EVERETT LINK EXTENSION

MODEL CODE PARTNERSHIP

TRANSIT-ORIENTED DEVELOPMENT TOOLKIT

JANUARY 2026

SoundTransit

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ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
AHTF	Affordable Housing Trust Fund
AMI	Area Median Income
APA	American Planning Association
BART	Bay Area Regional Transit
BAT	Business Access and Transit
BCO	Business Community Ownership
BESS	Battery Energy Storage System
BNG	Biodiversity Net Gain
BRT	Bus Rapid Transit
CBA	Community Business Agreement
CDBG	Community Development Block Grants
CDC	US Centers for Disease Control and Prevention
CHIP	Connecting Housing to Infrastructure Program
CHP	Combined Heat and Power
CHPS	Collaborative for High-Performance Schools
CIE	International Commission on Illumination
CLT	Community Land Trust
CSS	Context-Sensitive Solutions
dBH	Diameter Breast Height
ECA	Embodied Carbon Assessment
ECHO	Embodied Carbon Harmonization and Optimization
EPA	US Environmental Protection Agency
ESDA	Everett Station District Alliance
ESDS	Evergreen Sustainable Development Standard
EV	Electric Vehicle
EVLE	Everett Link Extension
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GBCI	Green Building Certification Inc.
GHG	Greenhouse Gas
GMA	Growth Management Act
HASCO	Housing Authority of Snohomish County
HB	House Bill
HUD	US Department of Housing and Urban Development
IES	Illuminating Engineering Society
ITE	Institute of Transportation Engineers
LAP	Land Acquisition Program
LBC	Living Building Challenge
LED	Light-Emitting Diode
LEED	Leadership in Energy and Environmental Design
LF	Linear feet
LIHTC	Low-Income-Housing Tax Credit
LLC	Limited-Liability Corporation
LPI	Leading Pedestrian Interval
LRT	Light Rail Transit
MCP	Model Code Partnership
MFTE	Multifamily Tax Exemption
MUTCD	Manual on Uniform Traffic Control Devices
NACTO	National Association of City Transportation Officials
NLC	National League of Cities
OMF	Operations and Maintenance Facility
PBIC	Pedestrian and Bicycle Information Center
PHS	Passive House Standard
PSRC	Puget Sound Regional Council
PV	Photovoltaic
RCW	Revised Code of Washington
RGC	Regional Growth Center
SEDG	Station Experience Design Guidelines
SR	State Route
SRI	Solar Reflectance Index
ST3	Sound Transit 3 Plan
STart	Sound Transit Art Program
STEP	Shelters, Transitional housing, Emergency housing, and Permanent supportive housing
TDM	Transportation Demand Management
TMA	Transportation Management Association
TOC	Transit-Oriented Community
TOD	Transit-Oriented Development
USGBC	US Green Building Council
V2G	Vehicle to Grid
VMT	Vehicle Miles Traveled
WSEC	Washington State Energy Code
WSHFC	Washington State Housing Finance Commission
WSSP	Washington Sustainable Schools Protocol

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1 INTRODUCTION

Addressed in This Chapter

This chapter of the Transit-Oriented Development (TOD) Toolkit introduces the document, the Model Code Partnership, and the TOD Policies.

Station Experience Design Guidelines (SEDG) Topics

Sound Transit's Station Experience Design Guidelines (**SEDG**) provide direction for light rail station and station environment design to support transit passengers. References to the SEDG in this Toolkit are highlighted throughout and are listed at the beginning of each chapter.

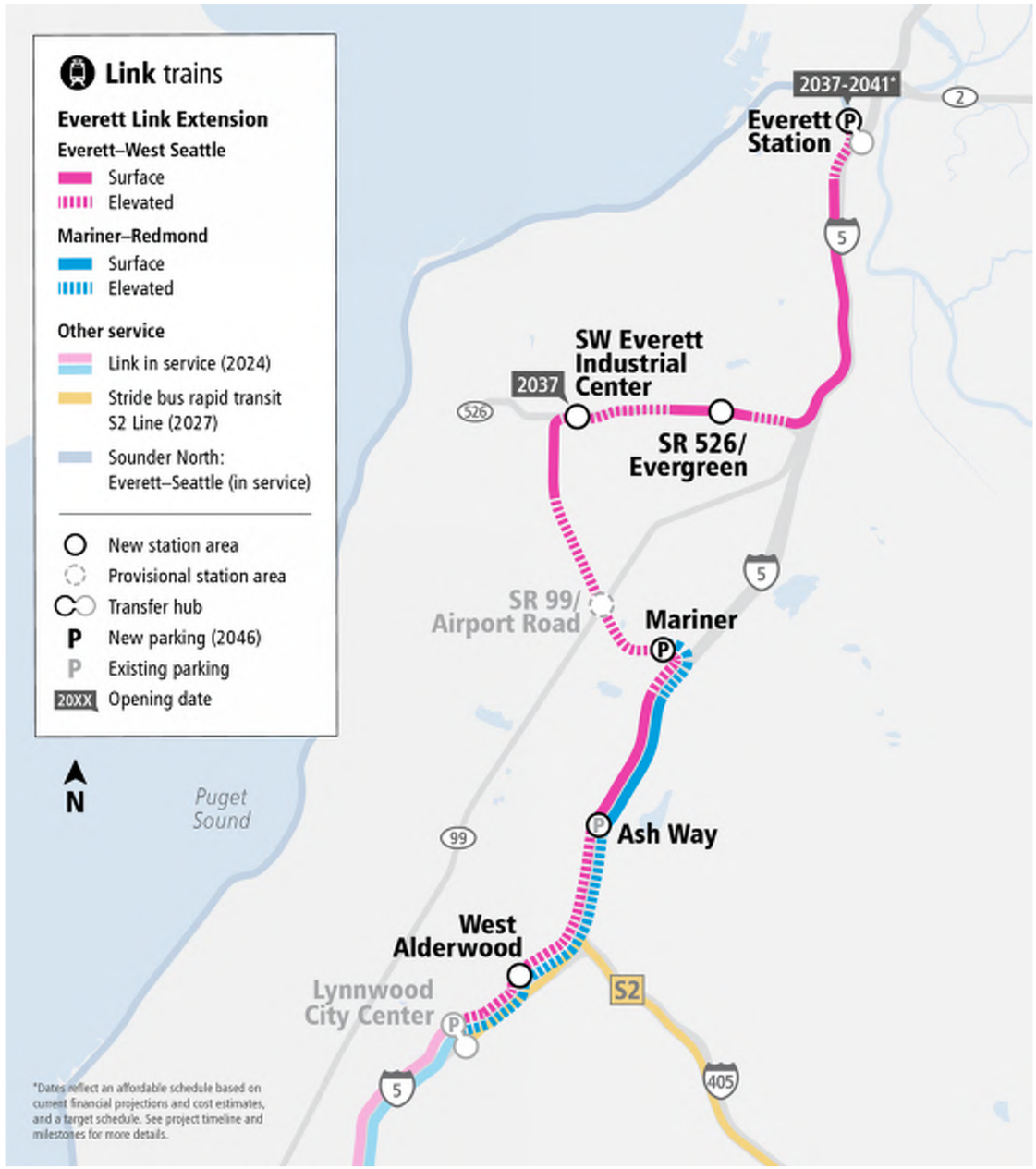
1.1. BACKGROUND: EVERETT LINK EXTENSION AND THE MODEL CODE PARTNERSHIP

The Everett Link Extension (EVLE) and Operations and Maintenance Facility (OMF) North Project ('EVLE Project' or 'the project') was funded as part of the Sound Transit 3 (ST3) Plan, funding for which was approved by voters in 2016. The EVLE Project will provide fast, reliable light rail service to regional urban centers, mixed-use residential and commercial districts, and job centers in growing areas across the jurisdictions of the City of Lynnwood, Snohomish County, and the City of Everett.

The EVLE Project will operate on a 16-mile elevated and at-grade guideway and add six stations to the regional light rail system. The project is also analyzing one provisional station, which is funded through the planning phase but not yet through construction. Link light rail service will extend north from Lynnwood City Center to West Alderwood, Ash Way, Mariner, Southwest Everett Industrial Center, SR 526/Evergreen, and Everett Station, with the provisional station at SR 99/Airport Road. The project would also include parking facilities for transit riders at two locations on the corridor — 550 parking spaces in the Mariner Station area and 1,000 parking spaces in the Everett Station area. A map of the Representative Project is shown in **Figure 1-1**.

The EVLE Project includes a unique framework for implementing consistent best practices along the corridor through the Model Code Partnership (MCP). The MCP is funded primarily by a $2 million grant from the Federal Transit Administration (FTA) TOD Pilot Program. Sound Transit is working with three partner jurisdictions and the Puget Sound Regional Council (PSRC) to develop policy and regulatory language to be considered for local adoption across the jurisdictions in the EVLE corridor.

Figure 1-1 The EVLE Corridor and Stations



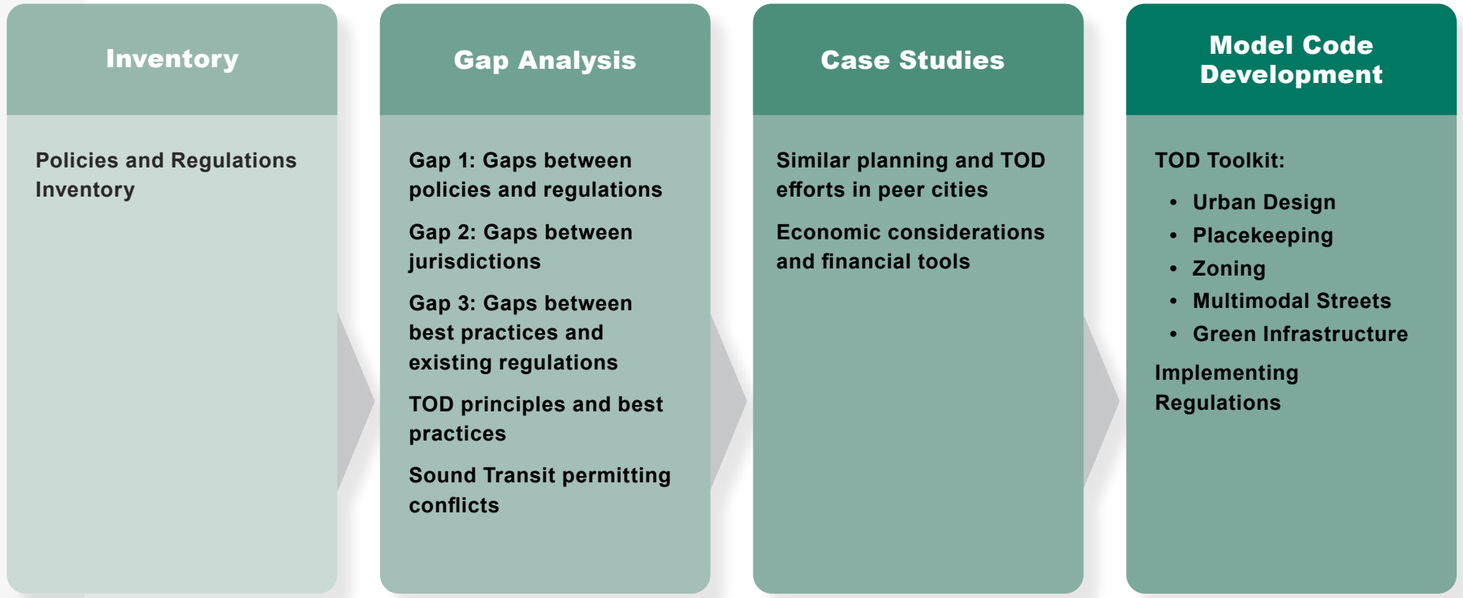
This TOD Toolkit is a key component of the MCP framework, encompassing regulatory language and other tools for jurisdiction adoption to facilitate TOD, multimodal transportation, economic development, infrastructure improvements, public/private partnerships, green building, and affordable housing, supported by the jurisdictions and encouraged by FTA. This Toolkit will:

- Explore zoning, urban design, and land use tools for sustainable mixed-use centers in station areas, with an emphasis on affordable housing.
- Describe design elements of multimodal streets and innovative systems for water, stormwater, and wastewater.
- Provide case study examples and engagement resources for select topics identified throughout.

The MCP analyzed existing regulatory language and produced advisory documents in four categories (**Figure 1-2** provides additional information on each):

1. Policy and Regulations Inventory Report (June 2021), which catalogs existing language from guiding documents for each of the three jurisdictions.
2. **Gap Analysis (June 2021)**, which identifies potential gaps and/or conflicts between policies and regulations within each jurisdiction, between jurisdictions, and between existing and best practices. It also identifies potential regulatory barriers specific to light rail facilities.
3. **TOD Case Studies (January 2022)**, **Economic Development Considerations and Financial Tools (May 2022)**, which focus on exemplary planning and TOD efforts in peer cities.
4. Provides recommendations for policies and regulations that could close local gaps and implement best practices along the EVLE corridor. These recommendations are collected in this TOD Toolkit, which includes TOD Implementing Regulations that can be found in the **Appendix A - TOD Implementing Regulations**. Jurisdictions can customize and adopt the recommendations in the Toolkit as they update their comprehensive and subarea plans, and development regulations. The partnership will culminate in a summary document of all model code efforts, including policies and regulations adopted by partner jurisdictions, for reporting to FTA.

Figure 1-2 Model Code Elements



1.2. WHY A TOD TOOLKIT?

This TOD Toolkit was created to provide a comprehensive and relevant set of resources, including policies and regulations, for local jurisdictions along the EVLE corridor and the planners and designers who work in the station areas to effectively implement TOD. The Toolkit provides design and development guidance and strategies that have proven successful in other station area settings for creating walkable, mixed-use communities centered around public transit. TOD and access to transit benefit local communities and the greater region by reducing car dependency, enhancing sustainability, supporting equitable neighborhoods, expanding housing choices and job opportunities, and improving quality of life.

To prepare for the future EVLE light rail stations, the TOD Toolkit supports a consistent design and implementation approach to public infrastructure, private development, and transportation-related improvements for areas generally located within an approximate 10-minute walking distance of the stations (approximately one-half mile).

To create mixed-use communities within walking distance of a light rail transit (LRT) stop, the Toolkit calls for creating a highly pedestrian-oriented environment that:

- Encourages the use of public transportation, walking, and bicycling.
- Supports compact, mixed-use development that maximizes accessibility to transit and increases housing choices.
- Supports "placekeeping", vibrancy, and economic activity in the station areas to support neighborhood-serving businesses and expand job opportunities.
- Manages regional growth without sprawling into surrounding areas.
- Reduces vehicle miles traveled (VMTs) and related environmental impacts.
- Facilitates private and public investment in infrastructure improvements.

Implementing the provisions of the TOD Toolkit will support the goals of aligning transportation improvements with land use plans, and developing regulations that support development and infrastructure improvements that align with the local vision for station areas. Consistency in provisions can also incentivize public and private investment in affordable housing and other features of transit-oriented communities (TOC).

PLACEMAKING AND PLACEKEEPING

PLACEMAKING: "A process of community development that leverages outside public, private, and nonprofit funding to strategically shape and change the physical and social character of a neighborhood using arts and cultural activities." — Coined by urbanist Fred Kent. While there are ample examples of placemaking activities resulting in positive change, the term does not acknowledge the cultural identity and other elements that have already created a place.

PLACEKEEPING: "The active engagement of bringing together diverse people, who live and work there, to shape, maintain, and take care of a place." — Coined by Roberto Bedoya. It involves fostering a sense of connection to local knowledge, stories, and traditions and aims to empower communities to have a voice in decisions that affect their built and natural environments.

TRANSIT-ORIENTED DEVELOPMENT AND TRANSIT-ORIENTED COMMUNITIES

This chapter uses the terms "transit-oriented development" (TOD) and "transit-oriented communities" (TOC). These are separate but related concepts.

TRANSIT-ORIENTED DEVELOPMENT: TOD refers to specific developments that use various techniques to support mixed-use projects integrated with high-capacity transit service. This term is project- or site-specific in its scope, is primarily concerned with the building, and the focus is station connectivity.

TRANSIT-ORIENTED COMMUNITY: TOCs are dense and walkable districts near high-capacity transit stations. They will develop gradually over time and may take years or decades to support car-free living. TOCs include one or more TOD, and may also include pre-existing development, retrofits, infills, and new development. This term generally applies to a neighborhood (or larger) scale, is primarily concerned with infrastructure, and the focus is developing a central hub.

SIMILARITIES BETWEEN TODS AND TOCS INCLUDE:

- Mix of uses.
- Walkable and bikeable, enabling people to reduce or eliminate auto dependence.
- High-quality building and public realm design.
- Transit design and urban design fit together.

1.3. INTENDED AUDIENCE

The primary audience for the TOD Toolkit consists of the three jurisdictions along the EVLE corridor — City of Lynnwood, Snohomish County, and City of Everett. The intent is for staff of these jurisdictions to reference and adapt this guidance in meaningful ways as part of future comprehensive and subarea planning, development code amendments, and design standards. Some provisions for various station areas may be integrated into jurisdictional regulations in the near term, while some may be integrated over time as conditions evolve and change within the corridor.

A secondary audience who can reference this Toolkit guidance includes other jurisdictions, transit providers, and design and development practioners throughout the Puget Sound Region and beyond. Principles and resources outlined in this Toolkit can apply to mass transit provided through bus rapid transit (BRT) or ferries, and in multiple geographic contexts. Topics like Anti-Displacement Strategies and provisions to support affordable housing could be used in many contexts beyond transit centers.

Engagement Resources

What is Transit-Oriented Development (TOD)?

A partnership for good: Cedar Crossing by Sound Transit

TOD - Learn about Transit-Oriented Development by Jacksonville Transportation Authority

Key messages communicated:

- TOD is the creation of compact, walkable neighborhoods that are centered around transit.
- TOD encourages a variety of land uses close to transit, especially housing and neighborhood-serving businesses.
- Locating homes, businesses, and services close to transit is beneficial because it can lower household transportation costs, traffic congestion, and pollution.

1.4. HOW TO USE THIS TOOLKIT

Preparation of each of these chapters began with the development of TOD principles to articulate the primary goals for well-designed station areas. These principles have been translated into policies and presented here for jurisdictions to consider when preparing their comprehensive plans or subarea plans to clearly articulate their goals for station areas. Primary policies are included for topic areas addressed in each chapter, with additional supporting policies listed. The policies are listed in Section 1.5 TOD Policies for Consideration and are then repeated as these topics are discussed in each chapter. It is up to each jurisdiction to choose which of these policies to adopt through various planning documents and how best to tailor for their communities.

The chapters provide further explanation and illustration of the concepts introduced by these policies as well as definitions to explain TOD specific terms; engagement resource videos that can be used to further explain these concepts to decision-makers, advisory groups, or the general public; and case studies to provide examples where these concepts have been successfully implemented in other communities.

Finally, the TOD Implementing Regulations in the **Appendix** provide examples of specific regulations that can be adopted by each jurisdiction to implement these policies. These regulations are not intended to be adopted as a complete ordinance in and of themselves, but rather language that can be adapted to fit into each community's unique development code.

1.5. TOD POLICIES FOR CONSIDERATION

1.5.1 Urban Design and Placekeeping

Pedestrian Realm

Primary policy

- Create a safe and comfortable public realm that supports public life.

Supporting policies

- Provide intuitive, accessible signage and wayfinding within the station areas to the station and key destinations.
- Promote awnings and overhangs that provide shelter and create human scale.
- Provide clear sightlines and "eyes on the street" to support public life and for pedestrian safety.
- Locate parking and mechanical equipment, trash enclosures, service and loading bays, and noise- or odor-producing facilities away from active pedestrian spaces, or screen them from public view.
- Incorporate residential use and community amenities in ground floors that activate the pedestrian environment.
- Orient buildings toward the street with limited setbacks and create active building edges along pedestrian streets.

PUBLIC LIFE

Public life refers to the activities and interactions that take place in public spaces, specifically "between buildings" – streets, plazas, parks, and other areas where people gather. It encompasses both necessary activities like walking and optional ones like socializing or enjoying public amenities. This theory, developed by Jan Gehl, recognizes that the design of our communities, the public realm, and how we manage and maintain these spaces have a significant influence on public life. A vibrant public life promotes health, makes our communities safer, can lead to more civic engagement, and connects people to their communities.

Parks and Gathering Spaces

Primary policy

- Plan for compact, active public gathering spaces in high activity areas that provide seating, shade, and landscaping.

Supporting policies

- Allow parklets, farmers markets, food truck areas, and other similar uses to provide additional public space.

Placekeeping

Primary policy

- Support communities through change by considering social infrastructure in planning.
- Promote retention of unique aspects of existing communities including small businesses, cultural organizations, and public art that reflect neighborhood history and identity.

Supporting policies

- Use equity assessments in planning, design, and development decision-making. Engage directly impacted residents and businesses with clear and frequent communication.
- Use place-based coordination across departments to identify plan and project effects on community social infrastructure.
- Encourage uses and services near stations accessible to a range of incomes, household types, and cultural affiliations reflecting the surrounding community.

Public Art

Primary policy

- Celebrate local culture and improve aesthetic appeal through thoughtful and well-designed public art that relates to historic context and promotes community well-being.

Supporting policies

- Promote a sense of place and belonging by integrating public art and design elements that reflect local identity into streets, public spaces, and buildings.
- Adopt a funding mechanism for public art and create a clear process that engages the local community in the design or selection of installations.
- Develop an area-wide art plan involving community art organizations.

1.5.2 Land Use

Land Use

Primary policy

- Focus employment and population growth around transit with mixed-use development.

Supporting policies

- Locate highest TOD densities adjacent or nearest to light rail transit stations.
- Where station areas are adjacent to low-density neighborhoods outside the 10-minute walk zone, use transitional design standards or zoning.
- Allow station area uses that benefit from transit adjacency and reduce dependency on the automobile; prohibit or condition auto-dependent uses like standalone parking and drive-throughs.
- Minimize curb cuts near stations. Require developers to access from side streets if possible.
- Promote a mix of smaller spaces as well as large, flexible spaces with multiple entries designed for a variety of business and community uses on the ground floor to support continual active ground floor use.
- Allow flexibility for use of ground floor space to accommodate market readiness to support retail or other commercial uses.

Parking

Primary policy

- Avoid siting parking facilities along streets with high pedestrian activity or immediately adjacent to stations.

Supporting policies

- Parking facilities should be used to buffer high-activity areas from freeways and industrial uses.

Residential Anti-Displacement

Primary policy

- Focus local affordable housing resources within station areas.
- Adopt anti-displacement strategies to counter market forces that may reduce affordability in station areas.

Supporting policies

- Designate all TOD zones as eligible for the Multifamily Tax Exemption (MFTE) and expand the exemption for affordable housing from 12 to 20 years if allowed by the State.
- Adopt Inclusionary Zoning to support affordable housing targets in station areas. Develop procedures and define roles for administration, including expanding the program to ownership and adopting fee-in-lieu provisions.
- Expedite permit processing for projects with a substantial affordable housing component.
- Implement anti-displacement strategies such as identifying surplus public land and supporting community land trusts and other affordable housing providers.

Commercial Anti-Displacement

Primary policy

- Encourage preservation or construction of affordable commercial or non-profit spaces.

Supporting policies

- Support development of smaller retail or incubator spaces that are more affordable for growing businesses.
- Support incorporation of a community land trust or other model to provide affordable commercial spaces for neighborhood-serving businesses in perpetuity.
- Create commercial stabilization programs to serve locally significant small business and cultural uses.

1.5.3 Multimodal Streets

Multimodal Network

Primary policy

- Design streets for high functionality of all modes in station areas.
- Prioritize pedestrians, bicycles, and local bus access near transit stations.
- Create a continuous bike and pedestrian network throughout station areas.

Supporting policies

- Minimize conflicts among users of different modes of transportation in station areas to promote safety.
- Designate curb management zones to accommodate deliveries, passenger pick-up / drop-off, emergency access, utility maintenance, and services like garbage pickup.
- Define allowable uses for furnishing and amenity zones within the pedestrian realm, including seating, lighting, landscaping, bicycle parking, and dining.
- Designate and design some streets for flexible use for festivals, markets, and food trucks.
- Plan, design, and develop compact block sizes and require mid-block connections to support walkable urban scale and pedestrian access.

Bike facilities

Primary policy

- Design and construct a robust, connected, and safe bicycle network.

Supporting policies

- Provide bike pathways with widths to accommodate different bike sizes and speeds, including cargo bikes.
- Site and design bicycle facilities to reduce potential for conflicts with vehicles and pedestrians.
- Require adequate short-term bicycle parking adjacent to path of travel in the station areas and adequate long-term bicycle parking in residential and office buildings.

Infrastructure investments

Primary policy

- Use public infrastructure investments to encourage economic activity.

Supporting policies

- Coordinate the timing of infrastructure improvements with utility upgrades to minimize disruption to residents and businesses.

1.5.4 Sustainability: Resilient Infrastructure and Green Building

Sustainable Districts

Primary policy

- Promote nature-based, distributed, and district-scale infrastructure to manage stormwater runoff and conserve energy and water.

Supporting policies

- Locate tree canopies to provide shade to pedestrian and bicycle paths, seating areas, and areas predominantly consisting of hardscape.
- Implement a shared thermal network or ground-coupled heat exchanger to provide heating, cooling, and hot water to multiple buildings.
- Improve district-scale and building-scale energy resiliency through installing renewable energy generation, shared thermal systems, and microgrid.

Sustainable Infrastructure

Primary policy

- Integrate stormwater features into parks, public streets, plazas and parking areas.
- Coordinate with utility providers to increase resiliency of electrical, wastewater, water, stormwater, communication, gas, and other infrastructure.

Supporting policies

- Implement Blue Green Streets.
- Encourage permeable paving, light-colored paving materials, and urban tree canopy to reduce heat island effect.
- Use stormwater planters to support landscaping in the public realm.
- Build stormwater parks to increase capacity for storage during flooding events.

Sustainable Developments

Primary policy

- Establish sustainability goals and standards for station areas and TOD projects.
- Require or incentivize green building and sustainable site design principles in station area developments.

Supporting policies

- Incentivize rehabilitation or new construction projects that meet various green building certifications. Options include green building, site, district, and community protocols like Leadership in Energy and Environmental Design (LEED) Just Communities, Passive House, Living Building Challenge, Built Green, Salmon-Safe, and Evergreen Sustainable Development Standard (ESDS).
- Promote rainwater harvesting and recycled water reuse. Encourage high-performance landscape and site design using green stormwater infiltration, green roofs, and other techniques to improve water quality.
- Promote on-site renewable energy production.
- Integrate infrastructure for sewer heat recovery and combined heat and power into design and construction of capital projects.
- Establish Green Factor provisions for site design and landscape performance.

Sustainable Vehicles

Primary policy

- Support infrastructure for transitioning to electric vehicles (EVs).

Supporting policies

- Require new construction to install conduit for future EV charging stations.

2 URBAN DESIGN AND PLACEKEEPING

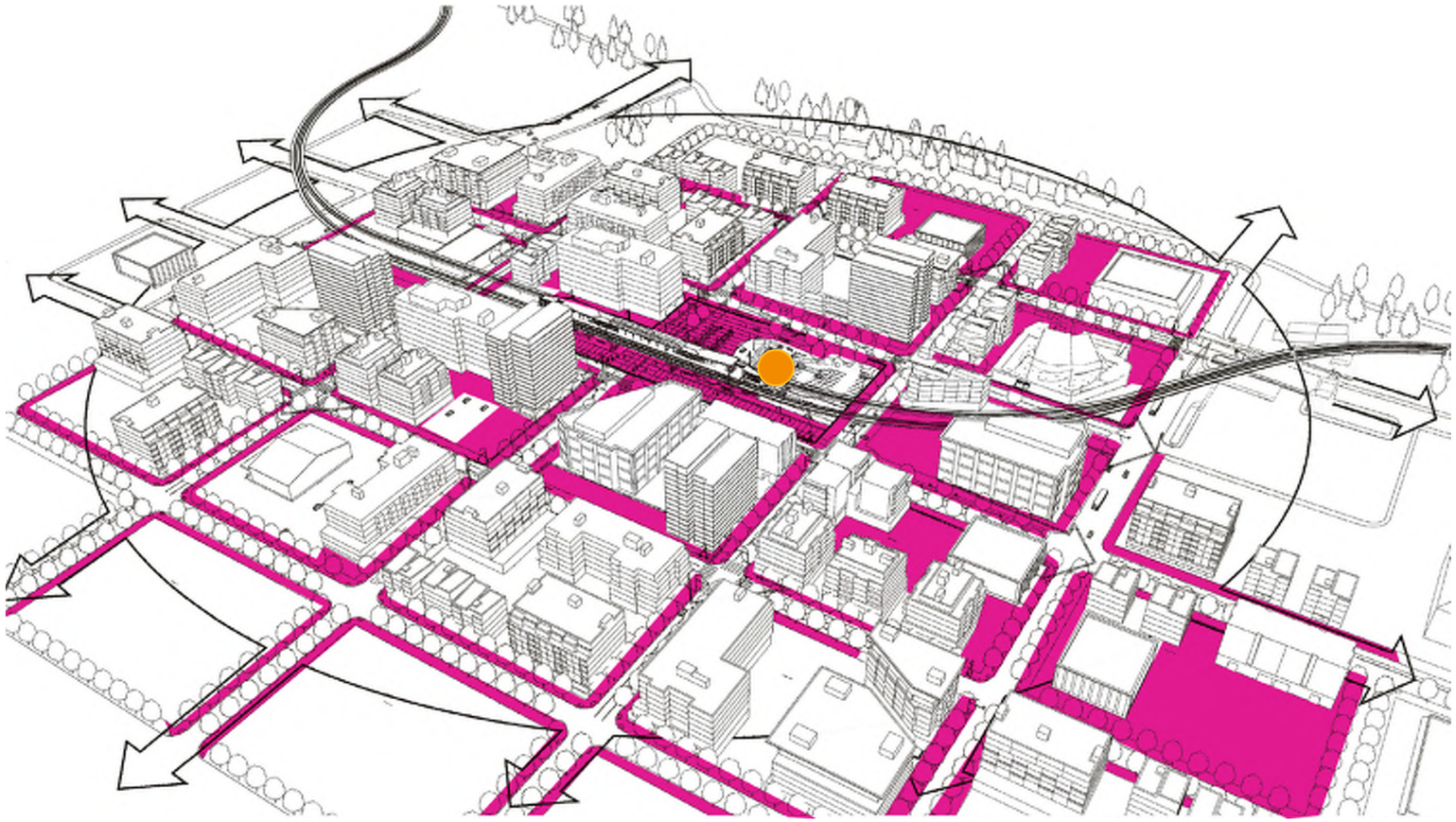
Addressed in This Chapter

This chapter of the TOD Toolkit provides guidelines for urban design to support TOD and strategies for promoting and preserving community culture and identity as new growth and development occur.

Station Experience Design Guidelines (SEDG) Topics

- Wayfinding, ***page 17***
- Slow-speed bicycle zone, ***page 27***

Figure 2-1 Context Graphic



2.1. INTRODUCTION

2.1.1 How are Communities Affected in a Period of Growth?

All communities are living ecosystems and places where local cultures, economies, natural habitats, and the built environment continually evolve and change. Identity of place is formed through layers of our experiences and memories of a place. What makes that place special — whether nature, culture, or human connections — is experienced through layers of our identities. Research shows that when people feel a sense of belonging, it can inform opportunities and upward economic mobility for individuals and for entire metro regions (Chetty 2022). This sense of belonging also serves to increase community wellbeing and resilience (Sites 2003).

While many places in the Puget Sound region are dominated by auto-oriented development patterns resulting from growth in the mid- to late-19th century, we are now experiencing a period of new growth and redevelopment as light rail extensions and other transportation improvements connect our region.

With any transformative change, there is the potential for direct and/or indirect displacement. Direct displacement can result when property is acquired for construction of light rail or other publicly funded projects. Indirect displacement, can occur because of market changes when neighborhood redevelopment and amenities increase market value. Another type of indirect displacement, cultural or community displacement, is when a neighborhood or community culture changes due to the influx of new residents, businesses, and organizations. An overview of anti-displacement strategies and programs is provided later in this chapter, with more detailed guidance in **Chapter 3**.

2.1.2 Thoughtful Urban Design and Community Benefits

When thoughtfully planned and implemented, new growth and redevelopment can support existing communities and improve the quality of life for residents. This represents a unique opportunity for investment in our communities with a focus on the people and places that make communities unique.

This chapter focuses on urban design of the public realm, including public-facing developments, open space, and streetscapes. Recommendations are based on evidence-based strategies that are proven to be effective for long-term community well-being, resilience, and economic opportunity. Public health research recognizes that shorter-term actions, such as new policies, projects, and programs, can collectively improve the physical environment and influence how people interact, access resources, and go about their daily routines. Over time, we can reasonably expect positive community- or population-level outcomes in wellbeing resulting from these social determinants of health, such as housing, economy, transportation, and built environment (US Centers for Disease Control and Prevention [CDC] 2024).

Light rail infrastructure may take 10 – 20 years to plan, design, and build before operation. In the meantime, local jurisdictions can proactively plan for station areas and update their zoning and development standards. Jurisdictions and agencies can plan for infrastructure needs and work with utilities to begin making improvements. As stations are closer to opening, more private-sector investments often bring additional housing, infrastructure, and amenities. As a result, communities typically face phased and staggered periods of construction and growth over the course of decades.

An Impact-Based and Continual Improvement Model for the Social Determinants of Health

When urban design is coordinated with supportive policies and infrastructure, public health research shows these interventions affect people's every day behaviors, and in the long term result in improved well-being at the community level. This is why factors in the built, social, and economic environment are known as social determinants of health. They are upstream levers to improve opportunities for health and wellbeing proactively, rather than waiting for disease or injury to occur and treating the symptoms. These upstream factors make up 50-70% of what determines length and quality of life. The Impact Assessment process identifies priority outcome topics and recommended interventions to get there. Evaluation plays an important role, to measure progress and use a continual improvement model. Health Impact Assessments (HIAs) were pioneered in Europe in the late 1990's as the connections between public health and the built environment were better understood. In the early 2000's, the HIA approach began appearing, championed by Rhajiv Bhatia and Human Impact Partners, Howard Frumkin, Andrew Dannenburg, and Matthew Trowbridge. Some of the earliest HIAs at the neighborhood level were conducted by the San Francisco Department of Public Health for the HOPE SF program, and one of the early HIAs integrated into development planning was done by the Denver Housing Authority and Mithun for the Mariposa Healthy Living District in Denver, CO. A similar approach to Equity Impact Assessments and Review Tools has been led by King County amongst others, and today, health equity impact methods have been integrated into many planning processes. The recommendations in this Urban Design and Placekeeping Chapter use an applied Health Equity Impact approach to selecting priority strategies aligned with the desired outcomes for transit-oriented communities.

2.1.3 Change Management and Supporting Communities with Placekeeping

A proactive approach to managing change and supporting communities includes engagement and planning for physical improvements as well as programs to support social infrastructure. When using urban design to express identity of place, it is critical to begin with an asset-based approach to understand how the community has evolved over time with more detail than a city-wide approach. This includes attention to both the physical community and the socioeconomics, demographics, businesses, and organizations that make each place unique. Physical spaces and "third places" where people frequently meet, such as local businesses, services, arts and culture, and community-based organizations, can reinforce social networks. Together, with an inviting public realm and legible wayfinding, these elements act as social infrastructure for durable resilient communities. Social infrastructure can be a tool to advance anti-displacement and equitable development strategies.

THIRD PLACES AND RESILIENCE

Third places encourage regular, casual interactions in public places that are neither home nor work. Social capital has been found to be one of the strongest indicators of upward economic mobility for entire regions.

Third place coffee shop and restaurants make the sidewalk more lively and engaging, with outdoor seating that encourages interaction. Seattle, WA

Photo credit: Erin Ishizaki

The terms “placemaking” and “placekeeping” both describe this process of community change and improvement over time. This chapter uses the term “placekeeping” in acknowledgement of our existing communities, rather than the more common term “placemaking.” Below is a summary of the key differences between the two concepts.

Placemaking

"A process of community development that leverages outside public, private, and nonprofit funding to strategically shape and change the physical and social character of a neighborhood using arts and cultural activities."

– Coined by urbanist Frank Kent

Placemaking encourages integration of arts and culture with community redevelopment and revitalization. Arts and culture programming can help increase activity and safety, and research shows that integrating art into real estate can significantly increase the return on investment. It is distinguished by its use of arts and culture as a specific tool for real estate or economic development.

While there are ample examples of placemaking activities resulting in positive change, some placemaking activities may unintentionally increase real estate speculation and displacement in the name of “neighborhood revitalization” when using a top-down approach.

Placekeeping

“The active engagement of bringing together diverse people, who live and work there, to shape, maintain, and take care of a place.”

– Coined by Roberto Bedoya.

Placekeeping involves fostering a sense of connection to local knowledge, stories, and traditions to empower communities to have a voice in decisions that affect their built and natural environments. In placekeeping activities, the focus is on supporting existing communities through times of change.

Placekeeping can be achieved through a process of engagement and coordination of both physical improvements and social infrastructure. This occurs through policy, capital projects, development, and anti-displacement strategies. Together, these efforts can result in a sense of belonging for existing communities and greater community resilience. They can build community capacity and ownership in public sector processes.

What does placekeeping look like in practice?

- Center directly impacted residents, businesses, and organizations by using early engagement and clear communication when planning, design, and development decisions are being made.
- Conduct engagement with outreach and efforts prioritizing the most impacted populations.
- Use equity assessments in planning, policy, and development standards and codes.
- Use place-based coordination across departments (e.g., Planning, Economic Development, Public Works, Parks and Recreation, etc.)
- Support community through change with early actions such as community land trust property acquisition; outreach to existing businesses, community organizations, and renters; and establishing anti-displacement programs.
- Report regularly with transparency on progress and community equity, wellbeing, and resilience metrics.

The urban design guidelines of this chapter are intended to support placekeeping, social infrastructure, and inclusive public-realm improvements to respect and honor all who call this place home.

2.2. VALUES AND GUIDING PRINCIPLES OF URBAN DESIGN AND PLACEKEEPING

Urban design focuses on the design of the public realm, including public spaces, streets, open spaces, and paths, and informs the design of infrastructure and buildings as they affect the function and the public realm. Below are guiding principles that underpin urban design and placekeeping. They are supportive of and related to many of the MCP TOD policies described in **Chapter 1**.

Social Connections and Inclusion

Encourage social interaction, encounters, and connections by creating physical spaces that are connected, safe, and accessible for all users. These spaces should foster a sense of community where everyone, regardless of age, ability, or background, feels welcome and included. Coordination of programs and events that activate spaces can help boost community outcomes.

Movable furniture, landscape, and flexible plaza provides ample opportunities for social connections.
San Francisco, CA

Photo credit: Nazanin Mehrin

Identity of Place and Belonging

Celebrate the unique character and identity of the place. Design elements should reflect local cultures, history, natural features, and values, fostering a sense of pride and connection among community members and enhancing social resilience.

Clear and Easily Recognizable Public Realm

Promote a cohesive and functional public realm that remains consistent and intuitive for wayfinding to key paths, nodes, edges, districts, landmarks, and services, regardless of whether it is delivered by the public sector or by a private party. Design should prioritize clarity, accessibility, and ease of navigation with universal design principles. This enables public space to be easily recognized and used by all, promotes independence, and enhances mobility.

Signage is located at an important point along a route, providing clear information about district destinations and using symbols and contrast to increase legibility and promote wayfinding.
San Francisco, CA

Photo credit: Kristian Elizes

Community Wellbeing

Put people first by promoting physical and mental health of the community. Design should prioritize human comfort, safety, and wellbeing, creating environments that support healthy lifestyles and social interactions. This includes comfort in a range of weather conditions, including rain and heat, physical and psychological safety, and sense of security in normal conditions and during emergencies.

Open space ease of visibility with flexible furnishings encourage interaction and play for all ages.
San Francisco, CA

Photo credit: Nazanin Mehrin

Environmental Co-Benefits

When human health, inclusion, and community resilience outcomes are prioritized, co-benefits, including longevity and sustainability of ecosystems and habitats, are often achieved. As the natural environment is a part of place identity, urban design strategies that are responsive to local ecological health, resource efficiency, resilience, and indigenous knowledge often enhance the unique identity of the place and foster a sense of belonging.

PLACEKEEPING AND ANTI-DISPLACEMENT

Placekeeping practices play a pivotal role in battling all forms of displacement, including cultural displacement. The guiding principles of placekeeping are designed to give special attention to the vibrant cultural background within an existing community and work together with community members to shape development. In urban design, this shows up as collaboration with existing residents, community organizations, and businesses to emphasize values and traditions through policies, programming, and design. Each urban design and placekeeping principle focuses on identity, belonging, and value for the culture of communities to benefit from expanded opportunity that neighborhood investments can bring.

Given the high risk of displacement throughout the region and its multitude of causes, there is no one solution to prevent it. To create viable solutions, a combination of policies and partnerships that build upon each other to meet the solution are what's required.

For more information refer to **Chapter 3**.

Engagement Resources

What is Placekeeping?

NYC Department of City Planning: What is Urban Design?

City of Port Adelaide Enfield (Australia): What is Placemaking?

Key messages:

- ***Placemaking is a term to describe efforts that enhance the public realm and create a sense of place. However, it can imply that a vibrant place does not already exist.***
- ***Placekeeping is an evolution of the term that describes the active engagement of bringing together diverse people, who live and work there, to shape, maintain and take care of a place.***
- ***Placekeeping aims to empower communities to have a voice in decisions that affect their built and natural environments and uses local assets to create public space that supports a community's existing social fabric.***

2.3. URBAN DESIGN AND PLACEKEEPING GUIDANCE

PLACEKEEPING POLICIES

Primary policy

» *Support communities through change by considering social infrastructure in planning.*

» *Promote retention of unique aspects of existing communities including small businesses, cultural organizations, and public art that reflect neighborhood history and identity.*

Supporting policies

» *Use equity assessments in planning, design, and development decision-making. Engage directly impacted residents and businesses with clear and frequent communication.*

» *Use place-based coordination across departments to identify plan and project effects on community social infrastructure.*

» *Encourage uses and services near stations accessible to a range of incomes, household types, and cultural affiliations reflecting the surrounding community.*

The urban design and placekeeping guidelines below influence development, infrastructure, and public project design elements at street edge, public space, and the entire public realm within a station environment. The guidelines provide tools to amplify and celebrate existing character and help to enhance a sense of place. The elements, when properly designed and located, can enhance social connections and inclusion, reinforce an identity of place and belonging, establish a clear and easily recognizable public realm, promote community wellbeing, and support environmental co-benefits. The guidance is based on an evidence-based and contextual, or place-based, approach to best support desired outcomes. **Chapter 3** provides more quantitative, dimensional, and detailed guidance.

This section starts with general guidelines for each design element critical to enhancing a sense of place within each station area. It then discusses location types within the private and public realm where the design elements will be implemented and outlines special considerations associated with each. The intent is that these guidelines should be applied across station areas to achieve a consistent urban design quality whether in private developments or the public right-of-way. These are not listed in a particular order, and when adapting for local use, these can be adjusted to best align with local policies and regulations.

The **Design Elements** are:

- **Building Frontage and Ground Floor**
- **Public Art**
- **Landscape**
- **Wayfinding Features**
- **Lighting**
- **Micro- and Emerging Mobility Infrastructure**
- **Furnishings and Amenities**

The **Location Types** where the design elements can occur include:

- Streetscape
- Public Gathering Spaces (such as Plazas, Pocket Parks, Courtyards, Gardens)
- Midblock and Shared-Use Connections

2.3.1 Design Elements

The Design Elements may occur within private development, public right-of-way, or capital improvement projects.

PEDESTRIAN REALM POLICIES

Primary policy

» *Create a safe and comfortable public realm that supports public life.*

Supporting policies

» *Provide intuitive, accessible signage, and wayfinding within the station areas to the station and key destinations.*

» *Promote awnings and overhangs that provide shelter and create human scale.*

» *Implement design principles to provide clear sightlines and "eyes on the street" for pedestrian safety.*

» *Locate parking and mechanical equipment, trash enclosures, service and loading bays, and noise- or odor-producing facilities away from active pedestrian spaces, or screen them from public view.*

» *Incorporate residential use and community amenities in ground floors that activate the pedestrian environment.*

» *Orient buildings toward the street with limited setbacks and create active building edges along pedestrian streets.*

Regulations to implement these policies can be found in the ***TOD Implementing Regulations, Section 9***

1. Building Frontage and Ground Floor

Intent

Maintain a continuous, consistent, walkable, and human-scaled pedestrian environment at the interface of buildings and the public realm. Promote interaction between indoor and outdoor activities to create an inclusive and vibrant public realm.

General Guidelines for all Location Types including Building Frontage and Ground Floor

a. Incorporate residential use and community amenities in ground floors that activate pedestrian environment. For residential frontage, encourage porches, stoops, and other human-scale design elements, such as low walls, railings, and planting beds.

b. Locate primary buildings entrances along primary pedestrian circulation and public-gathering space for ease of wayfinding and to contribute to a vibrant public realm.

EYES ON THE STREET THEORY

Eyes on the Street is a theory coined by Jane Jacobs, an activist for people who live in cities. The theory encourages people to look at their neighbors and make regular eye contact to support social networks and collaboration. The urban environment can be designed to encourage regular casual interaction and visual access, which can also support safety. This approach aims to build a sense of community amongst people to increase sense of ownership and reduce crime opportunities using architecture, urban design, and facility management.

c. Maximize doors, windows, and balconies at the pedestrian level to provide lines of sight to create 'eyes on the street'. A difference of 30 inches or less between first floor and grade can help provide interior privacy from passersby while still creating lines of sight. Avoid visually impermeable fencing or blank walls as well as building elements creating blind spots that may feel unsafe to pedestrians.

d. In areas where blind spots and blank walls cannot be avoided, use art or murals, lighting, landscape, and screening to increase aesthetic appeal and sense of identity. In screening design maintain clear lines of visibility between 3-5 feet.

e. Along active street frontages, design ground floor storefronts for flexibility to allow a mix of smaller ground floor space and large, flexible spaces with multiple entries designed for a variety of business and community uses including small/local businesses, childcare/early learning centers, health and social services, resilience hubs, library or community gathering center, and education and training/career development. Aim for an active entry or window every 30 feet along a pedestrian way. See **Figure 2-2**.

f. Encourage opportunities to make indoor/outdoor connections and support retail or active ground floor uses in frontage zones. Establish a high level of ground floor transparency using windows along primary pedestrian circulation paths. Create either ground floor recesses or canopies along frontage zones to create weather protected space for retail spill-out activities.

g. To support ground floor flexibility for a range of shops and retail uses, provide a 15-foot ground floor height to accommodate retail, commercial (including maker spaces that allow for small-scale manufacturing, crafting, and creative production activities), and residential or residential-based businesses. Allow flexibility in use as market conditions evolve.

ACTIVE GROUND FLOOR USES

To assist with implementation and clarity of intent for pedestrian-friendly frontages, the City of Redmond's 2025 code updates included new definitions for Active Pedestrian Generating Uses and Active Retail uses, as well as new supplementary use standards: 21.04.2020. Active Retail Uses and identified locations for Pedestrian-Oriented Block Faces at the ground floor.

h. Create a human-scaled environment and reduce the perception of large buildings by promoting building designs that take cues from local context. Include one or more of the following strategies:

- Ground floor recesses and/or awnings to create weather-protected outdoor spaces.
- Upper-level stepbacks that can support semi-public balcony or amenity space. Stepbacks can be achieved in an efficient manner by placing them above the podium level where construction-type transitions. Upper-level stepbacks should be required when the right-of-way width-to-building height ratio is smaller than 2:1 to allow sunlight to reach the ground-level public realm and streetscape.
- Ground floor facade design that creates a sense of rhythm and visual interest using articulation with elements such as window mullions, horizontal fenestration, expressed structural columns, or structural bays.

i. Whenever possible, locate mechanical equipment, trash enclosures, service and loading bays, outdoor bulk storage areas, and noise- or odor-producing facilities away from active pedestrian spaces, or screen them from public view. When larger utility areas, such as dumpsters or mechanical or electrical equipment, must be located in the public realm, group them together; place them outside of the pedestrian clear zones; and screen using landscape, art, or other enclosures.

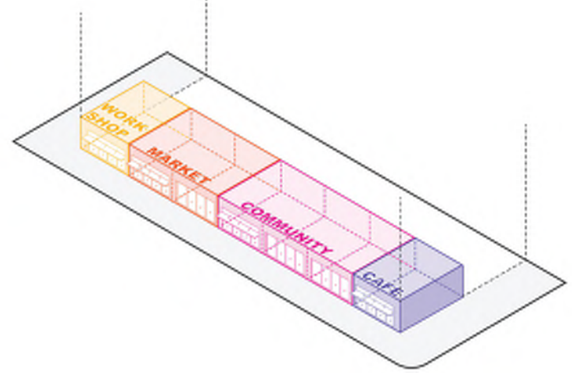
j. Integrate a range of colors, materials, details, and artworks to add visual interest and contribute to a more dynamic and attractive public realm. Material quality and durability should be considered in selection.

k. Incorporate complementary and high-quality business and building signs that reflect the unique character of the neighborhood or buildings. Signage should be pedestrian-scaled, well placed, and visible from street frontage.

l. To support anti-displacement efforts, encourage provision of affordable commercial or non-profit space with a priority for local existing businesses.

Refer to **Chapter 3** for additional design provisions.

Figure 2-2 Ground Floor Space for a Variety of Uses



Weather protection and modulation of ground floor façade supporting human-scape environment. 📍 *Seattle, WA*

Photo credit: ©Kevin Scott / Courtesy: Mithun

Ground floor recess creating weather-protected space with outdoor seating.
📍 *San Francisco, CA*

Photo credit: ©Bruce Damonte / Courtesy: Mithun

Stoops and planting beds in front of ground floor residential units creating human-scale environment.
📍 *San Francisco, CA*

Photo credit: Nazanin Mehrin

2. Wayfinding Features

Intent

Create a consistent, clear, inclusive, accessible, and easy-to-understand information system that guides the public through the physical environment of the station area along paths and walkways to edges, districts, nodes, landmarks, and transit stations. This includes reducing the number of steps a person must make to get to their destination, with clear visibility between key destinations and assistance provided with adequately spaced signage and other visual cues. For additional wayfinding guidance see **SEDG** Section 3.2.2

General Guidelines for all Location Types including Wayfinding Features

a. Use clear and consistent wayfinding signage to navigate and direct toward destinations. Identify decision points along major paths of travel to transit facilities or other main destinations within the station area. Place wayfinding elements in a consistent spatial sequence. Limit the number of steps or decisions a user must take by creating a simple, less disorienting system of wayfinding features.

b. Place wayfinding signage in visible locations and at a convenient eye level.

c. Use universally recognized symbols, accessible colors, and consistent design language. Integrate universal design elements such as auditory announcements, detectable pavers, tactile treatment, or multisensory features (Fitwel 2024).

INCLUSIVE AND UNIVERSAL DESIGN

As part of the Redmond 2050 focus on equity and inclusion, the City updated policies and development standards including a new incentive program for universal design, assessable housing, sensory spaces, and IDD housing; as well as new Community Design Standards including 21.58.2000 Universal Design which encourages universal design features citywide.

d. Provide multilingual translations for signage or use icons and art, as well as availability in multiple forms of media (e.g., offering online and in-person opportunities for input, etc.), to facilitate inclusive access.

e. Create an inclusive community directory highlighting important historic, cultural, and natural places; landscapes; legacy businesses; faith-based organizations; and cultural and community organizations.

f. Ensure legibility and visibility of wayfinding signage by considering vertical elements, size, font, and lighting.

g. Design the forms, colors, details, and materials of wayfinding features with reference to local character and physical features of the existing neighborhood environment. Coordinate these elements with the design language of wayfinding features provided by transit providers.

A sign with interpretive information about a public park. *Seattle, WA*

Photo credit: Laura Durgerian

A sign that integrates wayfinding with historical information. *San Francisco, CA*

Photo credit: Kristian Elizes

3. Furnishings and Amenities

Intent

Contribute to the character of the place, encourage a diversity of social activities, and enhance comfort and wellbeing of users in public spaces.

General Guidelines for all Location Types including Furnishings and Amenities

a. Streetscape and public realm design should include a furnishing zone that is clear of the pedestrian circulation zone. The furnishing zone should include amenities that are relevant to the particular location.

b. Require seating and opportunities for people to pause and rest. This increases accessibility for seniors and people with limited mobility. Seating can be provided within the sidewalk amenity zone. Seating should be Americans with Disabilities Act (ADA) compliant and have full or partial, comfortable backs, offering a mix of shaded and unshaded seats suited to the local climate. When seating is divided, set arms or dividers far enough to accommodate a variety of sizes and abilities.

c. At locations with busy pick-up/drop-off areas or other waiting areas, encourage furnishings with shade and weather protection that support comfort and wellbeing. These can be accomplished through building canopies and awnings as well as independent shade structures on furnishings within the streetscape, such as bus stop shelters. At key locations or in coordination with existing service facilities, encourage the integration of resilience features such as emergency call buttons, misters for heat events, and other resilience infrastructure.

d. In heavily used public plazas or open spaces, provide public restrooms and water filling stations.

e. Require waste, recycling, and compost receptacles near corners, plazas, and crossings; adjacent to clear paths; and in convenient locations to help maintain a clean and enjoyable pedestrian environment.

f. Consider local climate and culture in the materials and design of furnishings and amenities.

g. Allow the use of underutilized parking as parklets, farmers markets, food truck areas, and other similar uses to provide additional public space.

h. Group and place furniture and amenities consistently throughout the district and maintain a clear and unobstructed area for active transportation modes, including walking, biking, and rolling paths. Place furniture and amenities to provide access for emergency and public services.

Refer to **Chapter 4** for additional provisions related to streetscape design.

A variety of seating arrangement for different group sizes and a range of body sizes and abilities.
San Francisco, CA

Photo credit: Yao Lu

A water refill center and shade canopies in a public open space.
Seattle, WA

Photo credit: Erin Ishizaki

Shaded movable seating on a public plaza. 📍 *Emeryville, CA*

Photo credit: Nazanin Mehrin

Food trucks with movable seating spaces activate an underutilized parking space. 📍 *San Francisco, CA*

Photo credit: Nazanin Mehrin

Example of ornate bollards delineating a pathway within a multimodal street; from Amsterdam. 📍 *Amsterdam, Netherlands*

Photo credit: Stephen Lloyd Netherlands / Alamy

4. Public Art

PUBLIC ART POLICY

Primary Policy

» *Celebrate local culture and improve aesthetic appeal through thoughtful and well-designed public art that relates to historic context and promotes community well-being.*

Supporting policies

» *Promote a sense of place and belonging by integrating public art and design elements that reflect local identity into streets, public spaces, and buildings.*

» *Adopt a funding mechanism for public art and create a clear process that engages the local community in the design or selection of installations.*

» *Develop an area-wide art plan involving community art organizations.*

*Regulations to implement these policies can be found in the **TOD Implementing Regulations, Section 9***

Intent

Promote the identity of a place through well-designed and thoughtfully placed public art that enhances aesthetic appeal, relates to local cultures and history, and promotes community wellbeing and engagement in the public realm. Public art is effective to support continuity and social and cultural connections through visual and multi-media means. Due to the wide range of media and types of public art, it is effective for temporal use and in conjunction with engagement or other programs. Coordinate public art design and installation with transit agencies and other public art installations to reinforce neighborhood identity and sense of place. Public art is also effective as screening during construction phases.

General Guidelines for all Location Types including Public Art

a. Collaborate with local artists, community-based organizations, and schools to create site-specific artwork that communicates the histories and stories of the place and enhances the public experience of the site. Encourage participation of community-based organizations and public art initiatives, including coordination with transit agency and other public art installations to promote a sense of pride and ownership over the place (Urban Land Institute 2022).

b. Develop an area-wide art plan or integrate art into transit station public art and park and recreation planning to guide individual project public art and cultural installations throughout the district.

c. Create public art that is interpretive, educational, and/or reflects local culture, history, and character. Provide interpretive signage with the art integrated in the wayfinding system. Site public art near high pedestrian traffic areas and in conjunction with the planning and design of gateways, destinations, landmarks, prominent intersections, or public gathering spaces.

d. Create public art that supports multisensory experiences and encourages touch and play through incorporating sound, light, texture, movable parts, or digital interfaces to foster engagement and connection.

- Integrate public art with landscape features and/or buildings, and design to complement and feature artworks.
- Design and place artwork so it does not block pedestrian sightlines or obstruct primary passenger flows. Public art should be accessible to people with disabilities and not compromise the clear path of travel.
- Use art to mitigate blank wall surfaces and screen utility areas, especially along active frontage or highly visible areas.

Hummingbird sculpture at Lynnwood City Center Station.
Lynnwood, WA

Photo credit: Sound Transit

STart, Sound Transit's art program, features artworks by nationally known artists and emerging public artists. Many live in the Pacific Northwest. Their work represents a diverse range of style, scale, and perspective that creates welcoming and engaging places. ST3 dedicated 1% of the construction budget for public art in the EVLE corridor. Sound Transit works with the local community to identify artists for the program.

More information can be found at:
https://www.soundtransit.org/system-expansion/creating-vibrant-stations/start-sound-transit-art-program

Public art installed at the expanded T Line stations by Tacoma artist Kenji Stoll who explained: "Those layers of the stars are kind of built with different motifs and inspirations from parts of local history. Each station sits in a unique neighborhood of our city... and each has unique stories."

Credit: Sound Transit

Painted Sidewalk. *San Francisco, CA*

Photo credit: Nazanin Mehrin

A living wall in a public space *San Francisco, CA*

Photo credit: Yao Lu

Sign featuring educational insights into local ecological history.
North Richmond, CA

Photo credit: Yao Lu

5. Lighting

Intent

Design lighting that is oriented to pedestrian scale and that contributes to the character of the area, enhances safety, reduces disturbance of adjacent developments and habitat, and incorporates dark sky practices.

General Guidelines for all Location Types including Lighting

a. Provide pedestrian-scale lighting that adds to the comfort and experience.
b. Integrate lighting for pedestrian pathways and entrances and highlight important entry locations, destinations, or unique features like artworks, fountains, or historic features. Consider opportunities for projected lights to activate public space.
c. Design lighting to reflect cultural and historical context of the area, using motifs and patterns that resonate with these contexts. Involve the community in the design process so that the design reflects local values and identities and safety needs.
d. Intentionally calibrate the level of illumination in public spaces considering the anticipated night-time uses to enhance safety and comfort for all users (SPUR and Gehl 2021). Consider people who work or go to school in late shifts and have other needs to travel safely when it is dark.
e. Consider non-glaring lighting design and avoid tense lighting design that creates harsh shadows, creates blind corners, or affects visibility negatively (AARP 2022).
f. Focus lighting onto the streetscape to minimize glare and light pollution that could negatively impact human and wildlife well-being. Consider sensitive lighting design on upper levels. Strategies to incorporate dark sky practices are discussed in **Section 6.2.2.2** Nature-Based Priority Standards.
g. Use interactive lighting and flexible event lighting installations to support community activities and foster a playful and inclusive environment.

Refer to **Chapter 4** for additional provisions related to street lighting and pedestrian scale lighting.

DARKSKY

DarkSky is a movement to reduce light pollution and its harmful effects, including disruption to wildlife, impacts to human health, wasting energy and money, contributing to climate change, and blocking our views of the night sky. DarkSky International advocates for responsible lighting practices through policies that require and encourage dark sky friendly outdoor lighting fixtures as well as parks and public open spaces that meet these standards.

Lights highlighting entrances and pedestrian paths.
Irvine, CA
Photo credit: Mithun

Pedestrian-scale lights providing sufficient lighting to enhance safety.
San Francisco, CA
Photo credit: Mehrin

Integrated lighting in furnishing and landscape
San Francisco, CA
Photo credit: Mehrin

6. Landscape

Intent

Intentionally design landscape to maximize environmental, economic, and social benefits to the community in the public realm.

General Guidelines for all Location Types including Landscape

a. Locate and size landscape areas to enhance habitat connectivity and support pollinators. Allow community gardens and urban agriculture within open spaces and landscape areas.

b. Use landscape and plantings to provide a natural setting for activities in urban spaces. Design landscape and hardscape to promote a connection to nature and mental health by intentionally providing opportunities for immersion in nature.

c. Increase urban canopy to provide comfort and reduce heat island effect. Trees should be selected based on desired shading ability, growth habit, and durability. Locate tree canopies to provide shade to pedestrian and bicycle paths, seating areas, and areas predominantly consisting of hardscape.

CASE STUDY

Snohomish County's Urban and Community Forests Program is working to increase tree canopy in urban neighborhoods. Through partnership with the City of Everett, City of Marysville, and the Tulalip Tribes, free trees are available to plant, supported by neighborhood workshops, an urban forestry program, updates to the tree code, and other resources.

d. Select plant species based on ecoregional characteristics that are native to the local habitat, performance criteria, ecological value, and maintenance capabilities. Make selections considering long-term environmental, economic, and social impacts such as reducing flows and nutrients in stormwater, air filtration, enabling energy savings, minimizing irrigation and maintenance needs, and encouraging outdoor activity.

e. Provide landscaping elements that add color and seasonal interest. Consider a mix of evergreen and deciduous plants, bark and stem qualities, texture, and fall color. Consider location and the need for pet durability in the design and selection of plants for higher traffic areas.

f. Use landscape to visually screen unwanted features in the pedestrian environment (e.g., utilities, service uses, parking, or blank walls), soften large and continuous building mass, and add visual interest to building rooflines when used on terraces and upper levels.

g. Use landscaping elements to delineate spaces and frame views. In pedestrian areas, provide a clear zone from 2 to 7 feet above the ground to support clear lines of sight and safety, particularly near intersections or potential points of conflict.

h. In planning and design, consider existing trees and cultural landscapes. Seek to prioritize those with cultural significance and those that are critical components of existing important public views and view corridors.

i. When sourcing materials, consider locally available materials, natural materials that promote a connection to nature, and materials with a low carbon footprint.

j. Provide interpretive, educational signage to highlight sustainable features and the benefits of landscaping.

k. Provide sufficient soil volume for optimal tree health. This can include increasing the size of planting areas or providing soil cells in hardscape areas, as well as planning for irrigation and the plant establishment period. An example of establishing standards for high-performance soil depth and volume is discussed in **Section 6.2.2.1** Green Factor Code .

l. Consider Green Factor Code, which requires standards for buildings and site-integrated green infrastructure when designing sustainable and high-performance landscape elements. Landscape design should be combined with green infrastructure strategies.

Refer to **Chapter 3**, **Chapter 4**, and **Chapter 5** for additional design provisions.

GREEN FACTOR CODE

A Green Factor Code is a set of development regulations that require a minimum level of landscaping and green stormwater infrastructure in building and site improvements. Green Factor Codes have been used successfully in multiple jurisdictions in King County, including the cities of Seattle, Fife, Edmonds, Bellevue, and Kirkland, to improve the look and feel of neighborhoods and increase performance and resilience with additional capacity to address flooding, increase biodiversity, and reduce heat island effect.

Seasonal flowers and integrated seating
San Francisco, CA

Photo credit: Mehrin

Tree canopy over pedestrian and bicycle infrastructure.
New York, NY

Photo credit: Yao Lu

Landscape feature reflecting the area's geological and natural characteristics.
Spokane, WA

Photo credit: Erin Ishizaki

Landscape uses to visually screen utility equipments.
San Francisco, CA

Photo credit: Mehrin

7. Bicycle, Micro-, and Emerging Mobility Infrastructure

Intent

Encourage the use of micro- and emerging mobility devices to support increased access to transit communities, goods, and services for all ages and abilities by providing safe, shaded, and comfortable infrastructure and amenities as well as curb management in station areas. Emerging mobility refers to new technologies that provide transportation, including micromobility such as electric scooters, shared cars and ride hailing, and autonomous vehicles.

General Guidelines for all Location Types including Micro- and Emerging Mobility Infrastructure

a. Micromobility device parking and docking points, when placed on the sidewalk or in open space, should enhance the quality of the pedestrian environment and avoid impeding pedestrian access, sightlines, or flow to transit or building entrances. Co-locate parking and docking points with landscape and stormwater management facilities at locations like curb extensions or plazas to create well-defined and sheltered parking areas.

b. Locate short-term micromobility device parking and docking points adjacent to areas with high visibility and active building frontage to provide increased security. Micromobility device parking and docking points should be placed at well-lit locations or provide dedicated lighting.

c. Coordinate with local transit agencies to create adequate short-term micromobility parking space adjacent to path of travel in the station areas.

Use color and signage to make bicycle lanes, routes, and paths obvious.
San Francisco, CA

Photo credit: Kristian Elizes

2.4. LOCATION TYPES

In addition to the general urban design guidance previously discussed, there are special considerations for the design elements when they are located within a larger streetscape, public gathering space, or mid-block and shared-use connections.

This section highlights additional considerations for design elements beyond general guidelines mentioned in the previous section.

