

Chapter 1 Introduction

1.1 Purpose and Need

The Right-of-Way Improvements Manual is an on-line resource developed by the City of Seattle to help property owners, developers, architects, landscape architects, and engineers involved with the design, permitting and construction of improvements to Seattle's street right-of-way.

The Right-of-Way Improvements Manual considers and attempts to balance the access and mobility needs of all users of the street right-of-way: pedestrians, non-motorized vehicles, automobiles, transit, and freight. Procedures and design criteria were developed keeping in mind the critical balance among the following: safety, the preservation and maintenance of roadway infrastructure and utility services, and preserving our environment.

Knowing that all projects have site specific opportunities and constraints, the Right-of-Way Improvements Manual articulates the City's design criteria for street right-of-way improvements and describes a deviation process to achieve flexibility when practical.

1.2 Authority

The Right-of-Way Improvements Manual establishes and documents the policies, procedures and practices for how the City manages physical improvements in the street right-of-way and on public property. It attempts to provide a comprehensive resource for all procedures, standards and guidelines affecting physical changes in the street right-of-way. For more information on the authority and purpose of the Right-of-Way Improvement Manual go to: www.seattle.gov/dclu/codes/dr/DR2005-22.pdf

The Right-of-Way Improvements Manual summarizes the City of Seattle's Land Use Code requirements ([Title 23 of the Seattle Municipal Code](#)) for street and alley improvements and presents specific criteria for design and installation. In addition to requirements, the Right-of-Way Improvements Manual also includes additional resources and guidelines for doing work in the street right-of-way including information on project permitting, construction requirements and street design guidelines. Refer to the chapter summaries in [Chapter 1.3 Organization](#) for the authority of information in each chapter.

1.3 Organization

The Right-of-Way Improvements Manual is an on-line resource. As such, it provides the ability to view, print and link to a wide range of information about making improvements in the street right-of-way. This section summarizes the organization of the Right-of-Way Improvements Manual and the contents of each chapter. A document map is also included for easy reference. The Right-of-Way Improvements Manual is organized as follows:

[The Right-of-Way Improvements Manual Home Page](#): Information about street right-of-way permits begins on the website home page. Here you will find a number of resources and links that are the global navigation of the website—meaning they are available on every page. They include a glossary of terms, online help, frequently asked questions, and contact information for key resources.

[Chapter 1 Introduction](#) provides an overview of the Right-of-Way Improvements Manual purpose and need and defines the authority, roles and responsibilities of the various City departments that have oversight of the street right-of-way. This chapter also includes information on the relationship between the Right-of-Way Improvements Manual and other regulations and guidelines, as well as a description of the revision process and update schedule.

[Chapter 2 Procedures, Permitting Process and Approvals for Street Right-of-Way Improvements](#) is designed to help navigate the process for preparing permits for street right-of-way improvements. These include resources to guide the applicant through the environmental review, design review or historic district review processes, as well as the steps needed to prepare a permit application. Permit forms and other helpful tools are also included and can be downloaded directly from this site. This chapter also describes the information which must be submitted to request a deviation from street improvement requirements. The information in this chapter constitutes the City of Seattle's official permitting process for work in the street right-of-way.

[Chapter 3 Street Right-of-Way Improvement Requirements](#) summarizes the City of Seattle's Land Use Code requirements (Seattle Municipal Code Title 23) for street and alley improvements. It explains the importance of the various types of street and alley improvements, and explains how to make the best use of this Manual to determine the type and extent of improvements required by the Land Use Code. It describes the specific improvement requirements for different types of streets and alleys in different zones, based on the requirements in the Land Use Code. These requirements are summarized in a series of tables and drawings for easy reference. [Chapter 4 Design Criteria](#) provides technical information and design criteria for specific elements of the street right-of-way, such as grading, pavement type and depth, street tree placement, and utility locations. Design criteria have been established so that streets and sidewalks used by the public and maintained with public funds will meet standards for operating efficiency, and will hold up to long-term use with minimum maintenance and repair. These requirements and criteria pertain to streets and alleys that are under the jurisdiction of the Seattle Department of Transportation. They also pertain to private streets and alleys that will serve development projects. A deviation request from the design criteria in this chapter may be requested from the City of Seattle for certain streets in unusual situations, or for certain development projects for which the requirements or design criteria would be unreasonable. The information in this chapter constitutes a set of requirements that are officially adopted by the Right-of-Way Improvements Manual SDOT [Director's Rule](#).

[Chapter 5 Construction and Maintenance](#) defines the information needed for working in the street right-of-way including links to Seattle's Traffic Control Manual for In Street Work and the Pavement Opening and Restoration Rules.

[Chapter 6 Streetscape Design Guidelines](#) describes design guidelines that may be have interest to project applicants, but do not represent requirements. Many are neighborhood specific, such as Green Street, neighborhood based plans, Green Stormwater Infrastructure and street design concept plans. Others define City programs that apply to street rights-of-way but are not required, such as traffic calming guidelines.

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1.4 Relationship to Other Standards and Guidelines

The Right-of-Way Improvements Manual is one of many resources for a project applicant proposing to

do work in the street right-of-way. Information in the Manual is:

- Consistent with citywide regulatory documents such as the [Seattle Municipal Code](#) and [City of Seattle Standard Plans and Specifications](#).
- Consistent with applicable federal, state, regional and local regulatory requirements.
- Consistent with related citywide plans, such as the [Comprehensive Plan](#), the [Transportation Strategic Plan](#) the [SDOT Pedestrian Master Plan](#), the [SDOT Bicycle Master Plan](#) and the [Stormwater Code](#).

Compliance with certain federal standards including the Americans with Disabilities Act (ADA), and the [Manual on Uniform Traffic Control Devices \(MUTCD\)](#) is necessary for all work done in the street right-of-way. The City of Seattle recognizes the [Washington State City/County Design Standards](#) as the basic set of requirements for roadway work in the street right-of-way.

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1.5 Departmental Roles and Responsibilities

The City of Seattle is made up of a number of departments. The following have a regulatory and permitting role with regard to the street right-of-way in Seattle:

[Seattle Department of Transportation \(SDOT\)](#) plans for, builds, maintains and operates Seattle's \$13 billion transportation infrastructure. To further the goal to get Seattle moving, the department manages short- and long-term transportation investments that connect the City with the region. SDOT's mission is to deliver a safe and reliable transportation system that enhances Seattle's environment and economic vitality. SDOT is responsible for building, operating and maintaining transportation facilities in the street right-of-way. SDOT also reviews and issues permits to manage the use of the street right-of-way, including permitting improvements to the street infrastructure constructed by developers and others agencies. City of Seattle Inspectors are responsible for enforcing the ordinances; City Specifications; and the Street and Sidewalk Pavement Opening and Restoration Rules. This is to ensure that all construction, safety, and accessibility requirements of a permit are met as approved.

The Seattle [Department of Planning and Development \(DPD\)](#) develops, administers, and enforces standards for land use, design, construction, and housing within Seattle city limits. DPD is also responsible for long-range planning. With regard to the right of way, DPD reviews the scope of street improvements required of adjacent development. DPD also reviews and issues permits for new or revised curbcuts, structural building overhangs, sidewalk cafes, commercial signs, and any shoreline substantial development permits when required for work in the street right-of-way. DPD also oversees the Design and Planning Commissions as well as the Design Review Board.

[Seattle Public Utilities \(SPU\)](#) provides more than 1.3 million customers in King County with a reliable water supply, as well as essential sewer, drainage, and solid waste services for the City of Seattle. To deliver these basic services, Seattle Public Utilities relies on a system of pipes, reservoirs, and disposal and recycling stations. In the street right-of-way, SPU is responsible for drainage facilities and conveyance systems, water facilities (e.g., hydrants) and solid waste services. SPU has permitting and regulatory responsibility for utility services and utility construction work, including water quality certification, water availability certification, side sewer and drainage permit application review and code compliance review.

[Seattle City Light \(SCL\)](#) works to sustain and enhance the community's quality of life by providing

excellent energy services to customers and to be the most customer-focused, competitive, efficient, innovative, environmentally responsible utility in the United States. In addition to its generating facilities, SCL is also responsible for building, operating, and maintaining its power transmission and distribution facilities in the street right-of-way in a fashion that is both safe and reliable. SCL is also charged with the responsibility of managing the use of space on its facilities. Customers wanting new or enlarged electrical services or wishing to attach their equipment to SCL's facilities must contact SCL and secure written permissions in advance.

[Seattle Parks and Recreation \(SPR\)](#) is responsible for development, maintenance and operation of over 6,200 acres of property including numerous historic parks, boulevards, open spaces, and recreation facilities. These include community centers, swimming/wading pools, play areas/courts and ball fields. Certain city streets have been officially designated as park boulevards. In addition to providing typical transportation and street right-of-way functions and amenities, park boulevards provide scenic links throughout the city. Any development project on or adjacent to a park boulevard must be reviewed and approved by SPR in addition to all other applicable review and approvals.

[Seattle Fire Department](#) responds to fire and medical emergencies, and is dependent upon the capability of the street network to handle traffic flows. The Fire Department reviews proposed street improvements, closures, etc. to identify potential negative impacts on response times. Private roads must be in accordance with Section 503 (Fire Apparatus Access Roads) and Appendix D of the Seattle Fire Code. Plans for building construction are routed from the Department of Planning and Development to the Fire Department's Fire Prevention Division for review of fire apparatus access and other fire code related issues.

[Department of Neighborhoods \(DON\)](#) Historic Preservation Program oversees Seattle's historic preservation program. The program's primary objectives are to encourage the rehabilitation and reuse of historic properties for public and private use; to promote the recognition, protection and enhancement of landmark buildings, objects and sites of historic, architectural and cultural significance in Seattle; and, to identify, protect, preserve and perpetuate the cultural, economic, historical and architectural qualities of historic landmarks and districts throughout the city.

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Organization Name/Website	Phone
Department of Neighborhoods	(206) 684-0464
Department of Planning & Development (DPD) General Information	(206) 684-8600
Seattle City Light General Information	(206) 684-3000
Seattle Department of Transportation (SDOT) General Information	(206) 684-ROAD (7623)
Seattle Fire Department	(206) 386-1400
Seattle Parks and Recreation General Information	(206) 684-4075
Seattle Public Utilities General Information	(206) 684-3000

Procedures, Permitting Process and Approvals for Right Of Way Improvements

2.1 Navigating the City of Seattle Permit Process

There are numerous permits that the City of Seattle may be required for private development projects. A number of City departments oversee permitting, including:

- [Seattle Department of Transportation \(SDOT\)](#) has authority over permits related to any work being performed in Seattle's street right-of-way. SDOT coordinates the review and inspection of drainage, wastewater and water infrastructure with Seattle Public Utilities (SPU) and electrical infrastructure with Seattle City Light (SCL).
- [Department of Planning and Development \(DPD\)](#) is responsible for and leads the review and approval of Construction and Master Use Permits (MUPs).
- [Seattle Department of Parks and Recreation \(SPR\)](#) permits work proposed on land that they own or on designated park boulevards.
- [Seattle Department of Neighborhoods \(DON\)](#) reviews and approves projects within the seven historic districts. Their review ensures the historical integrity of structures and public spaces in the City's seven historic districts. DON is also responsible for the legal process of nominating, designating and protecting landmark structures and sites.
- In addition to City required permits, many projects may require permits or approvals by County, State or Federal agencies.

This section of the Right-of-Way Improvement Manual provides a high-level overview of typical permits that may be needed for work in the street right-of-way.

2.1.1 Overview of DPD Permitting

The Department of Planning and Development (DPD) issues two types of permits, Master Use Permits (MUPs) and Construction Permits.

In general Master Use Permits assure that structures meet zoning requirements and comply with environmental regulations, such as the State Environmental Policy Act (SEPA) and the Seattle Shoreline Master Program. Components of a MUP may also include use approvals, variances, administrative conditional uses, design review, special exceptions, shoreline district approvals, short plats, and certain street uses.

Construction Permits assure that the structural and fire/life safety elements of your project are in compliance with the latest adopted code.

DPD has several [Client Assistance Memos \(CAMs\)](#) available to help guide applicants through the permitting process.

2.1.2 Preliminary Assessment of Private Development

In the initial stages of the DPD permitting process, DPD Land Use, DPD Drainage, SDOT, SPU and SCL review the proposed project. Following the review the applicant will receive a Preliminary Application Report (PAR) with all of the reviewers' comments and requirements combined into the report. The SDOT portion of the report contains SDOT permitting requirements based on the requirements from the different review groups.

The requirements are based on the information provided by the applicant in the Preliminary Application Package. As with all permitting requirements, it is the sole responsibility of the applicant to obtain the

necessary permits for their project prior to project construction. Problems or delays that occur during construction due to the lack of a permit or due to the lack of coordination with SDOT are the responsibility of the applicant.

2.1.3 Right-of-Way Improvement Requirements

Right-of-way improvement requirements for private development can be triggered through several different review processes. Some of the more common ways that street improvements are triggered are:

- [MUP](#)
- [Land Use Code Requirements](#)
- [Right-of-Way Vacation Requirements and Procedures](#)
- [Discretionary improvements.](#)

When right-of-way improvements are required a street use permit is required for those improvements. The type of street use permit depends on the type and extent of the improvements required.

2.2 SDOT Street Right-of-Way Permits

The City of Seattle requires an SDOT permit for work in or use of a street right-of-way.

There are five basic types of SDOT permits with varying requirements, some of which are considered to be Street Improvement Permits.

Construction Permits include the construction or repair of improvements to the right of way such as street paving, curbs, or sidewalks. Street Improvement permits are further broken down into three groups depending on the extent of work to be completed. Further explanation is available on [Client Assistance Memo 2209](#).

Group 1 – Over-the-Counter (OTC) permits that can be obtained any time prior to construction or installation of the improvement. Some examples include plantings, or clearing vegetation on the right-of-way and/or construction of a driveway apron on a street with an existing curb.

Group 2 – OTC permits which should be obtained concurrently with a building permit. These permits generally include items that may impact your building design. Some project examples include: constructing or rebuilding walls, rockeries, new asphalt driveway. This category of permits typically requires a field review to determine whether the conditions on the site are suitable for the type of improvement desired. SDOT must review and approve the permit prior to commencing work.

If the project falls into the type of improvements in Group 2 and are not reviewed and/or permitted by SDOT at the time the applicant is obtaining the construction permit, the applicant may be required to make significant changes to their private property development plans to construct their project to the appropriate grade, consistent with SDOT standards and [SMC Title 15](#).

Group 3 – Street Improvement permits (SIP). Street Improvement permits are required for new or realigned city owned infrastructure and significant repair projects. When street improvement permits are required in conjunction with private development, the 60% SIP must be approved by Street Use prior to the construction permit intake. A Group 3 permit may need to include a Group 1 or Group 2 permit as a part of the project's permitting requirements.

Use Permits are issued for temporary use of the right-of-way during construction such as material storage, scaffolding, crane placement or crossing the curb and sidewalk with heavy equipment.

Shoring and Excavation Permits are issued for excavations in the public right-of-way that could by the nature of the excavation affect the integrity of a right-of-way or utilities in a right-of-way. Permits for excavations on private property that may impact the right of way are issued by DPD, but SDOT reviews the plans to insure the right of way is not affected.

Utility Permits are issued for the installation of underground and overhead utility mains and services in the public rights-of-way. They include power, communication, gas, steam, water, sewer, drainage, and privately owned facilities such as oil pipelines.

Non-Construction Permits are issued for private uses of the right of way. These permits include both short and long term uses. Short term uses include street closures for block parties and farmers markets. Long term uses of the right-of-way include signs, private retaining walls, structural overhangs and sidewalk cafes. Permits for uses over one year generally require an annual fee and in some cases liability insurance or a public place indemnification agreement. Although these permits are issued for uses that may seem permanent they are considered temporary in nature and are revocable within 30 days.

The types of permits that are of most interest to those engaged in private development are explained in

this chapter. For more information on the various kinds of SDOT permits, contact the [SDOT Street Use Permit Counter](#) or refer to the [SDOT CAM 2100: List of Street Use Permits](#). SDOT Street Use also allows customers to apply for certain types of permits online. Visit the [Online Permitting web site](#) for more information on submitting an online application for a street right-of-way permit. Refer to the [SDOT CAM 2105: What You Will Need to Apply for a Permit Online](#) for specific instructions.

Applicants will need to carefully review the right-of-way improvements required for their project.

With all of the permitting requirements, it is the sole responsibility of the applicant to obtain the necessary building permits for their building project. It will also be important to obtain and coordinate the required (if any) SDOT permits – prior to construction. It is also the responsibility of the applicant to ensure that all required permits are obtained prior to project construction. Problems that occur during construction that are due to the lack of coordination with SDOT are the responsibility of the Permittee.

The permitting fees and the cost of services provided by the City of Seattle vary based on the type of permit, duration and amount construction within the right of way. Permit and inspection fees are based on the number of hours required to complete the work. The current Street Use Fee Schedule can be found [here](#).

2.3 Street Improvement Permits – Group 3 permits

A Street Improvement Permit is required for significant, permanent improvements in the street right-of-way such as paving a street, widening a street, or extending a public storm drain. For complex projects, there will be additional components of the project, such as street tree installation or curb cuts for driveways that will also be included in the Street Improvement Permit for the project; however, private utilities including service drains and side sewers do require separate permits, even when the connection of these systems to the public utility is shown on the street improvement plans.

The following is a summary of Street Improvement Permit (SIP) issuance procedures. For more complete information on procedures and plan requirements, refer to [SDOT CAM 2200: Street Improvement Permitting Process](#).

2.3.1 Coaching

Street Improvement Project Managers are available for coaching prior to submitting street improvement plans to help the applicant understand their street improvement requirements and design choices. Coaching provides general information regarding requirements outlined in the preliminary assessment report and basic guidance over the counter.

2.3.2 Application Requirements

When a project requires a Street Improvement Major Permit, the applicant submits a completed Street Improvement [Permit Application](#), an initial deposit for the cost of the plan review and street improvement construction plans to [Seattle Department of Transportation – Street Use Division](#). Other items may also be required depending on the level of plans submitted. The materials required for all submittals are listed on the [Design Guidance Application Material Transmittal Form](#) and the [Formal Review Application Material and Mylar Transmittal Form](#). Additional information may be required depending on the scope and type of infrastructure being installed.

The plans must meet the City of Seattle standards for formatting and drafting as well as content, and must meet the City of Seattle's design standards and specifications for public works projects.

