to planting and maintaining street trees in the city, including in the downtown area. However, a lack of funding has significantly curtailed new plantings and maintenance. Trees are planted fairly consistently along the length of Capitol Way and provide a stately character. However, gaps in the trees occur along the length of the street. Many trees were planted at the same time and are nearing the end of their lives. Many of the trees in the historic district have roots that are heaving and cracking the sidewalk (Figure 12). City arborists attribute this condition to, among other reasons, tree species with aggressive roots, compacted soil, and other unfavorable urban planting conditions such as inadequate soil volume for tree and root health and viability.

Trees typically are planted close to the street curb. Street trees have been omitted or pruned to be clear of the awning where permanent awnings project over the sidewalk (Figure 13). In some areas, street trees are planted in wells at the back of the sidewalk and are crowding into building facades that are not set back. Along 5th Avenue just east of Capitol Way, street trees are in planters in the parking lane (the planters are separated from the sidewalk so as not to impede runoff along the curb in this retrofit street design) (Figure 14). Trees in these types of planters appear to be thriving. Capitol Way has little landscaping, aside from the street trees and large expanses of lawns along Capitol Way through the capitol campus and at Sylvester Park. No landscaping is currently used to capture stormwater runoff from impervious areas.

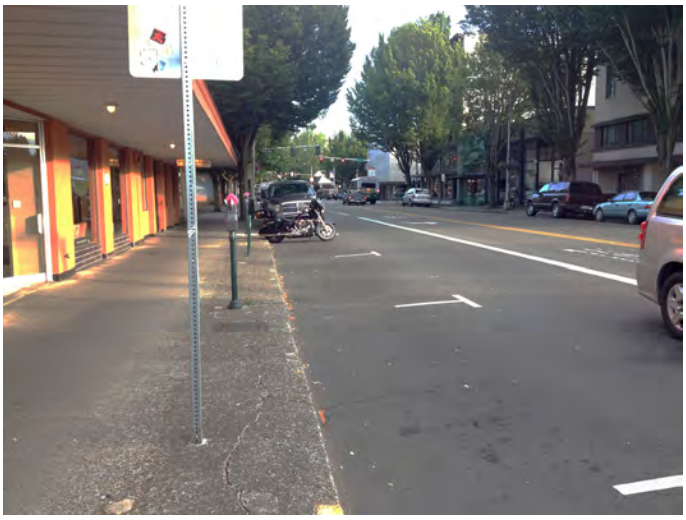

Figure 13: Tree canopies and businesses' awnings compete for space along Capitol Way. (Image Credit: Urban Rain | Design)

Figure 12: Many of the mature street trees downtown are buckling the sidewalk, causing unsafe conditions. (Image Credit: Urban Rain | Design)

Figure 14: 5th Avenue has trees planted in the parking lane, contributing to the pleasant character. (Image Credit: Urban Rain | Design)

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Community Partnerships, Economic Vitality, and Placemaking

Olympia's downtown hosts many uses and facilities that reinforce the community's character and draw residents. The city has seen recent public and private investments in community facilities in areas such as Percival Landing, the farmers market, the Washington Center for Performing Arts, the new city hall, and the waterfront. Numerous events and festivals are held downtown and in Sylvester Park, including Artswalk, Procession of the Species, Music in the Park, and Harbor Days. The farmers market draws many shoppers and sightseers downtown for local fresh products and craft items.

Downtown has public art, large murals, and artistic painted benches. The city has an informal mural program to create art and abate graffiti. Plaques identify and describe historic buildings, alleys, and sites. An alley improvement project is underway to expand non-traditional areas for pedestrian use while making downtown more attractive.

The city also allows the installation of parklets, a street improvement that provides public gathering space in the parking zone of streets. No parklets exist along Capitol Way, but two are present along Cherry Street and 5th Avenue east of Capitol Way. One parklet uses raised planters for landscaping and catching stormwater (Figure 15). For more information on parklets, see Appendix C.

Figure 15: The parklet outside the Olympia Coffee Roasting Company in downtown Olympia provides a canopy to protect people from rain and sun and capture rainfall, which flows into the integrated planters. (Image Credit: Community Design + Architecture)

3 | Design Workshop

The design workshop took place over September 29th to October 1st, 2014. During the workshop, the design team met with the community at two public open houses, one at the beginning of the design workshop and one at the end; held interactive design sessions with city staff; and facilitated focus group meetings with technical experts and local stakeholders in three topic areas identified as priorities by city staff before the workshop—economic development and placemaking; green infrastructure and climate resiliency; and walkability. Input that the design team heard from the public, city staff, and focus group attendees is organized below into the city's three original goals for the project. The goals, coupled with public and stakeholder feedback (some feedback naturally fits under multiple goals), guided the development of the design options presented in Chapter 4.

A fourth focus group meeting, attended by city, state, and federal agency staff, discussed "opportunistic implementation," referring to the potential for linking Capitol Way improvements with other funded street and stormwater improvement projects, and using public-private partnerships to more efficiently implement green infrastructure and complete streets concepts. Participants also discussed investing public funds to leverage private investment and increase both private and public economic benefits. A summary of this meeting is in Chapter 5.

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Goal 1 – Improve pedestrian, bicycle, transit, and vehicular facilities and circulation.

- **Improve sidewalks and street crossings.** Workshop participants voiced many concerns about the deteriorated sidewalks, poor lighting, and narrow walking areas in some locations. People discussed the need to differentiate the sidewalk from the street, have audible signals at crossings, and other features to assist people with disabilities including sight impairment. Participants also noted that several intersections were hard to cross because of poor or non-existent crosswalk markings and the width of the street. Other participants commented about emphasizing the value of pedestrian space and the need to make a positive walking environment.
- **Improve conditions for bicyclists.** While participants generally agreed on the need for bicycle improvements in the downtown, they did not agree on what kind of improvements to make. Some people strongly advocated for dedicated lanes or a cycle track (on-street bike lanes that are physically buffered from traffic lanes), while some bicyclists were comfortable with being part of the traffic flow if speeds are relatively low. Other participants identified parallel streets in the downtown as better bicycle routes than Capitol Way.
- **Make Capitol Way function well for buses.** Participants value the transit service they currently have and understand the importance of transit to downtown's future success. Some participants emphasized that changes to the street should not reduce transit service or cause delays (for example, when buses must pull out of the flow of traffic to access stops, re-entering the traffic can delay the bus).
- **Reduce and manage traffic speeds.** Participants were concerned about speeding traffic, especially on the hillside portion of Capitol Way.
- **Use the downtown grid better.** People noted that the city could better use the street grid to improve circulation for drivers, pedestrians, and bicyclists.
- **Tie alleyways into a pedestrian network.** Along with a street grid, downtown Olympia also has a network of alleys. Participants supported current city efforts to improve some of the alleys for pedestrian use and would like to see more.

Goal 2 – Make Capitol Way more of a destination that supports existing businesses and is attractive to new development.

- **Increase public space with shared streets.** Workshop participants were excited by the potential benefits of shared streets. They saw shared streets as a way to not only improve the pedestrian environment, but also make the street a place where people could gather and special events could be held.
- **Maintain on-street parking.** Many participants noted a real or perceived lack of on-street parking on Capitol Way and want current on-street parking to be maintained or increased so as not to affect businesses. Others suggested that the space for on-street parking could be more valuable for other uses, such as a wider sidewalk to create increased active public space. Some participants felt that, in a successful downtown, people might not be able to park right in front of their destination, but walking a few blocks in a pleasant environment is part of a good downtown experience.
- **Reinforce the downtown character.** Stakeholders felt strongly that Capitol Way should have a distinctive character and streetscape that uses building materials and design details that would be identifiable as "downtown."

Goal 3 – Increase the amount of landscaping and pervious areas to capture stormwater runoff, help reduce localized flooding, and improve downtown's overall appearance.

- **Care should be taken in street tree siting and maintenance.** While street trees were desired by most of the workshop attendees, participants had differing concerns about current tree conditions and locations. Problems noted were sidewalk damage, restricted sunlight, obscured windows and views of building facades, and signs and street lights blocked by foliage. Positive comments received from participants about street trees included providing a more attractive downtown.
- **Include stormwater management in landscaping.** Participants were interested in providing green infrastructure downtown. Green roofs and green walls are possible techniques in addition to integrating rain gardens into the streetscape.

4 | Design Options

With input from the community, the design team generated design options, and green and complete street strategies. These options and strategies respond to the community's goals of improving Capitol Way for all users as the main street for downtown and a primary linkage to the capitol campus while improving environmental conditions, reducing flooding risks, and increasing social and economic vitality in downtown Olympia.

Key ideas that informed the design options while also addressing community concerns include:

- **Put additional portions of Capitol Way on a road diet.** The city has already used a road diet in the northern area of Capitol Way. The design team developed a concept that includes a similar removal of travel lanes for the entire length of Capitol Way north of 10th Avenue. Lane removals or width reductions reallocate space in the right-of-way to pedestrians and/or bicyclists, can shorten street crossings for pedestrians, and can help calm traffic. For more information on road diets and examples of how cities in the Pacific Northwest have used them, see Appendix D.
- **Create a shared street district in the north end of Capitol Way near the farmers market.** Design options illustrate how shared streets can improve the experience for pedestrians, provide attractive gathering spaces, and temporarily convert into open space for special events. Other design options show how the city could inexpensively and incrementally convert streets to shared streets using parklets, paint, and planters. For more information about shared streets and examples of how cities in the Pacific Northwest have implemented them, see Appendix E.
- **Put more street trees and landscaping in the parking lane.** To protect tree health and reduce root damage to sidewalks, the design options illustrate placing street trees in the parking lane, similar to what is already in place on 5th Avenue. Putting trees here would require some reduction of on-street parking, which local businesses are concerned about, but it would create a more attractive, walkable, and environmentally friendly streetscape.
- **Maintain on-street parking.** Despite some on-street parking space being lost to tree planting, using a road diet on Capitol Way allows additional on-street parking where none existed before, particularly in the area between the historic downtown and the capitol campus.
- **Maintain good transit access.** To accommodate buses, the design options illustrate a consistent 11-foot-wide travel lane to avoid buses' current straddling of two narrow travel lanes. The team developed two design options for bus stops that aim to allow traffic flow to continue when a bus is stopped and also not to delay buses as they attempt to re-enter traffic to keep them on schedule. One option provides a space in the parking lane for a bus stop at the far side of an intersection, which allows the bus to more easily re-enter traffic with the gaps between vehicles created by the traffic signal. The other option provides a vehicle bypass lane around buses stopped in the travel lane adjacent to a stop in a transit bulb-out that extends the sidewalk across the parking lane. Transit bulb-outs are also located at the far side of an intersection; this configuration gives the bus free flow travel in the through lane after stopping.
- **Use landscape as green infrastructure to manage stormwater and reduce flooding.** The design options use a variety of green infrastructure techniques to manage runoff while making Capitol Way more attractive.
- **Balance the need for dedicated bicycle lanes with other uses.** Through discussion with city staff and workshop participants, the team recognized that bike lanes on Capitol Way could not be added without reducing the potential to improve sidewalks and sometimes affecting parking. Given the workshop participant's desire for improving pedestrian facilities and the importance of street parking, the team's design options do not include bike lanes on Capitol Way, except for a bicycle climbing lane between 7th and 11th avenues that allows bicyclists who would find it difficult to maintain speed on an uphill climb to safely get out of the traffic lane.

Figure 16 illustrates the overall circulation concepts presented in the design options.

This chapter discusses the general areas along Capitol Way and the more detailed focus site as a prototype for a design option. The work on the five focus sites include site-specific analysis and design options, as well as illustrate design concepts that could be applicable to the area of Capitol Way in which the focus site is located.

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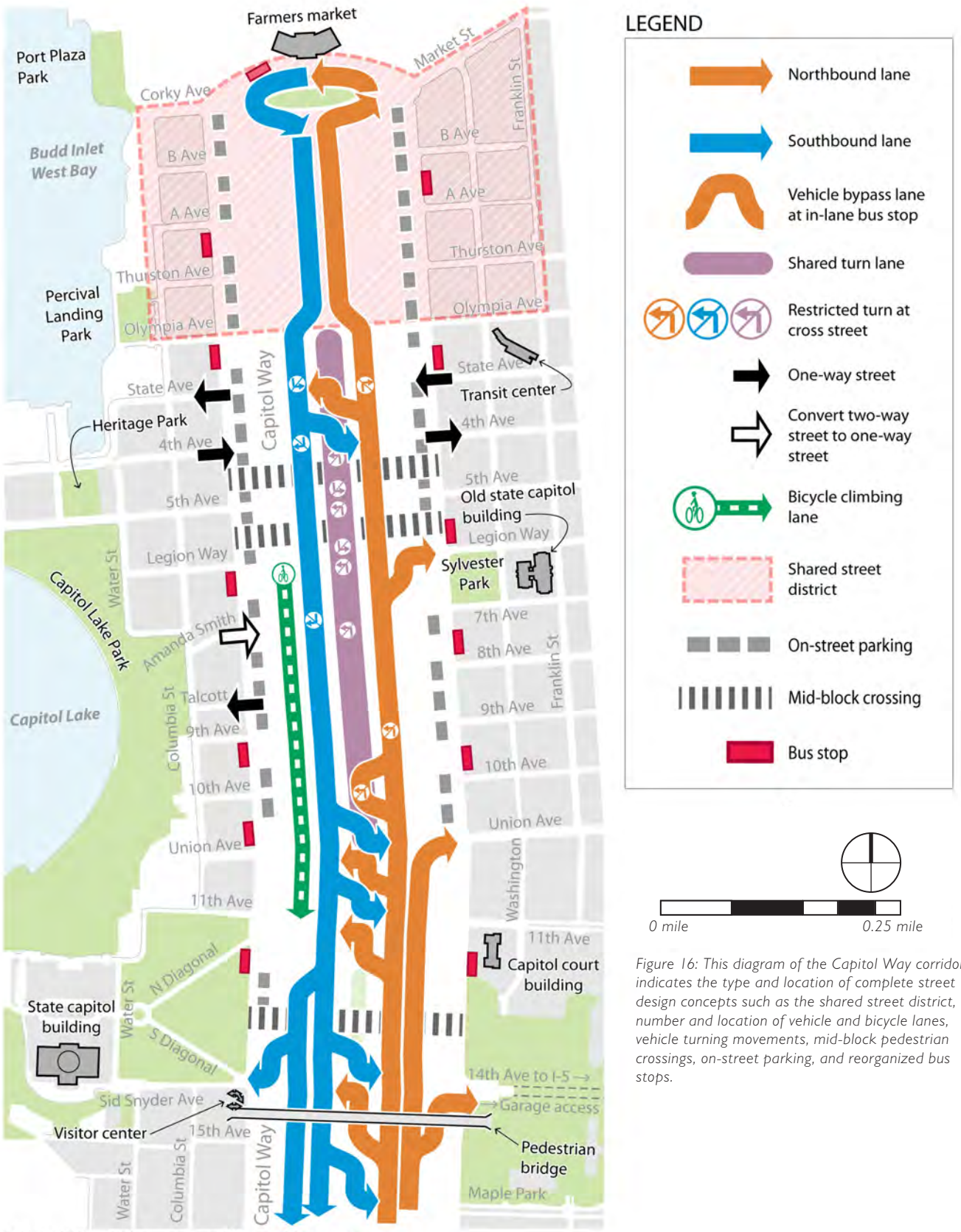

** Capitol Way width exaggerated for graphic purposes*

Figure 16: This diagram of the Capitol Way corridor indicates the type and location of complete street design concepts such as the shared street district, number and location of vehicle and bicycle lanes, vehicle turning movements, mid-block pedestrian crossings, on-street parking, and reorganized bus stops.