Figure 2-3 Location Types

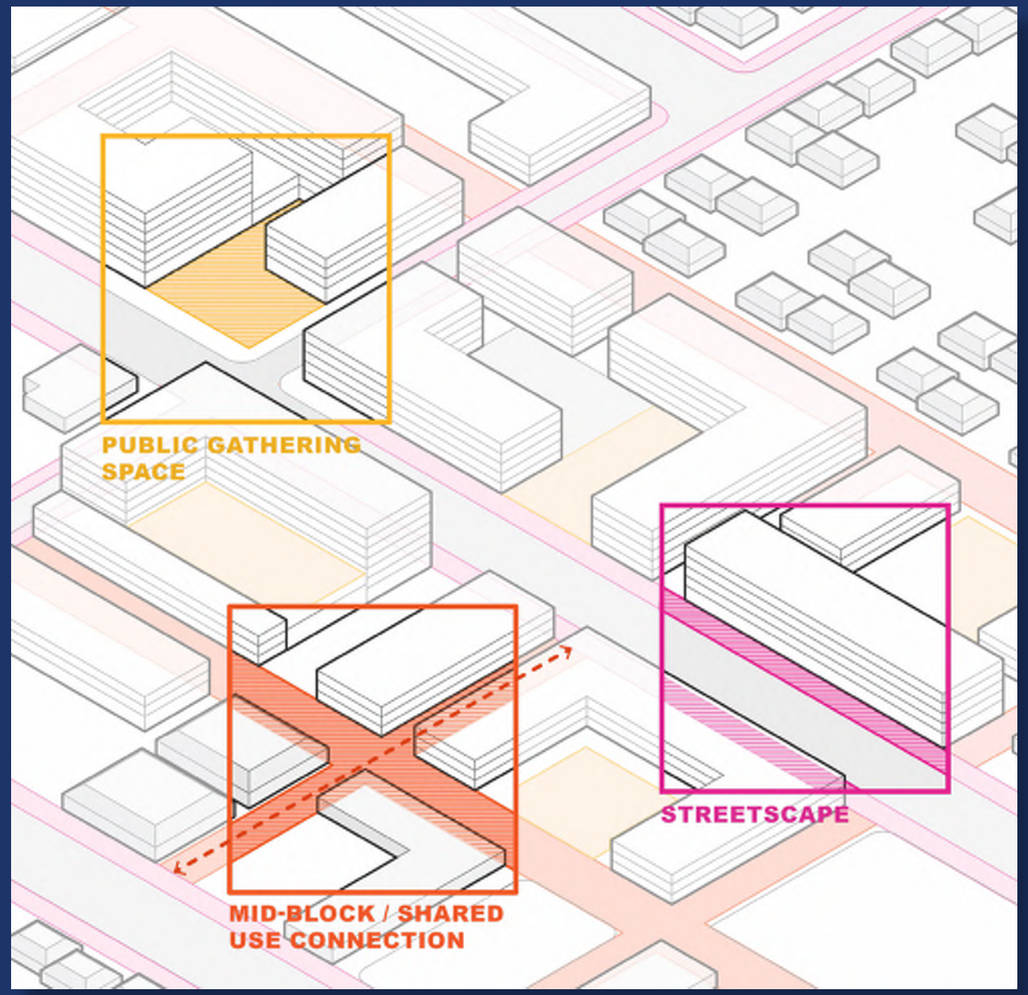
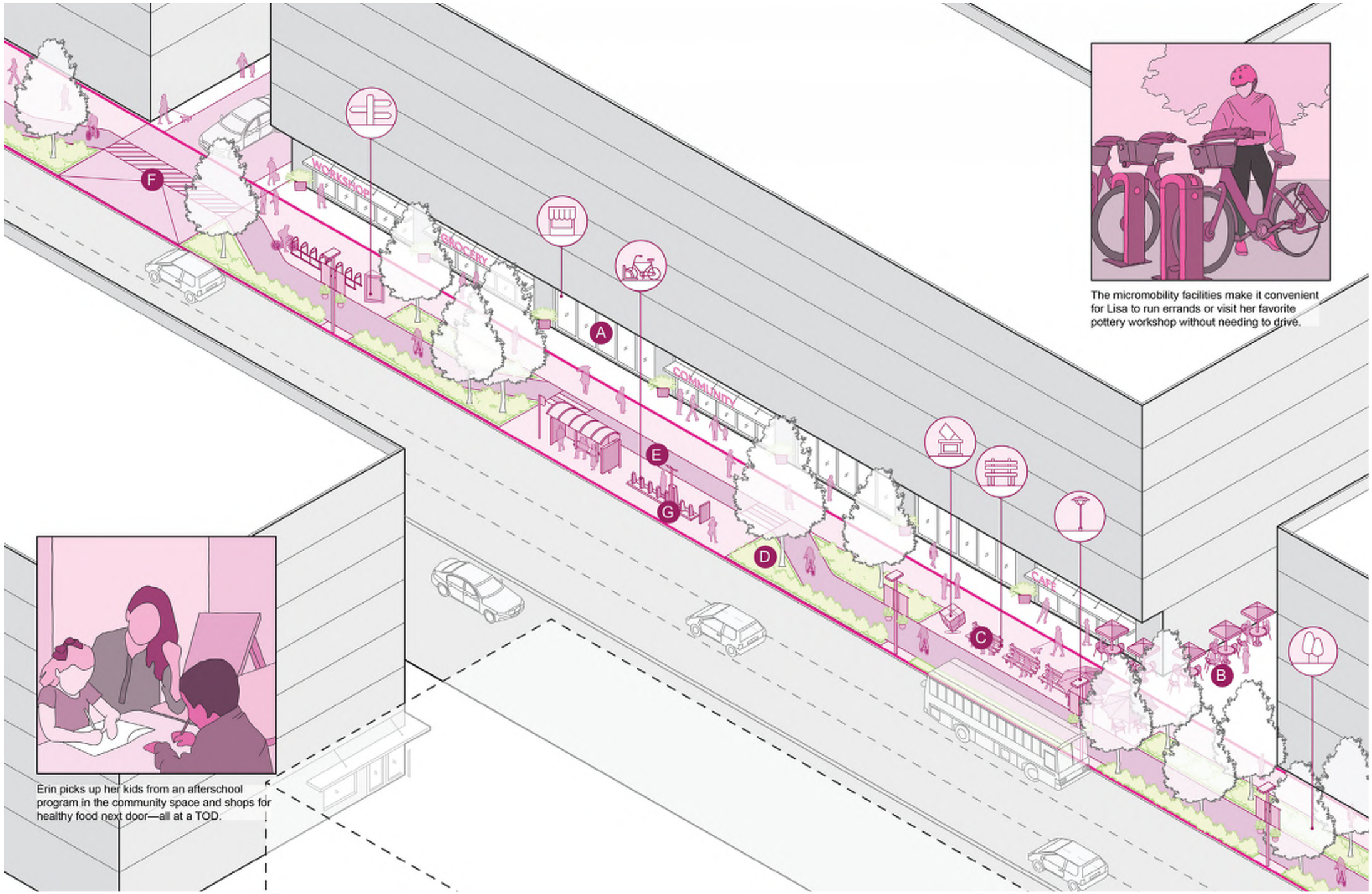


Figure 2-4 Design Elements in Streetscape Location



The micromobility facilities make it convenient for Lisa to run errands or visit her favorite pottery workshop without needing to drive.

Erin picks up her kids from an afterschool program in the community space and shops for healthy food next door—all at a TOD.

2.4.1 Urban Design Guidance for Elements in Streetscape

Streetscape, serving as the interface between the public right-of-way and private development, plays a crucial role in the consistency and cohesion of the public realm. It is critical to incorporate features that reflect the cultural, natural, and historical identities of the area when approaching the design of all elements within the right-of-way. It is essential to consider streetscape connectivity, recognizing it as a vital component of a larger system, especially when designing wayfinding, landscape and stormwater management, and micromobility infrastructure.

Building Frontages and Ground Floors

- Prioritize maintaining a continuous, consistent street wall with limited breaks for driveways and other vehicular infrastructure.

A Encourage the use of design elements that facilitate visual connections and interactions between ground floor activities and pedestrian flow, including outdoor dining areas, multi-entry storefronts, and large operable windows.

- At intersections with higher concentrations of pedestrian traffic, create building recesses and visual transparency at corners of buildings located at street intersections to promote visibility and allow for a collection of people.

B For additional setback areas for café or similar space, provide for a mix of permanent and movable seating for flexible use of the space.

Furnishings and Amenities

C Place street furniture to provide clearance areas along sidewalks for unobstructed access from street to sidewalk.

- Promote the design of flexible streets by creating adaptable and multi-functional furnishing and utility zones outside pedestrian and bicycle paths of travel to support street markets, festivals, and food trucks, allowing for diverse community use.

Public Art

- Coordinate artwork and integrate it into other streetscape elements, such as street furniture, so the art complements the overall character, aesthetic, and functionality of the streetscape. This also provides opportunities for expanding the scope of artworks.
- Place public art in high traffic pedestrian areas that avoids obstructing pedestrian flow.
- Integrate public art streetscapes using colored pavement, special pavers and materials, and crosswalk designs.

Lighting

- Place streetlights that provide sufficient level of illumination to enhance visibility and safety for pedestrians, cyclists, and motorists.

Landscape

D Use street trees as a pedestrian barrier between sidewalks and roadways to help reduce vehicle speed and enhance pedestrian and bicycle safety.

- At intersections, incorporate plants that do not obstruct a sight visibility triangle.
- Encourage the use of structural soil, which can include tree cell technology to support heathier tree growth in rights-of-way with limited space or soil depth.

Bicycle, Micro-, and Emerging Mobility Infrastructure

- When placed at sidewalk level, design bike paths or cycle tracks in a way that reduces conflicts with pedestrians.

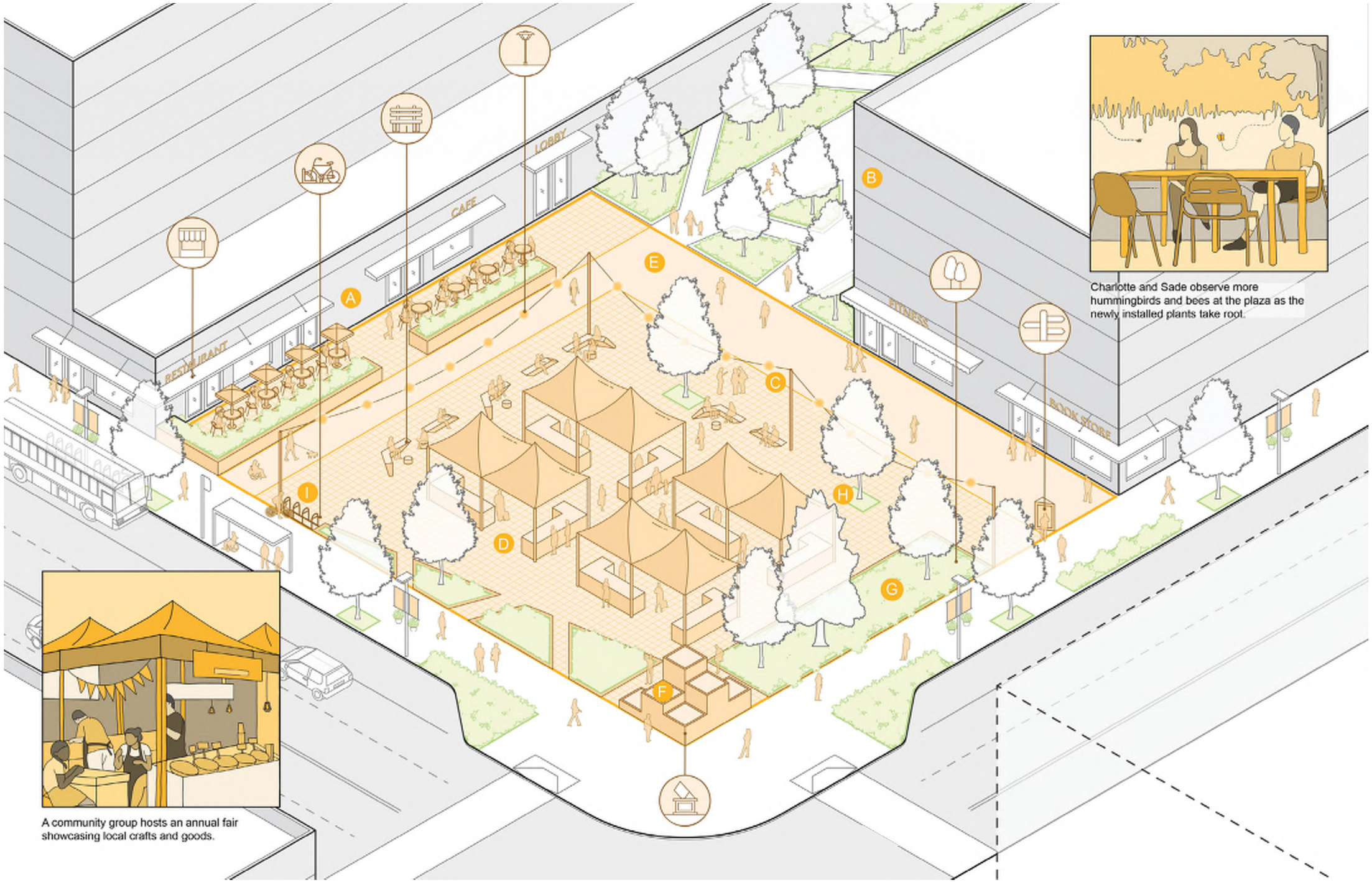
E In transit stop zones, provide designated pathways for bicycles, or clearly delineate shared-use sidewalks (those that serve both people rolling and walking) using visual cues and tactile cues (National Association of City Transportation Officials NACTO] 2025). Where bicyclists share space on pedestrian paths or trails, provide a minimum of 5 feet of clear space per direction of travel to ensure safety and comfort of pedestrian and bicyclists (Sound Transit 2024). If being designed as a part of a transit plaza, establish a 6-foot- to 12-foot-wide slow-speed bicycle zone, depending on directional configuration (Sound Transit 2024).

F Reduce conflicts between vehicular driveways or loading zones and bicycle and pedestrian infrastructure. Locate curbside loading zones away from primary bicycle routes if possible. Where conflicts cannot be avoided, provide signage indicating that vehicles should yield to pedestrian and bicycles and use clear pavement markings and tactile warning to indicate a mixing zone.

- In zones along the bike lanes and paths with pedestrian conflicts, design signage and warning pavement markings leading up to these areas to indicate that cyclists should yield to pedestrians.

G Support flexible curb management (NACTO n.d.) to accommodate new mobility options, deliveries, freight, and emergency access where appropriate, as well as accessible pick-up/drop-off for residential buildings, businesses, and community services.

Figure 2-5 Design Elements in Public Gathering Space Location



Charlotte and Sade observe more hummingbirds and bees at the plaza as the newly installed plants take root.

A community group hosts an annual fair showcasing local crafts and goods.

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2.4.2 Urban Design Guidance for Elements in Public Gathering Spaces (Public Plazas, Pocket Parks, Courtyards, and Gardens)

Public gathering spaces play a crucial role in providing space for gathering and community use, supporting social connections and inclusion, and promoting identity of place and belonging. A variety of usable and interesting public gathering spaces contribute to a livable and memorable place for people to connect with each other and provide wellbeing benefits including access to fresh air, sun, and nature, especially for households with children and pets. Prominent public gathering spaces can be placed at visible locations such as gateways, near transit stops, primary building entrances, or along frequently traveled sidewalks. These spaces should be welcoming and accessible to all people of all ages, abilities, and cultures, supporting a wide variety of programs and activities. Design elements like public art, wayfinding features, and landscape should be coordinated to help direct people to these spaces.

Building Frontage and Ground Floor

A Encourage pedestrian-friendly and active uses along the edge of the plaza such as street vendors, ground floor restaurants, and outdoor seating. At least 70% of the frontage along the plaza should include an active use for building facades greater than 100 feet, or by transparent glazing or public art for building facades less than 100 feet. In limited cases, but not as a general strategy, public art may be used to mitigate blank walls fronting a plaza.

B Create a sense of enclosure through a combination of building and landscape elements. Avoid creating oversized spaces that are not well defined and lack amenities.

Furnishing and Amenities

C Incorporate a combination of permanent and flexible seating spaces for individuals or groups. Incorporate amenities such as lighting, special paving, bollards, and planters to define the plaza space and make comfortable spaces for social interactions and human activities.

D Use flexible furnishings to host events and temporary installations, such as markets or cultural events, in public spaces.

- Locate seating and resting areas with views toward the open space, landscape, or more active areas.
- Create intergenerational spaces by including furniture suitable for all ages and abilities. Consider programming specific to intergenerational connections (AARP 2016), which can be coordinated through parks, recreation, and arts services or health and human services departments.

E Consider pedestrian flow and pathways to destinations when locating permanent furnishings and amenities. In areas with higher pedestrian traffic or areas that may experience surges of people for large events, use pedestrian level of service studies so that walkways and waiting areas provide ample space to accommodate.

Public Art

F Incorporate monumental or interactive public art that adds character and engages people in the public space in collaboration with local institutions, community groups, and artists.

Lighting

- Create public open spaces that are well-lit with various types of lighting to provide welcoming and safe spaces.
- Use lighting that contributes to and integrates with the overall character of the public gathering space.

Landscape

- G Incorporate natural elements such as plants, trees, and water features to connect people with nature and encourage outdoor activities.
- H Provide a wide range of planting types and distribution such as cluster and linear layout with trees and planters.

Micro- and Emerging Mobility Infrastructure

- I Provide a designated location in public spaces for parking and docking of micromobility devices to minimize conflict with pedestrians.

PARKS AND GATHERING SPACES POLICIES

Primary policy

» *Plan for compact, active public gathering spaces in high-activity areas that provide seating, shade, and landscaping.*

Supporting policies

» *Allow parklets, farmers markets, food truck areas, and other similar uses to provide additional public space.*

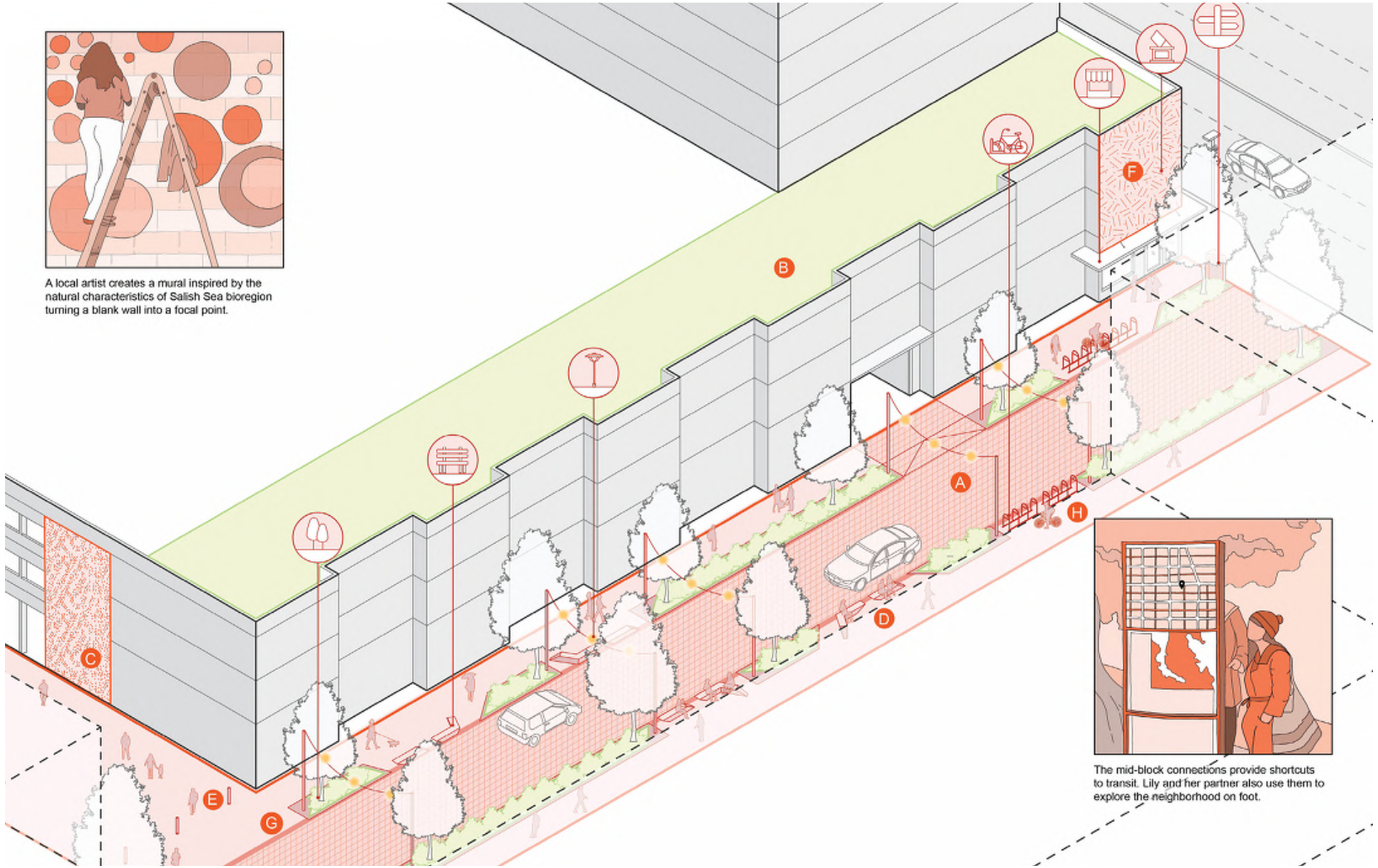
*Regulations to implement these policies can be found in the **TOD Implementing Regulations, Appendix***

Plaza between transit and TOD uses retaining walls for seating, adds landscape, and creates a focal point for varied activities .
San Francisco, CA

Photo credit: ©Bruce Damonte / Courtesy: Mithun

A local artist creates a mural inspired by the natural characteristics of Salish Sea bioregion turning a blank wall into a focal point.

Figure 2-6 Design Elements in Mid-Block/Shared Use Connection Location



The mid-block connections provide shortcuts to transit. Lily and her partner also use them to explore the neighborhood on foot.

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2.4.3 Urban Design Guidance for Elements in Mid-Block and Shared-Use Connections

Mid-block or shared-use connections refer to walkways, linear public space, or service drives, lanes, and alleys that cut through large blocks and connect public streets. These connections complement the street network and are important to break up long blocks to help create a walkable environment. They provide comfortable shortcuts for pedestrians and cyclists, additional outdoor spaces, and when carefully designed, can contribute to the public realm. Some can also provide off-street service, loading, and parking access for buildings. Although some of these connections can be integrated within public rights-of-way and public properties, publicly accessible mid-block or shared-use connections provided on private properties can further enhance the street network and provide significant benefits.

Building Frontage and Ground Floor

- **A** Determine the widths of the mid-block/shared-use connection, in proportion to the height of the buildings that front it, ensuring a comfortable, human-scale environment and supporting better solar access and air circulation among taller buildings.
- **B** Encourage design elements like balconies and windows that facilitate a dialogue between ground floor activities and the pedestrian flow along the mid-block/shared-use connection.
- **C** Screen or mitigate visual impacts of exposed parking structures, service areas, utilities, and blank walls through planting, decorative walls or enclosures, decorative fencing, public arts, and murals.

Furnishing and Amenities

- Incorporate a combination of permanent and flexible seating spaces, planters, lighting fixtures, local art, and other amenities to activate the space and encourage social interactions.
- **D** Place seating, furniture, and planters to support multiple uses of the space, such as outdoor dining, exercise, relaxation, and events.
- **E** Where feasible, install removable bollards at the street entrances of mid-block/shared-use connections to discourage cut-through traffic and restrict access to non-service or non-loading vehicles.

Public Art

- Introduce color and graphic paving, fencing, and murals to provide visual interest, encourage activities, and enhance safety.
- Collaborate with local artists to showcase diverse talent and create memorable places.

Lighting

- **F** For shared-use connections, establish a visual connection to the sidewalk and upper stories wherever feasible, with lighting levels equivalent to the adjacent public spaces or streets.

Landscape

- Co-locate and integrate landscape elements like trees, bushes, shrubs, and water features with furnishing and amenities.
- Use landscape elements to create grade transitions where necessary.
- **G** Where there is a curbless, continuous surface, use contrasting textures, paving patterns, tactiles, planters, or bollards to differentiate and delineate pedestrian-only space from shared-use areas and discourage high-speed vehicle movement.
- Encourage permeable paving and light-colored paving materials to reduce heat island effect.

Micro- and Emerging Mobility Infrastructure

- **H** Provide short-term bike parking and other biking amenities within shared-use space.

Comfortable seating area, weather protection structure, and landscaping provide an inviting public realm at a mid-block connection.
Portland, OR
Photo credit: ©Kevin Scott / Courtesy: Mithun

A public mid-block connection adjacent to affordable housing using ground floor transparency and landscape to create a defined and comfortable space.
San Francisco, CA
Photo credit: ©Bruce Damonte / Courtesy: Mithun

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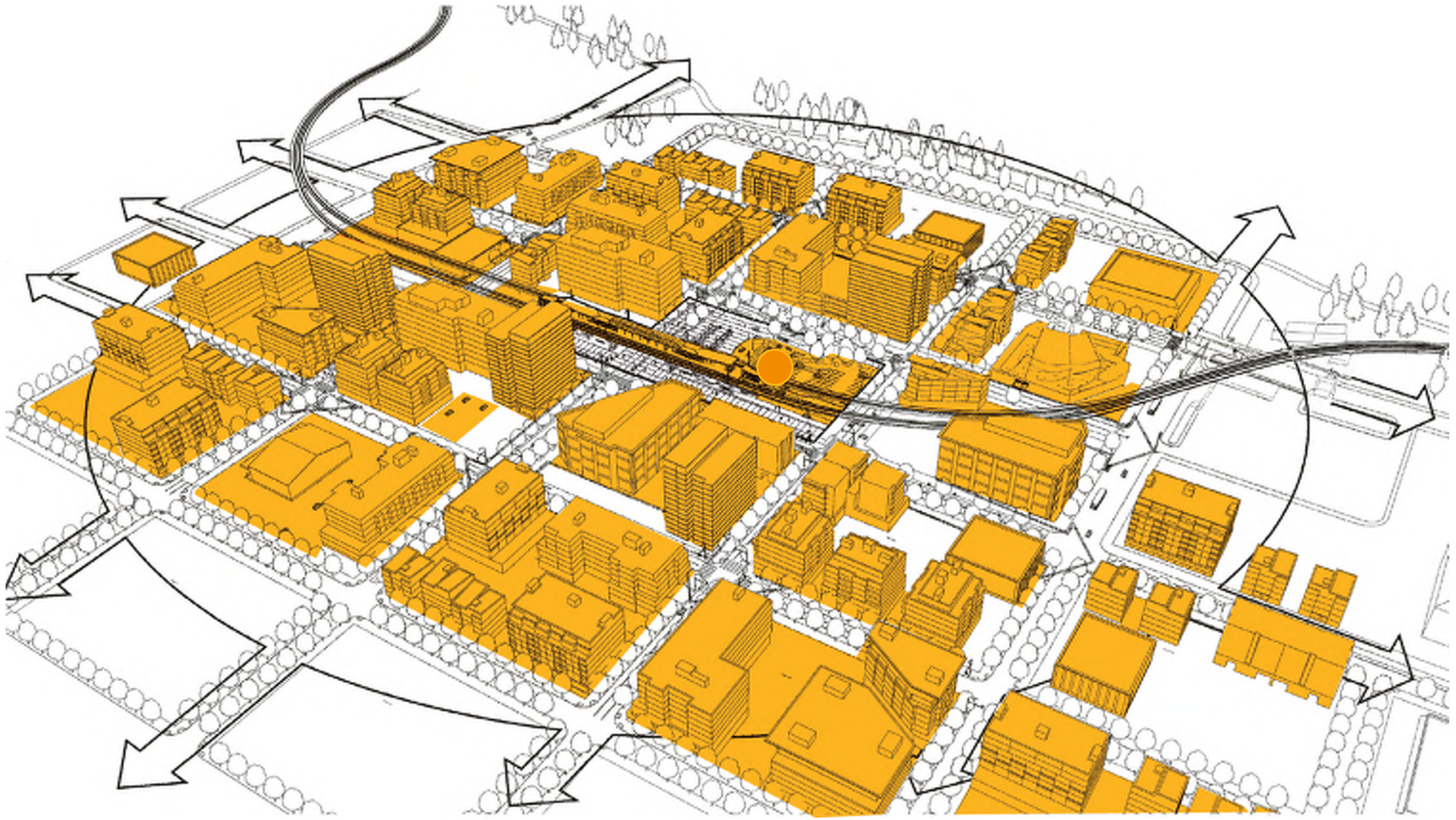
3 LAND USE AND BUILT FORM

Addressed in This Chapter:

This chapter of the TOD Toolkit provides guidance on land use regulations, parking, and anti-displacement strategies as station areas transition from the existing built environment to transit-oriented communities (TOC).

Figure 3-1 Context Diagram



3.1. COORDINATION WITH EXISTING PLANS, CODES, AND DEVELOPMENT REGULATIONS

Implementation of this Toolkit will enhance predictability for existing residents and potential developers within station areas while introducing regulatory flexibility that allows for creativity and innovation. Guidance in this chapter was designed to be incorporated into policy and regulatory documents, including comprehensive plans and light rail station subarea plans.

REGIONAL PLANNING FRAMEWORK

Under the Growth Management Act (GMA), local jurisdictions adopt a comprehensive plan that sets a vision and a guide for transformation. PSRC's *VISION 2050*, the regional growth framework that applies along the EVLE corridor, plans for 65% of the region's population growth and 75% of the region's job growth to occur in regional growth centers and near high-capacity transit. PSRC's regional centers framework "calls for the creation of central places with a mix of uses and activities connected by efficient transportation" (PSRC 2020). See Figure 3-2.

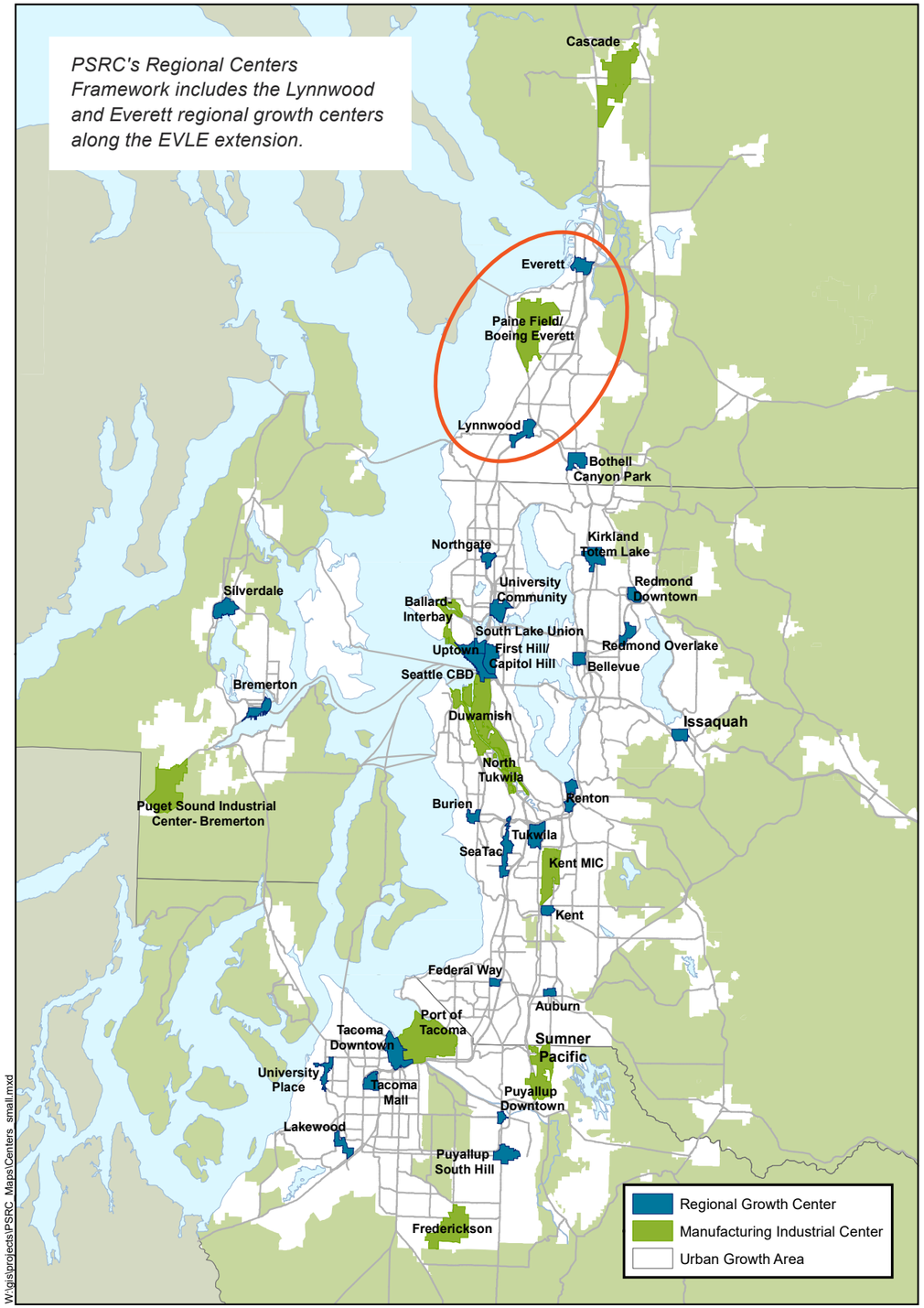
In line with the regional centers plan, Snohomish County is planning for 308,352 new residents and 171,818 new jobs by 2044. Everett will absorb 22% of the population growth (68,547 people, or approximately 38,557 housing units) and 39% of the job growth (67,340 jobs). Lynnwood will accommodate 8% of the population growth (25,167 people, or approximately 14,051 housing units) and 13% of the job growth (21,912 jobs).

Lynnwood is designated as an "urban" regional growth center (RGC), and Everett is designated as a "metro" RGC. These centers call for higher-intensity development to meet activity unit thresholds (where activity units are the combination of population and employment in the center):

- **For urban RGCs, the center's planned target density must be at least 45 activity units per acre.**
- **For metro RGCs, the center's planned target density must be at least 85 activity units per acre.**

High-capacity transit is a key feature of the centers, facilitating denser development while reducing car trips.

Figure 3-2 Map of Regionally Designated Centers by Puget Sound Regional Council



Source: PSRC

3.2. CREATING TRANSIT-ORIENTED COMMUNITIES

LAND USE POLICIES

Primary policy

» *Focus employment and population growth around transit through mixed-use development.*

Supporting policies

» *Locate highest TOD densities adjacent or nearest to light rail transit stations.*

» *Where station areas are adjacent to low density neighborhoods outside the 10-minute walk zone, use transitional design standards or zoning.*

» *Allow station area uses that benefit from transit adjacency and reduce dependency on the automobile; prohibit or condition auto-dependent uses like standalone parking and drive-throughs.*

» *Minimize curb cuts near stations. Require developers to access from side streets if possible.*

» *Promote a mix of smaller spaces as well as large, flexible spaces with multiple entries designed for a variety of business and community uses on the ground floor to support continual active ground floor use.*

» *Allow flexibility for use of ground floor space to accommodate market readiness to support retail or other commercial uses.*

*Regulations to implement these policies can be found in the **TOD Implementing Regulations, Section 2***

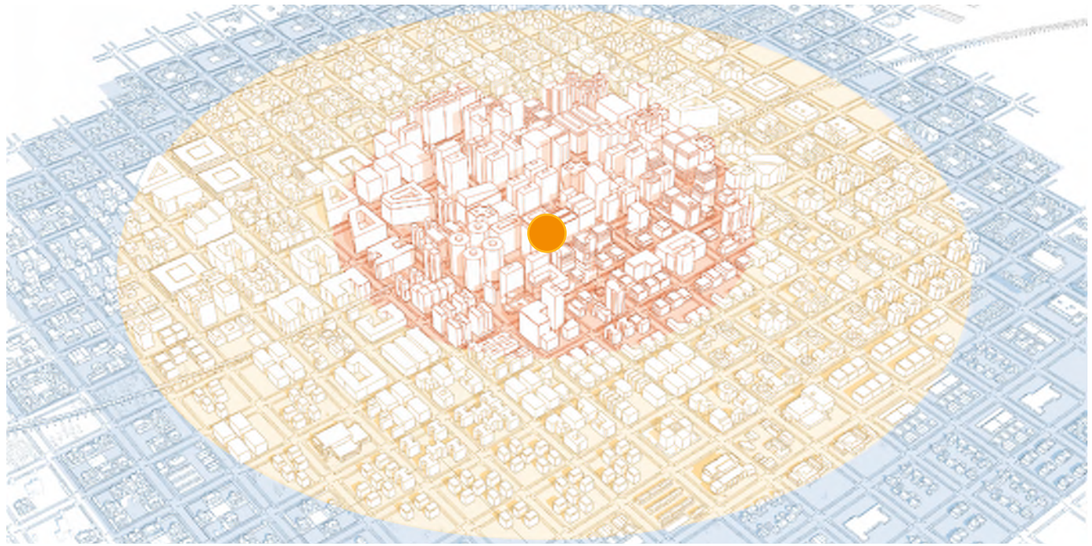
TOCs are dense, walkable, vibrant districts with access to high-capacity transit. TOCs serve a combination of residents, workers, and transit users in meeting their day-to-day needs, ideally without relying on a car. Ingredients for a successful TOC include a mix of uses, activities, and services; high- or moderate-density housing that meets broad lifestyle and affordability needs; a convenient street grid that supports multimodal accessibility; and an attractive and functional public realm. This section of the Toolkit identifies key considerations for station area and broader TOC planning and presents best practices to support implementation.

Along the EVLE corridor, the future station areas are a mix of urban and suburban communities with a variety of development patterns. This Toolkit supports jurisdictions in responding to these existing patterns, emphasizing consistency with the neighborhood, and understanding how phased change and growth can occur over time.

3.2.1 Station Area Zoning Hierarchy

Existing and proposed land uses vary greatly across the EVLE corridor, and future TODs may take a variety of forms depending on the surrounding context, built form, and location of transit facilities. Potential zoning categories for the station areas could be adopted to bring more consistency to the built form and density. This Toolkit recommends provisions under three TOD zoning categories. Local jurisdictions should consider adapting the provisions from these categories to applicable areas around EVLE light rail stations. They may choose to use existing or new zoning classifications at their discretion.

Figure 3-3 Conceptual Diagrams of Zone Categories



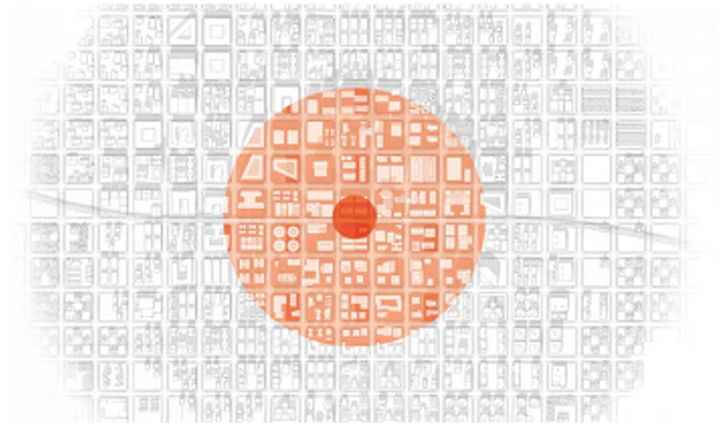
Categories further described on the following pages and shown in Figure 3-3 above include:

Center Core: The area closest to the light rail station, generally within a 5-minute walk or less.

Outer Core: The area generally located within a 5- to 10-minute walk from the station.

Transitional: The area located between the outer core and other surrounding neighborhoods and districts that is often transitional in built form from more intensive to less intensive density.

Figure 3-4 Diagram of Center Core Built Form



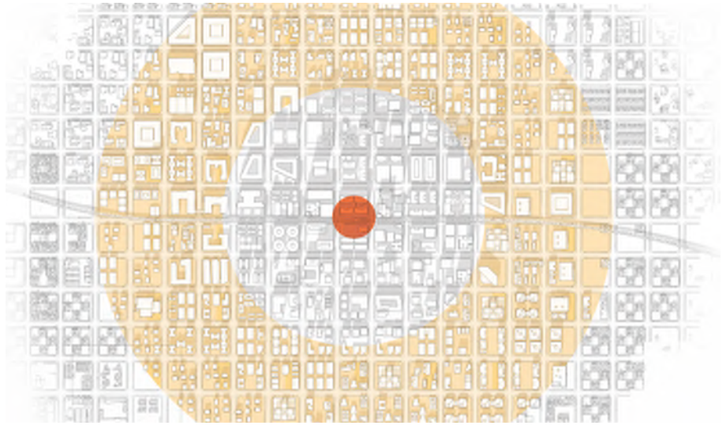
Center Core: Mixed-Use TOD/High-Rise

Center Core is the highest intensity station area typology, intended to promote high-density development in urban centers near high-capacity transit stations (typically within one-quarter mile or a 5-minute walk). This typology promotes mixed-use activity, active ground floor level uses, and a pedestrian-friendly environment with accessible public spaces.

High-rise buildings are appropriate here with active pedestrian street façades and a diversity of uses supported by active ground floor frontages. This typology allows for uses and densities that support mixed uses, high-density residential, employment, retail, entertainment, services, civic, and/or public use around transit stations, and connect pedestrian routes in downtown and city center areas.

Mixed-use employment and adaptive reuse of historic and existing buildings to allow flexible uses (such as lofts, studios, and other living units and shared spaces) may also occur in this zone. Active retail and service uses are typically provided at the ground floor of buildings. Parking is typically provided in above- or below-grade multi-story parking structures, as well as on-street parking that serves businesses on the ground floor. Typical building heights should eventually exceed eight stories, although lower building heights may be allowed and podium buildings (shorthand for one to two concrete levels supporting three or more wood- or steel-framed residential levels; see **Figure 3-9**) will likely be common.

Figure 3-5 Diagram of Outer Core Built Form



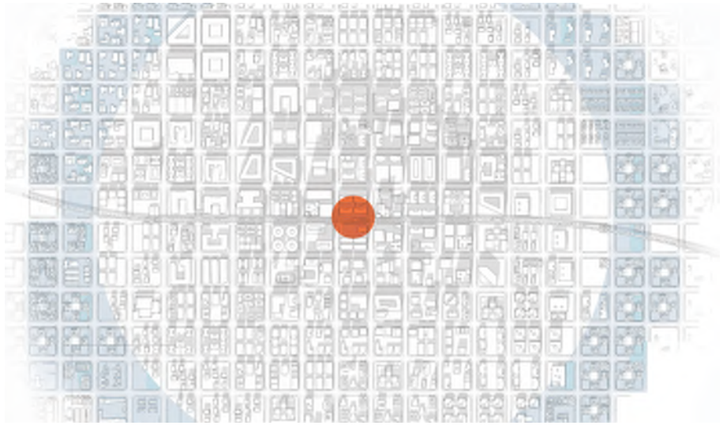
Outer Core: Mixed-Use TOD/Mid-Rise

Outer Core station area typology includes moderate- and higher-intensity development typically quarter to half-mile or a 5-10 minute walk from a high-capacity transit station. This typology includes mostly mid-rise buildings (existing and future) and a mix of uses that support pedestrian activity, including high-density residential, employment, civic, retail, public uses, and adaptive reuse of historic and existing buildings.

Active retail and service uses are typically provided at the ground floor of buildings. Parking is typically provided in above- or below-grade multi-story parking structures, as well as on-street parking that serves businesses on the ground floor. Building heights would typically be five to eight stories (the maximum currently allowed heights for podium-type construction under applicable building codes). Higher buildings may already exist or could be built through a land use approval. Lower buildings may exist in these areas as well.

This typology also promotes mixed-use activity, active ground floor level uses, and a pedestrian-friendly environment with accessible public spaces. Buildings can be scaled to make them more compatible with adjacent land use typologies.

Figure 3-6 Diagram of Transitional Built Form



Transitional: Mixed-Use TOD/Low-Rise

Transitional station area typology is a medium-intensity transitional area typically located greater than one-half mile or 10-minute walk from the high-capacity transit station, but less than one-half mile or a 10-minute walk. This area promotes the development of building types that provide a transition in intensity and height between the Center Core and/or Outer Core typologies and surrounding development that may be lower density, lower height, and smaller scale. Transitional allows for mixed-use, high-density and medium-density residential; employment/professional offices; services; and retail uses.

As with the Center Core and Outer Core typologies, Transitional also promotes mixed-use activity, active ground floor level uses, and a pedestrian-friendly environment with accessible public spaces.

Parking is typically provided in multi-story garages but may also occur in a combination of structured and surface parking solutions, as well as on-street parking in surrounding rights-of-way to serve uses on the ground floor. Building heights are typically lower than five stories, often transitioning from three to five stories, but may include existing buildings of higher or lower heights. Buildings can be scaled and stepped down at the periphery of the property to make them compatible with adjacent residential neighborhoods.

A Context-Sensitive Approach to Applying the TOD Zones

The zones represent a gradual transition from very dense to less dense development intensity, tying into the existing development patterns along the EVLE corridor. They could be applied in a wedding cake concept with the Center Core zone centered on the station location, surrounded by the Outer Core zone, which is then surrounded by the Transitional zone to connect the denser station area to the surrounding context. The zones could also be applied in a context-sensitive approach, with adjustments made to the geographic extent of each zone based on existing built and natural features. For example:

Highways: Because of the way interstate and state highways impact community mobility, these may serve as a natural barrier that negates the need for a transition in some of the station area. **See Figure 3-7**.

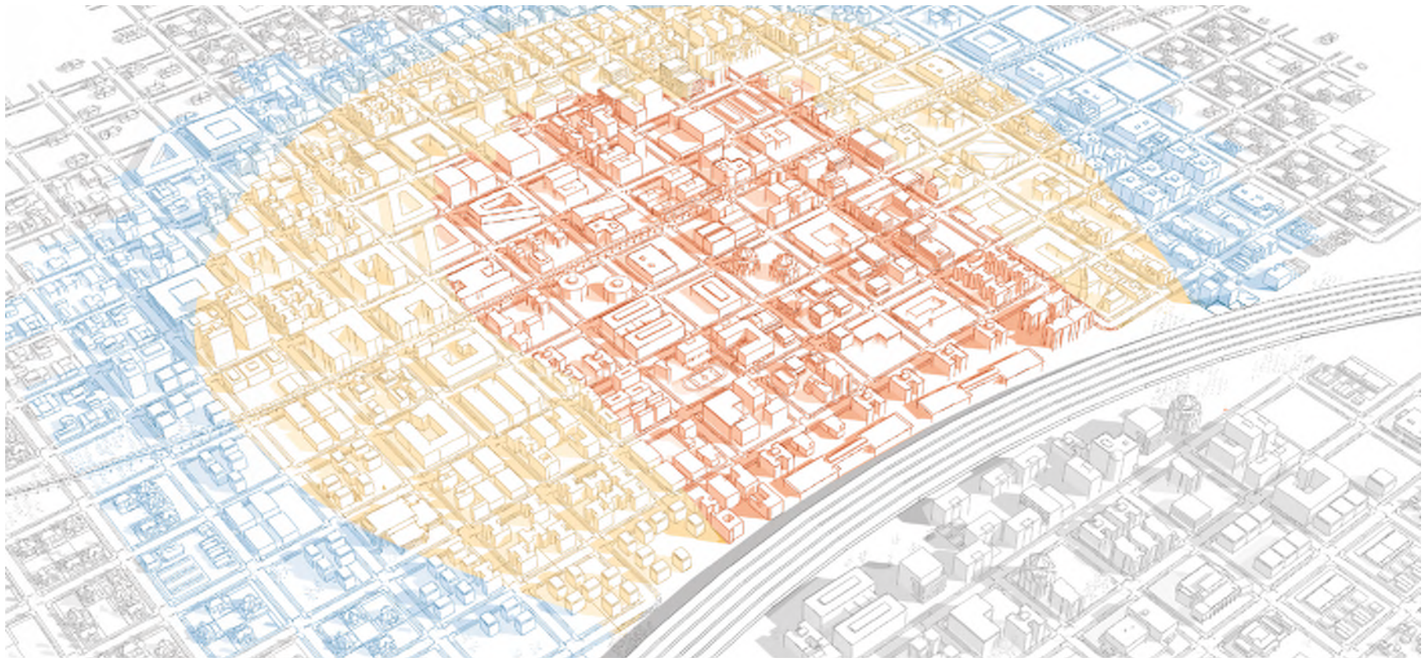
Schools: Schools are a consistent land use that is not typically assumed to redevelop. A larger Transitional zone may be needed in some station areas, like Evergreen, to more fully integrate the surrounding elementary, middle, and high schools into the future TOC.

Arenas: Arenas are also a consistent land use not typically assumed to redevelop but, given the nature of arena activity, these could be surrounded by more intense development. The area between the station and the arena could be a higher-intensity zone with a gradual transition to the existing built form thereafter.

Malls and Shopping Centers: Areas around larger shopping centers, such as Alderwood Mall, will benefit from the greater density and intensity of use envisioned in the Center Core zone. The zone could incorporate not just the immediate station area, but also the area within one-quarter mile of the mall. Smaller shopping centers, strip malls, or big-box stores may be more likely to redevelop if higher intensity is allowed.

Manufacturing and Industrial Areas: Manufacturing and industrial areas may be less likely to redevelop with the full range of mixed residential and commercial uses typically envisioned in the Center Core or Outer Core zones. These areas, like the SW Everett Industrial Center, are employment hubs and can still develop with a greater range of services to support commuters in and out of the station area, potentially at a lower-use intensity.

Figure 3-7 Example of How Zoning May Look Adjacent to Highways



Evolution of the Station Area

Even with the front-loaded station area planning effort and adoption of code provisions, station areas will transition gradually from their current patterns to dense, walkable, mixed-use, and pedestrian-oriented communities. Redevelopment will be market-driven, and profitability of development projects will be the key ingredient in transitioning other stable or lucrative uses, such as big-box stores, fast food locations, gas stations, mini storage, etc., into TOD.

Jurisdictions should consider the timing of light rail service with the implementation of TOD zoning. TOD projects built today will not have high-capacity transit service until 2037-2041. Some key ingredients to TOD rely heavily on the availability of transit service (such as reductions in parking), so some regulations may need to phase in over time. In the Lynnwood Link Extension project, developers initiated design and construction in advance of light rail operations, but even after service began, the station areas continue to redevelop and are not yet mature. A similar scenario is likely to play out in station areas along the EVLE corridor, with developers likely to plan further ahead where infrastructure and transit service is already present (such as near Alderwood Mall and in downtown Everett).

Alderwood Mall, located in the vicinity of a proposed EVLE light rail station. 📍 *Lynnwood, WA*

Source: Lamb and Company

3.2.2 Fine-Tuning Land Uses

Mixed Uses in Compact Form

Many successful TOCs benefit from a mix of land uses, typically mixed vertically with active uses on the ground floor and residential or office uses on upper floors. At its most basic, “mixed use” means two or more land uses present on a single property or in a single development project. A desirable mix of uses includes residential, commercial/ employment, and, potentially, civic or institutional uses. This type of urban form brings people — residents, employees, customers, visitors, and others — in close to transit. See **Figure 3-8**. Typical residential density ranges in station areas are shown in **Table 3-1**.

> The balance of jobs to housing is important because commercial and employment uses generate additional vibrancy and even more transit use from those within and outside the TOC; the Station Experience Design Guidelines call for a range of jobs to housing of 1:1 to up to 3:1 in emergent and established urban areas (4.1.2). PSRC envisions a healthy mix of jobs and housing in its Regional Centers Framework, requiring centers to plan for up to 45 or 85 activity units (a combination of population and jobs) within the urban or metro centers, respectively.

A mix of uses should also incorporate a variety of public gathering spaces and other civic spaces. These spaces may include features for recreation or play, dining, street performances/busking, and other activities that contribute to an enhanced streetscape environment. Where appropriate, jurisdictions should plan for flexible public spaces, such as festival streets, that can serve day-to-day recreational needs and provide special-purpose gathering space.

Figures 3-9, 3-10, and 3-11 on the following pages show visualizations of best practices in TOD — providing a mix of land uses that create a sense of place, offer a range of living and working choices, and reduce environmental impacts by improving the multimodal network and access to transit. TOD should encourage investment in each community, proving attractive and easily accessible destinations for residents, employees, and visitors.

Figure 3-8 Rendering of Potential Marymoor Village Station TOD, Illustrating Mixed Uses

In this concept, five residential stories are stacked over one commercial story adjacent to the light rail station. Commercial uses include retail and restaurants with thoughtful sidewalk amenities, including weather protection and sidewalk dining.

Source: Provided by Otak

Figure 3-9 TOD Best Practices - View 1

Figure 3-10 TOD Best Practices - View 2

Figure 3-11 TOD Best Practices - View 3

Residential Land Uses

A successful TOD will usually include a residential component, typically with higher-density units that lend themselves to vertical mixed-use projects closer to the transit station and some moderate-density options as the station area transitions to single-family residential neighborhoods.

Residential land uses in the area surrounding the station and the broader TOC should foster a mix of housing densities, types, and affordability levels, and both ownership and rental options should be available. In the Center Core and Outer Core zones, multi-family buildings may be the most successful option, but these can still include a range of unit types or sizes and be affordable to various income levels. In the Transitional zone, a variety of middle- and higher-density housing types and ownership models should be encouraged.

Residential uses should:

- Be planned at a reasonable minimum density to support transit use and commercial activities. Suggested density ranges by station area zone are presented in **Table 3-1**.
- In multi-family buildings, encourage family-sized units (three or more bedrooms) in addition to studio, one-, and two-bedroom units. This could be negotiated through a development agreement or incentivized with bonuses or other offers, similar to (or alongside) affordable housing.

STATION AREA ZONE	DWELLING UNITS PER ACRE	JOBS PER ACRE	TYPICAL BUILDING HEIGHT
Center Core	60 to 100+ Units per Acre	±200	Seven stories and above
Outer Core	40 to 60+ Units per Acre	±75	Four to seven stories and above
Transitional	20 to 40+ Units per Acre	±50	Three stories and above, may vary

Table 3-1 Suggested Density Ranges in Station Areas with Applicable Jobs per Acre

Source: PSRC, Metropolitan Council (Twin Cities MN)

HB 1491 (2025-2026)

In 2025, the Washington Legislature amended the GMA to set minimum densities for transit station areas measured in floor area ratio (FAR). Jurisdictions must allow new residential and mixed-use development at a density of at least 3.5 FAR, on average, within 0.5 miles walking distance of a rail station and a density of 2.5 FAR, on average, within 0.25 miles of a bus stop. Jurisdictions may allow less density within some areas, as long as the average FAR within each station area meets the minimum requirement. The new law also requires that, for new developments within station areas, at least 10% of rental housing units must be affordable to families making 60% or less of area median income (AMI). In exchange, jurisdictions must approve a 20-year MFTE for projects that meet the affordability requirements and must provide a 50% reduction for any transportation impact fees imposed. Jurisdictions must also provide an additional 1.5 FAR to new developments in station areas in which all of the units are affordable or workforce housing.

Commercial and Employment Land Uses

Vibrant TODs also incorporate nonresidential uses, including commercial uses that provide employment opportunities and help meet the service and enjoyment needs of residents and visitors transiting through the area. Suggested employment densities are shown in **Table 3-1.** Suggested densities are informational only and support the land use and dimensional standards; the densities themselves should not be regulated because the market will determine the viability of various businesses and business models. Jobs density is met by allowing a variety of sizes and types of nonresidential use in the various zones, and all employees associated with any business would contribute to the calculation of jobs per acre.

Commercial and employment uses should:

- Meet the needs of residents and transit users to reduce car trips as much as possible. This means emphasizing retail, restaurants, personal services, professional offices, grocery stores, hotels, civic uses, performing arts spaces/cinemas, parks/open spaces, and similar uses.
- Prioritize active uses on the ground floor of at least 40% of each TOD project, including retail, restaurants/cafes, commercial or personal services, and other commercial uses with a high turnover in patrons. The total amount of active ground floor uses will vary based on specific project and location characteristics. Ground floor commercial may not be economically viable at first (American Planning Association [APA] 2025), so jurisdictions may require construction to commercial standards but allow other interim uses until the market can support more active uses. In the Center Core zone, consider a second commercial story for uses with a lower turnover in patrons, such as professional offices; this may be a level above the commercial podium in four-over-one or five-over-two construction.
- Provide a mix of commercial spaces that can be used by businesses of different sizes, including incubator spaces for local entrepreneurs. Local businesses contribute to the unique character and sense of place for the station area and help differentiate it from any other station area (see Anti-Displacement Strategies and Program in **Section 3.6**). Consider requiring new developments to reserve a portion of ground floor space for small storefronts for start-ups.
- In the Center Core and Outer Core zones, prohibit new auto-dependent uses like drive-throughs. Walk-up service windows for pedestrians or bicyclists could be incorporated. In the Transitional zones, prohibit these uses or limit them to freeway interchange areas and similar auto-dominated spaces. As redevelopment occurs, existing auto-dependent uses will discontinue.
- Consider the role of live-work units in the Transitional zone, especially to provide more affordable or incubator spaces for businesses and services like hairdressers, accountants, and artists.

Examples of creative support of local businesses in TOD and mixed-use districts in Minneapolis, including the Malcolm Yards Market where a historic warehouse was converted to a food hall--now a popular venue with a mix of local restaurants and vendors

Source: Model Code Partnership TOD Case Studies, January 2022, Sound Transit

Industrial Land Uses

Many heavy industrial land uses are not desirable in station areas due to the combination of larger land requirements, comparatively low jobs density, and potential for environmental or quality-of-life impacts such as noise or odor. Some light industrial uses may be appropriate when they are compatible with commercial uses.

If light industrial land uses are allowed, they should:

- Represent a comparatively small amount of the station area/TOD.
- Fit into a compact urban form and avoid taking up a significant amount of street frontage on active pedestrian ways.
- Support existing innovation clusters, like technology, or the creative class, like maker's spaces.
- Include artisanal manufacturing or similar uses when it is compatible with an urban scale and accompanied by an active commercial space, such as a brewery attached to a restaurant.
- Limit impacts to surrounding properties, such as noise, odor, light, traffic, etc.
- Strive to aesthetically blend into the rest of the station area by using facade improvements, landscaping screening, decorative fencing materials, and similar treatments.

Where existing industrial uses are present, the station area plan should consider how the jurisdiction may want to protect those uses, or if a gradual transition to denser uses through infill development is more appropriate.

Other Land Uses

Each jurisdiction may want to include, or conditionally include, other kinds of land uses within the station area. Other land uses should:

- Prioritize high-activity levels, either through high employment numbers or frequent customer turnover.
- Allow arts and culture uses, such as theaters or museums, as commercial uses or as a separate category of uses.

Undesirable Land Uses

There are many land uses that are not compatible with TOD, and these should be prohibited within the station area. Undesirable uses may include:

- Auto-oriented uses, such as drive-throughs, gas stations, service garages, dealerships, etc.
- Large surface parking lots, particularly in Center Core or Outer Core zones, and especially when not associated with a commercial or employment use.
- Campus-style uses with large land needs and comparatively small building footprint.
- Heavy industrial uses, warehousing, and shipping.
- Outdoor storage or mini storage.

These uses may already be present in the station area, especially in manufacturing and industrial centers. When uses are incompatible with the future vision for station areas, enforcing noncomforming use regulations to prevent expansion and encourage turnover may be necessary.

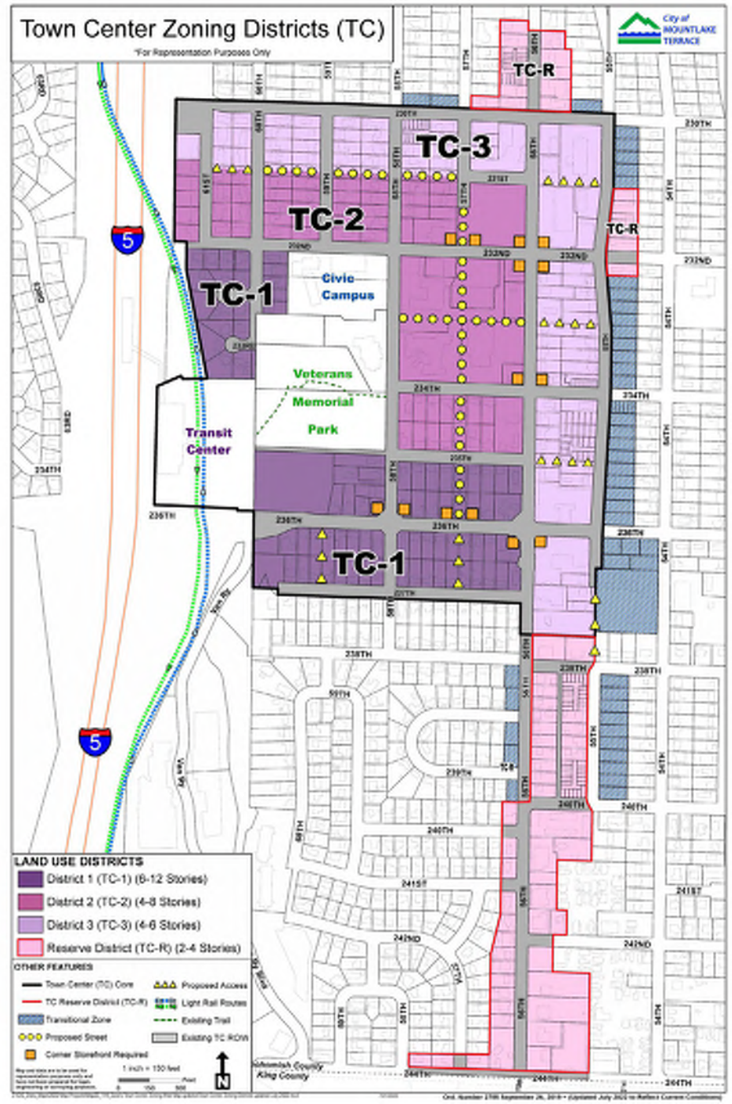
Form-Based Codes

Some communities (such as Mountlake Terrace) are transitioning to form-based zoning for all or some development regulations. Form-based codes focus on the physical character of development and its relation to the public realm. Form-based codes typically regulate building scale, intensity of development, and the interrelationship between buildings and the public realm. Some use requirements may also be included, but typically form-based codes are less granular and restrictive in regulating uses and densities.

Form-based codes can be tailored to any community. Generally, form-based codes:

- Encourage mixed uses.
- Encourage a mix of housing types and densities, including middle housing types.
- Regulate site design, building form, and the adjacent public realm, including streetscape design.
- Use illustrations.
- May regulate starting from a land use transect, a building, or the street.
- Tend to be flexible and allow a great deal of design freedom to create unique buildings and spaces, while still providing the key elements of active and engaging places.

Figure 3-12 Mountlake Terrace Town Center TOD Zoning Based on Form



Source: City of Mountlake Terrace

3.3. BUILT FORM

3.3.1 Creating a Pedestrian-Friendly Street Grid

As station areas transform over time, there will be a shift from a more automobile-oriented pattern of land use and transportation, to a pattern that is more walkable and bikeable and that facilitates access to light rail transit, as well as connecting transit services (bus rapid transit and local bus). Creating a more walkable street grid with block sizes that support good pedestrian access is important to this transformation. Refer to **Chapter 4** for more information on recommended block sizes and multimodal network provisions.

Other key elements to enhance walkability and built form in TOD districts include:

- Encouraging pedestrian activity by creating a cohesive and attractive pedestrian realm and streetscapes with trees, landscaping, lighting furnishings, public art, and other features.
- Orienting building frontages to the street in a way that frames and activates the pedestrian realm. Jurisdictions should adopt a minimum frontage requirement, a build-to line or zone, or other dimensional standard. See more information in **Chapter 2**.
- Allowing some architectural variation and articulation along the building frontage to support various types of uses. For example, on a street with residential uses, porches and stoops may be provided; on a street with ground floor retail shops and active uses, sidewalk cafes, display areas, and other features may add variation to the frontage. See more information in **Chapter 4**.
- Requiring building entrances to be pedestrian-oriented and articulated to provide visual interest and help pedestrians navigate.
- Requiring a continuous pedestrian realm with unobstructed sidewalk corridors (pedestrian clear zone—see **Chapter 4** for more information) as well as pedestrian permeability mid-block and through blocks to maximize access (see **Chapter 2** for more information).
- Providing a comfortable pedestrian experience through requiring architectural overhangs, awnings, and other rain and sun protection/shelter along pedestrian corridors.
- Minimizing surface parking in TOD districts and maximizing built form and locating parking behind or to the side of buildings rather than along street frontages.
- Providing on-street parking for additional parking capacity for businesses and residences, which brings the added benefit of traffic calming and serving as a buffer between the moving traffic in the street and the pedestrian realm.
- Providing street design and circulation that allows for short term loading, deliveries, and other curbside access needs (e.g., carry-out services, rideshare, etc.).

3.3.2 Site Access and Circulation

Site access should take a multimodal approach. With a strong emphasis on walkability in the TOC, there are more frequent opportunities for conflict or collision between vehicles and pedestrians or bicyclists. Best practices for managing site access are:

- Limit the number of driveways or curb cuts that can access a site. The fewer points where a vehicle crosses a pedestrian pathway, the safer pedestrians and cyclists will be. Clear signage should be incorporated to identify the driveway/access point, for both vehicle drivers and for pedestrians and bicyclists. This is particularly important on primary pedestrian streets and in dense urban areas.
- Require direct connectivity to a public sidewalk and/or building entrance from on-site parking areas. The pedestrian path should be at least six-feet wide, unobstructed, and well-marked.
- Plan for internal connectivity and connections between parcels or projects. For example, sharing a driveway access will minimize curb cuts.
- Prioritize pedestrians and bicyclists by making these connections frequent, convenient, highly visible, and safe. Place bike racks near building entries.
- Require bicycle parking for all projects, including both short-term and long-term parking. Parking facilities should be securely affixed to the ground or a building and should allow a bicycle to be safely locked at two or more points on the frame and one wheel.
- Require barrier-free accessibility (universal design) that complies with ADA requirements.
- Require project proponents to consider emergency response services, like garbage or Uber, and deliveries, like Amazon, in designing for safety of multiple modes while accomodating access for a variety of service providers.

3.3.3 Site Planning and Land Use Transitions

Consider the following site planning and transitional measures:

- In the Center Core and Outer Core zones, eliminate setbacks and fencing or screening requirements to allow buildings to touch and provide a continuous street frontage.
- In the Transitional zone, consider smaller setbacks and reduced screening requirements (compared to the neighborhood just outside the TOC) and support ancillary uses such as outdoor dining.
- Require new buildings to front along the street. Adopt a minimum frontage requirement, a build-to zone, or another dimensional standard. Allow some variation in the frontage to support porches, stoops, storefronts, and architectural variation.

BUILD-TO ZONE

A build-to zone is an area at the front of a lot where the building facade must be located. This tool brings buildings to the sidewalk while allowing freedom for architectural variation, civic and open spaces, and other character-defining elements of the frontage.

- Transition from higher buildings to lower buildings in a progression from the station to the fringes of the station area/TOC. Building heights should respond to the current context as well as planned densities and intensities.
- When more intense uses will abut existing low-density residential uses, consider landscaping buffers to soften the transition.
- When more intense uses will abut existing low-density residential uses, consider orienting service or delivery entries, storage, and mechanical equipment away from those uses.

3.4. PARKING AND TRANSPORTATION DEMAND MANAGEMENT

PARKING POLICIES

Primary policy

» *Avoid siting parking facilities along streets with high pedestrian activity or immediately adjacent to stations.*

Supporting policies

» *Parking facilities should be used to buffer high-activity areas from freeways and industrial uses.*

*Regulations to implement these policies can be found in the **TOD Implementing Regulations, Section 5***

While TOC supports car-free or car-light living, automobiles are a fact of life for the foreseeable future and parking is still needed in the TOC. Parking is an important resource that is expensive to build and occupies land that will be increasingly valuable as station areas transition into denser, more urban areas. To facilitate this transition, minimum parking requirements should be reexamined to right-size the amount of parking being provided. Transportation Demand Management (TDM) is the collective name for a wide variety of strategies aimed at encouraging people to drive alone less and use other forms of travel more, such as transit, walking, and biking. Jurisdictions should require more extensive TDM plans for new development to reduce the need for parking.

3.4.1 Parking Minimums and Maximums

Minimum parking requirements can be a major barrier to development. Parking spaces require a lot of land, which reduces the developable area and drives up cost. Parking lots reduce the overall density of the neighborhood, which means that destinations are farther away from each other, making walking more difficult. Surface parking lots are also detrimental to creating an inviting streetscape for pedestrians, as discussed in Chapter 2. While building parking underground or in structures can mitigate some of the negatives of surface parking, it is also much more expensive, which increases the overall cost of development and can make many smaller projects financially infeasible. Existing parking minimum standards in the MCP partner jurisdictions and example parking minimums in Lynnwoord, Snohomish County, Redmond, and Shoreline are shown in **Table 3-2**.

Some jurisdictions have changed from requiring a minimum amount of parking to instead restricting the maximum amount of parking that can be built. These policies are intended to encourage developers to design projects that are less reliant on car traffic by requiring them to include less parking. Currently, Lynnwood has parking maximums of 1.5 spaces per unit for residential projects in the planned City Center zone. Snohomish County allows a maximum of 1.5 – 2.5 spaces per unit for residential projects and four to eight spaces per 1,000 net square feet for commercial projects in its Urban Center zone. These minimums are a higher ratio than what developers have been providing in the region and so are unlikely to impact the amount of parking provided. Further limiting parking maximums near light rail stations may be warranted as the areas redevelop to discourage the expansion of developments with excess parking.

USE	LYNNWOOD – PRC ZONE	SNOHOMISH COUNTY – UC ZONE	REDMOND – OVERLAKE DISTRICT	SHORELINE
Restaurants	1 space per 100 gross floor area	1 space per 500 net square feet	None	1 space per 75 square feet in dining or lounge area
Retail	1 space per 200-400 gross floor area	1 space per 500 net square feet	None	1 space per 400 net square feet
Office	1 space per 260-360 feet gross floor area	1 space per 500 net square feet	-	1 space per 500 net square feet
Multi-Family (four units or more)	1 space per unit	1 to 1.5 spaces per unit	None	0.75 to1.5 spaces per unit

Table 3-2 Parking Requirements

Source: Lynnwood Municipal Code 21.48.210; Snohomish County Code 30.26.032; Redmond Municipal Code 20D.130.10-020; Shoreline Municipal Code 20.50.390.