The deposit for a single family residence or a duplex is \$1,250. The deposit for all other new construction projects is \$2,500. The actual cost of the permit will depend on the amount of review required to approve the plans and the amount of inspection required during construction.

2.3.3 Design Guidance

Design Guidance is available for applicants who would like specific information regarding design requirements for right of way infrastructure. Design guidance occurs in a meeting setting with subject matter experts from various City departments and external agencies. In order to submit a permit application for formal review the street improvement plans must be developed to 90% completeness. Applicants who need assistance in developing their plans to the 90% level should apply for design guidance.

Project that have non-standard elements or are working in an unimproved alley or an alley with a closed contour are required to obtain 60% SIP approval through design guidance.

Additional information regarding design guidance can be found in [CAM 2211](#). Specific information regarding the 60% Complete SIP Plan can be found in [CAM 2213](#) and the [60% Complete SIP Checklist](#).

When a SIP is required based on the Land Use Code requirements, applicants must obtain 60% SIP approval prior to Construction Permit intake.

2.3.4 Survey and Base Map Requirements

Accurate surveys and base maps are essential for designing and constructing improvements in the right of way. A separate survey and base map is required for all SIP plans submitted at the 30% level or above. The survey and base map information must meet the requirements in the [Survey Checklist](#) and the [Base Map Checklist](#).

[CAM 2212](#) provides more information regarding the survey and base map requirements.

2.3.5 Formal Review

The SIP Project Manager assigned to the project reviews the plans, circulates them for review to other departments of the City of Seattle and other pertinent agencies, and informs the applicant of any corrections or revisions required. Refer to [CAM 2214](#) for more information regarding the plan acceptance for formal review.

2.3.6 Correction Cycles

The applicant re-submits corrected plans and/ other requested information. The SIP Project Manager checks the revised plans to verify if all corrections have been made and whether the plan is ready for final approval. Once all of the required corrections have been addressed the SIP Project Manager will send an approval notification that contains the required construction phase deposit amount and the surety bond amount. Refer to [CAM 2200](#) for more information regarding formal review correction cycle.

2.3.7 Plan Approval

Once the SIP Project Manager notifies the applicant that the plans are ready to be approved, the applicant submits the final plan set for signatures. The final plans must meet City of Seattle standards. These plans are signed by the SDOT Street Use SIP Supervisor and filed in the SPU Records Vault as a permanent record of improvements in the street right-of-way.

In addition to submitting the plans, the applicant must also submit the required construction phase deposit and surety bond.

The Street Improvement Permit is issued once the plans have been signed, the construction phase deposit has been submitted, and the bond has been approved by the City's Law Department.

2.3.8 Construction

Refer to Chapter 5 for the SIP process associated with construction of street improvements.

2.4 Other Street Use Construction Permits – Groups 1 and 2 permits

Improvements that are limited in scope may be reviewed and permitted with an SDOT permit for that specific improvement. These limited permits are described in this section.

2.4.1 Driveway and Curb Cut Permits

Driveway and curb cut installations must meet City requirements and specifications including:

- Width of the driveway or curb cut at the property line;
- [Grades and/or elevations](#) at the property line;
- [Driveway slope, crest, and curve](#);
- "Sight triangles";
- Maneuvering room on site for vehicles; and
- Objects on or adjacent to the driveway.

No existing curb: When there is no existing curb, the City of Seattle requires a Street Use Driveway Permit for the installation of a driveway that will join with a public street. SDOT issues and inspects the work for this permit. A Group 2 permit is required when there is no existing curb.

Existing curb: The City of Seattle requires a Curb Cut Permit to remove a portion of an existing curb for the purpose of providing access to private property. This permit is issued by DPD and the work is inspected by SDOT.

2.4.2 Grade and Rock Permits

The grade and rock permits are required for alleys and for some residential access roadways. This pavement option would be used when minimal grading or leveling a street or alley or for installing a minimal amount of crushed rock. If the total area of grading is more than 750 square feet or the project is in an Environmentally Critical Area then a Group 1 (SIP) permit is required for the work.

2.4.3 Paving Permits

When less than 750 square feet of paving is proposed to be installed and the street profile or alignment is not being modified, applicants can apply for a paving permit.

2.4.4 Sidewalk and Sidewalk Repair Permits

Property owners are responsible for maintaining the sidewalks adjacent to their property, [per SMC 15.72](#). They must ensure that snow, ice and debris do not pose a hazard to pedestrians. They must also repair cracks and other damage. The property owner of record is notified by the Street Use inspector of the repairs or action needed. If there is an unsafe condition and you want to repair the sidewalk, apply for a sidewalk permit.

A sidewalk is considered to be damaged and in need of repair in the following instances:

- The sidewalk is cracked.
- There is a fault or other discontinuity greater that exceeds ADA tolerances.
- Any piece of the sidewalk can be moved with ordinary foot pressure.
- If in the view of SDOT the grade or slope of the sidewalk creates a concern for safe pedestrian passage.

If tree roots need to be cut to complete this repair, you must contact SDOT Urban Forestry at: 206 684-TREE.

To repair the sidewalk adjacent to your property, you will need to obtain a Street Use – sidewalk repair permit. For more information, refer to the [CAM 2208](#).

2.4.5 Private Encroachments in the Right-of-Way

Private encroachments in the right-of way require permits and inspections. There are two types of permits required for this type of structure. The first permit is for the construction and the second permit is an Annual/Renewable Street Use permit which is required for the long-term use of the rights-of-way such as signs, fences, retaining walls, and structural overhangs. These permits require an annual fee and in some cases liability insurance or public place indemnity agreements. Although these permits are issued for uses that may seem permanent they are considered temporary in nature and are revocable within 30 days.

Refer to [Chapter 2.8](#) for more information regarding the annual/non-construction permit.

2.5 Right-of-Way Use Permits

Construction of private property frequently requires temporary use of the right of way for equipment and material storage, staging or other activities. All use of the right of way requires a Street Use permit.

When the right of way is used for these activities, the public's access to the right of way is restricted resulting in limitations on pedestrian, bike and vehicle mobility. SDOT's goal is to minimize these impacts on mobility. As a disincentive to limiting the public's mobility, SDOT charges escalating fees based on the

amount of area occupied, the duration of the impacts and the type of street impacted.

Refer to [CAM 2115](#) for more information regarding use permits and fees.

2.6 Shoring and Excavation Permits

The City of Seattle Department of Transportation requires a [Shoring and Excavation](#) Permit if a project meets the following criteria:

- excavation or construction adjacent to the street right-of-way deeper than three feet; and
- any excavation where the plane extending from the bottom of an excavation at 100% (45 degree) slope crosses the property/street right-of-way line.

This permit is required whether or not the street right-of-way is improved or even open to traffic. The purpose is to protect the stability of the street right-of-way and facilities within and/or near the street right-of-way.

In cases where there is an associated Department of Planning and Development (DPD) Construction Permit, SDOT does not issue a separate Shoring & Excavation Permit. However, when excavation on private property meets the criteria stated above, the plans for excavation or shoring must be reviewed and approved by the SDOT's Street Use Section before DPD will issue a Construction Permit.

2.7 Utility Permits

Street Use issues permits that are required to construct maintain and operate railroad or streetcar tracks, pipes, ducts, utility tunnels, vaults, maintenance holes, poles, fixtures, wires or any other appurtenances on, under or over the streets, alleys or public places of the City of Seattle. These installations include in part: gas mains and services; electrical manholes and conduits; telecommunication manholes and conduits; steam mains and services; water mains and services; utility poles; and aerial CATV and telecommunications cables.

The applicant must submit an application and plan detailing the proposed utility to the Franchise and Utility Permit Section. The application and plan will be reviewed and any corrections noted before a permit will be issued.

2.7.1 Side Sewer Permitting

Side sewers, which include service drains and any other piping that is connected to public storm drains or sewers, are installed, owned, and maintained by the owner of the property being served. This ownership extends from the building structure to the tee or wye connection at the main, and therefore the property owner is responsible for excavation, installation, and restoration within the street right-of-way.

Side sewer construction shall be in accordance with the City of Seattle Standard Plans and Specifications, latest edition. There may be additional requirements for service taps, backfilling, shoring, and restoration within the street right-of-way or public easement.

Side Sewer permitting is administered by the Department of Planning and Development, which provides guidance and ensures that requirements are met by performing application review and site inspection. Construction work in the street right-of-way is inspected by SDOT. For more information on side sewer permitting please read [DPD CAM 503](#). If your work on a side sewer involves any impeding any traffic on an arterial, a traffic control plan is required. See the SDOT CAMs on [Traffic Control Plan Checklist](#) and [Traffic Control Plan submittals](#).

2.7.2 Water Services, Hydrants, and Other Water System Appurtenances

The installation of water services, hydrants, and other water system appurtenances in the street right-of-

way that are to serve a property or development requires a Street Use Permit issued by SDOT and either a standard charge or a time and materials charge payable to SPU. The installation of these facilities is done by SPU and the Street Use Permit is obtained by SPU.

To obtain a water service, there are several key steps:

- Determine your use, and the flow range and diameter of the water service you need. Contact SPU's Customer Service consultants for assistance – 206 684-5800.
- Obtain a [Water Availability Certificate \(WAC\)](#) to determine whether water service is available to your property. A legal description and the name and address of the owner/contact person are required per the WAC. If water is available, you can apply for a water service with SPU's Customer Service Branch. For details, please review the [SPU CAM 1202](#). At the time of this application, [payment for the water service](#) must be made. In some cases, a plan by a registered professional engineer that is acceptable to SPU may be required. Otherwise SPU will use its standard details.
- Once application and payment has been made, the Street Use Permit application and installation is completed by SPU.

If hydrants and other water system appurtenances in the street right-of-way are needed for your project and they are an individual installation (e.g., water fountain, hydrant) that is not part of a larger water system improvement, then a request and payment will need to be made to SPU.

Contact SPU for more information and a standard charge or time and materials charge payable to SPU will be required prior to the commencement of any work. In some cases, a design by a registered professional engineer will be needed. Once the fees and design are complete, the Street Use Permit and installation are performed by SPU as is the case with water service installations. Refer to the SPU website for details on how to [initiate water services](#).

2.8 Non-Construction Permits

New development projects often include private encroachments in the right of way that require an annual non-construction permit. Examples of typical items that require annual permits are balconies, benches and street furniture, and sidewalk cafes. These permits may require an annual fee, indemnification and insurance.

2.9 Street Trees and Landscaping Permits

SDOT standards include the preservation or planting of trees as an integral part of proposals for improvements in the street right-of-way. Selected, installed and protected to provide optimum functional and environmental benefits, trees are required elements of street right-of-way infrastructure to be maintained and preserved for public benefit.

Though the City of Seattle issues various types of permits associated with trees and related landscape improvements on land under public jurisdiction, SDOT Urban Forestry Division is the lead for review and approval of plans for tree preservation, tree planting and related improvements in street right-of-way areas. Street Use Permits are required for installation, pruning, or removal of street trees and for installation of landscape improvements that require inspection to ensure compliance with public safety standards.

2.9.1 Street Tree Permits

To encourage the proper planting of trees in the street right-of-way, SDOT's Urban Forestry Division provides review and approval of the tree type and planting location at no cost to the applicant. Applicants are responsible for maintenance of trees planted, including regular watering to ensure establishment, mulching, and pruning to ensure appropriate clearances over streets and sidewalks. Go to the Urban

Forestry webpage for more information and to get a copy of the [Street Tree Permit application](#).

2.9.2 Street Tree Removal or Pruning Permits

Street Tree Removal or Pruning Permits are required under Seattle Municipal Code. Permit applications are subject to review and approval by the SDOT's Urban Forestry Division. Go to the Urban Forestry webpage for more information and to get a copy of the Street Tree – Pruning and Removal [permit application](#).

Permit applications may be required to include public notification. In cases where the applicant is not the owner of the property abutting the proposed work, applications must include signatures of adjacent property owners. The extent of notification is determined on a case by case basis to ensure public safety and awareness and/or approval of the project. Names and addresses of contacts may be submitted for approval or provided as a component of the permit review process by the SDOT Urban Forestry Division. Permitted work must be completed within 60 working days from the time of permit issuance, unless otherwise defined by the permit.

2.9.3 Beautification Permits

[Beautification permits](#) are required for the installation of landscape improvements in the street right-of-way. SDOT's Urban Forestry Division provides support services to promote appropriate planting in the street right-of-way. Applicants are encouraged to contact [SDOT Urban Forestry Division](#) to receive information on permit requirements and/or general guidelines for landscape architectural design and construction in the street right-of-way.

2.9.4 Green Factor in the Right of Way Permits

When development projects propose to use the right of way to meet the development Green Factor requirements, a Green Factor in the Right of Way permit is required from SDOT. If a Street Improvement Permit (SIP) is required because of other land use code required improvements, the Green Factor in the Right of Way is reviewed in conjunction with the SIP.

2.10 Other Street Right-of-Way Improvement Activities

Other City Departments also regulate or provide guidance on a number of other activities that impact the public rights-of-way. This section defines the existing process for other improvement-related activities.

2.10.1 Seattle Parks and Recreation Department Reviews and Approvals

Some streets have been designated as park drives or boulevards and are under the jurisdiction of Seattle Parks and Recreation Department (SPR) as part of the City's extensive parks system. These streets may or may not have the term "boulevard" in their name. A complete listing of streets under the jurisdiction of SPR is available as [Appendix I to Title 15 of Seattle Municipal Code \(SMC\)](#),

Through an agreement between SPR and SDOT, SDOT is responsible for issuing permits for street uses affecting the paved street surface of park boulevards. Any disturbance to unpaved areas of park boulevards is subject to SPR review and approval. For more information go to SPR web page concerning SPR [Revocable Use Permits](#).

The following information describes the typical permits and approvals relevant to permitting work on SPR land.

2.10.2 Non-Park Uses of Seattle Parks and Recreation Department Lands

Seattle Parks and Recreation Department (SPR), as steward of public park lands, is responsible for preserving and protecting Seattle's park system. In order to preserve the public character of park lands and assure their availability for public use and enjoyment, it is the policy of SPR to eliminate and prevent unauthorized non-park uses on SPR lands. Further, it is the policy of SPR to limit authorized non-park uses to the fullest extent practicable. Any project proposed for SPR lands must obtain permission of SPR; usually in the form of a Revocable Use Permit (refer to prior section). Get more information in the [complete policy](#).

2.10.3 Revocable Use Permits

Any work on park boulevards, or that may affect other park property, must be reviewed by SPR. A Revocable Use Permit, issued by the Superintendent of Parks and Recreation, may be necessary. Refer to the SPR website and follow the links to [Permits for Non-Park Use of Park Property](#) or contact the Property Management Unit.

2.10.4 Design Intent for Seattle Parks and Recreation Department Boulevards and Trails

Refer to the [Seattle Parks and Recreation Department \(SPR\) website](#) for basic information that project applicants must consider when developing landscape plans affecting boulevards or other streets and roadways under SPR jurisdiction.

2.10.5 Seattle Parks and Recreation Department Tree Policy and Permits

The Seattle Parks and Recreation Department (SPR) Tree Policy was developed to maintain, preserve and enhance the urban forest within parks; to increase the overall tree canopy, tree health and tree longevity within parks including boulevards; and to ensure that parks trees are managed in a manner that is consistent with other departmental and municipal policies. Private work on trees on SPR property must be approved through issuance of a Tree Permit. Get a copy of the [permit and the complete policy](#).

2.10.6 Seattle Parks and Recreation Department Standards

The Seattle Parks and Recreation Department (SPR) Standards are intended to facilitate design and construction of SPR facilities through standard requirements on SPR property. The Standards are based upon past experiences and practices that have proved successful during design, construction, operation, and maintenance of SPR facilities. In certain situations, Consultant deviations may be acceptable provided they are approved by the Park Engineer and/or Construction Manager prior to implementation. The deviation process described in Chapter 2.11 Deviation Request Process for Street Right-of-Way Improvements does not apply to, or replace, the SPR deviation request process for projects on SPR lands. Refer to the [SPR standards homepage](#), including SPR CAD and Survey standards.

2.10.7 Department of Planning and Development Tree Protection Regulations

The Department of Planning and Development (DPD) enforces regulations regarding tree and vegetation protection and removal on private property and in the street right-of-way. To determine the regulations that apply to a specific site, reference DPD [Client Assistance Memo \(CAM\) #242: Tree Protection Regulations](#) in Seattle if the site is not in an Environmentally Critical Area or DPD [CAM #331: Environmentally Critical Areas: Tree and Vegetation Overview](#).

2.10.8 Street and Alley Vacation Process

A street vacation is the process by which an abutting property owner can petition the City to acquire the adjacent street right-of-way.

Street and Alley Vacations are reviewed by SDOT, the Seattle Design Commission and City Council who makes the final decision on whether or not to grant the vacation. The City has established policies and procedures to guide the decision. It is important to contact the street vacation staff early in your

development planning. Street vacation staff can explain the process, costs and time frame associated with the review of a vacation. Staff will also make every effort to assess whether a vacation appears to be feasible in your particular circumstance. Tunnels and aerial use of the street right-of-way may also require vacations.

Use this link for more information about [street vacations](#).

2.10.9 Dedication of Street Right-of-Way or Easement

Developers and contractors are sometimes required by DPD to dedicate property for transportation purposes in order to receive a Construction Permit. When this occurs, DPD notifies SDOT Real Property Services that a dedication of private property is required. SDOT works directly with the developers to ensure they comply with the permitting requirements. For more details, refer to [SDOT CAM 2203](#) for more information and procedures on dedications of street right of way or easements.

2.10.10 Shoreline Street Ends and Unimproved Rights-of-Way

Shoreline Street Ends are those platted streets that run into water and provide access and/or views of Lake Washington, Lake Union or Puget Sound. The City has 149 shoreline street ends. Many are already open to the public. [SDOT Director's Rule 00-1](#), the City's guidelines on the Shoreline Street Ends Program, includes improving a shoreline street end for public access.

[City Resolution 29370](#), adopted in September 1996, identified shoreline street ends as a scarce and valuable public resource which should be open for the enjoyment and benefit of the public. This policy was adopted after much public discussion and careful consideration. [Ordinance 119673](#) was adopted in October 1999 to establish a new type of permit and a new fee schedule for permitting private uses of the shoreline street ends. Although the ultimate goal is to remove private uses of these street ends, the permit process acknowledges some private uses will continue.