Focus Site 1—Capitol Way between B and A Avenues

Existing Condition

This northernmost area of Capitol Way, between Market Street and Olympia Avenue (Figure 17), includes streets with low traffic volumes and a mix of residential, industrial, and commercial uses. Capitol Way between B and Thurston avenues recently underwent a road diet, going from four lanes to three and adding dedicated bike lanes. However, Capitol Way's 53-foot curb-to-curb width is still quite wide and is difficult for residents of the large, adjacent senior community to safely and conveniently cross. This area has few stop signs or traffic signals, which also makes it difficult for pedestrians to cross safely. Bus stops are located in the parking lane. This area of Capitol Way, as well as downtown, is at a lower elevation, which makes it subject to flooding from high tides, storm surges, and an underground water table located close to the surface. These impacts are anticipated to increase as the climate changes and the region sees more intense storms and higher sea levels. The area surrounding this portion of Capitol Way is prime for redevelopment and infill due to the vacant and underused parcels, increasing development demand, and city interest in economic investment.

Design Option

Along Capitol Way, shared streets could occur between Olympia Avenue and the farmers market (and not just limited to the focus site between B and A avenues). These blocks were identified because the traffic in this area is low (and projected to remain low), and residents noted that the street is difficult to cross, especially for senior citizens. Furthermore, workshop participants expressed the desire for more public open space and places for events to occur, such as expanding the farmers market. The blocks immediately south of the farmers market could meet that demand by converting to shared streets. In fact, several of the blocks in this area could also be converted as shown in the shared street district in Figure 16.

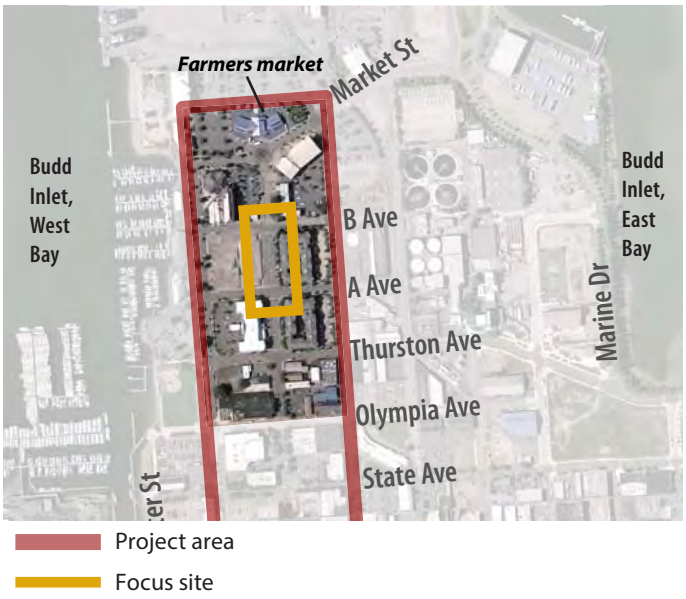

Figure 17: Focus site 1. (Aerial Image Credit: City of Olympia)

This design option illustrates how a street can be more flexible by creating a curbless, shared space that serves multiple functions and is shared by different users (Figures 20 and 21). The design calms traffic, and pedestrians and bicyclists are emphasized over vehicles. The illustrations include parallel parking, but other design concepts could include some diagonal parking. A 22-foot-wide travel area for vehicles (space for two 11-foot travel lanes) is provided, with the street offset, or jogged, to further emphasize the pedestrian nature of the space and to encourage slow speeds. The meandering travel way and variations in parking design create a flexible open space area on either side, ranging from about 15 to 40 feet wide. Fifteen feet denotes the minimum width of a sidewalk to accommodate large numbers of pedestrians walking between the farmers market and downtown and to provide a separation between pedestrians and vehicles. Forty feet is determined by the width of the right-of-way less the width of a minimum sidewalk on one side of the street (15 feet) and the vehicle travelway (22 feet). This flexible space can allow parallel and diagonal parking, stormwater planters, temporary kiosks or food truck parking, designated bus stops with shelters located at the far side of intersections, and public seating areas. The entire shared street space can be used for public gatherings or special events such as street fairs, food truck round-ups, and seasonal expanded farmers markets and can be closed to traffic for some of these activities. Adding stop signs at intersections is especially important for the residents of the adjacent senior housing community.

Integrating green infrastructure improvements can take advantage of Capitol Way as a low point or flow line within the downtown's watershed, as well as define and separate the different uses of the space. Shallow stormwater planters can work with the existing high water table and would protect water quality and collect debris before it enters the stormwater system. Delaying and storing stormwater runoff can reduce the risk of flooding due to heavy rain and tidal storm surge. The city might want to explore salt-tolerant plants in future detailed designs for this part of the project area.

An extensive pervious paving treatment across the street section can also manage and treat stormwater runoff. Pavers in a different color and texture can delineate the edge between the area that is more typically used by vehicles and bicyclists, and the area most often used exclusively for pedestrians. The delineating pavers do not need to be American with Disabilities Act-style truncated domes or a bright yellow

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color as the tactile quality of these pavers; physical and visual definition of vehicle travelways, and street signs can make it clear to pedestrians that they are entering a space to use caution and that drivers need to slow down and yield to pedestrians. Entry treatments at the intersections where the street transitions from the standard street to the shared street also help to indicate to drivers that they are entering an area that is different from the standard street. These treatments can include a change in pavement material, ramping up into the shared street, narrowing of the travelled way, stop signs, and changes in landscape treatment.

In the short term, the city could make the street safer and add open space with design treatments that are cost efficient and quick to implement. Examples include movable planters, pavement painted to delineate corner bulb-outs, new pedestrian seating areas and parking configurations, and parklet-style wood platforms to extend the pedestrian area (Figures 22 and 23). Unlike typical parklets, these platforms would not have side rails, which would let passengers enter from adjacent parked cars. These treatments would improve the street until the city can fund the full shared street option, if it chooses to. The street curb-to-curb section can undergo a road diet to reallocate the center dual-turn lane and bike lanes to widened pedestrian space and change to diagonal parking in lieu of parallel parking to minimize a reduction in on-street parking spaces.

The city could require future developers of the vacant parcel on the west side of Capitol Way between B and A avenues to provide an easement to widen the sidewalk beyond the right-of-way to match the right-of-way alignment of adjacent blocks.

Figure 18: Existing view of Capitol Way between B and A avenues, in front of the senior housing. The wide street is a challenge for local seniors to cross.

Figure 19: This design option depicts a shared street, providing flexible space where pedestrians, bicycles, and vehicles can use the same space. Landscaping and permeable paving help calm traffic, define where vehicles can be, and clean stormwater runoff.

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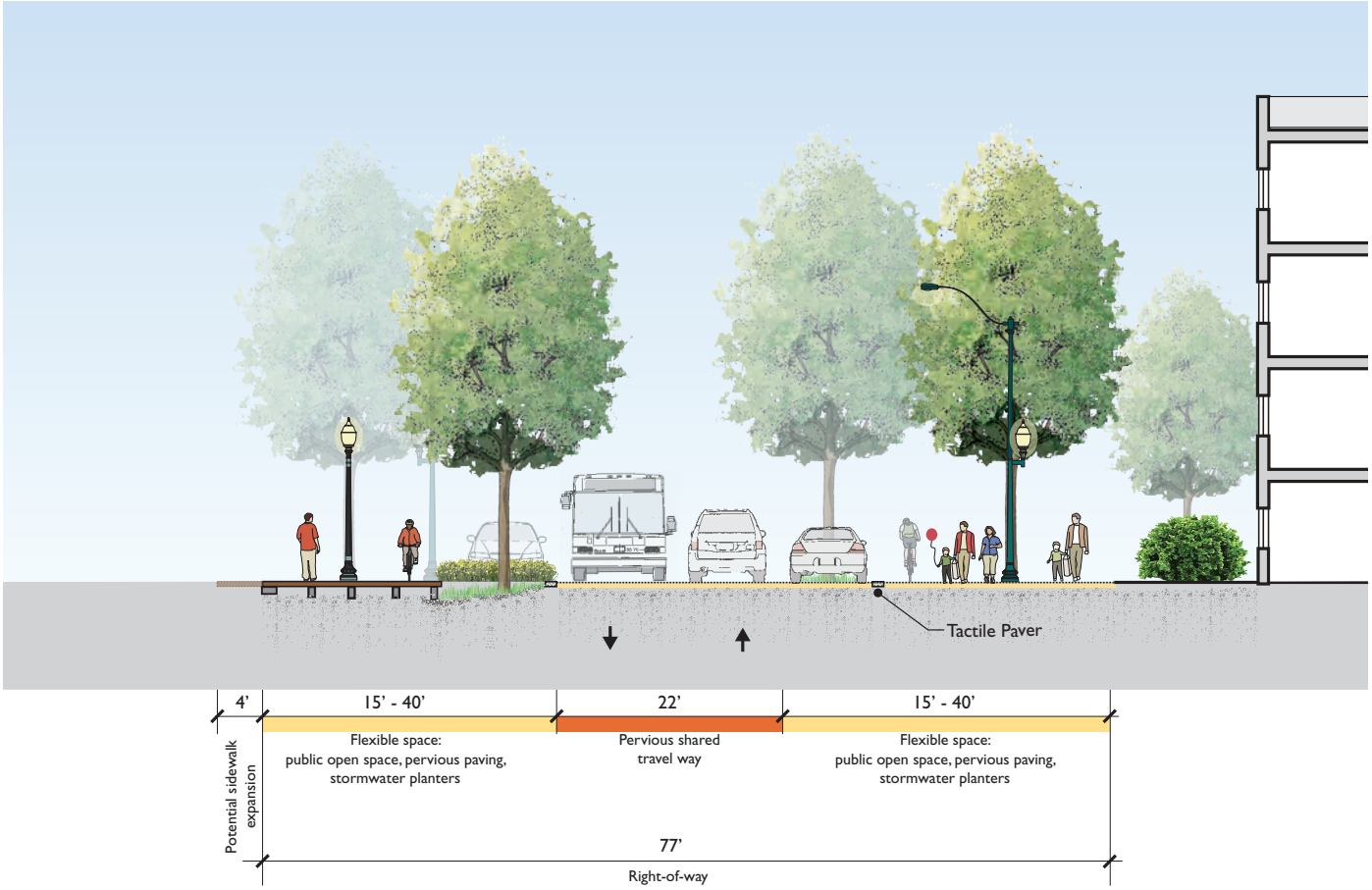

Figure 20: This section view of a shared street design option illustrates how vehicle circulation, parking, and pedestrian areas could be defined and coexist without curbs and with the street and sidewalk at the same level.

1. Offsetting the vehicle travel way subtly encourages drivers to slow down.
2. Raising intersections would continue the shared street option between blocks and emphasize the pedestrian realm.
3. A flexible space outside the travel way can provide space for parallel parking; intermittent, shallow stormwater planters; and paved and boardwalk areas for pedestrians, bicyclists, diagonal parking, temporary kiosks or food trucks, public seating areas, and other public activities and landscaping.
4. Boardwalk surfacing can be extended over the stormwater treatment area to allow larger bioretention areas below.
5. Shallow stormwater planters and pervious paving allow limited amounts of runoff to infiltrate to compensate for the high water table and tidal influences. The planters also can separate the travel way and parking areas from pedestrian areas.
6. Trees in the street and shared space provide shade to reduce ambient air temperatures, making people more comfortable.

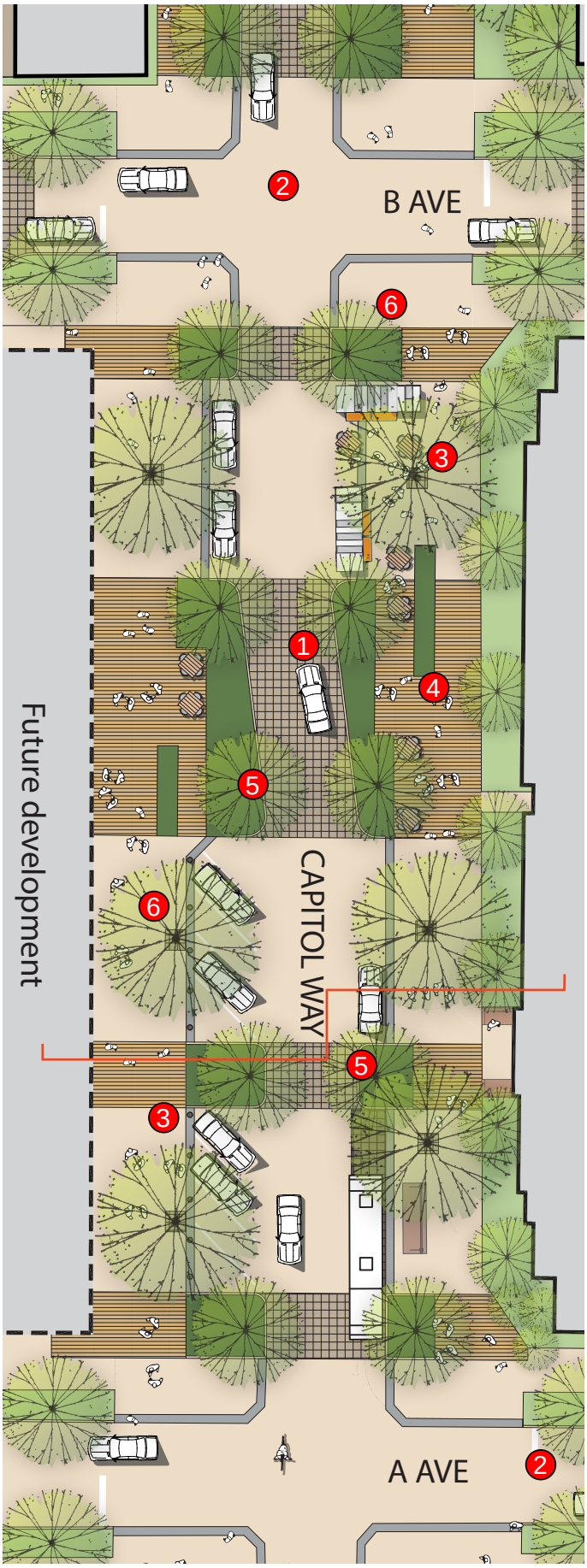

Figure 21: This plan view of Capitol Way between B and A avenues illustrates a design option for a shared street. The continuous paving pattern extends the pedestrian realm into the streets and intersections, signaling a shared space that deemphasizes the vehicle while still enabling vehicle traffic. Raised intersections would provide physical and visual cues to slow automobile traffic, while landscape planters and pavement color and texture would help guide drivers through the block.

