

# OPEN SPACE PLAN

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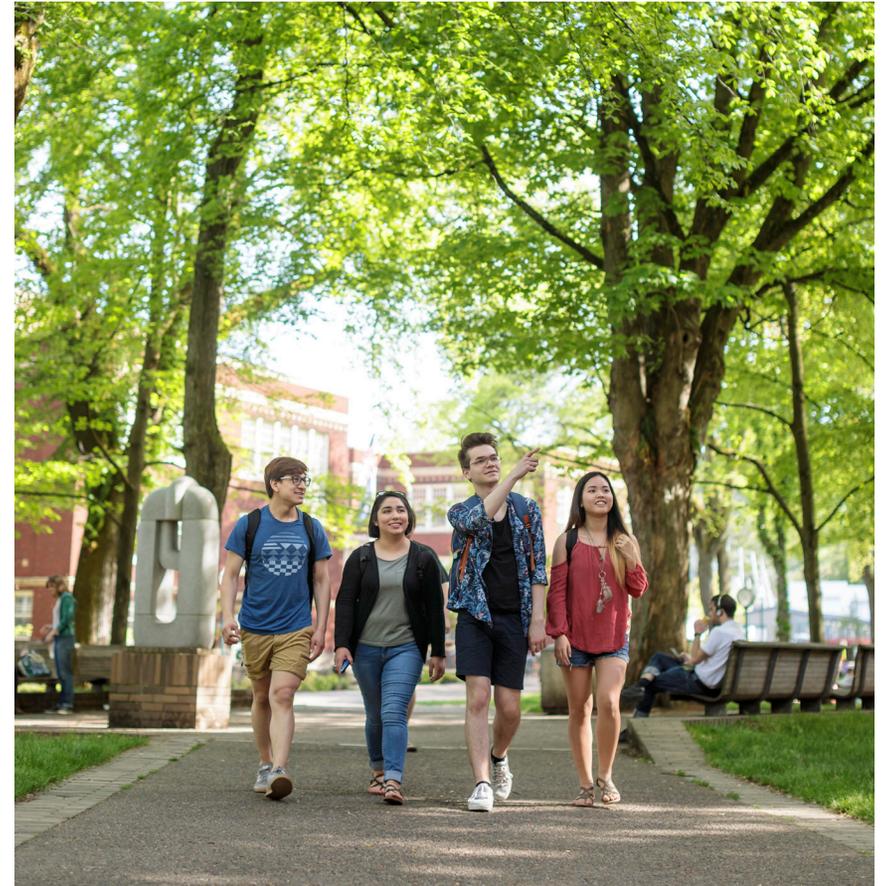


Figure 1. Portland South Park Blocks on the PSU Campus, source: PSU Flickr. Front Cover. Walk of Heroines, source: Campus Planning Office.

## ACKNOWLEDGMENTS

### CAMPUS PLANNING OFFICE

Jason Franklin, AICP, Director  
 Rani Boyle, Associate Campus Planner  
 Kevin Saavedra, AICP, GIS & Planning Analyst  
 Ludwig Salzmann, Assistant Planner  
 Laura Combs, Assistant Planner  
 Bijeta Choudbury, Assistant Planner  
 Brittany Quale, Assistant Planner  
 Ellen Palmquist, Assistant Planner

### CAMPUS SUSTAINABILITY OFFICE

Jennifer McNamara, LEED-AP, Campus Sustainability Director  
 Molly Bressers, Program + Outreach Coordinator  
 Brad Melaugh, Graduate Student

### STUDENT SUSTAINABILITY CENTER

Heather Spalding, Student Sustainability Coordinator

### 2.INK STUDIO

Melinda Graham, LEED-AP, Principal  
 Tom Wortman, Landscape Designer

# INTRODUCTION

The intent of the plan is to support a functional, interconnected, and sustainable system of open spaces that serves the overall planning efforts, vision, and mission of Portland State University.

# EXECUTIVE SUMMARY

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Portland State University (PSU) is a 50 acre campus located in the urban core of Oregon’s largest metropolitan region. Approximately 28,000 students are enrolled at the University and interact with its rapidly changing campus. To accommodate the growing demand for academic facilities, new buildings are being constructed and existing buildings are being renovated and expanded. Given PSU’s dense urban context and short supply of natural areas, the importance of open spaces cannot be overemphasized as the University continues to develop.

This plan is intended to acknowledge open spaces as valuable campus assets with multi-faceted benefits and functions that respond to a variety of campus needs. It aims to characterize and define open space types, guide the integration of open space into development decisions, highlight opportunities for improvement and engagement, and advocate for preservation where appropriate. The plan presents a vision for open spaces where they are actively considered instead of functioning as an afterthought in design.

Key recommendations of this Open Space Plan include the redesign and preservation of the Oak Savanna Block, improvements along 11th Ave, and establishment of a more intentional network of corridors that connect open spaces on campus. Through a multi-year stakeholder engagement initiative, the following values were established and serve as a framework for the recommendations within this plan:

-  • **COMMUNITY ENGAGEMENT:** Open spaces provide flexibility and opportunity for programming, recreation, and community building.
-  • **PEDAGOGY:** Open spaces provide unique opportunities to learn and engage with natural systems, functioning as a tangible living laboratory for PSU.
-  • **IDENTITY + CONTEXT:** Open spaces reinforce cultural, campus, and personal identities, creating context and a connection to place.
-  • **ECOSYSTEM SERVICES:** Open spaces provide critical ecosystem services, including, stormwater management, wildlife support, heat island reduction, food production, climate change mitigation, and more.
-  • **HEALTH + WELL-BEING:** Open spaces directly support community food security. Exposure to nature has proven benefits to both mental and physical health.
-  • **PRESERVATION:** Preserving diminishing open space inherently supports all other Open Space Plan values.

Drawing upon public outreach, existing planning documents, and input from planning, design, and engineering professionals, the plan identifies short-term and long-term investments. The ultimate intent of this plan is to support a functional, interconnected, and sustainable system of open spaces that serves the overall planning efforts, vision, and mission of Portland State University.



Figure 2. Students enjoying open space on the PSU campus, source: PSU Flickr

# CONTEXT

## NATURAL ENVIRONMENT

### ECOREGION

The Portland metropolitan region lies within the Portland/Vancouver Basin Ecoregion, which is characterized by undulating terraces and floodplains with numerous wetlands, oxbow lakes, and ponds. Prior to modern urban development, prairie and oak woodland grew on better drained sites while wetlands, Oregon ash, and Douglas-fir flourished elsewhere in the fault block basin. The present-day condition is predominantly defined by urban and suburban development, pastures, and nurseries. Potential natural vegetation includes prairies (impacted by Native American burning), Oregon white oak, Douglas fir, Oregon ash, alder, western redcedar.<sup>1</sup> Agricultural and urban development has radically altered the floodplain dynamics of the Willamette River and its associated watershed.

### WATERSHED HABITATS

The University is situated within the 260,000 square mile Columbia River Basin and the Willamette River Watershed. The PSU campus is located within a half mile of the Lower Willamette River, a corridor which provides important wintering habitat for waterfowl and raptors and breeding habitat for migratory songbirds. Shorebirds and waterfowl use the Willamette's Central Reach shallow water areas. Waterfowl and gulls use the vegetated shoreline along the river. Peregrine falcon nest on Willamette River bridges and perch on pilings and buildings. The Lower Willamette River provides the primary migration corridor for Endangered Species Act listed Chinook, coho, and chum salmon, and steelhead and bull trout, to the Columbia River.<sup>2</sup>

### MIGRATORY BIRD HABITATS

While the South Park Blocks do not provide connectivity between other habitat areas (for example, the west hills or the Willamette River), Portland is on the Pacific Flyway for migratory birds, and the South Park Blocks likely provide habitat for resident birds and for migrating birds during the spring and fall migration periods.<sup>3</sup>

1 D. Payter, S.A. Bryce, J. Kagan, et al. "Ecoregions of Western Washington and Oregon" (color poster with map, descriptive text, summary tables, and photographs).

2 City of Portland Bureau of Planning and Sustainability. Central City 2035. Volume 3B: Willamette River Central Reach Natural Resources Inventory – Proposed Draft June 2016, iii.

3 City of Portland, Center City 2035, 89.

### DEVELOPED LANDSCAPES

The PSU campus spans 50 acres on the south side of downtown Portland. The campus is mostly built-out, with the primary campus open space being the City-owned South Park Blocks running through the center of campus, noticeable in figure 3, which identifies the landscape contexts of the PSU Campus and surrounding neighborhoods. Other campus open spaces take the form of hardscaped plazas, gardens, and planters. The Oak Savanna, a mostly greenfield space meant to represent a native Pacific Northwest landscape, lies to the west of the South Park Blocks. An inventory of trees within the boundary of the SoMa Ecodistrict, undertaken by PSU students during the Fall 2015 – Spring 2016 terms examined trees existing within the PSU campus and its immediate environs. Within this area, the most common trees are the Norway maple, oak, elms and various stone fruit trees.



Figure 3. PSU campus and greater landscape context.

## GROWTH PATTERNS

### HISTORICAL CONTEXT

Founded in 1946 in response to a need for educating returning servicemen at the conclusion of World War II, Portland State University was founded as the Vanport Extension Center. The Center was located at Vanport City, where it remained until it was destroyed by the Vanport Flood of 1948. The school relocated several times before its eventual permanent relocation to the South Park Blocks in 1949. In 1955, PSU transitioned from a two-year to a four-year degree granting institution and earned university status from the Oregon Legislature in 1969.

### SURROUNDING NEIGHBORHOODS & DEMOGRAPHIC CHANGES

Over the last 65 years, the campus area and its surrounding neighborhoods have changed drastically in form and land use. In the 1950s the area was at the fringe of Portland's business core, adjacent to so-called "stopover" neighborhoods to the south and the west. These neighborhoods were characterized demographically by a diverse population of immigrant and newly-transplanted individuals looking for cheap, temporary housing. Poverty was a major issue, especially in southwest Portland, and thus those neighborhoods were ignored as viable residential areas.<sup>1</sup> The housing stock was primarily built in the 1930s and was characterized by small units and very high density.

Beginning in the 1960s, stopover neighborhoods experienced the first demographic changes. The percentage of people with college educations and professional jobs increased while poorer communities moved away, mainly to North Portland. This development pattern gained momentum with the substantial expansion of industrial and (especially in southwest Portland) institutional uses. Older residential blocks and entire neighborhoods were bulldozed through urban renewal initiatives and replaced with larger size apartment buildings, student housing and space for young professionals and artists.<sup>2</sup>

<sup>1</sup> Abbot, Carl. (1983). *Portland - Planning, Politics, and Growth in a Twentieth-Century City*. University of Nebraska Press.

<sup>2</sup> *Ibid.*, 25.

### I-405

The construction of I-405 in the mid-1960s had a significant impact on city structure. This effort required the demolition of most adjacent residential neighborhoods. Today, the freeway forms a physical border for PSU and its campus developments. The Park Avenue bridge was built to preserve remnant connections to the surrounding neighborhoods to the south and west.

### URBAN FORM

Overall, the district has changed from high density, smaller building structures towards bigger building footprints and larger empty open spaces. However, this development did not aim to create green or recreational spaces. Only the South Auditorium Urban Renewal Project ("superblock" east of 4th Avenue) created a series of open spaces, green spaces, and water fountains connected by pedestrian pathways.

### PARK BLOCKS

The campus has grown incrementally along and around the South Park Blocks, a stretch of 13 city blocks. Historically, the South Park Blocks were the only formally-designated open spaces on campus. Since the core of the PSU campus is located along this stretch, these blocks became the central natural asset and a major identity element of the PSU campus.

### UNDEVELOPED PROPERTY

In the 1970s the campus district had a significant amount of undeveloped land, but it was mostly paved and used for parking. Some vacant lots were developed into recreation fields in the 1990s and others remain as green spaces or community gardens.

Urban renewal and the construction of I-405 altered the city structure into a coarser-grained building pattern with larger block sizes, increasing the potential for larger public open spaces. The South Park Blocks remain consistent as a central and green infrastructure asset. In recent years, open space development has generally been a byproduct of other urban development efforts rather than a deliberate construction of dedicated open space.

# CONTEXT

## PLANNING EFFORTS

### OVERVIEW

The campus, as seen in figure 4, is subject to numerous City and University plans and planning efforts. It is important to note that the South Park Blocks, the most prominent campus open space feature, are owned by the City, though maintenance is performed by the University. This subsection summarizes relevant plans and goals, ordered by importance to the campus. Proposed future open spaces as described in the following planning documents are indicated in figure 5.

### UNIVERSITY DISTRICT FRAMEWORK PLAN (2010)

The University District Framework Plan was published as a strategy to leverage PSU's various assets and guide future development. While design standards, density studies, and possible future nodes of development were the primary focus of the document, sustainability and open spaces were also examined.<sup>1</sup>

### PORTLAND STATE UNIVERSITY CLIMATE ACTION PLAN (2010)

PSU's signing of the American College and University Presidents Climate Commitment spurred PSU's Climate Action Plan, which challenged participating institutions to track carbon emissions with the goal of carbon neutrality.<sup>2</sup> In 2015 PSU signed on to the updated version, the Climate Commitment, which challenges universities to establish strategies for both climate change mitigation and adaptation.

### CLIMATE ACTION PLAN, CITY OF PORTLAND & MULTNOMAH COUNTY (2015)

Climate Action Plan was created by the City of Portland and Multnomah County with the end goal of reducing carbon emissions by 80 percent below 1990 levels by 2050, with an interim goal of a 40 percent reduction by 2030.

### PARKS 2020 VISION (1999)

The Parks 2020 Vision was developed in order to ensure that a wide variety of park and recreation spaces would be available for all residents. Preserving, protecting and restoring the City's natural resources was also a key objective,



Figure 4. PSU campus and greater downtown Portland context.

as was ensuring the legacy of parks for future generations, and developing an overall sense of community in Portland.<sup>3</sup>

### CENTRAL CITY 2035

The Central City 2035 Plan impacts land use decisions in the campus neighborhood.<sup>4</sup> Key planning elements for this district include the development of a "Green Loop" connection between the South Park Blocks and SW Moody Street and overall strengthening of routes to the Willamette River. The plan identifies a potential cap over I-405 to the south of campus.