Refer to [Chapter 2.12.3 State and Federal Permits and Approvals](#) for information on additional permits that may be required for work on street ends including Army Corps of Engineer Permits Section 10: Hydraulic Permit Approval (HPA) and Section 401: Discharge of Dredge and Fill. Refer to [DPD CAM 209](#) and [Shoreline Substantial Development Permits](#), as the project may also require a Shoreline Permit.

2.10.11 Coordination Activities

Construction and maintenance activities in the street right-of-way typically require coordination with many agencies and on occasion coordination with other nearby construction activities, including federal, state and other local authorities. Coordination with some agencies will require the project applicant to provide advance notification so that any necessary reviews and approvals are in place prior to City permits being issued.

The City of Seattle Right of Way Management initiative has produced an online map where the user can ask for a log in to view the Street Use and DPD permitted activity in the area of their work site. This will improve the coordination of street and utility work in the street right-of-way. The [Planning, Analysis, Coordination Tool \(PACT\) database](#) and its accompanying map tools were developed to augment these coordination efforts. The PACT system tracks projects and coordination efforts. Information on project locations, coordination groups and moratoriums is available and updated twice yearly in April and July. The information on this interactive map from the SDOT Street Use Division is updated monthly.

In general, there is a three-year moratorium on opening new pavement. It shall not be permitted within the three-year period following its installation, except in the following circumstances: emergency repairs that could not have been anticipated or that are necessary for the protection of the public's health and safety; new or revised service connections that have been requested by a utility customer; work for which SDOT's denial of a permit would violate federal law; or with prior approval of the SDOT Director.

2.10.12 Landmarks Certificate of Approval

In Seattle, a Certificate of Approval is required for any project that will alter the appearance (including demolition) of a protected feature of a designated landmark or a property located in an historic or special review district. This process requires submittal of an application to the Department of Neighborhoods (DON) Office of Urban Conservation and review by the Seattle Landmarks Board or the review board for the landmark district.

If your project may affect a landmark or is in one of the following districts, you will need to talk with staff at the [Department of Neighborhoods](#). Review of these applications varies from district to district, depending upon the special characteristics of each area. For site-specific information, refer to the following SMC sections and ordinance.

- International District—SMC 23.66.318
- Pioneer Square Preservation District—SMC 23.66.115
- Pike Place Market Historical District—SMC 25.24.060
- Columbia City Landmark District—SMC 25.20.070
- Ballard Avenue Landmark District—SMC 25.16.065
- Harvard-Belmont Landmark District—SMC 25.12.090
- Fort Lawton Landmark District—Ordinance 114011

State Environmental Policy Act (SEPA) Policies regarding preservation of landmarks are found in SMC 25.05.675.

NOTE: If your building appears to meet the criteria for landmark designation, but is not currently designated as a landmark, the structure may be referred to the Landmarks Preservation Board for consideration (per SMC 25.05.675H2c).

2.11 Deviation Request Process for Street Right-of-Way Improvements

The Deviation Request Process defined in this section applies to deviations from the design criteria presented in this Manual, and does not apply to or replace, any other deviation, variance or exception process required for the City of Seattle permits or approvals or those of other agencies. For instance, requests to modify or waive a Land Use Code requirement for street improvements must be submitted to DPD (see [DPD CAM 205](#) for instructions to apply for Street and Alley Improvement Exceptions). The design criteria presented in this Manual have been developed to assure that Seattle's street rights-of-way are designed in such a manner as to protect the health, safety, and welfare of the public and to minimize post-construction maintenance and repair costs.

An applicant can request a deviation from the design criteria in this Manual for a street right-of-way improvement project by following the process defined in this section. In the case of a deviation request, the Seattle Department of Transportation (SDOT) will require the applicant to follow the procedure defined in Chapter 2.11.1 Deviation Request Submittal Process. The final decision on whether a deviation request is granted lies with SDOT.

2.11.1 Deviation Request Submittal Process

1. **Design guidance meetings:** The applicant must obtain approval through a 60% Complete SIP Design Guidance meeting. Design guidance meetings at the 0-30%+ level are optional and can be held to share contact information and discuss information relative to proposed street right-of-way improvements, including potential deviations and the necessary information that SDOT will

require to evaluate the deviation request prior the 60% complete submittal. Refer to [CAM 2211](#) for more information regarding the Design Guidance process.

2. **Deviation request submittal:** If the applicant chooses to apply for a deviation, he or she must submit the following in addition to the requirements for a 60% Complete SIP Design Guidance Meeting:
 - A completed [Deviation Request Form](#) Depending on the nature of the improvement, SDOT may require the deviation request to be signed and sealed by a professional engineer.
 - Description of how proposed work is consistent with the Comprehensive Plan, Transportation Strategic Plan, as well as any subarea transportation plans or neighborhood plans relevant to the area.
 - Engineering justification for the deviation proposal The justification should describe the impacts of meeting the standard and why the deviation is the preferred alternative.
 - Information on existing and predicted vehicular and pedestrian traffic volumes, when changes are expected as a result of the project.
 - Any additional information defined in the previous Design Guidance meetings that SDOT determine necessary to evaluate the deviation request.

The permit reviewer will screen the submittal package to determine if it meets the minimum submittal requirements for a 60% Complete SIP Design Guidance Meeting and provide the screening outcome within 3 business days.

3. **Deviation request coordination and review:** When a deviation request is submitted, SDOT's Street Use staff will consult with appropriate staff within SDOT and other departments that will be impacted by the deviation. If a 60% Complete SIP Design Guidance Meeting is not needed to process the deviation request, SDOT will typically process the request and notify the applicant if the request has been accepted or rejected within one week of the submittal. If City staff require additional information to process the request, the SDOT reviewer will alert the applicant that a 60% Complete Design Guidance meeting is required.

Permit submittal: Following acceptance or rejection of the deviation request, the applicant may submit 90% Complete SIP plans for formal review.

2.12 Environmental Review and Approvals

Permit applicants whose projects meet certain criteria are required to prepare an [Environmental Checklist](#). Refer to [DPD Director's Rule 17-2008: State Environmental Policy Act \(SEPA\) Exemptions from Environmental Review Requirements When Establishing, Changing, or Expanding a Use](#). For a complete listing of exempt and non-exempt projects, refer to [SMC Chapter 25.05](#).

For most private development projects the environmental review is a part of the Department of Planning and Development (DPD) Master Use Permit (MUP) process and DPD is considered the lead agency. DPD is also responsible for the environmental review of City Council conditional uses, full subdivisions, major institution master plans, and rezones.

For some development projects whose adverse impacts may significantly affect the environment, a checklist will not provide adequate environmental review. Projects that may significantly impact the environment will require an environmental impact statement (EIS).

When work by a private entity is solely in the right of way and does not require a DPD MUP or construction permit, the SEPA review may be performed as part of the SDOT Street Improvement Permit (SIP).

2.12.1 City Environmental Approvals

The State Environmental Policy Act (SEPA), RCW Chapter 43.21 C, requires governmental agencies to consider the environmental impacts of a proposal before making decisions.

The environmental impacts of certain public and private development proposals must be assessed by the City of Seattle per SEPA and the Seattle SEPA Ordinance - [Chapter 25.05](#), Seattle Municipal Code (SMC). The level of documentation required to comply with SEPA is dictated by the type of impacts a project may have. There are three levels of documentation:

- **Categorical exemption:** State and local SEPA regulations list certain types of projects presumed to have minimal or no impacts. A SEPA review is not required for these exempt projects. However, certain state and federal permits may require a letter or memo indicating a project is exempt. SEPA exemptions are listed in [SMC 25.05.800](#) and for DPD permits are further clarified in [DPD Director's Rule 17-2008](#).
- **Determination of non-significance (DNS):** During the review of a project under SEPA, impacts from a proposal may be limited to those which are fairly minor in scope or otherwise are not considered to be significantly adverse. This determination may be made after reviewing a SEPA checklist and other supporting documentation. The Seattle SEPA Ordinance includes policies that may allow for mitigation from identified adverse impacts. SEPA checklist requirements can be found in [SMC 25.05.315](#).

Determination of significance (DS): When review of a proposal determines that expected adverse impacts may be significant, a Determination of Significance may be made, requiring the preparation of an environmental impact statement (EIS). A description of SEPA EIS requirements can be found in [SMC 25.05.400](#).

2.12.2 Environmental Review as Part of the Permit Process

In order for these assessments to be made, permit applicants whose projects meet certain criteria are required to prepare an [Environmental Checklist](#). For a complete listing of exempt and non-exempt projects, refer to [SMC Chapter 25.05.305](#).

For some development projects whose adverse impacts may significantly affect the environment, a checklist will not provide adequate environmental review. Projects that may significantly impact the environment will require an environmental impact statement (EIS).

2.12.3 Filling Out the Environmental Checklist

If a project is subject to the State Environmental Policy Act (SEPA) and not categorically exempt, an [Environmental Checklist](#) must be filled out and submitted by the applicant at the time of SIP permit application, so that SDOT can review the project for compliance. Refer to the Environmental Checklist on the SDOT website.

If the environmental review for a project has been completed by another City department or by a different governmental agency, a copy of the threshold determination and the Environmental Checklist - or the draft and final EIS - must be made available to the SIP Project Manager. A copy of the threshold determination and environmental impact statement (EIS), if any, must also be submitted to SDOT prior to 60% Complete SIP Approval.

Applicants must fill out the Environmental Checklist accurately and completely in ink, acknowledging potential impacts, including those associated with demolition, grading, and construction (temporary as well as permanent). Measures that an applicant plans to take to mitigate adverse environmental impacts associated with a project should be discussed under the appropriate element(s) of the environment.

The completed checklist must be dated and signed and must include the complete street address of the project. Future development proposals related to the project should be discussed even if details are not fully established. This will ensure that the applicant does not need to go through an additional environmental review and appeal period later in the process. However, discussion of future development proposals in the checklist does not exempt an applicant from independent SEPA review of a future project, if that project is over SEPA thresholds. In most circumstances, the review for the total proposal must be completed before any permits can be issued. The more complete the information provided, the faster the review of the project can be conducted. If the information submitted is incomplete or if additional information is needed to make an accurate analysis of the environmental impacts of a project, the applicant will be required to furnish further information. Contact a SIP project manager for more information on these requirements.

2.12.3 Transportation Impact Analysis

A SEPA review may result in transportation mitigation measures consistent with SEPA policies such as full or partial contributions to transportation system improvements, such as new or upgraded traffic signals or roadway modifications.

As part of the environmental review process, transportation impact analyses (TIA) or parking demand studies may be required to document a project's transportation or parking impacts. A TIA typically estimates traffic volumes that a proposed project would generate, and compares the operating conditions of nearby intersections or roadway segments with and without the additional traffic. A TIA may also estimate potential traffic queues, examine any outstanding safety issues, and assess the impact of the project on transit, pedestrian, and bicycle facilities.

Projects may also be required to demonstrate that they satisfy transportation concurrency requirements established under the Washington State Growth Management Act. The City of Seattle uses a screenline approach to track transportation concurrency. Under this approach, a transportation analysis estimates the auto trips generated by the project that will cross one or more screenlines near the project site. Project volumes plus background traffic volumes for a screenline are compared to the established capacity for the screenline. Refer to the [Comprehensive Plan, Transportation Element](#) for additional information on level of service standards and screenlines.

2.12.4 Hazardous Materials Analysis

The Environmental Elements, Environmental Health sections of the SEPA checklist require the disclosure of any environmental releases or potential releases to the environment affecting public health. This disclosure would be noted in Section B-7a of this form. These would include any toxic or hazardous materials that may be caused by, or encountered during a proposed project. This includes contamination of private property and potential migration into the street right-of-way. This section of the checklist should summarize any analyses that have been completed, evidence of past contamination, or reports' indicating the site has been contaminated. Phase I and/or Phase II Environmental Site Assessments, property record searches, communications with the Washington State Department of Ecology, and cleanup action reports. These documents should accompany the checklist. Similarly, a section on environmental health should be included in an EIS and be accompanied by similar evaluations.

For more information on SEPA contact a SIP Project Manager.

2.13 King County Permits and Approvals

Some projects may require a King County Waste Discharge Permit. These permits are needed if the discharge could be expected to contain chemicals or contaminants that differ from ordinary sewage. The permit is also needed when discharging drainage into a sanitary-only sewer. This is only allowed if the drainage is contaminated and it is not feasible to pre-treat and discharge to the drainage system. Get more information on the [King County Waste Discharge Permit](#). For more information, call King County Department of Natural Resources and Parks at 206-263-3001.

2.14 State and Federal Permits and Approvals

Permit Type	Overview and Web Link	Agency
Air Quality	<p>Notice of Construction Approval (NOC): Ecology or the local air authority has review and approval authority for the construction of new sources or modifications to existing sources of air pollution.</p> <p>Sources proposing to construct a new source or modify an existing source must submit a Notice of Construction Application to Ecology or the local air authority. The application must include a description of the new or modified source, the types of equipment used that will generate air pollution, the types and amounts of air pollutants released into the air, and proposed methods for air pollution control or prevention.</p>	<p>Washington State Department of Ecology Air Quality Program 300 Desmond Drive PO Box 47600 Olympia, WA 98504-7600 (360) 407-6800 (360) 407-6802 fax</p>
Aquatic Resources	<p>Hydraulic Project Approval (HPA): Work that uses, diverts, obstructs, or changes the natural flow or bed of any of the salt or fresh waters of state requires a Hydraulic Project Approval (HPA). Permit processing can take up to 45 days following receipt of a complete application package. Download the application for an individual permit, called a Joint Aquatic Resource Permit Application (JARPA).</p>	<p>Washington State Department of Fish and Wildlife 600 Capital Way North Olympia, WA 98501-1091 (360) 902-2464 (360) 902-2946 fax</p>
	<p>Aquatic Use Authorization: Anyone wishing to use state-owned aquatic lands (including harbors, state tidelands, shorelands, and beds of navigable waters and owners of adjacent lands) must get authorization from DNR. Other activities for which authorization is required include</p>	<p>Washington State Department of Natural Resources Aquatic Resources Division 1111 Washington Street SE PO Box 47027 Olympia, WA 98504-7027 (360) 902-1100 (360) 902-1786 fax</p>

	<p>shellfish/aquaculture leases, geoduck harvest sales, dredge disposal, easements for bridges and utility crossings (including outfalls), and sand and gravel removal. Download an application for an individual permit, called a Joint Aquatic Resource Permit Application (JARPA).</p>	
<p>Archaeological and Cultural Resources</p>	<p>Archaeological Excavation Permit: Excavation altering or removing archaeological resources or Native Indian grave sites. The status of any sites or structures listed in or eligible for the State or National Register of Historic Places or Local Landmark designation may need to be determined. Plans for protection or mitigation measures may be a condition of any permit issued. Get more information from the DPD Director's Rule 2-98.</p>	<p>Department of Archaeology & Historic Preservation 1063 South Capitol Way, Suite 106 P.O. Box 48343 Olympia WA 98501 360-586-3065 360-586-3067 fax</p>
<p>Water Quality—Federal</p>	<p>401 Water Quality Certification: Applying for a federal permit or license to conduct any activity that might result in a discharge of dredge or fill material into water or non-isolated wetlands or excavation in water or non-isolated wetlands. Issuance of a certification means that the Ecology anticipates that the applicant's project will comply with state water quality standards and other aquatic resource protection requirements under Ecology's authority. The 401 Certification can cover both the construction and operation of the proposed project. Conditions of the 401 Certification become conditions of the Federal permit or license. Download an application for an individual permit, called a Joint Aquatic Resource Permit Application (JARPA).</p> <p>Coastal Zone Consistency Determination: Activities and development affecting coastal resources which involve federal</p>	<p>Department of Ecology Office of Regulatory Assistance Environmental Permitting Service 300 Desmond Drive PO Box 47600 Olympia, WA 98504-7600 (360) 407-7037 (800) 917-0043 toll free (360) 407-6711 fax Website: http://www.ora.wa.gov/</p>

	<p>activities, federal licenses or permits, and federal assistance programs (funding) require a written Coastal Zone Management (CZM) decision by Ecology.</p>	
	<p>Section 10 Permit - Work in Navigable Waters: An Army Corps of Engineers Permit is required when locating a structure, excavating, or discharging dredged or fill material in waters of the United States or transporting dredged material for the purpose of dumping it into ocean waters. Typical projects requiring these permits include the construction and maintenance of piers, wharfs, dolphins, breakwaters, bulkheads, groins, jetties, mooring buoys, and boat ramps.</p>	<p>US Army Corps of Engineers Seattle District Regulatory Branch PO Box 3755 Seattle, WA 98124-2255 (206) 764-3495 (206) 764-6602 fax</p>
	<p>Section 404 Permit - Discharge of Dredge and Fill Material: An Army Corps of Engineers Permit is required when locating a structure, excavating, or discharging dredged or fill material in waters of the United States or transporting dredged material for the purpose of dumping it into ocean waters. Typical projects requiring these permits include the construction and maintenance of piers, wharfs, dolphins, breakwaters, bulkheads, groins, jetties, mooring buoys, and boat ramps.</p>	<p>US Army Corps of Engineers Seattle District Regulatory Branch PO Box 3755 Seattle, WA 98124-2255 (206) 764-3495 (206) 764-6602 fax</p>
Waste and Toxic Substance Permits	<p>Dangerous Waste Treatment, Storage, and Disposal Facility: Facilities that store, treat, and/or dispose of dangerous waste must obtain a Dangerous Waste Permit for any dangerous waste activities that do not meet the less-stringent generator requirements.</p>	<p>Department of Ecology Headquarters 300 Desmond Drive PO Box 47600 Olympia, WA 98504-7600 (360) 407-6000 Website: http://www.ecy.wa.gov/</p>
	<p>Hazardous Substance Release Notification Requirement (MTCA): The Model Toxics Control Act (MTCA) is a citizen-mandated hazardous waste cleanup law. Under the MTCA regulations, owners and operators must report to Ecology any release or</p>	<p>Department of Ecology Headquarters 300 Desmond Drive PO Box 47600 Olympia, WA 98504-7600 (360) 407-6000 Website: http://www.ecy.wa.gov/</p>