- Boardwalk
- Pervious paving
- Sidewalk
- General landscaping
- Green infrastructure
- Tactile paving strip

0' 15' 30'

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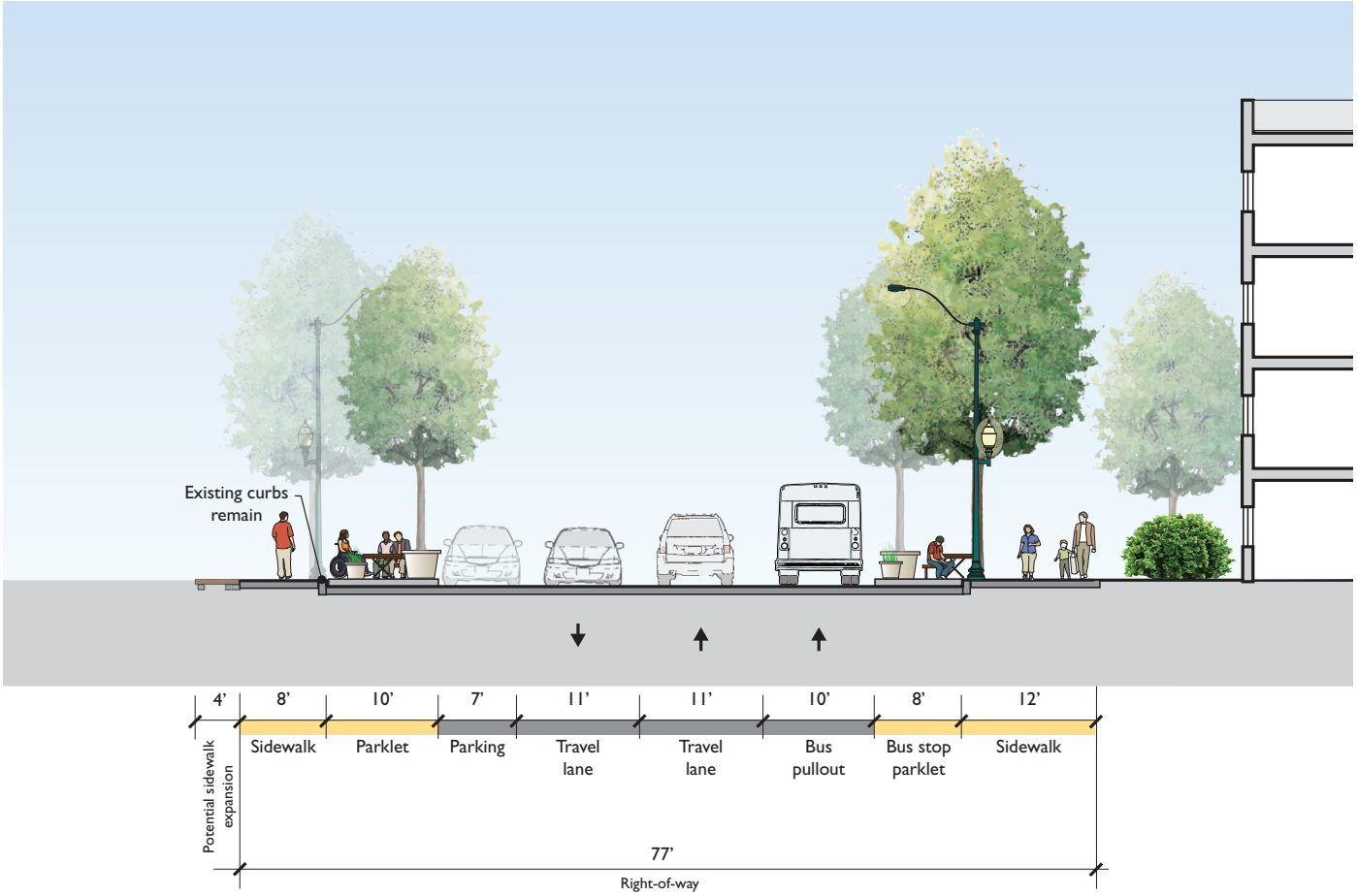

Figure 22: Section view of a possible interim reconfiguration of Capitol Way to transition into a shared street. Narrowing Capitol Way would shorten crossing distances for seniors and other pedestrians.

1. Moveable planters and painted pavement delineate corner bulb-outs and new pedestrian seating areas and parking configurations. Bulb-outs reduce pedestrian crossing distances.
2. Parklet-style wood platforms extend pedestrian areas. Asphalt pavement below the platform could be replaced with a pervious surface to allow stormwater to infiltrate.
3. Corner bulb-outs can calm traffic.

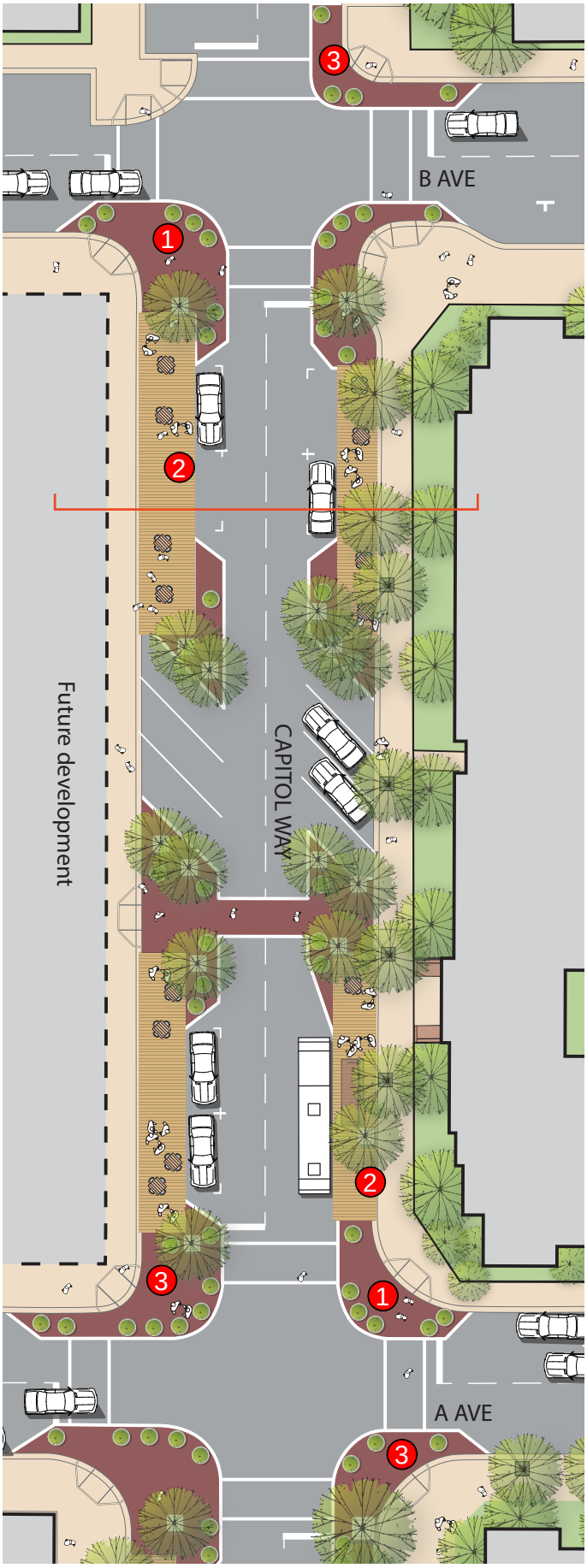

Figure 23: Plan view of a possible interim reconfiguration of Capitol Way to transition into a shared street. Initial improvements could include paint, planters, and parklets to redefine space for pedestrians and make street crossings safer.

Boardwalk
Sidewalk
General landscaping
Painted curb extension

0' 15' 30'

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Focus Site 2—Capitol Way between 4th and 5th Avenues

Existing Condition

This focus site, typical of Capitol Way from Olympia Avenue to Legion Way, is in the historic district of downtown. Figure 24 identifies the focus site and historic district within the downtown area. The street is wide, with four travel lanes and two parking lanes. Sidewalks are too narrow for the level of existing and potential pedestrian activity. Many sidewalks are in poor condition due to heaving from the street tree roots. As with other areas of Capitol Way, narrow traffic lanes cause buses to straddle the paired traffic lanes in each direction. Bus stops in this area are either located so that buses stop in the parking lane or stop in the travel lane with a transit bulb-out that extends the sidewalk across the parking lane. The block between 4th and 5th avenues is one of the busiest on the corridor in both pedestrian traffic and business activity. Alleys typically bisect blocks.

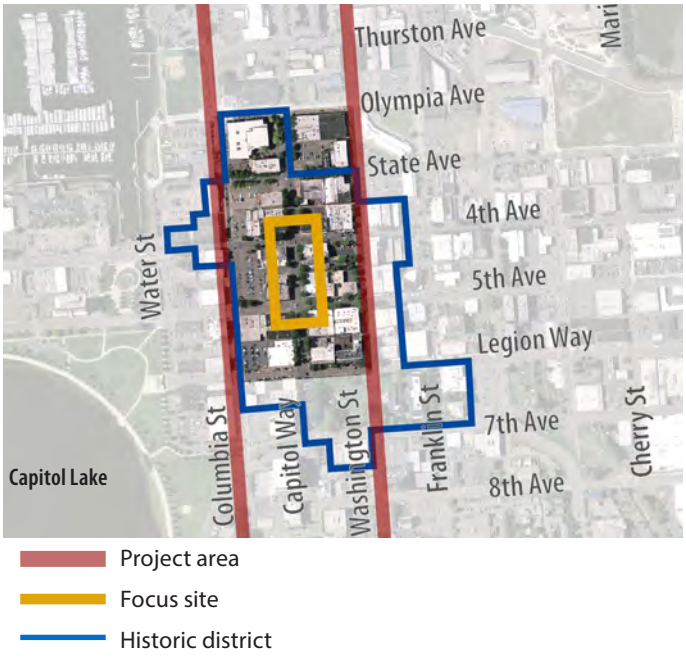

Figure 24: Focus site 2 represents the conditions found on Capitol Way between Olympia Avenue and Legion Way. (Aerial Image Credit: City of Olympia)

Design Option

The road diet design option reduces the number of through lanes to one in each direction and provides either a dual left-turn lane or back-to-back left-turn pockets in blocks where more vehicles are turning. A road diet can calm traffic and make pedestrians safer, responding to workshop participants' strong concerns about pedestrian safety along this part of Capitol Way. Reallocating the removed travel lane maintains on-street parking while adding room for landscaping, green infrastructure, and more pedestrian space (either as sidewalks or boardwalks over green infrastructure). To address the community's concerns about street trees, new street trees can be planted in parking lanes. This design permits flexible and occasional use of the parking lane for additional pedestrian space or other activities such as outdoor seating and street fairs.

A variety of green infrastructure elements, including stormwater curb extensions at corner bulb-outs, grated street tree wells, and pervious paving in the parking lane and center dual left-turn lane, could improve water quality and reduce peak flows to help alleviate the city's concerns about increased storm surge from Puget Sound (Figures 27, 28, and 29; also, see the green infrastructure toolbox in Appendix B). These improvements could provide a range of additional benefits, including trees that provide shade and reduce ambient air temperatures.

Mid-block crossings at select locations expand the pedestrian network and tie into the existing alley system. Alleys can be surfaced with permeable paving to reduce stormwater ponding. A planted median can be substituted for the center dual-turn lane if left turns into alleys are not necessary. Pruning existing street trees regularly would let more sunlight penetrate, avoid blocking street lights, and allow views into stores.

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Figure 25: Existing condition of Capitol Way in the block between 4th and 5th avenues in the historic downtown area. The lack or poor conditions of pedestrian and bicyclist facilities can make walking and biking less safe and less appealing. (Image Credit: Urban Rain | Design)

Figure 26: This sketch illustrates how a road diet and intermittent street trees and pervious paving in the parking lane can improve the street's visual character, narrow the street's real and perceived width to calm traffic, and increase green infrastructure opportunities. The bulb-outs and mid-block crossings would shorten crossing distances and times, while landscaping and pedestrian-scaled lighting would provide a more inviting place to walk.

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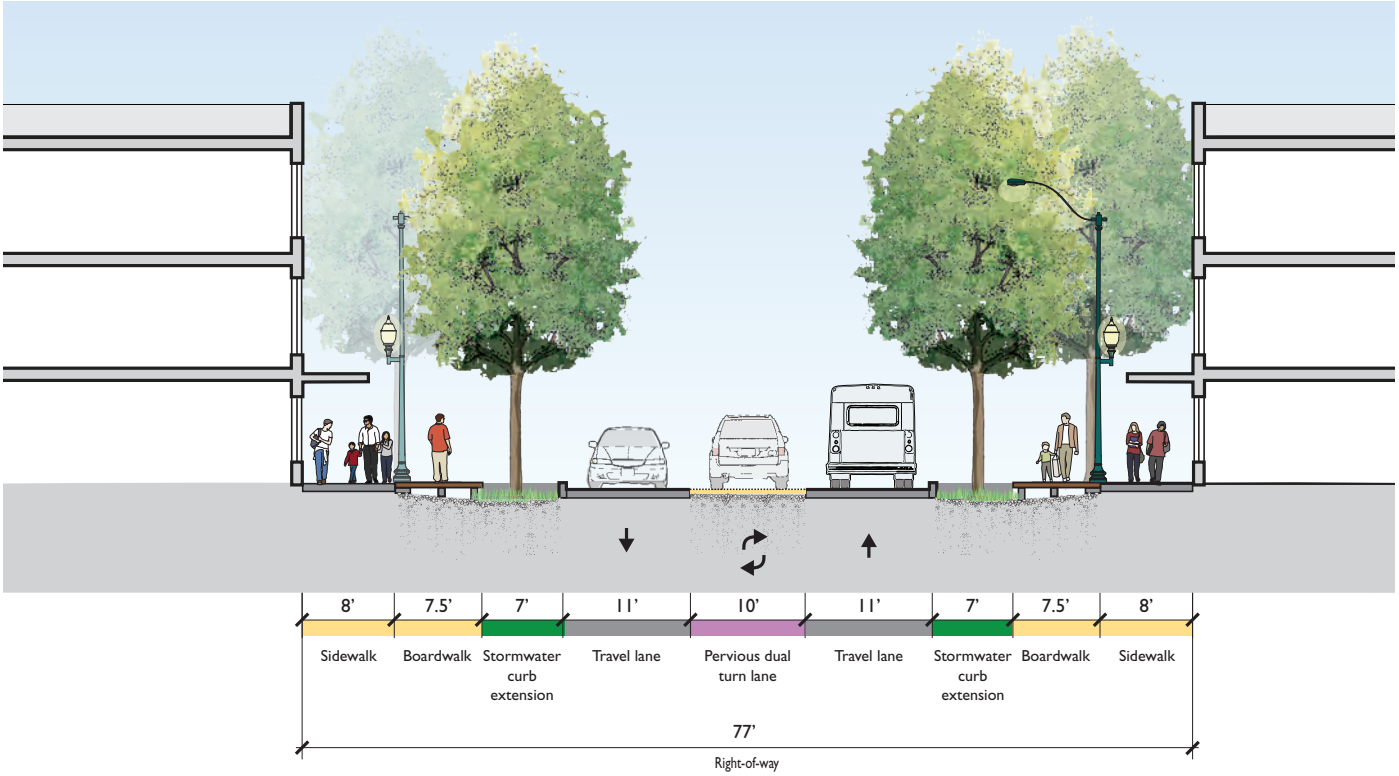

Figure 27: Cross section showing a road diet lane reduction at intersections with boardwalk paving and stormwater planters in bulb-outs to improve water quality.

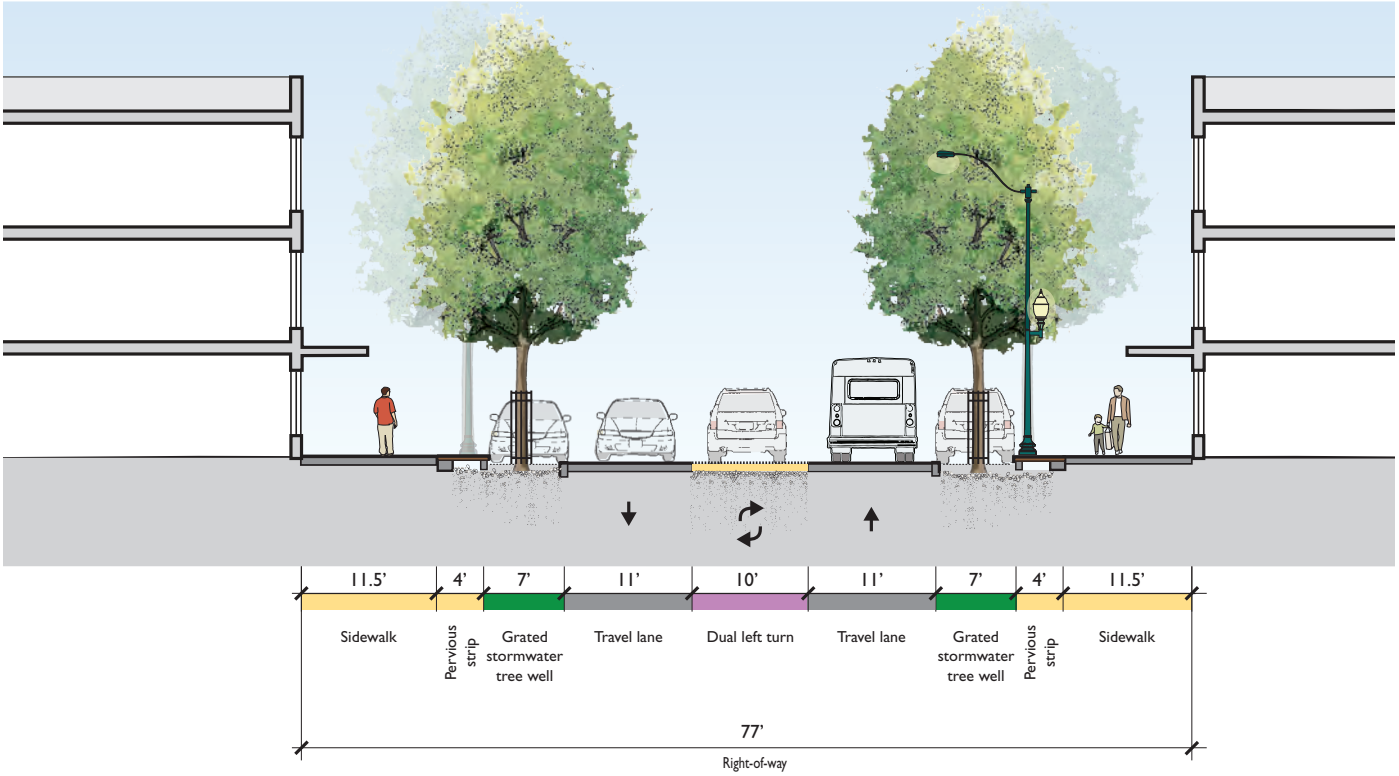

Figure 28: Cross section showing a road diet with the removal of a traffic lane mid-block with pervious paving and street trees with grates placed in the parking lanes. Grated street trees can capture and treat runoff and provide shade. Trees can trap light rains in their leaves to protect pedestrians from the elements and prevent and/or delay rainfall from reaching the ground.