### PORTLAND WATERSHED MANAGEMENT PLAN (2005) WITH 2012-2017 FIVE-YEAR IMPLEMENTATION STRATEGY

The Plan has a specific focus on stormwater management as it pertains to greening efforts on private property including the use of rain gardens, ecoroofs, tree planting and other sustainable stormwater approaches. The Implementation Strategy has identified the pursuit of partnerships with large building owners to install ecoroofs.<sup>5</sup>

1 Portland State University. (June 2010). University District Framework Plan. 5.

2 Portland State University. (May 2010). Climate Action Plan 2010. 9.

3 City of Portland Parks and Recreation. (1999). Parks 2020 Vision. Introduction. 28.

4 City of Portland, Willamette River Inventory. 27.

5 Ibid.

## PLANNING EFFORTS

### MONTGOMERY GREEN STREETS (2009)

The Montgomery Green Streets Plan was created as a vision of sustainable stormwater management strategies for the Montgomery Green Street Blocks. The intent was to foster a strategic convergence of these elements that will successfully activate the neighborhood, enhance the pedestrian experience, foster sustainability, and continue to build a community culture.<sup>6</sup>

### URBAN FOREST MANAGEMENT & ACTION PLAN (2004 & 2007)

This plan was created to address the complex system of trees and smaller plants, wildlife, associated organisms, soil, water and air in and around the City. The goals are to protect, preserve, restore, and expand Portland's urban forest, to promote stewardship, and to provide equitable urban forest benefits for all residents.

### SALMON SAFE CERTIFICATION (2006)

As part of the certification process, PSU developed stormwater modeling standards, prepared a water conservation plan, identified stormwater management projects, revised the Integrated Pest Management Plan, performed alternatives analysis for elected planting beds, and demonstrated a declining annual trend in the usage of synthetic fertilizers.

### TREE CAMPUS USA (2017)

This designation's five standards include convening a tree advisory committee, maintaining a campus tree-care plan, dedicating annual expenditures for its campus tree program, hosting an Arbor Day observance, and providing service learning projects.

### 2005 STORMWATER MANAGEMENT PLAN

The policy guides PSU's approach to stormwater with goals to decrease impervious surfaces and encourage the construction of landscape features that allow for water reuse and overall water quality improvement, implement erosion control, decrease usage of pesticides and fertilizers, and implement consistent system monitoring and auditing.

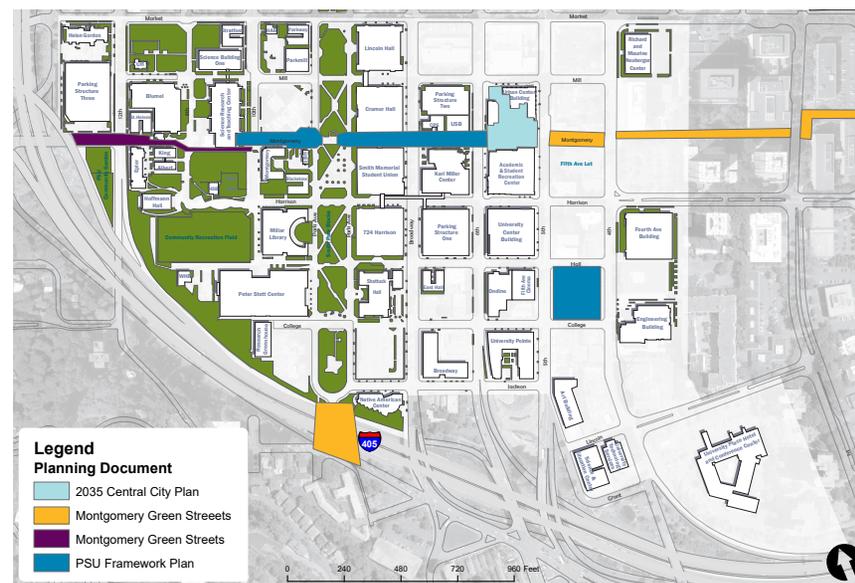


Figure 5. Proposed future open spaces as described in existing planning documents.

### BEE CAMPUS USA (2016)

This signifies PSU's commitment to minimizing the use of harmful chemical pesticides and raising awareness of the plight of pollinators, which have suffered in recent years due to chemical-use.

### SOMA ECODISTRICT (2012)

The SoMa EcoDistrict recommends five focus areas for the area outside the campus: destination gathering spaces, connectivity, green infrastructure, district utilities, and existing building retrofits.<sup>7</sup>

### 2016 SOMA ECODISTRICT TREE INVENTORY REPORT

The inventory acquired a more accurate picture of tree diversity, health and distribution across the district, and could allow for more focused planning and attention to troubled areas or unhealthy tree species.<sup>8</sup>

<sup>6</sup> City of Portland Bureau of Environmental Services. (October 2009). Southwest Montgomery Green Streets Plan. 4.

<sup>7</sup> Portland Sustainability Institute. (September 2012). SoMa EcoDistrict Roadmap. 14.

<sup>8</sup> Merrick, Meg, Armstrong, Mark, & Bisso, Katelynn (Instructors). (Spring 2016). SoMa EcoDistrict Tree Inventory. "Introduction."

# VALUES

This Open Space Plan utilizes the following values, which were developed as a part of extensive outreach efforts by PSU's Campus Sustainability Office and participating members of the PSU campus community to identify needs, and ideas about future open space concepts.

## COMMUNITY ENGAGEMENT



- Open spaces in the urban context enable community engagement
- Interaction and multi-functionality of open spaces are key
- Activating non-traditional outdoor spaces such as parking structures, sky bridges, and walkways could be a means of increasing community interaction

## PEDAGOGY



- Open spaces have educational value
- From informal gatherings to more formalized outdoor classrooms or research projects, open spaces at PSU are often used to teach
- Faculty are interested in open space availability and opportunities to optimize these spaces for use as a classroom or research subject

## ECOSYSTEM SERVICES



- Sustainability is part of the University mission, important to the PSU community, and should inform PSU's approach to open space planning
- Sustainability includes financial, environmental, and community considerations

## HEALTH & WELL-BEING



- Open spaces play an important role in addressing general health and well-being
- Devoting open space to uses such as gardens and urban agriculture should be considered as a strategy for addressing food insecurity in the PSU community

## IDENTITY & CONTEXT



- Open spaces reinforce both campus and personal identity, creating context and a connection to place
- PSU can create a sense of place that is unique to the region through thoughtful approaches, such as incorporating plants important to indigenous cultures or native to the Pacific Northwest

## PRESERVATION



- Open space is an invaluable and irreplaceable asset to PSU
- Preserving this diminishing open space inherently supports all other values

# VISION

This Open Space Plan will aid in guiding the future growth patterns for Portland State University and ensure that current and future development are consistent with the University's Mission and reinforce PSU's role as a national model for sustainable and innovative urban universities.

## UNIVERSITY MISSION & VISION

Portland State University intends to serve as a national model for urban universities that enhance their region by working with partners to solve sustainability problems and challenges to related fields such as community health, social work, and urban design. PSU sees itself as a leader in creating an equitable and sustainable future through academic excellence, urban engagement, and expanding opportunity for all.

Portland State University's vision is to serve as a leader for an equitable and sustainable future through academic excellence, urban engagement, and expanding opportunities for all. Sustainability is an active component of the University's mission: "We are dedicated to collaborative learning, innovative research, sustainability, and community engagement."<sup>1</sup> Sustainability is a key component of PSU's 2016-2020 Strategic Plan: "Extending [PSU's] leadership in community engagement."<sup>2</sup>

The Plan directly supports the goals outlined in PSU's Mission, Vision, and Strategic Plan: open, accessible spaces provide rich opportunities for collaborative learning, community health and engagement, research in environmental and urban design, and sustainable natural resource management.

## OPEN SPACE PLAN GOALS

This Open Space Plan will aid in guiding the future growth patterns for Portland State University and ensure that current and future development are consistent with the University's Mission and reinforce PSU's role as a national model for sustainable and innovative urban universities.

## ENGAGEMENT PROCESS

The Campus Sustainability Office conducted a series of discussions with stakeholders to inform its approach to campus open spaces in the future. This Open Space Plan adds an outreach process in which direct input from PSU students, faculty, and staff, was solicited to identify areas for open space prioritization. Over the course of a year, ending in 2015, sixteen focus groups and one community survey were conducted to gather direct input from PSU students, faculty, and staff. Members of the campus community were asked about their interactions with campus open space, related opportunities and needs, ideas about future design concepts, as well as values that should inform future policies and plans. On February 28, 2017 over twenty participants contributed design ideas and other related input during a design charrette. The focus groups, charrette, and additional design workshops informed design concepts and the development of six guiding principles for this plan.

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1 Portland State University. (2005). "Declaration of Support for Sustainability at Portland State University." Retrieved from [https://www.pdx.edu/sustainability/sites/www.pdx.edu.sustainability/files/psu\\_sust\\_declaration.pdf](https://www.pdx.edu/sustainability/sites/www.pdx.edu.sustainability/files/psu_sust_declaration.pdf).

2 Portland State University. (2016). Strategic Plan 2016-20, 12.

# ORGANIZING FRAMEWORK

## ORGANIZING FRAMEWORK

Campus spaces may be organized into categories as defined by urban planner Kevin Lynch in his seminal 1960 book, *The Image of the City*. The overall purpose of an organizing framework is to develop a concept of open spaces that is visible, coherent, and clear. Lynch identified that public perception of spaces can be distilled to five key ideas, which have been applied to the PSU campus context and are viable in figure 6.<sup>1</sup>

### PATHS

Paths are the channels along which people move, such as streets, walkways, and transit lines. For the PSU campus, the street grid and campus greenways form the main paths. Harrison and Montgomery form the main east-west paths, but also include Hall and College. North-south paths are comprised of Park Avenue as the main pedestrian paths, but also include SW 11th, Broadway, 6th, 5th, and 4th Avenues as pedestrian and vehicular paths.

### EDGES

Edges are the linear elements that serve as boundaries or breaks in urban continuity, such as edges of development and walls. Market forms the northernmost edges of campus, as fast-moving traffic along this street functions as a psychological barrier for most pedestrians. To the east, 4th Avenue generally defines the edge of campus. Generally, I-405 forms the southern and western edges of the campus.

### DISTRICTS

Districts are a section of a given place where people consider themselves to be “inside of,” and which are recognizable as having some common, identifying character. Today, PSU can be described as having a West Campus District, which contains most of the academic and residential buildings with a traditional college campus environment, and an East Campus District, which has a more urban feel and is situated on an active City of Portland street grid.

Two “sub-districts” can also be found in the immediate area: the City of Portland recognizes the South Park Blocks as a civic amenity and public urban open space, and the Halprin Open Space Sequence forms a border on the east end of campus. Though both the South Park Blocks and Halprin Open

Space Sequence are owned by the City of Portland, their presence as districts helps add an additional character to the PSU Campus.

### NODES

Nodes are points or strategic spots which are destinations a person is traveling to or from, such as a popular street corner or an enclosed square. Nodes may be the focus of a district. Perhaps the most well-known node is the PSU Urban Center, followed by the Walk of the Heroines. To the east of campus, the 4th Avenue food carts and Pettygrove Park are the most prominent nodes.

### LANDMARKS

Landmarks are defined physical objects, such as towers or monuments, but can also be local and familiar objects such as signs, storefronts, or particular trees. Campus landmarks include the clock tower at the PSU Urban Center, the fountain at the end of the Walk of the Heroines, Pettygrove Park, the Engineering Building plaza, and Lincoln Hall. As a natural landmark, the copper beech tree immediately in front of the Millar Library, planted around 1890, is a designated Portland Heritage Tree by the Portland City Council in 1995.

<sup>1</sup> Kevin Lynch. (1960). *The Image of the City*, Boston: MIT Press. 47-48.

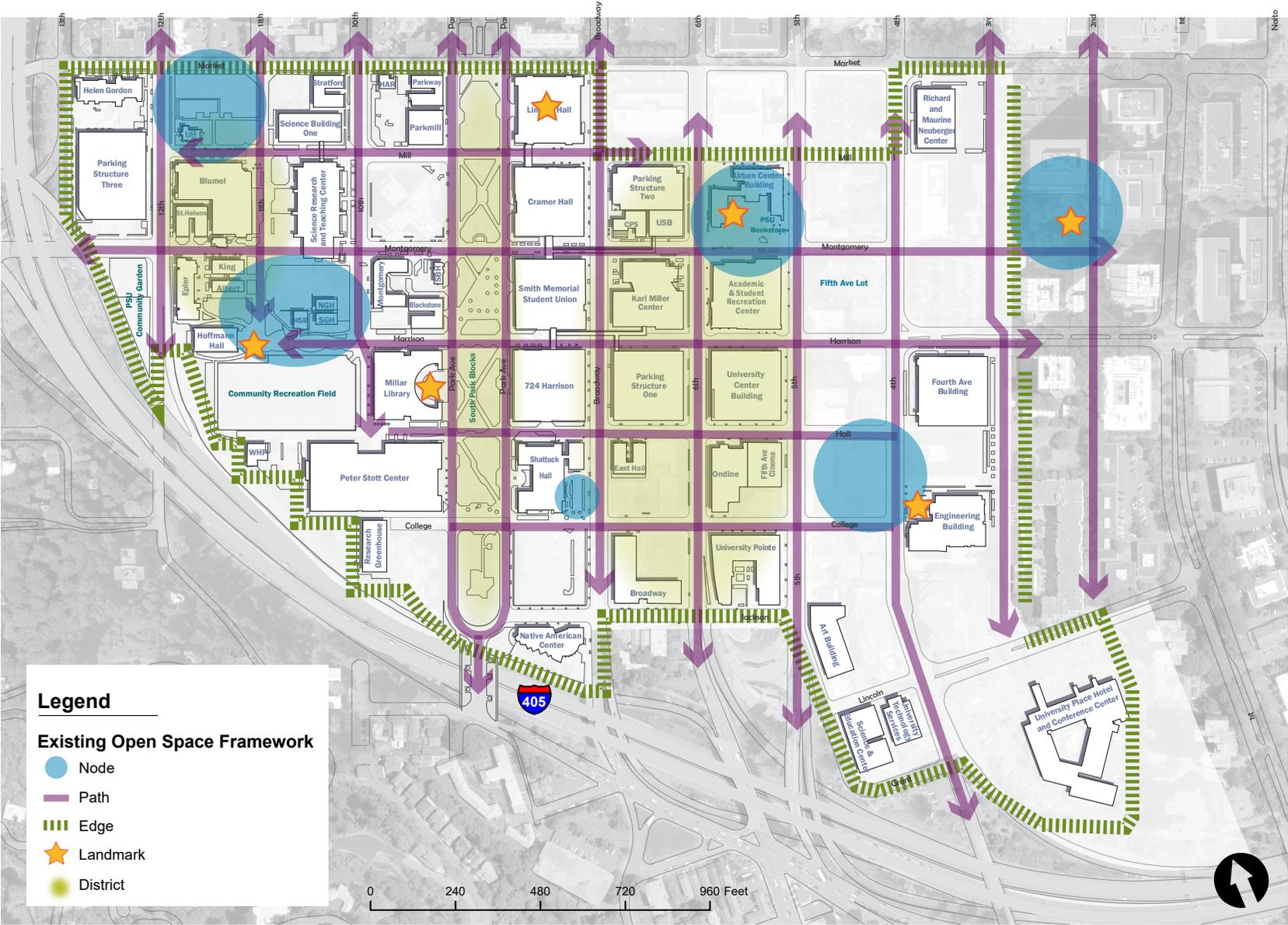


Figure 6. Campus open spaces organized into categories as defined by Kevin Lynch, applied to the PSU campus context.