<p>threatened release of a hazardous substance on their site. This requirement must be met if a historical release or a situation that could cause a release is discovered on a site. A verbal or written report must be made within ninety days of discovery.</p>	
<p>Hazardous Waste Release Notification (Spills or Releases): Prompt notification to Ecology is required when spills or releases of hazardous substances occur that have the potential to impact human health or the environment. Responsibility for reporting spills lies with the person who spills or releases the substance; however, any person aware of such spills is encouraged to contact Ecology.</p>	<p>Department of Ecology Headquarters 300 Desmond Drive PO Box 47600 Olympia, WA 98504-7600 (360) 407-6000 Website: http://www.ecy.wa.gov/</p>
<p>Model Toxics Control Act-Reporting Independent Remedial Actions: Any person who conducts an independent remedial action must submit a written report to Ecology within ninety days of completing the action. (Refer to the discussion of underground storage tanks (UST) for requirements specific to USTs) A limited number of these reports are reviewed by Ecology to evaluate, as a whole, the independent remedial actions conducted.</p>	<p>Department of Ecology Toxics Cleanup Program Headquarters 300 Desmond Drive PO Box 47600 Olympia, WA 98504-7600 (360) 407-7170 (360) 407-7154 fax Website: http://www.ecy.wa.gov/programs/tcp/cleanup.html</p>
<p>Resource Conservation & Recovery Act (RCRA) Site ID Number: The required Resource Conservation and Recovery Act (RCRA) Site ID# is an identifying number used for tracking wastes from their point of generation to final disposal. The Uniform Hazardous Waste Manifest system (EPA Form 8700-22) is the primary mechanism to ensure that wastes reach their intended destination. The transporter and the receiving facility signatures on the manifest you have prepared and sent with the shipment provide some assurance that the waste has been</p>	<p>Department of Ecology Hazardous Waste & Toxics Reduction Program Headquarters 300 Desmond Drive PO Box 47600 Olympia, WA 98504-7600 (360) 407-6700 (360) 407-6715 fax Website: http://www.ecy.wa.gov/programs/hwtr/index.html</p>

	<p>properly handled.</p> <p>Download an application for an individual permit, called a Notification of Dangerous Waste Activities FORM 2.</p>	
	<p>Underground Injection Control Registration: A state registration form, available from the Department of Ecology, must be completed by people who have installed or intend to install an underground injection control (UIC) well. A drywell, infiltration trench with perforated pipe, subsurface infiltration gallery and large on site septic system are some examples of UIC wells that need to register. Permits may be required, but would be determined on a site by site basis.</p>	<p>Washington State Department of Ecology Water Quality Program 300 Desmond Drive PO Box 47600 Olympia, WA 98504-7600 (360) 407-6400 (360) 407-6426 fax</p>
	<p>Underground Storage Tank Notification Requirements: A state notification form, available from the Department of Ecology must be completed by people who have installed or intend to install an underground storage tank (UST).</p>	<p>Washington State Department of Ecology Toxics Cleanup Program 300 Desmond Drive PO Box 47600 Olympia, WA 98504-7600 (360) 407-7170 (360) 407-7154 fax</p>
Water Quality Permits	<p>NPDES Individual Permit: A permit is required for soil disturbing activities (including grading, stump removal, demolition), where one or more acres will be disturbed, and have a discharge of stormwater to a receiving water (e.g., wetlands, creeks, unnamed creeks, rivers, marine waters, ditches, estuaries), and/or storm drains that discharge to a receiving water. If stormwater is retained on site, but detention facilities need to be constructed, permit coverage is required.</p>	<p>Washington State Department of Ecology Water Quality Program 300 Desmond Drive PO Box 47600 Olympia, WA 98504-7600 (360) 407-6400 (360) 407-6426 fax</p>
	<p>NPDES Construction Stormwater General Permit: A permit is required for soil disturbing activities</p>	<p>Washington State Department of Ecology Water Quality Program 300 Desmond Drive</p>

	<p>(including grading, stump removal, demolition), where 1 or more acres will be disturbed, and have a discharge of stormwater to a receiving water (e.g., wetlands, creeks, unnamed creeks, rivers, marine waters, ditches, estuaries), and/or storm drains that discharge to a receiving water. Browse Ecology's Construction Booklet for more information.</p>	<p>PO Box 47600 Olympia, WA 98504-7600 (360) 407-6400 (360) 407-6426 fax</p>
	<p>State Waste Discharge Permit: Planned discharge of wastewater to the ground or discharge of wastewater, other than domestic sewage, to municipal treatment plant requires a State Waste Discharge Permit. Discharges from industrial facilities to municipal wastewater treatment plants require a State Waste Discharge Permit if they haven't been issued a Pretreatment Discharge Permit by the municipality. Download the application for an individual permit here.</p>	<p>Washington State Department of Ecology Water Quality Program 300 Desmond Drive PO Box 47600 Olympia, WA 98504-7600 (360) 407-6400 (360) 407-6426 fax</p>
<p>Water Resource Permits</p>	<p>Permit to Withdraw or Divert Surface or Ground Water: Washington State law requires certain users of public waters to receive approval from the state prior to use of the water - in the form of a Water Right Permit or certificate. Any use of surface of water (lakes, ponds, rivers, streams, or springs) which began after the state water code was enacted in 1917 requires a Water-Right Permit or certificate. Likewise, ground-water withdrawals from 1945 onward, when the state ground-water code was enacted, require a Water-Right Permit or certificate. Refer to the Ecology website for complete information about this permit, including allowable exceptions.</p>	<p>Washington State Department of Ecology Water Resources Program 300 Desmond Drive PO Box 47600 Olympia, WA 98504-7600 (360) 407-6600 (360) 407-7162 fax</p>

Wetland Permits	<p>Wetlands: If you anticipate working in lands that are transitional between open water and uplands or that may be periodically inundated or saturated, you may be dealing with wetlands. Wetlands perform numerous important functions including water quality improvement, flood peak reduction, and stream and groundwater recharge while providing essential fish and wildlife habitat. Numerous federal, state, and local laws affect the use and protection of wetlands.</p>	<p>Washington State Department of Ecology 300 Desmond Drive Lacey, WA 98503 (360) 407-6000</p>
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2.15 Contact Information	
Organization Name/Website	Phone
Department of Neighborhoods (DON) Landmarks Certificate of Approval	(206) 684-0228
Department of Planning and Development (DPD)	

DPD Applicant Services Center and Permit Specialists	(206) 684-8850
DPD Drainage and Sewer Review Staff	(206) 684-5362
DPD Land Use Planner	(206) 684-8850
DPD Public Resource Center Seattle Municipal Tower 700 5th Avenue, 20th Floor	(206) 684-8467
DPD Site Development Staff	(206) 684-8850
DPD Transportation Impact Analysis and Parking Demand Studies	(206) 684-5837
King County Waste Discharge Permits	(206) 684-3001
Seattle City Light (SCL) Engineering Services	
<ul style="list-style-type: none"> • Residential and Commercial Customers: <ul style="list-style-type: none"> - North of Denny Way - South of Denny Way 	(206) 615 0600 (206) 386-4200
Large commercial and Industrial Customer	(206) 233-7177
SCL Distribution Design Office for Pole Attachments	(206) 233-2777
SCL Real Estate Services Division for Wireless Antenna Attachments	(206) 684-3324
SDOT Arborist's Office	(206) 684-TREE (8733)
SDOT Shorelines Street Ends Program	(206) 684-5283
SDOT Street and Alley Vacations	(206) 684-7564
SDOT Street Use Division	(206) 684-5283
SDOT Street Use Permit Counter Seattle Municipal Tower 700 5th Avenue, Suite 3700 (23 rd Floor)	(206) 684-5253
SDOT Street Use Utility Permit Specialist	(206) 684-5193
SDOT Urban Forestry Office	(206) 684-TREE (8733)

Seattle Public Utilities (SPU) General Information	(206) 684-3000
Seattle Parks and Recreation (SPR)	(206) 233-7935
SPR Design Standards	(206) 233-7920
SPR Property Management Unit	(206) 233-7935
Utility Underground Location Center and One Number Locator Service Hotline	(800) 424-5555

Additional contact information and resources are located in the [City of Seattle Staff Directory](#), which is searchable by Department, Division and individual staff.

Chapter 3 Right-of-Way Improvement Requirements

3.1 Overview of Requirements from the Land Use Code

The City of Seattle Land Use Code ([Chapter 23](#) of the Seattle Municipal Code) requires that streets adjacent and leading to lots being created, developed, or redeveloped, be improved or brought up to the minimum conditions specified in the Land Use Code and this Manual. The Department of Planning and Development determines the required right-of-way improvements and the Department of Transportation reviews and permits the construction of those right-of-way improvements through the Street Improvement Permitting Process.

3.1.1 Using the Land Use Code

The street improvement requirements vary by location, by land use zones and by street types to reflect the intensity of development, the scale and character of the zone, and to provide a balance between the need to accommodate vehicular and pedestrian traffic and the desire to preserve existing neighborhood character. In addition to the requirements for street and alley improvements contained in the Land Use Code, additional street and alley improvements may be required through the environmental review process.

All required improvements shall be constructed by the developer and accepted by the Department of Transportation prior to issuance of the final Certificate of Occupancy. A temporary Certificate of Occupancy may be issued prior to completion of street improvements when approved by the Director of Transportation.

Changes to the Land Use code can occur on an irregular basis and may affect the requirements necessary for your project. It is the responsibility of the applicant to know and understand the development requirements.

3.1.2 Coordination with SDOT Street Use

Once DPD has established the required Right of Way Improvements, SDOT reviews and approves the design of those improvements through the Street Improvement Permit process. Chapter 4 of this manual provides design criteria and Chapter 6 of this manual provides design guidelines for specific right of way improvements.

When new street improvements are required and the existing street right-of-way width does not meet the established width, additional street right-of-way shall be dedicated. There are circumstances where there is no requirement for the installation of curb, sidewalk, or pavement improvements. When a curb already exists, a setback and No-Protest Agreement are permitted in lieu of a dedication and improvements.

When the existing roadway or right-of-way is narrower than the required width standards, and no new pavement or curb improvements are required, a No-Protest Agreement shall be provided in lieu of roadway widening. Get more information on [No Protest Agreements](#).

3.1.3 Resources

Green Factor – 206 733 9668

Land Use Planners – 206 684 8850

Land Use Code – It is the responsibility of the applicant to understand and follow all of the development and improvement requirements

SMC 23.53 – Requirements for Streets, Alleys and Easements

SMC 23.54 – Quantity and Design Standards for Access, Off-Street Parking, and Solid Waste Storage

3.2 Requirements for Streets, Alleys and Easements

Required Improvement	Code section	Topics
Landscaping Standards	SMC 23.45.524	<ul style="list-style-type: none">• Street Tree and Landscaping Requirements
Improvement requirements for new streets in all zones:	SMC 23.53.010	<ul style="list-style-type: none">• Zone category• ROW widths
Improvement requirements for existing streets in residential and commercial zones:	SMC 23.53.015	<ul style="list-style-type: none">• Full and Reduced Improvement requirements• ROW widths• Pedestrian access and easements• Dedication requirement• No Protest Agreement• Paving Requirement
Improvement requirements for existing streets in Industrial zones:	SMC 23.53.020	<ul style="list-style-type: none">• Full and Reduced Improvement requirements• ROW widths• Pedestrian access and easements• Dedication requirement• No Protest Agreement• Paving Requirement
Alley improvements in all zones:	SMC 23.53.030	<ul style="list-style-type: none">• General requirements• Alley width

Access Easement Standards:	SMC 23.53.025	<ul style="list-style-type: none"> • Required improvements Easement standards
Pedestrian Access and Circulation	SMC 23.53.006	<ul style="list-style-type: none"> • General requirements
Parking space standards	SMC 23.54.030	<ul style="list-style-type: none"> • Curb cut width requirements • Driveway slope requirements
Overlay Districts	SMC 23.60 SMC 23.61 SMC 23.64 SMC 23.66 SMC 23.67 SMC 23.69 SMC 23.71 SMC 23.72 SMC 23.73 SMC 23.74	<ul style="list-style-type: none"> • Shoreline District • Station Area Overlay District • Airport Height Overlay District • Special Review Districts • Southeast Seattle Reinvestment Area • Major Institution Overlay District • Northgate Overlay District • Sand Point Overlay District • Pike/Pine Conservation Overlay District • Station Transition Area Overlay District

3.3 Contact Information

Organization Name/Website	Phone
Department of Planning and Development (DPD) General Information	
DPD Applicant Services Center and Permit Specialists	(206) 684-8850
Seattle Department of Transportation (SDOT) General Information	
SDOT Street Use Division	(206) 684-5283
Seattle Parks and Recreation Real Estate Section:	(206) 233-7935

Additional contact information and resources are located in the [City of Seattle Staff Directory](#), which is searchable by Department, Division and individual staff.

Design Criteria

4.1 Introduction

The design of Seattle's street rights-of-way has a significant impact on the livability of the city as well as the health, safety and welfare of its citizens. The width of a sidewalk, diameter of a curb radius, number of lanes in the right-of-way and the location of utilities such as overhead power lines and underground waterlines all play a role in shaping the right-of-way. A street is also part of the public realm and all streets provide some form of open space including view corridors and green space in between private property and the curb.

This chapter contains mandatory design criteria that must be followed when designing and constructing improvements to the public rights-of-way including streets, sidewalks, trees and landscaping, and utilities. Design criteria present a consistent approach to designing each element of the right-of-way to best serve the traveling public, support land use patterns, and encourage economic growth in the City and the region. When reviewing and approving projects in Seattle's rights-of-way, the City of Seattle makes every attempt to balance the vision for a project with adopted policy, regulation and user acceptance.

The design criteria in this chapter are to be used in conjunction with other applicable City, State and National standards for right-of-way design. More information on these standards can be found in [4.1.2 City of Seattle Standard Plans and Specifications](#) and [4.1.3 Washington State Minimum Design Standards](#).

In addition to the mandatory design criteria, this chapter contains design considerations which the City recommends be considered when designing right-of-way improvements. Compliance with design considerations is encouraged but not required.

4.1.1 Citywide Policy Guidance for Right-of-Way Improvements



The design criteria in this chapter have been developed consistent with appropriate local, state and national guidelines for right-of-way design. The criteria also support citywide policy defined in companion documents to this Manual, including the City of Seattle Comprehensive Plan (2005), the Transportation Strategic Plan (2005), and the Complete Streets ordinance (2007) and the Stormwater Code (2009).

Seattle's Complete Streets guiding principle is to design, operate and maintain Seattle's streets to promote safe and convenient access and travel for all users -- pedestrians, bicyclists, transit riders, for people of all abilities, as well as for freight and motor vehicle drivers.

4.1.1a City of Seattle Comprehensive Plan

The City of [Seattle Comprehensive \(Comp\) Plan](#), *Toward a Sustainable Seattle*, is a 20-year policy plan that defines the vision of how Seattle will grow in ways that sustain its citizens' values. The City first adopted the Comp Plan in 1994 in response to the state Growth Management Act of 1990. The Comp Plan makes basic policy choices and provides a flexible framework for adapting to real conditions over time. It is a collection of the goals and policies the City will use to guide future decisions about how much growth Seattle should take and where it should be located. The Comp Plan also describes in a general way how the City will address the effects of housing and employment growth on transportation, especially in designated urban centers and villages.

The [Transportation Element of the Comp Plan](#) encourages people to use cars less than they do today.

One way to do that is through the urban village strategy's goal of concentrating most new housing, jobs and services near one another in small areas, so that more trips can be made by walking, biking or transit. Another way is to support new public transit options. The Transportation Element contains policies that set the stage for street design standards that will match future street improvements to the types of uses and neighborhoods the street is serving.

4.1.1b Transportation Strategic Plan

The [Transportation Strategic Plan](#) (TSP) was updated in 2005. Linked directly to the goals and policies in the Comp Plan, the TSP outlines the specific strategies, projects and programs that implement the broader city-wide goals and policies for transportation in Seattle. The TSP also includes detailed lists of projects and programs to carry out citywide transportation policy.

4.1.1c Comprehensive Drainage Plan

The [City of Seattle adopted a Comprehensive Drainage Plan](#) in 2005 that charts a course for how to manage stormwater in our City. The Comprehensive Drainage Plan charts a broader commitment to protecting and, where possible, improving Seattle's surface water resources. The Plan divides SPU's drainage program into four areas:

- Stormwater and Flow Control
- Landslide Mitigation
- Aquatic Resource Protection – Water Quality
- Aquatic Resource Protection – Habitat

The Plan contains the policy guidance, levels of service and direction for capital and operating programs for each of these four areas.

4.1.2 City of Seattle Standard Plans and Specifications

The City of Seattle has developed design and construction standards for improvements in public rights-of-way to protect the health, safety, and welfare of the public and to minimize post-construction maintenance and repair costs. These standards shall be followed, together with the design criteria presented in this chapter and as required by the Seattle Municipal Code (SMC).

City of Seattle Standards for the design and construction of specific elements of rights-of-way improvements are contained in two publications that are referred to in this Manual by the shortened combined title, Standard Plans and Specifications.

- [City of Seattle Standard Plans for Municipal Construction](#). Individual plans from this publication are referred to in this Manual as "Standard Plan" followed by the number of the plan.
- [City of Seattle Standard Specifications for Road, Bridge, and Municipal Construction](#). Individual specifications from this publication are referred to in this Manual as "Standard Specification" followed by the number of the specification.

In the event of a conflict, Standard Plans and Specifications take precedence over the Manual. In certain cases, a deviation from the design criteria presented in the Manual may be appropriate. Get more information about the deviation process.

4.1.3 Washington State Minimum Design Standards

In addition to the design criteria in this chapter and Seattle’s Standard Plans and Specifications, right-of-way design elements must also comply with the minimum design standards for major arterial and secondary arterial streets in the State of Washington. These minimum design standards are established and adopted in the Revised Code of Washington (RCW) 35.78 Streets – Classification and Design Standards, and have been published in the [City and County Design Standards](#).

4.1.3a Exceptions from Washington State Minimum Standards

Per the [City and County Design Standards](#), it is noted that the professional engineer in charge of the project must evaluate each design situation, and if less than the desirable value is chosen, appropriate documentation laying out the reasons and conclusions should be placed in the project’s design files.

Thus, while this document provides design standards, it is not a substitute for engineering judgment.

“In adopting these standards, the (State’s design review) committee seek to encourage standardization of road design elements where necessary for consistency and to assure that motoring, bicycling, and pedestrian public safety needs are met. Considerations include safety, convenience, context sensitive solutions, proper drainage, and economical maintenance. The committees recognize that cities and counties must have the flexibility to carry out the general duty to provide streets, roads, and highways for the diverse and changing needs of the traveling public.