1. Street trees with grates can be planted in the parking lanes to capture and clean stormwater. Trees would be separated from the building façade and can have larger root zones, which keeps the trees healthier.
2. Boardwalks are extended over the stormwater treatment area to provide pervious paving and allow larger bioretention areas below.
3. Corner bulb-outs at intersections can provide larger stormwater planter areas, increase pedestrian safety and reduce pedestrian crossing distances. Reduced crossing distances allow shorter traffic signal cycles, as pedestrians take less time to cross the street.
4. Mid-block pedestrian crosswalks can be placed to give pedestrians more routes and choices while calming traffic.
5. Parking lanes and center turn lanes can include pervious paving to manage and treat stormwater.
6. A road diet could remove one or two lanes of traffic and reallocate the space to other uses, such as parking, a sidewalk, transit, bicycle lanes, and landscaping or green infrastructure. A road diet can encourage people to drive more slowly, which protect pedestrians. An 11-foot outside travel lane would let buses stay in their lane.

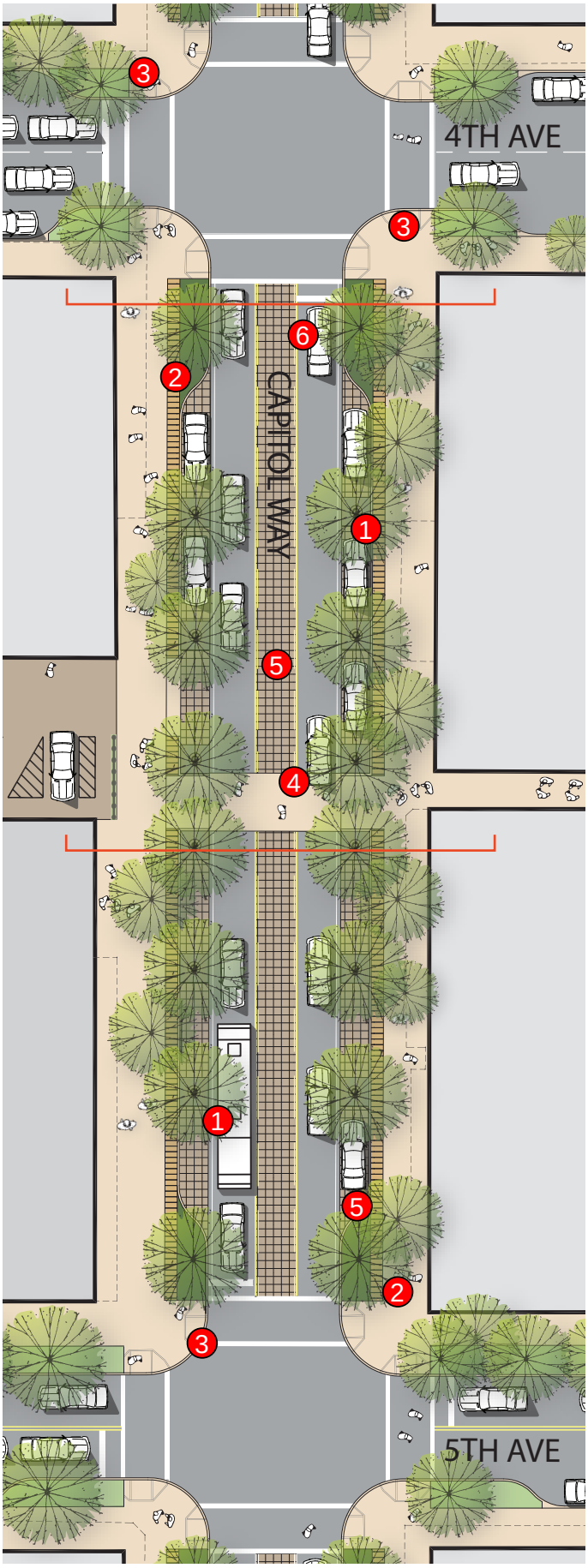

Figure 29: This plan view of Capitol Way between 4th and 5th avenues illustrates a road diet approach and how travel lanes could be reallocated to make the street more attractive, widen sidewalks, and allow varied and multipurpose techniques to green the street.

- Boardwalk
- Pervious paving
- Sidewalk
- General landscaping
- Green infrastructure

0' 15' 30'

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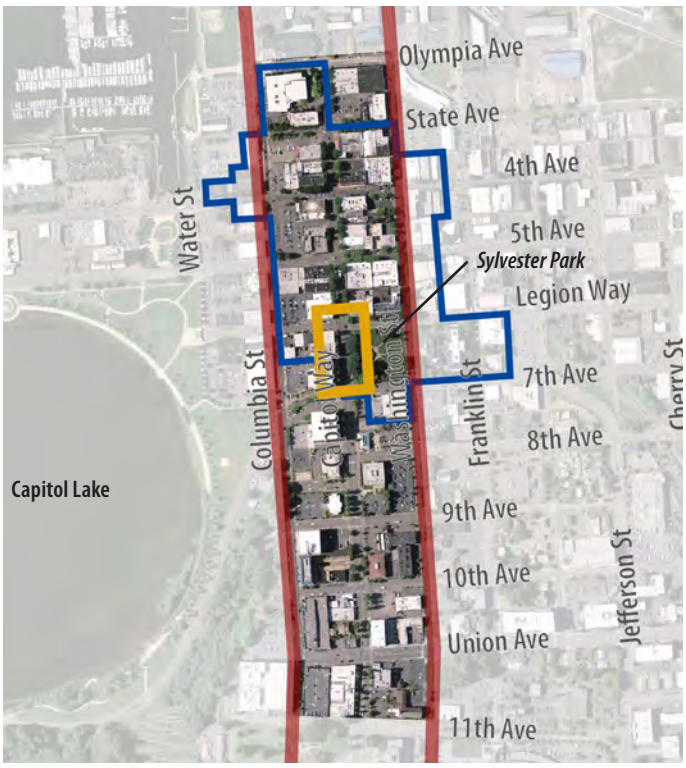
Focus Site 3—Intersection of Capitol Way and Legion Way

Existing Condition

The intersection of Capitol and Legion ways is at the southern edge of the historic downtown and is the junction between the downtown core to the north and the transition area to the capitol campus to the south (Figure 30). The original state capitol building and Sylvester Park are at the southeast corner. Sylvester Park's dense trees and lower elevation make it difficult to see into the park from parts of Capitol Way. Legion Way is one of downtown's most important east-west avenues, with a direct connection to the popular Heritage Park on Capitol Lake. Parking and street trees are limited on Capitol Way, giving pedestrians little separation and protection from traffic. On the southwest corner, the bus stop is at a transit bulb-out, with the bus blocking traffic in that lane when loading. The bus stop in the northbound direction is located in a widened travel lane. The only bike facility is a bike parking corral on Legion Way at the northeast corner of Capitol Way. The city requested guidance on how to create a gateway at this important crossroads, in particular how to highlight Sylvester Park as a de facto town square for downtown.



Project area
Focus site
Historic district

Figure 30: Intersection of Legion Way and Capitol Way. (Aerial Image Credit: City of Olympia)

Design Option

The design option for this intersection emphasizes improvements to green infrastructure and pedestrian, bicycle, and transit facilities (Figure 32). Pedestrian crossings are realigned to provide direct circulation. Reducing corner radii and providing corner bulb-outs where on-street parking is present shortens pedestrian crossing distances. An entry plaza into Sylvester Park signifies the importance of this public open space and provides a gateway to the park. A road diet, realignment of the travel lanes, and redistribution of on-street parking allows bus stops to be moved out of travel lanes and into the parking lane to improve traffic flow and allows a bicycle climbing lane up the hill towards the capitol campus to improve bicycle access and safety (Figure 33). The northbound bus stop is moved north of the Legion Way intersection to become a far side stop to help buses re-enter the flow of traffic.

Green infrastructure techniques can include permeable paving and a block-long, linear stormwater curb extension planter along the park's frontage. The stormwater planter has no trees so that it does not affect the existing board canopy of trees in the park.

The bus stops, bicycle lane, and right-turn pockets complicate the construction of sidewalk extensions on all corners but the northwest. However, the city could explore options to reduce the curb radii and pedestrian crossing distances at this central intersection in more detail during future design development.

This design option preserves the existing trees on the perimeter of Sylvester Park, but thinning the trees would allow "eyes into the park" and more sunlight in the park. An entry plaza at the Legion Way intersection could include special paving, seat walls, and art installations. The city would need to coordinate with the state Department of Enterprise Services (DES), as the DES manages Sylvester Park, on possible gateway design concepts, tree maintenance, and other management practices.

The existing bike parking corral at the northeast corner could be replaced with an extended corner bulb-out or parklet to give pedestrians more gathering space while including some bike parking. Alternatively, bike parking can be shifted to another location.

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Figure 31: Existing view of the Capitol Way and Legion Way intersection, with Sylvester Park on the left. (Image Credit: Makers)

Figure 32: This perspective view depicts how corner bulb-outs, reduced corner radii, realigned crosswalks, relocated bus stops, and a road diet can improve the pedestrian realm. The road diet allows the introduction of a bicycle climbing lane and stormwater curb extension planters to increase permeable areas and manage stormwater runoff.

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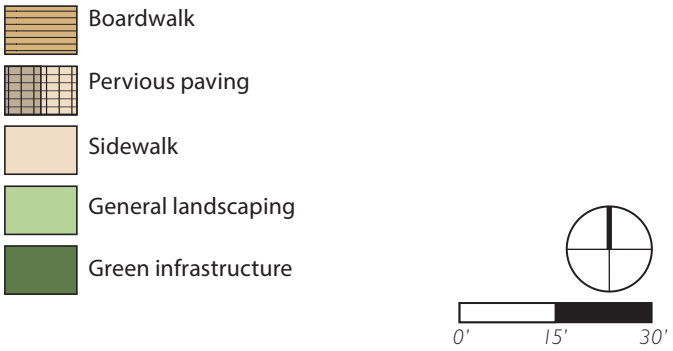
1. Parking lanes, center turn lanes, and sidewalks include pervious paving to manage and treat stormwater.
2. Stormwater planters in curb extensions can capture and treat runoff from the street and sidewalk and separate pedestrians and vehicles.
3. Boardwalk design treatments can expand the pedestrian zone over stormwater treatment areas.
4. Reducing the curb radius adjacent to Sylvester Park can slow drivers' turning right and create a more pedestrian-friendly area.
5. The entry plaza, which includes pervious paving and seat walls, serves as a gateway to historic Sylvester Park and invites people to enter the park.
6. Sidewalks can be widened where more pedestrians are expected and desired, at bus stops, or where the city plans outdoor activities.
7. Additional bicycle parking could encourage more cycling.

Figure 33: This plan view of Capitol Way between Legion Way and 7th Avenue shows how reallocating travel lanes to other uses creates space for elements that manage stormwater runoff, make the area more attractive, and make the street safer for all users.



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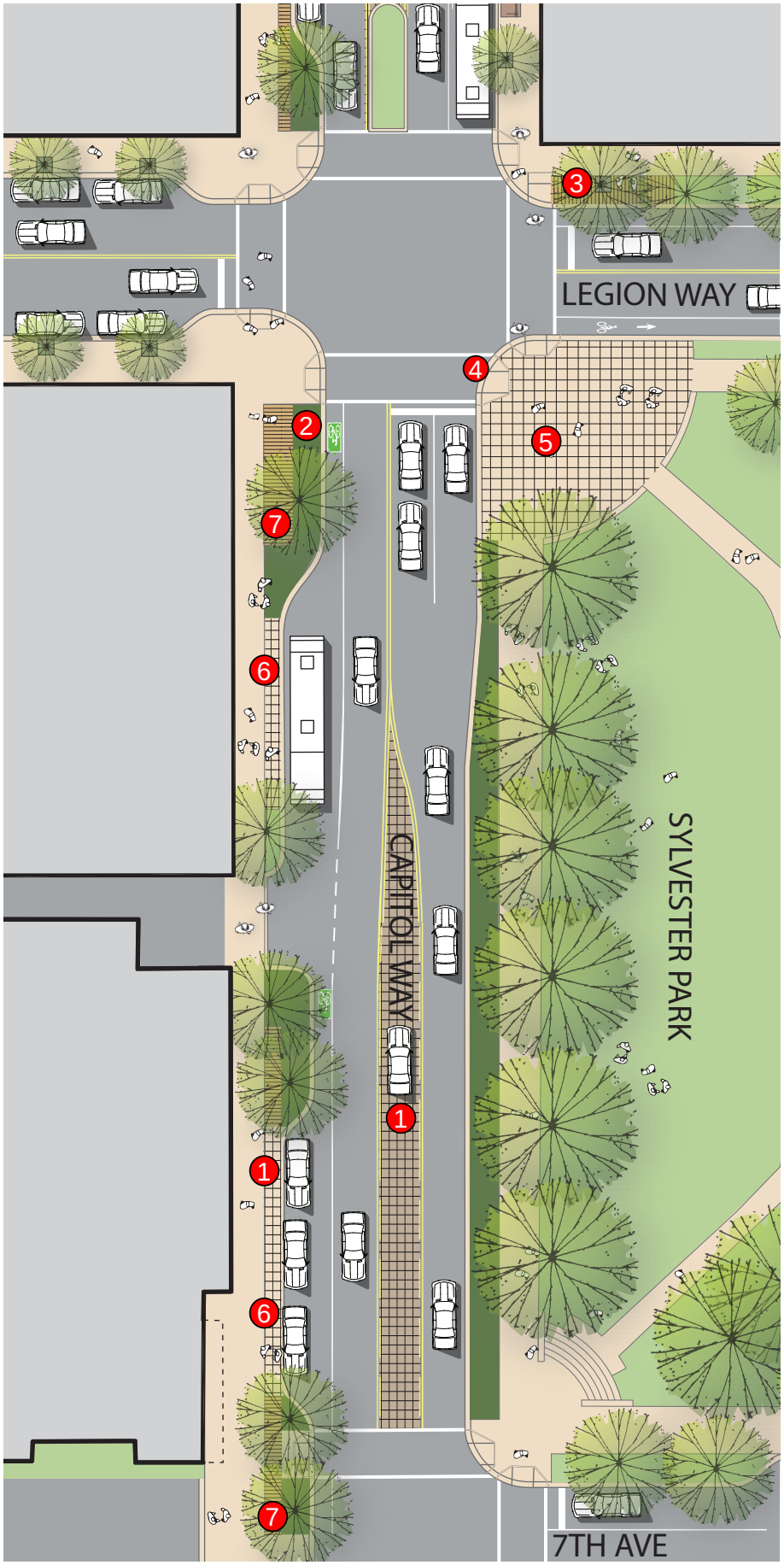

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Focus Site 4—Capitol Way between 9th and 10th Avenues

Existing Conditions

This focus site is in a portion of Capitol Way that transitions from the historic downtown to the capitol campus (Figure 34), between Legion Way and 11th Avenue. In this area, Capitol Way consists of four travel lanes, one parking lane on the west side, and sidewalks. The street has a hillcrest at the south. Workshop participants described unsafe pedestrian conditions in this area, including faster vehicle speeds due to the downhill slope and the lack of stop signs or traffic signals at all intersections between Legion Way and 11th Avenue. In addition, dual travel lanes in each direction create unsafe pedestrian conditions as a vehicle in the lane closest to a crossing pedestrian can block views of that pedestrian from drivers in the other lane. This increases the potential for the second vehicle to hit the pedestrian crossing the street. No marked bicycle lanes and the difference in speeds between bicycles and vehicles make the street unappealing for bicyclists as well. The pedestrian environment is worse here than in northern parts of Capitol Way as the street is unattractive, contains many parking lots adjacent to the sidewalk, and, with inconsistent on-street parking and trees, has less buffering for pedestrians. Bus stops in this area are located in a widened travel lane. The block between 9th and 10th avenues (Figure 35) is the focus site for this area.