Best practices for the provision of parking include:

- Reduce or eliminate minimum parking requirements, allowing a combination of market demand and financing requirements to determine how much parking is appropriate for a project. This will also allow developers to build denser projects in station areas and encourage smaller infill projects that may not need parking and would not be able to offset the cost of parking requirements.
- Adopt or update maximum parking standards so projects are not over-parked through conservative estimates of demand.
- Prohibit surface parking as a primary use.
- Discourage or prohibit surface parking as an accessory use, preferring a combination of structured parking and on-street parking. Where surface parking is the only feasible option, it should be accessed from a secondary street or alley and hidden behind structures or otherwise screened to reduce impacts to the pedestrian realm.
- Allow and encourage structured parking as an alternative to surface parking. Structured parking should be allowed at-grade and below-grade. At-grade parking structures should be designed for future conversion to an alternative use by including appropriate clear heights between floors and requiring flat floors with inclined ramps, rather than continual incline parking structures.
- Provide on-street parking that is convenient for retail uses and other active ground-floor uses. On-street parking should contribute to the streetscape.
- Incorporate landscaping within parking areas to help soften the visual impact of parking lots and provide environmental benefits (see Chapter 2). The number of ADA stalls shall not be reduced.

3.4.2 Shared and District Parking Strategies

Since parking demand varies by time of day and/or day of the week for different uses, sharing parking between multiple uses can reduce the amount of parking required overall. For example, parking used for an office building during the weekday can be used by shoppers or diners in the evening or on weekends. All three EVLE Project jurisdictions currently have limited forms of shared parking where buildings with peak demands at different times of the day or week can share some of their required parking. Light rail parking facilities also introduce new opportunities for shared parking. Since the morning commute is typically the heaviest period of demand, park-and-ride garages or spaces can be opened for other users after the morning rush. Sound Transit and King County Metro currently use this approach at Northgate Station; parking spaces in a nearby development are reserved for transit riders between 6 and 10 a.m.

Another approach is to implement shared parking for an entire neighborhood or district through a parking fee-in-lieu program often called district parking. This approach allows developers to pay a fee instead of building parking spaces, and the collected fees are then used to provide parking for the whole neighborhood in one or more centralized locations. This has the efficiency advantages of shared parking and allows for denser development that is not broken up by surface parking lots or garages since parking is concentrated in only a few locations. Jurisdictions can create shared parking districts to oversee fee-in-lieu programs to manage the overall supply of parking in the district and adjust pricing to manage parking demand by location and time of day.

CASE STUDY

MONTGOMERY COUNTY, MARYLAND

Montgomery County, MD, has operated three parking districts since 1951, centered on the Bethesda, Silver Spring, and Wheaton Metro stations. The County is authorized to purchase and develop parking facilities funded by a property tax within the district and fees from off-street parking facilities and metered street parking. In exchange, developments within the districts have lower minimum parking requirements and their tenants can use the district parking facilities. Funds from the district can also be redirected to other purposes such as Transportation Demand Management programs and multimodal infrastructure.

Figure 3-13 Unshared Versus Shared Parking Lots

Source: greencaltrain.com

3.4.3 Transitioning to a Multimodal Station Area

The development of a dense transit-oriented station area that supports a variety of transportation modes will not happen overnight. Even if parking requirements are eliminated, developers will continue to build parking if they believe it is necessary to attract tenants and secure financing. Yet it is critical to reduce the amount of required parking so parking is not overbuilt in station areas and developers can adjust the amount of parking supplied as the station area matures and more services are available within walking distance or along transit routes. Lowering parking requirements also provides greater flexibility for developers, allowing buildings and lots to change uses without expanding the amount of parking provided or allow parking lots to redevelop as land becomes more expensive and parking supply becomes less critical for building tenants.

Shared parking districts established early can also help right-size the parking supply. Parking districts can plan for an appropriate amount of parking and centralizing parking locations allows for a more cohesive urban grid, making walking trips easier and more appealing.

BEST PRACTICE: RIGHT-SIZE PARKING

Many factors influence the parking needs of a development. To help developers and community members better understand the parking needs of specific parcels, King County has developed a multi-family residential parking calculator. The calculator estimates parking demand for every parcel in the county based on its location characteristics and a variety of project specifications that a user can add. The site is available to the public here: https://rightsizeparking.org/

BICYCLE AND MICROMOBILITY PARKING

Everett has recently adopted comprehensive standards for bicycle and micromobility parking as part of its comprehensive plan update. The regulations include standards for long and short term bicycle parking, as well as specifications for larger bike parking spaces and other important considerations. EMC 19.34.160. Simplified bike parking regulations are also included in the TOD Implementing Regulations Section 4.

3.4.4 Transportation Demand Management

Washington state requires cities and counties to implement commute-trip-reduction ordinances for worksites with 100 or more full-time employees. In addition to the state requirements, Everett and Snohomish County require some commercial and residential projects to develop TDM plans. TDM requirements should be paired with a standard minimum parking exemption for projects in TOCs and expanded to include residential and commercial projects in addition to places of employment. Exceptions for smaller-scale development projects should be considered since they typically do not require extensive TDM measures and the cost to fulfill them could be prohibitive.

An effective model for TDM ordinances in TOCs is to allow developers to choose from a menu of TDM measures to combine into a TDM plan to fulfill the requirement. TDM measures may be assigned a point value based on their effectiveness at reducing vehicle trips. To be approved, a TDM plan must meet a minimum point value combining different TDM measures. TDM measures can include pedestrian and bicycle infrastructure improvements, real-time transit information signs, car share or shuttle service, and transit fare subsidies. According to research conducted by the Federal Highway Administration (FHWA), TDM strategies can reduce vehicle trips by up to 30% in areas served by rail transit with financial incentives such as fare subsidies being the most effective measures. **Table 3-3** includes example TDM measures and point values for different types of uses in San Jose, CA.

Coordinating TDM strategies for an entire geographic area is a good way to reduce the costs and improve their effectiveness. Transportation Management Associations (TMAs) are organizations that coordinate TDM efforts for a whole area, such as a neighborhood or campus. TMAs can manage maintenance of programmatic TDM strategies, like transit fare subsidies or shuttle services, jointly fund infrastructure improvements, and oversee data collection and reporting for compliance monitoring for all developers. Jurisdictions should encourage the creation of TMAs in TOCs by joining or forming a TMA as a strategy that developments can include in TDM plans. Jurisdictions should also look for local partners to setup TMAs along the corridor. Everett Station District Alliance (ESDA) has proposed setting up and operating a TMA. This TMA could be contiguous with the borders of ESDA near Everett Station or could encompass more of the corridor.

CASE STUDY

EXAMPLE TDM PROGRAM: SAN JOSE, CALIFORNIA

In 2023, San Jose, CA, replaced its parking ordinance with new regulations focused on TDM. The new parking ordinance removed minimum parking standards from the city and instead required that each development include a TDM plan to remove obstacles in the way of TOD and to encourage the use of alternate modes of transportation.

San Jose requires a compliant TDM plan as a condition for issuing building permits. Some projects, such as small infill projects, local-serving retail, and affordable housing, are exempt from the TDM requirement. Projects that require a TDM plan must include a covenant that runs with the land to guarantee the maintenance of the TDM measures through the lifetime of the project. All projects that require a TDM plan must provide an annual TDM compliance form including proof of implementation and any changes in programs that year. Larger projects must also collect ongoing mode share data to evaluate the performance of the implemented TDM measures.

Developers can choose from a variety of elements to include in their TDM plan so they can be customized from project to project. Each element is assigned a point value with more impactful elements counting for more points, and a compliant plan must include measures that combine to meet a minimum point total. These elements include building multimodal network improvements, providing education or marketing for alternative transportation, and subsidizing transit fares, among others. Most measures provide a point range, depending on the level of investment specific to the project. Some measures are also only applicable to certain uses. For instance, a commercial or office building cannot provide affordable housing as part of its TDM plan.

In San Jose, projects that are within the boundaries of an existing TMA are required to join it. The Berryessa Bay Area Rapid Transit (BART) Urban Village Plan includes the creation of a TMA to monitor TDM progress for the whole urban village, which is expected by San Jose's *Comprehensive Plan* to include over 6,500 housing units and over 22,000 jobs by 2040. The TMA would also help any new projects in the urban village develop project-specific TDM plans and identify shared parking opportunities.

Category	Measure	TDM Point Values			
		Home-End Uses	Commute-End Uses	Visit-End Uses	Other Uses
Project Characteristics	Provide Affordable Housing	1-4	-	-	-
Multimodal Network Improvements	Provide Bike and Micro-mobility Network Improvements	1-4	1-4	1-4	1-4
	Provide Transit Network Improvements	1-4	1-4	1-4	1-4
	Provide Residential Street Improvements	1-4	1-4	1-4	1-4
	Provide Pedestrian Network Improvements	1-4	1-4	1-4	1-4
Parking	Right-size Parking Supply	1-20	1-20	1-20	-
	Provide Bike Parking Facilities	1-2	1-2	1-2	-
	Provide Shared Parking	1-2	1-2	1-2	-

Table 3-3 TDM in San Jose, CA

3.5. ANTI-DISPLACEMENT STRATEGIES AND PROGRAMS

Providing a range of affordable housing options in station areas and identifying ways to preserve existing small businesses are important to meeting legislative goals at the local, regional, and state level. In order to advance these goals, jurisdictions need to plan for a range of housing options that meet the demand at various income levels in each jurisdiction as prescribed in Washington state legislative requirements under HB 1220 (see box below). TOCs should provide a mix of uses in buildings that can accommodate existing, small, local, and new businesses. There are a variety of strategies and programs that can address and mitigate residential and commercial/business displacement in station areas.

HB 1220 (2021-2022)

In 2021, the Washington Legislature amended the GMA to expand housing planning responsibilities. Jurisdictions must now "plan for and accommodate" housing affordable to all income levels, including STEP housing (shelters, transitional housing, emergency housing, and permanent supportive housing). HB 1220 requires jurisdictions to:

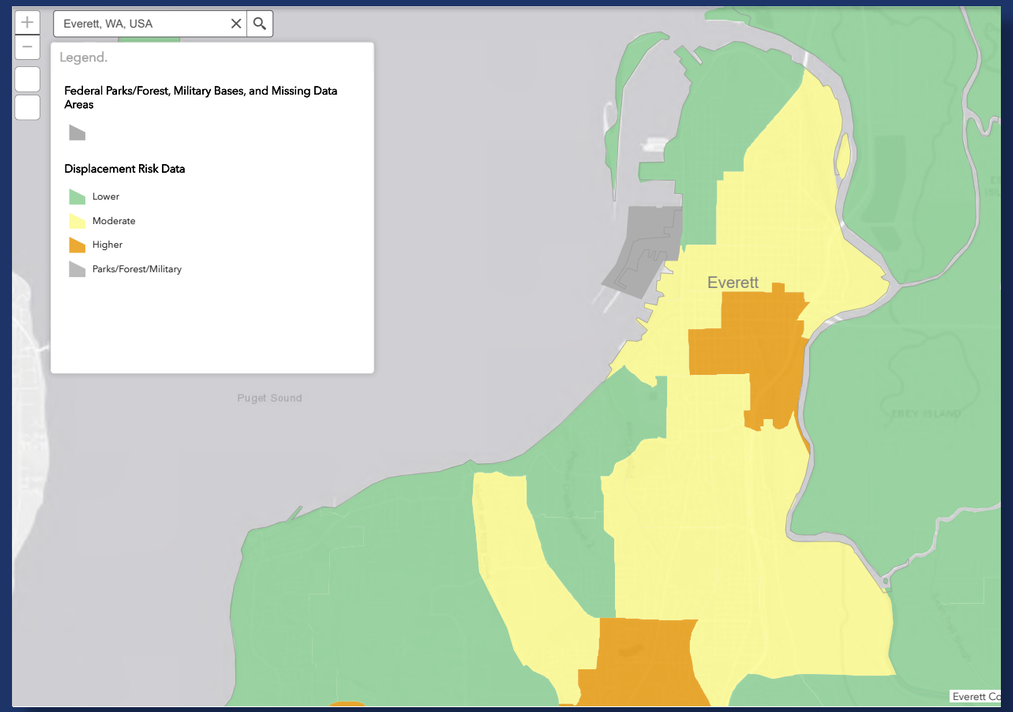
- **Analyze housing inventory and capacity at 0-30% Area Median Income (AMI), 30-50% AMI, 50-80% AMI, 80-100% AMI, 100-120% AMI, and 120+% AMI, plus emergency beds.**
- **Look for and plan to reduce or eliminate barriers to housing availability.**
- **Evaluate policies and regulations that result in racially disparate impacts, displacement, and exclusion, and plan for ways to undo them.**
- **Identify areas at risk for displacement and adopt anti-displacement policies.**

Equity Assessment Tools and Displacement Risk Mapping

Many jurisdictions are developing equity assessment tools capable of demonstrating where displacement risk is more probable within communities. These tools display the neighborhood's proxmity to resources and assets, such as affordable housing, employment, multimodal transportation, and services, to indicate opportunities to strengthen access through planning and design.

DISPLACEMENT RISK MAP

The PSRC Displacement Risk Map is used to identify what neighborhoods in the region are at higher risk of displacement. Displacement risk is a composite of indicators representing five elements of neighborhood displacement risks: sociodemographics, transportation qualities, neighborhood characteristics, housing, and civic engagement. The data from these five displacement indicators were compiled into a comprehensive index of displacement risk for all census tracts in the region. To access the tool, click here.



Source: PSRC

CASE STUDY

SHORELINE, WA, 20-YEAR MFTE

In 2021, the legislature authorized the adoption of a 20-year extension of MFTE incentives as a pilot program in Shoreline. This was an eight-year increase from the original 12-year option. Eligibility requirements for the 20-year exemption include the requirement for housing to be within one mile of high-capacity transit and at least 20% of units must be affordable to households making less than 80% AMI. The 20-year option has no extensions available, and after expiration of the tax exemption, affordability requirements remain at 20% of units for 99 years. Find more specific requirements about Shoreline's 20 year MFTE option here: https://www.shorelinewa.gov/business/property-tax-exemption-pte-program

The South Shoreline/148th Station are is a project where multi-family tax exemption is being implemented as part of TOD.

Source: City of Shoreline; Architectural Rendering of TOD Project by Tiscareno Architects

3.5.1 Incentivizing and Implementing Affordable Housing

RESIDENTIAL ANTI-DISPLACEMENT POLICIES

Primary policy

- *Focus local affordable housing resources within station areas.*
- *Adopt anti-displacement strategies to counter market forces that may reduce affordability in station areas.*

Supporting policies

- *Designate all TOD zones as eligible for the MFTE and expand the exemption for affordable housing from 12 to 20 years if allowed by the State.*
- *Adopt Inclusionary Zoning to support affordable housing targets in station areas. Develop procedures and define roles for administration, including expanding the program to ownership and adopting fee-in-lieu provisions.*
- *Expedite permit processing for projects with a substantial affordable housing component.*
- *Implement anti-displacement strategies such as identifying surplus public land and supporting community land trusts and other affordable housing providers.*

*Regulations to implement these policies can be found in the **TOD Implementing Regulations, Section 3***

Multi-Family Tax Exemption

In Washington state, the MFTE program provides a property tax exemption in exchange for the development of multifamily and affordable housing in designated "residential targeted areas." It authorizes eight-year exemptions to encourage the development of multifamily housing and 12- to 20-year exemptions to encourage the development of affordable housing. All cities, many towns, and Clark, King, Kitsap, Pierce, and Snohomish counties are eligible to offer an MFTE program. Over 50 Washington jurisdictions currently participate.

Local Housing Fund

Local housing funds can offer new resources to leverage available funding and directly support investments in affordable housing. The flexibility of fund types makes them ideal for affordable housing development. Although funds have unique components, local housing funding sources are specific vehicles by which government entities can consistently address the shortage of funding for affordable housing.

Jurisdictions can use the funds in a variety of ways:

- Direct loans or grants to owners or developers of affordable housing.
- Direct low-income renter or first-time homebuyer subsidies.

A local housing fund can be established through a legislative process that generates fund revenue, such as a special purpose housing levy enacted through voter approval. Commercial linkage fees can also serve as a designated revenue stream for a local housing fund, and jurisdictions are able to pool resources through a shared local housing fund with interjurisdictional cooperation.

For more direction on the use of local funds and implementation of HB 1406 allotted programs, reference the Association of Washington Cities website. Or to learn more about local housing funds from the PSRC Housing Innovations Program click here.

CASE STUDY

WAIVING UTILITY CONNECTION FEES TO SUPPORT AFFORDABLE HOUSING

The Washington State Department of Commerce's Connecting Housing to Infrastructure Program (CHIP) had $12.7 million in funding to assist affordable housing projects with utility connection costs in 2024. CHIP received 62 applications requesting over $40 million for utility service connections in 2024. The costs of these requirements are often tens of thousands of dollars per housing unit. Reducing infrastructure costs can help increase affordable housing (Bauer 2024).

For more strategies on increasing housing supply, see the Housing Supply Accelerator Playbook, developed by the National League of Cities (NLC) in collaboration with the APA.

Source: Adobe Stock

The CHIP program was created in 2021 to fund utility connections to affordable housing. It was funded again in the 2023 legislative session with $55.5 million budgeted for grants and deferred loans for the 2023-2025 biennium. Commerce announced in January 2025 that roughly $14.6 million in CHIP funding to support 24 projects in 10 counties across Washington. Future funding is contingent on appropriation in the 2025-27 State Capital Budget, under consideration by the Legislature.

Funding and Cost Offsets

Strategies to fund or otherwise offset the cost of providing affordable housing include:

- Connect developers with federal, state, or local funding resources, including grants and affordable loans.
- Identify possible fee-related barriers and waive or reduce fees to reduce the cost of developing housing and boost production of housing.
- When collecting impact fees, consider allowing for deferred collection later in the process and the financing of fees over time to lower the barrier of entry for builders.
- Expand fee waivers beyond planning fees to also include utility service connection fees for low-income or affordable housing. Under RCW 35.92.380, RCW 35.92.385, RCW 35.21.305, and RCW 36.94.370, cities and counties are authorized to waive utility connection charges for affordable housing.

Permit Expediting

Expediting the permitting process for projects with a substantial affordable housing component can be a meaningful incentive. Even if the permitting queue is not currently long, this could become more beneficial over time. Other efforts to streamline the permitting process may encourage the development of new units. This may include:

- Expanding the list of "by right" uses allowed in the TOD zones such that fewer entitlements or discretionary approvals are needed.
- Simplifying required entitlements, including application requirements and process requirements.
  - Simplify requirements for discretionary relief for affordable housing projects and make as many of these as ministerial or administrative (no hearing required) as possible.
  - As a matter of internal policy, set up project review meetings with staff, either at the pre-application stage or following the first round of review comments, to quickly resolve outstanding issues and avoid additional rounds of review.
- Revising design standards to be flexible and easy to implement to increase the overall supply of affordable housing.

CASE STUDY

PIERCE COUNTY AFFORDABLE HOUSING EXPEDITED PERMIT PROCESS

In 2010 Pierce County adopted a package of incentives to promote affordable housing development, including an expedited permitting process. The purpose of this incentive is to encourage the development of affordable housing for households earning 80 percent or less than the Pierce County median household income. Incentives like an expedited permit process aim to reduce the up-front financial carrying costs to developers and builders associated with review periods in exchange for providing affordable housing units. Each multi-family and subdivision project pursuing an expedited permit process is considered a priority for all Pierce County departments with review responsibilities, and a project manager within the Department of Planning and Public Works is assigned and responsible to coordinate the review process among all departments. Expedited permitting is available for building permit applications, subdivision applications, and road/sewer design review.

Expedited Permitting was used in all four of these completed projects. Pierce County staff estimate that the project review timeline was reduced by 15-20%.

For more information on Pierce County's Expedited Permit Process click here.

The Woods at Golden Given
100% Affordable, 80% AMI
30 units, ownership

Copper Valley Apartments
100% Affordable, 80% AMI
220 units, rental

South Hill Vintage Apartments
100% Affordable, 80% AMI
216 units, rental

Gateway Apartments
100%, 80% AMI
216 units, rental

3.5.2 Affordable Housing and Inclusionary Zoning

Engagement Resources

What is Inclusionary Zoning?

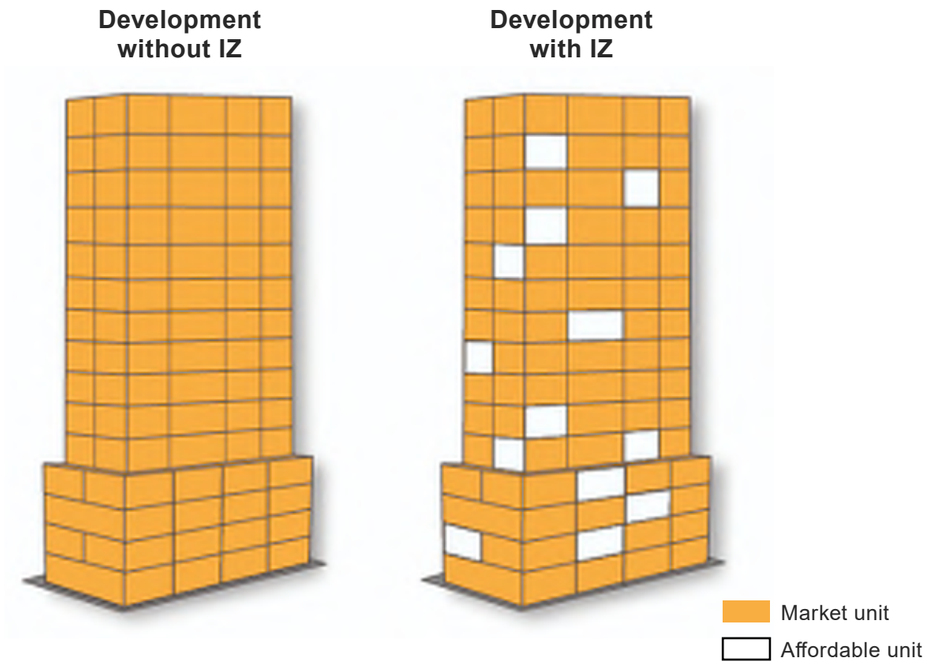
Rick Jacobus: Inclusionary Housing Explained

Inclusionary zoning requires builders to accommodate different income levels by including more affordable units in market-rate developments.

Housing should be affordable to a range of incomes, household sizes, and household types. Inclusionary zoning is one tool jurisdictions have available to provide a range of housing options within the station areas. The unparalleled access to job centers and services makes station area TODs an excellent location for affordable housing.

Inclusionary zoning can be a voluntary or a mandatory tool. When inclusionary zoning is voluntary, jurisdictions offer incentives or bonuses in exchange for affordable housing. In a mandatory program, projects are required to include a certain number of affordable units or pay an in-lieu fee. In an active market, inclusionary zoning results in more affordable units being built; in a slow market, inclusionary zoning requirements may disincentivize housing projects.

Figure 3-14 Market Unit vs. Affordable Unit



Market Unit Versus Affordable Unit in Development with Inclusionary Zoning.

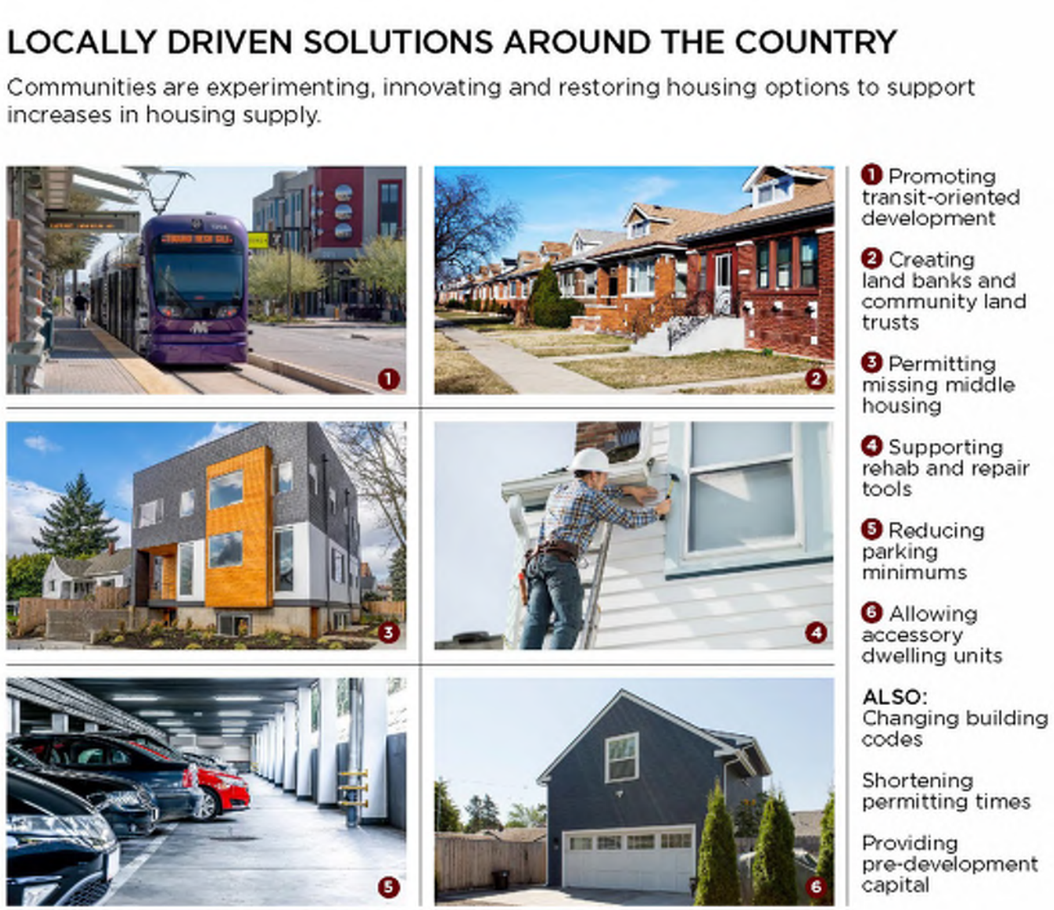
Source: Substack.com Better Cities article Sam Deutsch

3.5.3 Community-Focused Resources

Locally Driven Solutions

The American Planning Association (APA) and the National League of Cities (NLC) partnered to create the Housing Supply Accelerator to inspire and provide tools to support locally led efforts to increase housing supply. Their work recommends locally driven solutions that can be implemented by jurisdictions in response to conditions present in their communities. Some of the most impactful options they found include supporting TOD, relying on land banks and community land trusts, and reducing parking minimums, among others. See **Figure 3-15** for examples of locally driven solutions.

Figure 3-15 Suggested Locally-Driven Solutions to Address Housing Shortages



Source: American Planning Association's Housing Accelerator Playbook

Land Banking Programs

Jurisdictions focused on anti-displacement efforts with community-driven outcomes can also use land banking programs to meet their goals. Land banking allows jurisdictions to acquire vacant and foreclosed properties in a community to be redeveloped into affordable housing. Programs, like the one in Spokane, WA, serve as a precedent in the state for effective affordable housing strategies utilizing the land banking model. For more information on Spokane's Land Bank model: http://www.slihc.org/land-bank.html.

Land Acquisition Program

The Washington State Housing Finance Commission (WSHFC) administers the Land Acquisition Program (LAP). The LAP, like land banking, is intended to preserve land for later development of affordable housing. LAP is a revolving loan fund that offers affordable loans to local governments, housing authorities, and nonprofit organizations. The loans have a 1% interest rate with an estimated 1% loan fee and maximum term of eight years. Although the loan can be in any amount, it is not intended to cover 100% of site acquisition costs but is instead designed to be leveraged with other financing sources. For more information about LAP: https://www.wshfc.org/mhcf/lap/ProgramDesc_Application.pdf.

Community Benefits Agreement

A community benefits agreement (CBA) is a legally binding contract between coalitions of community-based organizations and municipalities or developers, or both, that outlines the benefits a project will provide to the community. CBAs are a powerful tool for communities to promote equitable development practices that advance housing justice and negotiate large developments seeking public investment to align with the needs of the community. These types of agreements must be developed through an extensive stakeholder engagement process to articulate the collective vision of the community. The agreement represents a commitment by public, private, and community partners to work together so that major investments and developments serve the greater good of the community as well as promote trust and good faith with stakeholders.

3.5.4 Small Business-Oriented Strategies and Programs

COMMERCIAL ANTI-DISPLACEMENT POLICIES

Primary policy

» *Encourage preservation or construction of affordable commercial or non-profit space.*

Supporting policies

» *Support development of smaller retail or incubator spaces that are more affordable for growing businesses.*

» *Support incorporation of a community land trust or other model to provide affordable commercial spaces for neighborhood-serving businesses in perpetuity.*

» *Create commercial stabilization programs to serve locally significant small business and cultural uses.*

Commercial Land Trust

The Commercial Land Trust (CLT) model helps safeguard affordability and counteract displacement pressures in high-capacity transit investment corridors by providing affordability for small businesses that serve the existing community. CLTs stabilize local economies by providing affordable commercial spaces that support small businesses, create jobs, and foster entrepreneurship. In some cases, CLTs will work with municipal partners to help fund land acquisition for commercial projects through grant programs.

The commercial land trust model is being explored in Minneapolis through the non-profit organization Partnership in Property Commercial Land Trust (PIPCLT). The PIPCLT is aware of the potential benefits and challenges of the Metro Transit Blue Line Extension project to begin construction in 2027, and has added a property less than a mile away from a future Blue Line light rail station to its portfolio.

Commercial Property Ownership Programs

The Business Community Ownership (BCO) Fund is a collaborative effort from the Seattle Office of Economic Development, Grow America, and JPMorgan Chase. It is a first-of-its-kind initiative intended to provide small business owners with a pathway to ownership of their commercial space in an environment where escalating commercial rents pose many challenges. The program is designed to assist neighborhoods experiencing high rates of displacement in Seattle by helping small business owners secure commercial spaces at rates well below market value. The BCO Fund invests in projects through a limited-liability company (LLC) structure. Business owners become members of the LLC, and the LLC purchases the ground floor of a mixed-use building and then leases that space back to business owners at a below market rate so they may remain in the neighborhood.

BCO FUND

Video: OED x Grow America | BCO Fund | Explainer Video

Website: Business Community Ownership Fund - Economic Development

Business Incubators

Business incubators are programs that help small businesses launch and grow by providing access to educational resources, mentorship, networking opportunities, investors, and even working capital by helping provide a low-cost workspace. In the state of Washington, the small business incubator program was created in the State Department of Commerce to provide start-up and operating assistance to small business incubators through grant awards. The program is part of the state's broader economic development efforts.

CASE STUDY

NW INNOVATION LAB

NW Innovation Lab, formerly known as TheLab@everett, is a business incubator that offers entrepreneurs and businesses a place to brainstorm ideas, refine an invention, or consult with industry experts free of charge. In 2021, The Lab was forced to move to a new location due to Everett Community College's expansion. The City of Everett helped The Lab find a new site by arranging a tour of available locations the City owns and is affiliated with, until settling on the Angel of the Winds Conference Center. NW Innovation Lab is now located on the first and second floor of the conference center and it houses workrooms, gathering spaces and a media room to help entrepreneurs and small businesses stage podcasts or record training videos. For more information on this business incubator click here.

Incentive Programs

Jurisdictions may also implement city-wide incentive programs, such as the one identified in the City of Redmond's *2050 Comprehensive Plan*. The program may include incentives, such as support for minority-owned businesses, and may outline displacement assistance through business relocation financial assistance and first right of refusal for new spaces offered to existing on-site businesses.

REDMOND ZONING CODE

Development Incentive Program

The city-wide incentive program administered as part of the City of Redmond's 2050 Comprehensive Plan has a focus on small business owners and affordable commercial space to address issues of displacement. Some of the incentives in the program include support for BIPOC-owned businesses and arts and culture businesses. The program also outlines displacement assistance through business relocation financial assistance and first right of refusal for new spaces offered to existing on-site businesses. Redmond has also developed incentives for co-location agreements for affordable commercial spaces for businesses.

3.5.5 Cultural Preservation

Preservation of Heritage

Some cities have such a rich cultural heritage prevalent in their communities that it has a profound influence on their identity and vitality. Strategies to strengthen visibility and appreciation of heritage have been developed through initiatives that highlight historical sites, support local artists, traditions, and engage the community in cultural activities.

Click on the links below to find more guidance and recommendations for creating cultural space.

CULTURAL SPACE CREATION TOOLKITS

Strategies and recommendations for local leaders to create space for culture can be found in the guides featured below:

- Making Space for Culture, Handbook for City Leaders **– World Cities Culture Forum**
- Creating, Activating, and Preserving Cultural Space Report (CAP) **– City of Seattle**

Cultural Districts

Jurisdictions can designate cultural districts (CDs) that preserve heritage and historical areas with cultural significance. CDs also highlight existing amenities that cater to diverse communities and are typically the most sensitive to redevelopment.

The purpose of a CD is to develop a deeper understanding and awareness of the shared history of the community. These special designated districts can safeguard historical, social, and economic value of neighborhoods and strengthen the appreciation of significant places. CDs are typically distinguished by unique social and historical associations and living traditions, and are primarily identified by the activities that occur within them including commerce, services, arts events, and social practices.

CDs can include what is considered tangible cultural heritage, which are items that can be seen and felt, like buildings, sites, monuments, and works of art. Or they can include intangible cultural heritage, which include non-physical characteristics such as customs and practices, language, traditions, and cuisine.

CASE STUDY

¡SOMOS UNO! – A CULTURAL HERITAGE STRATEGY FOR TUCSON

In Tucson, Arizona, the City has developed a strategic plan that outlines actionable steps and policies to achieve its cultural preservation goals, including developing an operational framework within City governance to manage cultural assets effectively, support cultural facilities, and promote resource-sharing among cultural organizations. Priority areas featured in Tucson's vision for an inclusive and inter-connected cultural heritage ecosystem include creative placemaking, belonging, cultural equity, governance and policy, and cross-sector collaboration.

Cultural Asset Inventory Map

Source: City of Tucson "Somos Uno" Report.

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4 MULTIMODAL STREETS

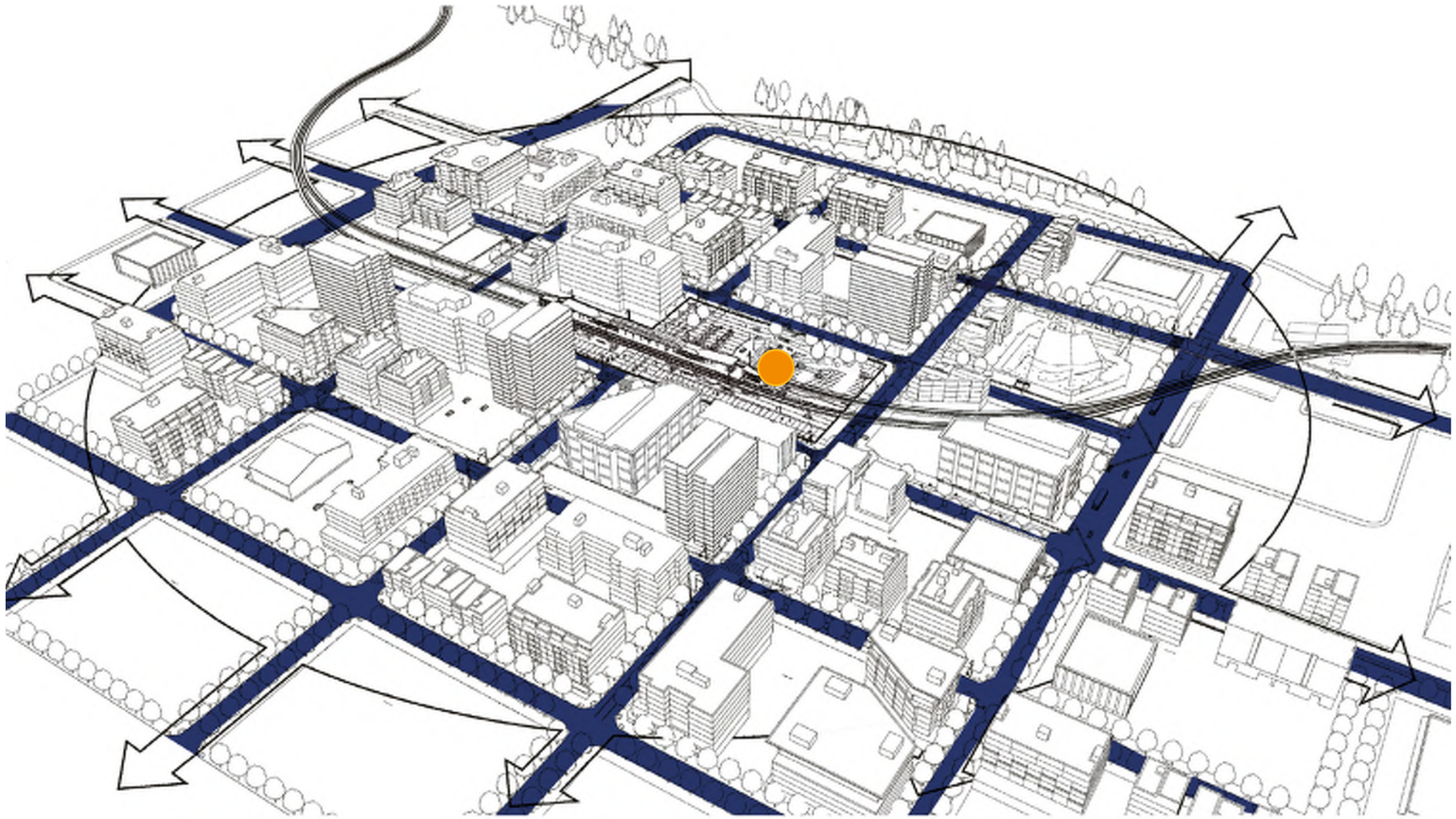
Addressed in This Chapter

This chapter of the TOD Toolkit provides guidance for the design of streets that support different modes of travel including walking, biking, transit, and driving.

Station Experience Design Guidelines (SEDG) Topics

- Walkable block sizes, ***page 71***
- Sidewalk design, ***page 75***
- Transit lanes and stops, ***page 81***
- Maximum turn radii, ***page 86***
- Crosswalk width, ***page 91***

Figure 4-1 Context Diagram



4.1. INTRODUCTION

Streets and corridors (whether public or private) make up the connecting fabric for TOD districts. Walkable, transit-oriented places are often the most attractive and memorable places in our communities. The streets in these districts are full of life and activity. They are the places people love to stroll, meet others, and go about their daily business. Important as a public resource, the street networks in urban areas, transit-oriented districts, and village centers often amounts to 40% or more of the total land area.

Jurisdictions are planning for light rail transit station areas throughout the Puget Sound region to transform from lower-density environments often in automobile-oriented settings, to denser, walkable, emergent urban environments, with more people living and working in proximity to high-capacity transit. As noted in Sound Transit's Station Experience Design Guidelines (**SEDG**), the station environment typology (land use types and access types) demonstrate that transit utilization is closely connected to the access types (auto, multimodal, walk-bike and roll) and density of land use types (single use, emergent urban, and established urban) in proximity to stations (Sound Transit 2024).

The design guidance in the **SEDG** focuses on the station environment, which includes the station area, station access, and the station context — areas immediately adjacent to the station — while this Toolkit focuses on a broader area surrounding the station that includes walking and bicycling distances to/from the station, see **Figure 4-1**.

Jurisdictions are planning and designing their multimodal streets to improve pedestrian and bicycle access to transit in the EVLE corridor station areas. Many of these streets will transform over time, and new streets and corridors will be built. Example street cross sections, as well as "before" and "after" examples of how streets can transform in TOD districts, are referred to later in this chapter.

GUIDANCE ON MULTIMODAL STREET COMPONENTS

Find guidance related to the following components here:

- **Connectivity/Block Sizes (Section 4.4.3)**
- **Pedestrian Realm Zones (Section 4.4.5)**
- **Bicycle Facilities (Section 4.5)**
- **Micromobility Design Considerations (Section 4.6)**
- **Configurations of On-Street Parking (Section 4.8)**
- **Reducing Crossing Distances (Section 4.9.1 through 4.9.7)**
- **Dimensions for Pedestrian Realm, Bicycle Facilities, Transit Lanes, Travel Lanes, and Other Elements (Chart in Section 4.13)**
- **Sample Street Cross Sections (Section 4.13)**

In TOD districts, streets are designed to accommodate all modes of transportation, but with a particular focus on enhancing pedestrian walkability. Source: Otak

INFRASTRUCTURE INVESTMENTS POLICIES

Primary policy

» *Use public infrastructure investments to encourage economic activity.*

Supporting policies

» *Coordinate the timing of infrastructure improvements with utility upgrades to minimize disruption to residents and businesses.*

STREET DESIGN IN TOD DISTRICTS ENCOMPASSES:

- **All Modes**
- **Universal Design and Accessibility**
- **Safety and Security/CPTED**
- **Clear Visibility**
- **Ample Space for Pedestrians, Bicyclists, and Access to Transit/Buses**
- **Shortening Crossing Distances for Pedestrians**
- **Slower Vehicle Speeds and Traffic Calming**
- **On-Street Parking**
- **Curbside Management**

4.2. DESIGNING MULTIMODAL STREETS FOR EVERYONE

MULTIMODAL NETWORK POLICIES

Primary policy

- *Design streets for high functionality of all modes in station areas.*
- *Prioritize pedestrians, bicycles, and local bus access near transit stations.*
- *Create a continuous bike and pedestrian network throughout station areas.*

Supporting policies

- *Minimize conflicts among users of different modes of transportation in station areas to promote safety.*
- *Designate curb management zones to accommodate deliveries, passenger pick-up / drop-off, emergency access, utility maintenance, and services like garbage pickup.*
- *Define allowable uses for furnishing and amenity zones within the pedestrian realm, including seating, lighting, landscaping, bicycle parking, and dining.*
- *Designate and design some streets for flexible use for festivals, markets, and food trucks.*
- *Plan, design, and develop compact block sizes and require mid-block connections to support walkable urban scale and pedestrian access.*

*Regulations to implement these policies can be found in the **TOD Implementing Regulations, Section 4 and 6***

4.2.1 Streets Are For Everyone

Streets must be planned and designed to accommodate all modes of transportation and meet the needs of each community. This means designing streets for pedestrians, bicyclists, and transit as well as for general automobile and freight traffic. While streets typically need to be designed to accommodate all modes, in TOD districts, facilities for pedestrians and bicyclists are prioritized to ensure efficient access to transit. See **Figure 4-1** on the next page.

Street designs can vary by jurisdiction based on local standards. This chapter provides guidance for all components of multimodal streets — design of the pedestrian realm and transit access areas; bicycle facilities; general-purpose travel by automobiles, buses, and freight vehicles; intersections and crossings; and other elements. See **Section 4.13** for more information and related dimensional guidance.

4.2.2 Multimodal Streets Hierarchy

Multimodal streets take on a hierarchy as networks build out over time. Light rail station areas have a variety of different types of streets within driving, walking, and bicycling distance from stations — multi-lane highways and arterials, minor arterials, collectors, local streets, center or core streets with on-street parking, streets that have more commercial character vs. streets that are more residential, emergency accessways, alleys, driveways, and other forms of circulation.

As networks develop over time in TOD districts, it is critical to expand and improve not just the street network, but also concurrently the pedestrian and bicycle networks and access to transit. Multimodal networks serve an important role in station areas by improving access to transit and encouraging people to use transit more regularly.

Each jurisdiction has its own street classification system, and multimodal network plans and standards for each type of street should be referred to as part of design.

4.2.3 Creating Complete Streets in TOD Districts

Complete Streets aim to develop a transportation system that accommodates all forms of transportation, making the travel space more accessible, comfortable, economical, sustainable, and efficient. Communities around the country have long accommodated various levels of infrastructure for all modes of transportation, including walking, bicycling, and accessing transit to promote health, safety, and sustainability. With integrated land use and transportation planning as a foundational approach, Complete Streets are critically important for reducing greenhouse gas emissions from the transportation sector — by encouraging more people to take transit, walk, and bike, and to support EV use (MRSC 2024). Taking this approach helps our transportation system work for all of us — strengthening communities, expanding options for non-drivers, and making travel more predictable for everyone.

IN 2022, THE WASHINGTON STATE LEGISLATURE ADDED A COMPLETE STREETS REQUIREMENT INTO RCW 47.04.035: "In order to improve the safety, mobility, and accessibility of state highways, it is the intent of the Legislature that the department (WSDOT) must incorporate the principles of Complete Streets with facilities that provide street access with all users in mind, including pedestrians, bicyclists, and public transportation users" and "integrate the state route into the local network for state transportation projects starting design on or after July 1, 2022 and that are $500,000 or more."

"COMPLETE STREETS" policies and programs call for an approach to planning, designing, building, operating, and maintaining streets that enables safe access for all people who need to use them, including pedestrians, bicyclists, motorists, and transit users of all ages and abilities.

Planning and designing Complete Streets brings more of a focus on the pedestrian and bicyclist level of traffic stress, connectivity, route directness, and a safe system approach (WSDOT 2023).

Each jurisdiction has Complete Streets policies and requirements. Typical key principles for Complete Streets include:

1. **Safety:** Plan, design, and construct transportation facilities and land developments to create an environment that reduces risk and supports the safe movement of people and goods by all modes.
2. **Flexible Design (Context-Sensitive Solutions [CSS]):** Design transportation facilities using best practices that integrate community values and recognize the importance of the surrounding context and environment.
3. **Accessibility and Mobility for All:** Plan and design transportation facilities for ease of use and access to destinations by providing an appropriate path of travel for all users and enhance the ability to move people and goods.
4. **Use By and Comfort of All Users:** Ensure users of all abilities, including pedestrians, bicyclists, transit riders, and drivers, feel comfortable and safe using the transportation system.
5. **Health:** Recognize the health benefits in providing alternative mode choices.
6. **Sustainability/Green Infrastructure/Green Streets:** Use trees and landscaping as integral components of a Complete Street to provide both human and ecosystem benefits, such as shade, to reduce the urban heat island effect, provide vegetation for carbon sequestration, reduce/filter non-point source pollution and sediments, retain stormwater, increase groundwater recharge, and provide wildlife habitat.
7. **Community Enhancement:** Complete Streets enhance community character and support placemaking in communities as attractive spaces that instill a sense of pride.

For more about Complete Streets, visit: https://mrsc.org/explore-topics/facilities/rights-of-way/complete-streets and https://wsdot.wa.gov/construction-planning/complete-streets.

Figure 4-2 Complete Streets Improve Equitable and Accessible Mobility Options

20-25% of Washingtonians can't or don't drive, and all of us are pedestrians at some point in every trip. Complete Streets give everyone the freedom to move in whichever way works for them (Washington State Legislature, 2023).

Making streets safer for our children to walk or roll to school gives them healthy movement, charges them for a day of learning, gives parents some time back, and cuts down vehicle traffic to make it smoother and safer for everyone.

Even some Washingtonians who can drive would prefer not to. People aged 16-34 are driving 23% fewer miles than young people previously did, bicycling 24% more miles, and using transit up to 40% more miles (Frontier Group, 2012).

4.3. HOW STREETS IN TOD DISTRICTS CAN TRANSFORM OVER TIME

As TOD districts emerge over time, better connected street grids and multimodal streets create more walkable and bikeable conditions, strengthening access to transit. Imagining how various station areas and surrounding TOD districts might transform over time can be challenging. It might be hard to look at current street corridors in their existing context and visualize how they might change over time to represent the guidance in this chapter of the Toolkit. The graphic examples and places highlighted in this section show before and after conditions of TOD districts and multimodal streets and how they can transform over time with the implementation of high-capacity transit and TOD. Refer to **Figures 4-2** through **4-7** and **Figure 4-40**.

Figure 4-3 Intersection Before and After TOD Improvements

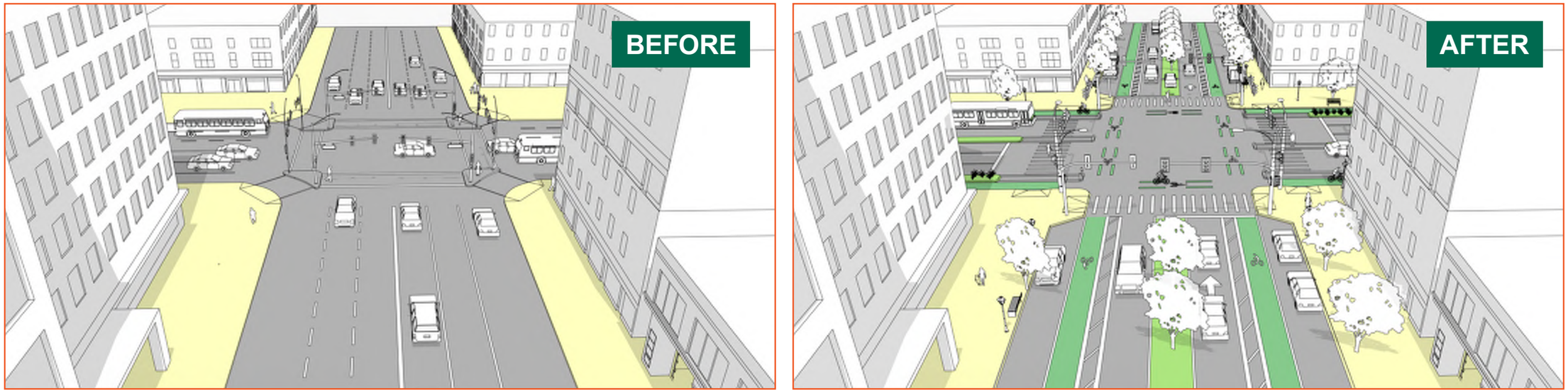


Figure 4-4 Mid-Block Crossing Before and After TOD Improvements

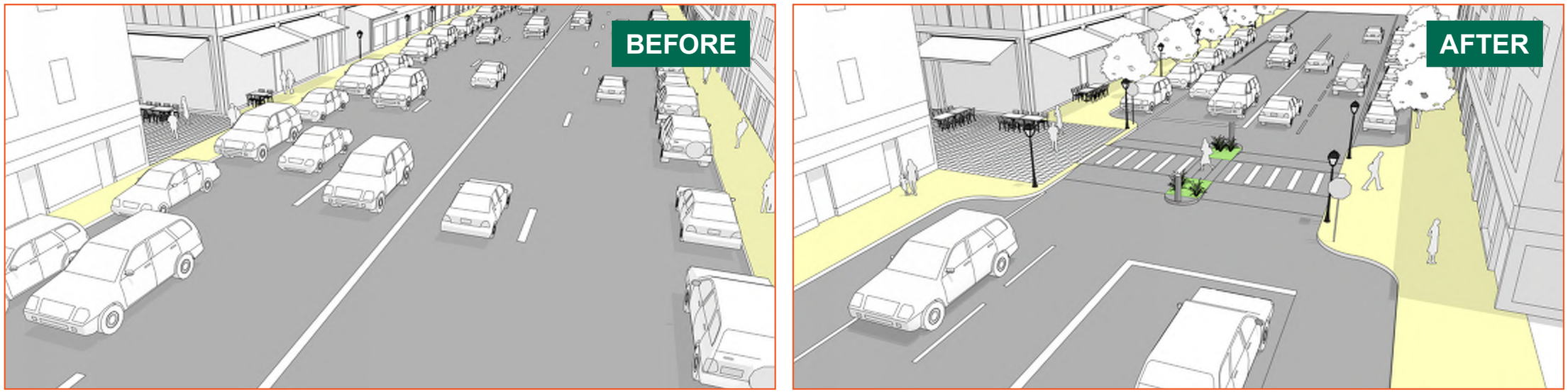


Figure 4-5 Four-Lane Street Before and After

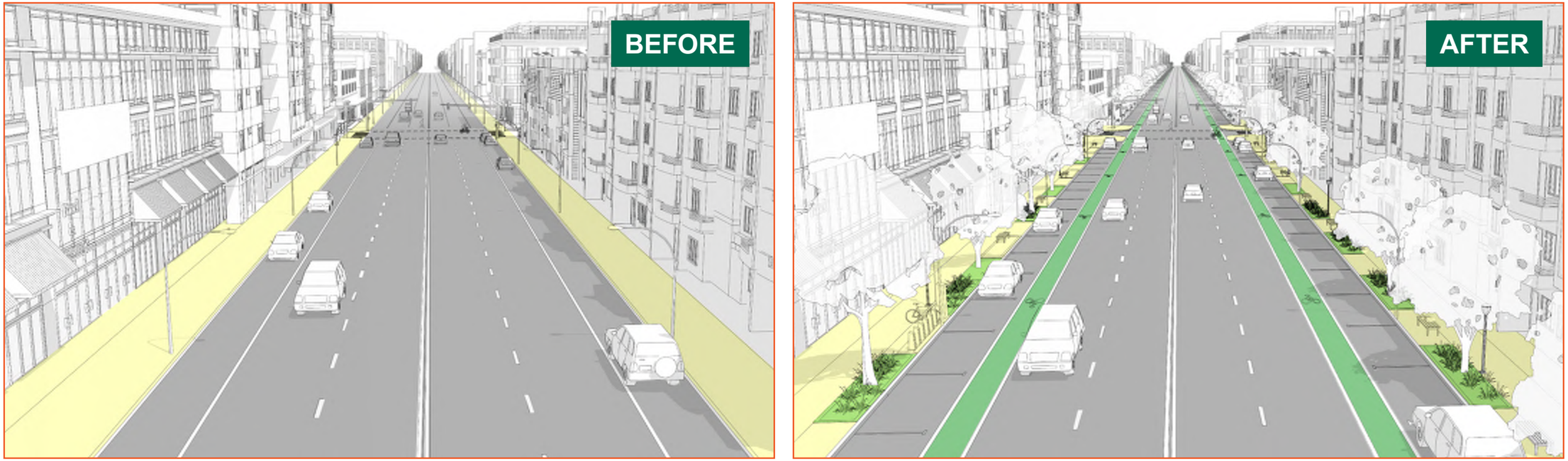
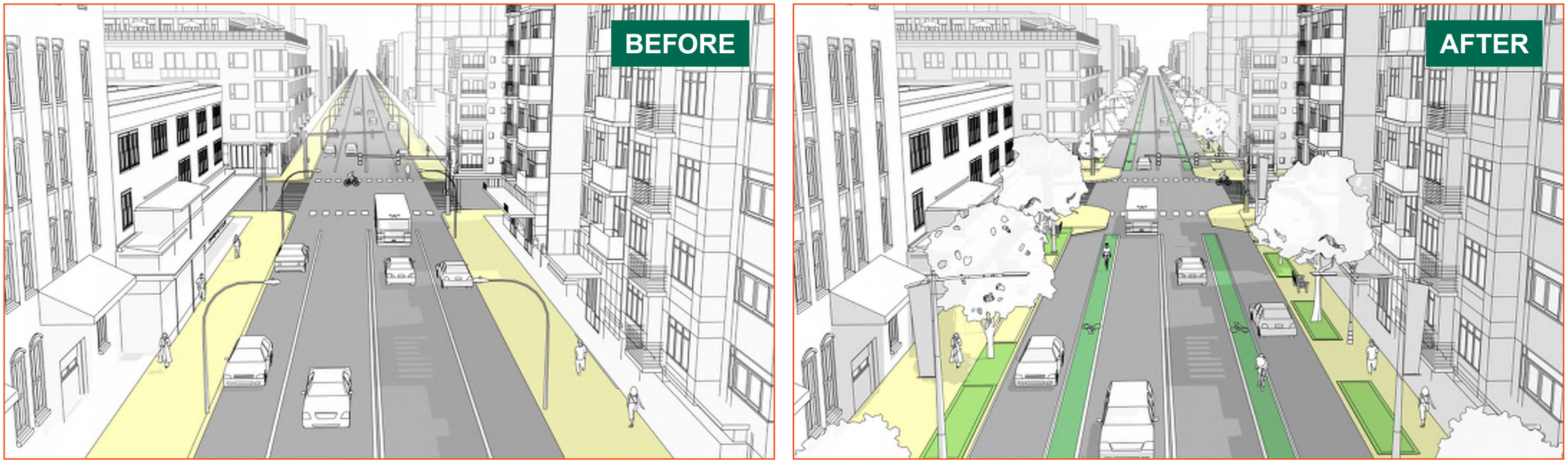
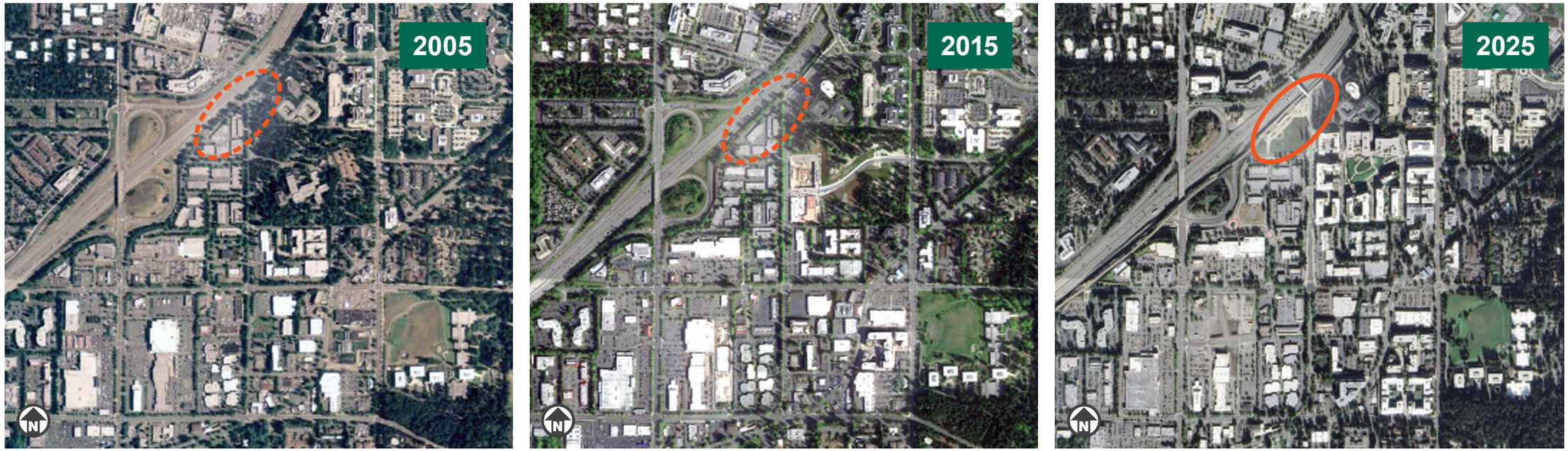


Figure 4-6 Two-Lane Street Before and After



The aerial photographs below show how some TOD districts around the Puget Sound have transformed over time from more suburban networks to more urban networks with a mix of land uses.

Figure 4-7 Overlake Village (top) and Shoreline South (bottom) Light Rail Station Area Change Over Time



CASE STUDY

HOW 196TH STREET SW TRANSFORMED

In 2023, the City of Lynnwood completed improvements to 196th Street SW, a major arterial in the City Center and an Alderwood RGC — an area where new TOD districts are transforming around the existing City Center light rail station at 46th Avenue W and the proposed West Alderwood light rail station. The improvements widened sidewalks, introduced a planted center median, and added lanes dedicated to bus movements and right turns. The center median replaced the previous dual left-turn median with the goal of reducing crashes, better managing access, and providing vegetation in the center for environmental benefits and traffic calming.

"Before" view of 196th Street SW prior to 2023 completion of improvements.

"After" view of 196th Street SW in 2024, showing improvements.

Engagement Resources

What are Road Diets and Why Do They Work?

Vox: Road diets: designing a safer street

Key messages:

- ***Road diets are a way to redesign streets to make them safer for all users, not just vehicles.***
- ***One way road diets help improve safety is through reducing conflict points — the number of places where crashes can happen.***
- ***Another way road diets reduce congestion is by taking left turn movements out of the flow of through traffic.***

4.4. DESIGNING STREETS FOR PEDESTRIANS

PEDESTRIAN REALM

Primary policy

» *Create a safe and comfortable public realm that supports public life.*

Supporting policies

» *Provide intuitive, accessible signage and wayfinding within the station areas to the station and key destinations.*

» *Promote awnings and overhangs that provide shelter and create human scale.*

» *Implement CPTED principles to provide clear sightlines and "eyes on the street" for pedestrian safety.*

» *Locate parking and mechanical equipment, trash enclosures, service and loading bays, and noise- or odor-producing facilities away from active pedestrian spaces, or screen them from public view.*

» *Incorporate residential use and community amenities in ground floors that activate the pedestrian environment.*

» *Orient buildings toward the street with limited setbacks and create active building edges along pedestrian streets.*

*Regulations to implement these policies can be found in the **TOD Implementing Regulations, Section 6***

4.4.1 Why Pedestrian-Friendly Streets are Critical in TOD Districts

In TOD districts, designing streets where pedestrians are a priority is critical because every trip begins and ends as a pedestrian trip. Pedestrians want streets that are safe, attractive, connective, and easy to use. Pedestrian-friendly streets convey a strong sense of place and focus on accommodating pedestrians. If designed properly, the best public pedestrian facilities (sidewalks/walkways) will also be the most durable and the easiest to maintain. If designed poorly, pedestrian facilities may discourage use if pedestrians feel unsafe, unprotected, or uncomfortable, negatively impacting community vitality.

4.4.2 Typical Elements of Pedestrian-Friendly Streets

The most memorable places in our communities are often the most walkable, vibrant, and interesting places to be. Design of the pedestrian realm needs to address accessibility, convenience, safety, security, and comfort. Following are some typical elements of successful pedestrian-friendly streets in TOD districts. See **Chapter 2** for additional guidance.

AS DISCUSSED IN CHAPTER 2, SUCCESSFUL PEDESTRIAN-FRIENDLY STREETS:

» **Facilitate efficient pedestrian access between the station and key destinations.**

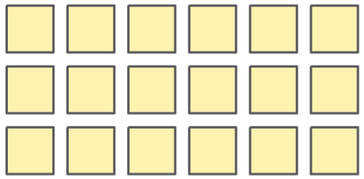
» **Provide a safe and comfortable pedestrian environment.**

» **Create an active and vibrant place that is highly walkable and designed to pedestrian scale.**

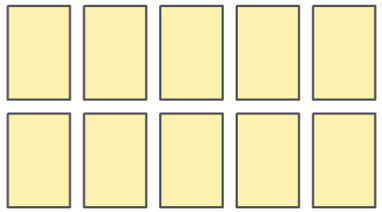
Every trip begins and ends as a pedestrian trip. Here, people are walking near the 196th and 44th Ave West intersection in Lynnwood, Washington. Lynnwood's 196th Street SW was recently reconstructed to enhance multimodal connectivity and accessibility.

Source: Annie Barker, The Herald

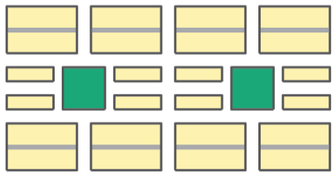
Figure 4-8 Grid Patterns and Block Sizes



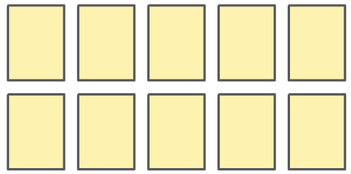
Portland, OR



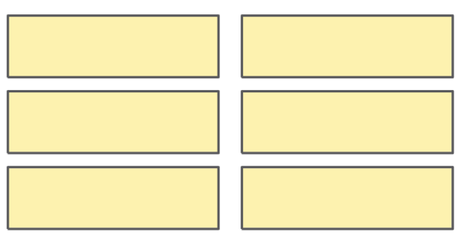
Denver, CO



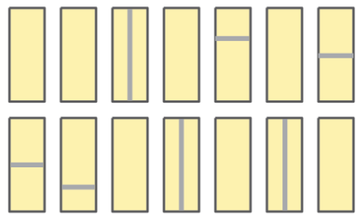
Savannah, GA



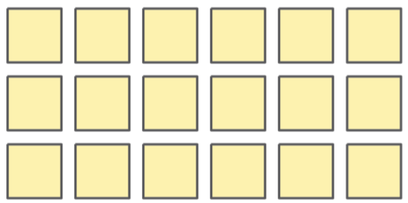
Seattle, WA



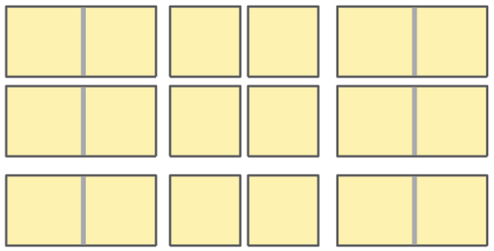
New York, NY



Everett, WA



Paris, France



Lynnwood, WA

4.4.3 Walkability and Connectivity

The most effective TOD districts are well-connected and often grid-patterned, providing a highly walkable context with direct and convenient access throughout and with safe crossings at intersections and mid-blocks, as well as pedestrian permeability within the length of blocks.

Transformation Over Time

As TOD districts emerge and become more walkable, jurisdictions provide guidance around walkable block sizes and how to break up mega-blocks, which are often prevalent in more auto-oriented, suburban contexts. For example, Downtown Bellevue was originally built as a mega-block pattern of 1,200 feet by 1,200 feet. Through the decades, Downtown Bellevue has transformed into more of walkable grid of 300 feet by 300 feet. In some cases, there are multimodal streets every 300 feet, while in other places, there are pedestrian or pedestrian/bicycle corridors at the 300-foot interval, providing a well-connected, walkable grid for access throughout downtown. Bellevue also has guided development of new TOD districts, including Wilburton and the Spring District (see the case study later in this chapter), creating new multimodal networks and walkable grids in contexts that were previously suburban mega-block networks oriented to auto traffic and not pedestrians and bicyclists.

Multimodal Networks

As redevelopment occurs in TOD districts, circulation networks become more multimodal, where previously they may have been mostly automobile-oriented. As jurisdictions prepare for light rail stations and access to light rail, they are planning networks for all modes — pedestrians, bicyclists, transit (local bus and BRT), motorists, and freight/deliveries in the TOD districts. A key objective in the transformation of TOD around stations relates to expanding and enhancing multimodal access to encourage more ridership, but another positive outcome is the creation of vibrant, walkable neighborhoods that are desirable places to live, work, and visit.

Grid Patterns and Block Sizes

Development blocks with established street grid patterns should be sized with a maximum distance between streets and pedestrian corridors. Existing and potential block sizes vary throughout the EVLE corridor, ranging from approximately 150 feet to 600 feet in dimension and can be square or rectangular. **Figure 4-8** illustrates block patterns from several well-known walkable cities — Portland, Seattle, Savannah, New York, and Paris — in comparison to Everett and Lynnwood block sizes.

Pedestrian Permeability

The ideal maximum distance for pedestrian access between or within blocks is 200 feet to 300 feet. For example, when the overall block size is 500 feet or 600 feet in the longest dimension, new streets or pedestrian connections should be introduced every 200 feet to 300 feet maximum.

Mid-Block Connectivity

In addition to providing a walkable street grid, providing mid-block connections across streets also supports a thriving TOD district. For more design guidance on mid-block crossings refer to **Chapter 2**.

Provide Pedestrian Facilities/Sidewalks on Both Sides of the Street

In TOD districts and station areas, continuous sidewalks should be provided on both sides of all streets. Sidewalks on only one side of the street constrict pedestrian movements, typically causing pedestrians to walk in the roadway or illegally cross to reach their destination.

WALKABLE BLOCK SIZES

Famously walkable grids, such as Portland, Oregon, have walkable block sizes of 200 feet by 200 feet. All sides of the blocks in these existing and emerging urban contexts have building frontages, creating vibrant walking districts with a variety of businesses and active uses at the ground floor and a mixture of residential and employment uses in upper floors. In these settings, there is a strong focus on urban design, placekeeping, and placemaking to create an enhanced pedestrian experience (see Chapter 2 for more information).

Sound Transit's SEDG calls for blocks sized to support urban scale, mixed-use development patterns (Section 4.2). In the Established Urban typology, blocks should be maximum 300 feet in length/width, and in the Emergent Urban typology, blocks may be more in the range of 300 feet to 600 feet in length/width. It is important to note that this transformation into a more walkable grid will happen over time in the EVLE station areas as TOD projects emerge, but the right regulatory environment must support the transformation.