These standards cannot provide for all situations. They are intended to assist, but not to substitute for, competent work by design professionals. It is expected that land surveyors, engineers, and architects will bring to each project the best skills from their respective disciplines. These standards are also not intended to limit any innovative or creative effort, which could result in better quality, better cost savings, or both. An agency may adopt higher standards to fit local conditions. Special funding programs may also have varying standards.”

- excerpted from the *City and County Design Standards*

In any case, evaluation and ultimate approval of deviations to existing street design standards and criteria are the responsibility of SDOT.

4.2 Street Classifications and Street Types

4.2.1 Street Types

4.2.1a Regional Connector Streets

4.2.1b Commercial Connector Streets

4.2.1c Local Connector Streets

4.2.1d Main Streets

4.2.1e Mixed Use Streets

4.2.1f Industrial Access Streets

4.2.1g Green Streets

4.2.1h Neighborhood Green Streets

The City of Seattle classifies streets according to different levels of emphasis on motor vehicle movement versus direct access to property. At one end of the hierarchy, a freeway emphasizes traffic movement, while restricting access to adjacent land. At the other end of the hierarchy, a local street provides easy access to adjacent residential, commercial, and industrial land uses. A description of Seattle’s street classifications is located in the [Comprehensive Plan](#) and further defined with maps in each classification in the [Transportation Strategic Plan](#). Although street classifications do not change frequently, they are modified periodically. Any changes to traffic classifications are adopted by City

Council Ordinance. Please confirm the classification of streets adjacent to a site with a SIP Project Manager.

Seattle's traffic classifications are based on the American Association of State Highway and Transportation Officials (AASHTO) standards that identify major functional classifications for all urbanized areas that have over 50,000 people.

The [Traffic Classifications](#) define the roadway network and include Interstate Freeways, Regional, Principal, Minor and Collector Arterial streets, Commercial and Residential Access Streets and Alleys. The arterial network is the "backbone" of the roadway system and accommodates the most trips for all modes.

In addition to the traffic classifications, Seattle's street classifications define networks of streets citywide that are designed to accommodate freight, transit, pedestrians and bicycles. A classification also exists to define Seattle's boulevard system. The classifications are as follows:

[Major Truck Streets](#) accommodate significant freight movement through the city and to and from major freight traffic generators including Port of Seattle Terminals, inter-modal rail facilities and the regional freeway network. The Major Truck Street network defines critical connections for freight movement throughout the City and these roadways need to maintain the function of, and capacity for truck movements. Major Truck Streets generally carry heavier loads and higher truck volumes.

[Transit Classifications](#) define a network of streets throughout the city that accommodate various levels of transit service.

[Bicycle Classifications](#) define an on- street and off-street network of bicycle routes throughout the city.

[Boulevard Classifications](#) describe the existing system of boulevards, most of which are owned by the Seattle Parks and Recreation (SPR). Traffic is accommodated on every boulevard and design features must be approved by both SDOT and SPR.

4.2.1 Street Types



Seattle’s street classifications (refer to [Comp Plan Policies T10-T15](#) and [Transportation Strategic Plan strategies S3-3.5](#)) define how a street should function to support movement of people, goods and services versus access to property. However, street classifications by themselves are not an adequate local planning and design tool. The design of a street--intersections, sidewalks, and transit stops should reflect the adjacent land uses because the type and intensity of the adjacent land use directly influences how the street is used. Street Types are not additional classifications, but provide a more specific definition of the design elements that support the street’s function and its adjacent land use.

Street Classifications and Street Types provide design guidance for anyone doing work in Seattle's street rights-of-way. Refer to the table below to assist with identifying the Street Classification and Street Type that applies to a project. This section (4.2.1) provides information on design features that are compatible with each Street Type.

SDOT will review street designs and operational characteristics to ensure that a reasonable balance is achieved among competing uses. This role is critical in Seattle, where there is typically very limited space within the right-of-way to accommodate the needs of pedestrians, transit, bicyclists, freight, cars, landscaping, utilities, and parking.

Not all streets in Seattle currently have a designated Street Type. Refer to SDOT's [Street Types map](#).

**Street Types Definition
(Reprinted from the Transportation Strategic Plan)**

Name of Street Type	Street Classification	Adjacent Land Use
Regional Connector	Principal Arterial	Industrial, Commercial, Residential
Commercial Connector	Minor Arterial	Commercial, Residential
Local Connector	Collector Arterial	Residential, Institutional (community service)
Main Street	Arterial—all	Neighborhood commercial with a pedestrian designation
Mixed Use Street	Arterial—all	Neighborhood commercial
Industrial Access Street	Arterial—all, non-arterials in commercial areas	Industrial, Maritime
Green Street	Non-arterial in Downtown Seattle	Residential
Neighborhood Green Street	Non-arterial outside of Downtown Seattle	Residential

Identifying Street Classifications and Street Types

# Information Needed	Resources
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1	Is my project located on an arterial street?	Street Classification Map—Traffic Classifications . Transportation Strategic Plan 2005.
2	Does the street my project is located on have a truck, transit, bicycle or boulevard classification?	Street Classification Map—Truck, Transit, Bicycle and Boulevard Classifications . Transportation Strategic Plan 2005. Major Truck Street and Transit Classifications are an important criterion for street design, traffic management decisions and pavement design and repair. The Bicycle and Boulevard Classifications also define certain design priorities or additional reviews needed before a project approval can be granted.
3	My project is located on an arterial. What is its Street Type?	Street Type Policy in the Comprehensive Plan and Transportation Strategic Plan , Street Type Map and Design Guidance in this Manual, Chapter 4.2.1 Street Types .
4	My project is located on a local street (non-arterial) but has industrial zoning.	The Industrial Access Street Type applies to arterial as well as local (non-arterial) streets that serve industrial land uses.
5	My project is located on a designated Green Street or Neighborhood Green Street.	The Green Street and Neighborhood Green Street Types apply to local (non-arterial) streets. Also reference Green Street design guidelines in this Manual Chapter 6.2 Green Streets and Chapter 6.4 Green Stormwater Infrastructure for streets in creek watersheds.
6	My project is located on a multi-use trail.	Street Classification Map—Truck, Transit, Bicycle and Boulevard Classifications . Transportation Strategic Plan 2005. The Bicycle and Boulevard Classifications also define certain design priorities or additional reviews needed before a project approval can be granted.

4.2.1a Regional Connector Streets

Regional Connector streets are principal arterials that link urban villages to each other and connect to regional destinations outside of the city. Although they must be accessible and attractive to all modes, they are designed to provide city-wide and regional access for transit, cars and truck trips. Regional Connectors also connect designated manufacturing and industrial centers to the local and regional freight network. They move high volumes of traffic through the city and between urban villages.

Street Design Features	Character
Roadway Section	4-6 travel Lanes plus transit
Curb bulbs	With on-street parking, and in locations with frequent pedestrian crossings, curb bulbs may be appropriate if they are designed to accommodate the turning movements of trucks and transit vehicles.
Bicycle routes	Bicycle routes may occur on Regional Connectors if no feasible alternative route exists, Bicycle access on or parallel to Regional Connectors is important as they are often the most direct link between dense residential neighborhoods and employment centers.
Truck route signage	Signage is encouraged that directs trucks to destinations such as Port facilities, intermodal rail yards, the regional freeway network

	and to Seattle's Manufacturing and Industrial Centers.
Medians	Use on streets with three or more lanes only. Medians can be continuous. Appropriate in locations where high volumes of pedestrian crossings occur and depending on left-turn movements. Medians are an access management tool and can also accomplish a variety of community goals such as limiting cut-through traffic, and environmental benefits from trees and landscaping.
Crossing islands	Use on streets with three or more lanes only. Typically a crossing tool used at a crossing location not controlled by a traffic signal.
Sidewalk width	As wide as possible to accommodate pedestrians once vehicle access needs are addressed. Additional sidewalk width is encouraged in the vicinity of transit zones.
Driveways	Minimize the number of driveways that cross the sidewalk to support pedestrian safety and establish a continuous sidewalk.
Street trees and landscaping	A planting strip is encouraged to provide safety through separation between pedestrians and moving traffic. They also provide environmental and aesthetic benefits. Trees in transit zones should be located to be compatible with transit passenger loading areas and maintained so as not to interfere with transit vehicle access.
Street furniture	Bus shelters are appropriate in transit zones. Wayfinding signs and other street furnishings are appropriate where right-of-way width allows.
Pedestrian scaled lighting	Prioritize at pedestrian crossing locations, in transit zones, where there are concerns about personal security, and in where adjacent land uses support pedestrian activity.
Decorative elements	Decorative elements (including public art and special paving) may be appropriate if adequate right-of-way width exists and long term maintenance issues are addressed.
Awnings or other weather protection	Appropriate in locations where adjacent land uses support high pedestrian volumes, including transit zones.

Priority Design Features

- Sidewalks buffered from moving traffic by additional sidewalk width or planting strip
- Pedestrian facilities including weather protection and lighting at transit zones and in locations where adjacent land uses support pedestrian activity
- Bicycle access accommodated if parallel route is not feasible

4.2.1b Commercial Connector Streets

Commercial Connector streets are minor arterials that provide connections between commercial areas of the city, such as neighborhood business districts. They also provide local access within urban villages.

Street Design Features	Character
Roadway Section	2-4 travel lanes plus transit or parking
Curb bulb	Curb bulbs may be appropriate in locations where there is on-street parking.
Bus bulbs	Appropriate in locations to support high transit ridership where on-street parking is a lower priority and reliable transit service.
On-street parking	Prioritize short-term visitor and resident parking when adjacent to commercial and residential land uses respectively. On-street parking should be considered after transit service is accommodated, and may be restricted during peak commuter periods.
Bicycle routes	Sign and/or stripe bicycle lanes on designated bicycle routes. Prioritize those routes that are the most direct link between dense residential neighborhoods and employment centers.
Truck route signage	Signage to assist trucks is appropriate in locations that have key freight destinations such as Port facilities, the regional freeway network and to Seattle's Manufacturing and Industrial Centers.
Medians	Use on streets with three or more lanes only. Medians can be continuous. Appropriate in locations where high volumes of pedestrian crossings occur and depending on left-turn movements. Medians are an access management tool and can also accomplish a variety of community goals such as limiting cut-through traffic, and environmental benefits from trees and landscaping.
Crossing islands	Use on streets with three or more lanes only. Typically a crossing tool used at a crossing location not controlled by a traffic signal.
Sidewalk width	As wide as possible to accommodate pedestrians in balance with vehicle access needs. Additional sidewalk width is encouraged in the vicinity of transit zones.
Street furniture	Benches, bus shelters, bike parking, and wayfinding are appropriate if the right-of-way is sufficiently wide to accommodate street furniture and still meet the needs for sidewalk width and landscaping.
Street trees and landscaping	A planting strip is desirable and provides safety through separation between pedestrians and moving traffic. They also provide environmental and aesthetic benefits. Trees in transit zones should be located to be compatible with transit passenger loading areas and maintained so as not to interfere with transit vehicle access.
Driveways	Minimize the number of driveways that cross the sidewalk to support pedestrian safety and establish a continuous sidewalk.
Pedestrian scaled lighting	Prioritize at pedestrian crossing locations, in transit zones, where there are concerns about personal security, and in where adjacent land uses support pedestrian activity.
Decorative elements	Decorative elements (including public art and special paving) may be appropriate if adequate right-of-way width exists and long term maintenance issues are addressed
Awnings or other weather protection	Appropriate in locations where adjacent land uses support high pedestrian volumes, including transit zones.

Priority Design Features

- Wide sidewalks and planting strip buffer walking area from moving traffic
- Street trees and landscaping
- Bus shelters at transit zones
- Signed and/or striped bicycle lanes on designated bicycle routes

4.2.1c Local Connector Streets

Local Connector streets are collector arterials that provide direct connections between pedestrian generators (e.g., residences, transit stops) and destinations (e.g., community centers, schools, neighborhood main streets). They are designed to emphasize walking, bicycling, and access over mobility and tend to be more pedestrian oriented than Commercial Connector Streets.

Street Design Features	Character
Roadway Section	2-3 travel lanes plus bike lanes or transit
Curb bulbs	Use in locations with on-street parking.
Bus bulbs	Appropriate in locations with high transit ridership where on-street parking is a lower priority.
Medians	
Crossing islands	Use on streets with three or more lanes only. Typically a crossing tool used at a crossing location not controlled by a traffic signal.
On-street parking	Where sufficient right-of-way exists, on-street parking is encouraged and has benefits for residents, business districts and may provide some traffic calming effect. Should only be encouraged where transit service is not a priority.
Bicycle lanes	Sign and stripe bicycle lanes on designated bicycle routes.
Sidewalk width	Wide sidewalks support pedestrian activity and are a high priority.
Street furniture	Benches, bus shelters, bike parking, and wayfinding are appropriate if the right-of-way is sufficiently wide to accommodate street furniture and still meet the needs for sidewalk width and landscaping.
Street trees and landscaping	A planting strip is to provide safety through separation between pedestrians and moving traffic. They also provide environmental and aesthetic benefits. Trees in transit zones should be located to be compatible with transit passenger loading areas and maintained so as not to interfere with transit vehicle access.
Driveways	Minimize the number of driveways that cross the sidewalk to support pedestrian safety and establish a continuous sidewalk.
Pedestrian scaled lighting	Prioritize at pedestrian crossing locations, in transit zones, where there are concerns about personal security, and in where adjacent land uses support pedestrian activity.
Awnings or other weather protection	Appropriate in locations where adjacent land uses support high pedestrian volumes, including transit zones.

Priority Design Features

- Wide sidewalks with planting strips
- Signed and/or striped bicycle lanes on all designated bicycle routes
- Street trees and landscaping
- Traffic calming may be appropriate
- Bus shelters at transit stops

4.2.1d Main Streets

Main Streets are arterial streets located within the most pedestrian-oriented sections of neighborhood business districts. These arterial streets and adjacent properties may have a “pedestrian designation” in the Seattle Municipal Code that requires new development to be pedestrian-friendly and help generate pedestrian activity. For more information, and to learn if your project is located within that pedestrian designation, please contact DPD’s [Applicant Service Center](#) for more information.

Street Design Features	Character
Roadway Section	2-3 travel lanes plus parking and bike lanes
Curb bulbs	Use in combination with on-street parking to support pedestrian activity at corners and shorten crossing distances.
Bus bulbs	Appropriate in locations with high transit ridership. Impacts to on-street parking should be considered.
On-street parking	Appropriate in business districts consistent with the goals of the neighborhood, the City and in locations after transit service is accommodated. When on-street parking exists, it is actively managed for passenger and truck loading, and short-term customer access.
Bicycle routes	Stripe and/or sign designated bicycle routes.
Medians	
Crossing islands	Use on streets with three or more lanes only. Typically a crossing tool used at a crossing location not controlled by a traffic signal.
Sidewalks	Wide sidewalks support pedestrian activity and are a high priority.
Street trees and landscaping	Wide planting strip with mature street trees and landscaping significantly enhance the street for pedestrians. Trees in transit zones should be located to be compatible with transit passenger loading areas and maintained so as not to interfere with transit vehicle access.
Pedestrian scaled lighting	Pedestrian scaled lighting lights the sidewalk and provide a consistent vertical design element to the streetscape. Prioritize at pedestrian crossing locations, in transit zones, where there are concerns about personal security, and in where adjacent land uses support pedestrian activity.
Street furniture	Benches, bus shelters, bicycle parking and signs and maps (wayfinding) are all encouraged to support pedestrian activity and comfort. Consistent design among street furniture elements can enhance the streetscape and should be considered.
Driveways	Minimize the number of driveways that cross the sidewalk to support pedestrian safety and establish a continuous sidewalk.

Awnings and weather protection Encouraged, especially in locations where adjacent land uses support high pedestrian volumes, including transit zones.

Priority Design Features

- Wide sidewalks and planting strip
- Curb bulbs in locations where there is on-street parking
- Street trees and landscaping
- Pedestrian scaled lighting
- Street furniture
- Awnings and weather protection
- Signed and/or striped bicycle lanes on designated bicycle routes
- Bike parking in business districts
- Short-term, on-street parking

4.2.1e Mixed Use Streets

Mixed Use Streets are arterials located in neighborhood commercial areas that do not have a pedestrian land use designation. They typically connect to Main Streets and have adjacent land uses that are fairly dense and mixed use. Mixed Use Streets accommodate all modes of travel with particular emphasis on supporting pedestrian, bicycle and transit activity.

Street Design Features	Character
Roadway Section	2-3 travel lanes plus parking and bike lanes
Curb bulbs	Use in combination with on-street parking to support pedestrian activity at corners, shorten crossing distances and slow speeds for turning vehicles.
Bus bulbs	Appropriate in locations with high transit ridership. Impacts to on-street parking should be considered.
Medians	Medians or crossing islands are encouraged, where right-of-way width allows.
Crossing islands	Use on streets with three or more lanes only. Typically a crossing tool used at a crossing location not controlled by a traffic signal.
On-street parking	Appropriate in business districts consistent with the goals of the neighborhood, the City and in locations after transit service is accommodated. When on-street parking exists, it is actively managed for passenger and truck loading, and short-term customer access.
Bicycle routes	Stripe and/or sign designated bicycle routes.
Medians or crossing islands	Medians or crossing islands are encouraged, where right-of-way width allows, managing traffic, improving the aesthetics of the right-of-way and improving pedestrian crossing conditions.
Sidewalks	Wide sidewalks support pedestrian activity and are a high priority.
Street trees and landscaping	Wide planting strip with mature street trees and landscaping significantly enhance the street for pedestrians. . Trees in transit zones should be located to be compatible with transit passenger loading areas and maintained so as not to interfere with transit vehicle access.

Pedestrian scaled lighting	Pedestrian scaled lighting lights the sidewalk and provide a consistent vertical design element to the streetscape. Prioritize at pedestrian crossing locations, in transit zones, where there are concerns about personal security, and in where adjacent land uses support pedestrian activity.
Pedestrian scaled lighting	Pedestrian scaled lighting lights the sidewalk and provide a consistent vertical design element to the streetscape. Prioritize at pedestrian crossing locations, in transit zones, where there are concerns about personal security, and in where adjacent land uses support pedestrian activity.
Street furniture	Benches, bus shelters, bicycle parking and signs and maps (wayfinding) are all encouraged to support pedestrian activity and comfort.
Driveways	Minimize the number of driveways that cross the sidewalk to support pedestrian safety and establish a continuous sidewalk.
Awnings and weather protection	Encouraged, especially in locations where adjacent land uses support high pedestrian volumes, including transit zones.