Design Option

The design option for this portion of Capitol Way continues the road diet and street improvements described for the previous focus sites and street areas. This design option reduces the travel lanes to two, with a center dual left-turn lane and two parking lanes. The parking lanes could have pervious paving and intermittent stormwater curb extensions. The center dual left-turn lane and a strip along the curbs between street trees could also have pervious paving (Figure 37).

Figure 34: This project area and focus site transition between downtown and the capitol campus. (Aerial Image Credit: City of Olympia)

The street transitions from three lanes to four at Union Avenue southward as traffic volumes increase (Figure 38). Here, lanes are narrowed, and the reallocated space is used for stormwater curb extensions and a bicycle climbing lane for slower bicycle speeds up the hill. These elements separate pedestrians and bicyclists from vehicle traffic and visually narrow the street to provide a cue for drivers to slow down. The larger stormwater curb extension planters and infill street trees extend the landscape character of the capitol campus north along Capitol Way.

One option to mitigate downstream flooding is to investigate how implementing green infrastructure south of the downtown core can slow and divert water from the combined sewer system in the lower portions of the downtown. Given the interconnection between downtown's stormwater system, site topography, and potential for flooding, it makes sense to investigate these issues holistically starting from the top of the project's watershed moving downhill. The more that the landscape can absorb rainfall and runoff and can be interconnected, the more runoff can be prevented from flowing downhill which creates a lesser burden to manage stormwater in the lower lying areas.

To respond to residents' concerns about speeding downhill traffic and dangerous conditions for pedestrians, the city could consider adding stop signs or traffic signals at one or more intersections. If traffic volumes support introduction of a stop sign or full traffic signal, the city could also install a rectangular, rapid-flashing beacon or pedestrian hybrid beacon (a pedestrian-activated warning device located at the curb that flashes to warn drivers to stop and provides a "walk" indication to pedestrians) to better protect pedestrians crossing Capitol Way if the street continues to include two lanes of vehicle traffic in each direction.

To address buses' difficulty in re-entering the traffic flow, the northbound bus stop could be moved to the far side of the intersection. A vehicle bypass lane can be provided where bus stops are located at transit bulb-outs as space permits to allow buses to stay in the travel lane and not block traffic behind. A bus stopped at these locations would then continue along the travel lane, having free flow. Cars would use the bypass only if a bus is located in the through lane. The pavement of the bypass lane could have the same type of special treatment as the center turn lane to denote it as being a secondary route and to help slow down traffic. Where a bike lane is present, the bike

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lane can remain between the vehicle and bus lanes or can be redirected behind the transit bulb-out.

A dedicated bike lane in the uphill direction protects bicyclists from faster traffic next to them. Bicycle climbing lanes are typically used where the right of way is constrained and cannot accommodate bike lanes in both directions. In these cases, a bicyclist can presumably travel downhill faster and does not need the added protection from vehicles, so a shared travel and bicycle lane is provided for downhill bicyclists.

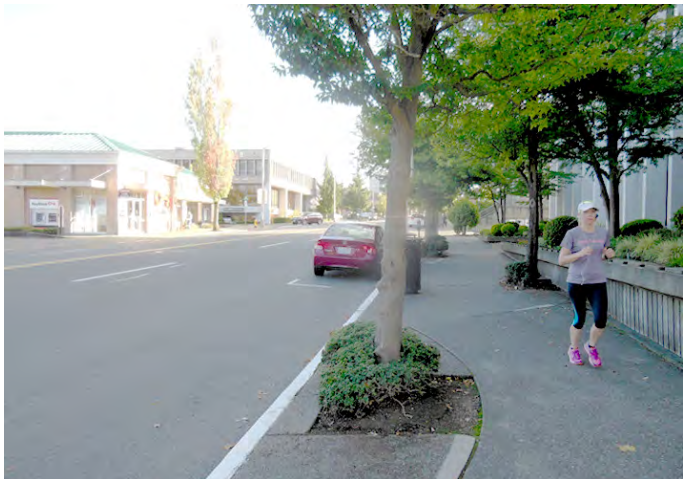

Figure 35: Current view of Capitol Way in the block between 9th and 10th avenues. Fast-moving cars, wide crossing distances, lack of parking lanes, and few street trees make it uninviting for walking. (Image Credit: Makers)

Figure 36: This perspective view depicts how a road diet and consistently planted street trees can increase safety and give the street more character. Reducing travel lanes and adding stormwater curb extension planters, permeable paving, and a bicycle climbing lane can work together to encourage downhill drivers to drive at a safer speed. Due to Capitol Way's gradient, stepping weirs (retaining walls that stormwater can flow over) can be used to slow the velocity of collected stormwater runoff and allow informational and playful art opportunities.

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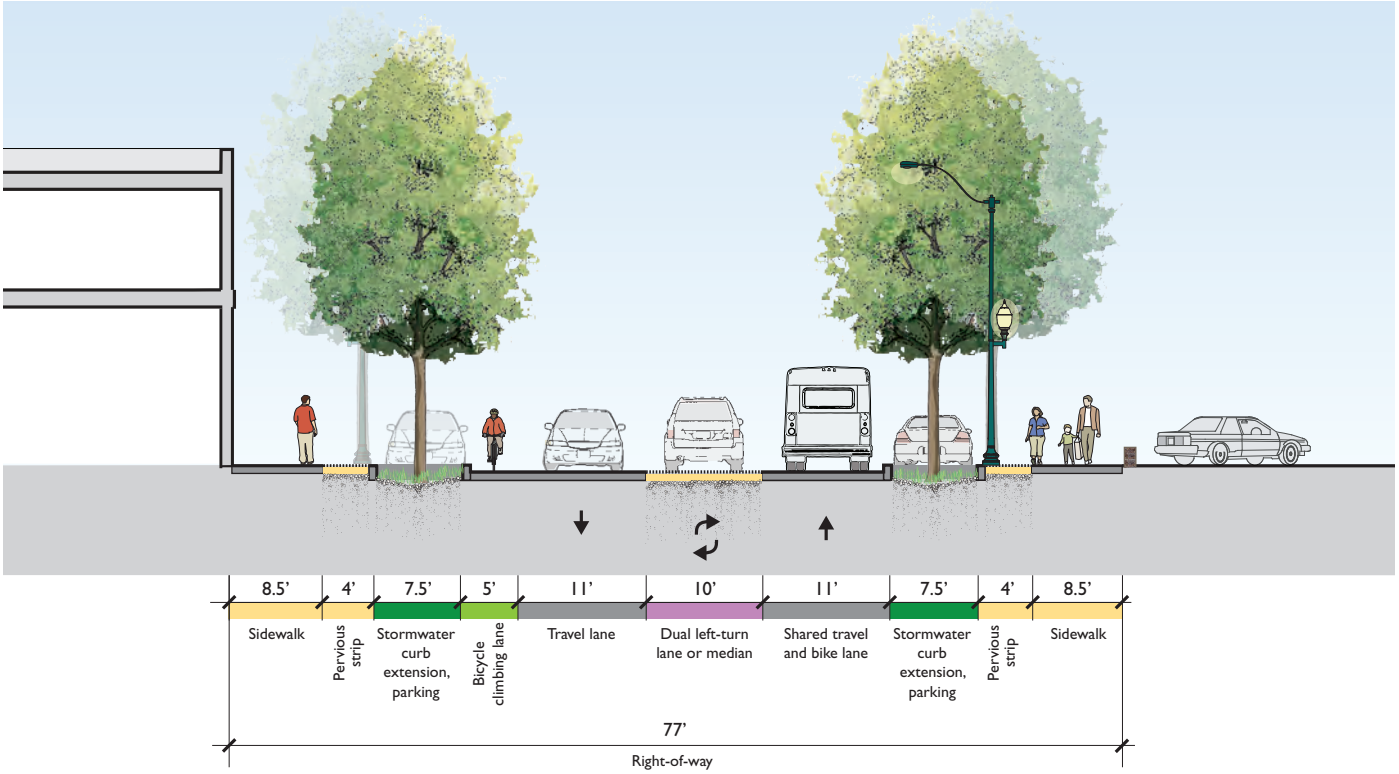

Figure 37: Cross section illustrating a road diet. Adding pervious paving, trees, and stormwater planters would manage stormwater runoff, create shade to improve the walking environment, and buffer pedestrians from adjacent traffic.

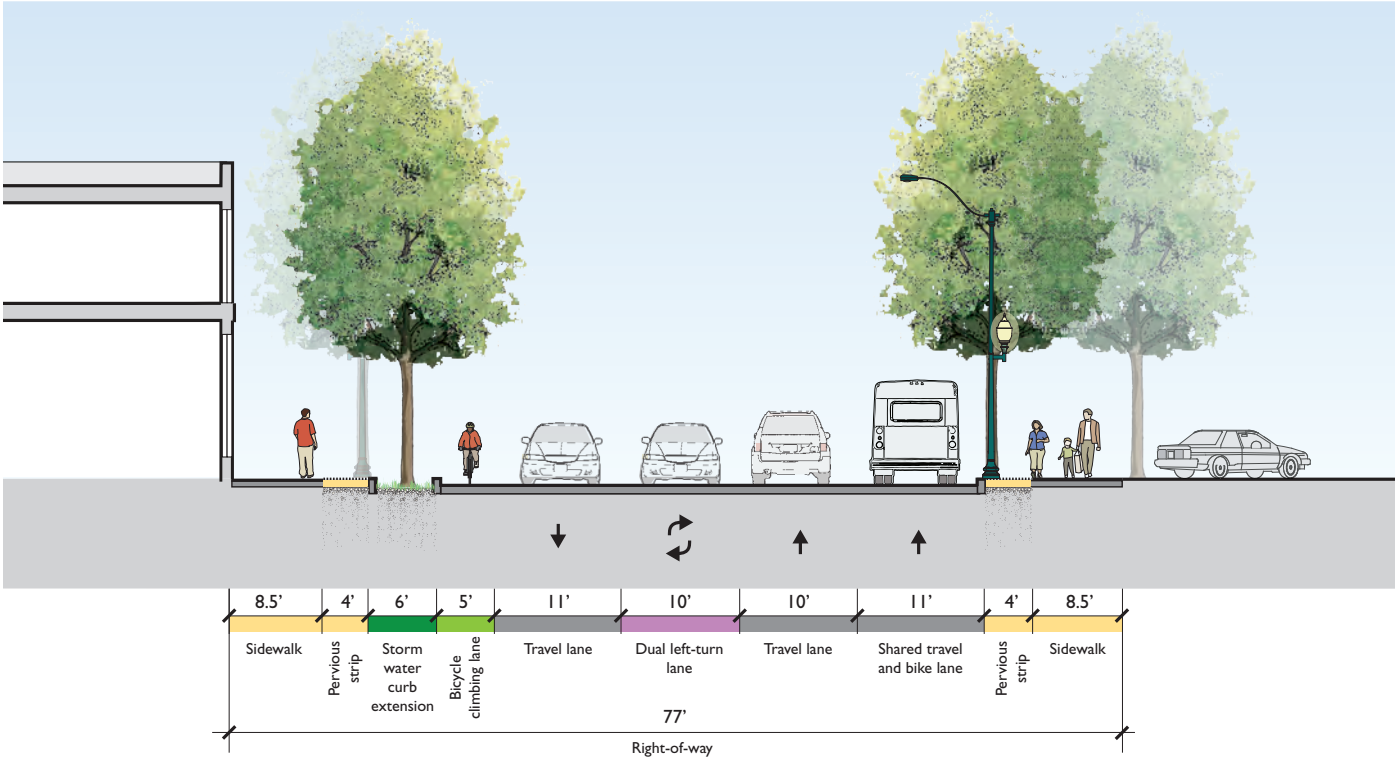

Figure 38: Cross section showing transition from the street section with two travel lanes to the section between Union and 11th avenues, where lanes are narrowed to help meet community goals by adding green infrastructure and a bicycle climbing lane to keep bicyclists safer.

1. Pervious paving between the curbside trees allows air and water exchange with the soil to improve tree health and clean stormwater.
2. Pervious paving, landscape strips, and bulb-outs in the median, parking lane, and along the curb allow space for green infrastructure.
3. Curb extension planters help clean stormwater. Due to the slope of the street, the planters can be terraced with weirs to work with the grades.
4. The bicycle climbing lane separates bicyclists from traffic to better protect them.
5. Corner bulb-outs can make crossing the street safer by encouraging drivers to drive more slowly through the intersections.
6. Stop signs or traffic signals at intersections along the descent of Capitol Way can calm traffic and keep pedestrians safer.
7. Time signals to not prioritize vehicle traffic outside of commute times, and even in commute times do not delay pedestrian crossings of Capitol Way too long, particularly adjacent to transit stops.
8. The provision of new on-street parking creates more parking options and buffers pedestrians from moving vehicles.

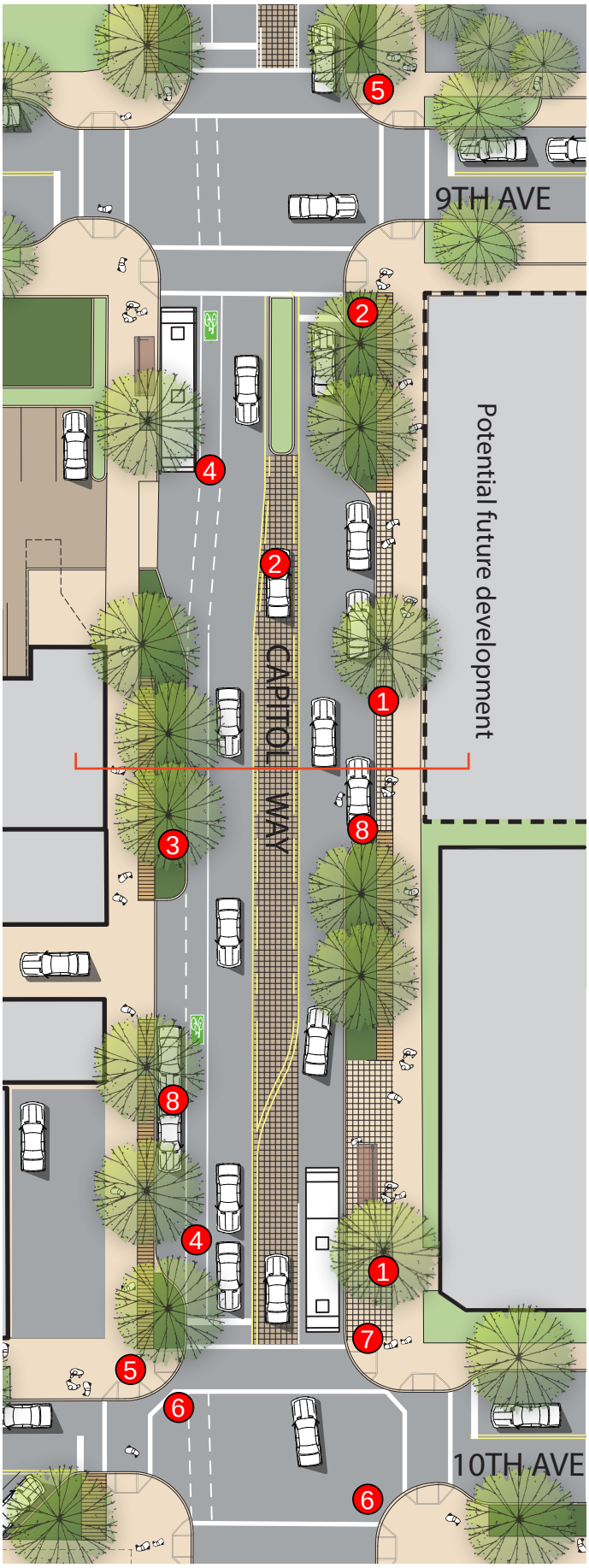

Figure 39: This plan view of Capitol Way between 9th and 10th avenues depicts a road diet. Bus stops can be relocated or designed to improve buses re-entering the flow of traffic. Adding on-street parking, street trees, and stormwater curb extension planters continues the capitol campus character into downtown and contributes to a pedestrian-friendly street.