# ORGANIZING FRAMEWORK

## FUTURE CAMPUS OPEN SPACE FRAMEWORK

Elements of the future campus open space framework are illustrated in figure 7 and described in further detail below.

### DISTRICTS

This Open Space Plan approaches open spaces by dividing the PSU Campus into two districts based on the character of the built environment. The West Campus District is bounded by Market Street, I-405, and ends in the half-block between Park and Broadway. It encompasses the core of the PSU campus and is characterized by a traditional college campus feel, with the Park Blocks functioning as an enclosed “quad.” The West Campus District is primarily pedestrian-oriented. In contrast, the East Campus is permeated by the city street grid and has a distinctly urban feel that allows for a mixture of fast-moving pedestrian, transit vehicle, automobile, and bicycle traffic.

### PRIORITY PATH

These two districts are connected by a series of paths, which are strong linear connections that are aligned with major streets. This Open Space Plan proposes east-west connections in the form of a fully-completed Montgomery green street, which was a 2009 plan for stormwater management and open spaces along Montgomery Street that is, at present, only partially implemented. The Green Loop that is proposed at the southern part of the PSU campus along College Street is one of several alignment options proposed by the City of Portland as a part of the Green Loop linear park concept that arose as part of the Central City 2035 Plan.

The Green Loop also forms a north-south priority path alignment, although this Open Space Plan does not make any final recommendations for this location; two alternative alignments are shown as a Park Green Loop, which runs through the Park Blocks (a City of Portland recommendation) and a Broadway Green Loop (a favored alignment by PSU focus group participants). The 10th and 11th Campus Streets are intended to form a new pedestrian core that incorporates new open spaces with existing service-oriented streets.

### PRIORITY OPEN SPACE NODES

Nodes, defined as centers of activity or destination points, naturally arise from the existing street grid as whole blocks or as spaces where two streets or paths intersect, with tremendous open space potential. In this Open Space Plan, ten nodes are either created or revitalized. They are intended to serve as focal points for student life and public recreational activities, which would also strengthen east-west open space connection from the Park Blocks and the Lawrence Halprin open space sequences, and more strongly define the north-south gateway areas of the campus. These nodes are examined in more detail as a part of the West Campus and East Campus Districts in their respective chapters of this plan.

### FOCUS AREAS

Three focus areas are identified in this Open Space Plan, which are intended as a guide for future land use in these areas. The Northern Gateway will create a strong edge to the PSU campus and signify an official entry into the campus. This focus area is pedestrian-oriented and should have a high density of uses. The West Campus Housing focus area has some overlap with the Northern Gateway, but should be fully committed to student residential Development which is concentrated on this core campus area where existing student residential buildings are located. Finally, the Southern Gateway will create a sense of entry for the motorists exiting from I-405, or Max Orange Line Riders or bicyclists approaching from the east. The current site of the University Place Hotel and Conference Center will be a key location for any future development due to its prominence as a strong anchor for the southeast campus.

### LANDMARKS

Campus building construction and renovation provides locations for new landmark. Building facades, landscaping, and signage can be used to signal entryways along the campus edge. The installation of a shield outside the Peter W. Stott Center will provide a new landmark in the West Campus District and future development in the East Campus District may provide additional landmark opportunities.

FUTURE CAMPUS OPEN SPACE FRAMEWORK

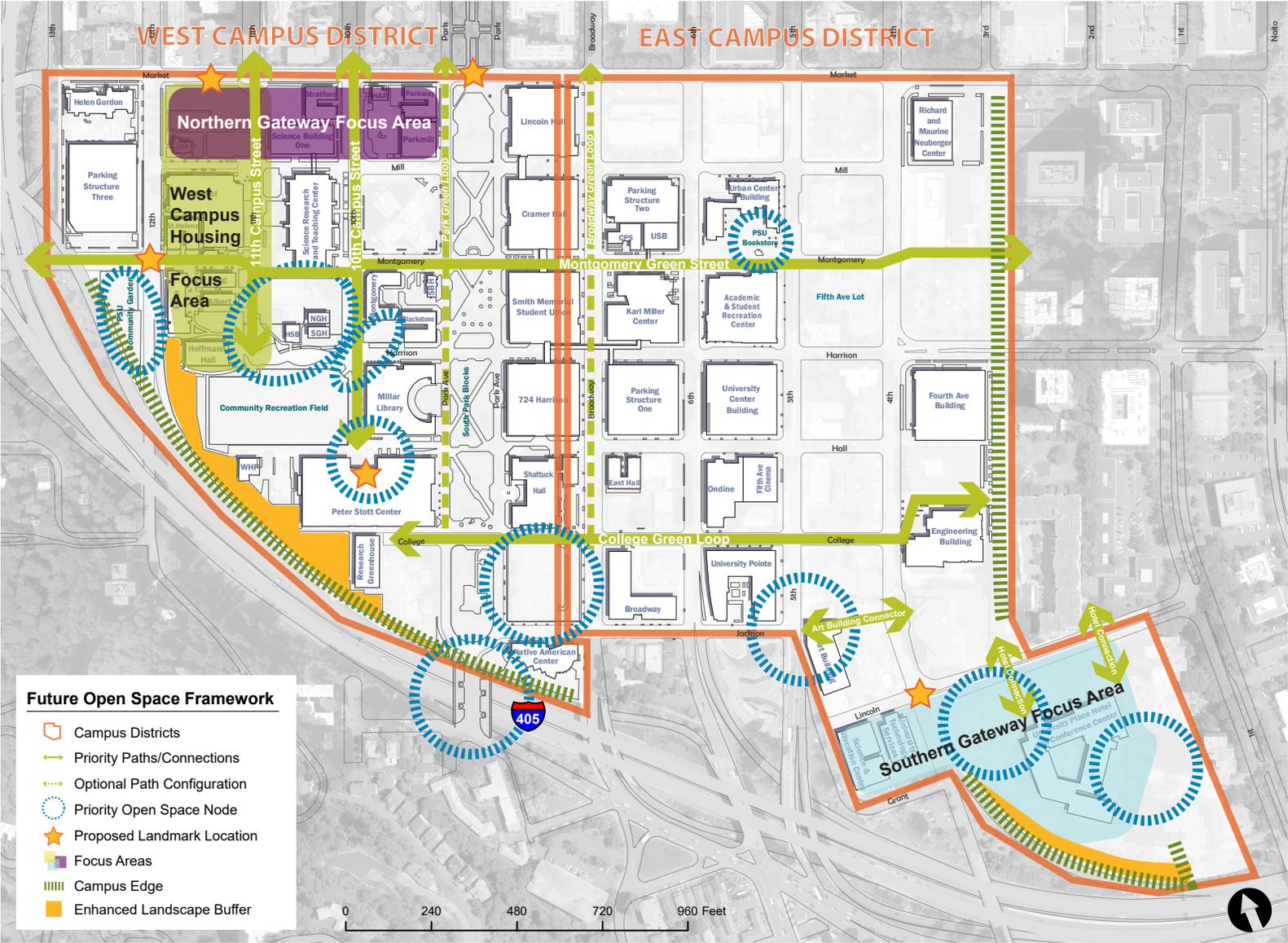


Figure 7. Future open space framework.

# OPPORTUNITIES

This section examines campus open space in greater detail, utilizing planning and urban design concepts. Specific implementation opportunities are identified following an examination of existing conditions and issues.

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**Figure 8.** Organizing framework for campus open places; top, campus wide, bottom left, west campus district; bottom right, east campus district.

# OPPORTUNITIES: CAMPUS WIDE



## PATHS



### EXISTING CONDITIONS & ISSUES

Paths have the potential to be the most common and most expansive types of open space on campus. Figure 9 shows these open space types as linear in nature. Paths serve primarily as circulation corridors for bicycles and pedestrians and can assist in wildlife movement and provide habitats for various animals through a continuous systems of tree canopies or planting. Examples of paths include the Park Avenue pedestrian way adjacent to the Parks Blocks, and the Montgomery Green Street.



Figure 9. Paths in relation to PSU Campus.

Some paths fall within the jurisdiction and oversight of the City of Portland and require further collaboration with the City in order to achieve desired design or environmental goals. It is not always possible to create a continuous canopy or planting landscape due to utility and other physical barriers. Additionally, delivery vehicles can impede the use of greenways through impromptu parking use.

### OPPORTUNITIES

- As potentially the most numerous type of open space on campus, paths present a significant opportunity for integration with new projects or for potential rehabilitation and reconfiguration. An incremental approach to building out paths can serve longer-term goals for integrating plants that support a variety of wildlife and increase biodiversity, creating a sense of place even between established spaces, and contributing to general campus way finding. Depending on the programming and plant palettes uses. Paths could be incorporated seating and welcome spaces for rest or “break” opportunities and could promote foraging opportunities by planting food-producing shrubs and trees

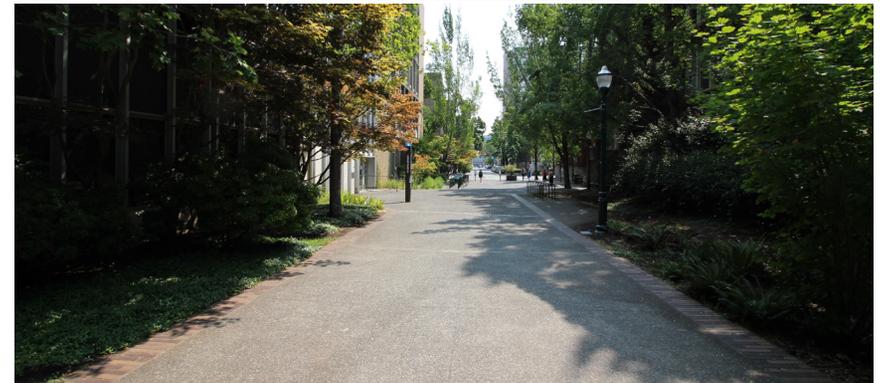


Figure 10. Existing conditions, breezeways; top, Mill Street; middle, Montgomery Street; bottom, Hall Street.



# OPPORTUNITIES: CAMPUS WIDE

## BREEZEWAYS

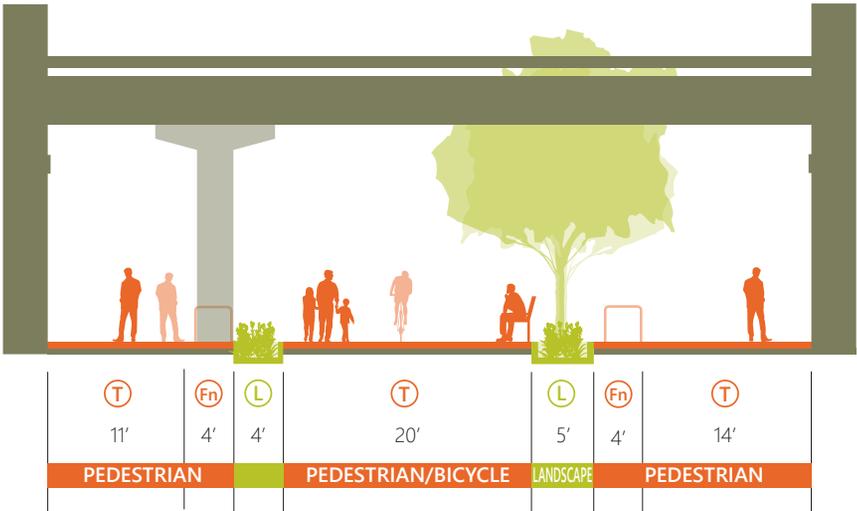


Figure 11. Existing conditions, section, Montgomery between Broadway and Park Avenues.

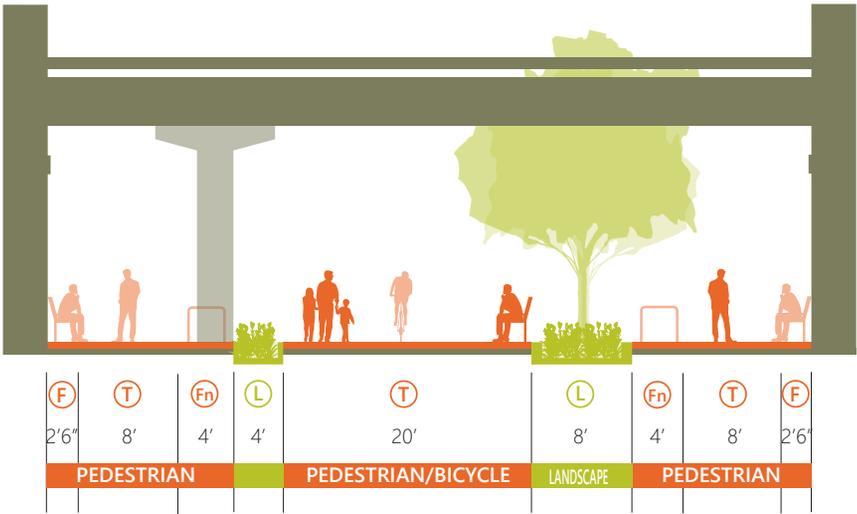


Figure 12. Campus street conversion, Montgomery between Broadway and Park Avenues.

### EXISTING CONDITIONS & ISSUES

The breezeways, as shown in figure 10, are located between Lincoln Hall, Cramer Hall, 724 Harrison, Smith Memorial Student Union, Shattuck Hall linking Broadway to the South Parks Blocks.

### OPPORTUNITIES

- Increase the frontage zone along pedestrian walkways
- Use breezeways as linkages between the more urban feel of the East Campus District with the more traditional campus feel of the West Campus District, as shown in figure 12
- Increase connections between the University buildings and the South Park Blocks, as seen in figure 14
- Distinguish furnishing zone by increasing area for seating

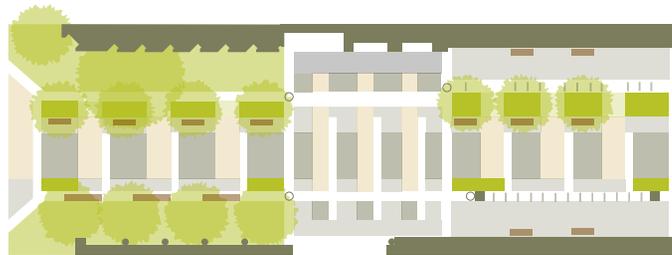


Figure 13. Campus street conversion, plan, Montgomery between Broadway and Park Avenues.

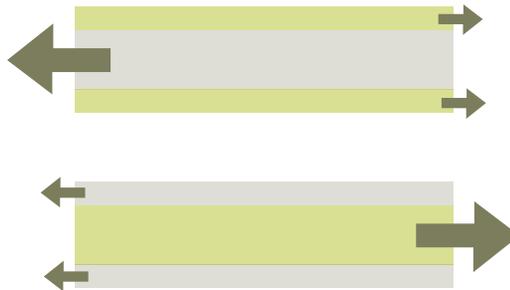


Figure 14. Diagram of Montgomery between Broadway and Park Avenues; top, city reaching into park; bottom, park reaching into city.