Figure 4-9 provides an example of block pattern and multimodal network planning in the Overlake Village station area of Redmond, WA. Figure 4-10 illustrates the proposed walkable blocks "Stitch" project in Atlanta, GA, where a green, walkable network is being created to better connect pedestrians through the district (at an angle between blocks, and to/from the MARTA light rail station). Figure 4-10 also shows that walkable blocks don't always need to be square. They can take on trapezoidal shapes, as long as frequent connectivity is provided.

Figure 4-9 Overlake Village Light Rail Station Area Concept for Walkable Blocks, Redmond, WA

Figure 4-10 The Stitch — MARTA Station Area Concept for Walkable Blocks, Atlanta, GA

4.4.4 Sidewalks, Walkways, and Sidewalk Corridors

Sidewalk Corridors/The Pedestrian Realm

The "sidewalk corridor" generally encompasses the space between curb or street edge and the face of buildings or property lines adjacent to the street. This includes all elements from the property line to the curb edge or travel lane — pedestrian facilities, planting strips and furnishings zones, frontage areas, and other spaces. The sidewalk corridor typically includes sidewalks or walkways as well as space for landscaping, street trees, furnishings, utility appurtenances, signage, streetlights, and other features.

A sidewalk is the space within the right-of-way dedicated to pedestrian travel. The term "walkway" is often used synonymously with "sidewalk." It is common for sidewalks to be thought of as the paved (typically concrete) surfaces along a street that are raised from the street level and separated by a curb, and they are often constructed to formal standards. Whereas walkways are often thought to encompass a broader range of either raised or at-grade improved paths for exclusive use by pedestrians. Sidewalks and walkways in the pedestrian realm often also function as pedestrian access routes, which must be designed to meet ADA requirements.

The widths of sidewalks and walkways may vary depending on adjacent land uses, local requirements, type of street or roadway, presence of trees and utilities, and predicted pedestrian activity. Recommended minimum dimensions are shown in **Table 4-1** in **Section 4.14.** As a general best practice, sidewalks and walkways along streets and roadways should be a minimum of 6 feet wide, a width that allows two people to walk side by side or to pass each other (either standing or in wheelchairs) comfortably. However, in TOD districts, a minimum width of 8 feet is recommended for sidewalks and walkways to more comfortably accommodate a higher volume of pedestrians. Some central business districts have sidewalks of 10 to 15 feet or wider to accommodate high pedestrian flows. However, if sidewalks are too wide, they can appear uninviting to pedestrians.

If the facility is a shared-use path (shared with bicyclists), it must be a minimum of 8 feet wide — and often wider depending on the use.

PRIORITIES FOR PEDESTRIANS TRAVELING ALONG STREETS:

- **Pedestrian facilities that take people to and from their destinations**
- **Safety and security**
- **Efficient mobility**
- **Defined space**
- **Visibility between motorists and pedestrians**
- **Accessibility: Firm, stable surfaces; acceptable gradients; and clear paths of travel**
- **A comfortable and attractive environment**

Pedestrian Realm Zones

The pedestrian realm in TOD districts should be designed and planned to efficiently accommodate heavy volumes of pedestrian traffic. Because the pedestrian realm serves multiple purposes, it generally consists of the following zones (see **Figure 4-11**):

- Building Frontage Zone
- Pedestrian Clear Zone
- Landscape/Furnishings Zone
- Edge/Curb Zone
- Extension Zone

The typical widths of each of these zones may vary depending on specific circumstances in the right-of-way and the street design standards of each jurisdiction. **Figures 4-12** show the zones of the streetside pedestrian realm typical of station areas. The pedestrian realm also includes intersections and crossings; refer to page 85.

CASE STUDY

SPRING DISTRICT, BELLEVUE, WA

Bellevue's Spring District is transforming approximately 36 acres of warehouses, parking, and auto-oriented development into a dense, walkable, transit- and pedestrian-oriented neighborhood anchored by a Sound Transit light rail station. Spring District plans called for retrofitting the existing street grid to create shorter blocks and developing a mix of professional office, apartments, retail, dining, a market hall, and public gathering spaces. The new street grid includes blocks of approximately 300-feet-long building fronts directly on generously sized sidewalks, and parking is provided on the street or in structures. Where blocks exceed 300 feet, pedestrian pathways provide welcoming connections through the block. The aerials below include images for "before," "planned," and "after" of the transit-oriented district.

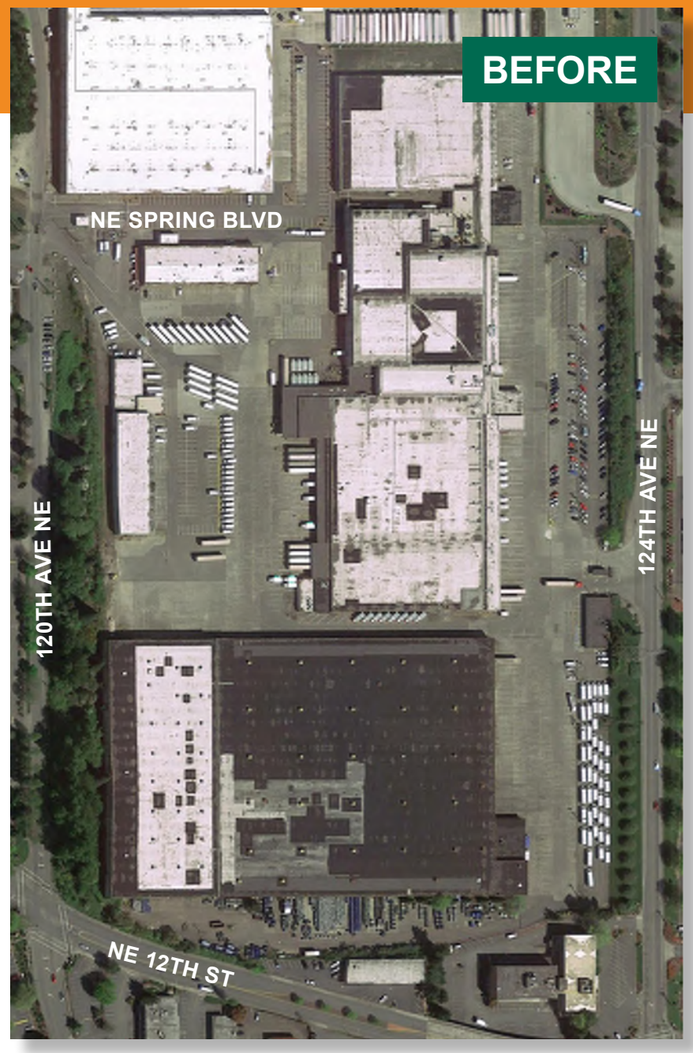
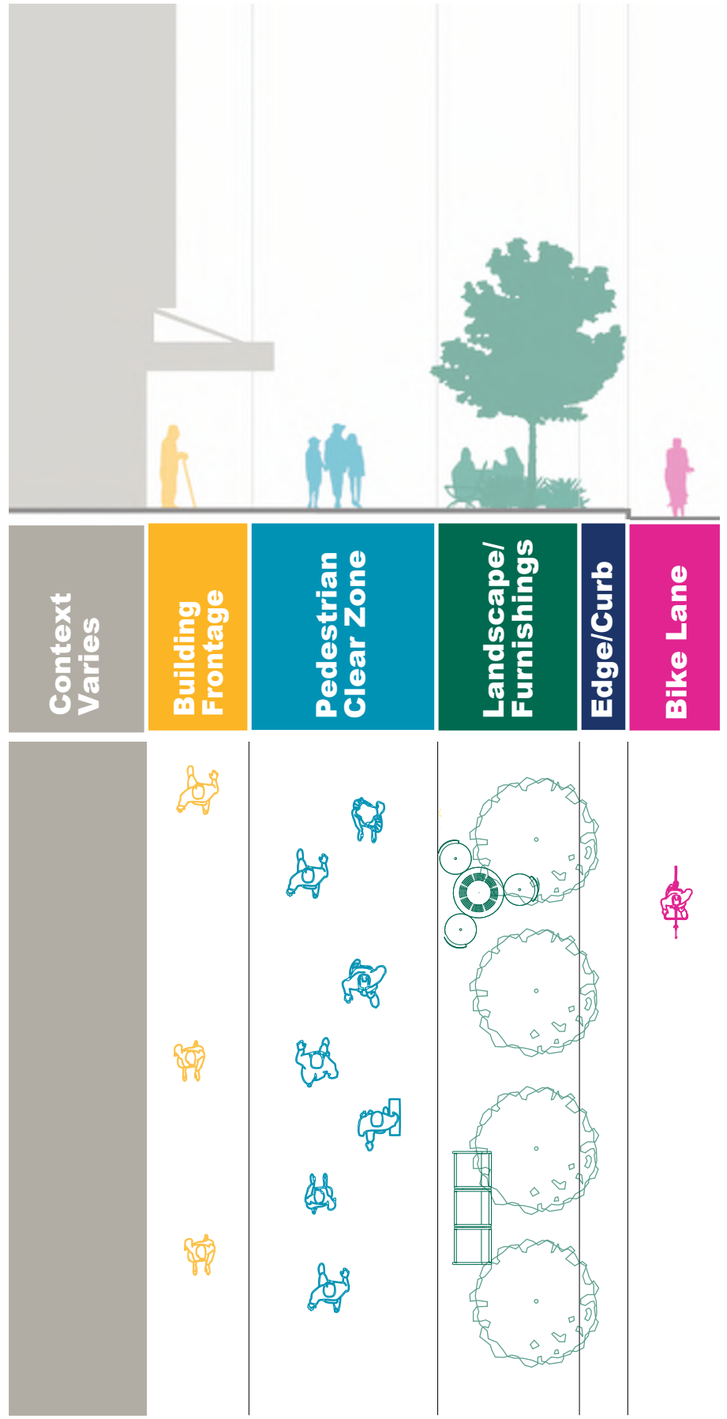


Figure 4-11 Pedestrian Realm Zones

- Area along the right-of-way that functions to provide space between the building facade, wall or fence and through zone of the sidewalk
- Obstacle-free space for clear pedestrian through travel that is often the primary walking area of the sidewalk
- Primary buffer space between the active pedestrian walking area of the through zone and adjacent throughfares
- Street uses such as on-street parking, bike lanes/cycle tracks, or travel lanes with a shoulder stripe or shy space from curb



Building Frontage Zone

The building frontage zone is where people enter and exit buildings and where pedestrians may travel at a slower pace to window-shop or stop and chat. This is also an area where adjacent restaurants and cafés may provide outdoor seating that extends out into the pedestrian realm. The frontage zone starts adjacent to the building or property line. This zone can vary in width from approximately 2 to 10 feet or more. When there is not outdoor seating or sidewalk café space, designers should allow a minimum of 2 feet "shy" distance, as people prefer this width when walking adjacent to buildings. The frontage zone width provides space for door openings, steps, architectural features, utilities, window shopping, signs, displays, and similar provisions.

Other recommendations for the building frontage zone include:

- Keep this space as narrow and clear as possible.
- Construct the frontage zone at the same grade and level as the through zone.
- The surface material should be the same as the through zone, but accent paving or color may be used to delineate and distinguish the building frontage zone from the through zone.

Pedestrian Clear Zone (Barrier-Free Through Travel Way for Pedestrians)

The pedestrian clear zone is the predominant, obstacle-free space for through pedestrian movement. This zone must remain both horizontally and vertically clear and provide a direct connection between destinations. In station areas, the pedestrian clear zone should typically be 6 to 8 feet wide minimum (per **SEDG** recommendations and other design guidance). Refer to **Section 4.14** for other dimensional guidance.

In addition to providing sufficient space for through pedestrian movement, designers should:

- Provide a firm, slip-resistant surface.
- Increase the width of the through zone in places that will attract high volumes of pedestrians (near transit stops, malls, plazas, and other areas).

Figure 4-12 Pedestrian Realm Zones — Downtown Everett Example

Landscape/Furnishings Zone

The landscape/furnishings zone may also be known as the fixtures or planting zone. This zone is where street furniture, utility equipment, trees, landscaping, stormwater facilities, newspaper and entertainment flyer boxes, transit stops, and other features, such as kiosks, sidewalk cafés, vendors, and public art, may be located. This zone provides a buffer between street traffic and the pedestrian through/travel zone. Dimensions for this zone can vary widely, ranging from 3 to 10 feet. For bus loading areas in this zone, an 8-foot minimum width should be provided. For the remaining length of the street, a 6-foot minimum width is recommended, particularly if these areas are landscaped and contain street trees.

Other recommendations:

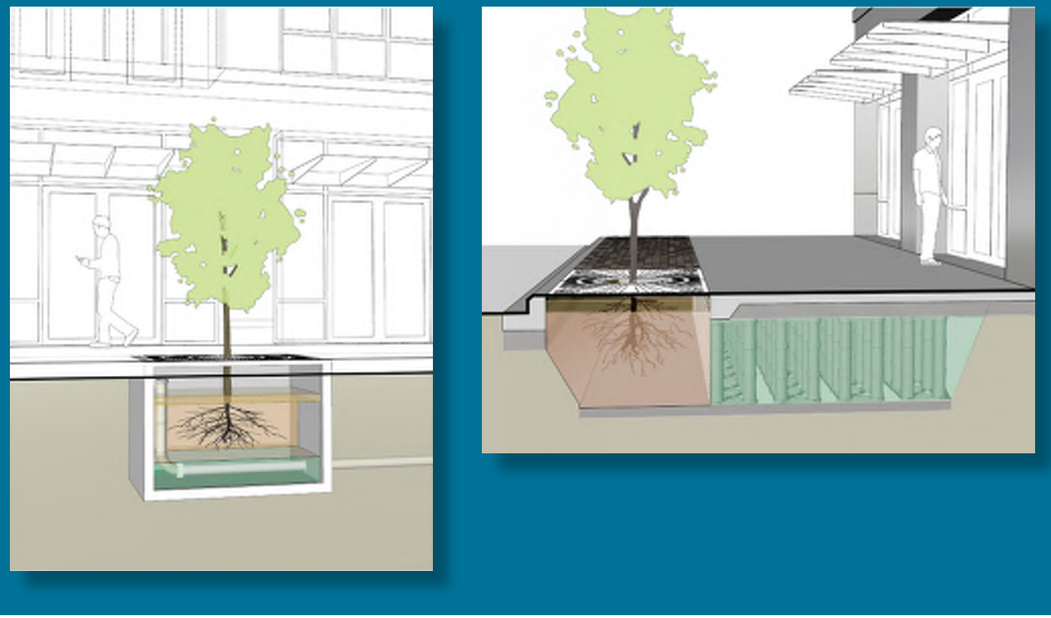
- Consolidate and organize furnishings to maximize public use and benefit.
- Provide paved areas across the furnishings zone where needed to allow pedestrian access to crossings, taxi stands, bus stops, and other facilities.
- Provide screening/buffering of utility fixtures in this zone while maintaining clear access for utility providers for maintenance.

Figure 4-13 Street Tree Planting Detail

THE FURNISHINGS ZONE AS A PLANTING BUFFER

The furnishings zone can function as a planting buffer with street trees and landscaping that aesthetically enhance the streetscape. Planting buffers (also referred to as planting or landscape strips, verges, greens, and nature strips) provide effective separation between walkways and streets in all types of settings. The added separation of a planting buffer helps pedestrians feel more comfortable when walking along the street. Trees and landscaping also soften the urban environment, provide shade, reduce heat, mitigate carbon emissions, and create a more pleasant walking environment. The planting buffer also can house constructed and natural drainage facilities, such as:

- **Stormwater planters or products that allow water to permeate the area and can doubly irrigate appropriately selected trees and plantings. These double to provide water quality treatment and flow control.**
- **Swales within planting strips rather than groundcover vegetation alone to better manage stormwater.**
- **Planted areas within the curb extensions or behind slotted areas of curb that capture stormwater and provide water quality treatment.**
- **Tree boxes and products that allow water to filter down into the tree roots, which are also recognized for stormwater management functions (see Figure 4-13).**



Edge/Curb Zone

The edge or curb zone is adjacent to on-street parking, bike lanes, or motor vehicle lanes, and provides space to open a car door. It is also where pedestrians wait for taxis and buses when combined with the furnishings zone. This zone is often where streetlights, signals, traffic signs, parking meters, and street-related infrastructure are placed (these elements may also be placed in the furnishings zone). While the width of this zone can vary, it is generally preferable to keep the edge/curb zone as narrow as possible (12 to 18 inches is common). If a landscape/furnishings zone is not provided, wider edge/curb zone dimensions should be considered to enhance the overall walking experience and create a stronger sense of safety. In this case, the buffer space also needs to provide room for light poles, signs, and other street furniture, as well as protection from splashing and car door openings.

When there is no landscape/furnishings zone, edge/curb zone widths as measured from the edge of the traveled way should be:

- Local or collector streets: 2 to 4 feet.
- Arterial or major streets: 5 to 6 feet.

Other recommendations:

- Ensure that signs, streetlights, parking meters, and other elements located in the edge will not conflict with the use of the adjacent lane (whether for on-street parking, bike travel, or motor vehicle traffic). Provide adequate clear space/shy space around all appurtenances in the zone.
- Combine furnishings zone and edge zone where necessary for transit stops and taxi stands. If not possible, provide a minimum of 5-feet horizontal clearance where pedestrians are likely to wait for taxis or buses.

Street Zone

The street zone is the space beyond the curb or pedestrian realm that may include on-street parking, bike lanes or cycle tracks, transit lanes, and/or general-purpose travel lanes for motorists. This space may also encompass an "extension" of the pedestrian realm for curb extensions/bulb outs, flexible use of parking lanes (such as for parklets), spaces for bike parking, micromobillity docking stations, seating and furnishings, additional lighting, street trees and landscaping, stormwater facilities, and other elements. If an extension area is created, it is generally the same width as on-street parking lanes.

Interactions Between Zones

Because interaction occurs between these zones, development of a cohesive design for the pedestrian realm is important. Design must consider the unique conditions associated with each zone, as well as how the pedestrian realm interacts with other elements of the street (e.g., bike and transit facilities and intersections). Maintaining clear sight lines between pedestrians, bicyclists, and motorists in these areas of interaction is critical.

4.4.5 Gradient, Cross Slope, Drainage, and Utility Covers

Accessibility requirements call for sidewalks and walkways to be designed with maximum grades of 5% (unless designed as ramps).

Sidewalk cross slopes shall be designed to a maximum of 2%. This facilitates positive drainage toward the street or adjacent planting buffer. Surfaces that are too flat (less than 0.5%) may cause poor drainage and pooling on the sidewalk surface.

Locate drainage grates, utility hole covers, hatches, vaults, and other utility covers outside the route of pedestrian travel.

Utility and traffic boxes and covers, can be opportunities for public art.

See **Figure 4-14**.

4.4.6 Paving and Surfacing

Any material used for sidewalks and walkways must be slip-resistant and easy to maintain (resist buckling and cracking). Surfaces must be accessible by meeting the “stable, firm, and slip-resistant” criteria required by the ADA. A wide spectrum of unit paving options, such as Portland cement concrete, concrete unit pavers, granite and other stone pavers, and brick, can also be installed as pedestrian surfaces. Special districts and downtown streets often incorporate special paving into the design of sidewalks and pedestrian areas. Walkways and sidewalk paving can be patterned and textured to provide a sense of scale and rhythm appropriate to surrounding buildings. The appearance of a monotonous concrete surface should be avoided.

When used, unit pavers must be set carefully, with a well-designed and constructed sub-base, or else they may settle or buckle and cause a tripping hazard. They should be designed to be easy to reset and replace. In many cases, unit pavers (that are not mortared in place) can be a preferred solution over utility lines because of the ease in taking them up and replacing them when repairs are needed.

Paving treatments can be susceptible to deterioration related to tree roots and vegetation. In areas where walkways are aligned adjacent to shallow-rooted shrubs and trees, root damage to the pavement can result. Selecting appropriate street trees and providing root barriers and/or tree boxes can be effective solutions.

Pervious and permeable surfaces for pedestrian use are becoming more common in US cities due to the green building/sustainability movement. Pervious pavement brings environmental benefits because it allows the flow through of surface water and can include pervious concrete, unit pavers, compacted crushed granite, rock, stone, and other treatments.

Figure 4-14 Examples of Utility Hole Covers as Public Art

The use of recycled content in paving or for sub-base materials is also becoming a more common practice. With sidewalk replacement projects, it is sometimes possible to demolish old curb, gutter, sidewalk, and street paving, and crush and grind the concrete and aggregate for reuse on-site during construction. Recycled pavement grindings can be inexpensive and easy to grade. When considering the use of permeable paving and recycled content in paving, designers should examine construction costs and life cycle/maintenance costs and jurisdictions need to adequately budget for these. Any surfaces used for pedestrians must meet the ADA standard.

The color and reflectivity of paved surfaces is an important consideration. The Solar Reflectance Index (SRI) value of sidewalk materials may be increased to reduce urban heat island impact, where metropolitan areas become significantly warmer than surrounding rural areas due to building and road materials. Material finishes may also be chosen that can reduce sidewalk glare and reflectivity.

All sidewalk paving and repair work should be coordinated with other streetscape and utility work to minimize street cuts.

VAN GOGH BIKE PATH

In the Dutch town of Eindhoven, artist Daan Roosegaarde has paid homage to its most famous resident, Vincent Van Gogh, by creating a glowing bike path that relies on solar-powered LED lights and interprets his classic painting "Starry Night."

4.4.7 Other Design Considerations

Passing, Waiting, and Resting Areas

Areas for passing, waiting, and resting should be integrated into the design of the streetside pedestrian realm in the furnishing zone to provide relief to pedestrians, especially those who lack stamina or those with mobility impairments. Seating/benches, shade, and other furnishings can be beneficial to pedestrians in these areas.

Meandering Sidewalks and Walkways

Sometimes, a meandering walkway is constructed, creating a planting strip with an informal, curving appearance. Although meandering walkways may look nice, they may not be the most efficient way of getting people from one place to another. They may also be misguiding to pedestrians with sight impairments who need better predictability. If a meandering walkway is desired, minimize the number of curves to avoid creating a route that is too awkward and indirect. Meandering walkways can be used as a solution to avoid obstacles, such as telephone poles, utility features, signs, etc., providing a smooth transition in the sidewalk alignment.

Bicycle Use Adjacent to and Within the Streetside Pedestrian Realm

Bike lanes are beneficial for pedestrians because they provide an additional buffer between pedestrians and motor vehicles. Providing bicycle facilities and pedestrian facilities is a required approach for creating Complete Streets, and the competing needs of pedestrians and bicyclists must often be carefully considered in design. Each of these travelers needs their own spaces, and sharing space in urban environments is not recommended unless the facility is specifically designed as a shared-use path. Bicycle facilities should be designed in accordance with applicable local, state, and federal guidance. See more guidance in **Section 4.5**.

Pedestrians crossing at the City Center light rail station in Lynnwood

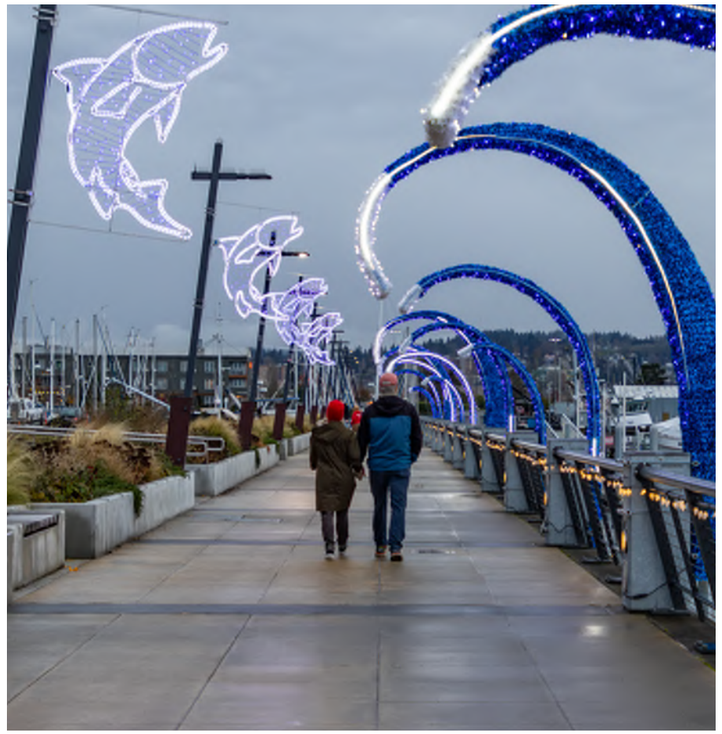
Source: Community Transit

Curbing, Railings, and Walls

Curbs and gutters serve two primary functions: 1) control of stormwater drainage, and 2) vertical separation between motor vehicles and pedestrians. Curbs are often required on streets where efficiently controlled drainage is a necessity. Curb and gutter/vertical curb provides a non-mountable barrier adjacent to street parking that prevents cars from parking on adjacent sidewalks. Curbs provide a physical barrier between moving vehicles and pedestrians, although curbs have limited ability to stop high-speed vehicles.

Railings and screens can aesthetically enhance the pedestrian realm through incorporating public art elements.

High retaining walls immediately adjacent to sidewalks and walkways should be avoided, since a mass of vertical walls could be imposing to pedestrians. The effect of retaining walls can be “softened” along pedestrian areas by terracing back on the slope with lower walls (when right-of-way is available) and providing landscaping. Instead of blank wall faces, walls should have an attractive finish and texture or a screen with trellises and climbing plants.



Pedestrians walking along the Everett Waterfront

Source: Istock, photograph by Cindy Shebley

4.5. DESIGNING STREETS FOR BICYCLISTS

BIKE FACILITIES POLICIES

Primary policy

» *Design and construct a robust, connected, and safe bicycle network.*

Supporting policies

» *Provide bike pathways with widths to accommodate different bike sizes and speeds, including cargo bikes.*

» *Site and design bicycle facilities to reduce potential for conflicts with vehicles and pedestrians.*

» *Require adequate short-term bicycle parking adjacent to path of travel in the station areas and adequate long-term bicycle parking in residential and office buildings.*

*Regulations to implement these policies can be found in the **TOD Implementing Regulations, Section 4***

4.5.1 Types of Bicycle Facilities

Bicyclists range in ages and abilities, and each requires their own considerations. For example, some higher speed, commuter, and/or experienced bicyclists tend to prefer to travel in facilities in the street. Since bicycle connectivity and continuity is crucial to the function of TOD districts, bicycle facilities must be provided to support multimodal access to transit. In addition to the guidance in this chapter, refer to local and WSDOT standards, as well as the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide, Third Edition.

Bicycle facilities come in various forms; a few of the more common types include:

- **Conventional bike lanes** (on-street lanes for bicyclists) should provide clearance/shy distance from signs and other elements when bike lanes are located adjacent to the curb (edge zone). Consider that bicyclists will ride as close to the curb as possible, and handlebars may come close to or overhang the curb edge. Bike lanes are typically located at the same level as street grade, separated from the pedestrian realm by a curb. In addition to providing dedicated space for bicyclists, they also buffer pedestrians from motor vehicle traffic.
- **Buffered/protected bike lanes** that may be at grade with the street or raised at sidewalk level; and may be one way or bidirectional. These facilities are for the exclusive use of bicyclists and provide the advantage of a physically separated space from motor traffic, distinct from the sidewalk. Data shows that bicyclists feel at lower risk of encountering car doors and other obstacles when bike lanes are buffered with a shy distance between most vehicles and the bike lane. A designated, striped/marked buffered bike lane is allowed by the

MUTCD. Buffers should be at least 18 inches wide. The combined width of the buffer area and striped lane is considered the full bike lane width and should be a minimum of 7 feet wide in TOD districts.

- **Cycle tracks,** which are popular internationally, may be located within the pedestrian realm, between the edge zone and the furnishings zone. Cycle tracks may be at the same elevation as the sidewalk or they may be slightly recessed. Pavement delineation and other treatments (planting strips) are important to clearly separate cycle tracks from the pedestrian realm. Bollards and other vertical elements need to be designed/selected with care when located adjacent to bicycling areas with proper spacing and buffering from the bicycling travelway. Raised pavement markers or extruded curbing are also not appropriate because they may create obstacles for bicyclists. Tactile warning strips are required by the ADA to delineate the edges of areas where pedestrians will be crossing streets and bicycle ways (including cycle tracks that may be at grade with the pedestrian realm).
- **Sharrows and yield lanes** where bicyclists and motorists are sharing the lane. Sharrows are pavement markings indicating that the lane is shared with bikes.
- **Contra-flow bike lanes** on one-way streets allow bicyclists to travel in both directions
- **Left-side bike lanes on one-way streets**
- **Shared-use paths** where bicyclists and pedestrians share a path that is separated from the street (either inside or outside the right-of-way)

Figures 4-15 through **4-20** illustrate some of these types of on-street bicycle facilities, including a typical bike lane, a bike lane adjacent to on-street parking, a typical yield lane/shared lane (with sharrow treatment), and cycle tracks

4.5.2 Pedestrians and Bicyclists at Intersections

Because pedestrians move more slowly than bicyclists and some pedestrians with disabilities have special needs at crossings, intersection and crosswalk design is typically geared toward pedestrians' needs (in terms of signal timing, crossing phases, etc.). At intersections where there are higher numbers of pedestrians and bicyclists sharing crosswalk facilities, crosswalks may need to be wider. Some communities are delineating crosswalk space specifically for bicyclists (such as bike boxes and green painted areas).

4.5.3 Bicycle Parking

Having widespread bicycle parking is also key to encouraging bicycling — particularly for errands and commuting. It is generally recommended that bike racks and bike lockers be located within the furnishings zone along sidewalks or in areas adjacent to the right-of-way, outside of the pedestrian through zone and the street/roadway clear zone. Appropriate design and placement of bicycle parking facilities is important to avoid conflicts with pedestrian mobility and accessibility. Refer to **Chapter 3** and the **Appendix** for more information on bicycle parking to be provided as part of a TOD project.

4.5.4 Accessibility Devices On Sidewalks

People using wheelchairs, mobile assistance devices, canes, crutches, and other mobility aides are considered to be pedestrians and should be accommodated within the sidewalk corridor and pedestrian realm for their travel. Pedestrian spaces should be designed with their needs in mind and in compliance with applicable ADA requirements. People in wheelchairs or on mobile assistance devices should not be directed to use bikeways or cycle tracks because they tend to travel at slower speeds than bicyclists.

4.5.5 Managing Conflicts

Sometimes people using other wheeled vehicles (motorized and nonmotorized, such as skateboards, push-scooters, and other devices) may use the sidewalk space. However, this may cause conflicts in heavily-congested pedestrian areas. Jurisdictions may determine the need to prohibit skateboards, push scooters, and other devices in sidewalk corridors for this reason. It is becoming more common place for these "rollers" to use protected bikeways and/or cycle tracks in urban areas rather than sidewalks because they tend to travel at speeds greater than pedestrians and more comparable to bicyclists. Signs and pavement markings should clearly indicate designated travel ways for people on these types of wheeled vehicles.

Other recommendations for managing conflicts include:

- Design protected bikeways and cycle tracks placed at the sidewalk level to minimize conflicts with pedestrians.
- Clearly delineate areas that serve people walking and rolling, using visual and tactile cues (NACTO 2025).
- Where bicyclists share space on pedestrian paths or trails, provide a minimum of 5 feet of clear space per direction of travel for enhanced safety and comfort in the mixed-mode pathway (Sound Transit **SEDG** 2024).
- If being designed as part of a transit plaza, establish a 6- to 12-foot-wide slow-speed bicycle zone depending on directional configuration (Sound Transit **SEDG** 2022).
- To reduce conflicts between vehicular loading zones and bicycle infrastructure, locate curbside loading areas away from primary bicycle routes if possible. Where conflicts cannot be avoided, clearly mark pavement and provide tactile warnings to indicate a mixing zone.
- Design signage and warning pavement markings leading up to areas where conflicts may occur to indicate that bicyclists (moving at faster speeds) are required to yield to pedestrians.
- Support flexible curb management to accommodate new mobility options, ride share, deliveries, freight, and emergency access where appropriate, as well as accessible pick-up/drop-off for residential buildings, businesses, and community services.

Bicyclists riding in street bike lane through downtown urban neighborhood.

Source: Otak

Figure 4-15 Bike Lane

Figure 4-16 Buffered Bike Lane

Figure 4-17 Buffered and Protected Bike Lane

Figure 4-18 One-Way Cycle Track

Figure 4-19 Two-Way Cycle Track

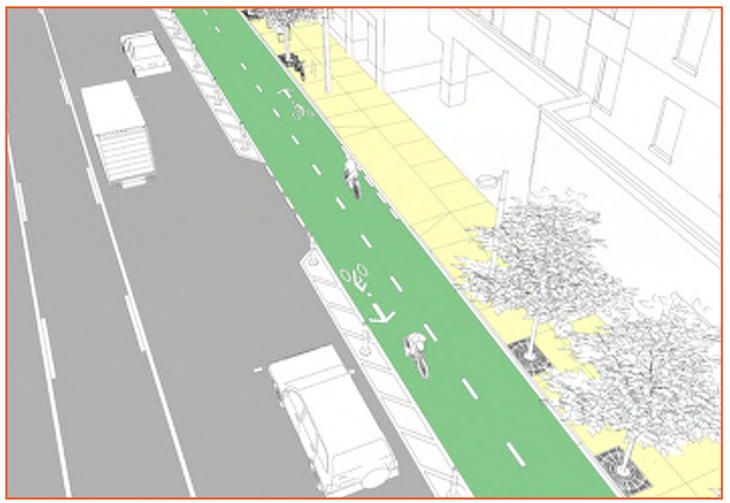
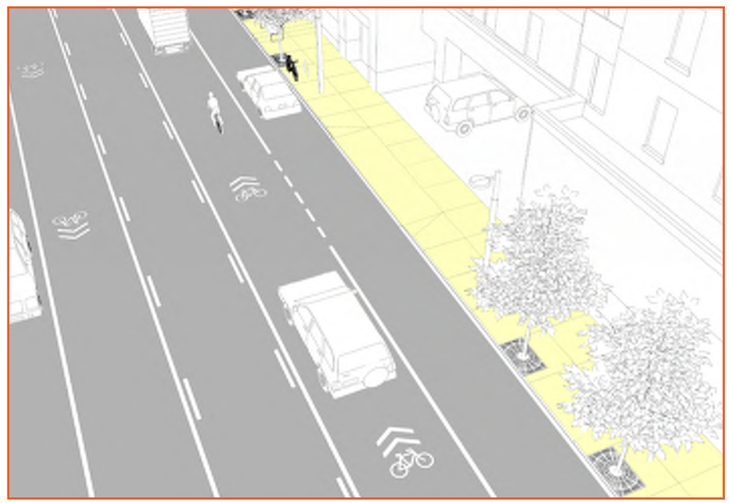


Figure 4-20 Sharrows

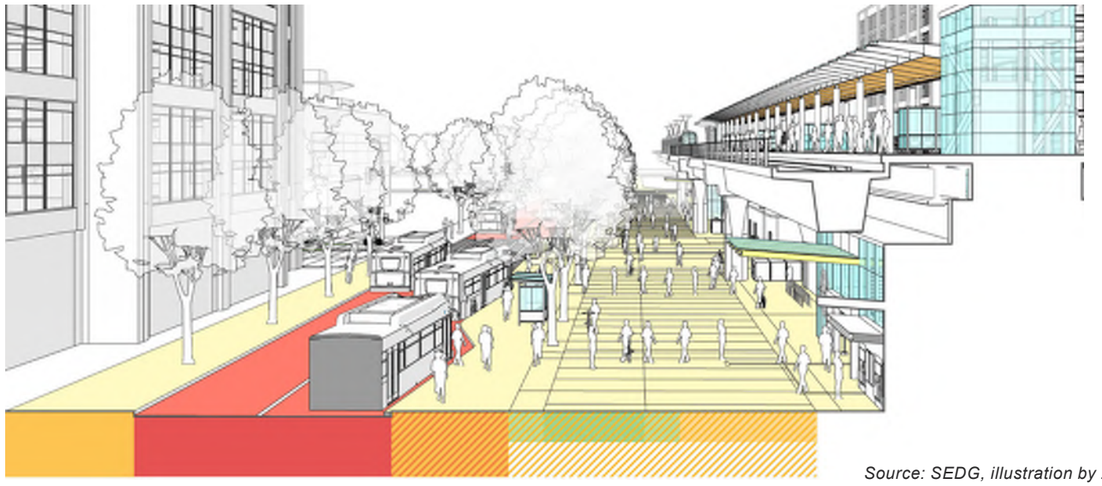


4.6. ACCESS TO TRANSIT/DESIGNING STREETS FOR TRANSIT

Access to transit is a foundational consideration in the design of multimodal streets, the pedestrian realm, buildings, and all other elements in TOD districts. A variety of transit services and facilities exist and will emerge in the station areas of the EVLE corridor in addition to the light rail stations, including BRT systems, dedicated bus transfer areas, local bus routing on a variety of streets, on-demand, and other types. Facilitating seamless and convenient transfers between high-capacity transit systems and local buses and other transit services is a key priority. With more convenient and immediate transfers, the more people will ride, which helps in achieving regional and local mode shift targets.

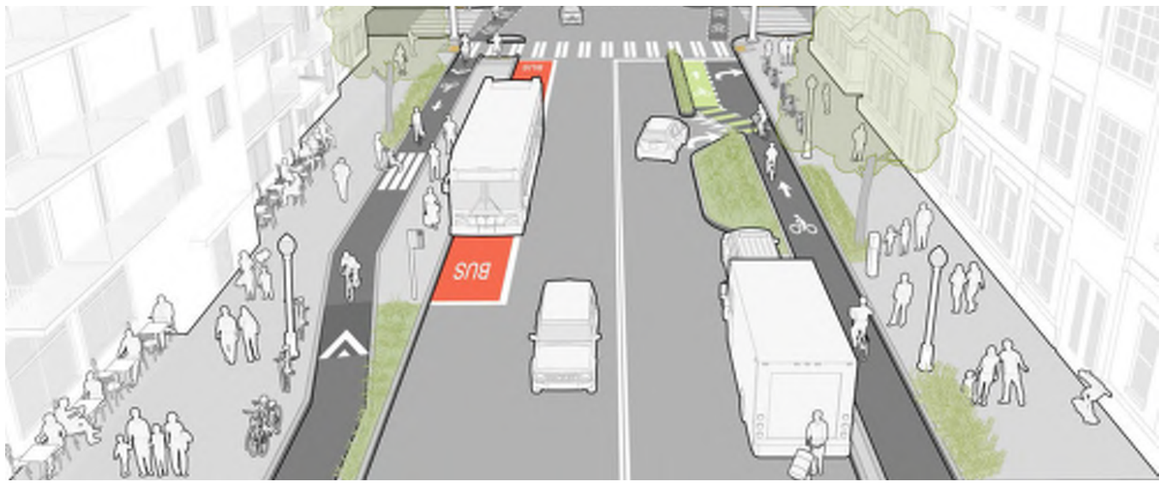
Transit services are accommodated through a variety of solutions on multimodal streets of station areas — transit-only bus-ways, exclusive transit lanes (BRT systems), and local bus routing on streets of varying classifications. Street lanes designed to accommodate buses should be a minimum of 10 feet wide (see additional dimensional guidance in **Section 4.13**). See F**igures 4-21**, **4-22**, and **4-23** for examples of integrated transit into street design. For additional guidance for transit lanes and transit stop design, refer to the **SEDG** (Chapter 4), the NACTO Transit Street Design Guide, and Community Transit design standards.

Figure 4-21 Transit Street from Sound Transit's Station Experience Design Guidelines (SEDG)



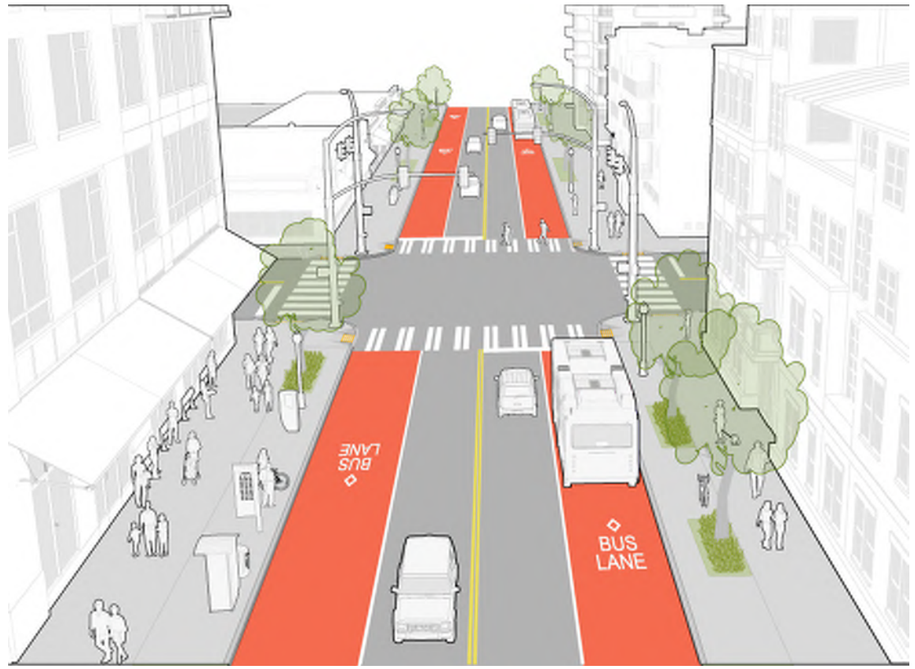
Source: SEDG, illustration by ZGF

Figure 4-22 Transit Lanes, Bus Stops, and Protected Bike Lanes on a Center Core Street



Source: Streets Illustrated, Seattle

Figure 4-23 Side Boarding Transit on Multi-Lane Street



Source: Streets Illustrated, Seattle

4.7. DESIGNING FOR MICRO- AND EMERGING MOBILITY INFRASTRUCTURE

As discussed in **Chapter 2**, accommodating micromobility access in TOD districts requires careful consideration in a holistic design approach for the pedestrian realm. Micromobility docking stations for scooters and bicycles available for shared use (as well as other bicycle parking) typically can be located either within the landscape/furnishings zone of the pedestrian realm, or within the on-street parking lane in a striped/designated area. When located in the pedestrian realm, there may be additional space within the curb extension/curb bulb areas at mid-block or block ends for docking stations; however, clear space for pedestrian access needs to be provided around these to avoid conflicts or barriers to access. Additionally, docking stations should not be located in areas that could block sight lines between motorists and pedestrians crossing the street.

Micromobility programs are being implemented and managed in a variety of ways by local jurisdictions. The City of Austin, Texas, has been successfully managing micromobility to increase access to transit throughout the community.

Bike share docking station in Chicago, IL. Source: DSpace@MIT

Bike station and mobility docking area at Millennium Park in Chicago, IL. Source: John Greenfield, Streetsblog Chicago

CASE STUDY

MICROMOBILITY MANAGEMENT IN AUSTIN, TEXAS

Austin's shared e-mopeds and integrated bikeshare programs have supported millions of trips and transfers to and from transit each year since 2017. The City also invested $460 million in bike lanes, sidewalks, and safer intersections. While the City was one of the first to implement "dockless" micromobility, the sidewalk clutter and chaos rapidly overwhelmed certain districts and bike parking infrastructure. By 2018, Austin shifted away from dockless to docking stations, as shown in the photo below.

Austin, Texas, Micromobility Scooters and Bicycles Docking Stations. Source: medium.com

4.8. ON-STREET PARKING

4.8.1 On-Street Parking

On-street parking can be beneficial for pedestrians because it provides a buffer zone between the street and the sidewalk, and its presence tends to reduce vehicle speeds. This includes on-street parallel parking and angled parking. On-street parking allows people to access the sidewalk directly from their vehicles and increases street activity.

Figures 4-24 through 4-27 on the next page show how on-street parking provides a buffer between street traffic and pedestrians. Dimensions of a minimum 7 feet wide by 20 feet in length are recommended for on-street parallel parking stalls. Some communities use standard dimensions of 8 feet wide by 22 feet in length (or more) for parallel parking stalls, but a general rule is that the narrower the width of the stalls, the closer people will tend to park to the curb. Reducing excessive length in stalls to fit many of today's smaller vehicle sizes can also bring benefits, such as opportunities to add curb extensions at pedestrian crossings, as well as landscaping or stormwater treatment areas. In all cases, it is important that parallel parking stalls provide adequate space for pedestrian movement around the parked car without forcing pedestrians into the stream of traffic.

Typical dimensions for on-street angled parking stalls are 60-degree angle stalls about 10 feet wide and 20 feet deep (measured perpendicular to the curb). Angled parking can either be front-in or back-in. Back-in angle parking provides motorists with better vision of bicyclists, pedestrians, and vehicles as they exit a parking space and enter moving traffic. Back-in angle parking benefits include clear sight lines when pulling out, ease of loading and unloading cargo, and protection for children because the open car door now directs young children back to a point of safety rather than out onto the street. Diagonal parking may require more attention to improve visibility at crossings and intersections, and it should not be used on high-speed or busy streets.

When on-street parking is implemented, approaches to crosswalks and intersections should be cleared or curb extensions should be added at crossing locations for pedestrian safety. When bike lanes are adjacent to on-street parking, providing a buffer area (within the width of the striped bike lane), between the parking lane and the bike lane, allows space for car doors to swing without encroaching into the bike lane.

4.8.2 On-Street Parking Setbacks from Crossing Points and Overhang Space

When on-street parking is provided, adjacent pedestrian walkways and clearly identified street crossing points are also necessary. On-street parking or loading zones that are too close to intersections and mid-block crossings can block views of pedestrians. Parking areas should be set back from intersections and crossings to allow pedestrians to see oncoming traffic and enhance visibility.

Curb extensions (bulb-outs) at intersections and crossing points shorten the crosswalk distance and provide space for pedestrians to stand in better view of approaching vehicles. On-street parking can be placed closer to the crossing point without affecting visibility of pedestrians.

When perpendicular parking stalls are located adjacent to sidewalks, wheel stops or curbing should be constructed to eliminate vehicle overhangs that reduce usable sidewalk area.

ADDITIONAL RECOMMENDATIONS FOR ON-STREET PARKING SETBACK DIMENSIONS FROM INTERSECTION CORNERS

- **Restrict parking within 50 feet of all intersection and mid-block crossings where the speed of travel is 35 to 45 mph and within 100 feet of crossings on streets where the speed of travel is above 45 mph.**
- **Provide a minimum setback of 20 feet at intersections in central business districts, downtowns, or other areas where travel speeds are typically slower and at signalized intersections or crossings.**
- **For good pedestrian visibility, a setback distance of 100 feet may be appropriate:**
  - **Near schools where many children are crossing.**
  - **On streets where travel speeds exceed 45 mph.**
  - **On streets with elements that affect sight and stopping distances (curves, bridges, vegetation, etc.).**

SOURCE: Institute of Transportation Engineers (ITE) Design and Safety of Pedestrian Facilities

On-Street Parking Configurations Around the Waterline Apartments in Everett, WA

Source: thewaterlineapts.com

Figure 4-24 Parallel Parking Example

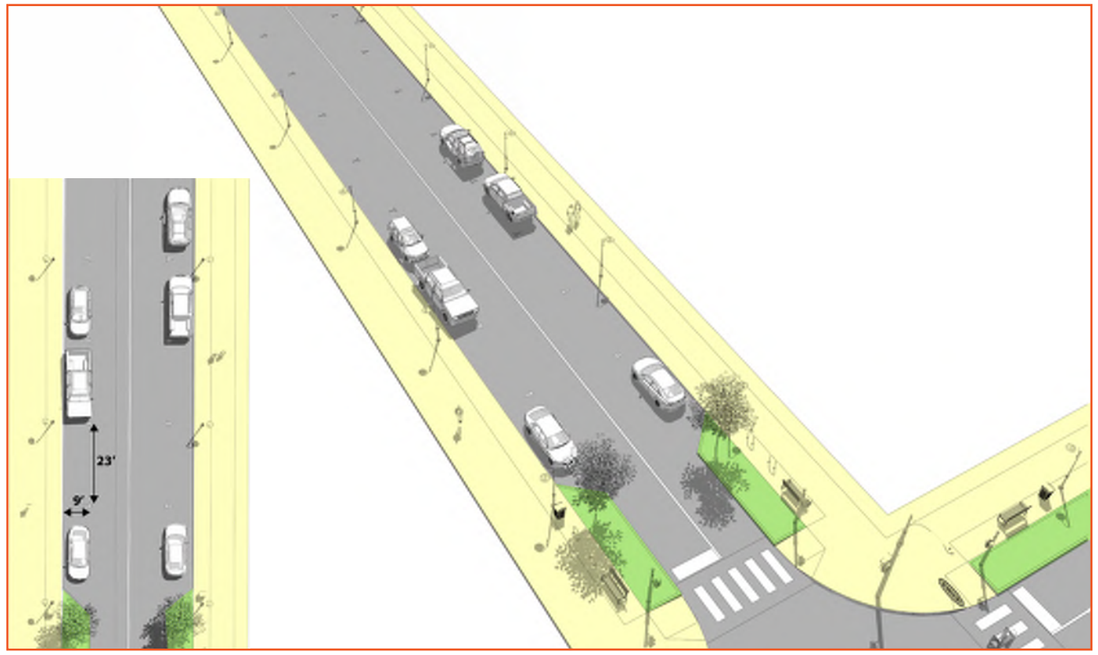


Figure 4-25 Front-In Angled Parking Example

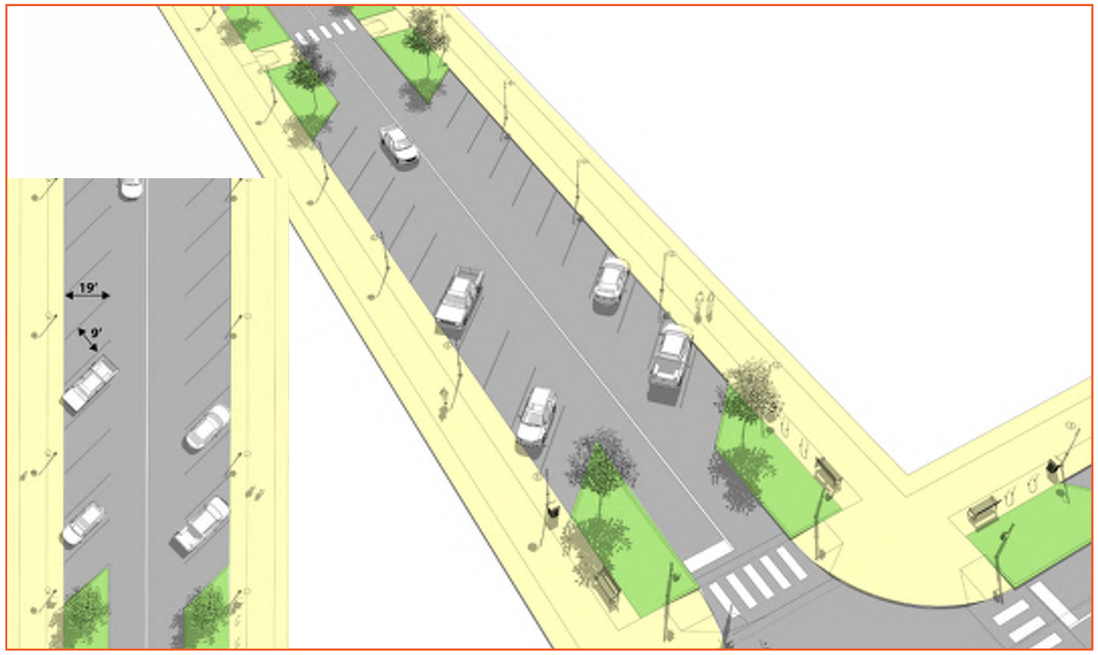


Figure 4-26 Back-In Angled Parking Example

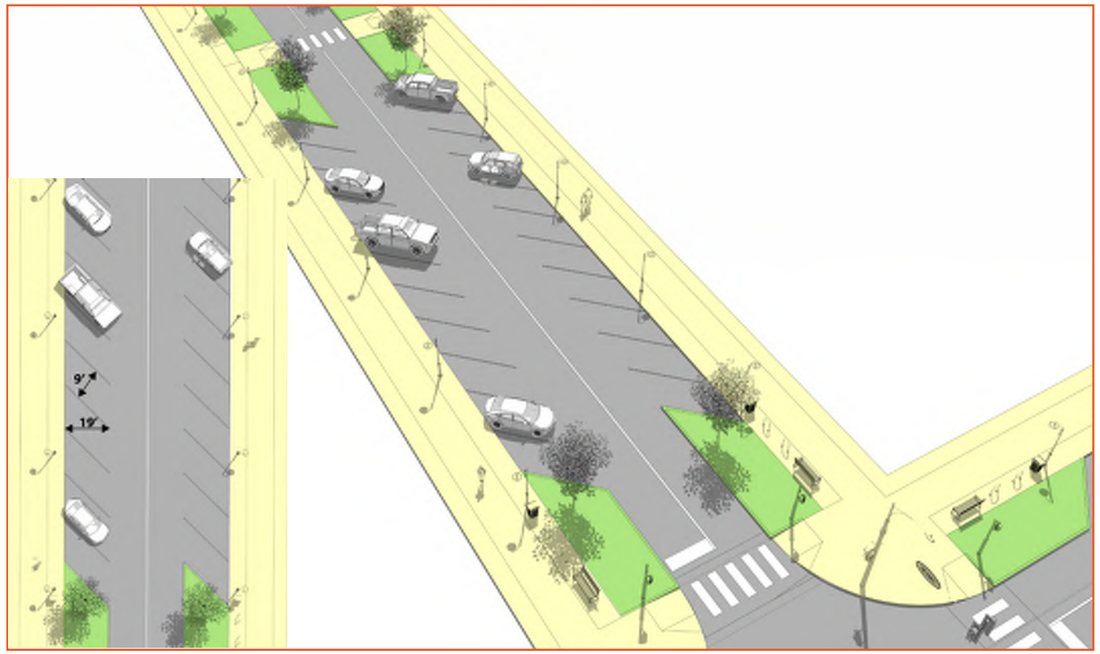


Figure 4-27 90 Degree Front-In Parking Example

4.9. INTERSECTIONS AND CROSSINGS

Since pedestrians are in the roadway/street at intersections and crossings, many of the recommendations below involve roadway design, including markings, signs, signalization, and geometry, to enhance safety. Intersections can be made more pedestrian friendly by implementing designs that improve crossing conditions, reduce crossing distances, and minimize conflicts between pedestrians, bicycles, and motor vehicles. **Figures 4-28** through **4-30** show various intersection design examples.

In all cases, the crossing treatment should be guided by an engineering study that clearly determines the needs and provides recommendations for the improvement of pedestrian facilities. Each location should be studied on a case-by-case basis. Special conditions (such as land use, school routes, pedestrians with special needs, etc.) may exist that must be addressed with pedestrian facilities. Commonly used crossing improvements include crosswalks, curb ramps, pavement markings, pedestrian refuges, signalization, signage, and lighting.

4.9.1 Minimizing Crossing Distances

Minimizing the crossing distance at intersections enables pedestrians to cross the street more safely and comfortably through reducing the time pedestrians spend in the street. Design techniques for reducing crossing distances include curb bulb-outs and extensions, median and center refuge islands, right-turn channelization and refuge islands, and smaller curb return radii.

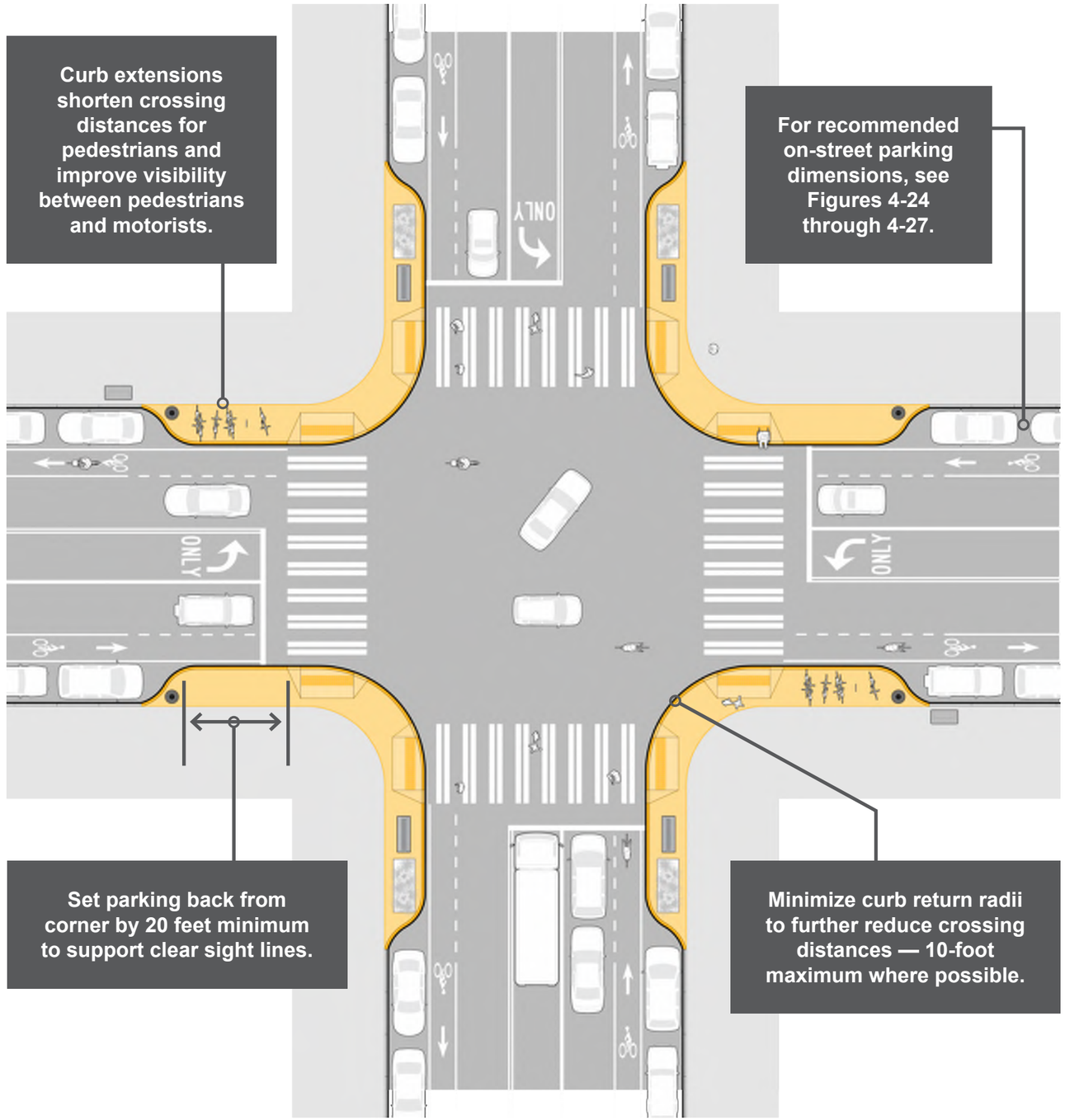
4.9.2 Curb Bulb-Outs and Extensions

Curb bulb-outs and extensions expand the curb and sidewalk into the street area, shortening crossing distances, reducing the crossing time, and making pedestrians more visible to vehicles. At intersections and mid-block crossings, curb bulb-outs and extensions may also help slow traffic by narrowing the street. They also are effective in delineating on-street parking zones. Learn more about curb extensions here and in **Figure 4-28**.

BASIC PRINCIPLES OF INTERSECTION DESIGN TO ACCOMMODATE PEDESTRIANS

- **Design compact intersections.**
- **Eliminate unrestricted motor vehicle movements.**
- **Reduced motor vehicle speeds through intersections.**
- **Create crossings on all legs of an intersection.**
- **Design crossing in a direct line, at 90 degrees to the direction of vehicular travel, as feasible.**
- **Clearly identify crossings to all pedestrians, including those with sight impairments.**
- **Avoid multiple and skewed intersections.**

Figure 4-28 Typical Intersection Design with Curb Extensions/Bulbs



Source: Seattle Right-of-Way Improvements Manual — Streets Illustrated, City of Seattle

4.9.3 Curb Return Radii at Intersections

The use of smaller curb return radii at intersections reduces crossing distances. Reduced radii also help to slow vehicles as they navigate through their turning movement, enabling drivers to respond more quickly to signal changes and crossing pedestrians. While reduced curb return radius may not be possible at every corner/intersection, designers should consider reducing radii to the absolute minimum needed. The **SEDG** recommends maximum turning radius or curb radius of 10 feet in station areas but recognizes that some variances as some corners may be needed to allow for the turning movements of buses and large vehicles. However, it is also important to remember that the effective turning radius of vehicles is much wider than the actual curb return radius, as shown in **Figure 4-30**. **Figure 4.29** shows the benefits of reduced turning radius (curb radius) and the correlating reduced pedestrian crossing distance.

Also consider:

- Designing turns so that vehicles may not turn faster than 10 mph.
- Calculating effective turning radius and available space for turning, including the space for on-street parking, bicycle lanes, and all travel lanes on the receiving street (not just the nearest lane).
- Allowing turning vehicles to use all of the available roadway width in the direction of travel. If the receiving street is a local street, it is preferable to allow an infrequent large vehicle to turn into an opposing travel lane instead of creating an unnaturally large street corner radius. This situation often occurs at local and collector street intersections – either signalized or unsignalized – where the only large turning vehicles are an occasional school bus, moving van, fire truck, or oversized delivery truck.

4.9.4 Right-Turn Lanes

Ideally, the use of dedicated right-turn lanes and right-turn slip lanes should be minimized, due to the emphasis on easy and fast motor vehicle travel and the challenges created for pedestrians and bicyclists at these intersections. However, if included, right-turn lanes can be designed to be less problematic. At many arterial street intersections, pedestrians have difficulty crossing due to right-turn movements and wide crossing distances. Well-designed right-turn slip lanes provide pedestrian refuge islands within the intersection and a right-turn lane that is designed to optimize the right turning motorist's view of the pedestrian. Listed below are four alternatives for right turns, in priority order.

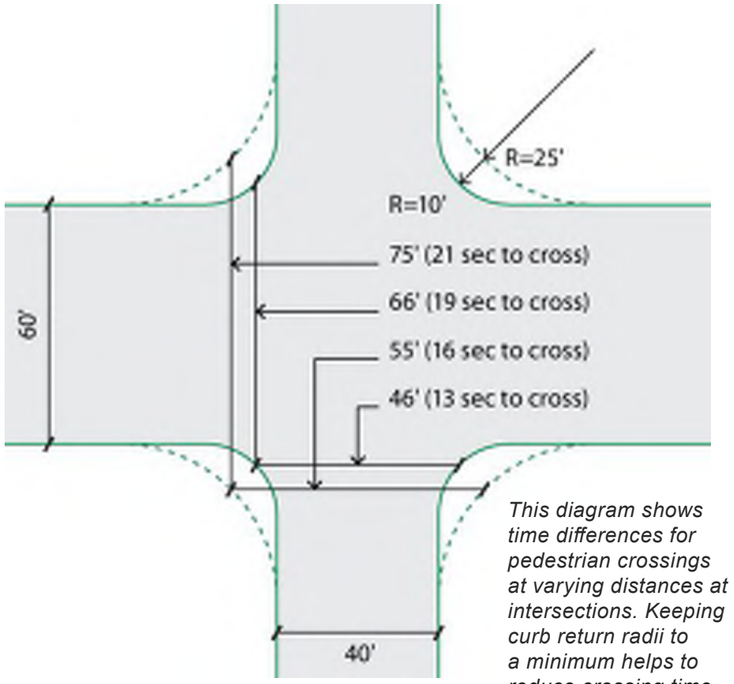
- Option 1 – No dedicated right-turn lane with "No Right Turn on Red" signs (preferred option).
- Option 2 – Dedicated right-turn lane.
- Option 3 – Signalized right-turn slip lane with raised pedestrian crossing.
- Option 4 – Yield-controlled right-turn slip lane raised pedestrian crossing.

At locations with extremely high numbers of right-turning movements, slip lanes should be equipped with a signal to provide pedestrians opportunities to cross.

Pedestrians crossing at an intersection in Washington D.C., where the curb return radius has been kept to a minimum.

Source: Jordan Pascale / WAMU

Figure 4-29 Curb Return Radii and Related Crossing Distances and Pedestrian Crossing Times



This diagram shows time differences for pedestrian crossings at varying distances at intersections. Keeping curb return radii to a minimum helps to reduce crossing time.

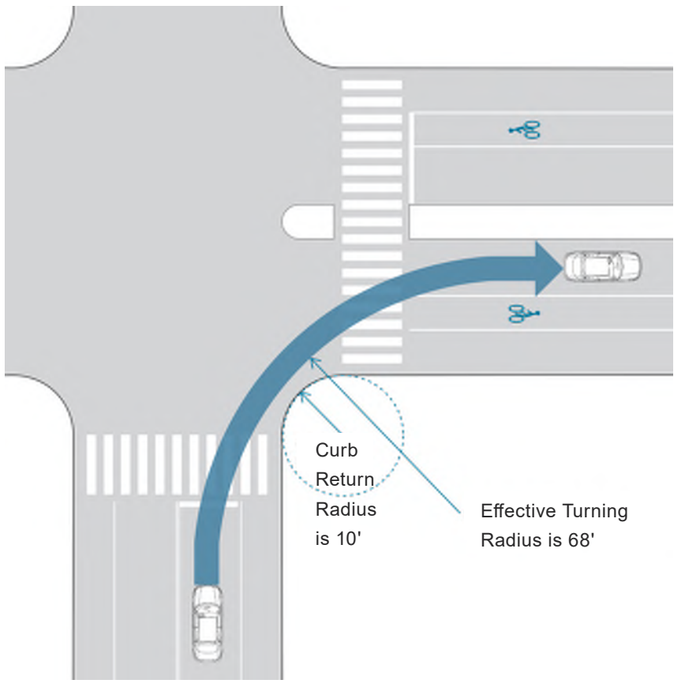
Source: NACTO

4.9.5 Effective Turning Radius

The distinction between the corner radius and the effective turning radius is crucial and often overlooked. The effective turning radius depends on the presence of on-street parking, bike lanes, the number of travel lanes, medians, and traffic control devices.

Designers often determine corner radii based on the intersection geometry only and overlook the effective radius. The effective turning radius is the actual path of travel of turning vehicles, as shown in **Figure 4-30**. By designing to the effective turning radius, the curb return radius can be kept to a minimum, which helps to reduce the crossing distance for pedestrians.

Figure 4-30 Effective Turning Radius vs. Curb Return Radius



4.9.6 Medians and Center Refuge Islands at Intersections

Medians and refuge islands are curbed areas separating two directions of traffic in the street. Because medians control vehicular access and turning movements, they can isolate traffic flow and increase safety of the roadway. When medians are designed as pedestrian crossings, known as refuge islands, they can eliminate the need for pedestrians to cross both directions of traffic at once. Whether located at intersections or mid-block, they help define the pedestrian walking space and provide protection and refuge from motor vehicles.

At intersections where there is a median in the roadway, the median nose can be added to create a pedestrian refuge island. The refuge should be aligned with the crosswalk, with the nose providing separation from traffic. Refuge islands are recommended at all intersections and crossings in station areas and are strongly recommended provided whenever crossing distances exceed 60 feet.