- Boardwalk
- Pervious paving
- Sidewalk
- General landscaping
- Green infrastructure

0' 15' 30'

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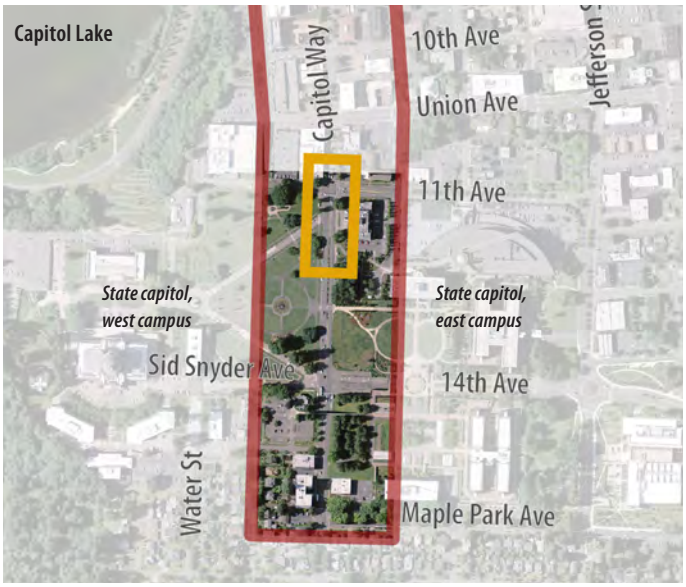
Focus Site 5—Intersection of Capitol Way and 11th Avenue

Existing Condition

This focus site is in the southernmost portion of Capitol Way. The intersection of Capitol Way and 11th Avenue is the transition point between the mixed-use office district with downtown to the north and the capitol campus to the south. Figure 40 highlights the boundaries of focus site 5 and the southern part of Capitol Way. This area is designed to emphasize vehicle traffic flow, and intersection signals are calibrated to give priority to vehicles. Capitol Way bisects the capitol campus and makes it difficult to walk between the two areas. North of the Capitol Way and 11th Avenue intersection is the beginning of the downward slope from south to north. Capitol Way angles to the west at Union Avenue, the next intersecting street to the north, which limits the connectivity between the different areas of the street. Southbound buses stop in a pullout at the southwest corner of Capitol Way and 11th Avenue and northbound buses stop in the travel lane at a designated zone near the midblock crossing between 11th and 14th avenues on Capitol Way.

The city wants the Capitol Way and 11th Avenue intersection to be a gateway to the city and link the capitol campus visually and physically with downtown. The intersection is poorly defined, with a parking lot and wide expanses of lawn and landscaping in front of historic government buildings set far back from the street on three of the corners (Figure 41). The fourth corner has a state office building; plans are underway to replace this building with a new structure.



Project area

Focus site

Figure 40: Capitol Way and 11th Avenue intersection. (Aerial Image Credit: City of Olympia)

Design Option

Many workshop participants noted that a gateway was needed to announce downtown and unify downtown with the capitol campus. In response, the design option includes entry plazas with special paving and seating walls on the corners. Buildings or other vertical elements can frame and highlight the intersection and views to both downtown and the state capitol building.

Street trees, rain gardens, stormwater planters, and conventional landscape treatments, following the *West Campus Historic Landscape Preservation Master Plan*, can be added to provide a variety of green infrastructure and extend the character of the capitol campus up to the intersection and along Capitol Way. Enhancing conventional landscaping and pedestrian circulation along the street frontage can provide many benefits, and itself can provide some stormwater management benefit by reducing overall imperviousness of the street. Every square foot of new conventional landscape space essentially removes the same amount of impervious area from the stormwater collection system. The *West Campus Historic Landscape Preservation Master Plan* also suggests that on-street parking be removed along the west capitol campus, which can create more space for landscaping and stormwater planters along Capitol Way.

A minor modification to the proposed state office building, to be built on the northwest corner of the intersection, can create a visual and physical link between the capitol campus and Capitol Way. The building's proposed front porch design can be modified to allow the entry stairs, which the current design orients only towards 11th Avenue, to turn the corner toward Capitol Way.

The city can work with capitol campus representatives to improve bicycle and pedestrian connectivity between downtown and the capitol campus and add green and complete street facilities around and through the campus, and along Capitol Way.

Many stakeholders, including capitol campus representatives, pointed out concerns about existing conditions along this part of Capitol Way from 11th Avenue to Maple Park Drive such as Capitol Way sharply divides the capitol campus and is difficult for pedestrians to cross. The design strategies developed for the Capitol Way and 11th Avenue intersection and other areas of Capitol Way could be extended to the Capitol Way and14th Avenue intersection and from 11th Avenue to Maple Park Drive to improve the community's concerns.

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The northbound bus stop could remain unchanged, as it is located near the midblock pedestrian crossing. The southbound bus stop could be relocated to also be closer to the midblock crossing. Shifting this stop south also allows for more landscape space near the 11th Avenue intersection, which creates a stronger gateway character at the intersection, reduces vehicle-bus conflicts, and provides a larger bus stop.

Figure 41: Existing view of the intersection of Capitol Way and 11th Avenue. The wide street, long waits for a walk signal, and numerous places where vehicles could potentially hit pedestrians make walking and bicycling unsafe. (Image Credit: Makers)

Figure 42: This perspective view shows how this intersection could be transformed into a gateway to both downtown and the capitol campus. Future redevelopment at the corners can frame the intersection. New corner plazas can have special pavement treatments, seat walls, and landscaping, including green infrastructure, to create an attractive yet functional space. The intersection could be raised to the sidewalk level to emphasize the pedestrian nature of this area and to slow drivers.

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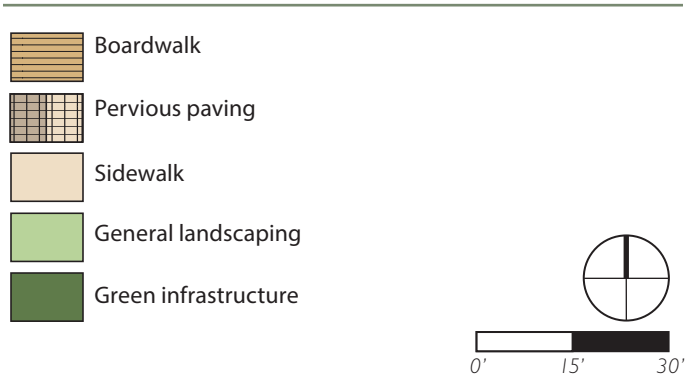
1. Entry plazas and special intersection paving can serve as a gateway to both downtown and the capitol campus.
2. Removing a parking lot can increase the amount of permeable area and strengthen the gateway character. This new green space can also provide a place for the state's historic fountain, currently in storage.
3. Rain gardens can treat and infiltrate stormwater.
4. Adding trees, landscaping, and stormwater planters can improve air and water quality, give the street character, unify Capitol Way's appearance all along its length, and provide a more pleasant and comfortable place for people to walk.

Figure 43: This plan view of the Capitol Way and 11th Avenue intersection illustrates gateway features on all four corners. Stormwater curb extensions along the street separate pedestrians and vehicles, while rain gardens in the capitol campus could allow landscape areas to be both attractive and functional.



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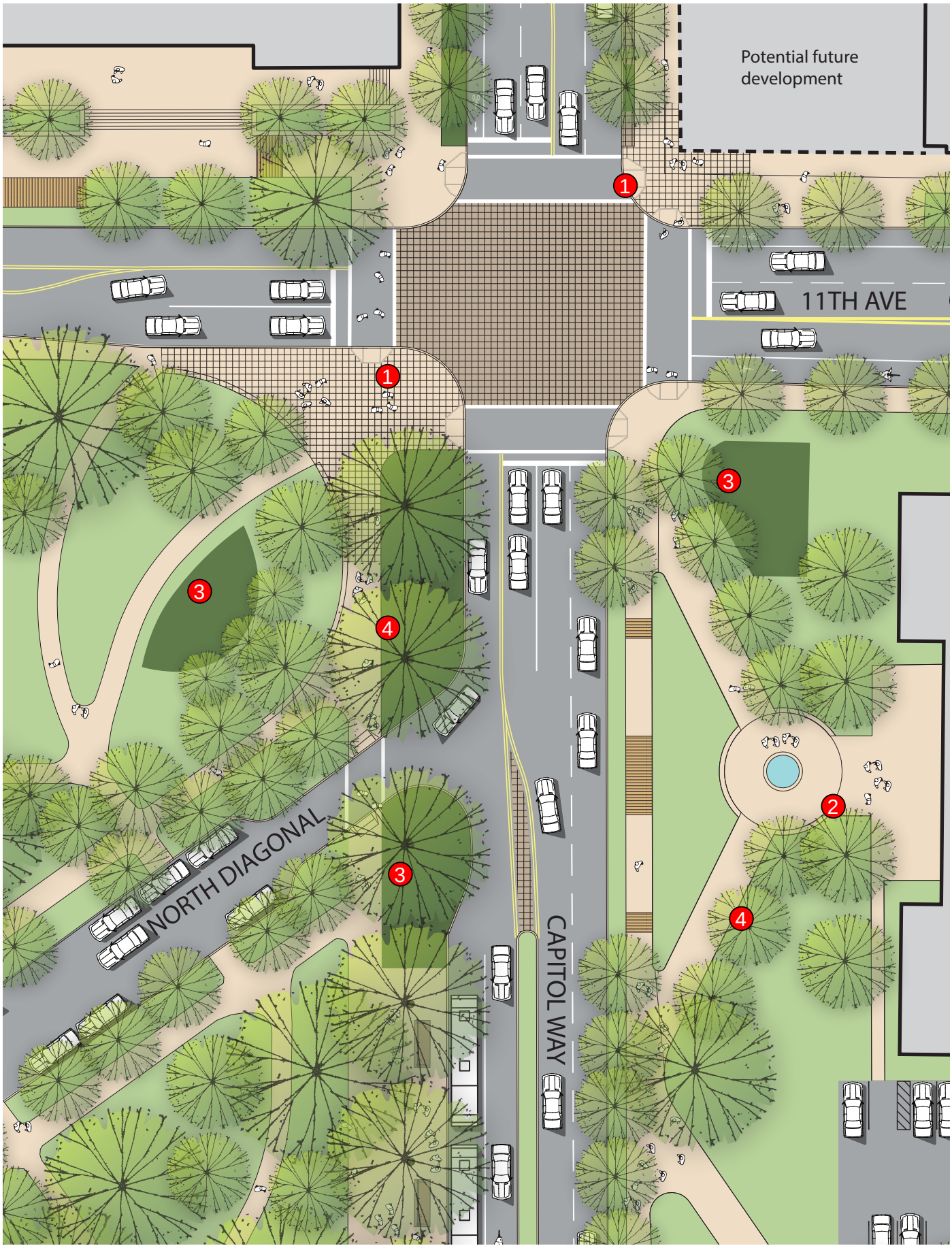

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5 | Next Steps and Funding Sources

The design options presented in this report, as well as the city of Olympia's other planning and policy efforts, can catalyze a range of improvements that can, in turn, attract more investment to improve Capitol Way and downtown. This chapter includes next steps that the city and its partners could take within the next five years to achieve their goals for downtown. It also notes potential funding sources identified and discussed during and after the design workshop. Some next steps would have ongoing implementation and programs that would continue beyond the initial five years discussed here.

Next Steps

Stakeholders, including city staff and staff from regional, state, and federal agencies, and the design team identified numerous tasks, programs, and policies that the city and its partners could implement if they choose to realize the design options in this report.

Near Term (2015 to 2017)

- **Include interim road diet design option improvements in repaving and restriping plans and construction projects.** The city will be repaving and restriping at least some portions of Capitol Way in the project area in the near future as part of the *2014-2019 Capital Facilities Plan*. The city could use this project as an opportunity to implement some elements of the road diet design options, as well as other features (e.g., bulb-outs, mid-block crossings, and others). These elements would occur as interim improvements by "painting" or striping them onto the new street pavement until full funding and design documents for new landscaping, moving curbs, and other physical improvements can be obtained. The improvements will encourage further discussions with stakeholders and analysis of the improvement's impacts on all modes of travel, and likely include traffic modeling of the road diet concept(s). This will inform the design of permanent improvements which should be completed to at least the 30 percent or similar design level. The performance of the interim improvements may also make the funding of permanent improvements more attractive for potential funders.
- **Include interim shared street and parklet improvements in repaving and restriping plans and construction projects.** The city can implement initial elements of shared or complete street concepts as part of repaving and restriping Capitol Way under the Capitol Facilities Plan activities. The interim improvements can use temporary and inexpensive materials such as paint for restriping and delineating corner bulb-outs, lane narrowing or removal, and parking zones; moveable planters for street trees and landscaping; and parklets to create more gathering and seating areas and bus zones.
- **Develop a Capitol Way Design Plan.** Preparation of a Capitol Way Design Plan can occur in conjunction with the upcoming Downtown Strategy undertaking (the Downtown Strategy will identify actions the city could take to implement its vision for downtown) or as a separate project. Integrating it with the Downtown Strategy could help the city understand how the downtown transportation network can support improvements to Capitol Way. The Capitol Way Design Plan could further develop the shared street design option for the northern portion of Capitol Way. The design plan could also further explore streetscape, green infrastructure, and other elements of the design options even if they cannot be implemented during the repaving and restriping of the street planned for under the capital facilities plan. Having a design plan completed and ready to use would be beneficial as either further interim implementation could be possible or other funding could be identified for additional pilot improvements in conjunction with the planned repaving and restriping project.
- **Develop a downtown shared streets district.** While a shared street on the northern part of Capitol Way could be implemented based on concepts and strategies developed in the Capitol Way Design Plan, it might make more sense to also develop a Downtown Shared Streets District Plan. A Downtown Shared Streets District Plan can assist in understanding the potential for the downtown transportation network to support improvements not only to Capitol Way, but the entire area anticipated to be included within the shared streets district. As part of the Downtown Shared Streets District Plan effort, the city could discuss the shared streets concept with stakeholders, conduct traffic modeling analysis of street improvement impacts on all modes of travel, analyze existing conditions in greater detail, and refine the interim and permanent improvement design options found in this report. In lieu of a Downtown Shared Streets District Plan, the Downtown Strategy could include a shared street district plan and advance the accompanying streetscape, green infrastructure, and other elements of the design options in this report.