Priority Design Features

- Wide sidewalks and planting strips
- Curb bulbs in locations where there is on-street parking
- Street trees and landscaping
- Pedestrian scaled lighting
- Awnings and weather protection
- Signed and/or striped bicycle lanes on designated bicycle routes
- Bike parking in business districts

4.2.1f Industrial Access Streets

Industrial Access Streets are arterials and non-arterials that are adjacent to industrial and manufacturing land uses. They are designed to accommodate significant volumes of large vehicles such as trucks, trailers, and other delivery vehicles.

Street Design Features	Character
Roadway Section	1-3 travel lanes
On-street parking	Load zones in locations to accommodate truck delivery.
Truck route signage	Signage is encouraged that directs trucks to destinations such as Port facilities, intermodal rail yards, the regional freeway network and to Seattle's manufacturing and industrial centers.
Sidewalk width	Sidewalk width must meet minimum requirements and may be wider if sufficient right-of-way exists once vehicle access needs are addressed. Additional sidewalk width is encouraged in the vicinity of transit zones.
Street trees and landscaping	A planting strip with low landscaping or high branching trees is encouraged to support freight mobility and to provide separation between moving traffic and pedestrians. Tree limbs should not interfere with truck movements.
Bicycle lanes	Parallel facility is recommended to accommodate bicycle connections.

Priority Design Features

- Truck route signage
- Load zones to support delivery activities
- Low landscaping or high branching trees in planting strips

4.2.1g Green Streets

Green Streets are designated on a number of non-arterial streets within Downtown Seattle. Landscaping, historic character elements, traffic calming, and other unique features distinguish Green Streets from other Street Types. Refer to [Chapter 6.2 Green Streets](#) for a complete description of right-of-way improvements on Green Streets.

Street Design Feature	Character
Roadway Section	1-3 travel lanes
Curb bulbs	Use in combination with on-street parking to support pedestrian activity at corners, shorten crossing distances and slow speeds for turning vehicles.
Bus bulbs	Appropriate in locations with high transit ridership. Impacts to on-street parking should be considered.
On-street parking	On-street parking may be appropriate to support short-term customer access, but should be limited to allow for pedestrian facilities.
Bicycle routes	Bicycles share the road with motor vehicles on these slow speed, non-arterial streets.
Sidewalks	Wide sidewalks support pedestrian activity and are a high priority.
Street trees and Landscaping	Wide planting strip or double rows of street trees with mature street trees and landscaping enhance the street for pedestrians, while maintaining adequate and comfortable sidewalk width.
Pedestrian scaled lighting	Pedestrian scaled lighting that lights the sidewalk and provide a consistent vertical design element to the streetscape.
Street furniture	Benches, bus shelters, bicycle parking and signs and maps (wayfinding) are all encouraged to support pedestrian activity and comfort. Consistent design among street furniture elements can enhance the streetscape and should be considered.
Driveways	Driveways that cross the sidewalk are not encouraged.
Awnings or other weather protection	Appropriate in locations where adjacent land uses support high pedestrian volumes, including transit zones.

Priority Design Features

- Wide sidewalks and planting strip
- Tight curb radii (and curb bulbs when there is on-street parking)
- Curb bulbs in locations where there is on-street parking
- Street trees and landscaping
- Driveways not encouraged in order to create a continuous sidewalk
- Pedestrian scaled lighting
- Street furniture
- Awnings and weather protection

- Bike route shared with motor vehicles

4.2.1h Neighborhood Green Streets

Neighborhood Green Streets may be any non-arterial street outside of Downtown Seattle. Similar to Green Streets, Neighborhood Green Streets emphasize pedestrian facilities, landscaping, historic character elements, traffic calming, and other unique features. Refer to [Chapter 6.2 Green Streets](#) for a more complete description of right-of-way improvements on Neighborhood Green Streets.

Street Design Feature	Character
Roadway Section	1-2 shared lanes plus parking on one side.
On-street parking	On-street parking may be appropriate to support short-term customer access, but should be limited to allow for pedestrian facilities.
Bicycle routes	Bicycles share the road with motor vehicles on these slow speed, non-arterial streets.
Sidewalks	Wide sidewalks or walkways in areas without curbs support pedestrian activity and are a high priority.
Street trees and landscaping	Wide planting strip or double rows of street trees with mature street trees and landscaping enhance the street for pedestrians.
Drainage	Natural drainage systems are encouraged in creek watersheds. Refer to Chapter 6.4 Green Stormwater Infrastructure for more detail.
Pedestrian scaled lighting	Pedestrian scaled lighting that lights the sidewalk and provide a consistent vertical design element to the streetscape.
Street lighting	Pedestrian scaled lighting that lights the sidewalk, especially on streets leading to schools, community centers or transit stops.
Street furniture	Benches, bus shelters, bicycle parking and signs and maps (wayfinding) are all encouraged to support pedestrian activity and comfort. Consistent design among street furniture elements can enhance the streetscape and should be considered.
Driveways	Driveways that cross the sidewalk are not encouraged.
Awnings or other weather protection	Appropriate in locations where adjacent land uses support high pedestrian volumes, including transit zones.

Priority Design Features

- Walkways and planting strip
- Street trees and landscaping
- Driveways not encouraged in order to create a continuous sidewalk
- Natural drainage encouraged
- Pedestrian scaled lighting
- Street furniture
- Awnings and weather protection
- Bike route shared with motor vehicles

[continue to Chapter 4.3»](#)

Design Criteria

4.3 Design Criteria General Notes



Conceptual sketch of the public right-of-way in a neighborhood business district showing underground utilities.

- As described in [Chapter 4.1.2: City of Seattle Standard Plans and Specifications](#), all elements of the public right-of-way shall be designed and installed according to City of Seattle Standard Plans and Specifications for Road, Bridge and Municipal Construction, most current edition. Please note that each Standard Plan includes one or more related Standard Specification references.
- The **Design Criteria** presented in this chapter constitute a set of requirements for the design, construction and maintenance of improvements within public rights-of-way.
- The **Design Considerations** presented in this chapter are not requirements, but do present information that is important to consider in the design, construction and maintenance of improvements within public rights-of-way.
- Client Assistance Memos (CAMs) developed by DPD, SDOT and SPU are available [on line](#), and at the Applicant Service Center at DPD. Copies of SDOT's CAMs are also available at the SDOT Street Use Counter. Get more information about the [Applicant Service Center](#) or [contact them](#) directly.
- Please note that revisions to information in this Manual and related links are completed on a regular basis; it is the applicant's responsibility to make sure to reference the most current documents. In the case that a document has been revised more recently than the update cycle for this Manual; the most current documents supersedes the information provided in this Manual.
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4.4 Grading

4.4.1 Definition

Complete and proper street grading can be a challenge in Seattle because of steep slopes and variable topography. Construction of street improvements requires grading the right-of-way to the [standard design cross section](#) and below the maximum street grades. SDOT must approve street grades for permanent improvements of each street and alley to minimize adverse impacts on adjacent private property.

Private developments must be designed to accommodate a planned permanent street grade that when fully improved with pavement, curbs, and sidewalks, the street grade will not:

- Result in driveways that are too steep;
- Require retaining walls to protect foundations and landscaping; and
- Create the possibility of an inaccessible or unsafe condition.

4.4.2 Design Criteria



Grading for Standard Design Cross Section : The standard design cross section consists of a crowned roadway centered in the right-of-way, sloping down at 2% from the crown to the gutter line, with a 6-inch high curb and a 2% slope up from the top of the curb to the right-of-way line. See the standard design street details in [Figure 4.1: Design Cross Section](#). New development shall be designed to accommodate the standard design cross section.

Centerline Profile: The centerline profile shall have a constant slope from cross-street to cross-street, with vertical curves as needed at street intersections. Additional slope changes within the block are permitted only when a constant slope cannot be obtained or when needed to accommodate street drainage.

Maximum Slope: The project shall be designed so that any new grading on site will not exceed the maximum slope permitted if it becomes necessary in the future to adjust site grades to accommodate grading for street improvements. The maximum slope permitted without a retaining wall is two horizontal to one vertical (2H:1V). Grades steeper than this require installation of an approved retaining wall or structure.

Survey: Because of the relationship between street grades and site grades, it is essential that survey information for both on-site and off-site improvements be based on NAVD-88 datum, using City of Seattle bench marks and monuments as reference points. When no profile has been established for the streets abutting and leading to the development site, the developer shall provide a survey of the street area by a licensed surveyor for the purpose of establishing the proposed centerline profile. SDOT must approve the centerline profile of the street and accompanying centerline elevations proposed by the developer's professional civil engineer.

The survey shall extend the full length of the block plus 50 feet on either side, show adequate cross section, and be based on NAVD-88 Datum. Include NAVD-88 marks with id numbers, descriptions, locations and elevation. Get more complete information on [survey requirements](#).

Maximum/Minimum Roadway Grade: The following tables show crown elevations along the centerline of a traveled way.

Street Classification

Maximum roadway profile grade permitted

Principal Arterials	9%
Commercial Access Streets	9%
Collector Arterials	10%
Minor Arterials	10%
Residential Access Streets	17%
Alleys	17%
Surface Material	Minimum roadway centerline profile grade permitted
Asphalt roadway	1%
Concrete roadway	½%

If the grade of the street or alley exceeds 10%, asphalt concrete or Portland cement concrete is required, crushed rock will not be permitted. If the proposed roadway cannot be kept below the maximum slope the project may meet the street improvement exception criteria defined in the Land Use Code, SMC 23.53.

Vertical Alignment: The design and placement of vertical curves must take into account ADA compliant crosswalk slopes and curb ramps. The placement of the point of vertical curvature (PVC) at intersections must be carefully considered.

Vertical curves shall be based on appropriate design standards (City and County Design Standards, AASHTO or WSDOT Design Manual) and shall not be less than the following minimum vertical curves:

Roadway Posted Speed Limit	Minimum Vertical Curve
35 mph or less	3 times the design speed (V d) where V d is no less than the posted speed limit
Greater than 35 mph	3 times the design speed (V d) where V d is 5 mph greater than the posted speed limit

Horizontal Alignment: Design speeds are established by the City Traffic Engineer based on current engineering standards and practices. A minimum horizontal radius with a maximum 4% super elevation for urban conditions are as follows:

Design Speed	Design Radius
20 mph	125 feet
25 mph	205 feet
30 mph	300 feet
35 mph	420 feet
40 mph	565 feet

Grading for Construction: The design of on-site improvements such as foundations, footings, floor elevations, building entries, driveways, and utility service connections shall be compatible with all grading that will be required to install future street improvements. This is especially critical to project design when the building and doorways are at or near the property line, where driveway slopes are at or near the maximum allowed, and where building height is at or near the maximum permitted by the Land Use Code.

4.4.3 Design Considerations



- Consult the standard profiles in the early stages of project development. Profiles for many

Seattle streets have already been determined by SDOT, including some streets not yet open to traffic. These profiles may be a helpful starting point in designing profiles for unopened rights of way. The established street profiles are available at the [SPU Record Vault](#). Consideration of private and public infrastructure that has been built since the profiles were established must also be taken into account.

- In general, the point of vertical curvature (PVC) shall not encroach in to a cross street.
- Foundations and footings shall be designed and constructed so they will not be uncovered or undermined by future grading required for street improvements.
- Grading at intersection approaches should consider appropriate transitions to avoid vehicles bottoming out.

4.5 Design Cross Section

The design cross section defines the location of the standard right-of-way elements (existing and proposed) for a project location. The standard elements are illustrated in [Figure 4-1: Standard Design Cross Section](#) and include but are not limited to: right-of-way line and width, roadway width, planting strip and shoulder, catch line, existing and new grade, slope line, sidewalks, street tree, curb, gutter, crown, depression line, thickened edge, pavement, water main, sanitary sewer and storm drain.

4.5.1 Links to Standard Plans and Specification

[030 Desirable Locations for Utilities \(Residential Street\)](#)
[400 Half Section Grade](#)
[401 Residential Pavement Section](#)
[402 Commercial Arterial Section](#)
[403 Roadway Cement Concrete Alley Pavements](#)

4.5.2 Design Criteria

Required Cross Sections for Street Improvement

Plans: SDOT requires that street improvement plans include a typical dimensioned cross section. Proposed street and alley improvements require dimensioned cross sections as follows:

- at all driveways; and
- at all building entrances located within 10 feet of the property line.

In addition, if a new curb, street widening, roadway alignment, or roadway profile changes are being proposed, cross sections shall be provided for every 25 feet along the length of the improvement.

All cross sections shall be stamped and signed by the Project Design Engineer.

Description of Required Elements : The design cross sections shall describe the following:

- existing and proposed grades, with spot elevations provided at the centerline;
- existing edge of pavement;
- gutter line or flow line;
- top of curb or thickened paved edge;
- back of sidewalk;
- property lines;
- catch lines; and
- any retaining walls or rock facing.

Elevations: Existing elevations shall be based on current [survey data](#).

Cross Slopes: The standard cross slopes are identified in the table below.

	Standard	Minimum	Maximum
Street	2%	1%	4%
Alley	4.7%	2%	6%
Sidewalk and Planting Strip	2%	0.5%	2%

In areas where the pavement width is being added to an existing street or must vary to accommodate existing infrastructure, the slopes may vary within the minimum and maximums provided above. When an alley is part of an ADA accessible route, a portion or the entire the cross slope may need to be adjusted to meet current ADA standards.

4.5.3 Design Considerations



Whenever possible, street improvements shall conform to the standard right-of-way cross section described in [Figure 4-1: Standard Design Cross Section](#).

4.6 Roadway Width

The term “roadway” refers to the area of the street right-of-way used for vehicular travel, including cars, trucks, bicycles and transit. The roadway may also include a number of additional uses such as on-street parking, curbed structures such as medians and crossing islands, and utility access points.

4.6.1 Standard Plan and Specification References

- [Standard Plan 400: Half Section Grading](#)
- [Standard Plan 401: Residential Pavement Sections](#)
- [Standard Plan 402: Commercial and Arterial Pavement Sections](#)
- [Standard Plan 405: Types of Joints for Concrete Pavement](#)
- [Standard Plan 410: Type 410 Curb](#)
- [Standard Plan 411: Curb Joints and Dowels](#)

4.6.2 Design Criteria



Roadway width on streets with curbs: Where there is a curb, the roadway width is the curb face to curb face width of the street.

Typical Design Cross Sections are provided in the figures below.

Figure 4-2: Crushed Rock Improvement

Figure 4-3: Crushed Rock Improvement Industrial Zones

Figure 4-4: Crushed Rock Edge Detail

Figure 4-5: Asphalt Concrete Pavement: New Pavement For Streets without Existing Hard Surface

Figure 4-6: Asphalt Concrete Pavement: New Pavement For Streets without Existing Hard Surface in Industrial Zones

Figure 4-7: Asphalt Thickened Edge Detail

Figure 4-8: Asphalt Concrete Pavement: Pavement Widening For Streets Existing Hard Surface Streets without Sidewalk

Figure 4-9: Pavement Widening for Existing Hard Surface Streets

Figure 4-10: Curb and Sidewalk Improvement: New Pavement For Streets Without Existing Hard Surfaces

Figure 4-11: New Concrete Sidewalk with Existing Curb

Figure 4-12: Full Improvements for Newly Dedicated Streets

Figure 4-13: Alley Improvement

Minimum pavement width —non-arterial streets: The minimum roadway width varies per Land Use Zone per the table below.

Zone	Standard Roadway Width
Low Density Residential	
SF, LDT, L1, NC1	25 Feet
Mid-Density Residential and Mixed Commercial / Residential	
L2, L3, L4, NC2-30, NC2-40, NC2-65	32 Feet
High Density Residential, Mixed Commercial / Residential, and Industrial	
NC3, MR, HR	36 Feet
C1, C2, IB, IC, IG1, IG2	40 Feet

If a project is on a block which is split into more than one land use zone category, the zone category with the most frontage determines the minimum width required. If the land use categories have equal frontage, the one with the greater requirement shall be used to determine the minimum street width.

When street improvements are required, project applicants shall construct the half street on their side of the-right-of way, plus ensure that a minimum of one - twelve foot paved travel lane and 5 feet of graded shoulder exist on the other side of the centerline. When new pavement is required for this travel lane it shall include a 2-foot wide thickened edge for drainage (see figures above).

Minimum pavement width — arterial streets: Minimum pavement width requirements for arterial streets must meet the minimum design standards given in the Washington State “[City and County Design Standards](#).” Refer to Appendix A: [Arterial](#) List for existing and required right of way and roadway widths

for arterials.

Projects with Reduced Requirements: Projects with reduced requirements must provide the minimum roadway width specified in the land use code, plus a thickened edge if necessary to control drainage. Projects with reduced requirements in industrial zones should provide the minimum roadway width to meet Fire Code requirements. 28 feet is recommended by SDOT.

Lane width for arterials: The following standard arterial lane widths are used in the design of arterials and are compliant with the [City and County Design Standards](#):

Lane Type	Standard Lane Width
Parking lane	8 feet
Parking lane on bus route	10 feet
Through traffic lane	11 feet
Curb lane	12 feet
Bus only lane	12 feet
Turn only lane	12 feet
Curb lane (vehicle/bicycle)	14 feet

Road taper and transitions: For permanent roadway tapers, the standard taper length for the narrowing from two lanes to one lane or offsetting of a lane is:

- $L = WS^2/60$, where L is the length of taper in feet, W is the lane offset in feet, and S is the design speed in miles per hour.
- On non-arterial streets, temporary asphalt tapers are allowed for narrowing a single lane when additional street improvements are anticipated in the future.
- On non-arterial streets, the standard taper for temporary tapers is 25:1.

4.6.3 Design Considerations



Location of roadway within the right-of-way: The roadway is typically centered in the right-of-way, but may be offset due to topography, existing utilities, or limited right-of-way width.

Considerations for developing minimum roadway dimensions should be made within the context of how the entire right-of-way will be developed over time. This includes public safety; available right-of-way; land use and zoning, current and projected roadway capacity; pedestrian facilities, landscaping (including natural drainage where allowable), bicycle facilities, freight and transit needs, and other intended uses of the public realm.