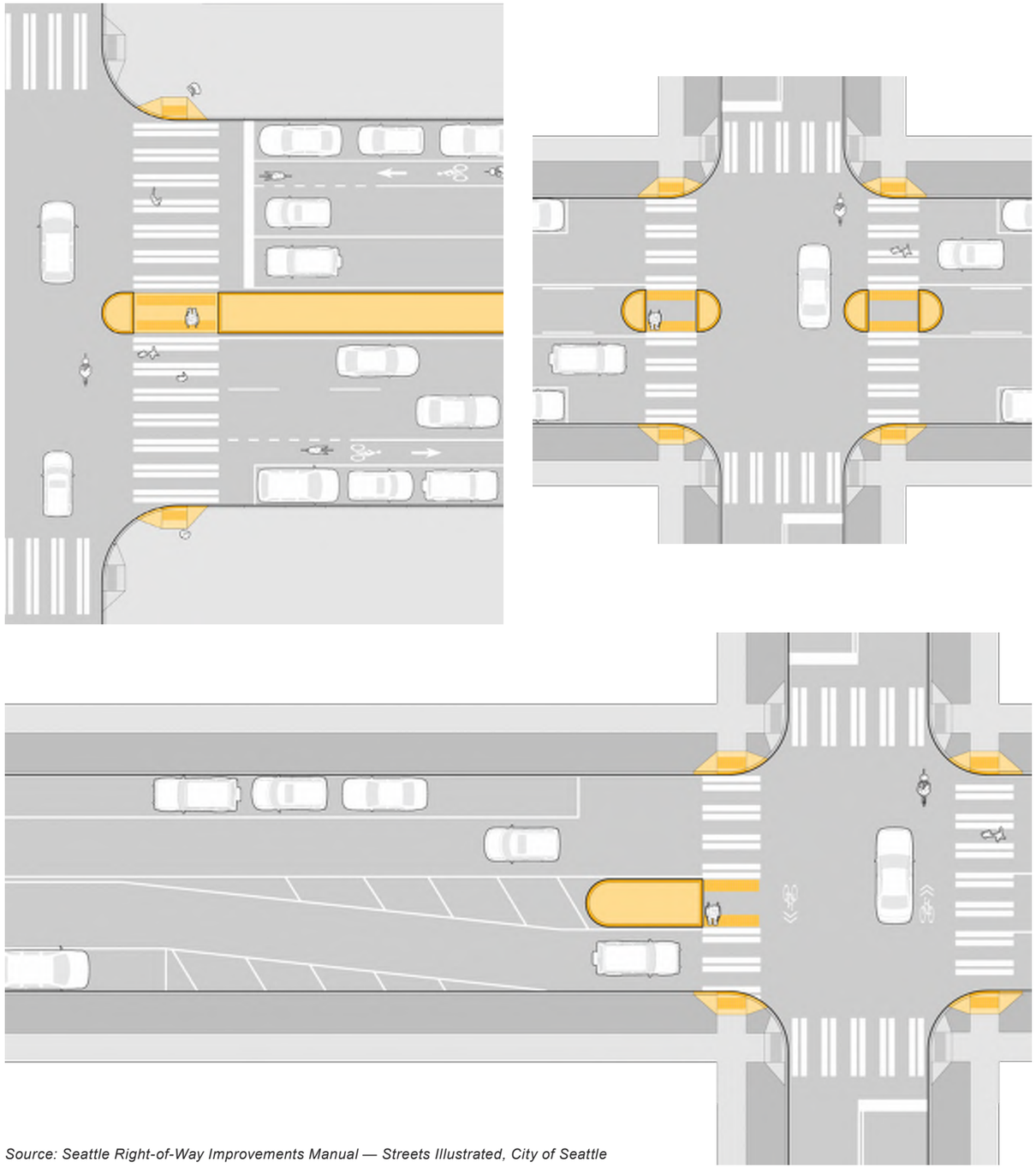
Refuge islands designed as pedestrian crossings need to be wide enough to provide refuge for several pedestrians waiting at once. The refuge needs to be accessible, with either curb ramps or at-grade cuts. At-grade cuts are generally easier to construct and easier for pedestrians to negotiate than curb ramps, particularly on smaller islands. Pedestrian push buttons at the refuge area may be needed when the signal timing does not allow all pedestrians to cross the entire street on one crossing phase.

CHECKLIST

DESIGN OF CENTER REFUGE ISLANDS AS PEDESTRIAN CROSSINGS

- **Provide pedestrian-scale lighting at all pedestrian crossings.**
- **Provide a minimum width of 8 feet for the median for sufficient space for someone pushing a wheelchair, bicyclists, and strollers.**
- **Narrow traffic lanes (such as from 12 feet to 11 feet) as needed to provide the recommended width for the median at crossings.**
- **Paved crossing areas and cut-throughs should have a maximum cross slope of 2% for drainage.**
- **The preferred cut-through/crossing width is 8 feet minimum or as wide as the crosswalk.**
- **Truncated domes should be installed as warning devices for visually impaired pedestrians.**
- **Pedestrian push buttons should be placed in medians of signalized mid-block crossings where the crossing distance exceeds 60 feet.**
- **The use of staggered or angled (“Z”) crossing configurations is recommended because they direct pedestrians to look toward oncoming traffic, making them more aware of approaching vehicles (see 4.9.8).**
- **Do not locate utilities, including signal control boxes, signal and light poles, signs, and/or landscaping above 2 feet in height in these areas to keep sight lines clear.**
- **Trees in medians (and at planting zones along the street edges) can help narrow the field of vision for motorists, which creates a traffic calming effect (drivers tend to slow down).**

Figure 4-31 Examples of Median Crossing Island Configurations at Intersections



Source: Seattle Right-of-Way Improvements Manual — Streets Illustrated, City of Seattle

4.9.7 Mid-Block Crossings

Mid-block crossings can support pedestrian accessibility and safety in TOD zones and help people cross to key destinations, such as transit stops, restaurants, and shops on the other side of the street. The following guidance for determining locations for mid-block crossing installation is provided by the ITE manual, Design and Safety of Pedestrian Facilities. Also refer to **Chapter 2** for urban design guidance related to mid-block connections.

Good sight distance at mid-block crossings is important for safety. Mid-block crossings are of particular concern where inadequate sight distance exists because there is no control (stop sign or signal) over the movements of vehicles and pedestrians. Facilities such as signs, utility poles, bus stops, benches, and other elements are often added after design and construction of an intersection, inhibiting driver and pedestrian visibility. These elements should not be located in areas that interfere with sight distances. In addition to proper roadway geometry, any obstacle that would interfere with visibility at the crossing location (e.g., mailboxes, utility poles, street furniture, and landscaping) should be removed or relocated. On-street parking should be set back from the crossing point for improved visibility. Curb extensions should be used at mid-block crossings, because they reduce crossing distances and make pedestrians more visible to oncoming traffic. Raising a crossing to the same level as the curb enhances pedestrian safety by making pedestrians more visible and by functioning as a speed hump or speed table, which forces motorists to slow down. Raised crossings provide additional comfort to the pedestrian by maintaining the grade from curb to curb and should be accompanied by the appropriate markings as shown in **Figure 4-33**. Advance speed hump markings are designed to warn motorists of the upcoming speed hump and may help alert them to the presence of pedestrians, as well. **Figure 4-33** shows a mid-block crossing design at grade.

LOCATE MID-BLOCK CROSSINGS

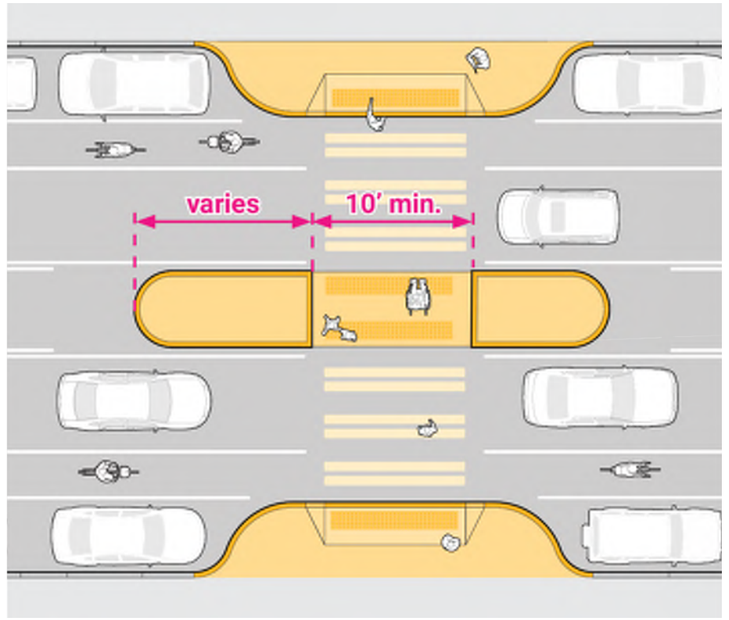
- **Where significant pedestrian crossings and substantial pedestrian/vehicle conflicts exist; should not be used indiscriminately.**
- **Where the crossing can serve to concentrate or channelize multiple pedestrian crossings to a single location.**
- **At approved school crossings or crossings on recommended safe routes to schools.**
- **Where land uses create high concentrations of pedestrians needing to cross (such as residential areas across from retail or recreation, and transit stops across from residential or employment).**
- **Where pedestrians could not otherwise recognize the proper place to cross or there is a need to delineate the optimal location to cross.**

Crossing design treatments and related traffic control call for careful consideration and typically require a traffic engineering analysis of existing conditions on a project-by-project basis. At mid-block crossings, design treatments should be used in combination with one another. These may include:

- Markings
- Stop or yield signs
- Signalization
- Pedestrian hybrid beacons
- Pedestrian actuated buttons
- Refuge islands
- Curb extensions
- Signs warning motorists of the presence of pedestrians

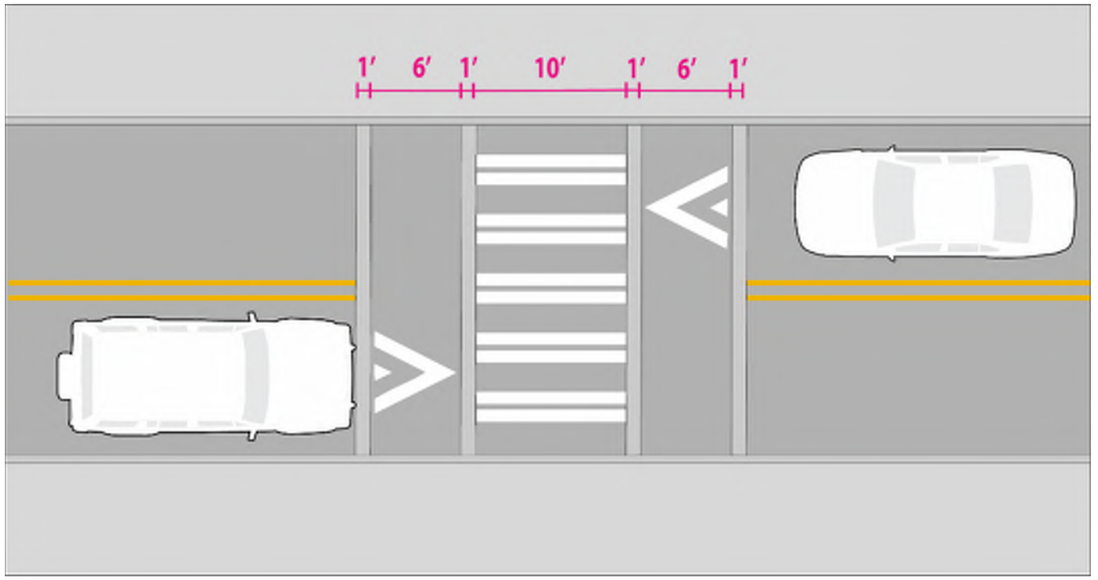
Mid-block crossings may be signalized, unsignalized, or use other techniques described in this section to control roadway traffic. Signalization should be designed and installed only on the basis of a professional engineering study. Pedestrian actuated signals are often appropriate for roadways that have high traffic volumes or speeds, or four or more lanes. Since these signals only operate in the presence of pedestrian traffic, they do not cause undue delay to vehicles during periods of low pedestrian volumes. For more information on signalizing and marking mid-block crossings, refer to the Manual on Uniform Traffic Control Devices (MUTCD).

Figure 4-32 Mid-Block Crossing at Grade



Source: Seattle Right-of-Way Improvements Manual — Streets Illustrated, City of Seattle

Figure 4-33 Raised Pedestrian Crossing Example



Source: Seattle Right-of-Way Improvements Manual — Streets Illustrated, City of Seattle

4.9.8 Mid-Block Median Refuge Islands

Raised refuge islands greatly increase pedestrian safety at mid-block crossings. They can be installed by themselves or within a median. On multi-lane roads, raised medians or refuge islands are highly recommended to provide a vertical barrier and added protection between vehicles and pedestrians. Refuge islands need to provide curb cuts, or cut-throughs if space is limited, for accessible passage. Minimum dimensions for refuge islands as required by AASHTO shall be:

- No smaller than 54 square feet, but preferably a minimum of 97 square feet.
- Minimum length of 20 to 25 feet long.
- A wider area is needed to provide curb ramps and a level area between the curb ramps in the crossing region.
- Medians and pedestrian refuge islands shall be 6-feet minimum in length in the direction of pedestrian travel. The crossing refuge island shall contain a pedestrian access route of 4-feet minimum in width for accessibility.

LOCATIONS WHERE MID-BLOCK MEDIAN REFUGE ISLANDS ARE MOST BENEFICIAL:

- **Wide, two-way streets (four lanes or more with high traffic volumes), high travel speeds, and large pedestrian volumes.**
- **Wide streets where people cross regularly (especially children, people with disabilities, or older adults).**
- **Wide two-way intersections with high traffic volumes and significant numbers of crossing pedestrians.**
- **Low-volume side street traffic demands with insufficient time to cross.**
- **Minor access/local residential streets where they function both as traffic calming devices and street crossing aids.**

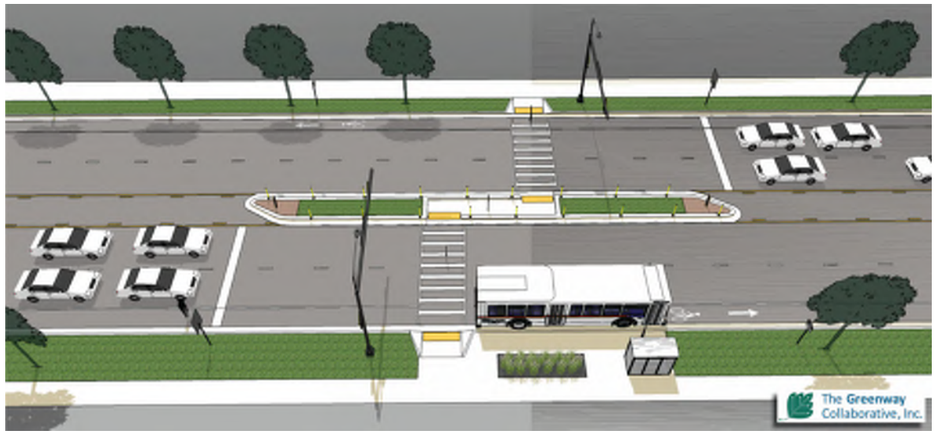
Z-style/staggered pedestrian crossing on El Camino Real in Encinitas, CA

Source: City of Encinitas, CA

4.9.9 Staggered or "Z" Crossings at Mid-Block

Staggered crosswalks at a raised refuge island in a "Z" form offsets the crosswalk so pedestrians are oriented towards oncoming traffic. The walkway between the crossings provides room for pedestrians to walk toward and see approaching traffic and provides space for waiting when crossing multi-lane roads. Fencing provides additional separation from traffic. See **Figure 4-34** for examples.

Figure 4-34 Staggered Crosswalks at a Z Crossing



Source: The Greenway Collaborative https://greenwaycollab.com/midblock-crosswalks-for-arterial-five-lane-roadways/

Figure 4-35 Pedestrian Scramble Design Example

4.9.10 Crosswalk Dimensions

Crosswalks are typically designed to be a standard width of 10 feet. In high pedestrian areas, crosswalks are often wider. For example, the **SEDG** calls for 15-foot-wide crosswalks in the WALK, BIKE, and ROLL access areas adjacent to stations, and this TOD Toolkit recommends applying that minimum dimension (15-foot-wide) in all Center Core zone areas. In various special events districts or at high-volume intersections, crosswalks can be much wider — 20 feet or more. The approaching sidewalk and corner area at the intersection needs to be free of obstructions so pedestrians can freely travel in either direction to cross the street. The ITE recommends 10- to 12-inch bars, particularly at crosswalks that receive high use or deserve special attention. In some cases, crosswalks may be designed using special markings and paving treatments or with art design stencils, and these creative approaches require review and approval by the jurisdiction responsible for the right-of-way. Refer to **Figures 4-31** through **4-34** for typical crosswalk designs at intersections and mid-blocks.

4.9.11 Curb Ramps

Curb ramps are often considered to be the most important elements of an accessible pedestrian environment because they provide accessibility at the grade transition from the sidewalk to the street. They facilitate crossing for wheelchair users, people pushing strollers, bicyclists, and others. When properly located, they can also help direct pedestrians, including people who are blind or have low vision toward the crosswalk.

4.9.12 Giving Pedestrians Advantages at Intersections

Intersections can be designed to give pedestrians more advantages and choices in crossing. For example, the leading pedestrian interval (LPI) provides a walk signal several seconds before the green traffic signal, allowing pedestrians to enter the crosswalk first, protecting them from turning vehicles and making them more visible to motorists. This approach is typically used in conjunction with “No Right Turn on Red” signs. The introduction of the countdown display reduces confusion among pedestrians who find themselves in the middle of an intersection and are puzzled by the meaning of a flashing “DON’T WALK” sign. However, many existing intersections lack the countdown display and should be retrofitted with countdown displays. Countdown signals provide better pedestrian safety. Results from a San Francisco study showed that there was a 25% Crash Reduction Factor after countdown signals were installed.

In addition, shorter cycle lengths and longer walking intervals better serve pedestrians and bicyclists aiming to get to the transit station efficiently, and fixed time signals work best. Providing an exclusive pedestrian phase, also known as pedestrian “scrambles” or all-way-walk, at key intersections can provide advantages as well. These include increased pedestrian safety as a result of a significant reduction in pedestrian/vehicle conflicts and giving pedestrians the capability to cross in any direction (eliminating the need to cross two legs of an intersection). This approach works best near major transit stops and when pedestrian volumes meet or exceed 30% of the vehicle volumes during the peak hour or 300 pedestrians or more are crossing per hour during the peak hour on a single crosswalk leg. Refer to **Figure 4-35** for an example of a pedestrian scramble design.

Pedestrian Scramble near the Dolby Theater in Los Angeles, CA

Source: Los Angeles DOT

Pedestrian count-down signal head

Source: City of New York

4.10. ACCESS MANAGEMENT AND DRIVEWAYS

4.10.1 Benefits of Access Management

Well-designed access management can benefit pedestrians and bicyclists by reducing the amount of curb cuts they need to navigate across. Access management also helps keep traffic flowing. Access management techniques include:

- Reducing the number of existing driveways and consolidating driveways of parking areas and businesses.
- Providing raised or landscaped medians or concrete barriers to control turning movements from the street.

Key benefits to pedestrians and bicyclists include:

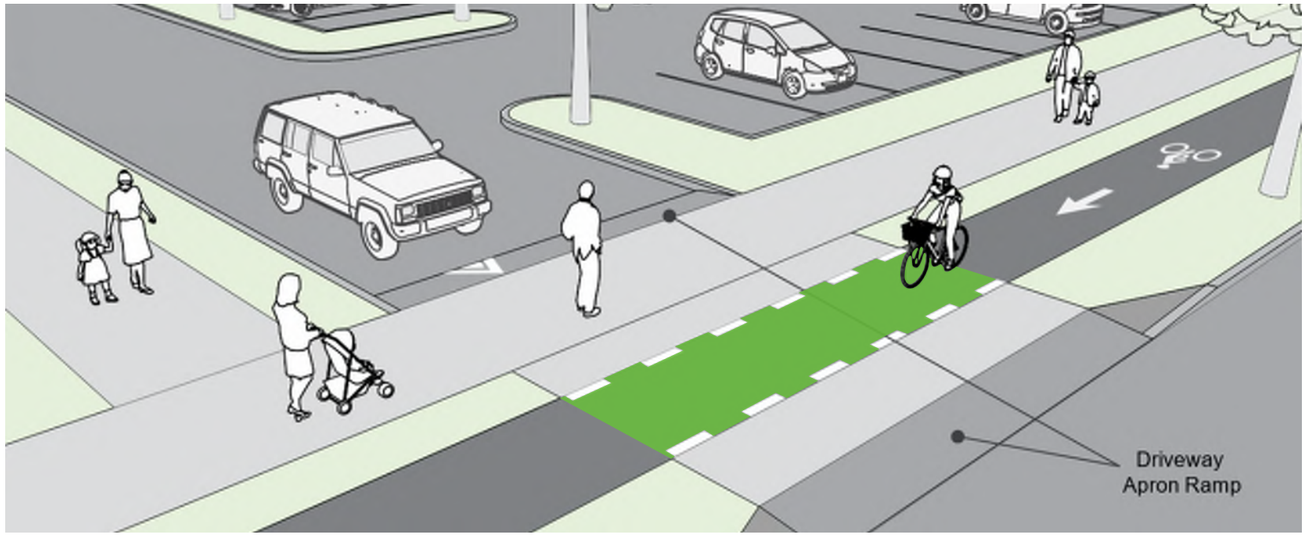
- Conflict points are reduced.
- Crossing opportunities are enhanced with an accessible raised median.

4.10.2 Design of Driveways: Best Practices for Pedestrians and Bicyclists

Guidelines for designing driveways to optimize pedestrian and bicycle mobility, accessibility, and safety are as follows:

- Consolidate driveways as much as possible — the number and width of driveways should be minimized.
- Space driveways from intersections per local and state requirements.
- Sidewalks should be continuous across driveways and the cross-slope and bike lanes/bikeways should be maintained (2% max); driveways should be sloped so the driver goes up and over the sidewalk and bike lane. The sidewalk and bikeway should be carried across the driveway rather than dipping down and up the driveway aprons. See **Figure 4-36**.
- Access to private property can be built either as conventional driveways or with designs that resemble street intersections. For pedestrian safety and comfort, the conventional driveway type is preferred because these driveways are narrower, causing motorists to slow down when turning into the driveway, and the pedestrian right-of-way is more clearly aligned across the driveway.
- Where the volume of turning vehicles is high, right-turn channelization should be considered to remove slower-turning vehicles from the traffic flow, allowing them to stop for pedestrians, or a traffic signal should be considered where the turning movements are very high.
- Driveway access should be built on side streets or alleys where possible.

Figure 4-36 Best Practice for Driveway Design, Creating a Continuous Travel Way for Pedestrians and Bicyclists



Source: Adapted from Ohio Department of Transportation guidance

High visibility green paint on bike lanes at pedestrian and vehicle conflict points

Source: Transpo Industries, Inc.

Bike lane behind a bus stop, painted green for high visibility

Source: bikeportland.org

4.11.MULTIMODAL STREETSCAPES

Several recommended provisions related to urban design integral to streetscapes are provided in Chapter 2 — Urban Design and Placekeeping, including guidance related to wayfinding features, furnishings and amenities, public art, lighting, landscaping, and micro- and emerging mobility infrastructure. This section of Chapter 4 provides more specific guidance with a focus on multimodal streets and related streetscape design considerations:

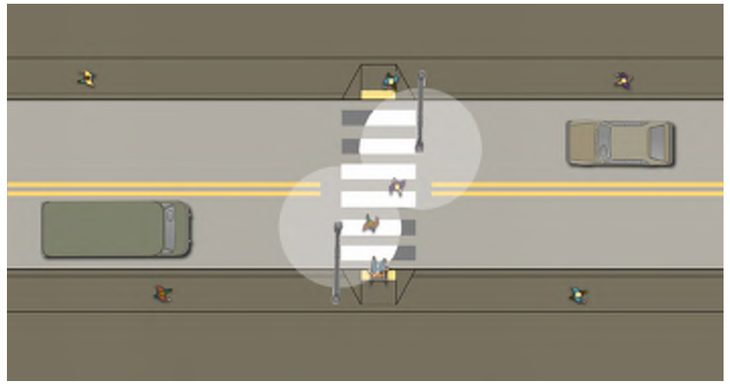
- Street lighting to support multimodal travel and the importance of lighting for pedestrians.
- Checklist of additional considerations related to streetscape furnishings.
- Checklist of additional considerations related to street trees and landscaping.
- Checklist of additional considerations related to signage and wayfinding.

4.11.1 Street Lighting: Lighting the Travel Lanes and the Pedestrian Environment

Street lighting is designed to serve a variety of purposes, but primarily, it should facilitate immediate visibility (clear, accurate, and comfortable) at night for all travelers. Seventy percent of pedestrian fatalities occur at night, so lighting should be a priority at pedestrian crossings, and street lighting has also been shown to reduce pedestrian accidents, reduce fear of crime, and promote business through use of public streets and spaces at night. Lighting can reduce the odds of pedestrian fatalities by 42% at mid-block crossings and by 54% at intersections. Street lighting type, spacing, light levels, and equipment shall meet the appropriate jurisdiction standards.

Lighting can be designed to improve safety, security, and comfort and to enhance the ambience of TOD districts. Existing street lighting may need to be supplemented with additional pedestrian lighting in areas of heavy pedestrian traffic, at locations where motorists may not expect a crossing, or in other areas determined by a traffic safety analysis. Crosswalks and the approaches to them should be well lit, and a consistent level of lighting achieved. Overhead road lighting installed at crosswalks generally provides greater visibility distance than headlamps alone. A level of 2.7 vertical footcandles, a measurement of light intensity per square meter, is considered a conservative estimate of the lighting level required for adequate visibility. In urban areas, intersection areas are typically double the footcandle of street corridor lighting. Light-emitting diode (LED) streetlights are more energy efficient than other technologies and can reduce the cost of keeping streets well-lit when dark. For more information, refer to the standards and design guidelines of the Illuminating Engineering Society of North America.

Figure 4-37 Lighting Mid-Block



Lighting Design Recommendations

- Urban street lighting fixtures should typically be mounted at 25 to 40 feet above grade, depending on the style of light pole and luminaire selected. However, pedestrian light fixtures need to be mounted more in scale with pedestrian activity typically at 12 to 18 feet above grade.
- Cutoff luminaires should be provided to minimize glare and light pollution.
- Lighting should be evenly distributed to avoid alternating bright and shadowed areas. Lighting should be designed to increase recognition of other people and not create inordinate shadows. The best type of lighting for pedestrians focuses on the sidewalk and shines down rather than out. The benefits of lighting can be amplified by reflective material such as yellow paint or reflective markings on the sidewalk that help pedestrians anticipate and avoid obstacles such as curbs.
- Provide between 0.5 and 2.0 footcandles of light along pedestrian travel ways, depending on conditions. A minimum intensity of 1 footcandle is required on the surface of accessible routes of travel.
- Choose energy efficient light sources, such as LED, that have a longer lamp life to minimize repeated replacement of lamps. Jurisdictions that have upgraded to LED streetlights have reported energy savings of about 50%, resulting in significant cost savings.
- Some designers use lamp styles to provide a sense of neighborhood continuity or preserve the atmosphere of a historic district. Specialty light pole styles can be selected to convey a particular theme or design character in coordination with the local municipality.
- Light poles can include brackets for hanging banners for special events or to reinforce district/neighborhood identity.
- Creative forms of lighting can add interest and appeal to the streetscape. Hanging votive-style lights, sparkling accent lights, lanterns, in-ground lights, colored lights, torches, and other illumination can add beauty and art to the street and also attract pedestrians.
- Streetlights for motor vehicle lanes should generally be located in the landscape/furnishings or edge zones. Pedestrian-oriented lighting should be located in the landscape/furnishings zone or frontage zone. Often pedestrian light fixtures can be mounted on the backs of street lights (at a lower height to provide sufficient illumination of the sidewalk corridor).
- Light pole locations need to be coordinated in design to avoid conflicts with other above- and below-grade utilities and street signs.
- The spacing of streetlights and trees establishes the rhythm of the streetscape. Streetlight spacing should be consistent along the length of a block or corridor, but flexibility in design is necessitated by infrequent driveway cuts. Lighting should be offset from street trees in a regular pattern, either mid-way between trees or at a consistent distance on either side, so the tree canopies do not interfere with illumination coverage.
- Choose fixtures that are durable and resistant to vandalism and environmental conditions.
- Provide additional levels of pedestrian lighting in high use areas and places where needed (such as where pedestrians move at a slower pace, look at more detail, and/or stop frequently for longer periods of time when compared with people in a moving vehicle), such as:
  - Intersection crosswalks and mid-block crossings (see **Figure 4-37**)
  - Stairs and ramps
  - Transit stops
  - Pedestrian underpasses
  - Building entrances
  - Plazas and public spaces
  - Parking garages
  - Under awnings and colonnades

Downward focused pedestrian scale lights in New Delhi
Source: indiamart.com

4.11.2 Guidance for Streetscapes

The checklists on this page provide additional guidance for streetscape design, including furnishings, street trees and landscaping, and signage and wayfinding for multimodal streets. Also refer to Toolkit **Chapter 2** Urban Design and Placekeeping for additional guidance.

Streetscape Furnishings

Providing high-quality streetscape design will show that the community values its public spaces and can be designed to be cost-effective over the long run (e.g., more durable and vandal resistant; less maintenance required). Well-designed streets and walkable districts are enhanced by urban design elements and street furniture, such as benches, bus shelters, trash receptacles, and water fountains. Streetscapes need to be carefully designed to provide adequate space for furnishings and utility facilities, such as light and signal poles, signal boxes, and fire hydrants. A continuous and clear travel way is required on sidewalks, walkways, and all accessible routes of travel.

CHECKLIST

- **Develop a recognizable palette for streetscape furnishings in station areas along the corridor.**
- **Choose materials and styles for maximum durability, comfort, safety, security, and usability.**
- **Locate furnishings primarily in the furnishings zone, and secondarily in other actively used areas, such as near intersections and mid-block crossings, at transit stops, and other places where they are needed and where space permits. Locate furnishings in curb extension/curb bulb areas at block ends and at mid-block crossings. Clustering furnishings in key locations rather than distributing throughout the entire furnishings zone also makes it easer for people to exit and enter their parked vehicles.**
- **Integrate adjacent site furnishings with other streetscape elements to reduce clutter and creative a cohesive pedestrian environment.**

Street Trees and Landscaping

Landscaping and street trees in the landscape/furnishings zone and in planting buffers and along streets can greatly enhance the pedestrian environment by softening the hardscape, providing shade and shelter, and enhancing the urban tree canopy — a vital component of mitigating greenhouse gas emissions. Street trees also create the benefit of traffic calming.

CHECKLIST

- **Space street trees evenly along the street, ranging from 20 to 50 feet apart, depending on the size of the tree at maturity. Trees can also be placed informally and clustered in areas but should not be located where they will be an obvious obstruction to visibility.**
- **Install accessible tree grates rather than tree wells to expand pedestrian capacity along the sidewalk. Tree grates adjacent to or within sidewalks need to meet the accessibility requirements of the ADA — top mounted flush with grade and no openings larger than 0.5 inches in diameter.**
- **Street trees generally need a minimum width of 4 feet, but wider, such as 6 to 8 feet, is more desirable for long term tree health.**
- **Install low-height shrubs and upward branching trees to maintain visibility and sight distance at intersections, driveways, crossings, and other critical areas along the street system. It is also important to consider how high and wide the shrubs and trees will be at maturity.**
- **Select plant materials and vegetation that align with maintenance expectations, water (irrigation) availability, and community preferences (such as the use of native species and informal plantings versus ornamental or formal landscapes).**
- **Screen parking structures, service areas, driveways, utilities, and blank wall from public view with the use of extensive planting. This can be established by using vertical and mid-height canopy form trees, shrubs, or non-invasive climbing or cascading vines. Designers may specify pre-fabricated trellis or cable systems for these applications.**
- **Wherever possible, water runoff from roofs, planter boxes, and parking facilities should be directed to landscaped areas for retention and percolation.**
- **Check with local utility providers on clearance requirements beneath overhead power and utility lines, as well as required clearances around utility boxes and vaults.**

Signage and Wayfinding

Signage and wayfinding systems are important in supporting pedestrians and bicyclists as they navigate station areas and find their way to and from transit.

CHECKLIST

- **Define specific goals and objectives for signage and wayfinding — is the system intended to guide primarily pedestrians and bicyclists, or to guide all travelers?**
- **Confirm local themes and standards and review all regulatory requirements that should be followed — individual cities and jurisdictions may have specific design themes (colors, fonts, design structures, etc.) to be followed.**
- **Use multiple design elements (sign types/sizes, vertical elements, maps, etc.) to devise a more complex system, instead of relying on one element.**
- **Limit the amount of information per sign to ensure visibility and comprehensibility.**
- **Use colors and type that ensure legibility and readability from the distances desired (people walking, bicycling, riding transit, and/or driving).**
- **Create signs that are attractive to pedestrians, even if they are oriented only to motorists.**
- **Design and build lasting styles and structures that withstand physical, design trends, and technological changes.**
- **Coordinate on required maintenance needs in advance, as part of the design process.**

4.12. INNOVATIVE DESIGN APPROACHES

4.12.1 Shared Streets, Woonerfs, and Festival Streets

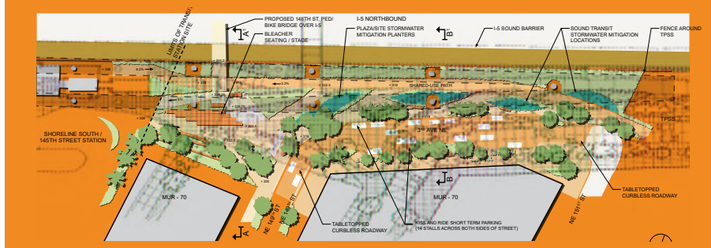
Public rights-of-way for streets can encompass 25% or more of the space of our cities. Designers and engineers have been applying innovative design practices to expand the multiplicity of public rights-of-way so they can function as shared spaces for all modes and enhance community settings.

A “woonerf” is the Dutch name for a "living street.” These streets are designed to prioritize the needs of pedestrians and bicyclists with motor vehicle drivers as secondary. This type of street functions as a "shared space" used by pedestrians, bicyclists, low-speed motor vehicles, and sometimes vendors. In such applications, the street becomes a public place for people instead of a single-purpose conduit for automobiles. Similarly to a woonerf, shared streets and festival streets also place a priority on creating an enhanced pedestrian setting and are designed to look similarly to pedestrian plazas and gathering spaces (See **Figure 4-38**).

In a woonerf, shared street, or festival street, vehicles may not impede pedestrians, who in turn may not unreasonably hinder the progress of drivers. These streets are typically narrower, and all travel modes share the same paved surface so that there are no defined travel lanes. They often have a surface paved with unit pavers or colored concrete to differentiate from other types of streets. They also are often constructed all at one level, without curbs or with minimal curbs, and in these cases tactile warning strips and bollards are used to define edges.

Often seen in many European cities, shared streets are becoming more common in cities across North America. Many cities and TOD communities use shared streets as flexible public space. They may close these street segments during festivals and special events (e.g., Plaza Roberto Maestas Festival Street at Beacon Hill Station). Shared streets can also serve as focus areas for street vendors and farmers markets. They may doubly share as pedestrian plazas or transit waiting areas.

Figure 4-38 Illustration of a Shared Street/Festival Street in a TOD District



Source: City of Shoreline

CASE STUDY

SHORELINE 3RD AVENUE WOONERF

Walking, biking, transit, and auto drop-offs all intersect at the station entrance on 3rd Avenue and 148th St, on the east side of I-5. Shoreline is proposing a public plaza, with the adjacent street being designed to give priority to walking over motor vehicles. The design will implement the Dutch concept of the “woonerf” — a living street, achieved through creating shared spaces, placemaking, calming traffic, and lowering speed limits. Other examples of woonerfs in Seattle include the 12th Avenue Square Park & James Court Woonerf and Pike Place Market. In a shared space like woonerfs, pedestrians’ movement and experiences are put at a higher priority over cars. Design and implementation of woonerfs is not always easy. Pedestrian priority needs to be reinforced through design, enforcement, and sometimes limiting cars all together.

Parklets in Downtown Louisville, Colorado.

Source: City of Louisville

Georgetown, Washington, DC, parklet design by Gensler Architects.

Source: Gensler Architects

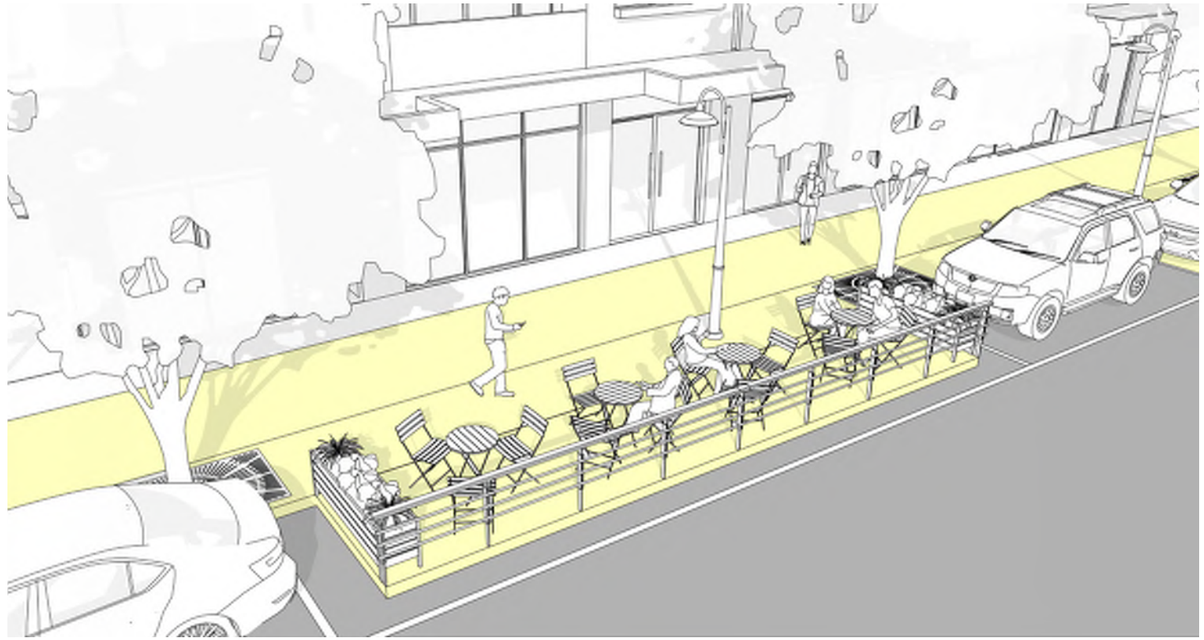
Parklet in San Francisco's Mission District, also termed a "Walklet."

Source: The Dirt; design by Rebar

4.12.2 Parklets

To encourage more vibrant community spaces and enhance dining and retail activity, many communities have created "parklets" — public seating platforms that transform curbside parking spaces into a streetscape amenity. These areas can be used for seating and dining during high-activity seasons (such as summer) and returned to parking use the remainder of the time. Parklets are designed uniquely in each setting and may include seating, planters, bicycle racks, and other furnishings. These areas can help to meet demand for public space in thriving TOD districts. See photos and **Figure 4-39** for examples.

Figure 4-39 Parklet Design Example



4.12.3 Enhanced Alleyways

Alleyways are being enhanced as pedestrian spaces in many cities and communities, enabling these spaces to take on multiple shared purposes and enhancing urban settings. Alleys and passages traditionally serve functional purposes, such as use by service vehicles collecting trash, deliveries for adjacent businesses, back-door access for employees, and/or corridors for power lines, water lines, sewer lines, and drainage. Alleys and passages also often provide corridors for pedestrian access and convenient shortcut routes to adjoining streets and destinations. Public investment to improve the shared use and aesthetics of alleys and passages is becoming commonplace in many TOD districts and downtowns. Enhanced treatments such as special paving, furnishings, seating areas, outdoor games spaces, lighting, planters, and public art attracts people to these places, bringing revitalization benefits for adjacent properties. Adjoining property owners, businesses, and residential buildings may be able to join in the redevelopment and enhancement of alleyways as amenities for their customers and residents. Encouraging activity to spill out from adjacent buildings into alleys and passages can strengthen retail, provide additional space for outdoor dining and special events, and expand the pedestrian and bicycle network linking many different areas.

Dairy block alleyway in Downtown Denver, CO, a place for outdoor games, dining, and social activities.

Source: dairyblock.com

4.12.4 Tabled/Raised Intersections and Mid-Block Crossings

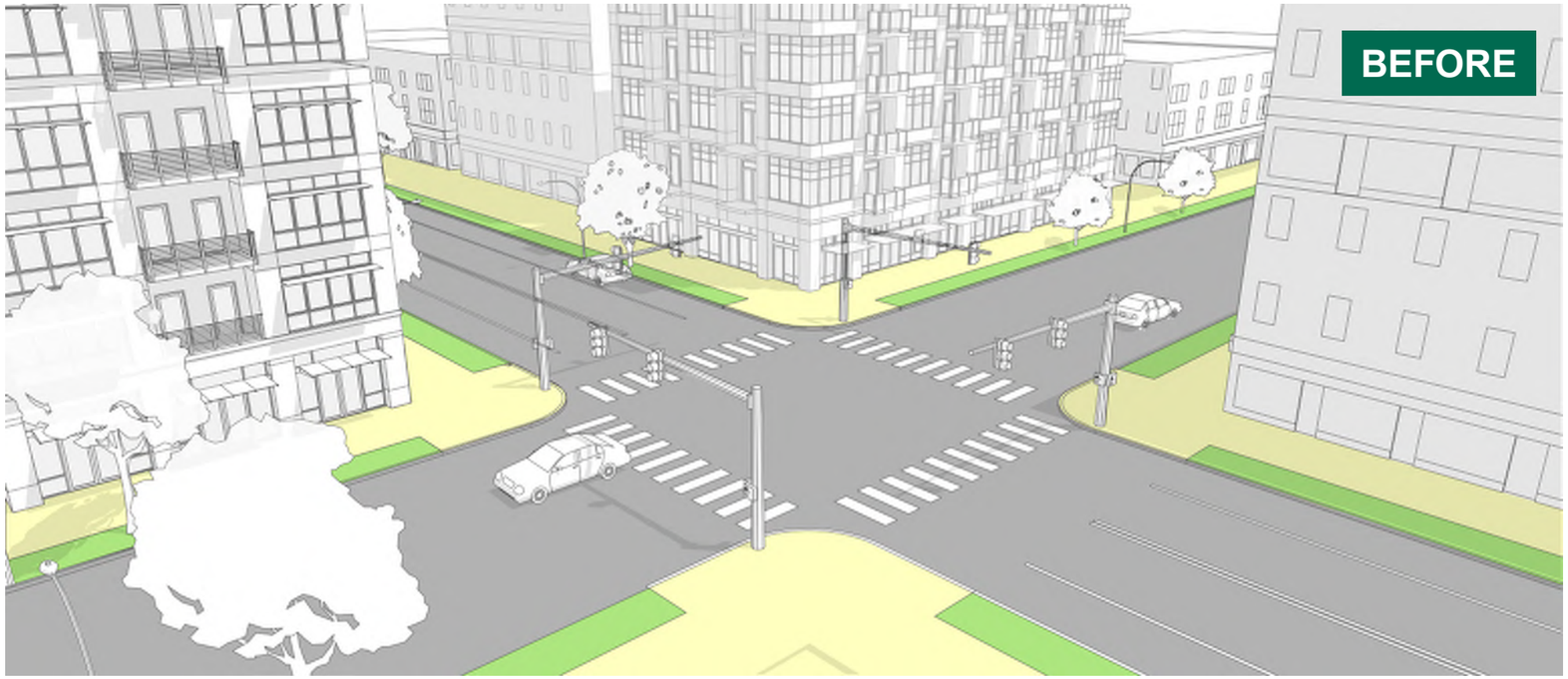
Tabled or raised intersections and raised mid-block crossings give pedestrians the priority in navigating and are often designed with innovative features, such as special paving. Design treatments can include special paint or pavers, stamped asphalt, or stamped concrete. Other considerations, such as roadway classification and design speed, should be evaluated in addition to pedestrian volumes when determining whether a raised intersection is appropriate. Raised intersections are typically used as a traffic calming measure for lower volume roadways, such as local residential and minor collector streets. They are not appropriate for high-speed thoroughfares and major arterials.

Raised intersections and mid-block crossings make it easier to meet the accessibility requirements because the crosswalk is a natural extension of the sidewalk, with no change in grade; however, they require warnings at the curb line to make them detectable to persons who are vision impaired.

Innovative mid-block crossing design by MIG in Sacramento, CA.

Source: City of Sacramento; photograph by Billy Hustace

Figure 4-40 Before and After Raised Intersection Design



4.13. DIMENSIONAL GUIDANCE FOR MULTIMODAL STREET COMPONENTS AND EXAMPLE STREET CROSS SECTIONS

4.13.1 Dimensional Guidance for Multimodal Street Components

Table 4-1 details recommended dimensions for components of multimodal streets based on various standards (see References). Refer to the cross sections on the following pages (**Figures 4-41** through **4-48**) for examples of how these dimensions can be applied to various multimodal street designs.

Table 4-1 Multimodal Dimensional Guidance

	Pedestrian Realm (Both Sides of Street)				Sidewalk Only	Bike Facilities				Shared Use Paths	Crosswalks	Medians with Trees and Vegetation	Transit Boarding Areas	Transit Lanes for Buses	Access Ways and Alleys	Travel Lanes for Vehicles	Turning Lanes for Vehicles
Station Area Zone	Building Frontage Zone	Pedestrian Clear Zone	Landscape/ Furnishings Zone	Edge/Curb Zone	Sidewalk Only (Both Sides of Street)	Bike Lanes (One-Way/ Each Side of Street)	Separated Cycle Track One-Way (Could Be Sidewalk Level Bikeway)	Separated Cycle Track Two-Way (Could Be Sidewalk Level Bikeway)	Buffered and/or Protected Bike Lanes and Cycle Tracks1	Shared Use Paths (Shared by Pedestrians and Bicyclists)	Crosswalks/ Crossing Zones at Intersections and Mid-Block	Medians with Trees and Vegetation (and Minimum Distance for Pedestrian Crossing)	Transit Boarding Areas (Adjacent to Pedestrian Clear Zone or Sidewalk); Width and Length	Transit Lanes for Buses	Private Local Streets, Emergency Access Lanes, Limited Access Streets, and Alleys	Travel Lanes in the Street for Motor Vehicles	Turning Lanes at Intersections and Driveways
Center Core	6’ Minimum for Sidewalk Café Space 2’ Minimum without Café Space	10’ Desired 8’ Minimum	8’ Desired 6’ Minimum	Varies; 18” Minimum for Clear Zone from Face of Curb to Raised Element	10’ Minimum	6.5’ Desired 5’ Minimum	7’ Minimum	12’ Desired 10’ Minimum	3’ Min Buffer/ Protection Area	12’ Desired 10’ Minimum	15’ Desired 10’ Minimum (May Be Wider)	8’ Minimum	10’ Minimum Width Minimum Length Should Be the Length of the Largest Bus in Fleet	10’ Desired 11’ Max.	20’ Minimum	10’ Desired 11’ Max.	11’ Desired 12’ Max.
Outer Core	6’ Minimum for Sidewalk Café Space 2’ Minimum without Café Space	8’ Desired 6’ Minimum	8’ Desired 6’ Minimum	Varies; 18” Minimum for Clear Zone from Face of Curb to Raised Element	8’ Minimum	6.5’ Desired 5’ Minimum	7’ Desired	12’ Desired 10’ Minimum	3’ Minimum Buffer/ Protection Area	10’ Minimum	10’ Minimum	8’ Minimum	10’ Minimum Width Minimum Length Should Be the Length of the Largest Bus in Fleet	10’ Desired 11’ Max.	20’ Minimum	10’ Desired 11’ Max.	11’ Desired 12’ Max.
Transitional	May Not Apply, but 2’ Minimum if Applicable	8’ Desired 6’ Minimum	May Not Apply, but 6’ Desired 4’ Minimum If Applicable	Varies; 18” Minimum for Clear Zone from Face of Curb to Raised Element	8’ Desired 6’ Minimum	6.5’ Desired 5’ Minimum	7’ Desired	12’ Desired 10’ Minimum	3’ Minimum Buffer/ Protection Area	10’ Minimum	10’ Minimum	8’ Minimum	10’ Minimum Width Minimum Length Should Be the Length of the Largest Bus in Fleet	10’ Desired 11’ Max.	20’ Minimum	10’ Desired 11’ Max.	11’ Desired 12’ Max.

Figure 4-41 Multi-Lane Street with One-Way Protected Bike Lanes

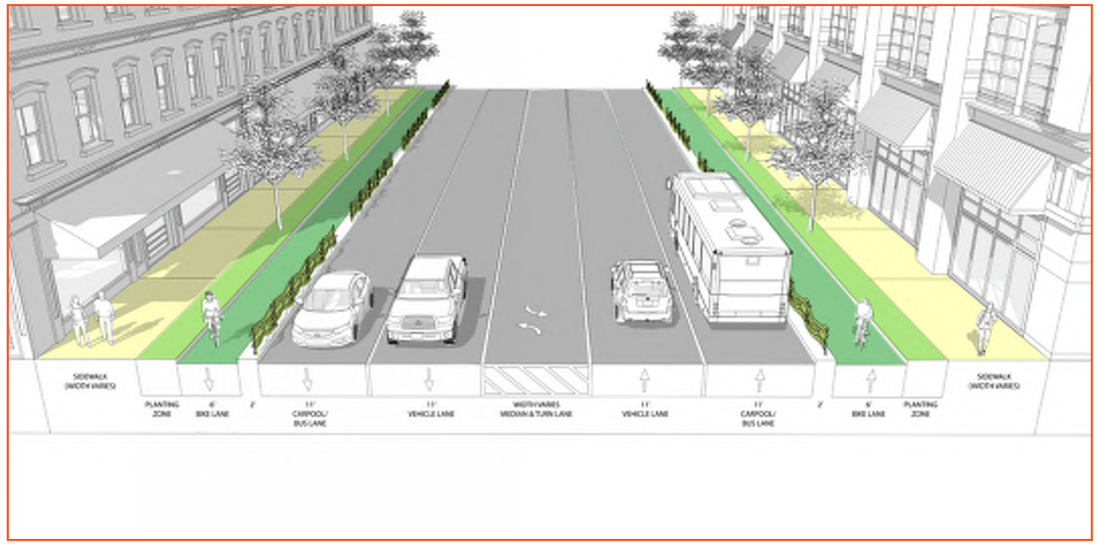


Figure 4-42 Multi-Lane Street with Two-Way Protected Bikeway/Cycle Track

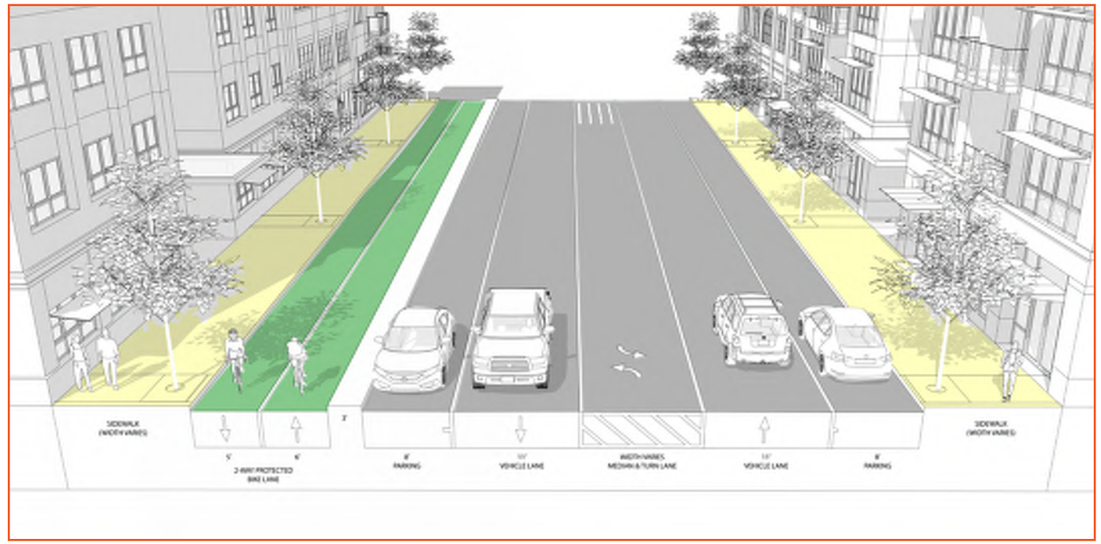


Figure 4-43 Multi-Lane Street with Two-Way Protected Bikeway/Cycle Track and Public Art

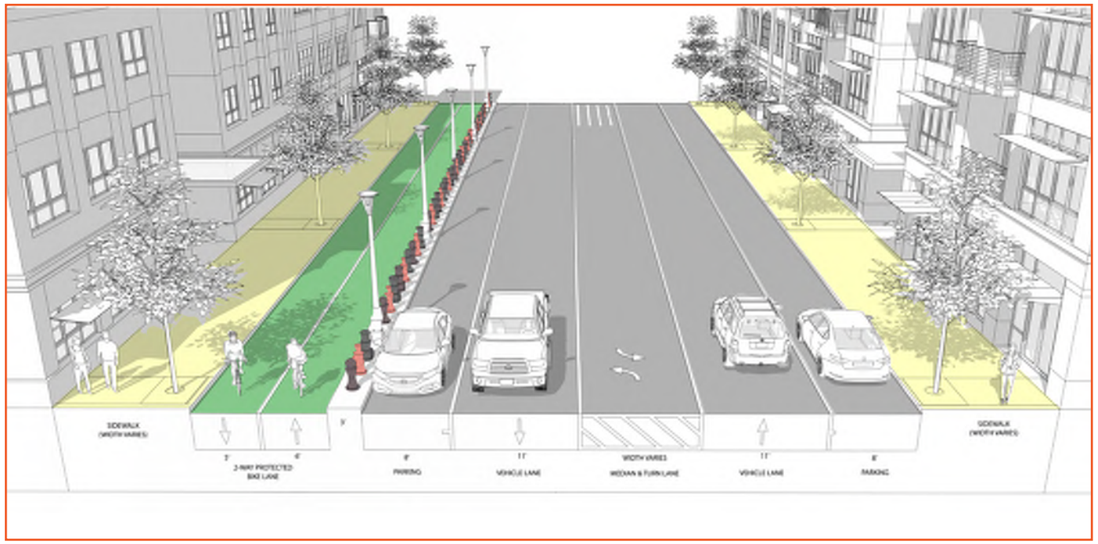


Figure 4-44 Local/Collector Street with Bike Lanes and Planted Median

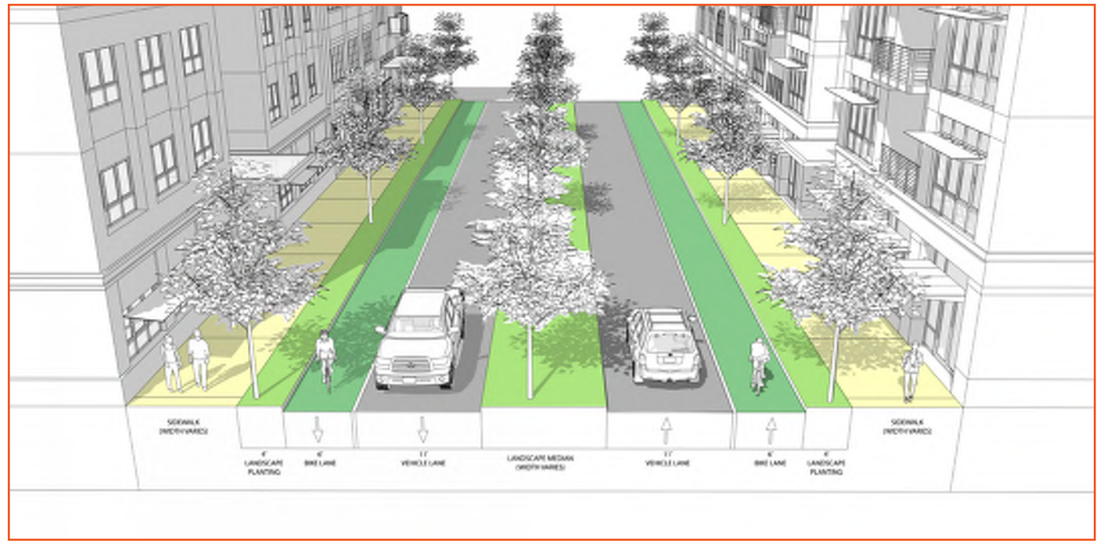


Figure 4-45 Core Street with On-Street Parallel Parking

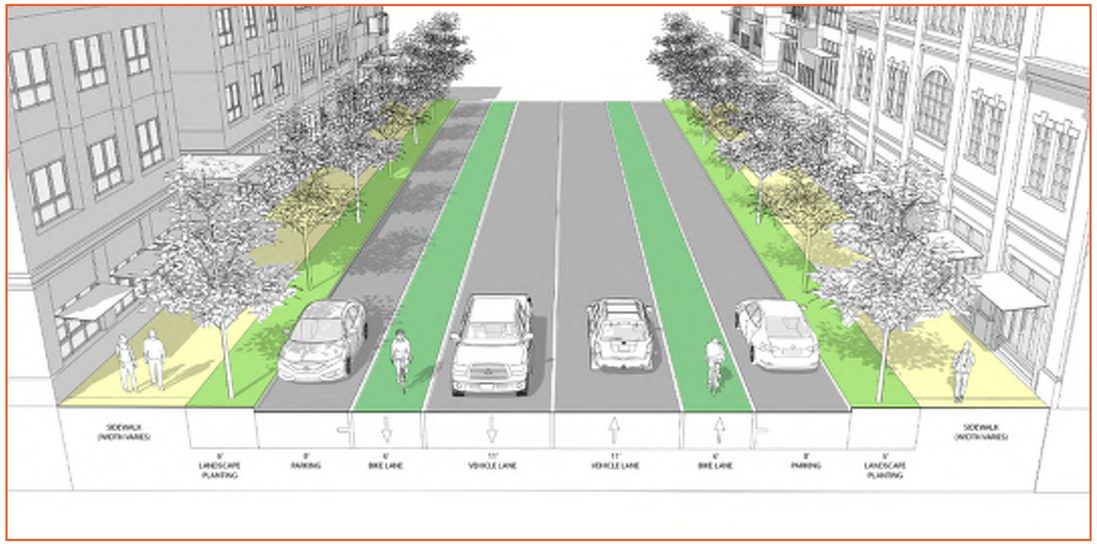


Figure 4-46 Transit Street with Bus Lanes

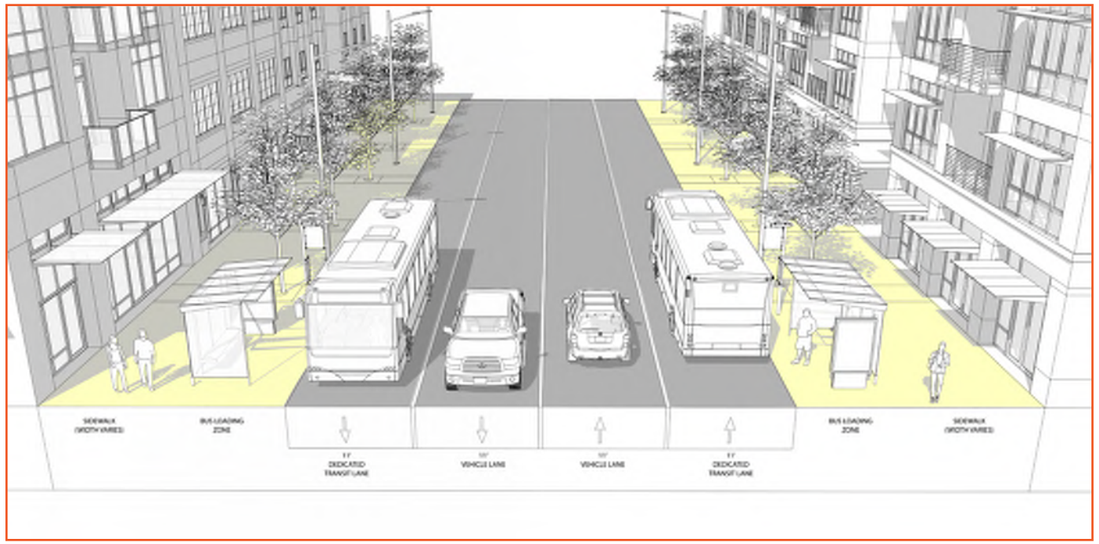


Figure 4-47 Alley Way

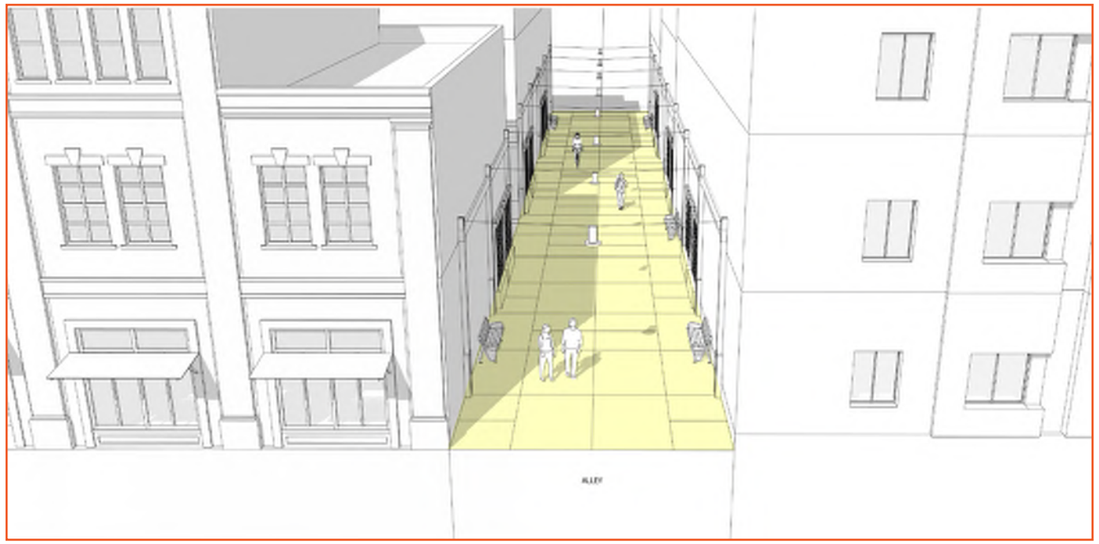
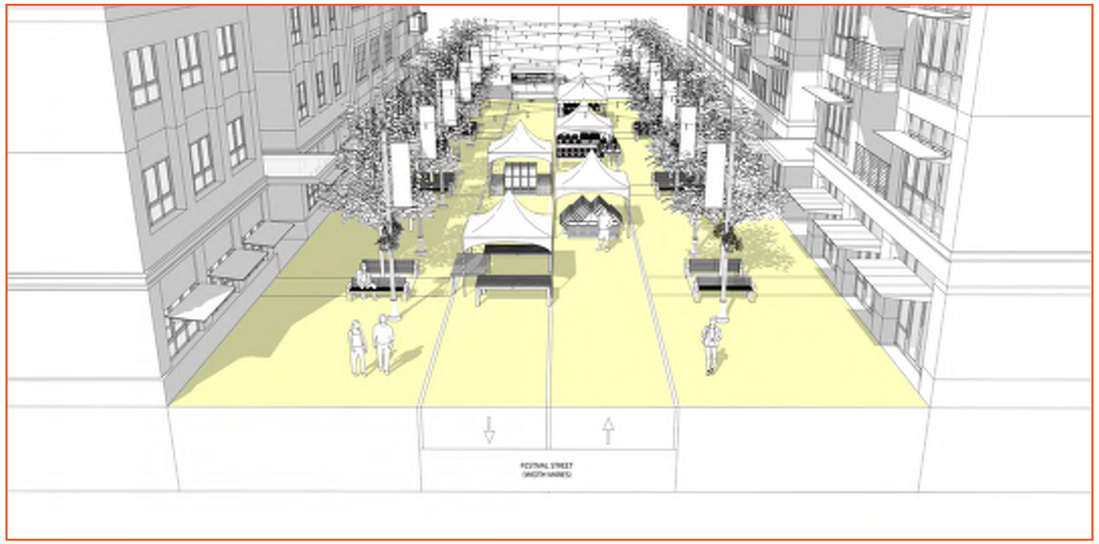


Figure 4-48 Shared Street



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5 RESILIENT INFRASTRUCTURE AND GREEN BUILDINGS

Addressed in This Chapter

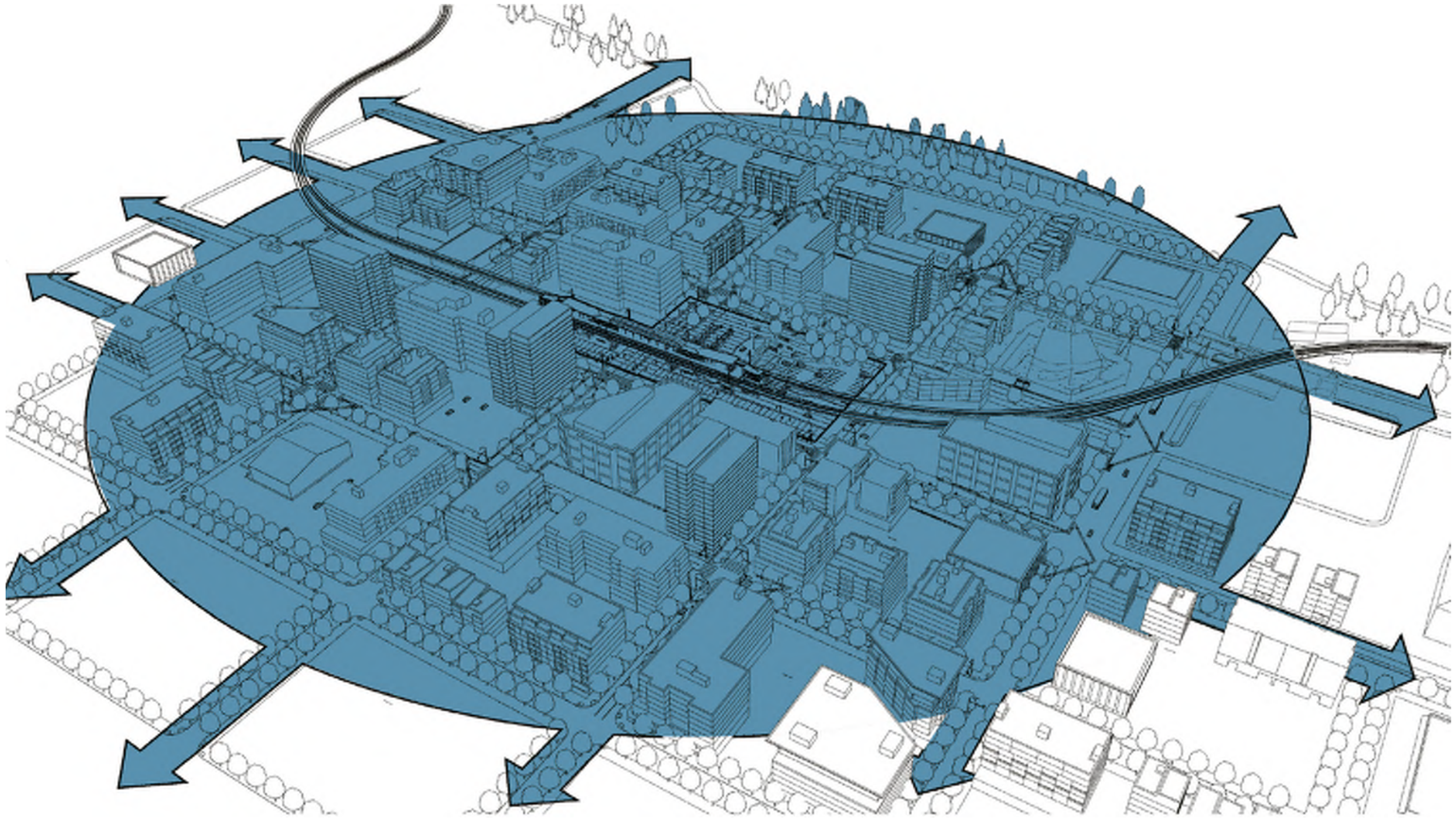
This chapter of the TOD Toolkit provides guidance for supporting the development of sustainable buildings and infrastructure.