# OPPORTUNITIES: CAMPUS WIDE



## MONTGOMERY STREET



### EXISTING CONDITIONS & ISSUES

In 2009, a collaborative effort between the City of Portland, PSU, and other stakeholders developed The Southwest Montgomery Green Street, a multi-block plan that incorporates stormwater management strategies and pedestrian spaces along Montgomery Street, stretching across the University campus in an east-west direction from SW 11th Avenues and Pettygrove Park. Figure 15 shows Montgomery Street in relation to the PSU campus.

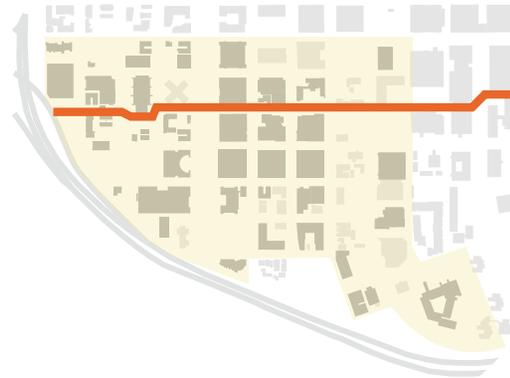


Figure 15. Montgomery Street in relation to PSU campus.

### OPPORTUNITIES

- Incorporate water in urban design
- Create and preserve open space
- Further enhance pedestrian spaces through planting options, paving options, permanent and flexible furnishings
- Green infrastructure
- Increase pedestrian and bicycle infrastructure and access



## COLLEGE STREET

### EXISTING CONDITIONS & ISSUES

Similar to Montgomery Street, College Street stretches east-west across the University campus. Figure 16 shows College Street spanning one block west of the South Park Blocks to SW 4th Avenue.



Figure 16. College Street in relation to PSU campus.

### OPPORTUNITIES

- As of 2017, the City of Portland proposed a Green Loop alignment through the Park Blocks within the PSU Campus with a possible connection through College Street
- College Street could serve as a secondary axial green street, shown in figure 17
- The primary pedestrian street in the southern campus area
- Increase pedestrian and bicycle infrastructure and access

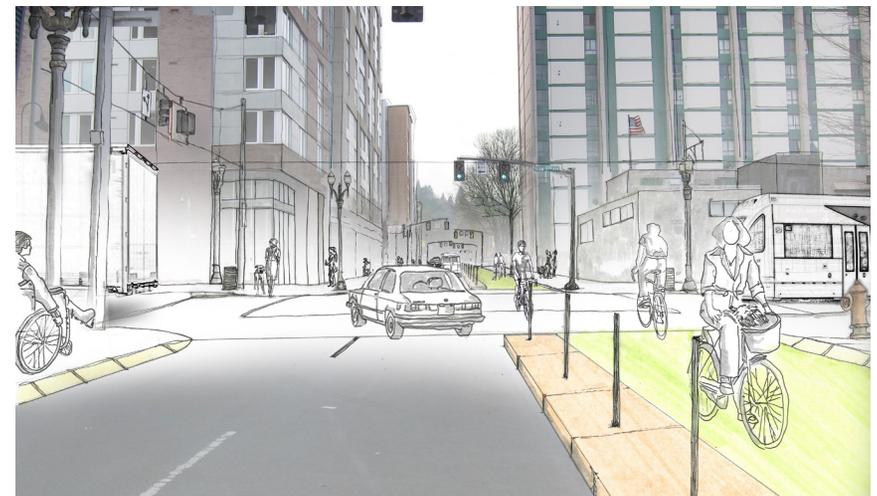


Figure 17. Rendering of possible College Street conversion.



# OPPORTUNITIES: CAMPUS WIDE

## STREET FURNISHINGS

### CAFÉ AND RESTAURANT TABLES AND SEATING

The presence of café and restaurant tables and seating activates pedestrian activity and helps generate a vibrant atmosphere while providing economic benefits to businesses. Other opportunities for café seating include curb extensions, flexible parking areas, and parklets.

#### Placement & Varieties

Furniture is most often placed in the Frontage Zone, provided there is enough space to allow for their placement and use. These elements must still allow for access to the building.

#### Code

City ordinances define details of public or private use for these tables and chairs, and other factors. See sections 17.25.010 - 100 of the City of Portland Code & Charter for more detail about café and restaurant tables and seating.

### BICYCLE RACKS

The presence of bicycle racks encourage people to cycle and can help bolster economic activity for nearby businesses. The presence of bicycle racks also discourages the use of street trees and other pedestrian elements or furnishings for bicycle parking, which helps preserve these amenities for their original purposes.

#### Placement & Varieties

Generally, bicycle racks should be located in the Furnishing Zone and provide access for different bicycle frame types and sizes and allow for the easy locking of the frame and wheel/wheels to the rack.

### PUBLIC ART

Public art can foster a sense of neighborhood identity, function as gateway elements, or enhance everyday utilitarian objects such as sign posts or utility boxes. Public art should be a source of enjoyment. As with other elements, public art should not cross into the Through Zone or impede access to parked vehicles in the Curb Zone.

The following section describes elements which can populate the pedestrian realm. Figure 18 shows examples of street furnishings on the PSU campus.

### PUBLIC SEATING

Public seating invites pedestrians to rest, wait, eat, socialize, or engage in solitary activity such as people watching or reading.

#### Placement & Varieties

Seating can take on many different configurations and be comprised of a variety of natural and synthetic materials, and can be movable or fixed in place. Seating may be integrated into the design of buildings with seating walls, sills, or other building or landscape elements.

#### Accessibility

Seating should be designed with all users in mind; for example, it should include a mix of seating with and without armrests for users of varying needs. Fixed benches in the Frontage Zone should be a minimum of 1' away from the building edge.

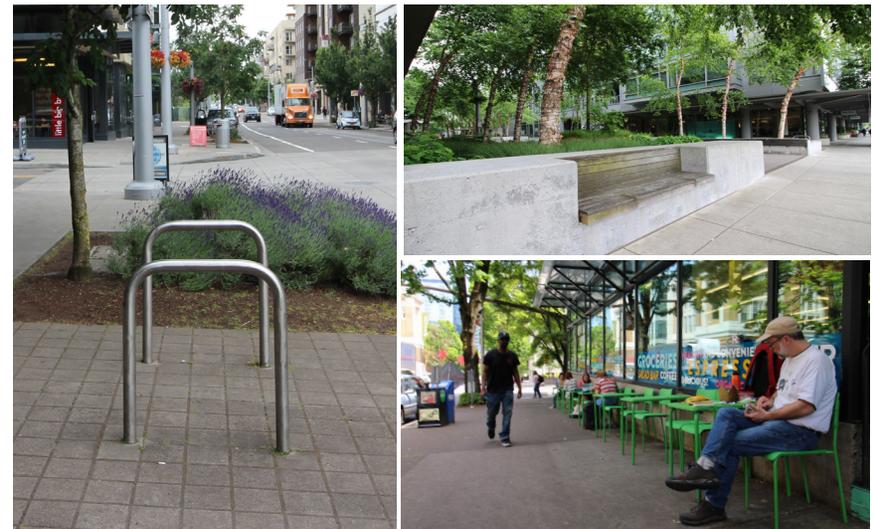


Figure 18. Left, bicycle racks; top right, public seating; bottom right, cafe and restaurant tables and seating, source: PSU Campus Planning Office.

# OPPORTUNITIES: CAMPUS WIDE



## GREEN LOOP



### EXISTING CONDITIONS & ISSUES

The Green Loop concept, developed by the City of Portland, is a six-mile linear park that provides public space in the form of a bicycle and pedestrian-oriented multi-use path. The Green Loop is intended to promote healthy lifestyles, organize growth in the city, provide paths and connections, and advance equity through access of green space. The City proposes an alignment through the campus Park Blocks and a possible East-West connection along College.

Future Green Loop Streets proposed under this street typology differ from existing conditions in that the multi-use path is formalized with dedicated and separate spaces for the Bicycle Zones and Shared Zones where applicable. Figures 23 through 26 visualize high-traffic areas.

The proposed Green Loop alignment, as seen in figure 20, runs through the South Park Blocks. Potential conflict areas between bicyclists and pedestrians in high-trafficked areas are identified in figure 19. Participants in the Open Space Charrette indicated concerns about pedestrian-bicyclist conflicts within the City-proposed north-south alignment through the Park Blocks and recommended an alternative alignment along Broadway instead of the Park Blocks.

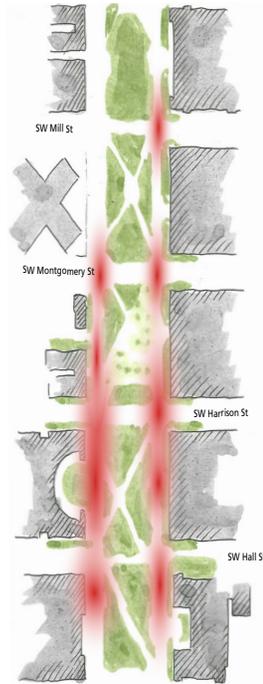


Figure 19. South Park Blocks, conflict areas.



Figure 20. Proposed Green Loop alignment route through Portland.

### OPPORTUNITIES

- Pavement or paint patterns such as those illustrated in figure 21 and 22 can be utilized
- An alternative alignment along Broadway instead of the Park Blocks; this Open Space Plan explores possible alignments through both the Park Blocks and Broadway and does not propose a finalized alignment at this time
- Increased and enhanced bicycle infrastructure, seen in figures 25 and 26



Figure 21. Proposed Green Loop alignment route through PSU.

Figure 22. Proposed Green Loop, Park Blocks west side.



# OPPORTUNITIES: CAMPUS WIDE

## GREEN LOOP

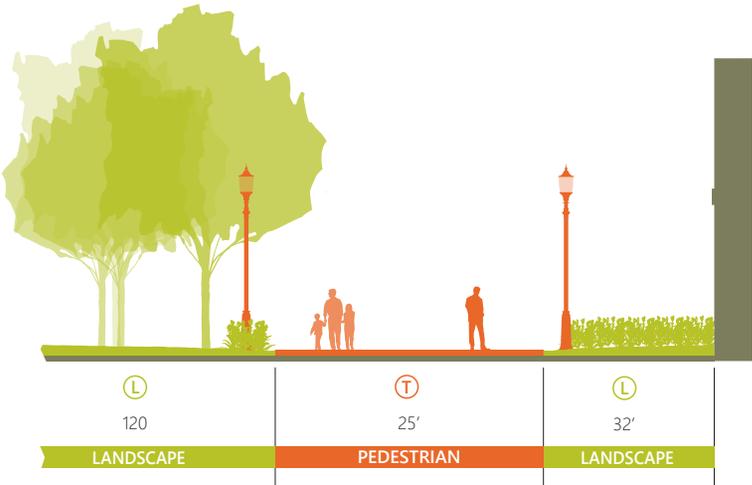


Figure 23. Existing conditions, Park Blocks west side.

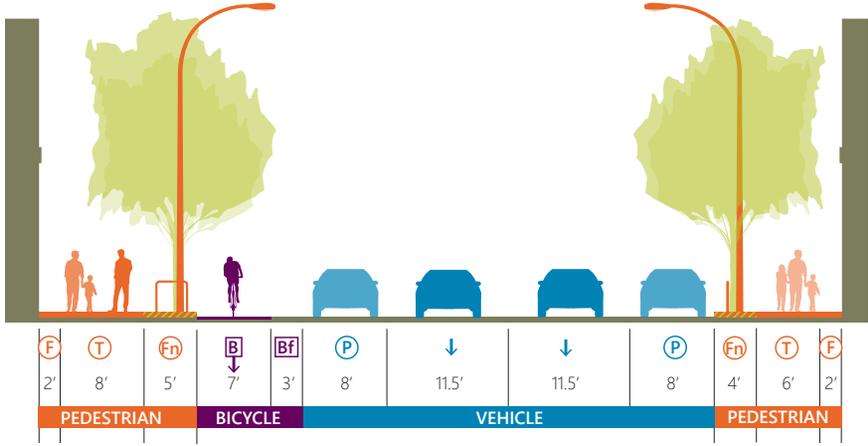


Figure 24. Existing conditions, Broadway.

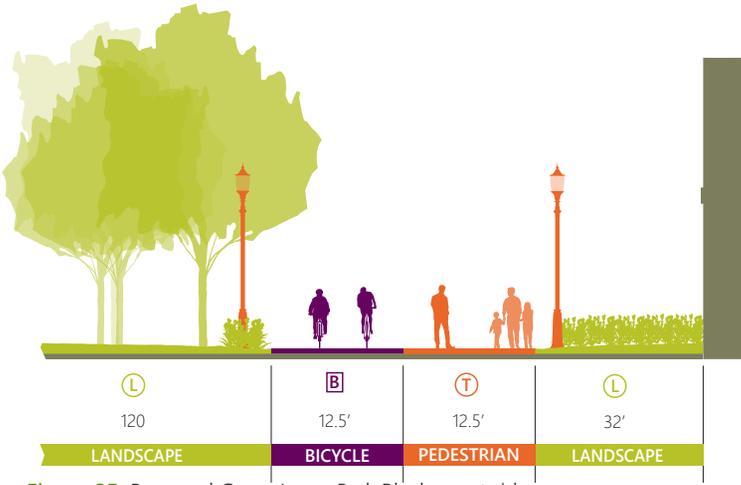


Figure 25. Proposed Green Loop, Park Blocks west side.

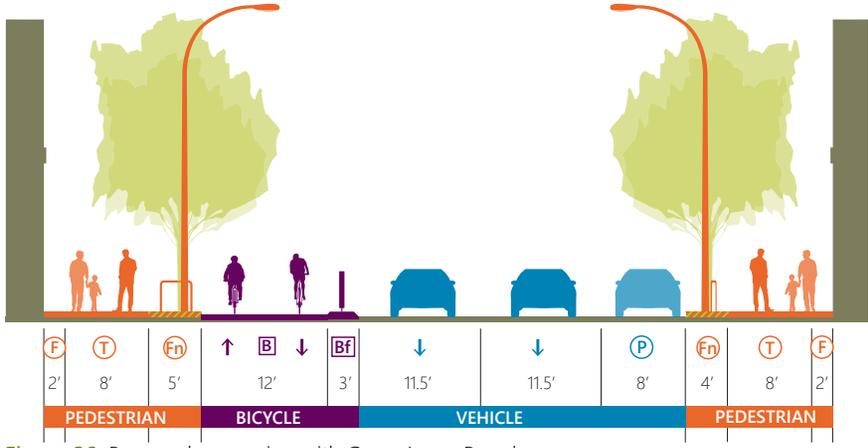


Figure 26. Proposed conversion with Green Loop, Broadway.