Considerations for establishing lane widths should be influenced by street type designations, street

classifications, and the need to have a reasonable balance among competing uses in the right-of-way. They are as follows:

- Lane widths need to support large vehicle movements such as trucks and transit. Wider lanes should be considered on [Regional Connector](#) and [Industrial Access](#) street types.
- Wide center turn lanes should be considered on streets that have high volumes of truck turning movements including intersections with one or more legs that are designated as [Major Truck Streets](#) or Industrial Access streets.
- Wide curb lanes should be considered on streets that have high volumes of transit service.
- On [Commercial Connector](#) streets, lane width should support travel demand. Areas where high pedestrian activity is occurring, consider options that keep lanes as narrow as possible. On streets with high levels of transit service or that accommodate high volumes of trucks and transit vehicles, consider options that have wider lane widths.
- Narrow lanes support slower vehicle speeds, and minimize overall roadway width which supports pedestrian activity. Narrower lanes can be challenging for larger vehicles to navigate, especially on roadways that carry high volumes of trucks and transit vehicles. Narrower lanes should be considered along [Local Connectors](#), [Mixed Use](#), [Main Street](#) and [Green Street](#) street types. For Green Streets and [Neighborhood Green Streets](#), keep lane widths narrow and limit the number of lanes to minimize the crossing distance for pedestrians as much as possible.

Lane widths on designated bicycle routes shall be evaluated based on the lane width requirements given in the [City and County Design Standards](#) and WSDOT Design Manual.

4.7 Roadway Pavement

The most widely used pavement materials for Seattle streets and alleys are portland cement concrete (rigid pavement) and asphalt concrete (flexible pavement). Slag cement as a substitute for a portion of Portland cement in concrete may be allowed or, in some instances, required.

4.7.1 Standard Plan and Specification References

[Standard Specification 2-09: Subgrade Preparation](#)
[Standard Plan 401: Residential Pavement Sections](#)
[Standard Plan 402: Commercial and Arterial Pavement Sections](#)
[Standard Plan 403: Cement Concrete Alley Pavements](#)
[Standard Plan 405: Types of Joints for Concrete Pavements](#)

4.7.2 Design Criteria

Pavement Type: New pavement shall be of the same type (rigid or flexible) as the existing pavement when a street is being widened, extended, or replaced unless otherwise directed by Seattle Department of Transportation.

Pavement Depth: Pavement depth is determined by a pavement design and is based on the zoning, number and type of heavy vehicles per day using or expected to use the roadway, the strength of subgrade, and the type of pavement being designed. Required pavement sections are provided in the [Pavement Opening and Restoration Rules](#) (PORR). The pavement sections provided in the PORR were developed to accommodate the varying design conditions (soil types, drainage conditions, etc) found throughout the City of Seattle and are fairly conservative.

If a project proposes to use a pavement section less than the one specified in the PORR, then a

pavement design must be approved by SDOT. The design should be based on specific site criteria and the design parameters described below. For designed pavements, subgrade testing and analysis by a geotechnical engineer, a traffic analysis, and pavement design calculations are required. Subgrade strength tests (CBR, k-value, R-value, etc.) shall be performed by a qualified geotechnical engineer.

Alley Pavement Depth:

Land Use Zone	Pavement Type and Depth
1 or 2 new dwelling units	6" crushed rock
SF, LR1, LR2, LR3, , MR, HR	6" Portland cement concrete or 3" asphalt concrete over 6" crushed rock
NC1, NC2, NC3	8" Portland cement concrete or 3" asphalt over 7" crushed rock
C1, C2, IB, IC, IG1, IG2 and Downtown	8" Portland cement concrete

Pavement Design: Default Design Parameters for New Pavement

Initial Serviceability Index (P _i)	4.5
Terminal Serviceability Index (P _t)	2.0
Reliability	90%
Asphalt Design Life	20 years
Asphalt Standard Deviation	0.45
Structural Coefficient Asphalt HMA Class ½" and Class 1"	.39
Structural Coefficient Mineral Aggregate Type 2, Crushed Rock	0.13
Concrete Design Life	40 years
Concrete Standard Deviation	0.35
Joint Load Transfer Coefficient	3.2
Modulus of Concrete Rupture	650 psi
Modulus of Concrete Elasticity	4.0 x 10 ⁶ psi
Drainage Coefficient	1.0

The inputs in the table above should be used as a starting point for pavement design and adjusted as needed to reflect the specific project conditions. Pavement design reports should describe how each input value was developed. Pavement design on roadways that accommodate a high volume of heavy vehicles, including [Major Trucks Streets](#), streets included in the [Transit Classifications](#), [Regional Connectors](#), [Commercial Connectors](#), and [Industrial Access](#) streets shall be designed using the 1993 AASHTO Guide for the Design of Pavement Structures, 4th Edition with 1998 Supplement.

Panel Layout: When new PCC pavement is proposed or required, the panel layout at all intersections and on arterial streets must be shown on the plans. Additionally, panel layouts may be required for non-arterial streets with non-standard street widths. Longitudinal joints must be placed so that they are not within the wheel path of vehicles or in an area used by bicycles. The joints, dowel bars, and tie bars shall be per Standard Plan 405a through 405d.

Pavement subgrade: The pavement shall be placed on a prepared subgrade of properly compacted suitable material as determined by Seattle Department of Transportation (SDOT).

Compaction of subgrade: The subgrade must be compacted to at least 95% of maximum dry density for

all street and alley improvements. Subgrade materials that cannot be compacted to this density shall be over-excavated (removed) and the subgrade replaced with acceptable material.

Soil tests: Soil density tests may be required during construction to show that the required degree of compaction has been obtained.

Limits of pavement replacement and restoration: The extent of new pavement to be installed on roadways with existing pavement depends on required pavement width and existing pavement conditions. Specific rules and requirements for new pavement are detailed in the [Street and Sidewalk Pavement Opening and Restoration Rules](#).

Existing and proposed concrete panel joints shall be shown on street improvement plans for all intersections, arterial streets and when the pavement restoration will exceed one block. The extent of pavement replacement shall be depicted on street improvement plans by shading panels, or portions of panels, to be replaced.

4.8 Intersections

The design criteria in this section address elements that are typically located in an intersection. Intersections are a challenge to design and operate because they are the location where traffic turns, pedestrians cross the street, bicycles must navigate vehicle turning movements, the roadway may expand to accommodate more capacity, and medians may become turn pockets.

4.8.1 Links to Standard Plans and Specifications

[Standard Plan 422a: Curb Ramp Details](#)

[Standard Plan 422b: Curb Ramp Details](#)

[Standard Plan 422c: Angled Curb Ramp Details](#)

4.8.2 Design Criteria

Curb ramps: Curb ramps are located at intersections and other legal crossings to facilitate wheelchair and pedestrian street crossings. All alteration or new construction projects must follow current ADA requirements. When a new ramp is installed on one side of the street, per [State Law \(RCW 35.68.075\)](#) an ADA compliant companion ramp shall be installed on the opposite side of the street. If project impacts the legal crossing path, curb ramp or the landing then curb ramps must either be retrofitted to comply current ADA requirements, or new ramps must be constructed that meet the current standard. Refer to the PORR for thresholds that require ADA upgrades in the curb return area.

Utility location in intersections: Gratings, access covers, and other appurtenances shall not be located on curb ramps, landings, blended transitions, and gutters within the pedestrian access route.

Curb ramp locations: Curb ramps are permitted only at legal crosswalk locations, at intersections, and at approved marked crosswalk locations. Legal crosswalks at intersections are defined by projections of the curb and back of sidewalk lines right-of-way lines across the street or by a line 10 feet behind the face of the curb or roadway edge when there is no sidewalk. Curb ramps at any other location in the public right-of-way are subject to the approval of the Director of Transportation.

Curb radius : In general, standard curb radius for street intersections are as follows:

When Vehicular Turn is Illegal	10 feet
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Arterial to Residential Access	20 feet
Residential Access to Residential Access	20 feet
Arterial to Arterial	25 feet
Arterial to Commercial Access	25 feet
Commercial Access to Commercial Access	25 feet
High Volume Truck and/or Bus Turns	30 feet

SDOT evaluates curb radii based on the type and volume of activity at the intersection. In all cases, with the exception of a location where a vehicle turn is illegal, SDOT will evaluate the curb radii based on a Single Unit (SU) vehicle with a 42 foot turning radius. An applicant may propose tighter curb radii, and will need to provide supporting documentation and have the request approved by the City Traffic Engineer. Refer to Chapter [4.8.3 Design Considerations - Intersections](#) for more information about curb radii.

Emergency vehicle signal priority: Signal priority for emergency vehicles will be included at all new signal installations, and is typically included for traffic signals that are being modified or updated.

4.8.3: Design Considerations



Layout and grading of intersections: The layout and grading of an intersection must be accomplished so that water flows and the intersection is safe and accessible by pedestrians, meets ADA requirements, and is safe for bicycle use.

Curb ramp considerations: Curb ramps should be placed to align with the adjacent crosswalk. Issues to consider include location and placement of utility poles, hand holes, vaults, inlets, catch basins and signal controller equipment.

Curb radii considerations: Curb radii should be designed based on the location and use of the intersection location and should balance the need to accommodate safe large vehicle movements with pedestrian safety:

- Tighter turn radii are appropriate at intersections that have high volumes of pedestrian and cyclist crossings to support adjacent land uses. These include [Main Streets](#), [Mixed Use Streets](#), [Local Connector Streets](#), and at intersections in Urban Centers and Villages.
- Wider turn radii are typically required at intersections that experience frequent, high volumes of truck and transit vehicle turns. These include [Regional Connectors](#), [Major Truck Streets](#) and streets that are part of the [Transit classifications](#). In these locations, curb radii will be evaluated based on the following standard design vehicle: Single Unit (SU) with a 42' turning radius. If for some reason, SDOT would anticipate a larger vehicle used in a site, a radius evaluation based on this larger vehicle would be required. Examples of typical turning templates would include a SU, WB-40, WB-50, WB-60 and WB-62.
- In locations where there is on-street parking in the receiving lane, consideration of tighter curb radii may be appropriate and still allow for safe larger vehicle movements.

Transit signal priority: Traffic signals may be timed to respond to certain conditions at intersections. Transit Signal Priority, transit signal queue jump and other related treatments may be desirable along [Regional Connector](#), [Commercial Connector](#) and [Industrial Access](#), [Main Street](#) and [Local Connector](#) street types, with high transit ridership.

Pedestrian signal priority: Traffic signals at intersections along [Local Connector](#), [Mixed Use](#), [Main Street](#) and [Green Street](#) street types should consider enhancing pedestrian crossings including

pedestrian walk phases on all legs of the intersection, countdown and/or audible signals where appropriate and elimination of pedestrian push buttons.

4.9 Driveways

A driveway is the portion of the street, alley or private property which provides access to, an off-street parking facility using a curb cut. Portions of the driveway that are in line and adjacent to sidewalk are defined as a sidewalk.

4.9.1 Links to Standard Plans and Specifications

[Standard Plan 430: Type 430 Driveway](#)

[Standard Plan 431: Concrete Driveway Placed with Sidewalk Construction](#)

4.9.2 Design Criteria



Curb cut and driveway widths: specified in the Land Use Code as follows:

- Overall requirements:
 - SMC 23.54 Parking Space Standards
 - SMC 23.53 Access Easement Standards
- Variations to standards:
 - SMC 23.44 Single Family Parking Location and Access
 - SMC 23.45 Lowrise Parking and Access
 - SMC 23.45 Midrise Parking and Access

Driveway on private property: the portion of the driveway on private property shall meet the requirements specified in the Land Use Code (refer to references above).

Driveways: Driveways shall be installed per the standard plans. The public sidewalk will have the right-of-way over private crossings. Driveways will be designed to meet ADA requirements for an accessible route.

Vertical curves: In accordance with the land use code, appropriate crest and sag curves must be accommodated in the driveway design. The vertical curves and grade breaks shall begin at the property line, not in the right-of-way.

Driveway elevations at the property line shall meet the elevations shown on the [Building Grade Sheet](#) and meet the Land Use Code driveway slope and vertical curve requirements. The driveway shall be designed so that any changes in driveway slope that may be needed as a result of future grading in the right-of-way will comply with driveway requirements specified in the Land Use Code.

Driveway Slope: The standards for the driveway slope are located in [SMC 23.54.030](#).

Parking Space Standards: Refer to [SMC 23.54.030](#) Parking Space Standards

[Figure 4-14: Driveway Slope](#)

[Figure 4-15: Maximum Grade Curvatures for Driveways: Crest Vertical Curve Figure](#)

[Figure 4-15: Maximum Grade Curvatures for Driveways: Sag Vertical Curve](#)

Driveway edges: When requested, the following elevations at the driveway edges and centerline shall appear on both Building Permit and Street Use Permit plans:

- centerline of street;

- gutter line;
- top of driveway approach;
- back of sidewalk;
- property line;
- garage floor;
- driveway slope; and

In addition, distance from property line to garage floor elevation shall be shown.

4.9.3 Design Considerations

Driveways should be placed sufficiently far from crosswalks to provide enough sight distance into the crosswalk so that drivers can see pedestrians approaching within the crosswalk and so that vehicles do not block the crosswalk when exiting a driveway.

4.10 Curbs

Curbs are a significant component of the right-of-way. They provide multiple functions including delineating the space between the roadway and streetscape and channeling surface water into drainage inlets. New and replacement concrete curbs shall be constructed according to the Seattle Standard Plans referenced below.

4.10.1 Links to Standard Plans and Specifications

[Standard Plan 401: Residential Pavement Sections](#)
[Standard Plan 402: Commercial and Arterial Pavement Sections](#)
[Standard Plan 410: Type 410 Curb](#)
[Standard Plan 411: Curb Joints and Dowels](#)
[Standard Plan 412: Extruded Curb](#)
[Standard Plan 413a: Traffic Curb Pre-cast Cement Concrete 3 foot and 4 foot Sections](#)
[Standard Plan 413b: Traffic Curb Pre-cast Cement Concrete 8 foot Section and Radial](#)

4.10.2 Design Criteria

Curb type: the curb type used depends on the type of pavement being installed and shall be in accordance with [Seattle Standard Plans 401 and 402](#). In general, a Seattle Standard Plan 410B curb and gutter is used with flexible pavement and a [Seattle Standard Plan 410C](#) doweled curb is used with rigid pavements.

Curb height: Seattle's standard curb height is 6 inches. The curb height may be reduced to a minimum of 4 inches if necessary to obtain adequate sidewalk cross slope.

Permanent curb location: When an existing curb and sidewalk are removed in conjunction with demolition and construction, the new curb shall be placed in the permanent location. The permanent curb location is the edge of the design roadway width in [Ch. 4.6.2 Design Criteria](#) .

Flowline Elevation: The flowline elevation should be based on a best fit profile of the centerline of the street and a projected cross slope of 1-4% (2% preferred).

Pedestrian bulbs: Pedestrian bulb standards have been established to ensure the public's safety and allow for street sweepers to negotiate curb line variations. The curb radii used for a 6 feet pedestrian bulb is 10 feet for the radius nearest to the travel lane and 20 feet for the radius closest to the right-of-way margin.

Parking curb setbacks: The installation of a parking curb setback in conjunction with a development proposal requires the approval of both the SDOT and DPD Directors and must meet the requirements in [SMC 15.06.050](#). Parking curb setbacks are not permitted on streets where parking is allowed in the existing curb lane. DPD reviews the curb setback from a land use perspective and SDOT reviews it from a traffic operations and street maintenance perspective. Refer to [Figure 4-17: Parking Curb Setback](#) for specific design specifications.

Construction of new curb: When new curb or curb and gutter are constructed, it shall be located in the permanent location required for the adjacent land use zone. Additional paving shall be provided between the existing edge of pavement and the new curb, as needed. In addition, a portion of the existing roadway pavement abutting the site shall be reconstructed as needed when the existing pavement is in poor condition (indicating inadequate subgrade or pavement strength), when the [cross slope](#) of the existing pavement is too flat, or when the street was not graded to the [standard design cross section](#) prior to paving.

In no case shall the grade in the pavement or gutter be such that allows ponding of water.

4.11 Sidewalks

SDOT's goal is to provide an interconnected network of sidewalks and walkways that allow pedestrians to safely access their destinations including transit stops, places of employment, recreation facilities, schools and residences.

SDOT recognizes and supports the range of benefits a well-designed streetscape provides for all pedestrians, including people with disabilities. For this reason, SDOT reviews streetscape design elements very carefully to ensure that the materials, dimensions and design elements meet safety and accessibility requirements. In addition to the aesthetic and practical benefits of a well-designed streetscape, SDOT must meet state and national safety and access standards for streetscape design.

The streetscape is broken into three parts, the Frontage Zone, Pedestrian Zone and Landscape/Furniture Zone plus Curb. The locations of these zones are defined as follows:

The Landscape/Furniture Zone (including the curb) is defined as the area between the roadway curb face and the front edge of the walkway. The minimum width of this zone is 5½ ft feet except in locations adjacent to high and intermediate capacity transit stations. Objects in the landscape/furniture zone must be setback a minimum of 3' from the face of the street curb. This zone buffers pedestrians from the adjacent roadway and is the appropriate location for street furniture, art and landscaping. It is also the preferred location for street trees, and other elements such as pedestrian lighting, hydrants and below grade utility hatch covers. Transit Zones are also located in the landscape/furniture zone and are designated for transit customer waiting, loading and alighting and may include transit signage, shelters, benches, litter receptacles, and pedestrian scaled lighting. Any landscaping or other objects proposed for this zone must comply with City of Seattle permitting requirements and design criteria.

The Pedestrian Zone is the area of the sidewalk corridor that is specifically reserved for pedestrian travel. The minimum width of this zone is 6 feet, except in locations adjacent to high and intermediate capacity transit stations. Street furniture, plantings, and other fixed items should not protrude into travel routes.

The Frontage Zone is defined as the area between the property line and walkway. Where sufficient right-of-way exists, a frontage zone should be provided that is a minimum of 2 feet wide, except in locations adjacent to high and intermediate capacity transit stations. Frontage zones can accommodate sidewalk cafes, store entrances, retail display or landscaping. A frontage zone is not needed if the sidewalk corridor is adjacent to a landscaped space.