5.1 Introduction

5.2 Topics and Tools

- Shared Infrastructure and District-Scale Sustainability
- Energy and Decarbonization
- Community Resilience
- Summary of Shared Infrastructure and District-Scale Sustainability Strategies
- Sustainable Site and Green Building Tools

Figure 5-1 Context Diagram



5.1. INTRODUCTION

The EVLE Project presents a range of opportunities to advance the region's resilience and sustainability goals. Transit itself is a major tool for decarbonization — the coordination of land use and transit options to allow more people to live, work, go to school, and visit areas within walking distance of transit stations can significantly reduce vehicle trips and the GHG emissions associated with those trips. Station area TODs, with higher intensity and compact development patterns, a mix of uses, and availability of amenities and services, present opportunities to invest in shared infrastructure and high-performance districts and buildings, which can support multiple co-benefits.

Washington State Department of Commerce provided a list of co-benefits that regional goals and policies should set out to achieve (Commerce 2025): support housing supply and diversity, reduce emissions, sequester carbon, enhance resilience, improve salmon recovery, promote economic development, promote equity and justice, provide cost savings, provide ecosystem services, protect tribal treaty rights, improve public health and well-being, improve air quality, protect water quality, and build community knowledge.

This chapter was developed with consideration of the unique context of the EVLE Project and included a review of local and regional plans, goals, and policies. These include the Sound Transit 2024 Environmental and Sustainability Targets, Sound Transit **SEDG**, the regional PSRC *VISION 2050*, Snohomish County *2024 Comprehensive Plan Update*, and City of Everett *2044 Draft Climate Goals and Policy Actions*. This Toolkit identifies strategies to help local jurisdictions meet the goals outlined in these plans and policies. Notable sustainability and resilience goals across these plans include a reduction of overall GHG emissions, reduction in overall VMT, development of alternative and distributed energy sources, development of district energy systems, protection and expansion of tree canopy, and improvement of water quality and management (City of Everett 2024). Through implementation of high-performance resilient infrastructure, systems, and programs in station areas, jurisdictions can advance these policy goals and set standards for areas beyond station areas.

The MCP set the stage for collaboration and partnership across jurisdictional boundaries and public agencies to initiate programs, investments, and projects with aligned goals and priorities. Beyond benefits to the planet, sustainable and resilient infrastructure strategies have a high cost-savings potential over time. Many strategies have a marginal or equal cost when considered early in planning and design. While certain systems may require a higher upfront cost, the total cost across the lifespan of these systems is often much lower than other choices, including maintenance, repair, and operating expenses. In addition, implementing sustainable design strategies can minimize damage and reduce the financial impact of extreme weather events. The National Institute of Building Sciences (NIBS) estimates that disaster losses related to the built environment average $100 billion per year in the United States, and that every dollar invested in hazard mitigation upfront saves up to $13 (NIBS 2020). Other economic benefits include reduced demand on existing systems, as in the case of green stormwater infrastructure that reduces pressure on existing sewer and drainage systems, as well as increased property values and lower healthcare costs for residents as a result of improved air and water quality (Sustainable Sites Initiative 2014).

Since station areas and TODs are also among the most attractive locations in the real estate market, there is an opportunity to plan for and establish baseline requirements and incentives for green buildings and resilient infrastructure, as well as public projects and partnerships that create resilient and sustainable infrastructure. Growth may increase demand on existing infrastructure, which is already aging and often in need of upgrades in most places; however, more compact mixed-use growth can increase opportunities for renewable and shared utilities. Resilient infrastructure and green buildings and sites play a critical role in reducing stress on the utility system and gaining multiple benefits with that investment. Sound Transit is committed to integrate sustainability into its stations and sites. There is an opportunity to coordinate station sites and adjacent TOD to leverage capital projects, lay the groundwork for shared infrastructure, and achieve more sustainable and resilient outcomes.

This chapter is designed to help jurisdictions advance the environmental, economic, and health benefits of climate resilience; GHG mitigation; sustainability; and green infrastructure objectives, goals, policies, and plans in station areas. The sections below highlight a set of topics and tools applicable to infrastructure, the public realm, and individual projects and developments within station areas that can set communities up to meet local and regional climate goals and achieve multiple co-benefits.

The section Shared Infrastructure and District-Scale Sustainability focuses on strategies across three topics:

1. **Water and Nature-Based Infrastructure**
2. **Energy and Decarbonization**
3. **Community Resilience**

Jurisdiction partners can conduct studies, adopt pilot programs, and invest in capital improvement projects based on how the co-benefits of these strategies align with their climate and sustainability priorities. Some metrics, standards, and third-party protocols provide frameworks and standards for implementing these strategies in development projects. **Section 5.3.2 Sustainable Site and Green Building Tools** provides an overview of these metrics, standards, and protocols, offering case studies and recommendations on adapting structures or programs to promote sustainable site and building design beyond building code requirements.

5.2. TOPICS AND TOOLS

SUSTAINABLE DISTRICTS POLICIES

Primary policy

» *Promote nature-based, distributed, and district-scale infrastructure to manage stormwater runoff and conserve energy and water.*

Supporting policies

» *Locate tree canopies to provide shade to pedestrian and bicycle paths, seating areas, and areas predominantly consisting of hardscape.*

» *Implement a shared thermal network or ground-coupled heat exchanger to provide heating, cooling, and hot water to multiple buildings.*

» *Improve district-scale and building-scale energy resiliency through installing renewable energy generation, battery storage, shared thermal systems, and microgrid.*

SUSTAINABLE INFRASTRUCTURE POLICIES

Primary policy

» *Integrate stormwater features into parks, public streets, plazas, and parking areas.*

» *Coordinate with utility providers to increase resiliency of electrical, wastewater, water, stormwater, communication, gas, and other infrastructure.*

Supporting policies

» *Implement Blue Green Streets.*

» *Establish Green Factor provisions for site design.*

» *Encourage permeable paving, light-colored paving materials, and urban tree canopy to reduce heat island effect.*

» *Use stormwater planters to support landscaping in the public realm.*

» *Build stormwater parks to increase capacity for storage during flooding events.*

SUSTAINABLE VEHICLES POLICIES

Primary policy

» *Support infrastructure for transitioning to EVs.*

Supporting policies

» *Require new construction to install conduit for future EV charging stations.*

5.2.1 Shared Infrastructure and District-Scale Sustainability

The strategies in this section are informed by a decentralized, but connected, systems approach to infrastructure and utilities that can increase resiliency and provide critical redundancies to utilities and services.

Water management systems are a prime candidate for implementation of a decentralized systems approach that provides multiple benefits. For example, successful green stormwater infrastructure systems use a mixture of regional facilities and distributed stormwater features to provide many benefits, from stormwater conveyance and treatment to urban habitat and public realm improvements through the creation of green streets. These systems also enable water conservation through reuse of harvested rainwater in toilet flushing or irrigation. Energy consumption and storage methods are shifting toward decentralized models with significant impact, as well.

In distributed energy systems, centralized fossil fuel-based energy generation is replaced with renewable energy-based systems that distribute generation and storage across multiple sources. This shift promotes resilience of critical infrastructure while supporting decarbonization of the built environment.

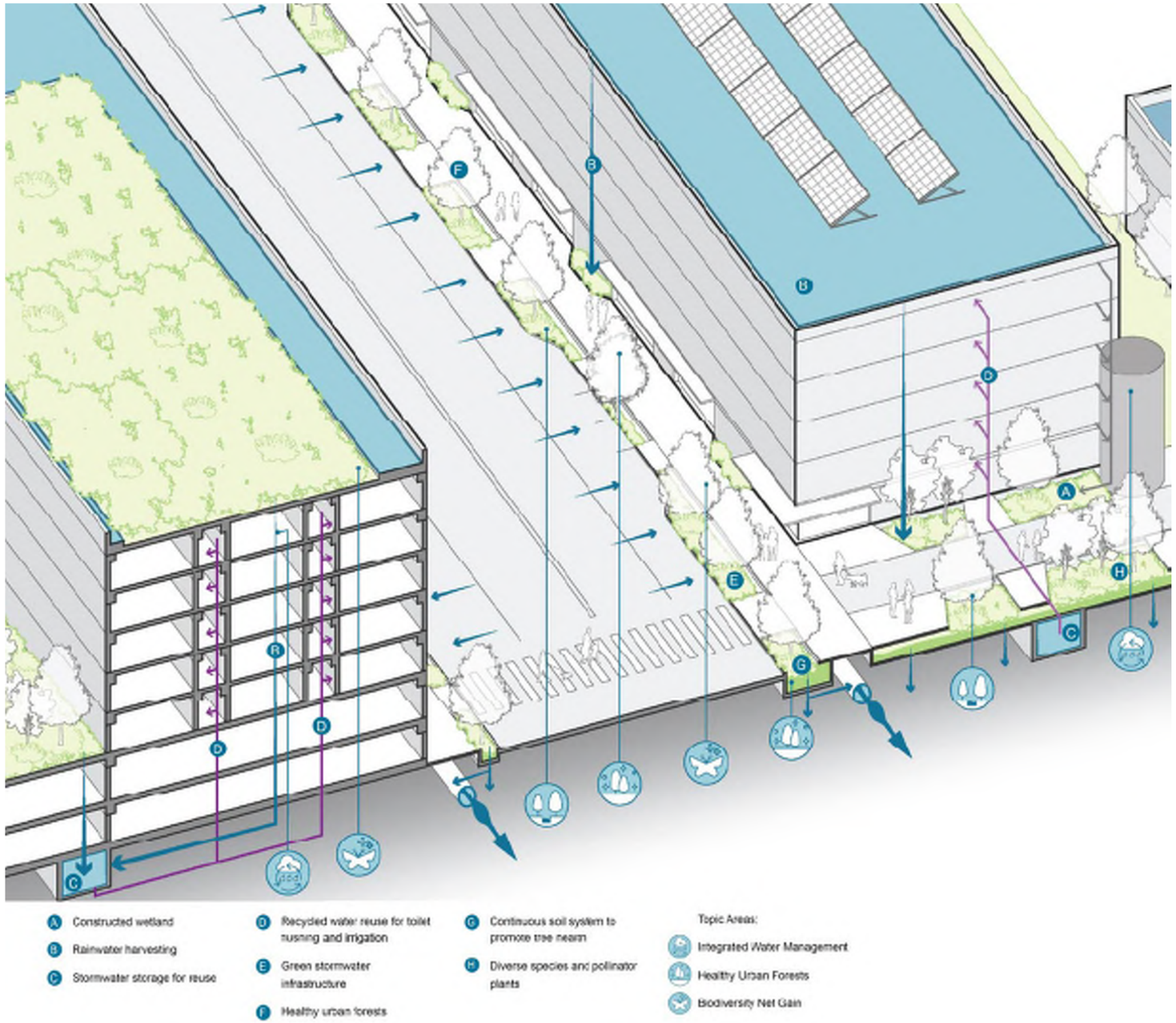
Tools to implement these strategies across sites and scales are discussed in **Section 5.3.2 Sustainable Sites and Green Buildings.**

Water and Nature-Based Infrastructure

Water and nature-based infrastructure looks to natural systems for district-scale best practices and strategies that provide ecosystem services, help reduce the impacts of climate change, and enhance resiliency of the built environment. In practice, nature-based infrastructure uses existing natural environments, systems engineered to mimic natural processes, or a hybrid of the two to create more resilient and multi-benefit infrastructure.

In urban environments, nature-based infrastructure is used increasingly in the management of stormwater runoff, stormwater and wastewater treatment, and heat mitigation. Nature-based infrastructure comes with co-benefits of restored habitat, improved mental health and sense of well-being, improved access to green spaces, increased evapotranspiration that cools the built environment, and increased biodiversity (EPA 2024).

Figure 5-2 Water and Nature-Based Infrastructure Strategies



Integrated Water Management

Integrated water management refers to the integrated approach to managing water resources within a defined geographical area, typically encompassing urban, peri-urban (interface of urban and rural zones) (Abramovay & Sachs 1996), and sometimes rural regions. This holistic strategy aims to balance water supply and demand, maintain the quality of water for various uses, mitigate the risks associated with water-related disasters, and promote the sustainable and equitable use of water resources.

With high-intensity development and growth in station areas, existing infrastructure may reach limits and come under stress. District-scale integrated water management systems provide an alternative and help mitigate that additional stress. Innovative water management solutions — such as green roofs, trees, permeable pavements, rain gardens, and on-lot wastewater systems — reduce runoff, recharge groundwater, and mitigate flood risks. This can be created within the design of a single block or as shared infrastructure that can serve multiple blocks.

District-scale integrated water management involves coordinated efforts among stakeholders, including local governments, utility providers, community organizations, and the residents themselves. These consolidated, multiple-benefit systems increase development potential by reducing the need to provide water management on each site. The success of district water management hinges on effective governance, robust infrastructure, stakeholder collaboration, and adaptive strategies.

By decentralizing water systems to the district-scale, neighborhoods are more resilient to future climate fluctuations and can adapt more quickly, easily, and often less expensively due to the smaller scale and fewer barriers to change. These strategies align with regional and local goals around community-scale infrastructure, water conservation, and overall resilience targets. The US Water Alliance One Water program is an example of how multiple systems can be more effective when strategies are integrated together.

The next few pages describe key components of an integrated water management strategy. These components should be looked at holistically to address the specific conditions of the district. An integrated water management strategy that will inform local goals for private development is recommended.

Strategy A: Constructed Wetlands for On-Site Wastewater Treatment

As wastewater facilities face increased potential for flooding and service interruptions with changing climate conditions, decentralized wastewater systems serving smaller districts can increase community resilience. On-lot wastewater systems in urban settings can provide multiple benefits that result in nature-based environments, local workforce development, and overall resilience of services that protect people's health. Wastewater treatment is integrated into primary tanks and constructed wetlands that provide sub-surface tertiary treatment before infiltrating into the ground and recharging groundwater.

CASE STUDY

HASSALO ON EIGHTH, PLACE AND BIOHABITATS, PORTLAND, OR

Hassalo is one of the first and largest North American neighborhoods to treat and recycle wastewater onsite. The system NORM (Natural Organic Recycling Machine) diverts 100% of the wastewater generated in the three mid-rise residential buildings and one mid-rise office building away from the municipal sewer and recycles it through filters and wetlands integrated into the public plazas and gathering spaces, meeting 100% of toilet, cooling, and irrigation demands on site. This reduces annual water usage by 50%.

Hassalo's constructed wetlands and stormwater gardens are integrated into the neighborhood's pedestrian "water streets," providing multiple co-benefits to residents, reducing impacts on the existing City infrastructure and creating opportunities for local management and workforce development programs with decentralized utilities. Portland, OR

Photo credit: GBD

Strategy B: Rainwater Harvesting and Recycled Water Reuse

Rainwater and greywater reuse can reduce demand on potable water sources, which will be increasingly under pressure with changing climate conditions. This recycled water from rooftops, showers, and kitchens can be treated and used for flushing toilets and irrigation. A purple pipe system is used to designate recycled water use.

Living Future in its 2021 report, A Decision-Maker's Guide to Cost-Effective Residential Potable Water Reduction in Seattle, WA, calculated that installing greywater to non-potable infrastructure to supply toilets in a multifamily project had a payback period of only 4-8 years with annual potable water savings of 49-50% (Living Future 2021).

Strategy C: Blue Green Streets

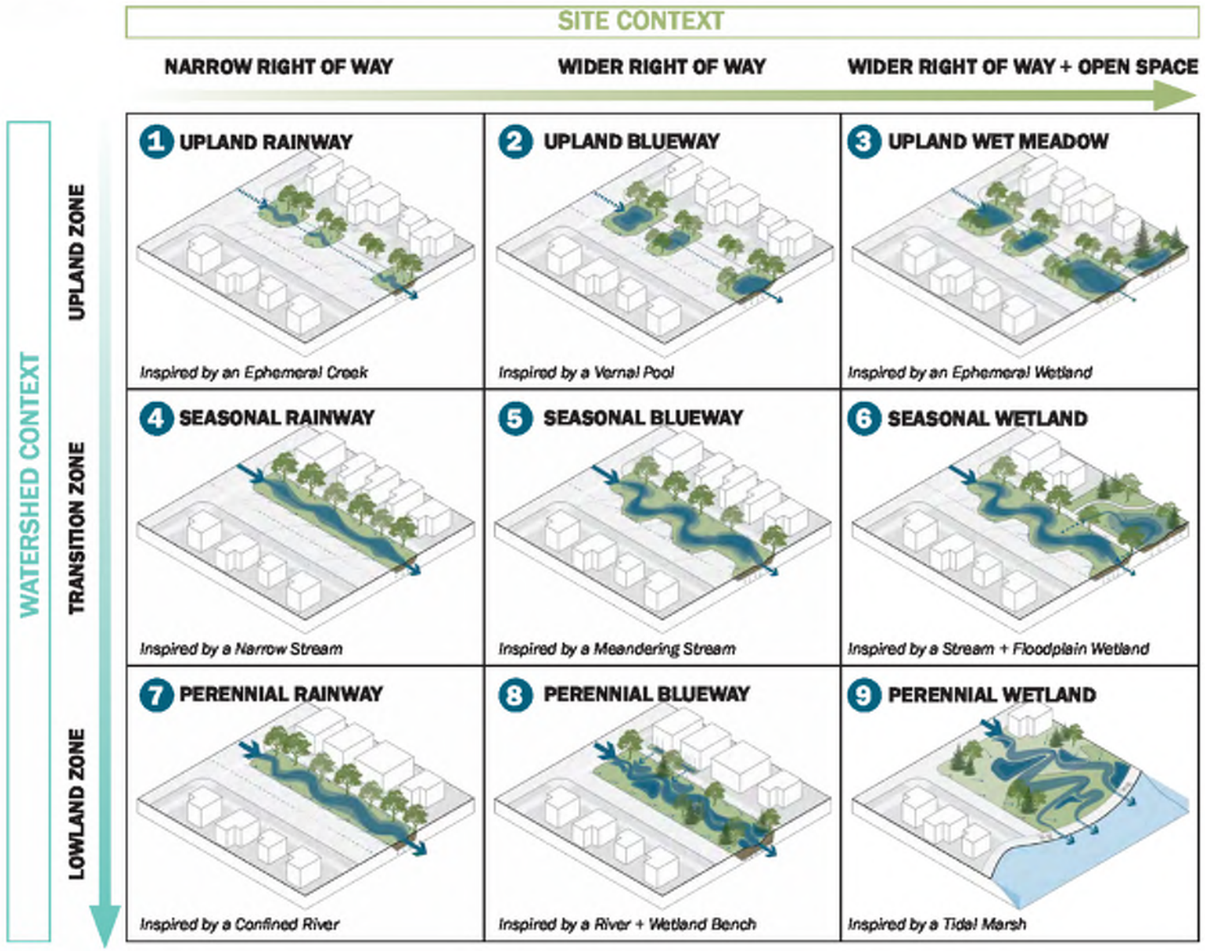
Streets intentionally designed to hold stormwater during intense rains can be part of a distributed systems approach to water infrastructure and utilities. Shifting from large, centralized stormwater facilities to smaller scale facilities allows for an adaptable and interconnected system that increases resiliency. Blue Green Streets act as a piece of distributed stormwater systems and complement regional facilities. While these pieces of infrastructure can be implemented on a site-by-site basis, a coordinated district- or city-wide system of interconnected Blue Green Streets is advantageous for more efficiently and holistically managing stormwater runoff and mitigating potential flood hazards across the area (Table 3). Combining stormwater facilities and human-centered street design strategies can also provide additional accessibility and economic benefits by prioritizing pedestrian safety.

CASE STUDY

CITY OF VANCOUVER BLUE GREEN SYSTEMS, VANCOUVER, CANADA

The impacts of urbanization in Vancouver led to increased inland flooding, poor water quality, lost wildlife and pollinator habitat, and other ecosystem and cultural impacts. Blue green systems are networks of connected park-like streets that manage water and land in a way that is inspired by nature and designed to replicate natural functions and provide ecosystem services. The Blue Green System Typology Study describes nine different types of Blue Green Systems that could be used in Vancouver. More information can be found at https://vancouver.ca/home-property-development/blue-green-systems.aspx.

Table 3. City of Vancouver Blue Green Systems Typology Framework



Concepts proposed for the Blue Green Systems Typology Study. Vancouver, BC

Source: City of Vancouver

CASE STUDY

THE SWALE ON YALE, SEATTLE, WA

Seattle Public Utilities and Vulcan Inc. have partnered on a regional scale biofiltration swale in Seattle's urban streetscape that treats hundreds of millions of gallons of stormwater from about 435 acres of Capitol Hill streets and sidewalks (SPUMedia 2019). A series of four wide, flat-bottomed ditches planted with thick vegetation reduce the speed of the runoff, allowing sediments and pollutants to settle out before going into a pipe that outfalls to Lake Union.

Swale on Yale is an example of creative approach to stormwater treatment in urban environment. 📍 *Seattle, WA*

Source: https://atyourservice.seattle.gov/2019/07/01/project-spotlight-swale-on-yale/

Water Use Efficiency and Demand Management

Measures to enhance water use efficiency include the adoption of water-saving technologies, leak detection systems, and public awareness campaigns on water conservation. One example of this is smart water grids. Smart water grids integrate advanced sensors, automated controls, and data analytics to monitor and manage water distribution in real-time. This system enhances operational efficiency, reduces water losses, and responds swiftly to disruptions.

Jurisdictions and utility districts may also develop policies and incentives to regulate water demand. This includes strategies such as tiered water pricing, subsidies for water-efficient appliances, and educational programs to encourage responsible water use.

Several third-party ratings systems and protocols provide guidance and tools related to water use and management. USGBC LEED Neighborhood Development, Built Green, Evergreen Sustainable Development Standard (ESDS); Salmon-Safe Urban Development; SITES; Envision; and Living Future (LF) Living Building Challenge (LBC) have prerequisites and credits related to green stormwater infrastructure, water use efficiency, and demand management. These tools and third-party protocols are further discussed in section **5.3.2 Sustainable Site and Green Building Tools.**

Green Stormwater Infrastructure

Green stormwater infrastructure in the public right-of-way and private land collects rainwater, reduces run-off, and improves water quality. Depending on the site conditions, infrastructure elements such as tree canopy, permeable paving, vegetated roofs or walls, and rain gardens (bioswales) each help reduce the impact of peak flow conditions by slowing the release of increasingly intense rain events and/or enhancing ground water recharge through infiltration. By acting like a sponge, these nature-based solutions mitigate the impacts of urban development and perform more like the original landscapes that have been replaced by development. The existing Green Stormwater Infrastructure Career Pathways Initiative links these physical improvements to local workforce development and small business opportunities, creating additional community benefits.

A rain garden at Goodwill Job Training and Education Center is connected to a rainwater collection cistern and is an accessible public space. Seattle, WA

Photo credit: Rich Franko

CASE STUDY

GOODWILL JOB TRAINING AND EDUCATION CENTER, SEATTLE, WA

At Goodwill's training and education facility, designed by Mithun, stormwater is collected in a cistern and either recycled for toilet flushing on site or dispersed into a streetscape rain garden. An existing landmark tree was preserved, and permeable paving was provided in the loading dock to reduce stormwater runoff.

Rainwater is collected in a cistern for toilet flushing and dispersed into a series of stepped rain gardens.

Photo credit: ©Bruce Damonte / Courtesy Mithun

Healthy Urban Forests

Healthy urban forests play a critical role in climate resilience and heat mitigation. Temperatures in cities are typically eight degrees hotter than the surrounding rural areas due to impervious surfaces and heat buildup. Robust tree canopies regulate temperatures and transpire precipitation, cooling and reducing ambient temperatures. Connected tree canopy also provides continuous bird and pollinator habitat.

As a part of the *2024 Comprehensive Plan Update*, Snohomish County has developed the Urban Tree Canopy Sub-Element to support the existing landscape code tree canopy requirements. The proposed Urban Tree Canopy Sub-Element policies would create an Urban Forest Management Program that would require the County to provide significantly more support to preserving, maintaining, and planting urban forest in unincorporated Snohomish County — increasing minimum tree canopy coverage goals from 30% to 38% within unincorporated urban growth areas, bolstering monitoring and inventory efforts, and broadening to apply existing landscape code requirements to all urban forests (McGowan 2023).

The Everett *2044 Draft Climate Change and Resiliency Element* outlines policy goals to expand tree canopy, including the prioritization of canopy enhancement projects in the districts and neighborhoods that have the lowest canopy coverage and highest urban heat island effects. Policy goals also include setting a city-wide tree canopy goal and incentives for increasing canopy on both public and private lands. The City's current percentage of tree canopy is about 25%, and the City acknowledges that optimal coverage is about 40% to achieve cooling from heat island effects (City of Everett 2021). Below are a few key strategies that can help jurisdiction partners achieve these goals:

Strategy A: Tree Equity

In many American cities, the health benefits of tree coverage are closely correlated with socioeconomic factors such as income and race, contributing to health disparities and inequity. A tree canopy equity tool such as the American Forests' Tree Equity Score map can help identify areas that have the greatest need. Areas identified with high need can be designated as priority zones for urban forest programs within the public right-of-way and publicly owned lands. In private developments, Green Factor can be used to achieve these goals, requiring higher scores of those developments. Green Factor is discussed in more detail in **Section 5.3.2 Sustainable Site and Green Building Tools.**

Strategy B: Healthy Soils

Installation of trees with attention to soil health and compaction issues is critical to establish healthy urban forests. The use of suspended pavement systems, such as Silva Cells or DeepRoot, and continuous soil systems greatly increases the life of a tree and its associated value and benefits. Refer to Chapter 4 for strategies to incorporate suitable environments for trees within the street right-of-way.

Green Factor Code is a tool and high-performance development standard that can be used to incentivize sufficient soil volume and suspended pavement systems to support tree health. Other sustainable site and green building tools that support healthy soils are Salmon-Safe and SITES. They are discussed in more detail in **Section 5.3.2 Sustainable Site and Green Building Tools.**

Strategy C: Tree Maintenance, Management, and Monitoring

Healthy soil installation to support trees is critical to achieving the air quality and heat island benefits that an urban tree canopy provides. Trees in urban conditions without attention to healthy soils have life spans of around eight years, which is the age trees begin to provide the greatest environmental and health benefits. To maximize the positive benefits of a tree canopy, it is important to properly install and care for urban trees to provide a healthy, age-diverse urban forest tree canopy.

Regular maintenance, management, and monitoring maximizes the value of an urban tree canopy as essential infrastructure in a climate with increasing temperatures and impacts. Studies suggest trees provide up to $5.60 in benefits for every $1 spent on tree planting and care (Arbor Day Foundation 2024).

Management and maintenance budgets should be aligned with the increased need to maintain focus on the health and longer life span of trees and accrue the greater benefits that come from a mature tree canopy. The benefits of a mature tree canopy are extended once tree canopy coverage reaches 40% (McPherson 2005). In addition, mature tree canopy extends the lifespan of asphalt. In Modesto, CA, this reduced maintenance costs by 60% over 30 years.

Biodiversity Net Gain

What Is It?

Biodiversity is the variety of life in our world and is a key indicator of health of an ecosystem. It is now being recognized as equivalent in urgency to carbon reduction in addressing climate change. The loss of the richness and complexity of the plants, animals, fungi, and microorganisms through conversion of natural habitats into agricultural land, urban areas, and infrastructure development accelerates climate change.

Biodiversity is integral to healthy hydrological and ecological systems that are intertwined with temperature regulation. For example, higher temperatures have forced animals and plants to move to higher elevations or latitudes, and the risk of extinction increases with each degree of warming. Other impacts include more frequent and intense fires, storms, droughts, ocean acidification, and sea level rise. A 2019 study found that North America has lost about 3 billion wild birds since 1970, and the Intergovernmental Platform on Biodiversity and Ecosystem Services estimates that about one million plant and animal species are threatened with extinction (IPBES 2019).

Ecosystems like trees, soils, and peatlands are important carbon sinks that pull emissions out of the atmosphere and slow climate change. Biodiversity loss also contributes to changes in farming productivity due to soil health degradation; reduced crops resilience to pests and diseases; a decline in pollinators; increased erosion, sedimentation, and desertification; and reduced transpiration in the hydrological cycle that affects the water supply.

How Does It Work?

Biodiversity Net Gain (BNG) requirement increases the nature-based performance beyond the existing natural ecosystem of a site. This restore and repair approach can be used in design and development to create hybrid strategies, such as vegetated roofs or street-side rain gardens, to maintain the overall health of the local ecosystem while providing many co-benefits. The immediate benefits of defining biodiversity net gain can go beyond improving the ecosystem or wildlife conservation. Improved air quality, flood management, and soil stability are just a few of the other advantages of BNG.

There are many indicators that suggest a greater understanding and focus on biodiversity is here and emerging in policies. For example, the US Global Change Research Program is conducting a National Nature Assessment to take stock of US lands, waters, and wildlife and the benefits to economy, health, climate environmental justice, and national security. The assessment will look at changes in the future and what that means to the economy and daily life. The document is anticipated to be released in 2026.

The United Kingdom already requires development projects to understand the existing or historic habitat character and value of the site and provide 10% more biodiversity either on- or off-site. Nationally, the American Society of Landscape Architects has prioritized an understanding of biodiversity impacts of site design in standard practice. Tools and performance-based metrics that can guide site design for individual development are discussed in **Section 5.3.2.2**.

Why Is It Relevant for TOD?

Preserving natural habitat and gaining biodiversity is a powerful nature-based tool in climate change mitigation and adaptation strategies. While transit and TOD are critical tools to reduce VMT and mitigate climate impacts, biodiversity strategies proactively increase climate resiliency and help offset a potential increase in impervious surfaces associated with new development. This is a key strategy for climate adaptation and mitigation. Bonding and insurance groups look favorably on this strategy as part of a jurisdiction's resilience — the ability to mitigate, recover from, or adapt to shocks and stressors.

There is an increased focus on nature-based solution funding. This is happening in the context of the recognition of the need to adapt to changing conditions while continuing to reduce carbon emissions globally. Much of the Bipartisan Infrastructure Law, which is investing $108 billion in the equitable development of ports, railroads, rail, and roads, prioritizes the use of nature-based solutions that provide pathways to workforce development, climate change response, and multiple benefits.

Energy and Decarbonization

Energy use for buildings significantly contributes to climate change emissions, encompassing both operational energy and the energy needed for material extraction and product manufacturing. To decarbonize the built environment, two interconnected strategies are essential: reducing overall energy demand and investing in cleaner energy generation sources. Actions should be taken at the individual building, multi-building, and district levels. Each station area offers opportunities for shared energy and load balancing based on existing and future developments and infrastructure improvements. One major trend is the shift from centralized, high-temperature fossil fuel generation to a more distributed, multi-source approach to energy generation, transmission, and storage. The strategies outlined in this section recognize this shift as a mid- to long-term process.

In Washington state, all existing and new district energy systems must comply with the Washington Clean Buildings Act as outlined in WAC 194-50 and RCW 19.27A.210 and 19.270A.260. A district energy system, which provides heating, cooling, or both to a campus with three or more buildings totaling over 100,000 square feet, can include components like shared thermal networks, combined heat and power, on-site renewable energy, district batteries, and microgrids. Existing systems must be 100% fossil fuel-free by June 2040, allowing for a 10% exception, while new systems are expected to avoid fossil fuels altogether. Jurisdictions can support this transition away from fossil fuels further through the inclusion of electric vehicle infrastructure and programs.

Washington state HB 2131, which passed unanimously in the 2024 legislative session, allows electric and gas utilities to sell thermal energy through a thermal energy network within their service areas. Gas utilities could apply for grants for pilot projects as part of a $25 million program managed by the Washington State Department of Commerce. Proposals could be submitted until spring 2025, with the first projects expected to be operational by the end of 2026.

Shared Thermal Network and Ground Coupling

What Is It?

A shared thermal network, or ground-coupled heat exchanger, provides heating, cooling, and hot water to multiple buildings through an underground pipe loop carrying water or a water-based fluid. This system differs from geothermal energy, which extracts only heat from the earth, typically in volcanic areas. Thermal energy networks utilize the stable temperature of the ground, around 55 degrees year-round, and can also transfer heat from sources like lakes or rivers. Each building connects to the thermal network via its own heat pump. In the winter, the system transfers heat from the underground loop into buildings, while in the summer, it removes heat from buildings to the loop for cooling.

How Does It Work?

The underground piping loop for a thermal network can be implemented using vertical boreholes ranging from 100 to 750 feet deep or a horizontal loop system installed at shallower depths, which can experience ground temperatures between 40 and 70 degrees. The infrastructure can be optimized by installing the piping network alongside other utility upgrades in the street right-of-way. A coordinated approach allows for necessary utility work upgrades or new services while minimizing existing service disruption and maximizing benefits from concurrent groundwork.

Shared thermal networks can be expanded over time and typically consist of a drilled well bore field, an underground pipe network in the street right-of-way with service connections for future use, and heat pump units in buildings. Once these components are in place, the network can become operational. Expansion can occur by connecting additional buildings or by increasing the existing well bore field or adding new ones. Utilizing a shared thermal network often reduces the need for larger heating and cooling equipment within buildings, freeing up floor space for other uses and generating additional leasable area.

Why Is It Relevant for TOD?

Shared thermal networks can be most effective when they are connecting buildings with a range of uses that might have heating and cooling demands at different times. Integrating vertical well bores into the foundation design — particularly if it includes pier or pile foundations — offers a cost-effective way to implement a thermal network. Focusing on development density through infill projects, optimizing surface parking area utilization, and renovating existing buildings within each station area can enhance the synergies necessary for establishing the network infrastructure.

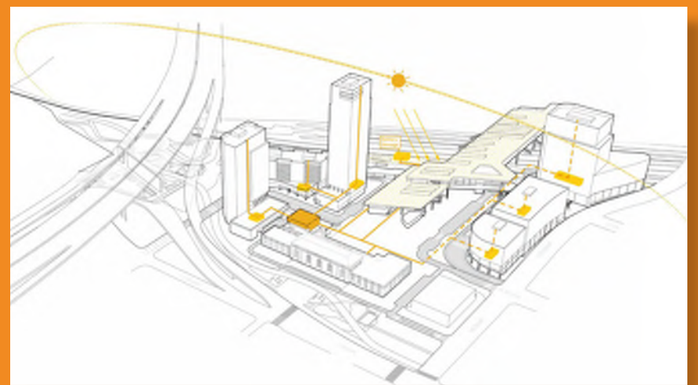
Thermal energy networks function like ground source heat pumps for a single building or home but are scaled to serve multiple buildings. They can achieve greater efficiencies by capturing excess heat from energy-intensive sources, such as data centers, or incorporating heat from wastewater systems. Compared to air-source heat pumps, ground source systems operate more quietly since they don't require outdoor compressor units. The amount of underground piping needed depends on local climate, soil conditions, and the available land for the loop field.

CASE STUDY

SACRAMENTO VALLEY STATION, SACRAMENTO, CA

The Sacramento Valley Station, a major multimodal transportation hub, incorporates a central utility plant to supply underground heating and cooling pipes to buildings over a 31-acre site via a ground source heat pump thermal network.

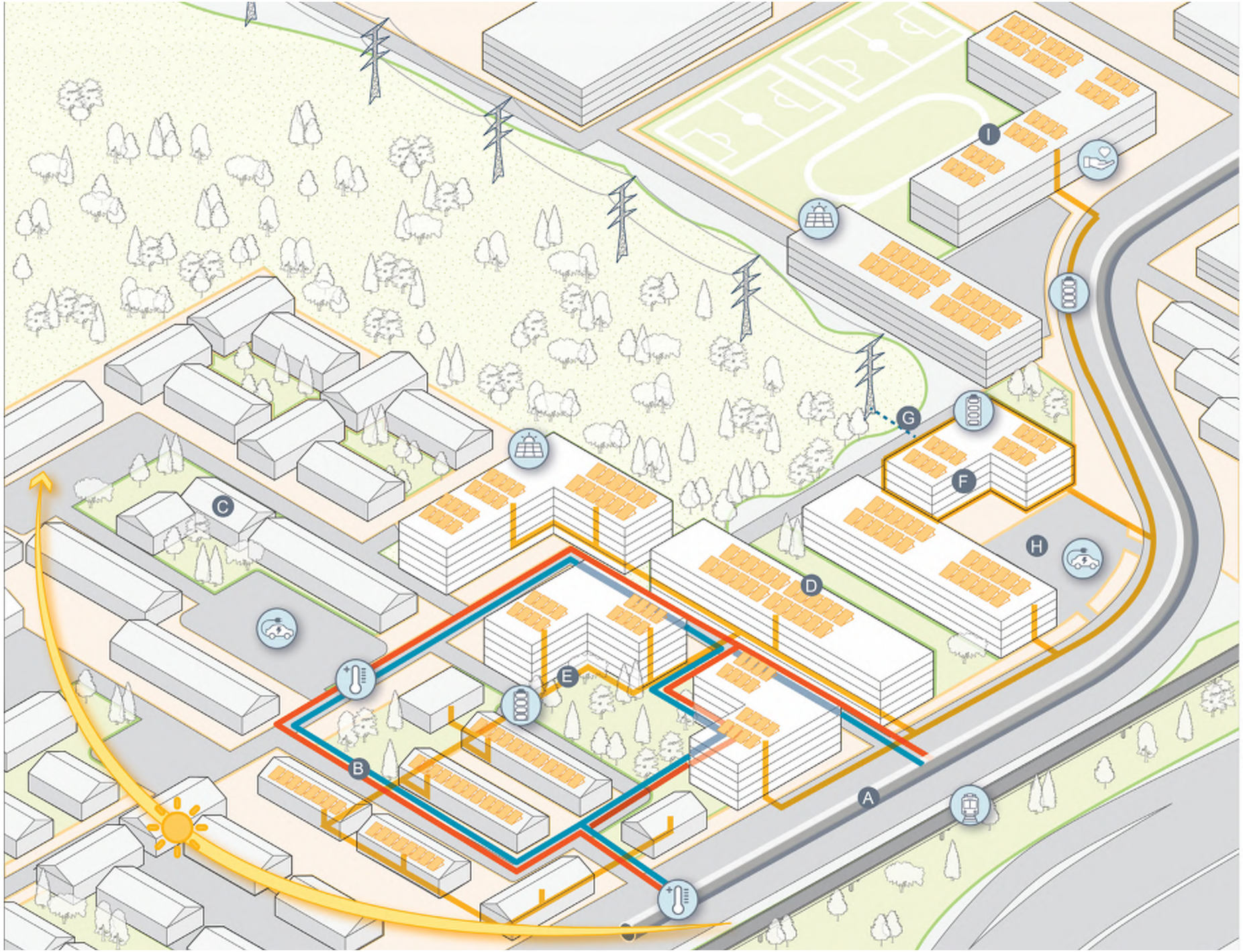
Additional information and resources can be found at https://www.cityofsacramento.gov/public-works/sacramento-valley-station/svs-current-planning



Sacramento Valley Station Area Plan Proposed District Energy

Source: Perkins&Will

Figure 5-3 District-Scale Energy and Decarbonization Strategies



A Sewer heat recovery

B District heating and cooling network

C Existing building smart metering

D Photovoltaic array

E Microgrid

F District battery and control center

G Reduce strain on utility grid during peak time

H Mobility hub and EV charging

I Retrofitted resilience hub using community assets connected to microgrid

Topic Areas:

Shared Thermal Network and Ground Coupling

On-Site Renewable Energy Production and Efficiency

District Battery and Microgrid

Electric Vehicle Infrastructure

Community Resilience

CASE STUDY

UNIVERSITY OF WASHINGTON, SEATTLE, WA

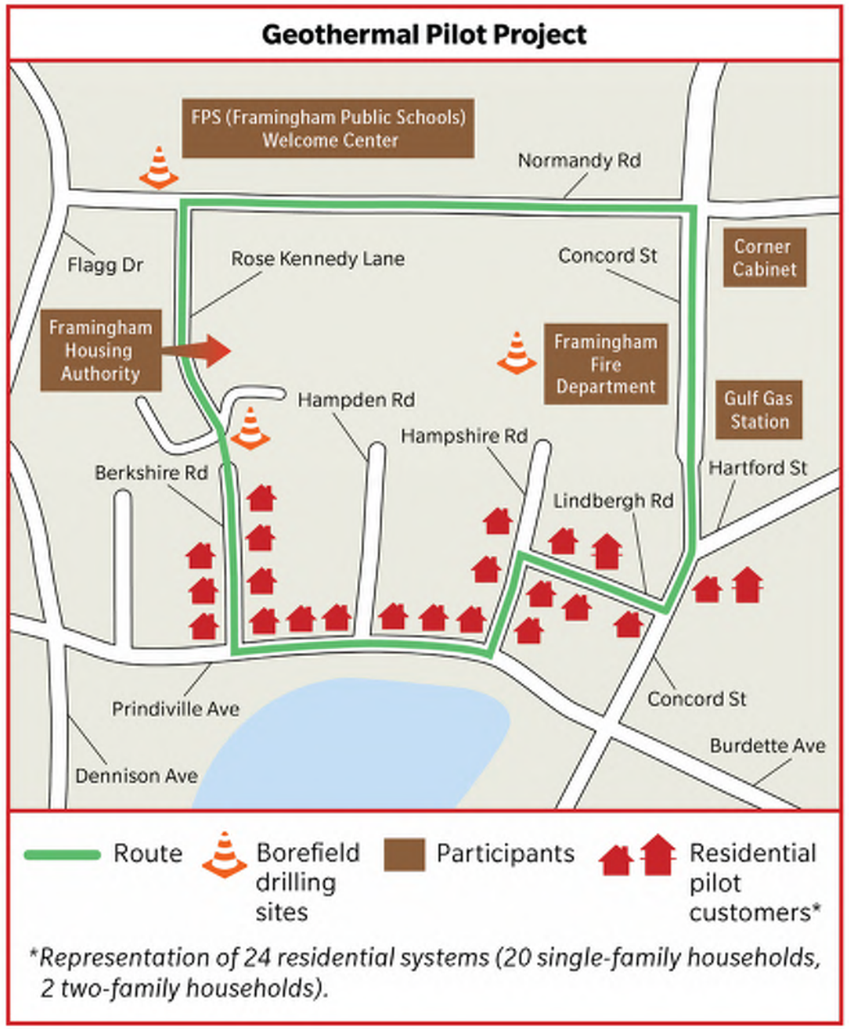
The University of Washington campus in Seattle, WA, provides a hot and cold-water loop to campus buildings. Steam is created for the hot water pipe by burning gas, and cold water is produced from electric chillers. Up until 1988, the central plant burned coal to create the steam heat when operations shifted to natural gas. Additional information and resources can be found at https://sustainability.uw.edu/blog/2015-01/tour-beating-heart-uws-facilities-services

Source: University of Washington

CASE STUDY

GEOTHERMAL PILOT PROJECT, FRAMINGHAM, MA

The City of Framingham, MA, implemented a shared thermal network that links 125 customer accounts across 36 buildings ranging in typology from single- and multi-family residential buildings to commercial buildings to fire department and school buildings (Eversource 2024). This pilot demonstrates the role that cities can play in implementing innovative infrastructure in existing communities. This case study uses the term 'geothermal' to refer to the shared thermal network implemented.



Source: eversource.com

Strategy A: Sewer Heat Recovery

Large sewer pipes transporting wastewater maintain a consistent temperature that can be used as an energy resource. A sewer heat recovery system captures this warmth, transferring it to a heat exchanger, which allows a heat pump to provide heating, cooling, or hot water to buildings. There is potential to access an existing sewer heat recovery interceptor pipe, running from south Snohomish County to the King County Wastewater Treatment Plant, near the West Alderwood station area and possibly the Ash Way station area.

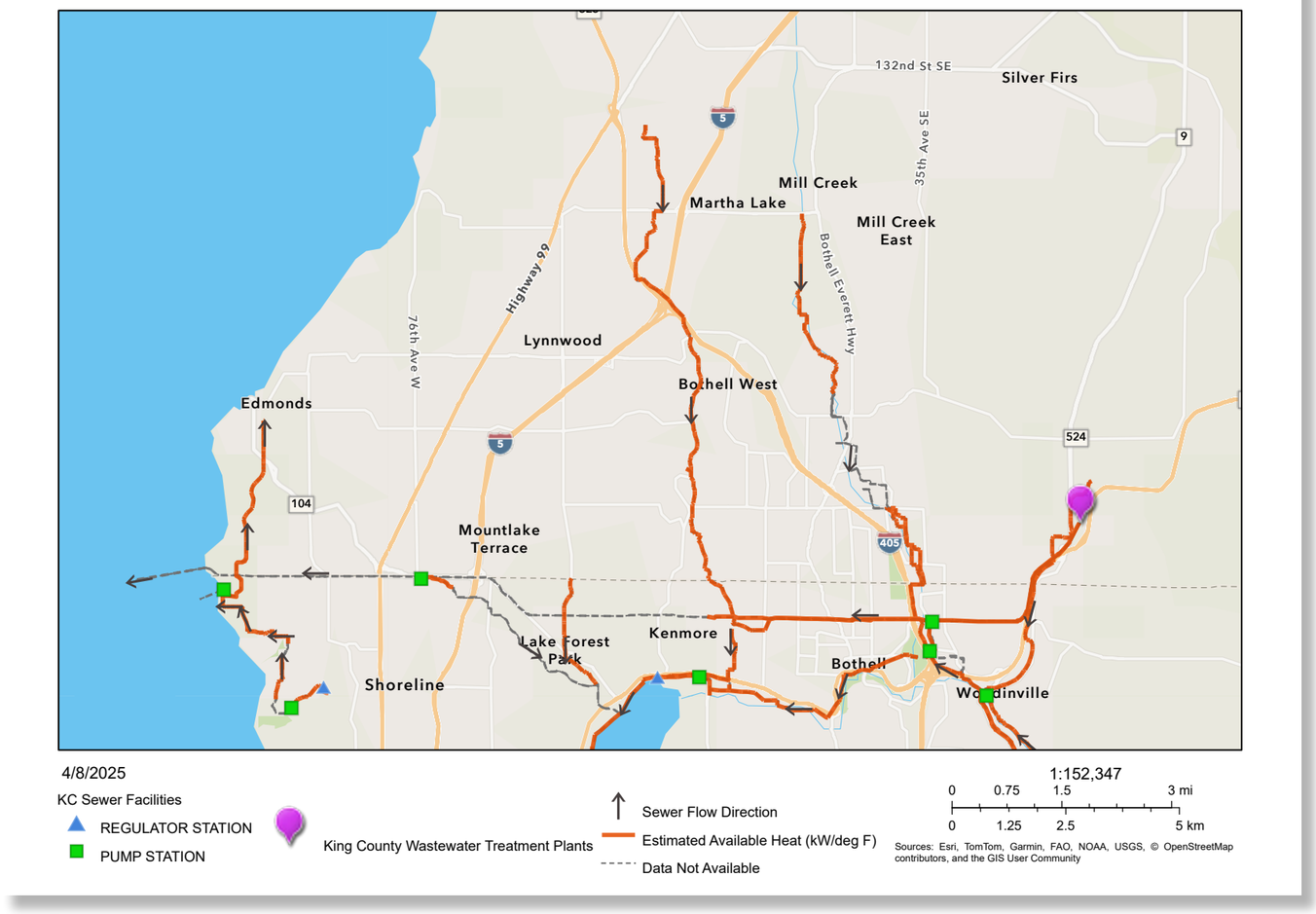
A sewer heat recovery system can be implemented through public, private, or combined partnerships. It's most effective when aligned with upgrades to existing buildings, like the Alderwood Mall complex, or alongside large new developments. This coordination ensures that both the system and buildings can utilize the heat recovery resource simultaneously.

CASE STUDY

SEWER HEAT RECOVERY IN VANCOUVER, BC, CANADA

SHARC is a publicly traded energy company that has installed a district energy system in Vancouver's False Creek area. This system captures waste heat from sewage pipes and uses heat pumps to provide heating and hot water, with 70% of the heat sourced from sewer heat recovery and the remaining 30% from gas boilers. This technology can be installed in projects ranging from single family to multi-family scale. The neighborhood aims to transition away from gas and achieve carbon neutrality by 2030.

The King County Wastewater Treatment Division (WTD) is the first in Washington state and one of the first wastewater utilities in the nation to offer sewer heat recovery (SHR). Private commercial property owners and developers can recover heat energy from our sewer pipes for heating or cooling their buildings. WTD uses this Sewer Interceptor Map to help users estimate available heat along WTD conveyance line. This webmap shows estimated available heat in King County's Wastewater Treatment Division Conveyance line. This estimated heat was calculated using forecasted sewer flow, which then applied conversion rate to calculate estimated heat in kW(kilowatt) per F(degree) per MGD (million gallon per day).



Map of existing Sewer Heat Recovery Interceptor pipe in Snohomish County region.

Source: https://kingcounty.gov/en/dept/dnrp/waste-services/wastewater-treatment/resource-recovery/sewer-heat-recovery

Combined Heat and Power

Combined heat and power (CHP) systems generate electricity while recovering heat byproducts for thermal energy used in buildings or districts. Traditionally powered by fossil fuels or waste incineration, CHP must transition to renewable energy sources, such as solar or wind, by 2040 to align with local, regional, and state climate goals. As renewable sources lack waste heat, CHP systems will gradually be replaced by thermal networks and microgrid applications. The focus will shift to using renewable energy to power and circulate water throughout thermal districts.

CASE STUDY

DOCKSIDE GREEN, VICTORIA, BC, CANADA

The Dockside Green development in Victoria, BC, burns biomass to create electricity power and distribute hot water serving 1.3 million square feet of development over a 16-acre site. Additional information and resources can be found at https://www.nexterra.ca/files/documents/ProjectProfile_DocksideGreen20140226.pdf

Source: Nexterra

On-Site Renewable Energy Production and Efficiency

Renewable energy comes from sources that can be quickly replenished, including solar, wind, geothermal, and hydro from moving water. On-site renewable energy and storage systems are essential elements for resilience hubs, ensuring communities have continuous power during emergencies that disrupt the grid. While off-site renewable energy is viable for certain developments, on-site generation with battery storage minimizes transmission losses, helps with peak load shifting, and provides backup energy during outages. Photovoltaic and micro-wind power systems are common applications in urban settings.

Photovoltaic Systems

A photovoltaic (PV) array (a group of solar panels) is the most implemented on-site renewable energy source, often aligned with net-zero energy goals, defined as generating at least as much energy from on-site sources as is consumed over a year. Buildings up to four or five stories can achieve net zero with full rooftop PV coverage; taller buildings will require façade PV or ground-mounted systems due to limited roof space. On-site PV systems can be enhanced with battery storage to retain excess collected energy for later use, as the utility grid is not a "net zero" bank you can withdraw from later. Prioritizing energy use reduction measures, such as high-performance windows, exterior shading, insulation, building airtightness, and heat recovery ventilation, is essential to minimize the amount of PV needed. The energy generated by a PV system can vary based on factors like sunlight availability, shading, solar orientation, panel type, efficiency, system losses, and panel tilt angles.

CASE STUDY

SAINT PAUL DISTRICT ENERGY, SAINT PAUL, MI

The city of Saint Paul burns 240,000 tons of biomass each year from tree waste to create electricity power with burning gas as a secondary and backup fuel. The St. Paul system also incorporates a hot- and cold-water loop with solar thermal hot water and thermal storage of hot water in tanks. The system serves 200 buildings in the central business district, including the Capitol Campus. Additional information and resources can be found at https://www.districtenergy.com/services/how-it-works/ .

Micro-Wind Power

In urban areas, micro-wind turbines can be integrated into building rooftops for small-scale wind generation. These tend to be more expensive than large utility-scale turbines, particularly when connected to the grid. The movement of trains at stations and along tracks presents a unique opportunity to capture wind generated by passing trains using vertical axis wind turbines. Further research is needed to assess whether this wind source can produce a significant amount of power that could be stored in a battery.

CASE STUDY

WESTERN RAILWAY, MUMBAI, INDIA

Western Railway has piloted a new strategy of small-scale windmills along railways to harness wind power and contribute to a shift toward clean energy in Mumbai. These turbines take advantage of the proximity to the trackway and build on Western Railways' efforts to generate clean energy, with PV systems at 97 stations and 46 administrative buildings.

District Battery and Microgrid

A microgrid is a localized electricity network that can operate independently or be connected to the larger utility grid. Battery energy storage systems (BESS) enhance the resiliency of a microgrid by storing generated electricity for future use, helping to meet peak power demands, or providing backup power during utility outages. Microgrids are crucial components of resilience hubs, and those equipped with battery storage are significantly more resilient to disruptions during emergencies.

Multiple renewable energy sources, including wind and PV, can supply power to a microgrid or be stored in a battery system. Incorporating battery storage allows for the flexibility to retain excess energy for later use, serve as a power source when wind or solar generation is unavailable, or provide electricity during outages. EV batteries using Electric Vehicle to Grid (V2G) technology is one form of energy storage that can help balance a microgrid and reduce strain on utility grid. This technology is discussed in more detail the next section.

Microgrids and battery storage systems are complex and nuanced, influenced by various factors including location, microclimates, renewable energy potential, electrical distribution, connections to the local utility, jurisdiction requirements, energy resource controls, and the specific building systems that will be supported during outages. Additionally, the building(s) or other service demand loads within the microgrid's boundaries play a crucial role in their design and size optimization.

CASE STUDY

ARLINGTON MICROGRID, ARLINGTON, WA

As part of a Snohomish Public Utility District program, the Arlington Microgrid demonstrates how energy storage integrates renewable energy generation and grid resiliency. The microgrid can feed power into the main electrical grid but also can be disconnected to provide power to the future North Community Office during a power outage.

CASE STUDY

SOUTH LANDING ECO-DISTRICT, SPOKANE, WA

At South Landing Eco-District, buildings share energy through a micro-transactive grid, which minimizes impact on the City's power grid and creates a local energy market. The system allows energy to be traded from one building to another as needs shift, allowing resources such as solar, battery storage, and individual buildings' energy management systems to supply energy more efficiently, while making the local distribution grid more reliable, resilient, and flexible.

Scott Morris Center for Energy Innovation in South Landing Eco-District. Spokane, WA

Source: Nazanin Mehrin

Centralized plant in Scott Morris Center for Energy Innovation that provide energy to multiple buildings.

Source: Nazanin Mehrin

Electric Vehicle Infrastructure

The transportation sector is a major contributor to GHG emissions in Washington, presenting numerous decarbonization opportunities. Transitioning from fossil fuel-powered to battery-powered vehicles can help reduce emissions along with expanding public transportation. Jurisdictions can facilitate this transition by offering incentives, programs, public charging infrastructure, and development requirements to support residents in adopting EVs. TDM is another key area for the transportation sector to reduce GHG emissions. Strategies related to TDM and Vehicle Miles Traveled (VMT) reduction are discussed in **Chapter 4**.

EV Charging at Public and Private Parking

Locating EV chargers at public parking spaces enables equitable access to charging, making EV use available to a wider population. This public infrastructure supports the transition from gas-powered to battery-electric vehicles.

Currently, level 2 charging stations (40-amp circuit) are required for 10% of parking spaces, along with 10% EV-ready parking spaces (with all wiring installed) (25% for multifamily parking). Additionally, 10% of parking spaces must be prepared for future charging installation (with conduits in place but no wiring). Exceeding these requirements can accelerate the shift to EVs and help lower GHG emissions from transportation. Future demand and system sizing should account for these requirements and demand for EV charging (Source: WAC 51-50-0429).

EV charging stations should follow safety measures and precautions like bank ATMs or public amenities such as park benches, including placement in well-lit, high-traffic areas. Security cameras and motion-triggered alarms can act as a deterrent along with new local laws that increase penalties for cable theft or vandalism. Alternatively, charging stations with retractable cables can be mounted 10 to 15 feet above ground and controlled via a phone app. Additional information and resources can be found at *https://seattle.gov/city-light/in-the-community/current-projects/curbside-level-2-ev-charging*.

Electric Vehicle to Grid (V2G)

An exciting upcoming opportunity is V2G technology, which uses the energy stored in EV batteries. A car battery size can range from 40 kWh up to 100 kWh capacity, which is approximately four to six times larger than a residential scale battery system, which can range from 10 kWh to 16 kWh. This system can feed energy from the car battery back into the electricity grid during peak demand, reducing the need for additional energy generation, and recharges the vehicle's battery when grid demand is low. EVs offer a unique advantage in resilience due to their mobility. Unlike stationary energy storage systems, EVs can be relocated to where power is most needed, allowing communities to respond flexibly to outages or emergencies.

CASE STUDY

PILOT PROJECT: MERIDIAN AT CORONA STATION, PETALUMA, CA

Located in Petaluma, CA, this project is set to begin construction in June 2025 and will be the first large-scale V2G project in North America. It aims to showcase the financial and technical case for combining rooftop and carport solar energy paired with bidirectional electric vehicles and stationary batteries. The system is projected to offset 62% of peak energy demand and be capable of operating off-grid for 94% of the year. The system will serve as a community resilience center during power outages, supporting essential needs like refrigeration and lighting.

The mixed-use development will be adjacent to a light rail stop and include commercial office space, public EV charging, and a food truck garden with six dedicated service outlets. Additionally, it will provide 131 affordable housing units, including 33 supportive housing units, with studio up to three-bedroom units available. This development contributes to the local housing stock with minimal impacts on the electric grid.

Embodied Carbon

Embodied carbon refers to the GHG emissions associated with the entire life cycle of building materials and construction, including emissions released from mining, harvesting, or manufacturing; fabrication; transportation and on-site construction activities; repairs and maintenance; and demolition and disposal/reuse. In 2024, US EPA awarded a $50 million grant to fund community-driven solutions for reducing emissions throughout the building life cycle, available across King, Kitsap, Pierce, and Snohomish Counties. A core program of this grant aims to establish capital project embodied carbon requirements and promote embodied carbon requirements in local codes. Further implementation guidance is available in **5.2.2 Sustainable Site and Green Building Tools**.

Community Resilience

With HB 1181, all “fully-planning" counties and cities under GMA are required to address climate and resilience as part of their comprehensive plan periodic updates. Snohomish County and the City of Everett have published a draft of their climate element, and the City of Lynnwood has included climate policies in their draft update of the environment element. Many other counties and cities are actively reviewing their policies, capital projects, and programs for preparedness, response, and recovery to hazards, as well as considering the nexus with other comprehensive plan elements and planning efforts. Counties and cities are assessing the social and racial equity impacts of resilience planning and prioritizing actions to benefit overburdened communities that are disproportionately harmed by climate impacts.

Evidence shows that strong relationships and social ties (known as social cohesion) across a community are critical for community wellbeing and quality of life (Office of Disease Prevention and Health Promotion n.d.). During extreme weather or climate-related crises, communities with strong social infrastructure and networks are better equipped to handle disruptions and mitigate harm. Just as decentralized hard infrastructure systems strengthen resiliency, broad and distributed social, economic, and civic infrastructure systems help bolster a community’s resilience, as well. When resilience actions are prioritized to benefit overburdened communities, many of the resilience strategies discussed in this chapter will advance environmental justice and can accrue outsized community benefits including broad wellbeing, social resilience, and even economic development.

This section highlights key opportunities to advance climate mitigation and resilience policies within station areas of high-frequency transit. Many of the priority measures, goals, and policies in the **Climate Element Planning Guidance from the Washington State Department of Commerce (2023)** have very strong alignment with recommendations throughout this Toolkit.

This section highlights key opportunities to advance climate mitigation and resilience policies within station areas of high-frequency transit. Climate Element Planning Guidance Section 5: Climate Measures, describes a Menu of Measures and **Climate Policy Explorer** including model climate goals and supportive policies that have a demonstrated ability to reduce GHG emissions. The station area opportunities for climate mitigation and adaptation make reference to specific Climate Measures in this Commerce Guidance document. This is to illustrate the significant potential for station areas to implement a jurisdiction's climate goals.

Station Area Opportunities to Advance Climate Mitigation

Increased density reduces GHG emissions by encouraging public transit use and thereby reducing VMT. In Washington state, transportation and vehicle pollution are the largest source of GHG emissions, at nearly 40% total. Vehicle emissions are the significant contributor to pollutants and GHG releases as well as exacerbating health issues like asthma and cancer. Walkable communities are beneficial for community connection and wellbeing, and they also have a positive impact on the environment by reducing GHG emissions associated with transportation.

As a result, encouraging high-intensity, mixed-use development near public transportation is the most impactful action to achieve GHG reduction targets and policies, especially when coordinated with TDM, last-mile connections, and a safe, inviting public realm design of a connected network to the stations.

- TOD zones, development standards, and street typologies established in this Toolkit can help support mixed-use, compact development near stations; set the standard and be catalytic for other development that follows; and should be considered a significant implementation action opportunity for climate and GHG reduction goals, policies, and commitments.
- For effective GHG mitigation, jurisdictions should adopt policies requiring a minimum density of 20-45 dwelling units and/or 50 jobs per net acre. This benchmark is the minimum density to support high-capacity transit and achieving significant reductions in driving through compact, mixed-use development and pedestrian-friendly design (**Growing Cooler, ULI, 2010**; **Transit Supportive Densities, PSRC, 2015**; **Decarbonization Framework for Planning, Landscape, and Infrastructure, Architecture 2030, 2024**.). This could be an action for Climate Policy ID K.01, Increase or remove density limits in areas well-served by transit and other services within the urban growth area. For more information, refer to **Chapter 3**.
- Mobility hubs in transportation-efficient locations, especially in overburdened communities, are also key components to achieving effective GHG mitigation (Climate Policy ID I.16). This can be advanced through transit integration of other modes, such as bus, together with new light rail stations.

Renewable energy production, conservation, and efficiency techniques will make strides towards Climate Policies under ID E. Guidance is available in the earlier sections of this chapter.

Station Area Opportunities to Advance Climate Resilience

Communities in the Puget Sound region are planning for climate resilience with a focus on key risks: more extreme heat events, higher winter flooding including river and coastal flooding, and increased summer drought and irrigation shortages. These risks will likely result in negative human health effects from heat and smoke, as well as negative habitat impacts for salmon populations and other species. Because station areas will likely experience the most mixed-use, compact growth over the coming years, they are an excellent opportunity for implementation of climate policies and goals. A few of the priority measures in Commerce's Climate Element Planning Guidance are aligned with guidance in this Toolkit and will support climate co-benefits in addition to their stated goals and objectives. These include:

- Guidance for a resilient transportation system, infrastructure, and parks that can recover from extreme weather events and climate impacts including flooding, Climate Policy ID A.01, is available in the earlier sections of this chapter as well as **Chapter 2** and **Chapter 4**.
- Resilient energy infrastructure, Climate Policy ID O.02, is covered by earlier sections of this chapter. Many communities are exploring the creation of resilience hubs. Resilience hubs are community-serving facilities augmented to support residents, coordinate communication, provide cooling and/or a safe indoor environment, and distribute resources during times of emergency. These can be co-located into community facilities, institutions, or the ground floor of private developments. Because station areas will be transit-accessible and mixed-use areas, they are an ideal place to locate a resilience hub. Resilience hubs (Climate Policy ID S.07) should be incentivized in buildings that include renewable energy generation and battery backup, particularly projects that serve vulnerable populations, such as seniors, youth, and people experiencing poverty, housing insecurity, or health issues. **Section 5.2.2** outlines tools and protocols designed to mandate or incentivize the development of high-performance, sustainable, and efficient buildings in station areas, making them strong candidates for resilience hubs.

A MOBILITY HUB is a recognizable place with options for different and connected transport modes, such as scooters, e-bikes, and electric car charging stations, supplemented with enhanced facilities to both attract and benefit the traveler (Source: Commerce).

A RESILIENCE HUB is a community-serving facility augmented to support residents, coordinate communication, distribute resources, and reduce carbon pollution while enhancing quality of life. Hubs provide an opportunity to effectively work at the nexus of community resilience, emergency management, climate change mitigation, and social equity, while providing opportunities for communities to become more self-determining, socially connected, and successful before, during, and after disruptions (Source: Urban Sustainability Directors Network).

Summary of Shared Infrastructure and District-Scale Strategies

Table 5-1 Summary Matrix of Shared Infrastructure and District-Scale Sustainability Strategies

			Co-Benefits from Climate Guidance Documents (Commerce 2025)													
Strategy	Description	Supporting Sustainable Site and Green Building Tool	Supports Housing Supply And Diversity	Reduces Emissions	Sequesters Carbon	Enhances Resilience	Improves Salmon Recovery	Promotes Economic Development	Promotes Equity and Justice	Provides Cost Savings	Provides Ecosystem Services	Protects Tribal Treaty Rights	Improves Public Health and Well-Being	Improves Air Quality	Protects Water Quality	Builds Community Knowledge
Water and Nature-Based Strategies																
Integrated Water Management	Balance water supply and demand, maintain the quality of water for various uses, mitigate the risks associated with water-related disasters, and promote the sustainable and equitable use of water resources.	Green Factor, Salmon Safe, LBC, SITES		X		X	X	X		X	X	X	X	X	X	
Healthy Urban Forests	Identify gaps in equitable tree coverage using the tree equity tool. Expand tree canopy through the implementation of healthy soil and regular tree maintenance, management, and monitoring practices.	Green Factor, Salmon Safe, LEED, Built Green, SITES			X	X	X	X			X	X	X	X	X	
Biodiversity Net Gain	Define and implement a biodiversity net gain requirement to improve the overall health of the local ecosystem.	Pathfinder 3.0, Americas Biodiversity Metric, Salmon Safe, Dark Sky Practice, Envision			X	X	X				X	X	X	X	X	
Energy and Decarbonization																
Shared Thermal Network and Gound Coupling	Install underground thermal network and future building connections at the same time as other utilities are being installed or upgraded in the street right-of-way.	LEED, LBC	X	X		X		X		X			X	X		
Combined Heat and Power	Recover heat byproducts for thermal energy used in buildings or districts.	-		X		X		X		X						
On-Site Renewable Energy Production and Efficiency	Implement on-site renewable energy generation such as PV system or wind/micro-wind power system.	LEED, Built Green, Passive House, Zero Energy, Envision		X		X		X		X				X		
District Battery and Microgrids	Create pilot programs to incentivize installing battery micro-grids on large sites and in projects that serve vulnerable populations, such as seniors, youth, and people experiencing poverty, housing insecurity, or health issues.	-		X		X		X		X						
EV Infrastructure	Encourage and support residents transitioning to EVs through incentives, programs, public charging infrastructure, and development requirements	Built Green, LBC		X		X		X		X			X	X		
Reduce Embodied Carbon	Incentivize disclosure and reduction of embodied carbon throughout a building's life cycle	LBC, LEED, Built Green, Zero Carbon			X	X				X				X		
Community Resiliency																
Station Area Opportunities to Advance Climate Mitigation	Support mixed-use, compact development near stations. Create mobility hubs to support integration of different modes of travel and reduce VMT and GHG emission.	Envision, LEED Cities	X	X		X		X	X	X	X	X	X	X	X	X
Station Area Opportunities to Advance Climate Resilience	Enhance resilience in transportation system, infrastructure, and parks. Create resilience hubs to support residents, coordinate communication, provide cooling and/or a safe indoor environment, and distribute resources during time of emergency.	Envision, LEED Cities				X		X	X	X	X	X	X	X	X	X

5.2.2 Sustainable Site and Green Building Tools

Along with district and community scaled strategies, this set of tools can advance sustainability and resilience goals through individual project and development contributions. This section includes strategies and tools to advance resilience and sustainability at the project scale including benefits to energy, biodiversity and ecosystem, and climate.