# OPPORTUNITIES: CAMPUS WIDE



## SIDEWALK ZONES



A sidewalk is comprised of several “zones,” which are described in further detail below. These zones serve different functions for pedestrian activity. While figure 27 shows examples of these zones on the PSU campus, figures 28 and 29 highlight these zones in a possible campus street conversion of Montgomery Street between 10th and Park Avenues.

### FRONTAGE ZONE **F**

The Frontage Zone is the area between the Through Zone and the front of the adjacent building, which may accommodate pedestrian-oriented activities.

### FAÇADE

In more urban areas, the façade of the building may abut the Through Zone; in more suburban and rural contexts, the Frontage Zone may be completely absent.

### WIDTH

The width of this zone can vary depending on the context and the activity it is designed to accommodate.

### ACTIVATION

Generally, larger frontage zones are recommended for the urban areas, especially immediately adjacent to commercial uses, as this allows for activation of the pedestrian realm through elements such as street furniture, and café and restaurant seating. In areas where pedestrian activity is high and sidewalks are crowded, a minimal frontage zone provides space for pedestrians to pause outside the flow of pedestrian traffic as well as for a “shy distance” from adjacent buildings or landscaping. In the West Campus District, where ground floor commercial uses are very limited, the frontage zones can be reduced to maximize dedicated landscape zones.

### THROUGH ZONE **T**

Commonly known as a public walkway or sidewalk, the Through Zone area is primarily reserved for pedestrian movement along the street.



Figure 27. Examples of sidewalk zones, source: PSU Campus Planning Office.

### WIDTH

Generally, to comply with ADA regulations, the through zone must be 4'-5' in width, but wider dimensions are generally recommended in this plan in order to encourage walking in a safe, vibrant environment. Narrowing down to 3' is possible in areas that are constrained by a combination of total feasible sidewalk width and infrastructure such of utility or signal poles, and other infrastructure.

### PATH

The Through Zone should be as straight as possible, although allowances can be made for periodic weaving due to unavoidable physical or topographical constraints, where needed. The Through Zone should cross driveways at grade for pedestrian convenience and the comfort of those in wheelchairs, as well as to minimize vehicular conflicts and maximize visibility.



# OPPORTUNITIES: CAMPUS WIDE

## SIDEWALK ZONES

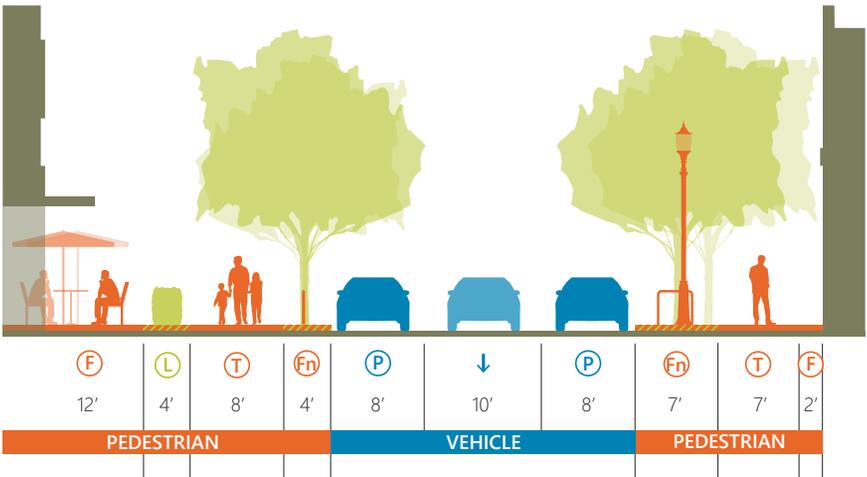


Figure 28. Existing conditions, Montgomery in between 10th and Park Avenue.

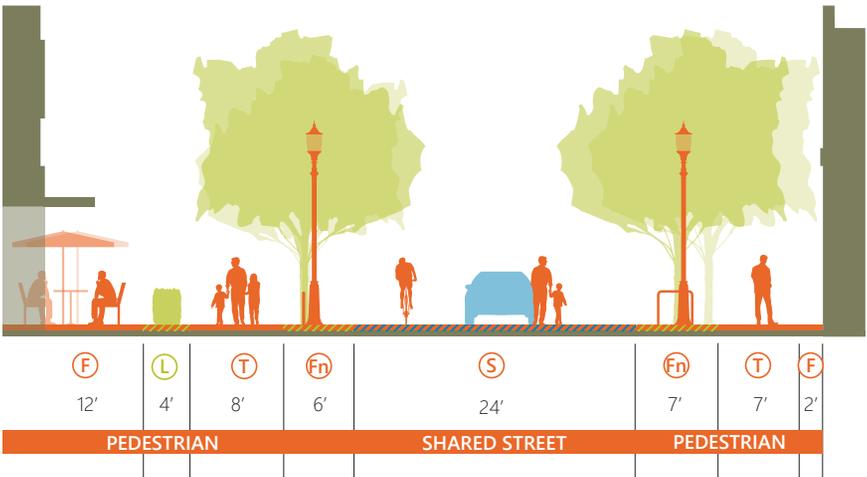


Figure 29. Campus street conversion, Montgomery in between 10th and Park Avenue.

### MATERIALS (S)

Differences in paving materials or colors can help distinguish the Through Zone from surrounding areas and allow for unique place-making opportunities. Different paving materials and colors can further reinforce the pedestrian “clear” area in the Frontage Zone.

### SHARED ZONE (Fn)

A feature unique to campus streets, Shared Zones are intended to be used by a variety of travel modes. Shared Zones are curbsless in nature; visually there may not be any physical indicators where the Shared Zone and Furnishing Zone begin or end. This mixing or sharing of modes and uses is intended to slow traffic down and allow for maximum flexibility of the street and allow for more thorough integration of open space areas.

### FURNISHING ZONE

The Furnishing Zone can contain active/passive landscape, street furniture, transit stops, wayfinding signs, etc., and is primarily intended as an extended buffer zone between pedestrians and vehicles, and a space for pedestrians to linger in the public open space of the street.

### PLACEMAKING

The Furnishing Zone is the primarily space for the range of public streetscape that provides an important placemaking function for streets and that makes a sidewalk engaging for pedestrians. It also serves as an extended buffer zone between pedestrians and vehicles, and a space for pedestrians to linger in the public open space of the street. Many landscaping, green infrastructure, street furniture elements, appropriately-scaled lighting, as well as utilities are located in this zone, hence its wider width compared with the other zones.

# OPPORTUNITIES: CAMPUS WIDE



## LIGHTING



### DAY & EVENING HOURS

During the evening hours, street lighting is the most prominent characteristic of the pedestrian environment. The placement and design of pedestrian-scale lighting contributes to safety and can promote transit usage at all hours of the day. During daylight hours, street lighting can contribute to a neighborhood's look and feel depending on the design and color of the pole and fixture.



### PLACEMENT

The placement of pedestrian lights should carefully consider the location of underground utilities, tree canopies, and other potential obstructions such as awnings in areas where sidewalk width is limited.



### PEDESTRIAN LIGHTING

Pedestrian lights are scaled (12'-15' typical height) and are focused on illuminating the sidewalk. Placement of pedestrian lights can further draw attention to both controlled and uncontrolled pedestrian crossings and intersections, and should also be a priority at transit stops and other locations where pedestrians may congregate at night. The use of dimmers or shut-off timers should be considered in locations where the energy savings can cover additional cost of equipment.

### BUILDING-MOUNTED LIGHTING

Building-mounted lights provide an opportunity for public/private property owners and developers to contribute to the pedestrian realm. These lights can serve the dual purpose of highlighting the building's presence while at the same time illuminating the Through Zone.

### LIGHTING STANDARDS

According to the City of Portland Street Lighting Standards, LED is the current standard in street lighting practice.<sup>1</sup> The International Dark-Sky Association (IDA) recommends five lighting zones as part of a lighting ordinance to control light pollution, ranging from no ambient lighting (LZ0) to high ambient lighting (LZ4). Lower lighting zones are preferable, but the specific lighting zones should be determined by the community and its desired lighting

<sup>1</sup> City of Portland Bureau of Transportation. New LED Streetlight Standard. <https://www.portlandoregon.gov/transportation/article/438845>



Figure 30. Lighting examples.

environment.<sup>2</sup> Furthermore, the IDA recommends shielded and downward-pointing lighting.<sup>3</sup>

<sup>2</sup> International Dark-Sky Association (2011). Model Lighting Ordinance (MLO) with User's Guide. [http://www.darksky.org/wp-content/uploads/bsk-pdf-manager/16\\_MLO\\_FINAL\\_JUNE2011.PDF](http://www.darksky.org/wp-content/uploads/bsk-pdf-manager/16_MLO_FINAL_JUNE2011.PDF)

<sup>3</sup> International Dark-Sky Association (2011). Model Lighting Laws & Policy. <http://www.darksky.org/lighting/model-lighting-laws-policy/>.



# OPPORTUNITIES: CAMPUS WIDE

## LANDSCAPING

Landscaping within the street right of way can include trees and ground cover plants within the Furnishing Zone of the sidewalk, as well as within medians where shrub plantings can also be appropriate. Landscaping serves a broad range of purposes and can be a prime factor in shaping the design character of a street. Landscaping can act as a buffer between pedestrians and the roadway, it can be incorporated into green infrastructure elements to provide stormwater benefits, provide for a cooler environment, and provide habitat for urban wildlife. Trees in particular can provide shade to benefit pedestrians, cyclists, and the general public by reducing urban temperatures and improving air quality. Studies have shown that the presence of street trees and landscaping can provide economic benefits.

### STREET TREES

Street trees are the largest and most visible elements of the landscape and overall streetscape.

### PLACEMENT

Trees should be carefully placed so as not to interfere with other elements. Street tree placement is recommended in the Furnishing Zone, where seating elements can utilize natural shading elements. In areas where sidewalks are too narrow to accommodate trees, it may be possible to plant trees within the planters or curb extensions in the parking lane.

### ACCESSIBILITY

For more urban areas in the East Campus District, street trees and tree basins must be situated so as to maintain the 4'-5' ADA minimum Through Zone, and to accommodate opening doors and facilitate passenger entry and exit from parked vehicles in locations where there is on-street parking. In more constrained locations and where there are higher levels of pedestrian activity, ADA-compliant tree grates may be used to extend the accessible Through Zone up to the tree trunk.

### TREE SELECTION & EXISTING INFRASTRUCTURE

Care should be taken in selecting tree species and locations near intersections in order to maintain sightlines, especially for pedestrian visibility. But the visual barrier effect of trees should not be a major concern in more urban

areas as parked cars, utility poles, and even the corners of buildings can affect sight lines as much or even more than tree trunks. Consideration should also be given to the space for trees above and below ground. Tree branches should be at least 80" clear in height above pedestrian circulation areas and 14' clear of parking lanes and travel lanes. Below ground there should be adequate space and soil conditions for tree roots. Clearance from underground utilities, basements, and other elements that could be damaged by tree roots should be maintained. Soils conditions can be improved through soils amendments, structural soils, and modular structural systems that help avoid over-compaction of soils. These types of soils improvements can also benefit green infrastructure.

### PLANTING BASIN

While tree basin dimensions will vary depending on site conditions and desired species of tree, the general desired minimum basin size should provide about 20 square feet; for example, a 5'x5' planter or tree grate. Narrower sidewalks may accommodate a 3'x6' planting area for trees.

### PSU BROADWAY STREET TREES STUDY AND PLANTING PLAN

The Broadway Street Trees Study and Planting Plan recommends increasing the diversity of street trees to protect against aging and pests and avoiding planting common trees including Norway maple and ornamental plum. The study investigates how street activity and furnishings, diversity, ecosystem services, native species, and resiliency inform tree selection.



# OPPORTUNITIES: CAMPUS WIDE



## GARDENS



### EXISTING CONDITION & ISSUES

Gardens on the PSU campus, identified in figure 31, are managed open spaces that are designed as a grouping of plots that are available for productive cultivation. They are student-focused and are intended to offer opportunities to learn about plant care, habitat restoration, food production, and to foster community building and cultural diversity. The most prominent examples are the Portland State University Community Orchard/Garden. Lesser-known examples include the Grazing Gardens adjacent to Cramer Hall, the Native American Student and Community Center Living Rooftop Garden and Deerwalk, the Smith Permaculture Garden, and the SRTC Native Garden. Continuous maintenance can be an issue, especially with student turnover. Presently, the Residence Hall Association is intending to reduce the size of the existing Community Garden and reserve the area for residents.<sup>1</sup>



Figure 31. Gardens in relation to PSU Campus.

### OPPORTUNITIES

- Hands-on opportunities for educating students about urban farming and horticulture, while providing food for housing residents
- Provide needed green space on PSU's urban campus environment, acting as buffers to the surrounding hardscape
- Creating agreements with Facilities and Property Management about how each garden will be maintained and by which groups is important for the ongoing success of these spaces. Future planning and coordination is required not just of the Community Garden, but for the general outlook of gardens on campus

<sup>1</sup> Portland State University Residence Hall Association. (May 2017). Introducing the "Residential Green Space": Reinventing the Residence Hall Community Garden. 2.



Figure 32. Gardens on the PSU campus, source: Campus Planning Office.



# OPPORTUNITIES: CAMPUS WIDE

## PLAZAS



### EXISTING CONDITION & ISSUES

Plazas are formal open spaces available for a wide variety of civic uses and in some cases, limited commercial activities. Plazas are typically hardscaped and provide a variety of seating and other furnishings. PSU has a variety of plazas, which are located in figure 34, that differ in size, configuration, and use:

- The PSU Urban Plaza, as seen in figure 33, is perhaps the best known and serves as a gateway and entry point for Portland Streetcar users. It provides a space for student groups' tabling activities and is a central meeting space
- The Engineering Building Plaza's outdoor space occasionally features engineering projects and has a permanent public art installation and seating areas
- The Montgomery Courtyard, shown in figure 33, is a smaller-scale pocket plaza that gives users the opportunity for a quieter refuge space. It features planters and seating areas for users
- The Epler Hall Plaza provides stormwater planters as well as seating and public art areas
- The Shattuck Ecological Plaza is a space to test student ideas and showcase academic projects



Figure 34. Plazas in relation to PSU Campus.



### OPPORTUNITIES

- Year-round amenities and sheltered areas
- Increased visibility and general awareness of plazas that are on campus and available for use

Figure 33. Top, Montgomery Courtyard, source: Campus Planning Office; bottom, Urban Plaza, source: PSU Flickr.

# OPPORTUNITIES: CAMPUS WIDE



## ROOFTOP SPACES



### EXISTING CONDITION & ISSUES

PSU features two main types of rooftop open spaces which serve markedly different, though complementary uses. Rooftop open spaces can be rooftop plazas, which are elevated, formal open spaces available for campus, civic, and commercial activities. These open space types often take advantage of favorable views and incorporate ecological stormwater runoff techniques. Examples of rooftop plazas include the fifth floor of the Academic and Student Rec Center, the top of the Wilson-DeShane Pavilion at the Urban Center, and the Native American Student and Community Center rooftop. Rooftop open spaces may also be non-accessible green roofs, which are architectural features that provide environmental services and can only be reached by authorized maintenance personnel. These spaces may also be used for research. Examples of non-accessible green roofs include the Cramer Hall, University Pointe, and Broadway Building rooftops.