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- **Work to coordinate Capitol Way design options with the state's West Campus Historic Landscape Preservation Master Plan update.** The city can work with the state to advance the strategies, goals, and design options to implement green and complete streets. As part of this effort, the city could also coordinate with the state to improve bicycle and pedestrian connectivity and safety through the campus.
- **Identify and implement projects that link to other funded projects.** As other public and private projects are planned and implemented, the city can consider incrementally implementing elements of the design options. This should be an ongoing action item beyond the near term and coordinated amongst all city departments and partner agencies.
- **Develop design standards for complete and green streets.** The city can develop design standards for complete and green streets to facilitate implementation of the Capitol Way design options and other concepts that will come from developing policies and plans such as a Capitol Way Design Plan, Downtown Shared Streets District Plan, or integrated with the Downtown Strategy. Several standard and guidance documents useful to this endeavor include the Institute for Transportation Engineers' *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*;[2] the National Association of City Transportation Officials' *Urban Street Design Guide*;[3] the Washington, D.C., Department of Transportation's *Green Infrastructure Standards*;[4] San Mateo County's *Sustainable Green Streets and Parking Lots Design Guidebook*;[5] the "Streetscape Design Guidelines" chapter of Seattle, Washington's *Right-of-Way Improvements Manual*;[6] the Puget Sound Partnership's Integrating *LID into Local Codes: A Guidebook for Local Governments*;[7] and Portland, Oregon's Bureau of Environmental Services website.[8]
- **Develop a green streets infrastructure operations and maintenance plan.** Many communities are implementing comprehensive green streets strategies and have recognized the benefits of preparing design standards and an operations and maintenance plan in tandem. The financial realities of the operations and maintenance plan can inform the complexities and details of the design standards to effectively maintain the green streets elements. Documents that can help Olympia prepare an operations and maintenance plan include: the Philadelphia Water Department's *Green Infrastructure Maintenance Manual Development Process Plan* and Appendix VII – Analysis of SMP [Stormwater Management Practice] Maintenance Protocols of *Green City, Clean Water Implementation and Adaptive Management Plan*;[9] Portland, Oregon's *Green Steward's Maintenance Guide*[10] and *Stormwater Management Manual*;[11] Seattle's *Green Stormwater Operations and Maintenance Manual*;[12] and the Washington. D.C., Department of Environment's *Stormwater Management Guidebook*.[13]
- **Identify and cultivate key partnerships.** Working with community stakeholders can help reach shared goals and implement strategies to integrate complete and green street concepts, create gateways, improve transit, enrich and unify the streetscape, and redesign Capitol Way. Key partners might include the county, the state, the regional transit agency, downtown business association, and parking and business improvement area groups. The city could also identify a role for businesses and other stakeholders to sponsor and maintain interim improvements such as parklets and planters and permanent improvements such as trees and bus shelters. The city can continue to look for these types of opportunities beyond the near term.

2 Institute of Transportation Engineers. Context Sensitive Solutions (CSS). *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach: An ITE Recommended Practice*. http://www.ite.org/css/. 2010.

3 National Association of City Transportation Officials. "Urban Street Design Guide." http://nacto.org/usdg. Accessed Nov. 21, 2014.

4 District Department of Transportation. "Green Infrastructure." http://ddot.dc.gov/GreenInfrastructure. Accessed Apr. 7, 2015.

5 San Mateo Countywide Water Pollution Prevention Program. *San Mateo County Sustainable Green Streets and Parking Lots Design Guidebook*. www.flowstobay.org/greenstreets. Accessed Apr. 7, 2015.

6 City of Seattle. *Seattle Right-of-Way Improvements Manual*. www.seattle.gov/transportation/rowmanual/manual/6_4.asp. 2012.

7 Puget Sound Partnership. *Integrating LID into Local Codes: A Guidebook for Local Governments*. Pages 137 – 138. http://www.psp.wa.gov/downloads/LID_Guidebook/LIDguidebook_FinalDraft.pdf. July 2012.

8 The City of Portland. "Sustainable Stormwater Management". www.portlandoregon.gov/bes/34598. Accessed November 21, 2014.

9 Philadelphia Water Department. "Green City, Clean Waters." http://phillywatersheds.org/what_were_doing/documents_and_data/cso_long_term_control_plan. Accessed Apr. 7, 2015.

10 The City of Portland. Environmental Services. "Green Street Steward Program." www.portlandoregon.gov/bes/52501. Accessed Apr. 7, 2015.

11 The City of Portland. Environmental Services. *2014 Stormwater Management Manual (SWMM)*. https://www.portlandoregon.gov/bes/52501. Accessed Apr. 7, 2015.

12 City of Seattle Public Utilities. Green Stormwater Operations and Maintenance Manual. http://www.seattle.gov/util/cs/groups/public/@spu/@usm/documents/webcontent/spu02_020023.pdf. Accessed Apr. 7, 2015.

13 District Department of the Environment. 2013 Stormwater Management Guidebook. http://ddoe.dc.gov/swguidebook. 2013.

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- **Implement and enforce city and downtown design guidelines and policies.** The city can implement and enforce existing design guidelines and land use, transportation, and economic policies and prepare other guidelines, policies, and implementation measures as needed to support its vision and goals for downtown. This action item should continue beyond the near term.
- **Partner to reduce vacancy of downtown buildings and their parking lots.** The city, downtown business organizations, property owners, and other stakeholders can work together to provide temporary uses in vacant buildings and their parking lots to create interest and active uses along the street. Uses might include art installations,[14] pop-up retail,[15] pop-up restaurants, food trucks or mobile retail (retail inside refurbished vehicles such as a bus), and similar temporary installations. Food truck "pods" in parking lots can include tables and seating, overhead canopies, lighting, a stage for entertainment, and a children's play area. The SoMa StrEat Food Park[16] in San Francisco, CA provides many of these elements including a large heated pavilion, rotating food truck vendors and cuisines, and programs to tie into related events such as celebrating national corn dog or grilled cheese sandwich day by offering those foods on the designated day.

  "Pavement-to-parks" installations could also be a strategy to pursue. Pavement-to-parks are where portions of a roadway is repurposed from vehicle use to public open space by closing off a roadway, or removing a portion thereof, with the use of street furniture, paint and/or planters to define a pedestrian space. These interventions can improve pedestrian safety, calm traffic, and enhance the attractiveness of the street. Pavement-to-parks can occur where streets or intersections produce excessively large areas of paved roadway that results in complicated intersections or slip lanes that create safety hazards for all roadway users, especially pedestrians. Public open space improvements can range from larger painted corner bulb-outs to an expanded public plaza with painted roadway surfaces, public art, planters, tables, seating, canopies and/or stormwater features. This strategy is increasingly being employed in cities across the United States.

  These various tactics can increase economic and pedestrian activity downtown until permanent uses are established in the vacant spaces.[17] In addition, pop-ups and flexible spaces can also encourage entrepreneurs by giving them inexpensive space to get started in. These types of opportunities should continue into the future.
- **Partner to improve downtown alleys.** The city, adjacent property and business owners, downtown business organizations, and other stakeholders can work together to improve downtown alleys to create a more fine-grained pedestrian network and vibrant pedestrian gathering areas, improve the character of the downtown, and reduce stormwater ponding in these areas. One example of this type of effort is the Alley Network Project in Seattle, which developed public and private partnerships to transform alleys around Pioneer Square into lively and attractive spaces. Its website includes lessons learned, resources, partnership members, and other information.[18]

Mid-Term (2018-2020)

- **Implement Capitol Way design option improvements that have not been completed.** The city or a public-private partnership can consider designing, building, and maintaining the shared streets, green infrastructure, street trees, and other elements that are not implemented as part of the street repaving and restriping capital facility improvement projects.
- **Work with state agencies that manage the capitol campus to implement improvements along Capitol Way between 11th Avenue and Maple Park Drive, and within the campus itself.** The city can coordinate and partner with state agencies as they implement the *West Campus Historic Landscape Preservation Master Plan*, 1063 State office building project, and other improvements to implement the design options and achieve community goals.
- **Review and update the green streets operations and maintenance plan.** The operations and maintenance plan should remain current with best practices and be regularly updated with information gathered from staff feedback, community input, and monitoring of green infrastructure strategies.

[14] San Francisco Arts Commission. "Search results for: Art in Storefronts." www.sfartscommission.org/?s=art+in+storefronts. Accessed Apr. 7, 2015.

[15] Farley, John. No Vacancy: Turning Empty Spaces Into Cultural Pop-Ups. METROFOCUS. Thirteen.org. October 31, 2011. http://www.thirteen.org/metrofocus/2011/10/no-vacancy-turning-empty-spaces-into-cultural-pop-ups.
The Storefront. How it Works. Pop-Ups Are Easy. www.thestorefront.com/how-it-works. Accessed Apr. 7, 2015.

[16] SOMA StrEatfood Park. "Home Page." http://somastreatfoodpark.com. Accessed Apr. 18, 2015.

[17] Marketek, Inc. *Invigorating Main Street with Pop-Up Businesses.* Portland, Oregon. http://www.oregon.gov/oprd/HCD/SHPO/docs/2013OMSConf/Marketek_PopUp_Retail.pdf. 2013

[18] Alley Network Project. "About the Alleys." http://alleynetworkproject.com/sample-page. Accessed Apr. 7, 2015.

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Funding Sources

Including green and complete streets in projects can help the city compete for limited infrastructure improvement funding from regional, state, or federal agencies. Green and complete streets elements can be easily integrated with other street improvements and support the environmentally sustainable and multimodal concepts that many funding entities emphasize.

Participants in the focus group on implementation identified several potential funding sources that the city and its partners could explore to implement the design options. The design team also researched additional potential funding sources.

Federal Sources

- **EPA's Clean Water Act Section 319 grants** fund demonstration projects that reduce nonpoint source pollution. Green infrastructure elements of the design options can be eligible for funding through this program.[19]
- **EPA's Brownfields grants and technical assistance** give communities and other stakeholders resources to assess, and clean up properties where the actual or potential presence of a hazardous substance could complicate reuse. Sites in the project area could be eligible for this assistance.[20]
- **Green Project Reserve**, part of EPA's Clean Water State Revolving Fund, is a water quality financing source that helps communities meet the goals of the Clean Water Act. Nonpoint source pollution control and green infrastructure can be eligible for funding through this program.[21]
- **EPA Region 10** Office offers many different funding sources for efforts to protect and restore the Puget Sound.[22]
- **EPA's Office of Water** has grants and other funding programs, including: **Clean Water** (projects to improve water quality, renew wastewater, and support local economies); **Section 106 Water Pollution Control** (to establish ongoing water pollution control programs); and **Targeted Watersheds** (to encourage community-based approaches to protect and restore watersheds such as Puget Sound).[23]
- **EPA's Urban Waters Small Grants Program** funds research, training, and studies that advance the restoration of urban waters by improving water quality through activities that support community revitalization and other local priorities. About 19 percent of recent grants have been given to advance green infrastructure.[24]
- **The U.S. Department of Housing and Urban Development's Community Development Block Grant Program** offers the **Section 108 Loan Guarantee Program.** Section 108 provides financing for a range of development-related projects including public infrastructure. These loans can catalyze private development.[25]
- **MAP-21, Moving Ahead for Progress in the 21st Century**, under the **U.S. Department of Transportation's Federal Highway Administration**, provides funding for pedestrian, bicycle, street, and transit projects. Specifically, MAP-21 establishes the Transportation Alternatives Program (TAP) and continues the Surface Transportation Program (STP).[26]

[19] U.S. EPA. "Clean Water Act Section 319." http://water.epa.gov/polwaste/nps/cwact.cfm. Accessed Apr. 7, 2015.

[20] U.S. EPA. "Brownfields and Land Revitalization." www.epa.gov/brownfields. Accessed Apr. 7, 2015.

[21] U.S. EPA. "Green Project Reserve." http://water.epa.gov/grants_funding/cwsrf/Green-Project-Reserve.cfm. Accessed Apr. 7, 2015.

[22] U.S. EPA. "EPA Region 10 (Pacific Northwest)." www2.epa.gov/aboutepa/epa-region-10-pacific-northwest. Accessed Apr. 7, 2015.

[23] U.S. EPA. "Grants Redirect." http://water.epa.gov/grants_funding/. Accessed Apr. 7, 2015.

[24] U.S. EPA. "Urban Waters Small Grants Fact Sheet." www2.epa.gov/urbanwaters/urban-waters-small-grants-fact-sheet Accessed Apr. 7, 2015.

[25] U.S. Department of Housing and Urban Development (HUD). "Section 108 Loan Guarantee Program." www.hudexchange.info/section-108. Accessed Apr. 7, 2015.

[26] U.S. Department of Transportation Federal Highway Administration. "Surface Transportation Program (STP)." http://www.fhwa.dot.gov/map21/factsheets/stp.cfm. Accessed Apr. 7, 2015.

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State Sources

- **The Washington State Historical Society** offers a **Heritage Capital Projects Fund** for projects facilitating the preservation of Washington's heritage and history and making it readily accessible to its citizens. Funds might be available in 2015.[27]
- **The Washington State Department of Natural Resources** administers funds from the **U.S. Forest Service's Tree City USA Tree Planting Grant**. Funding is available to cities that plan to increase community tree canopy coverage and provide multiple environmental benefits with stormwater management and water quality improvement.[28]

Community and Other Sources

- **Olympia** identified funding in its *Capital Facilities Plan* for 2015-2020 to make street tree, sidewalk, and corner bulb-out improvements between 10th and Union avenues during 2016 and 2020. The city could see if it is possible to fund and construct these improvements sooner. Regardless, the city can build on these planned improvements to respond to issues identified through the Greening America's Capitals project.
- **The ECO Network and the Puget Sound Partnership** offers a $10,000 grant for Thurston County ECO Net member organizations as part of their **ECO Net Capacity Building Block Grant**. The grant might be available in 2015. These grants fund a variety of membership development and networking programs to provide community outreach and education on issues related to Puget Sound stewardship.[29]
- A **special improvement district** can be created for stormwater, landscape, and lighting, or other streetscape improvements to help fund capital investments and operations and maintenance of improvements. The properties and/or businesses that would contribute to the improvement district will depend upon the specific boundary and improvements of the district, but the city can build upon the efforts and program of the existing **Parking and Business Improvement Area**.
- **The Downtown Business Association** could consider expanding and changing its funding and investment strategies to help with capital investments and operations and maintenance of improvements.
- A range of regional and national foundations and nonprofit institutes can fund further planning and design for green and complete streets in downtown Olympia through direct grants, training, or technical assistance. One example is the **12,000 Rain Gardens in Puget Sound**[30] organization in conjunction with the **Russell Family Foundation** that offers grants for environmental sustainability to reduce polluted runoff into the Puget Sound through green infrastructure.[31]
- The city could explore **public-private partnerships** for planting and maintaining street trees and green infrastructure such as a volunteer street tree management or stewardship program. Volunteers could include master gardeners, the general public, and students. These programs could also serve as job training for youths and others.

[27] Washington State Historical Society. "Heritage Capital Projects Fund." http://www.washingtonhistory.org/support/heritage/capitalprojectsfund/. Accessed Apr. 7, 2015.

[28] Washington State Department of Natural Resources. "Community Forestry Assistance Grant Resources." www.dnr.wa.gov/ResearchScience/Topics/UrbanForestry/Pages/rp_urban_grant_resources.aspx. Accessed Apr. 7, 2015.

[29] Puget Sound Partnership. Funding Opportunities. www.psp.wa.gov/funding.php. Accessed Apr. 7, 2015.

[30] 12,000 Rain Gardens in Puget Sound. "The Campaign." www.12000raingardens.org/about-us/the-campaign. Accessed Apr. 7, 2015.

[31] The Russell Family Foundation. "Puget Sound." www.trff.org/puget-sound. Accessed Apr. 7, 2015.