SUSTAINABLE DEVELOPMENTS POLICIES

Primary policy

- *Establish sustainability goals and standards for station areas and TOD projects.*
- *Require or incentivize green building and sustainable site design principles in station area developments.*

Supporting policies

- *Incentivize rehabilitation or new construction projects that meet various green building certifications. Options include green building, site, district, and community protocols like LEED, Living Building Challenge, Just Communities (previously EcoDistricts), Passive House, Built Green, Salmon-Safe, and Evergreen Sustainable Development Standard.*
- *Promote rainwater harvesting and recycled water reuse. Encourage high-performance landscape and site design using green stormwater infiltration, green roofs, and other techniques to improve water quality.*
- *Promote on-site renewable energy production.*
- *Integrate infrastructure for sewer heat recovery and combined heat and power into design and construction of capital projects.*

*Regulations to implement these policies can be found in the **TOD Implementing Regulations, Section 10***

Nature-Based Priority and Standards

Green Factor Code

The Green Factor Code integrates landscape, street improvement/frontage, and green roof or green wall standards together in one system to incentivize urban greening with a flexible menu of measures to meet baseline or incentive criteria.

A weighted menu of green infrastructure strategies sets a target number that can be achieved in multiple ways. A worksheet is used to calculate a total score based on size and quantities of trees, shrubs, and groundcover, preserving existing trees and vegetation, areas of various soil depths, and vegetated roofs and walls. Additional credits are available for local priorities such as the visibility of the proposed landscape systems from public spaces and the integration of them within the right-of-way.

The jurisdiction staff conducts a minor review of the Green Factor Code as part of the permit submission's landscape plan requirements. The project landscape architect provides a sheet that identifies all the work behind the calculations. Upon the project's completion, the landscape architect confirms the installation is consistent with the permit submission and submits a signed affidavit.

There are multiple benefits to adopting the Green Factor Code:

Flexibility: Rather than creating a prescribed list of landscape standards, the Green Factor Code allocates credits to different landscape strategies based on their performance and benefits, allowing for development to select site- and project-based design strategies to meet requirements.

Customizable: The weighting of each element allows jurisdictions to incentivize certain elements over others. For example, with the use of a tree canopy equity tool such as the American Forests' Tree Equity Score map, jurisdictions could incentivize the development of tree canopy in areas with highest priority ranking by assigning additional Green Factor points to plantings in High and Moderate priority areas. These equity tools consider existing tree canopy coverage, surface temperature, and socioeconomic factors like income, employment, race, age, language, and health factors of the local population. Jurisdictions can also leverage public-private partnerships to address gaps in funding, implementation, and maintenance of tree canopy and urban planting.

Ease of Implementation: The project landscape architects certify that the installation is consistent with the permit submission. Time needed for staff verification and enforcement is limited.

A Green Factor Code is an important first step in re-establishing healthy vegetation in the urban environment. The next step is to build landscape performance that can support greater biodiversity. Biodiversity is rapidly being understood to be as critical as carbon reduction in responding to climate change.

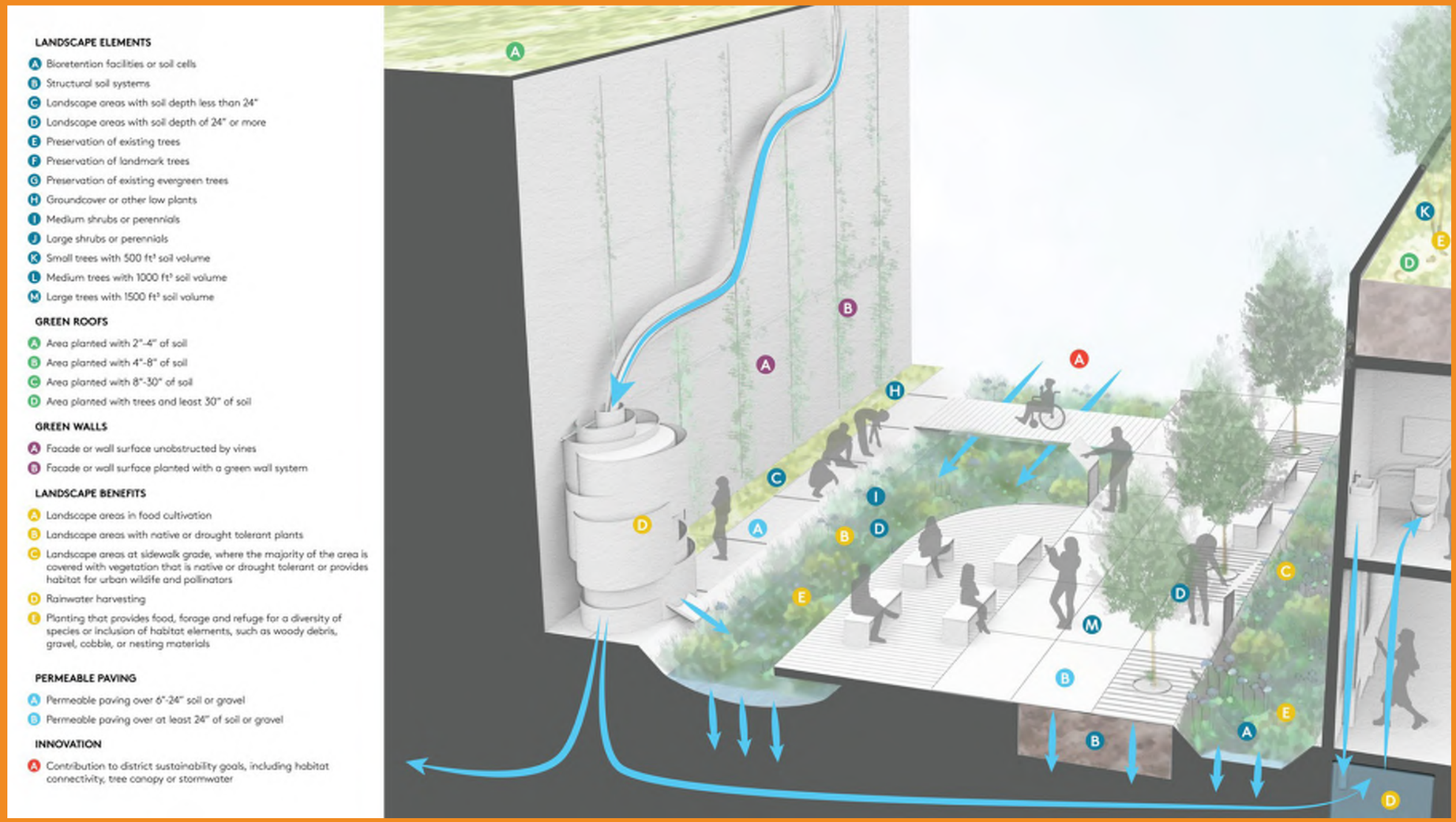
A 2023 study of nine planetary boundaries by scientists at the Stockholm Resilience Centre communicates the set of boundaries "within which humanity can continue to develop and thrive for generations to come. Biodiversity loss is the boundary where the current rate of extinction puts the Earth's system furthest outside the safe operating space. Crossing boundaries increases the risk of generating large scale abrupt or irreversible environmental changes. Drastic changes will not necessarily happen overnight but together the boundaries mark a threshold for increasing risks to people and the ecosystems we are part of" (Stockholm Resilience Centre 2023).

Ideally, biodiversity is measured at large scale and includes the expertise of ecologists and biologists to evaluate the myriads of interdependent relationships. In the meantime, tools have been developed to address the immediate need to work at the development scale; two of these, Pathfinder 3.0 and Ramboll's Americas Biodiversity Metric, are outlined below. Requiring developers to use one of these two tools and to share their outcomes can be part of rapidly scaling up the understanding of biodiversity value in the marketplace.

CASE STUDY CITY OF KIRKLAND GREEN FACTOR CODE, KIRKLAND, WA

The City of Kirkland adopted the Green Factor Code under its Form-Based Code requiring all new development and major renovations be designed, built, and certified to achieve or exceed the Green Factor Code. A city-wide *Sustainable Master Plan* identified goals related to sustainable urban waterways, conservation and stewardship, access to parks and open space, and sustainable urban forestry. These priorities are reflected by the weighting structure in Kirkland's Green Factor Code.

The Form-Based Code for the NE 85th Street Station Area Plan requires all new developments and major renovations be designed, built, and certified to achieving or exceeding a Green Factor score of 0.4 (Kirkland 2023).



City of Kirkland's Green Factor Code developed for the NE 85th Street Station Area Code.

Courtesy: Mithun

Pathfinder 3.0

Pathfinder 3.0 is primarily a carbon calculator for site design created by Climate Positive Design. By inserting quantities of materials into the calculator such as planting, soils, paving, and structures, projects can adapt the choice and quantity of materials to reduce the carbon sequestration offset time period that the landscape provides. The new version of the tool became available October 1, 2024, and includes related biodiversity performance measures. It also includes baseline projects to compare design performance and strategies. Additional information and resources can be found at **https://climatepositivedesign.org/introducing-the-new-pathfinder-3-0-a-climate-biodiversity-positive-tool-for-sites/**.

Ramboll's Americas Biodiversity Metric

This metric-based tool uses several factors, including habitat size, quality, conservation status, and local importance, to quantify biodiversity value. This tool can be used to evaluate baseline biodiversity value, track changes over time, and support decision-making processes. Ultimately, these metrics can help decision-makers understand and reduce development impact on the existing habitat, ideally resulting in net gain of biodiversity. Learn more about the tool at **https://www.ramboll.com/measuring-biodiversity**.

The Native Pollinator Habitat Restoration Guide Best Management Practices for the Puget Sound Lowlands

This is a how-to practitioner guide is a set of best management practices (BMPs) for native pollinator habitat restoration in the Puget Sound region. This guide is based on the 'set the table' concept that by actively restoring the physical structures and plant communities of an ecosystem, species diversity, network resilience, and network function can follow, and is available at https://www.earthcorps.org/wp-content/uploads/The-Native-Pollinator-Habitat-Restoration-Guide-EarthCorps.pdf

Dark Sky Practices

Light pollution disrupts wildlife, impacts human health, wastes electricity and money, and obscures the view of the night sky. DarkSky International is an organization working to restore the nighttime environment and protect communities from the harmful effects of light pollution through outreach, advocacy, and conservation. DarkSky is involved as a stakeholder with the International Commission on Illumination (CIE) and the Illuminating Engineering Society (IES), advocating for adoption of the Five Principles for Responsible Outdoor Lighting in standards, policies, zoning, and codes.

The five principles are:

1. Using light only when necessary and consider impacts to wildlife and their habitats.
2. Directing light downward so it falls only where needed.
3. Limiting brightness to what is sufficient for the need.
4. Using controls like timers or motion detectors.
5. Using warm-colored lighting to reduce shorter blue-violet wavelengths.

Additional information and resources can be found at DarkSky Creating Codes and Statues and MRSC Light Nuisances.

MCP Recommendation

Based on the success of Green Factor Codes around the region, the Model Code partnership proposes a similar system of a mandatory Green Factor Code within TOD zones and beyond. The MCP Green Factor Code was adapted from the City of Kirkland's Green Factor and updated to include lessons learned and updated best practices. This new Green Factor Code also includes more specific guidance for project teams around biodiversity net gain and regional climate resilience objectives described in 5.2.1. Technical reference tools have been added into this Green Factor Code to assist with ease of implementation, including The Native Pollinator Habitat Restoration Guide Best Management Practices for the Puget Sound Lowlands and the Pathfinder 3.0 Tool. Additional details and resources can be found in the **Appendix**.

Model Green Factor Table		
1 - Landscape Elements		**Multiplier**
A.	Bioretention facilities	1.5
B.	*Suspended pavement soil systems, continuous soil systems, or soil cells	0.2
C.	Landscaped areas with soil depth less than 24"	0.1
D.	Landscaped areas with soil depth of 24" or more	0.6
E.	Preservation of existing trees - calculated at 20 sq ft per inch dbh (Trees must have a minimum diameter of 6" at dbh.)	1.0
F.	Preservation of Landmark or Significant Trees bonus - calculated at 20 sq ft per inch dbh or preservation of non-invasive native vegetation that is larger than 4,000 sf (Trees must meet jurisdiction definition of Landmark Trees)	0.1
G.	Preservation of existing evergreen trees bonus - calculated at 20 sq ft per inch dbh (Preserved evergreen trees must have a minimum diameter of 6" at dbh)	0.1
H.	Ground covers or other low plants (less than or equal to 2' tall at maturity)	0.1
I.	Medium Shrubs or perennials - calculated at 9 sq ft per plant (2'-4' tall at maturity)	0.3
J.	Large Shrubs or perennials - calculated at 36 sq ft per plant (greater than 4' tall at maturity)	0.4
K.	Small Trees or equivalent with calculated soil volume that meets or exceeds 500ft3 per tree - calculated at 90 sq ft per tree (canopy spread 10' to 15' at maturity)	0.3
L.	Medium Trees or equivalent with calculated soil volume that meets or exceeds 1000 ft3 per tree - calculated at 230 sq ft per tree (canopy spread 16' to 24' at maturity)	0.5
M.	Large Trees with calculated soil volume that meets or exceeds 1500 ft3 per tree - calculated at 350 sq ft per tree (canopy spread 25' and greater at maturity)	0.7
2 - Green Roofs		
A.	Area planted with at least 2" of growth medium but less than 4" of soil	0.4
B.	Area planted with at least 4" but less than 8" of soil	0.7
C.	Area planted with at least 8" of but less than 30" of soil	1.0
D.	Area planted with tree(s) and at least 30" of soil	1.5
E.	Install vegetated roof system to reduce the total impervious roof surface by at least 25%. Area planted with at least 2" of growth medium and 4" of soil.	1.0
3 - Green Walls		
A.	Façade or wall surface obstructed with vines (calculate at 3 years of growth)	0.1
B.	Façade or wall surface planted with a green wall system (must have year round irrigation and maintenance plan)	0.2
4 - Landscape Quality Benefits		
A.	**Landscaped areas in food cultivation	0.2
B.	****Biodiverse Landscape: Areas shall be planted to provide habitat structure and continuous blooming, meeting guidance in the Native Pollinator Habitat Restoration Guide: Best Management Practices for the Puget Sound Lowlands Part 3.2: Pollinator Resource Requirements pg. 13 and Part 6: Plant Lists pgs. 36-42 and shall be comprised of a minimum of 70% native Puget Sound Lowland plants	0.1
C.	****Biodiverse Landscape Patch Bonus: Landscaped areas meeting requirements of 4B and are a minimum 2,000 sf contiguous planting/habitat	0.1
D.	Landscaped areas where at least 50% of annual irrigation needs are met through the use of harvested rainwater	0.2
5 - Permeable Paving		
A.	All exterior paving has a Solar Reflective Index of 0.28 or better and be composed of at least 15% of recycled materials or supplemental cementitious materials.	0.1
B.	Permeable grid, pavers or concrete paving used for at least 25% of paving. Must have a Solar Reflective Index of 0.28 or better.	0.2
C.	Permeable grid, pavers or concrete paving manages at 50-74% of on-site stormwater outside of building footprint. Must pass minimum ASTM infiltration performance requirements for the specified material.	0.3
D.	Permeable grid, pavers, or concrete paving manages at least 75% of on-site stormwater outside of building footprint. Must pass minimum ASTM infiltration performance requirements for the specified material.	0.5
6 - Innovatation		
A.	****Contributes to biodiversity net gain goals, scoring a minimum of 10% or more Native Ecosystem Impact value using the Pathfinder tool	0.5
B.	****Project is anticipated to become Climate Positive within 10 years of completion using Pathfinder Tool. Recommended for projects performing a LCA to meet certification requirements.	1.5

Energy and Decarbonization – Priority and Standards

Washington state has long been a leader in energy efficiency and decarbonization. Considering today's climate hazards, there is more emphasis on community resilience priorities that will enhance Washington's utility grid to meet peak loads with renewable energy.

With that goal in mind, greening the utility grid should be prioritized over an individual net-zero energy building. New construction and building renovations can significantly contribute by minimizing peak heating and cooling loads through the strategic combination of building insulation, airtight design, heat recovery ventilation, external shading, and high-performance windows. This climate smart approach also ensures building resilience against future climate extremes.

This section proposes an alternative to requiring full certification under Green Building Protocols. Instead, it recommends selecting specific standards or credits from these protocols that best support local and regional energy and decarbonization goals, offering targeted options for jurisdictions. When establishing regulatory requirements or incentives for high-performance development, counties and cities should adopt the outlined priority strategies to enhance the impact of TOD on regional sustainability and climate resilience goals.

Priority Level 1 (Highest)

To enhance the utility grid's capacity during extreme temperature events and improve human safety resilience during power outages, it is important to reduce peak thermal loads. This can be achieved with the following development standards:

- Limit the total sum of sensible peak heating and cooling loads to a maximum of 8.0 BTU-hr/sf conditioned floor area and limit air leakage to 0.17 CFM per square feet of building enclosure at 75 Pascals. This measure improves mechanical ventilation performance effectiveness, efficiency, and resilience for wildfire smoke-tightness.

This priority is informed by the LEED v5 EA Credit: Reduce Peak Thermal Loads Option 4, Case 1, which the best performance level limits the sum of peak heating and cooling loads to a maximum of 8.0 BTU-hr/sf (USGBC n.d.). The 0.17 airtightness value aligns with Washington State Energy Code (WSEC) C406.2.13.1 option credit.

Priority Level 2

To reduce pollution and carbon equivalent emissions from the extraction, manufacturing, transportation, and installation of building materials, all building developments are required to meet the following development standards:

- Conduct an Embodied Carbon Assessment (ECA).
- Adhere to a limit of 350 kg CO_2(e) per square meter for the building foundation, structure, and enclosure (modules A1-A4). Biogenic carbon stored in wood shall not to be included in this assessment calculation. It may be reported separately in accordance with recommendations of Embodied Carbon Harmonization and Optimization (ECHO) Schema V1.0 September 2024.

Priority Level 3

To support building decarbonization and electrification, existing buildings must benchmark energy use and create a plan for improvement upgrades needed to transition to an all-electric building. Incentives should target electric panel capacity, conduits, space, outlets, and the structural needs for future electrification incorporating PV, EV, and energy storage equipment.

Priority Level 4

To improve power resiliency and enable buildings to actively support grid decarbonization, reliability, and affordability, install an electric energy storage system in new development. A standard is:

- Provide an electric energy storage system with capacity to provide minimum of 0.4 kWh per kW of peak electric demand.

This priority aligns with LEED v5 EA Credit: Grid-Interactive Option 1. California implemented a battery storage requirement in their 2022 code, though the formula for calculating the amount of battery storage is complex. The LEED credit provides a straightforward approach that will meet 40% of the peak electricity demand.

Within energy code section C406.3, Washington state does include a credit option for the installation of an electric energy storage system for building load management with a minimum capacity of 5 Wh per square feet of gross building area. This pathway is viewed to require significantly more battery storage compared to the LEED credit.

Construction and Demolition Material Management

Salvaging demolition materials and recycling new construction waste are a key part toward promoting a circular economy. There are many benefits from diverting construction waste disposal in landfills or incineration facilities, including reducing pollution, minimizing the need for new landfill facilities (often located in frontline communities), lowering the need for and corresponding embodied carbon emissions from new materials and products, and creating green jobs and new markets for building materials.

WAC, section 51-51-60108 **Appendix Y**, (WAC 51-51-60108:) has existing code language that addresses construction and demolition material management. This appendix is available to all local jurisdiction in the state. Provisions in an appendix are not mandatory unless the appendix section is specifically referenced by a local jurisdiction in their adopting ordinance.

When a local jurisdiction adopts WAC 51-51-60108 **Appendix Y**, all existing and proposed new buildings over 750 square feet or $75,000 in valuation must conduct a salvage assessment before demolition and submit a waste diversion report after demolition and construction. The salvage assessment identifies building components that, if removed, have the potential to be reused. The assessment must be signed by the owner and submitted to the jurisdiction prior to permit issuance. The waste diversion report details the weight or volume of project-generated construction and demolition materials and whether they were disposed in a landfill or diverted for recycling and salvage.

Administering WAC 51-51-60108 requires staff time to receive and file the salvage assessment and waste diversion report, with no additional action needed as **Appendix Y** does not set a minimum value. If a jurisdiction does set their own minimum diversion threshold, LEED v5 offers a reference standard at either 50% or 75% minimum diversion levels by weight or volume. If a minimum value is set, penalties for non-compliance must be addressed.

Deconstruction, Salvage, and Material Reuse.

Source: Hilary Noll

Green Building Certification

Why Encourage Green Building Certification

Transit-Oriented Development in light rail station areas offers an enormous opportunity for jurisdictions to leverage social, environmental, and economic benefits from increased density, housing, and access to transit. These zones have locational advantages for development. Therefore, jurisdictions have the opportunity to facilitate more sustainable development and lower-emission construction through a set of low- and no-cost baseline expectations that raise performance above current WA Energy Code requirements and/or to provide incentives that encourage deeper levels of green building and consideration for materials, water, and community well-being.

Utilizing third-party certification programs offers multiple benefits to green building developers and to jurisdictions working with certification agencies to meet local goals. Benefits for developers include providing resources, education, and technical assistance to increase their proficiencies; and peer-reviewed and routinely updated sustainable development best-practices. A list of third-party green building protocols and how they can be helpful for evaluating green building projects **here**.

Benefits for jurisdictions include review by design professionals so local staff does not have to navigate protocols or administer green building standards. Certification agencies also share metrics and data to assist jurisdictions with evaluating program performance and progress towards sustainability targets.

According to the City of Shoreline's Deep Green Incentive Program webpage, benefits of green buildings for both developers and occupants include:

- High Tenant Occupancy
- Faster Review Reduced Fees Incentivezed Zoning
- Increased Asset Value
- Creates Local Green Jobs
- Energy Independece
- Increased Marketability
- Lower Utility Bills
- Healthier Homes & City

Third Party Green Building Standards

Existing Language and Development Regulations

The City of Lynnwood and the City of Everett have implemented density bonuses for meeting USGBC's LEED standards or achieving LEED certifications. While LEED addresses various aspects of green building and site development, other third-party protocols offer more detailed guidance on specific topics and provide standards to achieve more sustainable outcomes. This section recommends an expanded set of options for other high-performance development protocols in addition to LEED be included in regulatory requirements and incentives.

Shoreline's Deep Green and Incentive Program

Concurrent with adoption of subarea plans and new zoning for Shoreline's two light rail station areas at 185th and 148th Streets, the City mandated a level of green building in TOD (Mixed-Use Residential) zones and developed a tiered incentive program for more stringent green protocols near light rail and throughout the city.

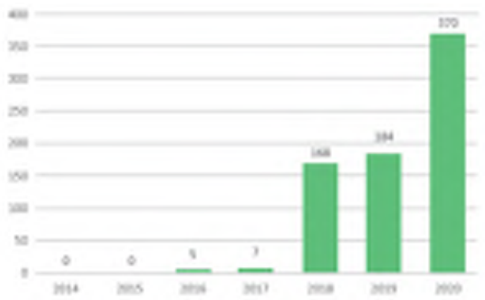
The graph below shows how the number of certifications through the Built Green program increased from adoption of the mandates in 2015 and 2016 through 2020, and how efficiencies in greener buildings save water, energy, and utility costs to residents.

Build Better with the Deep Green Incentive Program (DGIP)

The City of Shoreline is offering our Deep Green Incentive Program (DGIP), which gives developers who build green access to increased density, taller buildings and reduced fees. The DGIP applies to development projects that register with a third-party certification entity, such as the International Living Future Institute (IFLI), Built Green, US Green Building Council, Passive House Institute US, or Salmon-Safe.

Source: City of Shoreline

Built Green Enrolled Projects



Source: City of Shoreline

Since 2018, built green has registered 700 units in Shoreline. This means a cumulative:

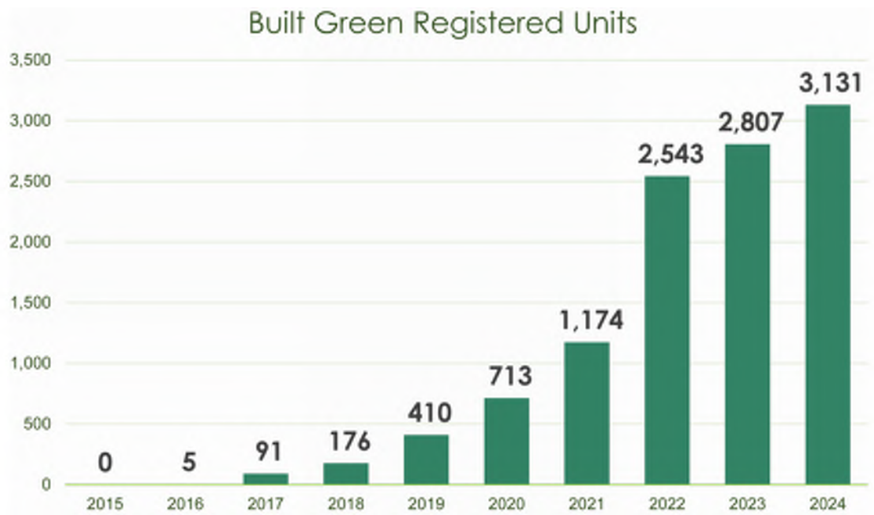
ANNUAL SAVINGS

4,685,450	783.86	$312,620
gallons of water	MWH of energy	

EQUIVALENT TO

282,205	1,001	8,316	899
pounds of CO^2 emissions	Nissan Leafs driven for a year	solar panels produced	years of running a 12W LED bulb continuously

The graph below illustrates that by the opening of the two light rail stations in August 2024, Built Green registrations increased from hundreds to thousands, with thousands more units currently in the development pipeline.



Source: City of Shoreline

MCP Recommendation

Based on the success of Shoreline's Deep Green Incentive Program, the Model Code Partnership proposes a similar system of a mandatory Green Building Standard (GBS) within TOD zones and a tiered Deep Green Building Incentive Program (DGBIP) for station areas and beyond. Several key differences between the Shoreline program and the MCP recommendation are described below.

Updates to Third Party Certification Protocols

Since 2017, many certification programs have evolved with new version updates and some programs have been retired or replaced with new names. PHIUS+ Source Zero is now PHIUS ZERO and PHIUS+ is now PHIUS CORE. The International Living Future Institute has become Living Future. Their Living Community Challenge still provides guidance but no longer takes registrations. Other programs, like Built Green have evolved their standards so they are more equivalent to programs that were placed on a higher tier in Shoreline's DGIP.

In some instances, programs are paired to create equivalency with more comprehensive protocols, like requiring Salmon Safe to complement a Net Zero certification to consider best practices for stormwater in addition to energy conservation. The Department of Commerce's Evergreen Sustainable Development Standard (ESDS) was included to provide additional incentives for publicly-funded affordable housing projects.

Green Building Standard

This recommendation is intended to establish a mandatory baseline for all new construction in TOD zones. Instead of relying on incentives, it allows access to be able to develop in TOD zones nearest the amenity of future light rail service and the walkable communities that will emerge. It includes priority measures for biodiversity, nature-based solutions, energy, and decarbonization described previously in this chapter. This includes no- to low-cost measures that builders are already utilizing to add quality assurance and holistic sustainability benefits not captured by Washington State's progressive energy code.

Deep Green Building Incentive Program

This recommendation is intended to provide a tiered system of incentives that reward deeper levels of green building certification. It could be applicable within TOD zones to encourage certification through more stringent protocols and/or throughout a jurisdiction.

Proposed levels for the GBS and DGBIP are described in the following table. Detailed regulations are included in the **Appendix - TOD Implementation Regulations, Section 10, Green Building Standards**.

Level	USGBC	Living Future	Built Green	ESDS	Other
1	Must comply with Green Building Standards				
2	LEED Gold	Zero Carbon	3-Star	55 pts	PHIUS Core
3	LEED Platinum	Core Certification	4-Star	60 pts	Salmon Safe or SITES and one of: • PHIUS Core • LF Zero Energy • LEED Gold with one LEED Zero certificate
4	LEED Platinum with one LEED Zero certificate	Petal Certification	5-Star	70 pts	Salmon Safe or SITES and one of: • PHIUS Zero • LF Zero Carbon
5	-	Living Building Challenge	Emerald Star	80 pts	-

Additional Considerations

Phasing in Requirements and/or Incentives over time

As of the writing of this Toolkit, market conditions like high interest rates have slowed the pace of development in the Puget Sound region and beyond. EVLE jurisdictions are not currently in a position to grant waivers of permit or impact fees, and their short permitting queues do not make expedited permitting a meaningful incentive. However, these conditions are likely to change in future market cycles, especially as light rail stations prepare to open, bringing additional frequent and reliable mass transit options deep into Snohomish County. Jurisdictions may wish to consider implementing some of the provisions described above and codified in the appendix in the near-term but additional requirements or incentives may be appropriate for a future market condition.

Refining incentives with the local development community and residents

High quality engagement with TOD partners and the community to determine meaningful incentives for a DGBIP and requirements for a GBS is critical to a successful green building program. Jurisdiction staff will likely need to provide more industry and community outreach to inform and educate about new requirements, incentives, and procedures.

Defining Community Benefit

When considering waiving impact fees as an incentive, it is important to define the community benefit that is being advanced (and/or to articulate the impact that is being mitigated) by encouraging green buildings. This will clarify that impact fee waivers are not a gift of public funds. This could happen in a local Climate Action or Sustainability Plan that describes the threat of climate change and the contribution of the built environment to greenhouse gas emissions. It can also be included in the WHEREASs in an ordinance that adopts such an incentive.

Third-Party Green Building Protocols

USGBC LEED

LEED certification offers a framework checklist of options for creating healthy, highly efficient, and cost-effective buildings, neighborhoods, and cities. It includes 12 prerequisites and seven credit areas: Location/ Transportation, Site, Water, Energy, Materials, Indoor Environment, and Innovation. USGBC has introduced LEED Zero certificates that complement a project's LEED certification level and verify the achievement of net zero performance in energy, emissions, potable water use, and waste.

Passive House Standard (PHS)

PHS is a leading standard for energy-smart and climate-resilient buildings. It is applicable to new and existing structures, both commercial, and residential buildings, including multi-unit and single-family homes. PHS buildings are energy-efficient, draft-free, and wildfire smoke-tight, providing comfort, filtered fresh air, energy savings, and resilience. Certification can be obtained through PHIUS (US Standard) or PHI (International Standard).

BuiltGreen

BuiltGreen, a certification program by the Master Buildings Association of King and Snohomish Counties, offers a checklist of options for new single-family, townhomes, multi-family housing, communities, and home remodels. It focuses on Site, Water, Energy, Indoor Air Quality, Materials, and Equity/ Social Justice categories. Projects must avoid ecologically sensitive areas and meet or exceed the higher energy efficiency requirements of the Washington State Energy Code, rather than national standards.

Living Building Challenge (LBC)

LBC, developed by Living Futures, offers a framework for fostering the symbiotic relationships between people and their built and natural environments across seven “Petal” categories: Place, Water, Energy, Health and Happiness, Materials, Equity, and Beauty. It includes 20 imperatives that must be met for certification. Certification requires at least 12 consecutive months of occupancy to demonstrate that actual performance meets or exceeds anticipated performance.

Living Future Zero Energy and Zero Carbon

Zero Energy certification mandates that 100% percent of operational energy to be offset on a net annual basis by on-site renewable energy. No combustion is allowed.

Zero Carbon certification includes the same requirements of Zero Energy certification plus a 30% reduction of the upfront embodied carbon emissions, and offsetting 100% of the embodied carbon emissions through on-site carbon sequestration or a one-time purchase of carbon offsets.

Washington State Evergreen Sustainable Development Standards (ESDS)

The ESDS is a building performance standard required for all affordable housing projects that receive capital funds through the state Housing Trust Fund program. ESDS is based on the national Green Communities standard created by Enterprise Community Partners, with modifications to reflect Washington state priorities and building codes. ESDS contains criteria to safeguard health and safety, increase durability, promote sustainable living, preserve the environment, and increase energy and water efficiency. This standard was developed for affordable housing projects as an alternative to the state requirement for LEED Silver.

Salmon-Safe

Salmon-Safe certification, co-led by Stewardship Partners and Salmon-Safe Puget Sound, emphasizes the importance of water quality and habitat restoration in the salmon bearing states and province of Oregon, Washington, California, and British Columbia. This site-specific, third-party certification uses nature-based strategies, such as green infrastructure, and is verified through in-person assessments by a science-based review team.

SITES

SITES is a rating system that evaluates and certifies the sustainability of landscapes and outdoor spaces throughout their planning, design, construction, and ongoing management. It guides landscape architects and planners in implementing nature-based solutions, enhancing biodiversity, mitigating climate change, conserving resources, improving public health, and protecting critical ecosystems. Administered by the Green Building Certification Inc. (GBCI), it is a complement to the LEED green building rating system.

Washington Sustainable Schools Protocol (WSSP)

WSSP is the green building guide for new construction and modernization construction in Washington for state funded school projects. WSSP is modeled after the Collaborative for High-Performance Schools (CHPS) green building protocol and adapted to reflect characteristics that optimize high performance in Washington schools. School districts can use either the WSSP or achieve LEED Silver for Building Design and Construction (Schools).

Envision

Envision is a rating system developed by the Institute for Sustainable Infrastructure, designed to guide large-scale, public infrastructure projects in implementing sustainable practices throughout a project’s life. Its five categories — Quality of Life, Leadership, Resource Allocation, Nature World, and Climate and Risk — cover a wide range of topics related to sustainability and resilience. Each Envision credit is evaluated on a scale of five levels of achievements: Improved, Enhanced, Superior, Conserving, and Restorative. Envision guides the entire project process from early planning and engagement to project construction and implementation. There are two verification pathways to pursue an Envision certification: a project can choose to verify its credits during design phase, or after it is constructed.

Summary of Sustainable Sites and Green Building Tools

Baseline level of priority refers to metrics or protocols that can lead to substantial positive impacts on climate resilience and community well-being and should be required through development standards and zoning codes.

Reach level of priority refers to metrics or protocols that can have significant positive impacts but might be challenging to achieve in the short term and should be incentivized through development standards and zoning codes.

Table 5-4 Summary Matrix of Sustainable Sites and Green Building Tools

			Co-Benefits from Climate Guidance Documents (Commerce 2023)													
Strategy	**Description / Metrics**	**Level of Priority**	Supports Housing Supply And Diversity	Reduces Emissions	Sequesters Carbon	Enhances Resilience	Improves Salmon Recovery	Promotes Economic Development	Promotes Equity and Justice	Provides Cost Savings	Provides Ecosystem Services	Protects Tribal Treaty Rights	Improves Public Health and Well-Being	Improves Air Quality	Protects Water Quality	Builds Community Knowledge
Green Factor Code	Jurisdiction partners should customize and adopt the Green Factor Code based on their priorities identified by the Natural Environment and Climate Elements. For example, City of Kirkland's Form-Based Code for NE 85th Street Station Area requires all new developments and major renovations be designed, built, and certified to achieve or exceed a Green Factor score of 0.4.	Baseline			X	X	X	X		X	X	X	X	X	X	
Nature-Based Priority Standards																
Biodiversity	Require developers to use of one of these two tools, Pathfinder 3.0 or Americas Biodiversity Metric, and share their outcomes of the tool.	Baseline			X	X	X				X	X	X	X	X	X
Energy and Decarbonization Priority Standards																
Sustainable Development Reduce Peak Thermal Loads	Limit the sum of the sensible peak heat and cooling loads per conditioned floor area to 8.0 BTU-hr/sf maximum. Air conditioning (cooling) must be installed and building airtightness or air leakage limited to 0.17 CFM per square feet of building enclosure at 75 Pascals.	Baseline		X		X				X			X	X		
On-Site Renewable	Provide an additional 0.25 W/sf renewable energy generation above WSEC C411 requirement for new buildings or additions larger than 5,000 gross square feet.	Reach		X		X		X		X			X	X		
Sustainable Development	Install battery storage energy capacity to meet minimum 0.4 kWh / kW as a percentage of peak electric demand.	Baseline		X		X		X		X			X	X		
Embodied Carbon Assessment	Require developers to provide an ECA. Establish an embodied carbon limit at 350 kg CO2 per square meter for the building foundation, structure, and enclosure for modules A1-A4. Biogenic carbon stored in wood is not allowed in this assessment calculation.	Reach		X									X	X		
Electric "Ready"	Require all buildings to have electric "ready" infrastructure (panel, conduit, outlet, etc.) provided if gas appliances (cooking, laundry, fireplace, etc.) are installed.	Baseline		X		X				X			X	X		
EV Infrastructure	Provide an additional 10% EV-ready parking spaces and additional10% EV-capable parking space above WAC 51-50-429 requirement	Reach		X		X							X	X		
Third-Party Green Building Protocols	Establish a mandatory baseline for new construction in TOD and a tiered system of incentives that reward deeper levels of green building certification.	Baseline	X	X		X		X		X	X		X	X	X	

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APPENDIX A - TOD IMPLEMENTING REGULATIONS

TOD Implementing Regulations

January 2026

Introduction

The Puget Sound Regional Council's growth plan, Vision 2050, anticipates that 65% of the region's residential growth and 75% of job growth will occur within a half mile of high-capacity transit, including future light rail stations like those along the Everett Link Extension. The body of this Toolkit outlines best practices for transit-oriented development and offers resources for local consideration. This appendix contains regulations to implement these best practices. It has been developed with jurisdictional partners to facilitate desirable and resilient development around planned station areas.

How to Use This Document

Every community in Sound Transit's service area is unique, and applies policies, implementing regulations, and incentives differently. It is the understanding that each jurisdiction will likely adopt portions of these regulations into their existing development codes, rather than adopting a wholesale TOD Implementing Regulations or creating an overlay or competing regulations. To that end, this appendix includes provisions, procedures, standards, and guidelines that encourage livable, safe, and sustainable development in these station areas. Illustrations, best practices, and pro tips have also been included where appropriate. In some areas, placeholders for jurisdiction-specific names or code references are denoted by "**< >.**" These are intended to be completed by the jurisdiction if this section of the document is used.

Pro Tip Callouts

Pro Tips offer advice and sometimes point to programs or partnerships that can aid in implementation. There are certain instances where successful implementation of TOD is not as dependent on new regulations as on the way existing regulations of the jurisdiction can be applied and interpreted within the TOD zones. In other cases, successful implementation of TOD policies requires development or customization of administrative procedures or other local efforts that would be a follow-up to the work of the Model Code Partnership.

The body of the Toolkit references best practices and case studies from many jurisdictions in the Puget Sound and beyond, and the project team has consulted with these jurisdictions to understand how practices have been implemented through regulation. Where appropriate, these regulations and other resources are included in this Appendix.

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1. PURPOSE AND INTENT

> ***Pro Tip:***
>
> General TOD zone purpose statements have been included here as a reference, but customized statements should draw from the goals and policies of local comprehensive plans and countywide, regional and state plans.

1.1 Purpose statement

The purpose of this ***<Title>*** is to establish the standards, regulations, and provisions that apply within Transit-Oriented Development Zones (TOD zones), with the intent of promoting transit-supportive and transit-oriented patterns of development that will sustain resilient communities and provide safe and convenient access to transit services.

1.2 TOD zones are intended to:

A. Encourage a mix of residential, commercial, and employment uses within future light rail station areas.

B. Design for reduced conflicts between vehicles, pedestrians, and transit operations.

C. Allow for a more intense and efficient use of land at increased densities to reinforce mutual benefits of public investments and private development for community well-being.

D. Provide a safe and pleasant pedestrian experience near transit stations by fostering a vibrant, active, and safe environment. This includes amenities such as outdoor seating areas, pedestrian scale lighting, and clear and safe pedestrian pathways.

E. Serve as priority areas within the jurisdiction for affordable housing and new neighborhood-serving businesses to improve transportation access and services available within the community.

2. LAND USES IN TOD ZONES

2.1 Three TOD zones established

> ***Creating TOD Zones***
>
> These Implementing Regulations establish three tiers for Transit-Oriented Development zoning. The intent of this approach is to recognize the need to accommodate differences between station areas in terms of intensity, environment, and existing patterns of development. By articulating three distinct TOD zones, jurisdictions could encourage a logical mix of land uses and promote densities of development that are appropriate for high-capacity transit areas, while fostering development expressions that are contextually appropriate.
>
> As jurisdictions consider zoning for station subareas, they may wish to designate areas for different levels of intensity, height, density, and uses based on characteristics like proximity to a station, adjacency to a single-family residential area, or a predominance of lower intensity uses. Building styles, heights, and infrastructure may differ based on these characteristics. In some cases, these designations could also be appropriate for areas along key connecting routes like bus lines, or within convenient bicycling distance, and so may extend beyond the typical ½ mile radius often considered in station subarea planning.
>
> There may be more than one zoning designation in the area around a transit station, but the general pattern is that development intensity should be a function of proximity to transit facilities. The highest expression of density and/or intensity should be closest to the transit facility. It may be prudent to prohibit lower intensity uses, like townhomes, in this zone.

A. Center Core TOD (TOD-CC)

The Center Core TOD (TOD-CC) zoning classification is intended to promote mixed-use activity with high-rise development, active ground floor level uses, and a pedestrian-friendly environment with accessible public spaces near transit stations (typically within ¼ mile or a five-minute walk). High-rise buildings are appropriate here with active pedestrian street façades and a mixture of uses supported by active ground floor frontages. The highest density for the TOD area occurs in the TOD-CC zone, or in connecting corridors, if appropriate, and building heights should be greater than five stories.

B. Outer Core TOD (TOD-OC)

The Outer Core TOD zone (TOD-OC) is another option that could be appropriate within 1/2 mile or a 10-minute walk, or in connecting corridors. The

TOD-OC zone steps down density and building heights from the Center Core zone. TOD-OC zoning is intended to include mostly mid-rise buildings and a mix of uses that supports pedestrian activity. Parking is typically provided in multi-story garages, but on-street parking may be accommodated in surrounding rights-of-way to serve active retail and service uses at the ground floor. Building heights in the TOD-OC zone would typically be five to eight stories.

C. Transitional TOD (TOD-TR)

The Transitional TOD zone (TOD-TR) is a medium intensity, mixed-use area typically located near the outer edge of the ½ mile or a 10-minute walk, or in connecting corridors. The TOD-TR Zone is intended to provide a transition in intensity and height between TOD zoning and the lower density, lower height and scale surrounding development. The Transitional Zone allows for mixed-use, medium-density residential, with employment/professional offices, services, and retail uses. As with Center and Outer Core zones, the Transitional Zone also promotes mixed-use activity, active ground floor level uses, and a pedestrian-friendly environment with accessible public spaces. Parking is typically provided with individual townhouse units or in a combination of structured and surface parking solutions for smaller apartment or mixed-use buildings, as well as on-street parking that serves active retail/service uses at the ground floor. This is an appropriate zone for other forms of "Missing Middle" housing. Building heights are typically lower than five stories.

Figure 1. Possible TOD zone designation.

2.2 Permitted Uses in the TOD Zones

A. Mixed-use sites. Multiple primary uses, and multiple use categories, are allowed on any lot in any TOD zone.

B. Permitted Land Uses

PARTICULAR USE	TOD ZONE		
P – Permitted C – Conditional X – Prohibited	**TOD-CC**	**TOD-OC**	**TOD-TR**
Residential uses[1]			
Accessory dwelling unit(s)	P	P	P
Adult family home	P	P	P
Boarding house	X	P	P
Duplex	X	P	P
Fourplex	X	P	P
Group quarters	P	P	P
Multifamily 5+ units	P	P	P
Single unit detached	X	X	P
Townhomes	X	X	P
Triplex	X	P	P
Residential accessory use	C	C	P
Commercial use			
Adult entertainment business	X	X	X
Automotive/automotive-related sales, rental, service, or repair	X	X	X
Bed and breakfast/guest house	X	X	C
Conference center	P	P	C
Daycare	P	P	P
Eating and drinking places	P	P	P
Entertainment, theaters, galleries, museums	P	P	P
Food and grocery store	P	P	P
Fuel service station	X	X	C
General sales, retail, or service	P	P	P
Home business	P	P	P
Hotel/motel	P	P	P
Indoor recreation and sports facilities	P	P	P
Marijuana retailer	P	P	P
Marijuana production	C	C	C
Marijuana processing	X	X	C
Office	P	P	P
Outdoor recreation and sports facilities	P	P	P
Wholesale trade	X	X	C
Commercial accessory use	P	P	P
Industrial uses			
Artisanal manufacturing	P	P	P

PARTICULAR USE	TOD ZONE		
P – Permitted C – Conditional X – Prohibited	**TOD-CC**	**TOD-OC**	**TOD-TR**
Light industrial	C	C	C
Heavy industrial	X	X	X
Mini storage and/or self-storage	X	C	C
Outdoor storage	X	X	X
Warehousing	X	X	X
Wireless communication facilities	P	P	P
Industrial accessory use	X	P	P
Public, institutional, and infrastructure uses			
Ambulatory and outpatient clinics	P	P	P
Arts and cultural establishments	P	P	P
Educational facilities	P	P	P
Electric vehicle charging stations	P	P	P
Government and administrative uses	P	P	P
Health and social service facilities	P	P	P
Long-term care facilities	C	C	C
Parking structures (as primary use)	C	C	C
Parks, plazas, trails, open spaces	P	P	P
Public transit facilities	P	P	P
Religious facilities	P	P	P
Residential care facilities	C	C	C
Schools	P	P	P
Social services	P	P	P
Temporary shelter	C	C	P
Veterinary facilities	C	C	P

[1] *Short-Term Rental (refer **to <jurisdiction code section XX>**)*

2.3 Dimensional Development Standards

Dimensional development standards for TOD zones are as follows.

DEVELOPMENT STANDARD	MEASUREMENT	STANDARD (PER ZONE)		
		TOD-CC	TOD – OC	TOD – TR
Lot dimensions				
Lot area (square feet)	Minimum	None required	None required	None required
Lot width (feet)	Minimum	None required	None required	None required
Setbacks				
Front yard setback (feet)	Minimum	0	0	0
Front yard setback (feet)	Maximum	5	5	10
Setback from a nonresidential zone (feet)	Minimum	0	0	5
Setback from a multifamily zone (feet)	Minimum	0	5	10
Setback from a low-density residential zone (feet)	Minimum	10	10	10
Setback from light rail transit facility (feet)	Minimum	0	0	0
Lot coverage requirements				
Lot coverage (for buildings)	Minimum	75%	70%	65%
Lot coverage (for buildings)	Maximum	100%	100%	100%

DEVELOPMENT STANDARD	MEASUREMENT	STANDARD (PER ZONE)		
		TOD-CC	TOD – OC	TOD – TR
Landscape open space requirements (total)	Minimum	5%	10%	20%
At grade landscape area (min.) (% of net lot area)	Minimum	0%	0%	20%
Landscape amenity area [1]	Maximum counted toward total	5%	10%	10%
Height dimensions				
Height, principal building (feet)	Minimum	60	50	45
Height, principal building (feet)	Maximum	None	90	60

[1] *Landscape amenity area may be provided above ground level (e.g., rooftop or podium-level gardens). Only the percentage specified in Table 2.3 of the net site area above the ground floor may count toward the total requirement—unless the above-ground area is publicly accessible, in which case the full amount may be credited. If not publicly accessible, only half of the allowed percentage can be allocated towards above ground amenities.*

3. AFFORDABLE HOUSING IN TOD ZONES

3.1 Purpose and applicability

A. The purpose of this chapter is to address the need for affordable housing and to provide opportunities for low-income households to live near transit and employment.

B. Affordable housing requirements shall apply to new residential and mixed-use rental developments of five dwelling units or more, for all TOD zones, and consistent with locally adopted middle housing ordinances as legislated.

3.2 Affordable Housing Requirements

A. All zones predominantly for residential use must comply with adopted middle housing regulations at the ***<jurisdiction code level>****;* increased density is allowed based on affordable housing units provided as identified in said code section.

B. This code pertains to areas within one-mile radius of high-capacity transit, the following inclusionary zoning standards are mandated as follow:

1. At least **20%** of the proposed dwelling units in new residential or mixed-use development must be affordable to households at or below 50% of Area Median Income (AMI); or
2. At least **10%** of the proposed dwelling units in new residential or mixed-use development must be affordable to households at or below 80% AMI.

C. AMI Allocated Housing Units by Income Band

HOUSING UNITS BY INCOME BAND	AREA MEDIAN INCOME (AMI)	APPLICABLE CODE SECTION REFERENCE*	BUILDABLE LANDS ALLOCATION SPECIFIC TO TOD*
Emergency housing/ shelters	N/A		
Extremely low	0-30% AMI		
Very low	31-50%		
Low	51-80%		
Moderate	81-120%		
Other	ABOVE 120%		

**Reference specific local jurisdiction code sections applicable to housing units by income.*

D. Beyond the units required by ***<jurisdiction code citation>***, when at least one additional unit affordable to extremely low-income households or at least two additional units affordable to low-income households are created in a TOD zone:

1. An additional one story of building height can be applied to buildings with the additional affordable dwelling unit(s).
2. Developments that include multifamily residential may reduce by 5% the amount of total amenity area required by ***<jurisdiction code citation>*.**

E. Whenever the calculated number of required affordable housing units results in a fractional equivalent of five-tenths (0.5) or greater, the number of required units shall be rounded up to the nearest whole number.

F. Affordable housing units that are provided under this section shall remain as affordable housing for a minimum of 50 years, as provided in a recorded covenant running with the land. The covenant shall be approved by the ***<jurisdiction>*** decision making body and filed for recording with the ***<jurisdiction>*** auditor prior to the issuance of a building permit for any structure.

G. Prior to the issuance of any permit(s), the Department shall review and approve the location and unit mix of the affordable housing units consistent with the following standards:

1. The location of the affordable units shall be intermingled with all other dwelling units within the development, with no more than three affordable units next to each other.
2. The tenure of the affordable housing units shall be the same as the tenure for the rest of the housing units in the development.
3. The bedroom mix of affordable housing units in any project shall be in the same ratio as the bedroom mix of the market rate units of the project.
4. The floor area of the affordable housing units shall not be less than 90% of the average gross floor area of the market rate units within the project with the same number of bedrooms; and
5. The exterior materials, interior materials, and design of the affordable housing units must be comparable with the other dwelling units in the development, with similarity in building finishes, rooflines, and landscaping.
6. Construction of the affordable housing units shall be concurrent with the construction of market-rate dwelling units.

> ***Pro Tip:***
>
> Jurisdictions may also simply require that units must be the same, whether or not they are income restricted as long as the required number of units remain affordable. Each jurisdiction will have to be consistent with their codes for middle housing affordability incentives.

3.3 Off-site and Alternative Compliance

A. While the priority of the ***<jurisdiction>*** is to achieve affordable housing on-site, the Director may approve a request for satisfying all or part of the affordable housing requirements off-site. The following shall apply to all units not located on-site:

1. The applicant can demonstrate that the deviation from the on-site requirement achieves a result equal to or better than providing all affordable housing on-site.
2. Affordable housing units provided off-site must be of the same type and tenure of units as the units in the project that give rise to the requirement.
3. The location does not lead to an undue concentration of affordable housing in any particular area of the ***<jurisdiction>***.
4. The site must be within the corresponding TOD zone.

B. Application for and approval by the Director for alternative compliance must be made prior to issuing a building permit for the project. Alternative compliance shall be requested in writing on an application form approved by the Director.

C. Application for off-site alternative compliance must document the timing that off-site affordable housing units will be made available and provide assurances of completion of the off-site affordable housing units. The off-site affordable housing units must be available before or at the same time as the on-site market rate housing.

3.4 Incentives for Affordable Housing

Pro Tip:

Consider these incentives to encourage affordable housing in TOD zones:

- Make affordable housing projects eligible for impact fee exemption.
- Consider a pilot program that will expire at a prescribed time to incentivize early development.
- Allow added affordable units, or larger units with more bedrooms, to reduce the minimum open space requirement or the minimum parking requirement.
- Offer additional incentives for certification through the Evergreen Sustainable Development Standard for affordable housing projects that are publicly-funded.
- City's ability to develop, modify and expand requirements of affordable housing as referenced in RCW 36.70A.540.

4. BICYCLE AND MICROMOBILITY

4.1 Short-Term and Long-Term Bicycle Parking

A. Short-term bicycle parking prioritizes proximity to building entrances and ease of use. Sometimes referred to as Class 2 bicycle parking, short-term bicycle parking is easy to access and use and does not require shelter or enclosure. It is typically for visits of less than four hours.

B. Long-term bicycle parking prioritizes security and weather protection. Sometimes referred to as Class 1 bicycle parking, it is intended for bicycles that are to be stored in an unmonitored area for several hours or longer. It is usually enclosed in a building, a garage, or at a transit center. It can be private or publicly accessible and is typically for visits of four hours or more.

4.2 Bicycle Parking Requirements

A. Bicycle parking requirements by use type are as follows.

USE TYPES	REQUIRED SPACES
Commercial – eating and drinking places	1 short-term space per every 300 sf of gross floor area
Commercial – general sales, retail, or service; professional office	1 short-term space per every 1,000 sf of gross floor area; Min. 3
Commercial – entertainment, theater, galleries, other	1 short-term space per 250 sf of gross floor area
Residential[1]	1 long-term space per every 4 dwelling units
Public facilities	1 space per 10,000 sf of gross floor area
Other uses	1 space per 10,000 sf of gross floor area

[1] *Developments with fewer than four (4) dwelling units are not required to provide bicycle parking for residential uses.*

B. When bicycle parking requirements result in a fractional bicycle parking space, fractions of 0.5 or more are rounded up.

C. Bicycle parking space requirements may be fulfilled with short-term or long-term spaces, where not specifically indicated in the table of bicycle parking requirements.

D. Long-term bike parking space requirements may be accommodated in the individual dwelling units.

4.3 Design of Bicycle Parking Spaces

A. Bicycle parking shall consist of either a rack or lockable enclosure with individual secured spaces. Racks shall support the bicycle frame at two points and allow for the bicycle frame and at least one wheel to be locked to the rack in a manner that will not cause damage to the wheels.

B. Bicycle spaces must be no less than two and a half feet wide by six feet in length, with a vertical clearance of at least seven feet.

C. If bicycles can be locked to each side of the rack, each side can be counted as a required space.

D. Bicycle parking must be well lit if accessible to the public or bicyclists after dark.

E. All bicycle parking spaces must be located on a surface with a slope no greater than 3%.

F. Bicycle lockers and racks must be securely attached to concrete footings or a structure and made to withstand severe weather and permanent exposure to the elements.

4.4 Placement of Bicycle Parking Spaces

A. All bicycle racks must be located at least 36 inches in all directions from any obstruction, including but not limited to other bicycle racks, walls, doors, posts, columns, or exterior or interior landscaping.

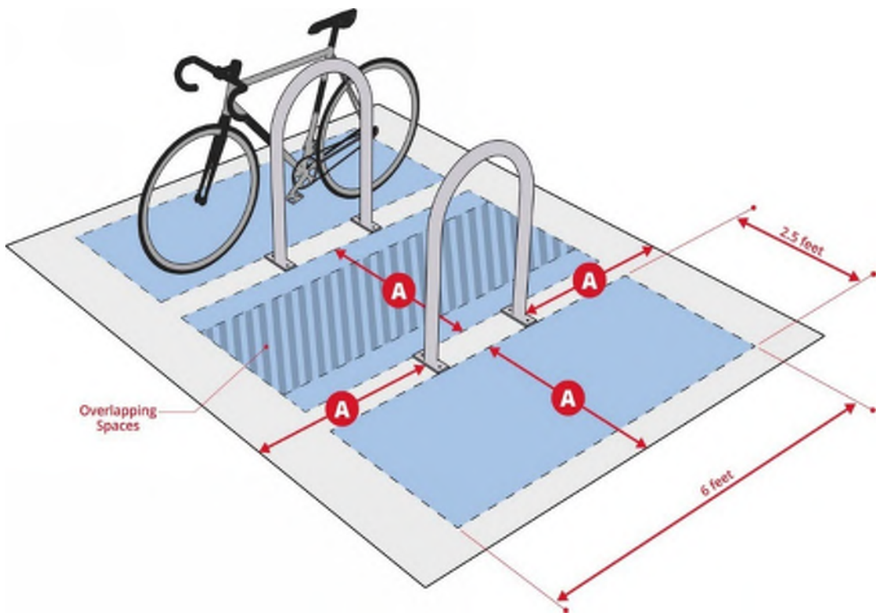
B. Bicycle parking spaces shall be sited for significant visibility by the public or by building users, except in the case of long-term bicycle parking that is in secure areas only accessible to employees or residents.

C. Short-term bicycle parking must be located either within 100 feet of the main public entrance of the building or facility or no farther than the nearest non-accessible motor vehicle parking space to the main public entrance, whichever is closer. If the development contains multiple buildings or facilities, the required bicycle parking shall be distributed to maximize convenience and use.

D. Short-term bicycle parking spaces may be located either on-site or in the public right-of-way, provided the necessary permit is obtained for the installation and it meets all other requirements of the law. If bicycle racks are located on public

sidewalks, they must provide at least six feet of pedestrian clearance and be at least two feet from the curb.

E. When located within a parking area, curbs, fences, landscaped areas, or similar, barriers shall be installed and maintained for the mutual protection of bicycles, vehicles, and pedestrians, unless the Director determines it to be unnecessary.



Source: Snohomish County Light Rail Communities Code

Figure 2. Bicycle parking design.

4.5 Bicycle Connectivity

A. All pedestrian and bicycle connections shall be provided in compliance with ***<jurisdiction code citation>*.** Where conflict occurs, the standards in this subsection apply.

B. Direct, convenient, and safe access shall be provided from commercial and mixed-use projects to adjoining residential, mixed-use, and commercial areas to the maximum extent feasible.

C. Pathways shall be a minimum of four-feet clear in width, hard-surfaced and may be paved with permeable materials.

4.6 Micromobility: Dock-Based and Dockless Systems

A. Dockless Systems. Dockless systems are allowed subject to ***<jurisdiction code citation>*.**

B. Motorized personal transportation devices may be parked in designated parking areas or in areas of the sidewalk that do not obstruct regular paths of travel.

C. Designated parking areas may be established in the right-of-way or on private property. All designated parking areas shall maintain a minimum six-foot-wide clear pedestrian path and shall not be located within ten feet of a crosswalk or curb ramp.

D. Project sites over 50,000 square feet shall identify a designated parking area on any primary street frontage. The designated parking area shall accommodate at least 10 motorized personal transportation devices. The designated parking area shall be held in reserve but may be landscaped or hardscaped until such time as the property owner reaches an agreement with a motorized personal transportation devices vendor to construct the designated parking area.

E. Dock-Based Systems. Dock-based systems are allowed subject to ***<jurisdiction code citation>*.**

F. Docks may be placed in the street, on the sidewalk, or in public open spaces subject to ***<jurisdiction standards >*.**

G. Bicycle share stations shall not cover or block utility access points.

H. Docks in the street. Docks may be placed in parking lanes that are eight feet wide or greater, subject to the following requirements:

1. Docks shall be placed at least three feet from the vehicular travel lane and at least eight inches from the curb.
2. Docks shall be placed at least 15 feet from fire hydrants ***<confirm with fire marshal>.***
3. A wheel stop shall be placed at least three feet from the end of the station. A wheel stop is not required adjacent to a non-parked area.

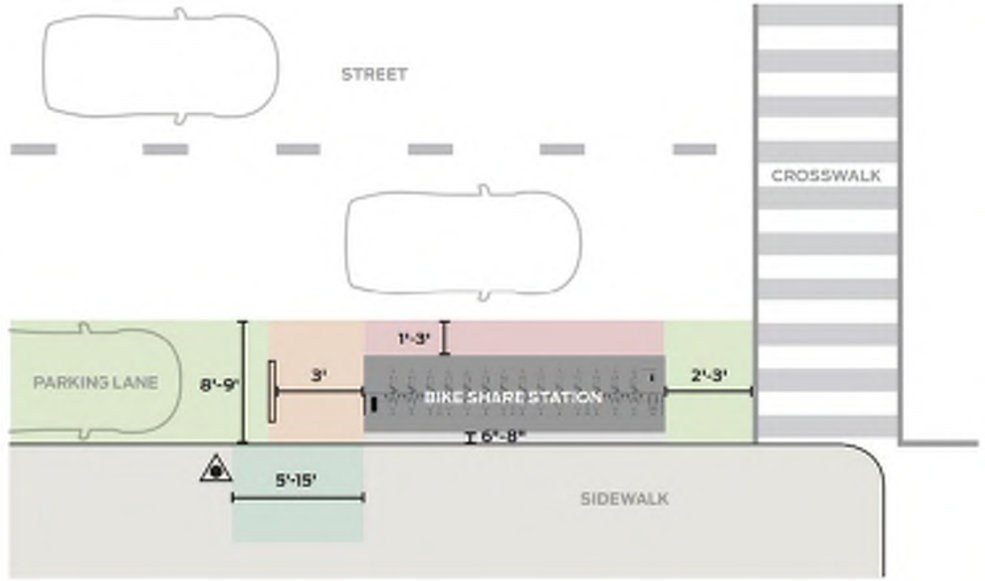


Figure 3. Docks for motorized personal transportation devices.

I. Docks on the sidewalk.

1. Docks shall be placed to maintain a minimum six-foot clear pedestrian path.
2. Docks shall be placed at least two feet from the edge of the curb where vehicle parking is allowed.
3. Docks shall be placed at least 15 feet from fire hydrants ***<confirm with fire marshal>.***

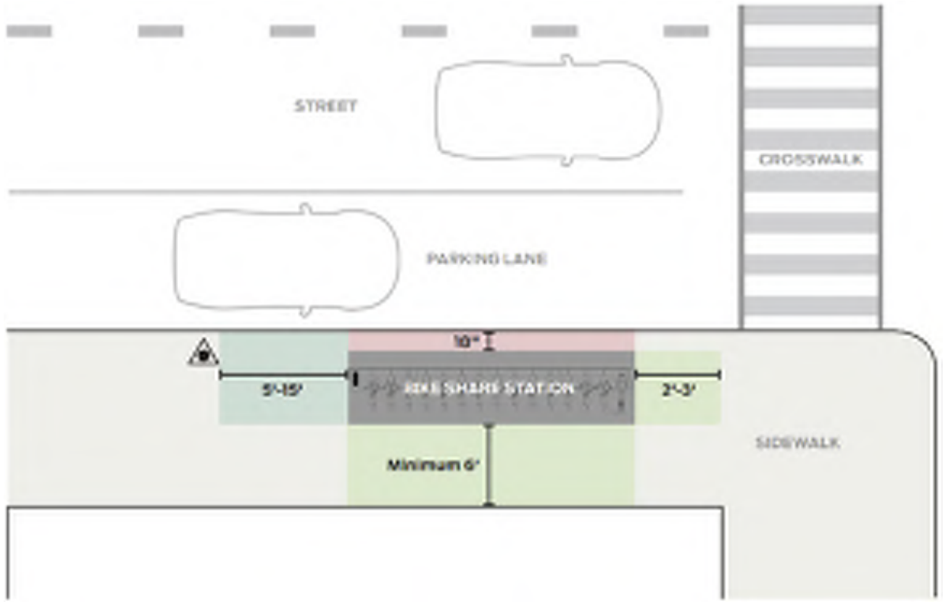


Figure 4. Docks on the sidewalk.

J. Docks in the public realm.

1. Docks may be placed in the greenway, urban park, square, and plaza civic space types.
2. Docks placed in the public realm shall maintain a minimum six-foot clear path in all pedestrian areas.

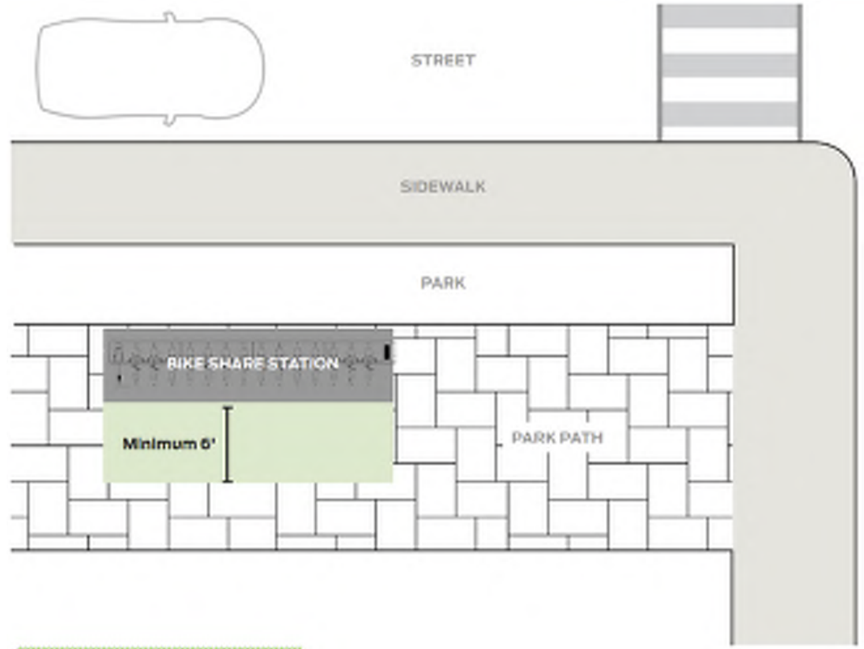


Figure 5. Docks in public open spaces.

Pro Tip:

Consider updating existing provisions for e-bikes, e-scooters, and other motorized personal transportation devices. Bremerton provides a good example of comprehensive regulations for motorized personal transportation devices, specifically with respect to definitions and operational concerns. Spokane provides a good example for rental vendor authorization requirements.

K. Modification of requirements for micromobility.

1. If satisfying the bicycle and/or micromobility parking requirements would be infeasible due to the unique nature of the site or cause an unintended consequence that undermines the purpose of these requirements, a property owner (or designee) may submit a written request to the Director for a modification of the requirements.
2. The Director may reduce the number of bicycle parking spaces required; however, in no case shall the requirement be less than two spaces.

Pro Tip:

Dial in the aesthetics of dock-based micromobility systems following the recommendations in NACTO's Bike Share Station Siting Guide, Chapter 3.0.

5. PARKING, LOADING AND DRIVEWAYS

5.1 TOD Minimum and Maximum Vehicle Parking Requirements

USE	TOD-CC AND TOD-OC		TOD-TR	
	Minimum	Maximum	Minimum	Maximum
Hotels	0.3 spaces per unit, plus commercial, conference, etc.	0.39 per unit	0.5 spaces per unit	0.63 per unit
Conference	First 10,000 sf waived for hotels, 1 space per 300 sf thereafter.	1.25 spaces per 300 sf.	First 10,000 sf waived for hotels, 1 space per 300 sf	1.25 spaces per 300 sf
Multi-family (including guest parking)	None	0.5 spaces per unit	For units <1,200: none For units >1,200: 0.5 spaces per unit	0.63 spaces per unit
Restaurants, bars and clubs	First 5,000 sf waived, 1 space per 500 sf thereafter	1.25 spaces per 500 sf	First 5,000 sf waived, 1 space to 500 sf thereafter	1.25 spaces per 500 sf
Retail sales and services uses; offices; entertainment uses, excluding theaters	First 5,000 sf waived, 1 space per 500 sf thereafter	1.25 spaces per 500 sf	First 5,000 sf waived, 1 space per 500 sf thereafter	1.25 spaces per 500 sf
Theaters	First 5,000 sf waived, 1 space per 500 sf thereafter	1.25 spaces per 500 sf	First 5,000 sf waived, 1 space per 500 sf thereafter	1.25 spaces per 500 sf

**Exceptions to minimum parking requirements in accordance with SB 5184 (not yet codified into RCW).*

A. SF = square footage of the gross floor area.

B. The maximum provision shall not apply to park-and-ride facilities, public parking garages, or other parking provided as part of a transit facility.

5.2 Location of Off-Street Parking

A. Surface parking is not allowed between a principal building and a primary street. It shall be located behind buildings. Surface parking may be allowed between a principal building and a secondary street to promote access from side streets when feasible.

B. Parking may be located in the rear or side yard of a building or below the building; however, no more than 40% of the width of the lot along the primary street shall be devoted to driveways and surface parking.