Figure 35. Rooftop spaces in relation to PSU Campus.

### OPPORTUNITIES

- Increased maintenance to prevent overgrowth and emergence of invasive species. This should include plans for sustained upkeep through use and maintenance agreements with Facilities and Property Management and research faculty
- Enhanced safety plans through structure and installed security measures. In the summer months, dead or dry vegetation on all green roofs can pose fire hazards, especially when in close proximity to rooftop mechanical equipment or exhaust vents
- Rooftop open spaces present tremendous opportunities for stormwater management, wildlife habitat, and positive user experiences due to their elevated nature and removal from street-level traffic
- Express or emphasize the urban form found on the street level

## RECREATIONAL OPEN SPACES



### EXISTING CONDITIONS & ISSUES

Recreational open spaces include sports fields and playgrounds, which are for formal and informal athletic activities. Examples include Stott Field (figure 37), tennis courts, and the playground at the southern terminus of the South Park Blocks.

### OPPORTUNITIES

The 2015 Focus Groups identified a desire for recreation spaces such as yoga spaces, or athletic and workout equipment such as swings, basketball courts, pull up bars, and gymnastics rings. Some of these sentiments were echoed by Campus Rec, who expressed interest in physical education and health promotion activities as a part of a recreation trail or loop.



Figure 36. Recreational open spaces in relation to PSU Campus.



Figure 37. Stott Field, source: Campus Planning Office.



# OPPORTUNITIES: CAMPUS WIDE

## FUTURE DEVELOPMENT

### EXISTING CONDITIONS & ISSUES

When spaces on campus require development, the University is faced with an opportunity to increase or enhance open spaces. The Karl Miller Center designed by Behnisch Architekten and SRG Partnership and built by Skanska, was opened in fall 2017 and is home to PSU's School of Business. The updated LEED Platinum renovation project, shown in figure 38, maintained the building's footprint, while increasing total square footage by more than 172%. The Karl Miller Center's five ecoroofs, totaling 7,000 square feet, help to manage stormwater and mitigate urban heat island effect. The open space north of the Karl Miller Center along Montgomery between SW 6th Avenue and Broadway (figure 38) is a section of the Montgomery Green Street that was designed to manage stormwater runoff and integrate vibrant pedestrian spaces. This area serves as an opportunity for enhanced community engagement, pedagogy, ecosystem services, and identity strategies.

### OPPORTUNITIES

Several areas on campus are prime for future development efforts. These include:

- The half block adjacent to Science Building One at the corner of SW Market and SW 11th Avenue
- The half block adjacent to Parkmill at the corner of SW Mill and SW 10th Avenue
- University Place
- An opportunity exists in a future redevelopment of the Art Block to create an alleyway connection that extends SW Jackson to SW 4th Avenue, increasing the permeability of this area and increasing visibility along the Southern Edge
- The current site of the tennis courts presents a short-term recreation opportunity and the development of a future node, especially in its placement proximate to the Green Loop alignment along College Avenue. A building and associated landscape areas will further anchor the blocks from the Park Blocks to the Art Building and reinforce the presence of the PSU campus along this area



Figure 38. Open space along Montgomery between SW 6th Avenue and Broadway, Karl Miller Center, source: Portland State University.

# OPPORTUNITIES: WEST CAMPUS

## OAK SAVANNA



### EXISTING CONDITIONS & ISSUES

The Oak Savanna Block, shown in figures 39 and 40, is a 1.1 acre open space that features 28 reclaimed wood log seats, as well as culturally-significant plants and natural wildlife during the spring and summer months. In addition to natural features, the open space includes built structures. The Harrison Street Building currently houses the Center for Lakes and Reservoirs; a north greenhouse houses environmental science management research; and a south greenhouse houses a civil and environmental engineering research lab. The open space serves many functions. While the University and community use the Oak Savanna Block as an outdoor learning environment, it has also been used as a construction staging area.<sup>1</sup> The site's unkempt appearance has contributed to its erroneous perception as a dog park, which is reinforced by the dog waste bag stations. Focus groups voiced concern over the off-leash nature of the park.



Figure 39. Oak Savanna in relation to PSU campus.

### OPPORTUNITIES

The Oak Savanna Block's preferred concept plan, shown in figure 41, highlights many opportunities for the open space.

- A raised deck area immediately adjacent to the new Library Food Carts allowing for enhanced seating options and opportunities for recreation
- A trellis or covering to meet the demand for all-weather outdoor spaces
- A renovated Harrison Street Building



Figure 40. Oak Savanna Block, existing conditions, source: Campus Planning Office.

- Outdoor classroom elements, including edible gardens, outdoor classroom terraces, lawn terraces, and outdoor bench seating
- Restoration efforts including protecting by means of an ADA accessible raised boardwalk, low walls to delineate protected areas from actively used spaces

<sup>1</sup> Spalding, Heather. Portland State University Student Sustainability Center. "Introducing a new outdoor classroom at PSU: The Oak Savanna." Retrieved from <https://www.pdx.edu/sustainability/solutions-blog/introducing-a-new-outdoor-classroom-at-psu-the-oak-savanna>.



Figure 41. Oak Savanna Block, preferred concept plan, phase 3 (full build-out), source: 2.ink Studio.



Figure 42. 11th Avenue, preferred concept, source: 2.ink Studio.

# OPPORTUNITIES: WEST CAMPUS

## 11th AVENUE



Figure 43. 11th Avenue, preferred concept, divided into three areas, source: 2.ink Studio.



Figure 44. Existing conditions, 11th Avenue.



Figure 45. Possible conversions, 11th Avenue.

### EXISTING CONDITIONS & ISSUES

11th Street is envisioned to become a campus street, a pedestrian-focused street intended to connect the Northern Gateway and West Campus Housing Focus Areas with the Oak Savanna Block. Overall, 11th Street will form a parallel campus street to the Park Blocks, but instead of a traditional quad, it will be a pedestrian boulevard that maintains its current loading and emergency access functionality. 11th Avenue's existing conditions are shown in figure 46.



Figure 46. 11th Avenue, existing conditions, source: 2.ink Studio.

### OPPORTUNITIES

Figure 44 and 45 illustrate existing conditions in comparison to possible conversion in section view. Figure 42 shows the preferred concept for 11th Avenue and figure 34 divides the campus street into three areas:

- In area 1, which extends from Market Street to Mill Street, opportunities exist for specialty paving to signal 11th Street's pedestrian priority, with café and outdoor seating as amenities. On the west side, a protected turnaround for vehicular traffic can discourage drivers from using the street
- In area 2, which extends from Mill Street to SRTC Alleyway, existing planting areas are maintained or enhanced to help direct pedestrian traffic along the corridor, along with seat walls. The trash enclosures for the SRTC and Blumel are consolidated into a larger protected enclosure immediately adjacent to SRTC to hide dumpsters from view and centralize garbage pickup locations
- Area 3, the southernmost section, connects the Oak Savanna Block and the Walk of the Heroines. Opportunities exist to enhance transitions through the curving visual design to seamlessly interconnect 11th Street, the Oak Savanna Block, and the Walk of the Heroines and invite pedestrian activity. In this concept, a new trash enclosure will hide dumpsters and the existing electrical transformer



# OPPORTUNITIES: WEST CAMPUS

## LIBRARY FOOD CART POD



### EXISTING CONDITIONS & ISSUES

PSU leases space for food carts across the university campus. Food carts, shown in figure 48, contribute to a vibrant campus environment and provide diverse dining options to University District residents, students, employees, and visitors. North of the PSU Millar Library, this location, sign guiding the way in figure 47, includes space for multiple food carts.



### OPPORTUNITIES

- A new food cart pod adjacent to the Millar Library presents an opportunity to activate surrounding sites and continues to build a sense of place



Figure 47. Library food cart pod sign, source: Campus Planning Office.



Figure 48. Students eating lunch at the library food cart pod, source: Campus Planning Office.

## SHATTUCK ECOLOGICAL PLAZA



### EXISTING CONDITIONS & ISSUES

The Shattuck Hall Ecological Learning Plaza, shown in figure 49, is a facility dedicated to research in sustainable building practices while engaging the public and encouraging community interaction. In the past, the Plaza has featured several green wall systems, green roof systems, demonstration landscapes and original furniture design. Vertical gardens, an experimental sloped green roof, solar panels and permeable paving have also been showcased. PSU students in Architecture, Engineering, and the Green Building Research Lab have created work for the Plaza in collaboration with design and engineering professionals, manufacturers, and public agencies. The Shattuck Ecological Plaza is a space to test student ideas and showcase academic projects.



### OPPORTUNITIES

- Over time, the Plaza is intended to become a space for further research and experimentation with other building materials and methods. As such, it can become a key activity node in future Campus Open Space efforts
- The lack of year-round amenities and sheltered presents an opportunity for development



Figure 49. Shattuck Ecological Plaza, existing conditions, source: Campus Planning Office.



# OPPORTUNITIES: WEST CAMPUS

## PORTLAND SOUTH PARK BLOCKS



Figure 50. South Park Blocks, existing conditions, source: PSU Flickr.

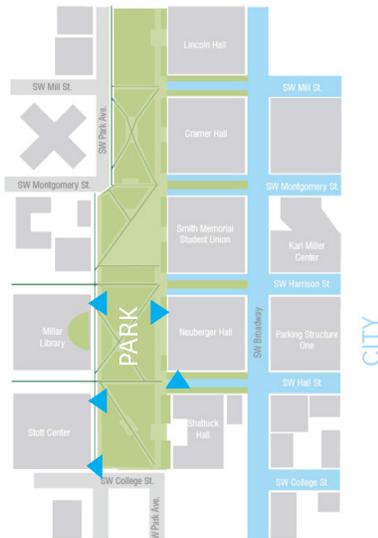


Figure 51. Opportunity to coordinate PSU building entrances with pathways and entrances of South Parks Blocks, source: Hacker Architects.

### EXISTING CONDITIONS & ISSUES

The South Park Blocks, located in figure 52, function as a traditional college campus quad and are a key feature that adds greatly to the character and identity of the PSU Campus. Perceptions of the Park Blocks are generally positive and seen by users as a core asset, although the current design of the Park Blocks is dated and is in need of a refresh and new investment by Portland Parks & Recreation.

While the trees that comprise much of the Park Blocks, shown in figure 50, provide a great deal of shade, the trees are nearing the end of their life and are becoming a safety hazard.

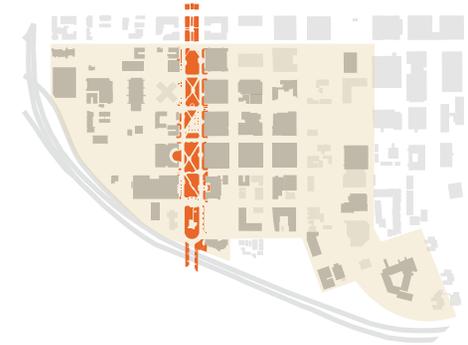


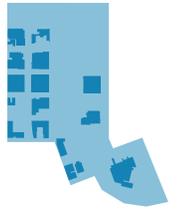
Figure 52. South Park Blocks, in relation to greater PSU campus.



### OPPORTUNITIES

- More flexible programming and functioning
- Covered areas for year-round use of the space
- Address tree hazards, general upkeep
- More seating options in general
- Safer crossings to the playground area at the southern terminus
- The Central City 2035 Plan includes an action for a new plan for the Park Blocks; Portland Parks and Recreation recently received funding to begin the plan in 2018. This planning effort is an opportunity for PSU to influence the future investments and emphasize the importance of this park space
- Intentionally connect adjacent building entrances to Parks Blocks, as shown in figure 51. Design landscaping and pathways to coordinate with surrounding built environment. Future designs should consider increased pedestrian traffic associated with the Viking Pavilion
- Design the South Parks Blocks quad to reflect PSU's unique urban campus

# OPPORTUNITIES: EAST CAMPUS



## SOUTHERN GATEWAY



### EXISTING CONDITIONS & ISSUES

The Lawrence Halprin Open Space Sequence, located in figure 53, is an open space and pedestrian system within the southern gateway, which consist of a network of fountains, greenways, plazas, and small parks that are immediately adjacent to PSU's eastern edge. Built between 1963-1970, the Sequence is a recognized landmark and is well-utilized by local residents and nearby office workers in fair weather. Fourth Street forms a physical barrier between the Sequence and the greater PSU Campus, except for the few PSU buildings that directly abut it. Generally, there is a lack of signage or other visual cues that alert the PSU campus community about its presence and availability.



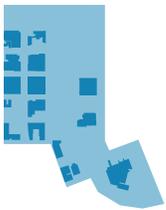
Figure 53. Southern Gateway in relation to PSU campus.

### OPPORTUNITIES

- A Southern Gateway Focus Area will solidify the link between the central and southern PSU campus with the University Place Hotel and Conference Center. As the primary entry location for Max Orange Line riders and motorists exiting off I-405, this location is a prime opportunity for landmarks, signage (see example in figure 54), and potential open spaces that reinforce a sense of officially entering the PSU Campus



Figure 54. Signage along the South Park Blocks, possible inspiration for opportunity in Southern Gateway Focus Area, source: PSU Flickr.



# OPPORTUNITIES: EAST CAMPUS

## MONTGOMERY STREET

### EXISTING CONDITIONS & ISSUES

Campus streets are predominantly pedestrian-oriented, but may carry occasional service or emergency vehicles. They contribute to a more “enclosed” atmosphere for users. Owing to limited vehicle-oriented space, this street typology creates the most flexibility for active and passive landscapes.

Montgomery Street, between SW 6th Avenue and Broadway, is part of the Southwest Montgomery Green Street, a multi-block plan that incorporates stormwater management strategies and pedestrian spaces. This stretch of Montgomery was also recently improved with the development of the Karl Miller Center.

### OPPORTUNITIES

- As indicated in figures 55 and 56, relatively minor reorganizations of the sidewalk and street zones can be performed to attain the campus street standard. This encourages the mixing of pedestrians, bicyclists, and slow-moving motor vehicles, with pedestrians given the greatest priority and street furnishing availability
- More cohesive system of open spaces that still perform their primary function of pedestrian-serving streets with limited use by motor and emergency vehicles

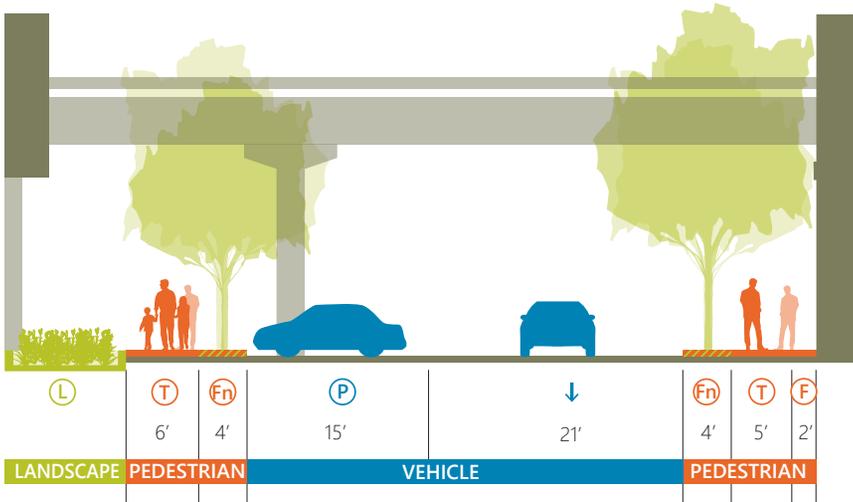


Figure 55. Existing conditions, Montgomery in between 6th and Broadway.