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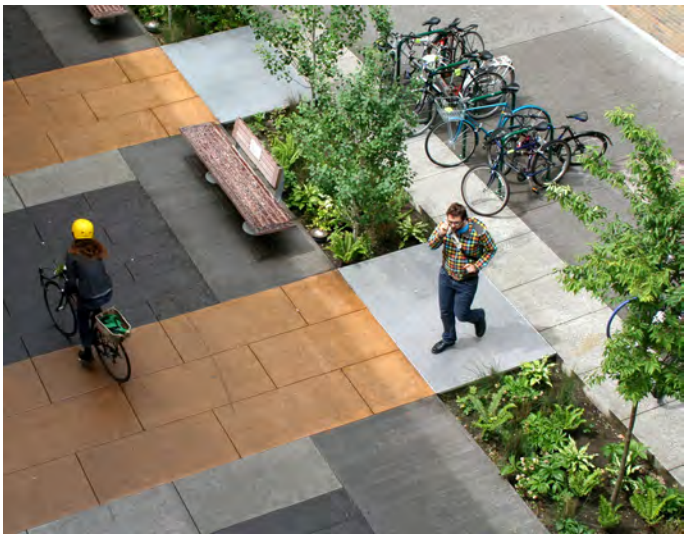
Appendices

APPENDIX A: EXAMPLES OF GREEN STREETS



Figures A-1 and A-2: Grated walkways, stormwater planters, and pervious paving in the SW Montgomery shared street in Portland show the different types of elements that can provide attractive ways to improve water quality. (Image Credit: Urban Rain | Design)

Many types of green infrastructure elements are useful in city streets and environments, even those with constrained rights-of-way. Green streets integrate these elements into a larger whole and for wider benefit. A green street is an integration of street and park; resulting in a landscaped public space designed to capture, cleanse, and potentially infiltrate stormwater runoff while creating an attractive environment that makes walking and biking more pleasant.

SW Montgomery Street in Portland, Oregon, is a green and complete shared street that includes grated passageways, or "bridges," across stormwater planters, landscaping, and curbless pavement areas (Figures A-1 and A-2). Shared streets expand pedestrian spaces and could create areas for capture and management of stormwater runoff into planters and pervious pavements. (See shared streets examples in Appendix E.)

The Burnside/Couch Streetscape in Portland is an example of stormwater curb extension planters (Figures A-3 and A-4). Retrofitted into a busy corridor, these planters separate vehicles and pedestrians, shorten pedestrian crossing distances, help calm vehicle speeds, and treat stormwater runoff.

Figures A-3 and A-4: Before and after views of the Burnside/Couch curb extension stormwater planters in Portland, which show how stormwater management and treatment can be retrofitted into city streets with existing trees. (Image Credit: Urban Rain | Design)

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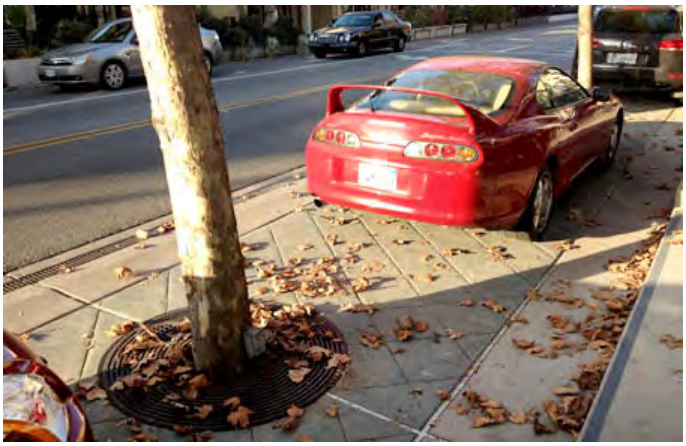
Pervious paving, including boardwalks, allow stormwater flows to infiltrate at or near the source and limit runoff. The Sports Basement development in Berkeley, California, demonstrates a boardwalk application. The boardwalk serves a dual purpose as it spans a bioretention area that collects and treats stormwater and works in a compact and constrained site, to accommodate bike parking (Figure A-5). One block of Allston Street in downtown Berkeley has been retrofitted with permeable pavers to infiltrate stormwater runoff (Figure A-6).

Castro Street in Mountain View, California, has street trees planted in parking lanes. Paired with tree grates and guards, tree wells in parking lanes provide a larger root zone area, separate trees from buildings and awnings, and let the parking zone be used for outdoor dining, street fairs, and other community events. These planters can also be designed to let runoff flow directly into the tree well systems. However, the Castro Street example does not incorporate direct capture of stormwater runoff (Figures A-7 and A-8).

Pervious pavement systems and green infrastructure stormwater elements can reduce the amount of stormwater runoff, slow the flow of runoff, and help clean the water at the source. They can reduce the quantity of debris, sediment, and contaminants by directing water to and through plants and soil, which protects water quality in Budd Inlet, Capitol Lake, and the Puget Sound. Planting trees can expand the urban forest and urban habitat, improve air quality and placemaking, reduce ambient air temperatures, and capture rainfall before it hits the ground. These examples show how green streets and green infrastructure can be integrated with design elements that create a more complete street and pleasant environment, giving drivers, bicyclists, pedestrians, and transit users more choices while supporting downtown Olympia's economic vitality and character.

Figure A-5: Pervious paving such as boardwalks allows stormwater runoff to infiltrate at the site. The Sports Basement in Berkeley illustrates how techniques to improve water quality can serve other functions such as providing bicycle parking. (Image Credit: Community Design + Architecture)

Figure A-6: Pervious pavers can collect and treat stormwater runoff. (Image Credit: Community Design + Architecture)



Figures A-7 and A-8: Trees in grated tree wells can provide numerous environmental and placemaking benefits. When placed in the parking lane, as on Castro Street in Mountain View, they create places that can be used flexibly for parking, seating, or community events. (Image Credit: Urban Rain | Design)

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APPENDIX B: GREEN INFRASTRUCTURE TOOLBOX

Green infrastructure[1] uses landscaping, permeable paving, and soil rather than more conventional engineering solutions to collect and treat stormwater runoff to protect water quality. In addition to these environmental benefits, green infrastructure strategies can enhance a streetscape's character and shade pedestrians. These techniques and facilities can be used to create green streets and provide green infrastructure elements.

Green Wall: Green walls help transform blank vertical surfaces into living art canvases. They are especially useful to significantly green a space without taking up valuable ground area. Though green walls are often seen as mainly aesthetic, they can be designed to accept stormwater runoff from the building and slow the movement of the runoff, much like a tree's bark. These stormwater walls could be effective in the alley system in Olympia's downtown core and other places where space is tight and roof downspouts are present.

Grated Landscape Area: These areas have a metal grate placed over the landscaping system to allow pedestrian and/or vehicular traffic on top of them. This stormwater system creates both a landscaping system for stormwater management and a viable walking or driving surface. Typically, slip-resistant steel metal grates are used, with the openings within the grate a maximum of 1/2-1/4 inch wide to meet current Americans with Disabilities Act standards. The plant material in grated landscape area systems is typically low growing (maximum 6 inches tall) and can survive in reduced light conditions.

Stormwater Planter: Stormwater planters are one of the most common types of landscaped stormwater facilities in downtowns. These systems can take different shapes and sizes, capture either street or sidewalk runoff, or be used with or without on-street parking. Stormwater planters along streets can be used at individual tree locations or as a linear and interconnected part of the sidewalk zone. In areas with high pedestrian use, stormwater planters should be graded as shallowly as possible to minimize the need for exposed curbs and other potential trip hazards.

Pervious Paving: In some areas, the need for hardscape will trump the desire for additional landscaping space. In these areas, pervious paving is appropriate for stormwater management and has many types of systems. Interlocking concrete joint pavers offer the most versatility in terms of color, shape, and pattern. They are relatively easy to install, remove, and replace if there is a need to access subsurface utilities without residual scaring and patchwork, as can be seen in conventional paving. Boardwalks are also useful for allowing stormwater to infiltrate through the boardwalk gaps while providing a distinctive and more natural paving surface.

Stormwater Curb Extension: Stormwater curb extensions, also known as bulb-outs, can be placed along streets in the parking zone. These facilities replace either existing parking spaces or areas in the parking zone striped as "no parking" with a landscaping system that captures and treats stormwater runoff. Stormwater curb extensions can be designed in many shapes and sizes. They can also be the method for supporting new street trees outside of the sidewalk zone.

Rain Garden: Rain gardens are larger landscaped areas used to capture stormwater runoff and can help set up special focal points or connections along streets. Rain gardens can be highly versatile, take on any shape, and are designed to capture and manage more significant amounts of runoff than other types of stormwater facilities.

[1] U.S. EPA. "Green Infrastructure." www.epa.gov/greeninfrastructure. Accessed Apr. 7, 2015.

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APPENDIX C: EXAMPLES OF PARKLETS

A parklet is a publicly accessible open space that expands the sidewalk area of a street for people to use for a range of activities. They add vitality to the street and adjacent uses. Parklets repurpose part of the street, typically one or two parking stalls, and are typically built and maintained by adjacent "sponsoring" businesses or residents. Sponsors might include cafes and restaurants, bike shops, art galleries, or churches. Some transit agencies are exploring the potential of using portions of parklets for bus stop bulb-outs. San Francisco was the first community in the United States to install parklets in 2010. The concept has spread across the country and has become a common technique to quickly and economically expand pedestrian zones in downtowns. The parklets on Powell Street in San Francisco provide much-needed seating and landscaping in a busy downtown shopping district (Figure C-1). In Olympia, parklets are constructed with roofs to protect people from rain and one incorporates green infrastructure into its design.

Figure C-1: Parklets provide respite in heavy pedestrian areas along Powell Street in San Francisco. (Image Credit: Community Design + Architecture)

A parking stall's typical dimensions—7 to 10 feet wide and 20 to 25 feet long—can create enough space for a variety of activities, including outdoor dining. For example, the Cheese Board Collective in Berkeley, California, (Figure C-2) constructed a parklet on a heavily traveled main street with narrow sidewalks to accommodate safe and convenient seating. This parklet incorporates many design elements, including mosaic tile planters, benches around trees, various seating types and arrangements, and night lighting. It encourages shoppers, residents, and passersby to sit and talk or relax over coffee, pastries, or a slice of pizza throughout the day and evening. Like most parklets, anyone can use it because it is officially a public open space.

Figure C-2: Parklets can offer different seating arrangements for a variety of social interaction. (Image Credit: Community Design + Architecture)

Parklets can be provided on many different types of streets, from major arterials running through a downtown to low-volume commercial or mixed-use streets. Parklets can support economic development and enhance street character.

Areas with heavy pedestrian activity might not be able to devote much space to on-street landscaped stormwater facilities. Parklets can add landscaped planters, or green roofs to help manage stormwater runoff. The art and architecture of the stormwater canopies can create a distinctive and innovative character.

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APPENDIX D: EXAMPLES OF ROAD DIETS

Figure D-1: Poor or no pedestrian and bicycle facilities along Stone Way in Seattle prompted the city to implement a road diet. (Image Credit: Seattle Department of Transportation)

Figure D-2: After the road diet in which vehicle lanes were removed and bicycle lanes and pedestrian improvements were added, Stone Way is a safer and more pedestrian-friendly street. (Image Credit: Seattle Department of Transportation)

Road diets typically reduce the number of travel lanes on a street; they can also narrow the width of the travel lanes. The remaining right-of-way can be reallocated to bicycle facilities, parking, landscaping or green infrastructure, and/or pedestrian space. Road diets improve the pedestrian and bicycle environment by calming traffic and adding amenities that make all users safer. Road diets can be used for a variety of street types and land use contexts. The calming of traffic and better walking and bicycling conditions can also help the economic vitality of commercial mixed use streets, helping them more fully function as community main streets.

Seattle has several successful road diet programs. In each of the examples below, vehicle travel speeds were reduced while peak-hour traffic volumes remained the same.

Stone Way reduced the travel lanes from four to two and added a two-way left-turn lane and a combination of bike lanes and sharrows, where bikes and vehicles share the same travel lane (Figures D-1 and D-2). This example is particularly pertinent to Capitol Way, as both streets have an uphill segment and a mix of land uses. After the reconfiguration, an evaluation based on three years data found a 6 percent decrease in motor vehicle volume, a 35 percent increase in bicycle traffic, and a decrease of all collisions by 14 percent. It also found that traffic was not diverted to adjacent streets or neighborhoods.[2]

Nickerson Street reconfigured the roadway to improve pedestrian safety by reducing the number of travel lanes and adding new marked crosswalks. The result for the first year of data after the improvements was a 23 percent decrease in the number of collisions.[3] Northeast 125th Street changed from a four-lane street (two travel lanes in each direction) to a three-lane street (one travel lane in each direction with a center turn lane) and added bicycle lanes. This street also saw a significant drop in speeding and collisions. Cars traveling faster than 40 miles per hour dropped by 69 percent and the rate of pedestrian, bicycle, and head-on collisions dropped by 10 percent.[4]

2 City of Seattle Department of Transportation. *Stone Way N Rechannelization: Before and After Study*. http://www.seattle.gov/transportation/docs/stonewaybeforeafterfinal.pdf. Accessed Apr. 7, 2015.

3 City of Seattle Department of Transportation. "Nickerson Street Changes." www.seattle.gov/transportation/nickerson.htm. Accessed Apr. 7, 2015.

4 City of Seattle Department of Transportation. "NE 125th Street – A Safer Street for All." Accessed Apr. 7, 2015.

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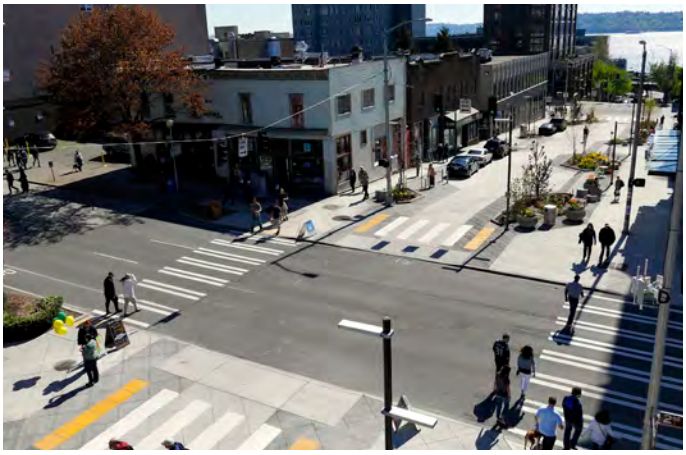
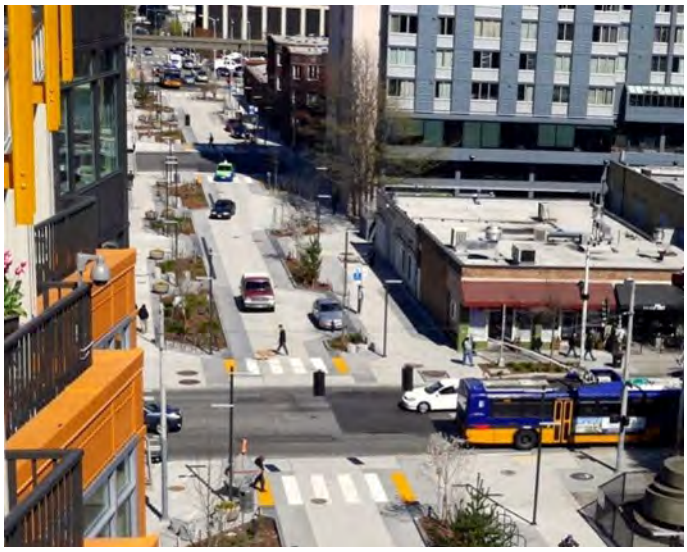
APPENDIX E: EXAMPLES OF SHARED STREETS

Shared streets have no curbs, and are designed to provide more public open space use while also creating a slower, safer street for all users. The street can serve multiple functions such as street fairs, seasonally expanded farmers markets, food truck gatherings, and informal public uses. The street could be closed to traffic for some of these activities. The arrangement of the road and sidewalk surface on a level ground plane, paired with special surface treatments (i.e., tactile and other pavement finishes), help calm traffic and define areas of the street that have different primary uses and modal priorities. This type of open space emphasizes the pedestrian while still allowing bikes and cars as "guests."

Bell Street, a four-block long shared street, is in one of Seattle's densest mixed-use neighborhoods. It was redesigned into a shared street to provide an outdoor living room to the residents of the surrounding buildings while still allowing vehicles, bicyclists, and pedestrians. Opened in 2014, the street has hosted numerous events, ranging from art walks to group dance lessons, while providing everyday public space to nearby residents, office workers, and commercial customers (Figures E-1 through E-4).





Figures E-1, E-2, E-3, and E-4: Bell Street is a shared street in a mixed-use area. Paving materials and colors, landscaping, and street furniture convey to drivers that this is a pedestrian zone and to slow down. (Image Credit: SvR Design Company)

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