C. Below grade garages must meet the minimum setback requirements of the principal building.

D. Parking spaces shall comply with adopted standards for stall and drive aisle dimensions.

5.3 Modifications of Parking Standards

A. Projects may vary from the minimum vehicle parking requirements with a parking study, prepared by a qualified professional, demonstrating that the project:

1. Can be adequately served by a lower number of parking spaces, except for off-street automobile parking that is permanently marked for the exclusive use of individuals with disabilities as required by code, or parking that is permanently marked for the short-term exclusive use of delivery vehicles.
2. Requires a higher number of parking spaces. The parking study shall also conclude that the proposed parking spaces will not encourage unnecessary automobile trips and will not result in adverse environmental impacts on the site.

B. In no circumstances shall the number of vehicle parking spaces be greater than 125% of the maximum that would otherwise be permitted.

5.4 Parking Structures

A. Above Grade. All above grade parking structures, or any parking built to provide more than 125% of the minimum required TOD parking spaces, shall meet the

following standards, which are intended to facilitate potential adaptive reuse of the structure for other purposes if the parking need decreases in the future.

1. Parking structures should be designed for adaptability, allowing for future reconfiguration or adaptive reuse. This includes incorporating the following features to accommodate reuse or redesign:
    a. Ground floor height shall be a minimum of 15 feet measured from floor to ceiling.
    b. Upper floor heights shall be a minimum of 12 feet measured from floor to ceiling or height determined by mechanically stacked parking.
    c. Exterior sides of parking structures shall have uniformly distributed openings on two or more sides. The area of such openings must be at least 20% of the total perimeter wall area of each tier of the structure.

B. Below Grade. Alternative compliance to these requirements may be achieved through construction of a below grade parking structure.

C. Above ground parking structures shall have an exterior facade that complements the primary structure. This can be done through facade articulation, architectural elements, color, and elements that break up the massing of the parking structure.

D. At least two of the following features shall be used to screen above grade parking structures from the street or adjacent properties:

1. Architectural cladding.
2. Louvers.
3. Expanded metal panels.
4. Decorative metal grills.
5. Spandrel (opaque) glass.
6. Significant landscaping which uses a combination of trees and evergreen shrubs.
7. Public art or decorative installations.
8. Other methods may be proposed that meet the intent of this guideline.

E. Parking structures that are free-standing shall include the design features listed in ***<jurisdiction code citation>***.

Source: Snohomish County Light Rail Communities Code

Figure 6. Entrance to below grade structured parking.

Source: Snohomish County Light Rail Communities Code

Figure 7. Above grade level parking facades.

Pro Tip:

Jurisdictions may require parking structures to be design for adaptability by including features such as level floors, practical interior heights, and other structural considerations. However, these design features can be expensive and so should be balanced against considerations for development feasibility.

5.5 Driveways

A. All existing and proposed developments that provide on-site parking or loading must provide satisfactory means of vehicle access to and from a street, alley, or adjacent parking lot.

B. Driveway access from alleys shall be subject to Public Works Department review and approval. The number of driveways accessing an alley may be limited to ensure safety, adequate circulation, and alley function. All surface parking lots shall be designed so that driveway access is off of a secondary street or alley, when such secondary street or alley can be accessed from the site. Driveway access to a parking lot may be achieved through inter-parcel connection to a street or alley, with approval of the Director.

C. Driveways shall be a minimum of 100 feet from any intersection, as measured from the driveway center line to any intersection.

D. Distances between driveways shall be measured along the right-of-way line from the center line of the proposed driveway at the right-of-way to the center line at the right-of-way of any other proposed or existing driveway.

E. Driveway width shall be measured at the intersection of the public right-of-way.

F. Driveways shall be designed in accordance with these regulations:

METRIC	DESIGN STANDARD
RESIDENTIAL	
Driveway width (maximum)	24 ft
ALL OTHER DEVELOPMENT, INCLUDING MIXED-USE	
Driveway width (maximum)	30 ft

5.6 Drive Aisles

A. The width of any one-way drive aisle shall not be less than 10 feet.

B. The width of any two-way drive aisle shall not be less than 20 feet.

5.7 Parking Space Design

A. The depth of any parking stall measured perpendicularly to the parking aisle shall not be less than 17 feet.

B. The width of any parking stall measured perpendicularly to the parking aisle shall not be less than eight feet.

C. Reference section 6.1 for sidewalk and pedestrian connectivity.

5.8 Inter-Parcel Connectivity

A. Wherever possible, parking lots on adjacent properties shall be designed to allow for shared driveway access and internal circulation between the parking areas to reduce the number of curb cuts along the street.

B. The design of any new parking lot shall anticipate and not preclude future inter-parcel connections from adjoining lots, if possible.

5.9 Abutting Parking Lots

A. On lots utilizing a cooperative parking agreement or part of a common development, parking areas may abut or cross lot lines.

5.10 Loading, Delivery, and Service Entrances

A. Site design shall accommodate loading needs while preserving accessibility, mobility, and safety for all users. The following standards apply to loading, delivery, and service entrances:

1. Sufficient space for safe maneuvering and ingress and egress of larger vehicles shall be provided. Through-access solutions shall be provided to minimize or eliminate turning and backing up within parking lots and pedestrian areas and to minimize the amount of needed hardscaped area for maneuvering.
2. Where truck, auto, pedestrian, and bicycle conflicts occur, loading and delivery signs at entrances and exits and audible signals shall be installed.
3. Delivery vehicles shall access loading from alleys or side streets where possible to minimize conflicts between high traffic areas and any adjacent residential uses.

B. Deliveries and services shall be scheduled during daylight off-peak traffic hours when feasible to minimize odor and noise impacts on any adjacent residential uses.

C. Passenger loading and unloading areas shall not block any mode of travel in the public right-of-way.

6. SIDEWALKS AND PEDESTRIAN SPACES

6.1 Sidewalks and Pedestrian Connectivity

A. Public sidewalks within the TOD zones shall have a minimum width of six feet on local streets, and a minimum width of eight feet on arterial and collector streets. The required minimum width of the public sidewalks shall be unobstructed by light poles, parking meters, street furniture, plant materials, fences, fire hydrants, mechanical and electrical equipment, and other obstructions except when approved by the Public Works Director.

B. A minimum five-foot wide unobstructed sidewalk or internal pedestrian path (for both private and public properties) shall be provided to connect all areas of a parking lot to convenient pedestrian-oriented building entrances on the site and to any existing adjacent sidewalk networks and transit stops.

C. The unobstructed pedestrian path shall be physically separated from traffic by a buffer zone or barriers such as bollards.

6.2 Lighting

A. Lighting shall be provided throughout the site to ensure a safe and accessible pedestrian environment.

1. Site designs should provide lighting features for elements including pedestrian pathways, entrances, and other features such as public art, fountains, and landscaping.
2. Lighting shall be no higher than 15 feet and shall be provided throughout all pedestrian walkways. Parking lot lighting shall be no higher than 30 feet.
3. Considerations must be taken when adjacent to residential units. Lighting should be placed in a way that minimally affects the units.
4. Lighting shall be screened and its light directed in such a way that none is emitted above the horizontal plane or adjacent structures and properties.
5. Interactive lighting and flexible event lighting installations are encouraged to promote community activities, events, and public art.

7. TRANSPORTATION DEMAND MANAGEMENT (TDM)

7.1 TDM Obligations[1]

A. The TDM obligation shall be determined according to <the cost schedule/rate established by the jurisdiction>.[2]

B. Applicants may satisfy TDM requirements by constructing or implementing approved TDM measures that have a value equal to or greater than the development's TDM obligation.

C. Improvements that satisfy the TDM requirements may be constructed on-site or off-site.

D. All off-site improvements used to satisfy TDM requirements must be completely within a TOD zone of ***<the jurisdiction>*** and must have a value equal to or greater than the development's TDM obligation.

E. The TDM obligation may be met by making a voluntary payment equal to the development's TDM obligation.

F. Voluntary payments to satisfy the TDM obligation must be made to ***<jurisdiction's process, when these funds must be paid>.***

G. Funds received by ***<the jurisdiction>*** shall be placed in ***<name of designated transit mitigation fund of the jurisdiction>*** to be used exclusively for identified TDM measures. ***<The jurisdiction>*** at its discretion may construct or purchase these measures or transfer the monies to transit agencies for construction or purchase of TDM measures.

7.2 Mitigation Measures

A. TDM measures are categorized as physical improvements and programmatic measures, with the core component for each category also identified.

B. These trip reduction measures are not exhaustive, as new opportunities to reduce vehicle trips are constantly emerging. For a trip reduction measure not

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[1] TDM obligations may need to be reconsidered due to changes to state law prohibiting jurisdictions from requiring parking in TOD areas.
[2] Implementing a TDM program will require developing a cost schedule to determine the value of each TDM measure and the total value that each development is required to meet.

included in this table to be considered in the applicant's TDM plan, prior approval from the Director shall be required, and ***<the jurisdiction>*** may establish criteria for approving trip reduction measures not included in this table.

TDM MEASURES		
Category	**Component**	**Measure**
Multimodal network improvements	Pedestrian network improvements	Fund or construct pedestrian street improvements connecting the project's property frontage to the greater planned pedestrian network if within one mile of a light rail station
	Bicycle and micromobility network improvements	Fund or construct bicycle and micromobility network improvements outside of the project's property frontage and within one mile of the project site.
	Transit network improvements	Fund or construct transit network improvements outside of the project's property frontage and within one mile of the project site.
	Shared parking	Provide at least 25% of the on-site parking spaces that will be publicly accessible and/or shared at all times.
Micromobility improvements	Provide bicycle share stations	Subscribe to the ***<jurisdiction>*** bicycle share program, if applicable.
	Bicycle parking facilities	Provide at least two times as many secure short-term and/or long-term bicycle parking spaces on site as required by zoning. Include wayfinding signage for both short-term and long-term parking.
	Bicycle share stations	Establish a new bicycle share station that includes six bicycle/e-bikes on public streets or garages within 0.5-miles of the project, for use by project residents and employees, as well as the general public.
Programmatic TDM	Transit fare subsidies	Provide ORCA passes for project residents.
	Car share stations	Provide at least one car-share vehicle with a reserved parking space, plus another such vehicle and space for a set number of dwelling units and/or sf of nonresidential occupied floor area on-site. Example: every 40 dwelling units, every 10,000 sf.
Programmatic TDM	Car share stations	Establish a new or expand an existing public car share station to include a minimum number of car share vehicles, such as one vehicle for every 40 dwelling units and every 10,000 sf of non-residential occupied floor area on public streets or garages within a 0.5-mile of the project, for use by both project residents and employees, as well as others in the local community.

8. OPEN SPACE, LANDSCAPING, AND STREETSCAPING

8.1 Selection, Installation, and Maintenance of Plant Materials

A. Mature trees shall be trimmed to provide a minimum of eight feet clear vertical height from top of walkway surface to the bottom of the tree canopy. When located at a transit stop or station, mature trees shall be trimmed to provide a minimum of 12 feet clear vertical height.

B. Large trees shall have a minimum canopy spread at maturity of at least 30 feet and shall have a caliper of at least 2.5 inches at time of planting.

C. Small and medium trees shall have a minimum canopy spread at maturity between 15 feet and 30 feet and shall have a caliper of at least 1.5 inches at time of planting.

D. All shrubs must be at least two feet in height at time of planting.

E. Plants with thorns, spines, or sharp points shall not be planted in areas accessible by pedestrians and commuters or within five feet of sidewalks or bicycle lanes.

8.2 Landscaping

A. Landscaping, such as native or naturalized and ornamental trees, flowering shrubs, and perennials, should be used to define public entrances, to soften walls and fences, and to screen foundations.

B. Landscaping should be designed to promote sustainable practices of on-site water management and infiltration, using materials such as native or naturalized plants, swales, and filter strips.

C. Landscaping should seek to incorporate existing natural features, especially existing mature and healthy trees, where possible.

D. Tree preservation and protection strategies, such as fencing and other structures, shall be employed to preserve existing trees during construction.

E. Where commercial developments, mixed-use developments, or residential structures of more than four units abut properties zoned for single-, two- or three-

family dwellings, required yards shall be sufficiently landscaped to provide a year-round visual screen along those boundary lines.

8.3 Open Space

A. Sites located within 600 feet of an existing, publicly owned open space that provides comparable or greater recreational or open space amenities are exempt from this requirement.

B. Required open space shall be in the form of designated areas for active or passive recreation, such as parks, plazas, courtyards, landscaping, rooftop gardens, playgrounds, and pedestrian gathering areas.

C. To count toward open space requirements, rooftop gardens must be made available to all tenants of a building, at no cost, from sunrise to sunset daily or during the hours of operation of the building, whichever results in a longer period of time.

D. The required open space shall be conveniently accessible by sidewalks or internal pedestrian paths to all buildings on the site. To the extent feasible, linear open space corridors shall be provided to facilitate pedestrian and bicycle connectivity.

E. Open space may incorporate a mixture of hardscapes and landscaping.

F. Areas required for screening cannot be counted toward open space requirements, and the open space shall not be used for parking, loading, or vehicular access except emergency or maintenance vehicular access.

G. Mechanical and utility equipment cannot be located within required open space areas.

8.4 Streetscaping

A. Where a street design has been adopted by the jurisdiction, the arrangement and design of streetscapes should be consistent with the intent of that plan.

B. The design of streets, pedestrian ways, landscaping, lighting, and street furniture shall be coordinated and integrated throughout the site.

C. Street trees shall be planted within tree lawns along all public rights-of-way. A minimum of one large tree shall be planted for every development site, and street trees shall be planted at intervals of no more than 30 feet on-center, on average. Where overhead utilities exist, one small tree must be planted every 20 feet on-center, on average. Tree spacing is measured as an average to account for driveways, utilities, bus boarding and alighting areas, and other potential conflicts.

D. Where a street tree is not possible or where tree lawns are less than three feet wide, a tree shall be planted in the required front yard space, if such front yard is at least 10 feet deep.

E. Streetscaping shall preserve the minimum clear walking space of a sidewalk. The pedestrian zone must be constructed to meet all local standards and ADA specifications. Transit shelters may encroach into the pedestrian zone if ADA requirements are met.

8.5 Parking Lot Landscaping and Screening

A. All surface parking lots must meet perimeter screening requirements.

B. Where a parking lot (or drive aisle or other type of area designed for motor vehicles) is located within 20 feet of a lot line, perimeter screening of Type A or Type B is required, in accordance with 8.6.

8.6 Perimeter Parking Lot Screening Types

Metric	Type A (no wall)	Type B (wall)
Minimum landscape strip depth	10 ft	7 ft
Percent of perimeter frontage screened	75%	75%
Number of trees required (minimum per 30 feet of frontage)	1 large or 2 small or medium	1 large or 2 small or medium
Minimum height of walls & fences	N/A	3.5 ft

A. Landscape screening along front yards and corner side yards shall consist of evergreen or dense deciduous shrubs. Landscaping in rear and interior side yards shall consist of dense evergreen landscaping.

B. Perimeter screening shall have a minimum height of three feet at maturity. The minimum height of shrubs may be reduced if berming is provided so that the combined height of shrubs and berming is not less than the minimum required height.

C. Required perimeter screening may be located within required setbacks.

D. Transit stop amenities such as shelters, benches, and an associated concrete pad may be located within the landscape strip.

8.7 Interior Parking Lot Landscaping

A. All surface parking lots designed for 20 or more parking spaces must devote at least 5% of the interior parking area to landscaping.

B. Multiple parking lots contained on a single site and any separate parking areas connected with drive aisles are considered a single parking area.

C. Interior islands should be distributed regularly throughout the parking lot. Interior islands may be consolidated, or intervals may be expanded to preserve existing trees.

D. An interior island must be a minimum of eight feet in width and 100 square feet in area. Each island must include at least one large tree or two small or medium trees

E. Interior islands must be protected by wheel stops or a six-inch curb, except where necessary to direct stormwater runoff.

F. Interior islands may be installed below the level of the parking lot surface to allow for runoff capture.

9. SITE DESIGN IN TOD ZONES

9.1 Street Grid and Block Design

A. Bulk regulations.

1. There are no maximum density limitations for dwelling units.
2. The minimum net residential density shall be according to TOD zone and shall be:
    a. 25 dwelling units per acre in TOD-TR;
    b. 40 dwelling units per acre in TOD-OC; and
    c. 50 dwelling units per acre in TOD-CC.
3. Rooftop patios, decks, and balconies designed for recreational activities shall be setback from a property line abutting a single-family residential zone by at least 30 feet.
4. Developments are encouraged to provide civic spaces, such as plazas, forecourts, hardscaped areas, or landscaped areas, within setbacks from public rights-of-ways. Director discretion may allow a building in a TOD zone to be set back farther than the maximum setback if that setback zone is used for a public purpose, including a bus stop.

Source: Snohomish County Light Rail Communities Code

Figure 8. Front setback plaza.

B. Maximum block length

1. The maximum block length for new building construction is limited to 400 feet measured from curb edge to curb edge.

2. On existing blocks greater than 400 feet long, new projects shall provide a mid-block pedestrian and bicycle connection to establish connectivity and mobility within the site if the site is more than 200 feet from the nearest street or other pedestrian connection.
3. Blocks greater than 400 feet long may be permitted with alternative acceptable pedestrian connections if:
   a. An open space or amenity area is more appropriate;
   b. The location and configuration of the lot makes a pedestrian connection infeasible or impractical; and
   c. Safe and convenient pedestrian connections are provided throughout the site and provisions are made to accommodate cross-access to/from pedestrian areas that may be developed on adjacent properties.

9.2 Access to light rail stations and transit stops

A. Existing and planned transit stations or stops shall be considered in the layout of new developments to ensure convenient transit access and use.

1. The location of entrances, walkways, and pedestrian amenities should allow for safe and comfortable pedestrian access from a transit station or stop to the site. The passenger accessible route should be ADA-compliant.
2. The location of pedestrian amenities shall not block or restrict pedestrian access to sidewalks, walkways, transit stations, transit stops, or designated vehicle pick-up/drop off areas.
3. Developments adjacent to current or planned transit and vehicle pick up/drop off areas shall meet the following requirements:
   a. Transit stops shall have a paved, firm, stable, and slip-resistant surface and level surface along the curbline at a minimum length of 50 feet to provide boarding and alighting areas for all buses and shall meet ADA accessibility standards;
   b. Bus stop length, width, and overall dimensions must meet operational needs as defined by transit agencies that serve that location.
   c. Roadway channelization improvements should be verified with all transit agencies that serve that location to confirm transit vehicles can safely and efficiently access the transit stop area.

   d. An ADA-compliant front-door boarding and alighting area shall be provided with minimum clear dimensions of 10 feet measured perpendicular from the curb (setback) and 11 feet measured parallel to the curb.
   e. Weather protection such as building canopies, awnings, or bus shelters shall be provided. Weather protection shall be 12 feet or higher from grade, and not conflict with existing transit stations or stops, unless new amenities are approved to be integrated into new development.
   f. New developments should incorporate a separate clear space for reinforced pad for shelter to be provided at bus stop. Developers should work with transit operator to confirm the shelter pad position, structural requirements, and dimensions.
   g. Space shall be provided for transit stop signage.
   h. All transit station and/or stop amenities must be approved by all transit agencies that serve that location.

9.3 Architectural materials

A. Architectural materials. The exterior materials and cladding of new buildings shall use primary and secondary materials to create aesthetic building designs.

1. Primary Material: Permitted and categorized as a high-quality material that can be used in combination, and in any quantity:
   a. Brick;
   b. Stone and cast stone;
   c. Smooth metal panels;
   d. Wood siding, mass timber; or
   e. Glass.
2. Secondary Material: Each individual material is limited to no more than 30% of the street level facade. Secondary materials cannot exceed more than 40% of any other facade to which they are applied:
   a. Concrete Masonry Unit (CMU);
   b. Smooth and scored or textured concrete;
   c. Smooth or textured metal panels;
   d. Durable exterior wood cladding;

e. Fiber cement; or

f. Stucco.

B. Where proposed architectural material is not identified in ***<jurisdiction's code citation>,*** the Director may approve an alternative material category based on the following considerations:

1. The appearance of the material;
2. The durability of the material including weather resistance, resistance to corrosion, standards for grade and treatment, thermal resistance, and insulation;
3. The method of installing the material;
4. The location of the material on the building; and
5. Information provided by the International Building Code.

Source: Snohomish County Light Rail Communities Code

Figure 9. Architectural exterior materials and cladding.

9.4 Ground floor and podium levels

A. Ground floors must be designed such that residential and commercial uses are visible and accessible. Ground floor retail shall be designed to be accessible, safe, and attractive for pedestrians. Design standards shall promote visible storefronts and access to enhance economic activities and support creative placemaking and local identity.

1. For the ground floor level of all developments:

a. The minimum ground floor to ceiling height must be 15 feet.

b. Doorways adjacent to right-of-way must be set back by the width of the door. Doors should not swing into rights-of-ways including sidewalks.

2. Along any street-facing building facade and along any portion of a storefront facade:

a. A minimum of 50% of the building facade between two feet and 10 feet in height from the exterior grade must be comprised of clear and highly transparent windows and doors;

b. Windows must allow views into the interior space or be storefront display windows that are set into the wall; and

c. Where possible, the bottom of storefront windows should be no more than two feet above the exterior grade. On sloping sites where it is difficult to meet a two-foot standard, the height above grade may vary.

Source: Snohomish County Light Rail Communities Code

Figure 10. Ground floor window transparency (15-foot height and 50%).

B. For the ground floor of mixed use or residential development:

1. Any building containing residential use must have at least one entrance located on the exterior of the building that provides pedestrian access to the dwelling units within the building. The entrance must be located on a building wall that faces a street, public sidewalk, or pedestrian plaza and is visible from and easily accessed from the street, sidewalk, or plaza. Access to dwelling units must not be solely through a parking garage or from an alley.
2. Mixed use and residential developments are encouraged to have the entries of ground floor residential and live-work units fronting sidewalks, forecourts, and plazas where feasible.

Source: Snohomish County Light Rail Communities Code

Figure 11. Entrance to ground floor residential units.

C. Entrances to storefronts should be at grade and the ground level floor height should be no more than one foot above the level of the abutting sidewalk or pedestrian plaza. On sloping building sites and for existing buildings, this requirement may be adjusted to accommodate various slopes and angles.

Source: Snohomish County Light Rail Communities Code

Figure 12. Entrances to storefronts.

D. Ground and podium level commercial uses must meet the following requirements:

1. The first floor and any additional commercial floors of the building must meet the building code specifications for commercial uses.

2. If there are retail, office, and other commercial uses on the second floor of a building, no less than 30% of any second-floor facade that faces a public street or pedestrian plaza shall be comprised of windows.
3. If the second floor is also commercial use, the floor to structural ceiling height shall be at least 11 feet.
4. Uses, activities, and amenities for residents, community groups, or other occupants are encouraged in vacant or underused ground level retail spaces, when they are not being leased by retailers.
5. Building facades facing the street must provide overhead weather protection such as awnings or canopies that have a minimum depth of six feet along 50% of the facade.

9.5 Weather Shelter Requirements

A. A minimum of 50% of the public sidewalk immediately adjacent to a new development and pedestrian connections through a new development shall provide weather shelter along the pedestrian frontage. Weather shelter may include awnings, overhangs, and other architectural treatments that protect pedestrians from rain and other weather. These shelters will also provide shade during the summer heat.

B. Detached shelter structures shall be designed with architectural elements that are compatible with the design of the primary structure.

C. A shelter element may project over the sidewalk in public right-of-way with an Encroachment Permit.

D. An exception shall be made in areas where a local bus service provider intends to install a bus shelter. Building design shall not hinder but consider community bus shelters.

Source: Snohomish County Light Rail Communities Code

Figure 13. Overhead weather protection.

Pro Tip

Shade provided during the heat of summer may be beneficial to the pedestrian environment and can be accomplished by any one or a combination of the following methods:

1. Shade cast from a building.
2. Landscape and shade trees within the front setback, placed in compliance with landscaping standards.
3. Trees and landscaping in public rights-of-way along pedestrian ways also bring the benefit of reducing ambient temperatures.
4. Structural weather shelter and shade elements, trellises, canopies, or covered walkways attached to the primary building shall have a depth of at least six feet and a maximum clear height of eight feet, except in public right-of-way or near driveways where higher clearances are required.

9.6 Architectural Features for All Buildings

A. Facade Articulation. Buildings must incorporate facade articulation features at the specified intervals. These requirements pertain to building facades that face streets, parks, access corridors, and residential zones:

1. Residential frontages: the width of the internal dwelling unit (e.g., if the units are 15 feet wide, the facade articulation must be 15 feet wide).
2. Storefronts and other non-residential frontages: 40 feet.

Source: Snohomish County Light Rail Communities Code

Figure 14. Residential facade articulation.

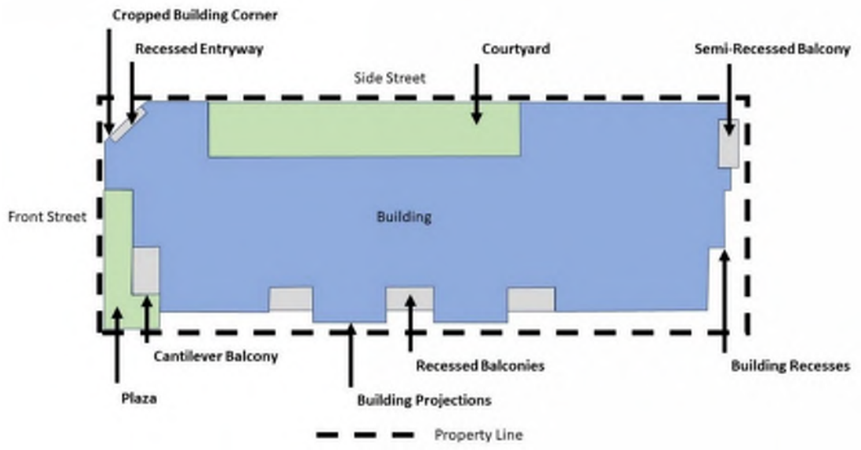
B. At a minimum, three of the following articulation features shall be included on all buildings:

1. Implementation of a window fenestration pattern.
2. At least 70% of the ground floor building frontage along a plaza or courtyard shall be comprised of clear and highly transparent windows and doors.
3. Incorporation of weather protection features that meet the requirements of ***<jurisdiction code>.***
4. Utilization of vertical piers and/or columns to all floors of the facade, excluding upper-level setbacks.
5. Alteration in roofline meets the requirements of ***<jurisdiction code>.***
6. Variation in architectural material and cladding to the facade that meet the requirements of ***<jurisdiction code>***, excluding upper-level setbacks.
7. Inclusion of vertical elements such as trellis with plants, green walls, or art installations.

8. Integration of vertical building modulation with a depth of at least 12 inches, connected to changes in roofline, or changes in building material, siding style, or color.
9. Incorporation of other design techniques at the discretion of the Director that effectively enhance a pattern of articulated facades in harmony with the building's surrounding context including upper story setbacks, offsets, and recesses.

Source: Snohomish County Light Rail Communities Code

Figure 15. Facade art installations.



Source: Snohomish County Light Rail Communities Code

Figure 16. Facade articulation elements.

C. Maximum Facade Length. Building elevations longer than 140 feet and 30 feet high that face medium and low-density residential zones shall incorporate at least

one of the following elements to break up the building's massing and enhance visual appeal.

1. Provide vertical building modulation at least six feet deep and 15 feet long. For multi-story buildings, the modulation must extend through at least one-half of the building floors; or
2. Use contrasting vertical modulated design components including a change in cladding, architectural materials, or colors that effectively contrast from the rest of the facade; or
3. A change in cladding that includes different architectural materials or colors that effectively contrasts from the rest of the facade; or
4. Contrasting facade articulations that look like multiple distinct buildings. These facades must:
    a. Incorporate different architectural materials and/or configuration of architectural materials;
    b. Incorporate contrasting window design including sizes and configurations; and
    c. Provide at a minimum three multiple distinct building patterns.

Source: Snohomish County Light Rail Communities Code

Figure 17. Contrasting facade articulation.

D. Roofline Modulation. Rooflines must meet the following criteria:

1. Building rooflines visible from public streets, open spaces, or public parking areas must feature design elements that create a varied and visually distinctive appearance. These features may include cornices, fascia, parapets, chimneys, gables, or articulated rooflines.

Source: Snohomish County Light Rail Communities Code

Figure 18. Roofline variation.

2. Any continuous flat roofline shall not extend more than 100 feet without modulation. Modulation can be achieved through one or more of the following treatments:
    a. For flat roofs or facades with horizontal eave, fascia, or parapet extending at least eight feet, the minimum vertical dimension of roofline modulation is two feet or one-tenth of the wall height (from finish grade to the top of the wall), whichever is greater, for segments 50 feet or less; or
    b. At least four feet, if the segment exceeds 50 feet in length.
3. For sloped or gabled rooflines, a segment must be at least 20 feet wide and have a vertical rise of no less than three feet per 12 feet of horizontal distance.
4. Rooftops should have features that soften the look of straight lines and mechanical equipment. Rooftop penthouses should blend with the roof design and overall building style for a cohesive appearance.

Source: Snohomish County Light Rail Communities Code

Figure 19. Rooftop penthouse design.

5. Alternatives will be considered if the roofline modulation design effectively reduces the perceived scale of the building and adds visual interest including roof overhangs. Solar panel overhangs or other green building features will also be considered.

9.7 Additional Architectural Features for Buildings Between Three Stories and Eight Stories

A. Buildings that are between three and eight stories shall meet the following design requirements:

1. Have a form that includes a ground floor/podium and middle/upper stories. The architectural forms and finishes should reflect the different sections of the building.

Source: Snohomish County Light Rail Communities Code

Figure 20. Form for buildings between three and eight stories.

B. Building designs with upper stories that are distinguished from middle stories are encouraged. Upper story design features can include:

1. A change of facade colors or materials;
2. A change of window type or size;
3. Cornice on roofline;
4. Balconies;
5. Rooftop patios or gardens; or
6. Other elements that meet the purpose of the standards.

Source: Snohomish County Light Rail Communities Code

Figure 21. Building with distinguished upper story.

9.8 Additional Architectural Features for Buildings Nine Stories and Higher

A. Buildings that are nine stories or more shall have a form that includes ground floor/podium stories, middle stories, and upper stories. Stories can be distinguished through different architectural materials and cladding, facade articulations and modulations, and window sizes and types.

Source: Snohomish County Light Rail Communities Code

Figure 22. Form for buildings nine stories and higher.

B. Tower separation standards. Towers (portions of a building over eight stories) must maintain at least 40 feet of separation from other towers. The Director may consider alternatives if towers are on the same site and provided the configuration and orientation of the towers limits potential access to light impacts on surrounding sites.

C. Towers must include at a minimum three distinctive forms including horizontal and vertically articulated components that shall be provided on all sides of the building such as:

1. Layered building forms;
2. Wall plane offsets;
3. Facade articulations;
4. Material changes; or
5. Window fenestration pattern changes.

9.9 Architectural Features for Corner Sites

A. Buildings on corner lots with at least two elevations facing public rights-of-way should emphasize their facades through the inclusion of prominent and visually engaging design features.

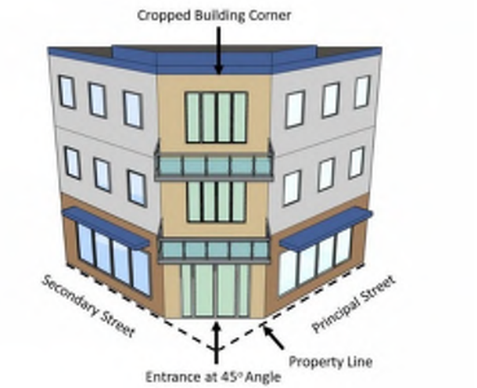
B. Buildings located on corner lots shall incorporate two or more of the following features:

1. Cropped building corner with a special entry feature such as a covered porch, or overhang;
2. Entrances oriented at a 45-degree angle to encourage pedestrian access from both the principal street and secondary street.
3. Distinctive facade articulations such as cantilevers, overhangs, and turrets;
4. Window features such as bay windows or bow windows;
5. Decorative use of building materials such as stone, tile, or stucco at the corner;
6. Features such as murals and public art;
7. Decorative building-mounted lighting features;
8. Corner plazas, patios, outdoor seating areas, and landscape features; or
9. Other decorative elements at the discretion of the Director.

C. Building designs, landscaping elements, and public art locations shall not impede pedestrian or vehicular traffic.

Source: Snohomish County Light Rail Communities Code

Figure 23. Architectural design features on corner sites.



Source: Snohomish County Light Rail Communities Code

Figure 24. Entrance at 45-degree angle.

9.10 Screening for Loading and Service Areas

A. Mechanical Equipment and Utility Meters:

1. Mechanical equipment or utility meters shall not be located along the street side of a building. Mechanical equipment and meters must be placed at the rear of the property whenever possible. If this cannot be achieved, such equipment may be located along the side of the building, provided that the equipment is screened and set back according to the provisions of this title.

B. Waste, composting, and recycling storage and collection. All developments shall provide a designated location for these facilities to meet the following standards:

1. Not visible from public streets, and located to minimize visual, noise, odor, and physical impacts to pedestrians and residents;
2. Not located in a right-of-way;
3. Enclosed or screened by fencing, materials that match the building, or vegetation; and
4. Located and configured so that the enclosure gate does not obstruct pedestrian or vehicle traffic or require hauling trucks to project into public rights-of-way.

10. GREEN BUILDING STANDARDS

10.1 Purpose

The purpose of this section is to establish baseline requirements and an incentive program for green buildings within the Everett Link Extension station areas. The goal is to encourage development that supports regional economic growth, housing, sustainability, and resilience goals, with a priority on clear air, reduced impacts on the grid, and ecosystem health. The program aims to encourage development that will serve as a model for other projects throughout the ***<jurisdiction>*** and region, resulting in the construction of more green buildings; and to allow for departures from Code requirements to remove regulatory barriers. This will be achieved by projects meeting at least one of the following certifications:

A. Living Future's (LF) Living Building Challenge™, Petal Recognition™, Core, or Net Zero Energy and Carbon Building programs. Holistic deep green building certification frameworks focused on resource conservation, material safety, placemaking, equity, and beauty to evaluate building performance.

B. Master Builders of King and Snohomish County's Emerald Star™, 5-Star™, 4-Star™, or 3-Star™ programs. Holistic residential building certification program, baselined on Washington State Building Codes, focuses on decarbonization, site design, resource and habitat conservation, well-being, and equity.

C. US Green Building Council's (USGBC) Leadership in Energy and Environmental Design™ (LEED) Platinum, Gold, or Zero certification programs. Holistic building certification frameworks focused on decarbonization, quality of life, and ecological conservation and restoration.

D. Passive House Institute US's (PHIUS) ZERO or CORE programs. A focused-scope certification centered on building enclosure performance and energy efficiency.

E. WA Department of Commerce's Evergreen Sustainable Development Standard™ (ESDS) program. Holistic building performance standard required for affordable housing projects that receive capital funds through the state Housing Trust Fund program.

F. Salmon Safe™ Urban Development Certification program. A focused-scope certification centered on habitat conservation, stormwater management, and water quality.

G. Green Business Certification Institute's The Sustainable SITES Initiative (SITES). A focused-scope certification centered on landscaping, water conservation, stormwater management, and habitat and human well-being.

10.2 The Green Building Standard

A. The Green Building Standard (GBS) is established to advance regional and ***<jurisdiction>*** sustainability and resilience objectives through development.

B. The Green Building Standard shall be applied as a minimum standard to all new developments larger than 5,000 square feet.

C. Requirements: As part of any development permit submittal, all projects including new developments and major renovations shall complete a form provided by ***<jurisdiction>*** indicating they are designed and built to achieve or exceed requirements in three categories: decarbonization and climate smart design, deconstruction, and ecosystem resilience.

1. Decarbonization and Climate Smart Design: All new developments and major renovations, including residential uses, shall meet one of the following requirements and submit documentation to the ***<jurisdiction>*** prior to permit issuance.

a. Electrification**:** See Washington Clean Fuels grant program / weatherization for clean fuel standards https://ecology.wa.gov/air-climate/reducing-greenhouse-gas-emissions/clean-fuel-standard.

b. Improving Building Enclosure Performance: The building enclosure, or building envelope, is made up of the building components that physically separate the exterior from the interior. All new construction projects shall achieve the following building enclosure performance improvements. New construction projects permitted under the 2021 WSEC-R are excluded from this requirement of the GBS.

(1) Limit the total sum of peak heating load plus peak cooling load to a maximum of 8.0 BTU/h x ft^2 (25.0 W/m^2) of conditioned floor area. The peak cooling load must be determined, even if no air conditioning will be installed.

(2) Limit the air leakage to 0.17 CFM per square foot of the building thermal envelope area at a pressure differential of 75 Pascals. These standards should be met in alignment with the 2021 WSEC-C, Section C406 options. Documentation is required prior to Certificate of Occupancy or approval of final inspection.

> **Pro Tip:**
>
> The improving building enclosure performance requirements are aligned with 2021 WSEC C406 table of energy efficiency credit options that must be utilized to meet minimum standards. Projects are required to earn a specific amount of C406 credits based on their building type and can select through a variety of options to meet minimum standards. These two requirements are intended to prescribe how projects meet their minimum standards by prioritizing building enclosure performance improvements. Building enclosure improvements are passive energy efficiency improvements that are highly cost-effective, long-lasting, durable, and are typically difficult, disruptive, and expensive to improve once the building is in operation.

c. Material Salvage: All new developments and major renovations that involve whole building demolition shall perform a Salvage Assessment prior to demolition and shall meet the Construction and Demolition Material Management provisions described in WAC-51-51-60108-Appendix Y. A Salvage Assessment shall be submitted prior to demolition permit issuance, and a Waste Diversion Report shall be submitted prior to issuance of the Certificate of Occupancy or approval of final inspection.

(1) Assessments must be performed by a Salvage Verifier. A Salvage Verifier is a person meeting one of the following criteria:

(a) An established salvage and reuse retail company;

(b) A licensed contractor specializing in deconstruction or building relocation; or

(c) A demolition company with knowledge of local and current salvage retail markets.

> **Pro Tip:**
>
> Most salvage verifiers listed on the *Northwest Building Salvage Network* do not request a fee for completing an assessment. In fact, using a Salvage Verifier may save a project money as there is potential for less materials to be sent to the landfill reducing the cost you would have paid to dispose of the materials. An example salvage assessment form can be viewed here*:* https://spuforms.powerappsportals.us/salvage-assessment/

(2) Existing structures to be demolished that are greater than 750 square feet that are identified as a historic building or were built 90 or more years ago shall be relocated or deconstructed,

rather than demolished with heavy equipment that would render the components unsuitable for salvage. This satisfies the reduction of embodied emissions as described in the 2.2.A.5 Reducing Embodied Emissions.

(a) Relocated to be permanently reused in a similar state

(b) Deconstructed as described in *WAC 51-51-60109 Appendix Z*—Building Deconstruction.

d. Reducing Embodied Emissions: All projects shall reduce the project's embodied emissions, which refers to the greenhouse gas emissions associated with the building materials required for a project. Use one of the following strategies to reduce the embodied emissions associated with the new construction project:

(1) Reuse: Retain an existing principal structure on the proposed development site.

(2) Relocation: Relocate a whole or partial structure, like a shed, mobile home, house, or other structure off the project site to another site location, where it will be permanently set and reconnected to continue its function.

(3) Deconstruction: Deconstruct or partially deconstruct existing structure(s) to remove a minimum 1,000 board feet of wood material for reuse. Material may be reused on site, donated, or sold for reuse.

(4) Salvaged Material Use: Use at least 2,000 board feet (a unit of volume for timber) of salvaged wood or 2,500 square feet of salvaged finish materials in the proposed new TOD construction. Use at least 800 board feet of salvaged wood or 800 square feet of salvaged finish materials for proposed new single-family residential construction, may be a combined total spread across multiple residential units.

(5) Carbon-Storing Materials: Use carbon-storing materials, in lieu of concrete and steel, for primary structural building components or materials costing no less than 15% of the materials budget. Carbon-storing materials are materials that have been derived from plants or animal fibers that have sequestered carbon during their growth before being transformed into a building material; for example, Cross-Laminated Timber (CLT), cork, wood, hemp, bamboo, wool, cellulose, and straw.

(6) Lower-Carbon Concrete: Reduce the embodied emissions of all concrete by procuring lower-carbon concrete mixes with a Global Warming Potential (GWP) at least 40% lower than National

Ready Mixed Concrete Association— (NRMCA's) regional benchmarks for the Pacific Northwest. Use a Life Cycle Assessment (LCA), that focuses on the environmental impact of a product from raw material extraction (the "cradle") through use and final disposal phases (the "grave"), and the GWP as demonstrated by product-specific Type III Environmental Product Declarations (EPDs) for the concrete mixes used in the project's structure, enclosure, and hardscape. A weighted-average approach can be used to calculate average embodied emissions intensity values.

(7) Total Emissions Threshold: Adhere to a limit of 350 kg CO2 per square meter of embodied emissions for the building foundation, structure, and enclosure components. Use a Life Cycle Assessment (LCA), that focuses on the environmental impact of a product from raw material extraction (the "cradle") up to the point where it leaves the factory (the "gate"). Biogenic carbon stored in wood cannot be included in its assessment calculation.[3]

(8) Life Cycle Analysis: Conduct a cradle-to-grave whole building life-cycle assessment.[4,5,6,7] Compare results to a baseline developed for the project and demonstrate at least a 10% reduction in GWP. Use a Life Cycle Assessment (LCA), that focuses on the environmental impact of a product from raw material extraction (the "cradle") through use and final disposal phases (the "grave").

Note that a whole-building Life Cycle Analysis of embodied emissions is a certification prerequisite for all LEED v5 BD+C projects and higher Star level Built Green projects. They have their own guidelines for LCA modeling and additional resources.

e. Ecosystem Resilience through Green Factor Code: All new developments and major renovations shall be designed, built, and certified to achieve or exceed a Green Factor score of 0.4. The Green Factor sets criteria for landscape and site-based sustainability measures that contribute to natural environment, ecosystems, air, and water quality. The Green Factor Score may be increased with

[3]*See Project Life Cycle Assessment Requirements: ECHO Project Recommendations for Alignment (October 2024 or later)*
[4]*See Built Green SF and MF 2024 checklists, Section 7: Carbon Reduction*
[5]*See Leadership in Energy and Environmental Design (LEED) BD+C New Construction, v5 Materials and Resources, Reduce Embodied Carbon*
[6]*See Project Life Cycle Assessment Requirements: ECHO Projects Recommendations for Alignment (October 2024 or later)*
[7]*See King County SEPA Greenhouse Gas Emissions Worksheet*

Innovation Credits for Biodiversity Net Gain or Climate Positive, awarded at the discretion of the Director. Rather than a ratio basis, the Innovation Credits are added to the bottom line after the Green Factor ratio score has been tabulated. They are tabulated using the Pathfinder Tool, a free, web-based application to understand and reduce the carbon footprint of site design and management, It was created by Climate Positive Design and is available at https://app.climatepositivedesign.com/start.

(1) The ***<jurisdiction>*** reviewer has the final authority in determining the accuracy of the calculation of the Green Factor score.

(2) Section 11.6: Green Factor – see attached; Excel Worksheet with formulas is also available attached to this document.

10.3 Deep Green Building Incentive Program Levels Established

A. The Deep Green Building Incentive Program (DGBIP) incentives are comprised of levels, based on certification programs, as follows:

1. Level 1 – Comply with the Green Building Standard, Section 10.2.
2. Level 2- LEED Gold, LF Zero Carbon Certification™, Built Green 3-Star™, or PHIUS CORE. Affordable housing projects must achieve the WA Department of Commerce ESDS with a score of at least 55 points.
3. Level 3- LEED Platinum, LF Core Certification™, Built Green 4-Star™, or one of the following in combination with Salmon Safe or SITES Certification: PHIUS CORE, LF Zero Energy Certification, or LEED Gold with at least one LEED Zero certificate. Affordable housing projects must achieve the WA Department of Commerce ESDS with a score of at least 60 points.
4. Level 4- LF Petal Certification™, Built Green 5-Star™, LEED Platinum with one LEED Zero certificate, or Salmon Safe or SITES Certification in combination with LF Zero Carbon or PHIUS ZERO Certification. Affordable housing projects must achieve the WA Department of Commerce ESDS with a score of at least 70 points.
5. Level 5- LF Living Building Challenge™ or Built Green Emerald Star™. Affordable housing projects must achieve the WA Department of Commerce ESDS with a score of at least 80 points.

10.4 Project Qualification and DGBIP Incentives

A. Application requirements. To request permits in a TOD zone, exemptions, waivers, or other benefits from the Deep Green Building Incentive Program (DGBIP), the applicant or owner shall submit a commitment letter, proof of third-

party certification project registration, the third-party verifier contracted for the project, and preliminary design summary demonstrating how their project will meet each of the requirements of the relevant certification program; such as including an overall design concept, proposed energy balance, proposed water balance, and descriptions of innovative systems.

B. All projects requesting permits in a TOD zone or departures under the DGBIP shall be third-party certified. The project must be registered with the appropriate third-party certification entity, such as Living Future, Built Green, US Green Building Council, PHIUS, or Salmon Safe. Projects must be enrolled in the Evergreen Sustainable Development Standard upon being awarded by the Housing Trust Fund.

C. If there is a conflict between the minimum standards of development, state building codes, GBS, or DGBIP and the third-party certification's minimum standards, the more rigorous standard shall apply.

D. Projects requesting incentives or departures under the DGBIP shall meet the latest applicable primary version of the appropriate certification program at the time of the project's first building permit application submission, excluding beta versions, which will qualify them for one of the following levels of incentives:

1. Level 2 – up to 25% reduction in imposed application fees ***<jurisdiction code certification>*** for projects meeting the Level 2 DGBIP criteria.
   a. USGBC LEED Gold.
   b. LF Zero Carbon Certification.
   c. Built Green 3-Star.
   d. PHIUS Core.
   e. WA Department of Commerce ESDS with a score of at least 55 points.
2. Level 3 - up to 50% reduction in imposed application fees ***<jurisdiction code citation>*** for projects meeting the Level 3 DGBIP criteria.
   a. USGBC LEED Platinum.
   b. LF Core Certification™.
   c. Built Green 4-Star™.

   d. One of the following in combination with Salmon Safe or SITES Certification:
      (1) PHIUS CORE.
      (2) LF Zero Energy Certifications.
      (3) LEED Gold with at least one LEED Zero certificate.
   e. WA Department of Commerce ESDS with a score of at least 60 points.
3. Level 4 – up to 75% reduction in imposed application fees and expedited permitting ***<jurisdiction code citation>*** for projects meeting the Level 4 DGBIP criteria:
   a. LF Living Building Petal Certification.
   b. Built Green 5-Star™.
   c. LEED Platinum with one LEED Zero certificate.
   d. Salmon Safe or SITES Certification in combination with LF Zero Carbon Certification or PHIUS ZERO.
   e. WA Department of Commerce ESDS with a score of at least 70 points.
4. Level 5 – up to 100% reduction in imposed application fees and expedited permitting for projects meeting the Level 5 DGBIP criteria:
   a. LF Living Building Challenge.
   b. Built Green Emerald Star Certification.
   c. WA Department of Commerce ESDS with a score of at least 80 points.

E. Departures from minimum standards or requirements of the development code may be requested on DGBIP qualifying projects. An eligible project shall qualify upon determination by the Director through submission of a complete application pursuant to ***<jurisdiction's administrative design review>*** and has complied with the application requirements of this subsection.

5. Departures from other requirements of the development code may be granted for projects qualifying for the Deep Green Building Incentive Program, as determined by the Director, including:
   a. Lot coverage standards.
   b. Floor-Area Ratio (FAR) standards.

c. Use provisions.

d. Standards for storage of solid waste containers.

e. Standards for structural heights, building overhangs, and minor architectural encroachments into the right-of-way, such as:

(1) Exceeding any maximum allowable roof height limit by at least 48 inches to accommodate roof-mounted solar energy panels.

(2) Allowing the portion of exterior wall assemblies that include insulation to project up to eight inches into the setbacks on all sides and establishing gross floor area by measuring from the interior face of the exterior walls, including drywall.

(3) Allowing the building to exceed the maximum allowable roof height by eight inches to accommodate additional insulation.

(4) Allowing roof-mounted solar energy panels to extend off the building's roof, overhanging the sidewalks, to accommodate on-site energy generation for Net Zero Energy certifications.

f. Facade modulation, roofline, or upper-level setback standards.

g. Reduced Stormwater Impact Fees, based on Salmon Safe or SITES certification and improved quality or total volume reduction of discharged stormwater.

Pro Tip:

Tailor the list of departures, based on providing TOD partner's a perceived value in equal or greater value to the perceived cost of the additional requirements of the DGBIP and what the jurisdiction has the capacity to implement. Engage with TOD partners to determine what types of departures from minimum standards the jurisdiction can offer that would provide them enough value to engage with the DGBIP.

6. Qualifying DGBIP Applicants may request consideration of additional departures from requirements of the development code than what is listed in 10.4.E.5, when the departure would grant the project the ability to meet a superior standard for energy, site, habitat, or water conservation; climate resiliency; or reduction of solid waste. To be reviewed by the Director on a per project basis. Costs to prepare the analysis will be the responsibility of the applicant. The Director will review such analysis at the applicable land-use hourly rate.

a. All requests must be submitted in writing, signed by the owner or financially responsible party and project designer. The request must include documentation demonstrating to the Director the nature and necessity of the departure and a comparative analysis of how the proposed departure allows the project to achieve a superior standard for energy, site, habitat, or water conservation; climate resiliency; or reduction of solid waste.

10.5 Procedures to Document a Commitment to Meet the GBS and DGBIP

A. The building permit application shall include a commitment letter from the property owner or financially responsible party and a report from the design team and/or the third-party certification verifier or rater demonstrating how the project is likely to achieve the elements of the program through which it intends to be certified.

B. Prior to a complete demolition and building permit application the property owner or financially responsible party must submit a completed salvage assessment and a memo indicating how the project will meet the reduction of embodied emissions requirements of the DGBIP.

C. Demonstrating compliance with the DGBIP after issuance of Certificate of Occupancy:

1. For projects pursuing a LF certification (Levels 2, 3, 4, or 5), after construction and within six months of issuance of the Certificate of Occupancy, the applicant or owner must show proof that an LBC, Petal, Core, Zero Energy, or Zero Carbon Preliminary Audit has been scheduled - such as a paid invoice and date of scheduled audit. After construction and within 12 months of issuance of CO, the applicant or owner must show a preliminary audit report from LF demonstrating project compliance with the Place, Materials, Indoor Air Quality, and Beauty/Inspiration Imperatives that do not require a performance period. Performance-based requirements such as energy and water must demonstrate compliance through certification from LF within two years of issuance of the Certificate of Occupancy.

2. For projects pursuing a Built Green Certification (Levels 2 through 5), after construction and within six months of issuance of the Certificate of Occupancy, the applicant or owner must show that the project has successfully obtained Built Green 3-Star (Level 2), 4-Star (Level 3), 5-Star (Level 4), or Emerald Star (Level 5) certification by way of the Certificate of Merit from the program.

3. For projects pursuing a LEED Platinum or Gold certification and LEED Zero certificates (Levels 1 through 4), or SITES certification the applicant or owner must show, after construction and within six months of issuance of the Certificate of Occupancy, that the project has successfully completed the LEED or SITES Construction Review phase by way of the LEED or SITES Construction Final Review Report.
4. For projects pursuing PHIUS CORE (Level 2) or ZERO (Level 3 or 4), the applicant or owner must show, after construction and within six months of issuance of the Certificate of Occupancy, that the project has successfully obtained the PHIUS certification.
5. For projects pursuing Salmon Safe or SITES certification (Levels 2, 3 or 4), the applicant or owner must show, after construction and within six months of issuance of the Certificate of Occupancy, that the project has successfully obtained the Salmon Safe Certificate.
6. For projects pursuing WA Department of Commerce's Evergreen Sustainable Development Standard (ESDS) certification (Levels 1 through 5), the applicant or owner must show, after construction and within 12 months of issuance of the Certificate of Occupancy, that the project has successfully obtained the ESDS Certificate.

D. No later than two years after issuance of a final Certificate of Occupancy for the project, or such later date as requested in writing by the owner and approved by the Director for compelling circumstances, the owner shall submit to the Director the project's certification demonstrating how the project complies with the standards contained in this subsection. Compliance must be demonstrated through an independent certification from LF, Built Green, USGBC, PHIUS, ESDS, Salmon Safe, or SITES. A request for an extension to this requirement must be in writing and must contain detailed information about the need for the extension.

E. If the Director determines that the report submitted provides satisfactory evidence that the project has complied with the standards contained in this subsection, the Director shall send the owner a written statement that the project has complied with the standards of the Deep Green Building Incentive Program. If the Director determines that the project does not comply with the standards in this subsection, the Director shall notify the owner of the aspects in which the project does not comply. Components of the project that are included in order to comply with the minimum standards of the DGBIP shall remain for the life of the project.

F. Within 90 days after the Director notifies the owner of the ways in which the project does not comply, or such longer period as the Director may allow for justifiable cause, the owner may submit a supplemental report demonstrating that

alterations or improvements have been made such that the project now meets the standards in this subsection.

G. If the owner fails to submit a supplemental report within the time allowed pursuant to this subsection, the Director shall determine that the project has failed to demonstrate full compliance with the standards contained in this subsection, and the owner shall be subject to penalties as set forth in ***<regulations of the jurisdiction>.***

10.6 Green Factor Table and Instructions

MODEL GREEN FACTOR TABLE			
1	**Landscape Elements**		**Multiplier**
	A.	Bioretention facilities	1.5
	B.	*Suspended pavement soil systems, continuous soil systems, or soil cells	0.2
	C.	Landscaped areas with soil depth less than 24"	0.1
	D.	Landscaped areas with soil depth of 24" or more	0.6
	E.	Preservation of existing trees - calculated at 20 sq ft per inch dbh (Trees must have a minimum diameter of 6" at dbh.)	1.0
	F.	Preservation of Landmark or Significant Trees bonus - calculated at 20 sq ft per inch dbh or preservation of non-invasive native vegetation that is larger than 4,000 sf (Trees must meet jurisdiction definition of Landmark Trees)	0.1
	G.	Preservation of existing evergreen trees bonus - calculated at 20 sq ft per inch dbh (Preserved evergreen trees must have a minimum diameter of 6" at dbh)	0.1
	H.	Ground covers or other low plants (less than or equal to 2' tall at maturity)	0.1
	I.	Medium Shrubs or perennials - calculated at 9 sq ft per plant (2'-4' tall at maturity)	0.3
	J.	Large Shrubs or perennials - calculated at 36 sq ft per plant (greater than 4' tall at maturity)	0.4
	K.	Small Trees or equivalent with calculated soil volume that meets or exceeds 500ft3 per tree - calculated at 90 sq ft per tree (canopy spread 10' to 15' at maturity)	0.3
	L.	Medium Trees or equivalent with calculated soil volume that meets or exceeds 1000 ft3 per tree - calculated at 230 sq ft per tree (canopy spread 16' to 24' at maturity)	0.5
	M.	Large Trees with calculated soil volume that meets or exceeds 1500 ft3 per tree - calculated at 350 sq ft per tree (canopy spread 25' and greater at maturity)	0.7
2	**Green Roofs**		
	A.	Area planted with at least 2" of growth medium but less than 4" of soil	0.4
	B.	Area planted with at least 4" but less than 8" of soil	0.7
	C.	Area planted with at least 8" of but less than 30" of soil	1.0
	D.	Area planted with tree(s) and at least 30" of soil	1.5
	E.	Install vegetated roof system to reduce the total impervious roof surface by at least 25%. Area planted with at least 2" of growth medium and 4" of soil.	1.0
3	**Green Walls**		
	A.	Façade or wall surface obstructed with vines (calculate at 3 years of growth)	0.1
	B.	Façade or wall surface planted with a green wall system (must have year round irrigation and maintenance plan)	0.2
4	**Landscape Quality Benefits**		
	A.	**Landscaped areas in food cultivation	0.2

	B.	****Biodiverse Landscape: Areas shall be planted to provide habitat structure and continuous blooming, meeting guidance in the Native Pollinator Habitat Restoration Guide: Best Management Practices for the Puget Sound Lowlands Part 3.2: Pollinator Resource Requirements pg. 13 and Part 6: Plant Lists pgs. 36-42 and shall be comprised of a minimum of 70% native Puget Sound Lowland plants	0.1
	C.	****Biodiverse Landscape Patch Bonus: Landscaped areas meeting requirements of 4B and are a minimum 2,000 sf contiguous planting/habitat	0.1
	D.	Landscaped areas where at least 50% of annual irrigation needs are met through the use of harvested rainwater	0.2
5	**Permeable Paving**		
	A.	All exterior paving has a Solar Reflective Index of 0.28 or better and be composed of at least 15% of recycled materials or supplemental cementitious materials.	0.1
	B.	Permeable grid, pavers or concrete paving used for at least 25% of paving. Must have a Solar Reflective Index of 0.28 or better.	0.2
	C.	Permeable grid, pavers or concrete paving manages at 50-74% of on-site stormwater outside of building footprint. Must pass minimum ASTM infiltration performance requirements for the specified material.	0.3
	D.	Permeable grid, pavers, or concrete paving manages at least 75% of on-site stormwater outside of building footprint. Must pass minimum ASTM infiltration performance requirements for the specified material.	0.5
6	**Innovation**		**Credit**
	A.	****Contributes to biodiversity net gain goals, scoring a minimum of 10% or more Native Ecosystem Impact value using the Pathfinder tool	0.5
	B.	****Project is anticipated to become Climate Positive within 10 years of completion using Pathfinder Tool. Recommended for projects performing a LCA to meet certification requirements.	1.5

**Structural soil systems or suspended paving systems means a soil mix or structure that is engineered to support pavement while allowing healthy root growth.*

***Landscape areas in food cultivation are defined as a use in which land is used to grow plants and harvest food or ornamental crops for donation or for use by those cultivating the land and their households. An example is community vegetable garden boxes.*

****Refer to the Native Pollinator Habitat Restoration Guide Best Management Practices for the Puget Sound lowlands https://www.earthcorps.org/wp-content/uploads/The-Native-Pollinator-Habitat-Restoration-Guide-EarthCorps.pdf.*

*****Refer to the Pathfinder Tool https://app.climatepositivedesign.com/start.*

The Green Factor score shall be calculated as follows:

A. Identify all proposed elements in the Green Factor Table.

B. Multiply the square feet, or equivalent unit of measurement where applicable, of each landscape element by the multiplier provided for that element in the Green Factor Table according to the following provisions:

1. If multiple elements listed in the Green Factor Table occupy the same physical area, they may all be counted.

2. Landscaping elements and other frontage improvements in the right-of-way between the lot line and the roadway may also be counted in the Green Factor, if a commitment is made to ongoing maintenance and management of the landscape areas through a surety bond or other mechanism. Subject to approval by ***<the jurisdiction>.***
3. Unless otherwise noted, elements shall be measured in square feet. Enter volume if soil cells.
4. For trees, large and medium shrubs and perennials, use the equivalent square footage of each tree or shrub provided in the Green Factor Table.
5. For green wall systems, use the square footage of the portion of the wall that will be covered by vegetation at three years. Green wall systems shall include year-round irrigation, and a submitted maintenance plan shall be included as an element in the calculation for a project's Green Factor Score.
6. All vegetated structures, including fences counted as vegetated walls, shall be constructed of durable materials, provide adequate planting area for plant health, and provide appropriate surfaces or structures that enable plant coverage. Vegetated walls shall include year-round irrigation, and a submitted maintenance plan shall be included as an element in the calculation for a project's Green Factor Score.
7. For all elements other than trees, large shrubs, large perennials, green walls, structural soil systems and soil cell system volume; square footage is determined by the area of the portion of the horizontal plane that lies over or under the element.
8. To qualify for landscape quality benefits B and C, landscaped areas shall be comprised of a minimum of 70% native Puget Sound Lowland Plants and shall provide habitat structure and continuous blooming, meeting guidance in the Native Pollinator Habitat Restoration Guide: Best Management Practices for the Puget Sound Lowlands Part 3.2: Pollinator Resource Requirements page 13 and Part 6: Plant Lists pages 36-42.

C. Add together all the products calculated in the Green Factor Table to determine the Green Factor numerator.

D. Divide the Green Factor numerator by the parcel area to determine the Green Factor score.

E. The Biodiversity Net Gain credit can be awarded if a development supports biodiversity goals and achieves or exceeds a threshold of 10% net gain of native ecosystem area. Net Gain means the development provides an increase in site

area devoted to native plants and habitat as compared to the existing condition. The Innovation Credit for Biodiversity Net Gain shall be calculated as follows:

1. Using the Pathfinder Tool, establish the project location, site boundary and area.
2. Under the Biodiversity Site Conditions tab, enter square feet of existing ecosystem (if any) and its quality (Good, Medium, Poor) and enter the existing areas and native percentages of General Planting, Lawn and Trees.
3. Add detail under the Materials tab, including data for Demolition and Site Preparation, such as Existing Tree Removal and Removal of Existing Ecosystems. Specify the percent native species for each.
4. Add detail under the Plants tab, enter data for Ecosystem Restoration, Ecosystems – Existing to Protect, Green Infrastructure, Lawn, Perennials, Shrubs, Trees, and Trees – Existing to Protect. Specify the percentage native species for each. Under the Plants Tab, review Scorecard details to check Pre and Post Design Conditions.
5. Under the Benefits Tab, note the Native Ecosystem Impact value as a percentage basis, derived by the area removed compared to the area restored.
6. Projects must meet or exceed 10% Native Ecosystem Impact value to be eligible for the Innovation Credit. Multiply the percent Native Ecosystem Impact value by the multiplier provided in the Green Factor Table and add that product to the total Green Factor score. This Innovation Credit may range from 0.05-0.20 and is subject to the discretion of the Director.

F. The Innovation Credit for Climate Positive can be awarded if a development supports decarbonization goals and achieves Net Positive Carbon Impact within 10 years of estimated completion for its site and landscape improvements. The Innovation Credit for Climate Positive shall be calculated as follows:

1. Using the Pathfinder Tool, establish the project location, site boundary and area.
2. Under '+ Add Detail', add appropriate input to the Materials and Plants Tabs on existing and proposed conditions to generate Carbon Impact calculations.
3. Under the Version Stats sections, 'View Scorecard' to note number of years to become Climate Positive after estimated project completion and Carbon Impact over 60 years.
4. Projects must meet or exceed Net Positive Carbon Impact within 10 years of estimated completion to be eligible for the Innovation Credit. Add the value for Climate Positive, 1.5, to the total Green Factor score. This Innovation Credit is subject to the discretion of the Director.

11. DEFINITIONS SPECIFIC TO TOD ZONES

A. "Accessory structure" means a structure that is located on the same lot as the main structure, and the use of which is incidental to that of the main structure.

B. "Affordable housing" means residential housing that is rented by a person or household whose monthly housing costs, including utilities other than telephone, do not exceed 30% of the household's monthly income. For the purposes of housing intended for owner occupancy, "affordable housing" means residential housing that is within the means of low or moderate-income households.

C. "AMI" or "Area Median Income" is the midpoint of an area's income distribution, where 50% of households earn above and 50% earn below the median. Defined by the U.S. Department of Housing and Urban Development (HUD), "area" typically refers to a Metropolitan Statistical Area (MSA), for purposes of this model code the relevant MSA is the Seattle-Tacoma-Bellevue, WA MSA, which includes King, Pierce, and Snohomish counties, reflecting the broader regional housing market. In accordance with RCW 36.70A.030(28), AMI categories include:

1. Extremely low-income households at 0–30% AMI.
2. Very low-income households at 31–50% AMI.
3. Low-income households at 51–80% AMI.
4. Moderate-income households at 81–120% AMI.
5. Above median income households at 120% AMI or more.

D. "Artisanal manufacturing" means on site production of goods by hand manufacturing, involving the use of hand tools and small scale, light mechanical equipment. Typical uses include but are not limited to woodworking and cabinet shops, ceramic studios, glass blowing studios, jewelry manufacturing and similar types of arts and crafts or very small-scale manufacturing uses that have no negative external impacts on surrounding properties.

E. "Attainable housing" is a general planning term referring to housing that is affordable to households earning between 80% and 120% of the Area Median Income (AMI), often described as moderate-income households. While not a statutory term, "attainable housing" is used to highlight the gap in housing options for those who do not qualify for income-restricted affordable housing but still struggle to find suitable housing in the market. This definition focuses on the economic segment served rather than a specific housing type or built form.

F. “Bicycle parking, long-term” means bicycle parking designed for extended stays, offering weather protection and greater security.

G. “Bicycle parking, short-term” means bicycle parking designed for quick stops of four hours or less, located near the entrances of businesses, institutions or public spaces.

H. “Civic space” means publicly accessible areas and facilities, such as community services, schools, hospitals, religious assemblies, parks, and public utilities, that serve the needs of the community. These spaces support social well-being, civic engagement, and convenient access to essential services, all within easy reach of transit hubs.

I. “Deep green” means an advanced level of green building that requires more stringent standards for energy and water use, stormwater runoff, site development, materials, and indoor air quality than required by the Building Code.

J. “Dockless system” means a shared mobility system that provides devices, such as electric-assist scooters and dockless bicycles, for short-term rental on point-to-point trips. These devices are designed to remain in the public right-of-way, even when not rented, and do not require docking at a designated station for rental.

K. "Docks for personal transportation devices" refer to designated, fixed stations or structures where shared mobility devices, such as bicycles or scooters, are parked, secured, and stored when not in use.

L. “Facade Length” means the length of a building from perpendicular wall to perpendicular wall including offsets, bays, and other minor modulating treatments not more than five feet deep.

M. “High-capacity transit” means areas within an 0.5 -mile of existing or planned light rail and streetcar stations, commuter rail stations, ferry terminals, and within an 0.25-mile of all bus rapid transit stations.

N. “Highrise building” means a dense form of development, typically encouraged as mixed-use, but may also consist of high-rise residential or office buildings with more than ten stories.

O. “Large Tree” means a tree that reaches a height of at least 40 feet at maturity.

P. “Living building” is a building that generates all of its own energy with renewable resources, captures and treats all of its water, and operates efficiently and for maximum beauty. With regard to the Deep Green Incentive Program, it refers specifically to the International Living Future Institute’s Living Building ChallengeTM or Living Community ChallengeTM programs, which are comprised of seven performance areas. These areas, or “Petals”, are place, water, energy, health and happiness, materials, equity and beauty.

Q. “Market rate housing” refers to residential units rented or sold at prices set by the open market, based on demand, supply, and market factors. These units are not subject to government subsidies, pricing controls, or income-based rent restrictions. They are available to any consumer who can meet the financial requirements.

R. “Micromobility device” means any small, low-speed, human or electric powered transportation device including bicycles, scooters, electric assist bicycles, electric scooters (e-scooters), and other small lightweight, wheeled conveyances.

S. “Midrise buildings” range between four to ten floors, typically with versatile uses of both residential and commercial/office uses.

T. “Small or medium tree” means a tree that reaches a height of less than 40 feet at maturity.

U. “Solar ready design” means a project design that includes the necessary infrastructure to easily accommodate a future solar energy system, such as roof space, structural support, wiring, and electrical connections. Proper building orientation, including placing the solar panels on a south-facing segment of a sloped roof, optimizes system performance for maximum energy efficiency.

V. “Transportation Demand Management (TDM)” means strategies and programs that help reduce traffic by encouraging people to use options like transit, carpooling, biking, walking, or working from home instead of driving alone. TDM helps make travel more efficient and supports cleaner, healthier communities.

W. “Wayfinding signage” means a sign or an integrated system of signs used to provide direction within a site, or for a district. Signage may be located on private property or in public rights-of ways. Signs may come in the form of a free-standing sign, wall sign, or as part of an installation.

X. “Wheel stop” or “Parking bumper” means a physical barrier, typically made of concrete, rubber, or similar durable material, installed at the end of a parking stall

to prevent vehicles from encroaching into adjacent spaces, sidewalks, landscaped areas, or other protected zones.

Y. “Work-Live Unit” is a commercial building or tenant space that includes a functionally related and integrated residential unit. Employees and walk-in trade are permitted.

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