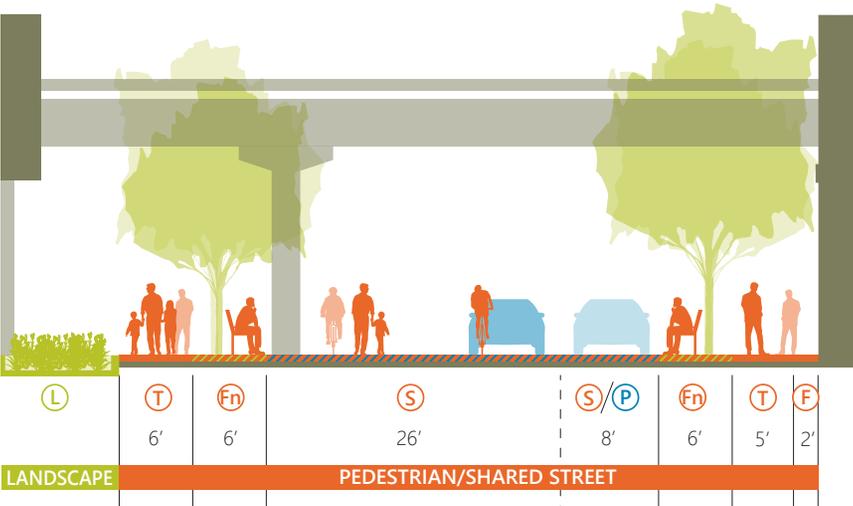


Figure 56. Campus street conversion, Montgomery in between 6th and Broadway.

# ACTION PLAN

The following section is a list of recommended actions that can be undertaken by identified parties at PSU to help realize the concepts explored in previous sections of this plan. It is not intended to be a definitive list of actions, nor should each action be taken in isolation; rather it should be approached as a university-wide, systematic effort to realize the plan's overall vision.

# ACTION PLAN

## KEY PARTNERS

ASPSU	Associated Students of Portland State University
COP	City of Portland
CPC	Capital Projects and Construction
CPO	Campus Planning Office
CPSO	Campus Public Safety Office
CSO	Campus Sustainability Office
DOSL	Dean of Student Life
DRC	Disability Resource Center
FP	PSU Food Pantry
FPM	Facilities & Property Management
HRL	Housing and Residential Life
ISS	Institute for Sustainable Solutions
LGL	Learning Gardens Laboratory
LLI	Living Lab Initiative (CSO)
NASCC	Native American Student and Cultural Center
PBOT	Portland Bureau of Transportation
PPR	Portland Parks & Recreation
RCSC	Resource Center for Students with Children
SAL	Salmon Safe
SSC	Student Sustainability Center

# ACTION ITEMS

	TIME FRAME			KEY PARTNERS
	SHORT	MEDIUM	LONG	

## I. PEDAGOGY

Integrate campus open space and green street design into academic programs such as Urban Design and Planning, Community Development, Architecture, and Art. Encourage students to continuously assist the development and design of campus open space over time. This incremental approach to campus green street and open space development complements piecemeal timelines for new construction and associated funding.

X

LLI (CSO, ISS, FPM), Faculty

Implement opportunities to better enable the academic community to engage with, teach, and research in existing open spaces and prioritize pedagogical opportunity in the design of new open spaces on campus through seating, coverage, and hardscape and/or landscape decisions.

X

CPC, CPO, CSO, FPM

## II. COMMUNITY ENGAGEMENT

Participate in the City of Portland's South Park Blocks Master Plan. Advocate for more flexible and varied uses for the South Park Blocks, including flexibility in programming, such as additional seating and shade structures for inclement weather. Work with the City to identify potential new permitted uses and programming options.

X

COP

Complete PSU Housing Master Plan. Ensure that the Housing Master Plan integrates with the Open Space Plan, including new open spaces and refurbishment of existing open spaces for residents. Work with Housing and Residence Life to prioritize the improvement of open spaces that serve students in University housing.

X

CPO, HRL, DOSL

Reactivate Shattuck Ecological Plaza. Determine the best way to utilize this space as an outdoor gallery and promote as a learning and gathering campus node. Form a task force with Architecture and Campus Planning to determine a strategy to move forward.

X

Faculty, CPO

Prioritize and improve existing roof top spaces. Create inventory and list of prioritized needs for occupied roof top open spaces. Based on this inventory, identify funding sources to improve and expand PSU's roof top open spaces. Require occupiable roof top spaces in all new construction, when possible.

X

FPM, CPO, CSO

Expand options for recreation and play. Incorporate more age-specific, child-friendly, safe, and universally accessible places to play throughout campus. Identify new opportunities for recreation space – basketball courts, skate parks, etc. in the housing district, on roof tops, or near University Place. Regulation-size ball courts could be constructed on top of Parking Structure Three or integrated into new building designs.

X

HRL, ASPSU, RCSC, DOSL

# ACTION ITEMS

	TIME FRAME			KEY PARTNERS
	SHORT	MEDIUM	LONG	

Address the growing presence of dogs on campus. Create and enforce appropriate dog regulations for campus to protect open spaces and open space users. Recognize that PSU cannot serve as the de facto downtown dog park and in partnership with the City of Portland, identify a location for a downtown dog park.	X			FPM, CPO, CSC, COP, SSC
Prioritize and ensure safety for the campus community through the creation of defensible space. Strategies should include strategic community partnerships, hardscape design, lighting, and other elements that increase security.	X			CPO, CPC, CPSO, FPM, other community partners
Identify opportunities to integrate campus community gardens into landscape design. Gardens enable community engagement, provide ecosystem services, and could potentially help address food insecurity within the PSU community. The Oak Savana provides ample space, sunlight, and access and should be considered as an opportunity for a campus garden.	X			SSC, CPC, CSO, CPO

## III. ECOSYSTEM SERVICES

Reactivate Student Test Plots on top of Cramer Hall. These spaces have fallen into disrepair over the years, yet continue to be a point of focus in PSU promotional materials that highlight student sustainability programs and opportunities. Identify a PSU faculty member to take over the space and encourage student capstone projects that make use of the plots.	X			SSC, CSO, Faculty
Complete Salmon Safe Certification Renewal. Renew PSU's commitment to link university land management practices with the protection of urban watersheds.	X			SAL, CSO
Complete Stormwater Management Plan. Ensure PSU's commitment to sustainable resource management and compliance with City of Portland and the greater Pacific Northwest ecosystem.	X			COP, CPO, CSO
Create new green space map. Design a new map layer that shows all garden locations, learning gardens labs, rooftop spaces and other green spaces to promote more interaction with campus green spaces.	X			CPO, CSO, SSC
Increase native species on campus. Develop design standards that prioritize the use of native species in campus green spaces and landscaping. Develop a list of preferred species for specific areas on campus (tree wells, open space, gardens, bioswales, etc.) as a resource for when opportunities arise.	X			FPM, CSO, Faculty

# ACTION ITEMS

	TIME FRAME			KEY PARTNERS
	SHORT	MEDIUM	LONG	

<p>Implement the Montgomery Green Streets Plan. Completion of the plan creates a strong east-west axis that forms a green 'spine' on the northern side of campus and connects to the Halprin Blocks to the western neighborhoods past I-405.</p> <ul style="list-style-type: none"> <li>• Close Montgomery street between 6th and Broadway to motorized vehicle traffic. Allow for a pedestrian oriented or festival street in this area of campus.</li> <li>• Turn Montgomery Street between 4th and 5th into a pedestrian/plaza street. Adapt the character from the urban plaza and create a leveled pedestrian zone shared with the streetcar.</li> <li>• Expand stormwater management infrastructure, tree planting, and wildlife support along Montgomery</li> </ul>		X		
		X		COP, PBOT, CPO, CSO, CPC
		X		
		X		
<p>Implement the College Green Street. Develop practical green street standards and designs for College Street between Park and SW 4th, including options for the Green Loop as appropriate.</p>			X	PPR Forestry, PBOT, CPO, Faculty
<p>Implement the Broadway street tree arboretum to showcase different street trees on the PSU campus and assist the city with determining the best types of street trees in different situations and for different purposes, including improved ecosystem services.</p>	X			FPM, CSO
<p>Preserve the Oak Savanna as open space. Build on initial concept drawing and visioning exercise for the Oak Savana to implement a new holistic design that is responsive to a variety of campus needs, provides a multitude of engagement opportunities, and enhances ecosystem services.</p>	X			SSC, Faculty, CSO, CPO
<p>Continue commitment to protect and diversify the campus urban canopy. Update the Campus Tree Care Plan, create a plan for campus street trees, design standards for campus trees, and the Campus Tree Inventory. Develop protocols and processes to ensure regular updates to the campus tree inventory.</p>			X	FPM, LLI, CSO

## IV. IDENTITY & CONTEXT

<p>Coordinate the campus Green Loop alignment with the City. If necessary, develop an alternative alignment along Broadway. PSU Community reaction to the City of Portland's Green Loop Proposals were mixed, with concerns raised about the potential about mixing slow-moving pedestrian traffic along with higher-speed bicycle traffic in the heart of the PSU Campus. Further studies about the alignment should be conducted with the City of Portland.</p>	X			PBOT
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# ACTION ITEMS

	TIME FRAME			KEY PARTNERS
	SHORT	MEDIUM	LONG	

Develop, in cooperation with the City of Portland and PBOT, a pop-up green loop design on College Street. PSU can take a leading role of the Green Loop development working with students in architecture, urban design, and engineering to develop and build green loop designs and temporary furniture.

X

PBOT, CPO, LLI

Develop 11th Avenue as a key campus pedestrian street. Build upon concept plans to create detailed designs and implement the 11th Avenue concept during redevelopment of adjacent blocks and seek funding for the remainder of the improvements.

X

HRL

Construct a Recreation District on the West Side of Campus. The need for formal recreation spaces on campus, as well as the presence of underutilized spaces on the West Side of Campus point to a need for an outdoor recreation-oriented district at these locations.

X

HRL, ASPSU, SSC

Identify and design open spaces with shelters for year-round accessibility. Outreach efforts consistently reveal a desire for year-round, all-weather open spaces, which suggest covered or otherwise sheltered structures.

X

DRC, HRL, CPO

Preserve the Oak Savanna as open space. Create a premier open space for the campus that improves the campus identity. Account for current uses elsewhere on campus and remove underutilized structures. Allow for more wide-ranging uses on the space, including protected native plantings, passive recreation use, and educational gathering space.

X

SSC, ASPSU, Faculty

Redevelop the Harrison Street Building. Explore options for maker space, classroom space and event space in coordination with creation of the Oak Savanna open space. Develop this space to be more accessible to the public or better utilized for educational purposes. Account for current uses elsewhere on campus.

X

Faculty, SSC, CSO, CPO

Replace Stratford, Harder, Parkway, and Parkmill with new buildings as part of the new Northern Gateway Focus Area. Replacing these existing buildings with outward-facing designs combined with new open spaces will create a dynamic gateway, which the Park Blocks Center concept of the 2010 PSU Framework Plan.

X

HRL, CPO

Continue to ensure access to views and daylight harvesting in building design as a secondary/indirect means of engaging and connecting to open spaces on campus.

X

CPC, CPO

# ACTION ITEMS

TIME FRAME  
SHORT    MEDIUM    LONG

KEY PARTNERS

Develop new open spaces as part of the development of the West Campus Housing Focus Area. This housing district will be consolidated around the existing housing “core” at 11th and Montgomery in order to create a safe and collegiate environment for PSU student-residents. A renewed focus on housing for this area can additionally encourage open spaces for more residential uses such as outdoor seating, gathering, and recreation areas and help create a northern gateway.

X    HRL, CPO

Create a New Southern Gateway on the south side of campus. Reinforcing the current buildings and uses in this area will strengthen PSU’s presence and redefine the existing edge of campus, and help to give the Native American Student and Cultural Center a renewed prominence in its present location.

X    NASCC

Develop open space with the creation of a new building at the site of the current Tennis Courts at the southern end of the Park Blocks. A new building combined with a plaza or gathering-oriented open space will form the western anchor to campus.

X    CPO, CPC

Develop a pedestrian alley, in conjunction with new construction, through the current Art Building block to connect to 4th Street. Jackson Street will become a new pedestrian-oriented anchor at the south side of campus, and a new alley will permeate the existing superblock. A new or repurposed Art Building will help define the southern gateway.

X    COP, CPO, CPC

Improve I-405 Deerwalk at the southern end of the South Park Blocks. Improvements can range from rehabilitation of green spaces to the full-fledged deck concept mentioned in City of Portland Plans. Any improvements will enhance the existing space and create a better connection to the surrounding neighborhoods.

X    PPR, PBOT, CPO

## V. HEALTH & WELL-BEING

Formalize ownership and operation of current campus gardens and orchards. Establish new campus gardens in accessible, appropriate locations. There has been vocal PSU community support for the revitalization and promotion of these spaces as a center for learning, community engagement, and a sustainable food source for the campus.

X    SSC, ASPSU, CSO, CPO

Integrate PSU open spaces with course curriculum. Make use of new opportunities to maximize food security awareness.

X    LGL, Faculty, SSC, CSO

# ACTION ITEMS

	TIME FRAME			KEY PARTNERS
	SHORT	MEDIUM	LONG	

Identify opportunities to utilize student-grown produce into campus dining halls. While large-scale harvesting opportunities are not possible, highlighting the potential for urban agriculture can showcase the University's commitment to these efforts. Formalize partnerships between campus food service provider and Learning Gardens Laboratory to integrate student grown produce into campus dining menus.		X		HRL, SSC, CSO, FP
Revise campus planting palette integrate more edible plants.	X			FPM, CSO, SSC
Support preservation and redesign of the Oak Savanna. Outdoor spaces have been proven to be restorative and stress relieving, providing an overall sense of well-being.		X		CSO, CPO, SSC, ASPSU

## VI. PRESERVATION

Work with campus stakeholders to establish a green space goal (% of campus, per project, etc.) and plan for both preventing and mitigating green space loss as we develop campus over time.	X			Faculty, SSC, ASPSU, CSO, CPO
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Figure 58. Urban Center Plaza, source: PSU Flickr.



Figure 57. Campus open spaces; bottom left, South Park Blocks, source: Campus Planning Office; top left, Walk of Heroines, source: Campus Planning Office; top right, view from a PSU eco-roof, source: PSU Flickr; bottom right, campus breezeways, source: Campus Planning Office.

# APPENDIX

The following section documents technical details mentioned in earlier sections. Separate sections are devoted to sidewalk zones, street furnishings, landscaping, lighting, stormwater features, environmental safety, maximizing south facing open spaces, streetscape framework, Green Loop street, and planting zones.

# APPENDIX

## INTEGRATED STORMWATER MANAGEMENT & LANDSCAPE DESIGN

During rain events in urban areas, stormwater runoff can collect pollutants, sediment, and other litter and debris, which can accumulate in drainage systems and eventually flow into the watersheds. “Green infrastructure” design elements manage stormwater by lessening and dispersing flows at peak times, treating water through various natural processes, and using it to irrigate landscapes.

### GREEN STREETS

Implementing green infrastructure within the public street for stormwater management can improve water quality by natural means. Often described as “green streets,” these elements provide an additional purpose for landscapes within the street and provide the added benefit of supporting economic vitality, complementing placemaking, and improving public health. The following is a short description of various green street elements that can improve stormwater quality and manage its flow.

### INFILTRATION

Infiltration is the process or rate at which water percolates into the ground. In order to select and design proper green street elements it is important to understand the ability of underlying soils to allow for infiltration – does the type of soil and the hydrology allow water to percolate and is there contamination or other factors that impede infiltration?

### DETENTION

Detention is the ability of hold water for a period of time to allow the water to infiltrate into soils or more slowly enter the storm drain system. This can allow a watershed to function more effectively and naturally.

### BIORETENTION

Bioretention is the ability of plants and soils to slow and reduce peak stormwater flow through natural processes. Plants can take up stormwater through their roots and transpire it into the atmosphere while soils have the ability to be saturated and allow the water to evaporate into the atmosphere, infiltrate into the ground water system, or flow through constructed underdrains into the stormwater system.

### POLLUTANT REMOVAL

Solid (particulate) matter and pollutants can be removed from stormwater by use of rocks, gravel, and the structure of plants or other constructed elements, such as grates. These elements should be design to allow for ease of maintenance. Soluble pollutants may be absorbed by plant roots and, in some cases, be filtered and processed by soil and microbes.

### PASSIVE LANDSCAPE USES

#### CAMPUS GARDENS

Among many footprint opportunities, there exist ones for expanded campus gardens in interstitial spaces and in buffer areas in front of buildings, such as the Grazing Gardens in front of Cramer Hall. Non-edible general planting beds also fall under this definition.

#### RAIN GARDENS

Rain gardens are shallow landscape depressions which collect runoff and allow it to infiltrate.<sup>1</sup> They can be designed in various sizes and configurations, including standalone ponds and street integrated urban planters. Space permitting, they can be designed to capture and hold large volumes of stormwater on-site.

#### STORMWATER PLANTERS AND CURB EXTENSIONS

Also referred to as infiltration or flow-through planters, stormwater planters are structural landscaped reservoirs used to collect, filter, and infiltrate stormwater - allowing pollutants to settle and filter out as the water percolates through the vegetation, growing medium, and gravel.<sup>2</sup> Stormwater planters are typically used in more constrained urban areas where there is a need to collect and hold larger volumes of runoff.

<sup>1</sup> City of Portland. (2016). Stormwater Management Manual. Section 2.3.4.5. Rain Garden.  
<sup>2</sup> Ibid., section 2.3.4.8. Planters.

## INTEGRATED STORMWATER MANAGEMENT &amp; LANDSCAPE DESIGN

Stormwater curb extensions are landscape zones within the parking zone of a street that can occur at street corners or along the length of a block. These curb extensions are versatile in size and shape and may benefit pedestrians by reducing street crossing width and managing the speed of traffic.<sup>3</sup>

## PERVIOUS PAVEMENT

Pervious pavement allows rainwater to either pass through the paving system itself or through joint openings between pavers. Depending on the underlying soil conditions, runoff can either infiltrate the soil or be collected in an under-drain system. Types include interlocking concrete pavers, reinforced grass paving, asphalt, concrete, and reinforced crushed rock/gravel.<sup>4</sup> Pervious paving can be used in practically all pedestrian areas as well as parking lots. The City of Portland considers pervious paving on private streets and public roadways on a case-by-case basis.<sup>5</sup>

## TREES

Trees are the most basic form of stormwater management and perform the earliest functions of runoff treatment during storm events. Tree foliage and bark collects rain water and retards it prior to the water reaching the landscape or pavement surfaces. The rainfall collected on trees may also evaporate into the air before it reaches the ground. When water does reach the ground, tree roots help in the uptake of stormwater and limit the amount of downstream runoff.<sup>6</sup>

## BIOSWALES

Bioswales, are typically long, narrow, and gently sloped landscaped depressions primarily used to convey stormwater runoff from the ground surface while also providing water quality treatment.<sup>7</sup> Water flowing through a bioswale is slowed and filtered by plants and soil, which allow for separation between sediments and pollutants.

## ACTIVE LANDSCAPE USES

The urban location of the PSU campus limits the footprint of dedicated open spaces for active uses. Nonetheless, careful design and placement of active landscapes can contribute to a healthier and more engaged PSU population.

## POCKET PARKS AND PLAZAS

Pocket Parks and Plazas can be the size of small tennis courts and can be carefully programmed for seating areas and tables, or small lawns and gardens. Activity can be concentrated into these areas and away from more passive landscape uses which may function more effectively without human intrusion.

## DEDICATED SPORTS FIELDS

Dedicated sports fields can be the most visible active-use landscape spaces. However, their size and specialized use requirements can mean that they are often under- or completely unutilized for much of the day despite their large footprint. Nonetheless, sports fields present an opportunity for community interaction through direct participation in the athletic activities themselves, or through indirectly observing these activities as an audience.

## OPEN FIELDS AND GENERAL RECREATION AREAS

Largely unprogrammed lawn or general recreation areas can see a mix of group or solitary activity and are flexible in their day-to-day use. They can function as outdoor event space and can be configured for occasional athletic activity if desired. Like dedicated sports fields, general open fields and recreation areas can help promote community interaction, but can also be programmed for specific needs.

<sup>3</sup> United States Environmental Protection Agency, Office of Sustainable Communities Smart Growth Program. (2013). Greening Last Chance Gulch. 5.

<sup>4</sup> Ibid. 5.

<sup>5</sup> City of Portland. Stormwater Manual. Section 2.3.4.2. Pervious Pavement

<sup>6</sup> U.S. EPA. Greening Last Chance Gulch. 5

<sup>7</sup> City of Portland. Stormwater Manual. Section 2.3.4.6. Swales.

# APPENDIX

## DESIGN GUIDELINES FOR MAXIMIZING SOUTH-FACING OPEN SPACES

The University's Portland, Oregon location limits its average number of sunny days to 175 per year, or 48 percent.<sup>1</sup> As such, efforts to design open spaces to maximize south-facing solar exposure should be emphasized.

### GUIDELINES

- Where possible, orient active-use open spaces to face within twenty degrees of true south for the highest amount of sunlight when available
- Plaza and future building design should be oriented such that south-facing building entrances provide an anchoring focal point<sup>2</sup>
- Emphasize the placement of taller buildings on the northern portions of sites and protect solar access for adjacent sites
- Emphasize south-facing open spaces in the following locations:

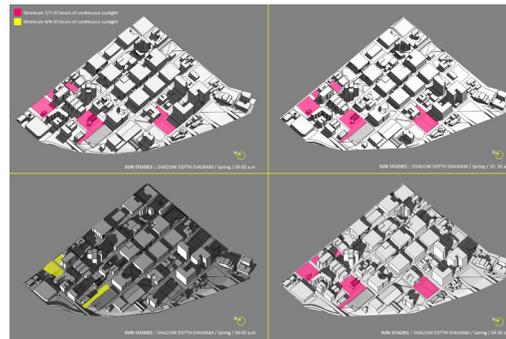


Figure 59. Sun studies shadow depth diagram, spring; bottom left, 8:00 p.m.; top left, 9:00 a.m.; top right, 10:30 a.m.; bottom right, 4:30 p.m.

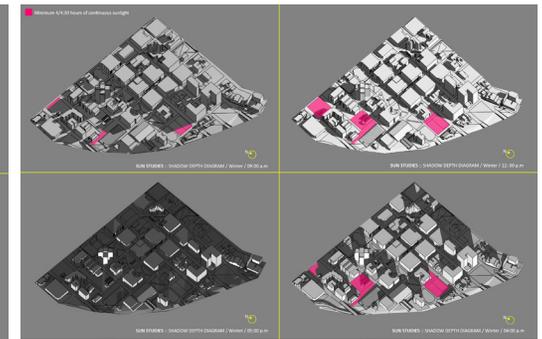


Figure 60. Sun studies shadow depth diagram, winter; bottom left, 3:00 p.m.; top left, 9:00 a.m.; top right, 11:00 p.m.; bottom right, 4:00 p.m.

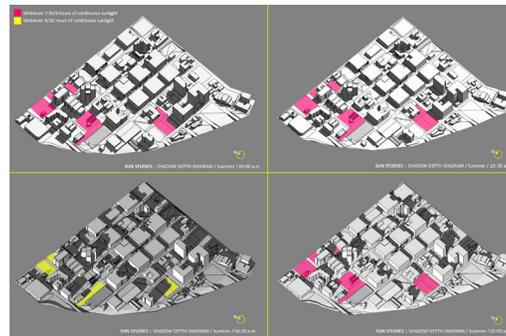


Figure 61. Sun studies shadow depth diagram, summer; bottom left, 8:30 p.m.; top left, 9:00 a.m.; top right, 10:30 a.m.; bottom right, 3:00 p.m.

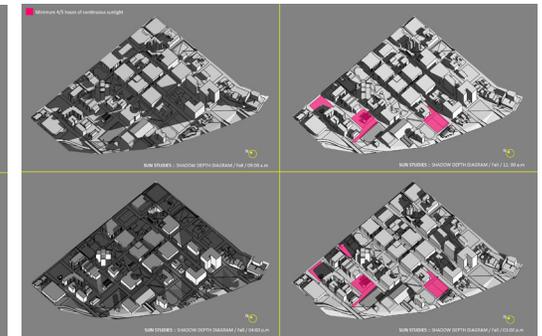


Figure 62. Sun studies shadow depth diagram, fall; bottom left, 4:00 p.m.; top left, 9:00 a.m.; top right, 11:00 a.m.; bottom right, 8:00 p.m.

1 National Climatic Data Center. (2004). "Ranking of Cities Based on % Annual Possible Sunshine in Descending Order from Most to Least Average Possible Sunshine." Retrieved from <http://www.ncdc.noaa.gov/oa/climate/online/ccd/pctpos.txt>

2 City of Portland Bureau of Planning. (2001, Updated 2003). Central City Fundamental Design Guidelines. Guideline B 5 – "Make Plazas, Parks, and Open Space Successful."

## ENVIRONMENTAL SAFETY CONCEPTS

Safety, security, and general crime and vandalism concerns can be addressed through careful design of the built environment. The concept of Defensible Space was coined by Oscar Newman to refer to a range of mechanisms, real and symbolic, barriers, strongly defined areas of influence, and improved opportunities for surveillance that combine to bring the environment under the control of its intended users.<sup>1</sup> The following are examples of Defensible Spaces that can be incorporated to existing and future open spaces to maximize safety and security.

**NATURAL PLANTERS AND BUFFERS**

These elements can be used to buffer building edges from public walkways and sidewalks and can be used as a deterrent against graffiti and other forms of vandalism. Figure 63 shows an example on the University campus.

**MINIMIZING OR REMOVING WALLS**

Walls may delineate private from public areas, but can also provide hiding places or secluded areas.

**LIGHTING**

Well-placed lighting adds to comfort for pedestrians and minimizes shadow areas where illicit activities can occur.



Figure 63. Example of a natural planter on campus, source: Campus Planning Office.

<sup>1</sup> Steiner, Frederick R & Butler, Kent. (Eds.). (2007). Planning and Urban Design Standards. American Planning Association. 274-279.

# APPENDIX

## PORTLAND STATE UNIVERSITY GUIDES & PLANS

The following guides and plans serve as reference to advance the goals of the Open Space Plan.

### CAMPUS TREE CARE PLAN

The purpose of the Campus Tree Care Plan is to establish a strategy for long-term management of campus trees. The following objectives aim to ensure a safe, attractive and sustainable urban forest by protecting a canopy of trees to be enjoyed by our campus community.

- Enhance and maintain a healthy tree canopy on campus
- Protect trees during construction and renovation
- Replace trees lost to campus development, disease, or old age
- Promote species diversity and plant appropriate, high quality trees
- Manage invasive plants throughout campus
- Encourage campus community to discover, identify, and value trees on campus.<sup>1</sup>

### INTEGRATED PEST MANAGEMENT PLAN

The Integrated Pest Management Plan provides a comprehensive guide for pest management decisions and specific policy-based direction for implementing integrated pest management principles on PSU's campus. The plan protects and embodies Portland State's commitment to provide a safe and healthy learning environment to all members of the campus community. The Integrated Pest Management Plan was a collaborative effort involving the following departments: The Campus Sustainability Office (CSO), Facilities & Property Management (FPM), and Environmental Health & Safety (EHS).<sup>2</sup>

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<sup>1</sup> Portland State University. Campus Tree Care Plan, section 1, Purpose

<sup>2</sup> Portland State University. Integrated Pest Management Plan. (2012, Updated 2016), "A Commitment to Integrated Pest Management."

### TECHNICAL DESIGN STANDARDS

PSU's Technical Design Standards are intended to clearly and concisely communicate Capital Projects & Constructions standards, including preferences and recommendations, for consultants and contractors. The Technical Design Standards are divided into sections that follow the Construction Specifications Institute (CSI) standards. This format facilitates the use and familiarity by the design and construction professionals. In addition, the guidelines in this document focus on PSU's vision to create facilities having the following characteristics:

- Adaptability
- Durability
- Maintainability
- Timeless design
- Sustainability
- Energy efficiency
- Innovation
- Environmental Health & Safety.<sup>3</sup>

### PSU BROADWAY STREET TREES STUDY AND PLANTING PLAN

The Broadway Street Trees Study and Planting Plan envisions Broadway as an arboretum, outlining four main goals that proactively prepare the street for tree loss between SW Jackson and SW Market:

- Increase Diversity of Tree Planting
- Integrate Native Tree Options
- Strengthen Resiliency
- Provide Ecosystem Services
- Develop Intentional Phasing

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<sup>3</sup> Portland State University. Capital Projects & Construction: Technical Design Standards. (Revision 2B, Updated 2017), "Introduction."



Figure 64. One of the most recognizable nodes on campus, PSU's Urban Center, source: PSU Campus Planning Office.