Streetscape Zones



Landscape/Furniture Zone

Pedestrian Zone

Frontage Zone

4.11.1 Links to Standard Plans and Specifications



[Standard Plan 420: Concrete Sidewalk Details](#)

[Standard Plan 421: Sidewalk with a Monolithic Curb](#)

[Standard Plan 422: Curb Ramp Details](#)
[Standard Plan 430: Type 430 Driveway](#)
[Standard Plan 431: Concrete Driveway Placed with Sidewalk Construction](#)

4.11.2 Design Criteria



Standard construction of sidewalks: A standard sidewalk is constructed of Portland cement concrete and is located at least 5½ feet from the face of the curb and 2 feet from the property line. The sidewalk may be located closer to the property line when necessary to attain the minimum 5 foot planting strip width and 6 foot sidewalk.

Construction of new sidewalks: On streets where the existing sidewalks are greater than 6 feet in width, the new sidewalk shall match the existing sidewalk width. In residential zones, when more than half the block on the project side of the street already has a sidewalk and planting strip, new sidewalks and planting strips may conform to the existing location, unless otherwise direct by SDOT. On streets in non-residential zones where the existing sidewalk is not in the standard location, SDOT shall determine the location of any new sidewalk or sidewalk replacement, based on the need for street trees and the desire to retain existing neighborhood character. New concrete sidewalks may not be installed without a curb. If a concrete sidewalk is required and there is no curb, a concrete curb shall be installed in the [permanent location](#). In many cases, this will necessitate the installation of additional [roadway pavement](#) and [drainage facilities](#).

Sidewalk width: Sidewalks shall be a minimum of 6 feet of unobstructed, linear sidewalk space that is free of street furniture, street trees, planters, and other vertical elements such as poles, fire hydrants and street furniture. Point obstructions such as poles and fire hydrants may encroach into the sidewalk area, but the sidewalk must have 5 feet clear width remaining.

Wider sidewalks are required in some cases consistent with the Land Use Code or when the sidewalk must be placed adjacent to the curb because of topography or right of way limitations. Sidewalks may be located adjacent to the curb when there is inadequate right of way or in steep topography areas where grading to a full street width would cause too great of an impact. Steep topography areas are defined by an 8-foot or more elevation difference between the existing grade and the established street grade at the right of way line. Sidewalks adjacent to the curb on non-arterial streets shall be a minimum of 8 feet wide. Sidewalks adjacent to the curb on arterial streets outside of downtown shall be a minimum of 10.5 feet wide.

Sidewalk path of travel: Sidewalks should keep as much as possible to the natural path of travel parallel to the improved roadway. Ideally, they will align with the crosswalk. While sidewalks do not need to be perfectly straight, curves that direct the pedestrian away from the natural path should not be introduced solely for aesthetic reasons.

Setback: A three foot distance between vertical objects on the sidewalk and travel lanes in the roadway is required to minimize conflicts with vehicle activity. Relocation of existing utilities may be required to meet clearance requirements.

Clearance from obstructions: The sidewalk shall be clear of all vertical obstructions, such as poles, fire hydrants, street furniture, and other elements for a width of at least 5 feet. These obstructions should be placed in the landscape / furniture zone or behind the sidewalk. Relocation of existing utilities may be required to meet clearance requirements.

Utility access points: Where practical, handholes, vaults, and other utility access points shall be located out of the sidewalk area and in the landscape/furniture zone. Where this is not practical, these access points must match the level of the sidewalk and be coated with a non-slip surface.

Slope: Sidewalk cross slope must be a minimum of 0.5% but may not exceed 2%.

Sidewalk Finish: Sidewalks shall be constructed and finished per the Standard Plans and Specifications. Any other treatments (non-standard scoring patterns, coloring, texturing) must be approved by SDOT and either the design review board or the design commission.

Visibility: No obstructions to pedestrian visibility should be present within 30 feet of an intersection. These include parked cars, street trees, signal control boxes, sandwich boards, utility poles and landscaping mounds.

Variations from standard sidewalk construction: In general, variations from standard sidewalk construction are required to meet ADA requirements. Additionally, on residential streets where natural drainage is being installed, variations will be considered based on planning and design principles defined in [Chapter 6.4 Green Stormwater Infrastructure](#).

Asphalt pedestrian walkways: There may be locations where asphalt walkways are appropriate on non-arterial streets such as industrial zones as specified by the Land Use Code. Please refer to the figure for more detailed information.

[Figure 4-18: Asphalt Pedestrian Walkway](#) - for use in industrial zones only, as allowed by the Land Use Code

[Figure 4-19: Asphalt Pedestrian Walkway 10 Feet or More From Existing Roadway](#) - for use in industrial zones only, as allowed by the Land Use Code

Maintenance responsibility: The area between the curb and property line, including sidewalks, is the maintenance responsibility of the abutting property owner. When the existing sidewalk adjacent to a project is in disrepair or is damaged during construction, it shall be repaired or replaced by the property owner.

Accessibility: Pedestrian facilities shall be designed to allow all users to logically connect to other pedestrian facilities (e.g. – length of sidewalk transitions and placement of objects near walkways). They shall be in compliance with current ADA requirements in all cases. Sidewalks and walkways should be constructed with accompanying curb ramps, including companion ramps, as required by current ADA standards.

Sidewalks in the vicinity of transit stations: Applicants proposing new development in the block adjacent to a high or intermediate capacity transit station must accommodate high volumes of pedestrians in the vicinity as follows.

In the block adjacent to the transit station, the sidewalk shall be 18-25 feet as follows:

- **Frontage zone:** (3 feet) If the project has a plaza or other space accessible to pedestrians and free of obstructions adjacent to the property line, the frontage zone requirement may be waived.
- **Pedestrian zone:** (10-12 feet) The pedestrian zone shall consist of a paved linear walkway that is free from obstructions. The following shall be considered when establishing the dimension of the Pedestrian Zone:
 - Ridership projections for the station;
 - Anticipated pedestrian volumes from adjacent land uses;
 - Right-of-way dimensions;
 - Block length; and
 - Location of bus transfer zones.

SDOT staff will work with the applicant to make the final determination of required sidewalk width.

- **Landscape/Furniture zone plus curb:** (5-10 feet) Landscape requirements for the project defined in the Land Use Code (SMC Title 23) can be met within the Landscape/Furniture Zone (they are not additive). The following shall be considered when establishing the dimension of the Landscape/Furniture Zone:
 - Available right-of-way dimensions;
 - Urban design priorities established by the City or Transit Agency; and,
 - Direction of adopted [Street Design Concept Plan](#) or other adopted plans.
 - Improvements in these zones shall meet or exceed the accessibility requirements defined by ADA as well as applicable local and state standards.

Additional improvements within 1/4 mile of station entrance: SDOT also requires curb ramps with tactile warning strips at legal crosswalks (refer to [Chapter 4.8.2 Intersection Design Criteria](#)) and smooth accessible sidewalks within a quarter mile of the station entrances. SDOT will require the transit agency to assess the conditions within the quarter mile of the station entrance, and add or repair existing sidewalks and curb ramps to provide access to the stations consistent with ADA guidelines. In some cases, consistent with City policy in support of transit oriented development, a project may be allowed to meet the total required sidewalk width and include building columns in between the Pedestrian and Landscape/Furniture Zones. In this scenario, the minimum dimension of clear, unobstructed sidewalk width shall be retained within the Pedestrian Zone.

4.11.3: Design Considerations



Width: Provide adequate sidewalk width, especially at locations such as transit stops where pedestrians can be expected to congregate.

Buffers: Sidewalks and walkways should be buffered from the motor vehicle lane by a planting strip, street furniture, parked cars or a bike lane.

Sidewalks in the vicinity of high and intermediate capacity transit stations: Consistent with the City of Seattle Comprehensive Plan policies that encourage pedestrian access to and from public transit facilities, especially in Urban Centers and Villages, the following shall be considered:

- High and intermediate capacity transit stations have unique needs for pedestrians due to the high volumes of pedestrians exiting stations and onto the adjacent streets. Transit agencies are typically required to size station plazas and waiting areas according to anticipated queuing and exiting volumes. However, the requirements do not typically extend outside the boundaries of the station site.
- The sidewalk on the street fronting the station is the primary location for high volumes of pedestrians congregating, making transfers to other modes or walking to a destination. This first block is where the need for wide sidewalks that are well-buffered from moving traffic is greatest. In some cases, anticipated pedestrian volumes, major pedestrian generators or other special conditions may require the improvements to exceed one block in length (e.g. hospitals, schools, community centers, libraries and parks).
- Additional improvements to pedestrian facilities are needed within a 1/4 mile of the station site to support and encourage safe pedestrian access (e.g. wide sidewalks, buffers, curb ramps).

4.12 Crosswalks

SDOT's goal is to provide an interconnected pedestrian network, including crossing opportunities, that allows pedestrians to safely and comfortably access their destinations including transit stops, places of employment, recreation facilities, schools and residences.

A legal crosswalk exists at every intersection unless it is otherwise signed. Marking the crosswalk is appropriate in some locations, and some marked crosswalks are best accompanied by other treatments such as signs or beacons. SDOT must approve all new marked crosswalks.

4.12.1 Links to Standard Plans and Specifications

[Standard Plan 712: Typical Crosswalk and Stop Line Installations](#)

4.12.2 Design Criteria

Location of legal crosswalks: Legal crosswalks exist at every intersection, unless otherwise signed, regardless of whether they are marked or unmarked.

- **Standard construction of crosswalks:** New marked crosswalks shall be ladder-style crosswalks with the accompanying signing per the [MUTCD](#) and [Standard Plan No. 712](#). Additional marking and signing may be needed based upon the traffic conditions. Marked crosswalks should keep as much as possible to the natural path of travel. Ideally they will align with existing sidewalks. Refer to [Chapter 4.8.2 Curb Ramps](#).
- **Materials:** Marked crosswalks shall conform to Standard Specifications 8-22 and 9-29
- **Site distance:** No obstructions between pedestrian and driver visibility should be present within 20 feet of the legal crosswalk. These include parking, trees, and bus zones.

Variation from standard construction of crosswalks: Textured and/or colored concrete may be considered in certain crosswalk applications. The following design criteria apply:

- **Area of crosswalk:** At least 10 feet wide.
- **ADA-accessible surface:** The surfacing material must be compliant with ADA.
- **Visibility:** A thermoplastic parallel line on either side of a colored or textured crossing maintains visibility. See Standard Plan 712 for Crosswalk marking standards.
- Street lighting upgrades may be necessary.

SDOT Traffic Management Division must approve the use of textured or colored concrete at crosswalk locations.

4.12.3 Design Considerations

The SDOT Traffic Operations Investigation & Implementation section considers each request for a marked crosswalk individually. In most cases, SDOT will wait to see how people use a new facility before making a decision about a marked crosswalk.

Orientation of building entrances to crosswalks: New development (and their pedestrian access points) should be designed to be consistent with the existing roadway operations and pedestrian travel patterns. For example, entrances and access points to new facilities should orient as much as possible towards a legal crosswalk.

This is especially true of facilities where a high volume of pedestrian travel across the street is expected. New development should take into account the location of existing legal pedestrian crossings when designing pedestrian access points. Entrances and access points that orient pedestrians towards

unsuitable crossing locations can promote mid-block or illegal pedestrian crossings. This problem is difficult to remedy after construction is complete.

4.13 Bicycle Facilities

Bicycles are legally considered vehicles and therefore legally allowed to operate on any public roadway except where specifically restricted. There are many features and design elements associated with traffic and signal operations that can greatly enhance the attractiveness and safety of bicycling in the roadway.

4.13.1 Links to Standard Plans and Specifications

[Standard Plan #265: Vaned Grate](#)

[Standard Plan #722: Bicyclist and Pedestrian Symbols](#)

[Standard Plan #724: Bicycle Symbol](#)

[Standard Plan #724: Bicycle Detector Pavement Marking](#)

4.13.2 Design Criteria



Per [RCW 35.75.060](#) and [36.82.145](#), all bicycle facilities must comply with Chapters 1515 and 1520 of the WSDOT Design Manual which is consistent with the 1999 AASHTO Guide for the Development of Bicycle Facilities.

Drain grates: Must be designed such that narrow tires cannot get caught. When new drain grates are installed or existing drain grates replaced, they must conform to the vaned grate design specified in [Standard Plan #265](#). **The drain grate design specified in Standard Plan #264 should not be used in any location where bicycles may be present.**

Deck grating: Can be extremely slippery, particularly in wet conditions. Bicycle tires, with their small contact area, are extremely vulnerable to loss of traction. If deck grating must be installed, it must be treated to increase traction and the seam width between the decking and the adjacent pavement should be no wider than 3/8 inch.

Signal detection sensitivity: Loop detector systems, and any other detection system employed such as camera-based motion detection systems, must be sensitive enough to recognize bicycles or bicyclists. These systems should also accommodate the trend in bicycle technology which is resulting in bicycles being manufactured with decreasing amounts of metal.

Pavement markings for loop detector systems: As required by State law, [RCW 47.36.025](#), with new construction or upgrade of detection equipment; bicycle loop detector systems should be accompanied by pavement markings that indicate the location where a bicycle should be located to maximize its disruption of the inductance field. Specifications for this pavement marking are illustrated in [Standard Plan 725](#).

Bicycle Parking

On-street bicycle racks: Racks must have the following characteristics:

- are intuitive to use correctly;
- have a no-maintenance finish that won't chip, peel, or rust. Galvanized steel finishes are preferred;

- support the frame of the bicycle;
- allow a u-style lock to secure one of the wheels and the frame to the rack;
- allow removal of the front wheel and locking it with the rear wheel and frame to the rack;
- have a minimum height of 2.5 feet so it is not a tripping hazard;
- are installed as close to, without being directly in front of, the main entrance(s) of a building or site; and
- have adequate [clearance](#) from driveways, curb ramps, transit loading areas and immediately adjacent to shelters, and utility poles.

The [SDOT bicycle rack program](#) website has sample racks and more information. SDOT will assume ownership and maintenance of bicycle racks once they are installed.

Private, off-street bicycle parking requirements are specified in the Land Use Code.

- [SMC 23.49.019](#) Downtown Parking Quantity Requirements
- [SMC 23.54.015](#) Required Parking
- [SMC 23.54.016](#) Major Institutions Parking and transportation
- [SMC 23.54.020](#) Parking Quantity Exceptions

Bicycle Master Plan: The City of Seattle's [Bicycle Master Plan](#) was published in 2007. The Bicycle Master Plan established a recommended bicycle facility network and defined the type of bicycle facilities to be placed on the identified streets.

The following are design criteria for some of the more common bicycle facilities identified in the Bicycle Master Plan. Refer to the Bicycle Master Plan for a full description of all the facility types. The following criteria should be used in conjunction with the current MUTCD and Chapter 1020 of the WSDOT Design Manual which is consistent with the 1999 AASHTO Guide for the Development of Bicycle Facilities.

Bicycle Lanes: The minimum width for a bicycle lane is five feet adjacent to a parking lane and 4 feet adjacent to the curb. Bicycle lanes should include a bicycle pavement marking with an arrow to indicate that bicyclists should ride in the same direction as adjacent motor vehicle traffic. When adjacent to parking, secondary striping is installed to delineate the parking lane from the bike lane. Where the edge line separating the bike lane from a motor vehicle lane is 13 feet from the curb or edge of roadway, the secondary striping should be installed no more than 8 feet from the curb or edge of roadway. Where the edge line separating the bike lane from a motor vehicle lane is less than 13 feet from the curb or edge of roadway, the secondary striping should be installed 7 feet from the curb or edge of roadway.

Shared lane markings: [Shared lane pavement markings](#) (or “sharrows”) are bicycle symbols that are placed in the roadway lane indicating that motorists should expect to see and share the lane with bicycles. Unlike bicycle lanes, they do not designate a particular part of the roadway for the use of bicyclists. The design location for sharrows should conform to the MUTCD. In addition, a near side sharrow will also be placed at arterial intersections with traffic control and at intersections where there is a far side bus stop and the far side sharrow is placed at the end of the bus stop. At locations where it is desirable to encourage motorists to pass the bicyclist by changing lanes or to wait until they reach a location where the lane widens, moving the marking towards the center of the travel lane should be considered.

Climbing Lanes: Climbing lanes are a hybrid bicycle facility that includes a five foot bicycle lane on one

side of the roadway (typically in the uphill direction) and a shared lane marking on the other side of the roadway.

Bicycle Facility Design: The following are criteria to follow when designing bicycle facilities or street improvements that may impact bicyclists:

- Paint or traditional thermoplastic are not satisfactory materials for bicycle lane symbols. Pavement markings should have a thickness no greater than 75 mil and must have retro-reflective and skid-resistant properties. Preformed type B thermoplastic legends should be used for bicycle facilities.
- Vertical obstructions within the path of bicycle travel are not recommended, but in some cases may exist. The pavement marking described in [Figure 4-20: Obstruction Warning Pavement Marking](#) provides a visual indication to bicyclists plan for an upcoming obstruction.
- Typical small-scale berms should have an average approach slope of 2%. For example, the approach to a 1.5 inches high berm should be 6 feet long. Berms with shorter approaches increase the likelihood that a bicyclist will lose control of their bicycle, especially those with high pressure tires or without any suspension.
- Concrete panels should be aligned such that seams should be located outside of the zone that bicyclists commonly travel. For example, this zone is typically 10-12 feet from the curb when on-street parking exists.
- The seam width between concrete panels should be no wider than .25 inch; vertical faulting must be maintained at a maximum of .25 inches.
- The minimum setback of a trail from railroad tracks/train should be 10 feet.

4.13.3 Design Considerations

Certain physical characteristics of bicycles require that our transportation system be built and maintained in a manner so bicycles can be safely operated. These characteristics, which are more common in road-style bikes than off-road style bikes, include:

- narrow tires, down to 20mm in width;
- small contact patch with the roadway surface;
- small mass of metal (steel, aluminum, or titanium) compared to motor vehicles;
- high tire pressure, typically 100+ psi; and
- lack of suspension.

These physical characteristics should be considered when designing bicycle facilities.

4.14 Street Trees and Landscape Architectural Standards

Street trees are required by municipal code and standards set by SDOT designed to provide maximum public benefit and compatibility with other infrastructure in the street right-of-way. Street trees are to be protected during construction and otherwise routinely maintained for optimum health, longevity, and public safety. SDOT Urban Forestry advises applicants on tree selection, installation and protection measures to preserve the functional, environmental, social, and economic benefits of trees and to support

the citywide urban forestry goal to increase canopy cover.

Like other street design standards, street trees are reviewed and approved by SDOT according to established guidelines and standards (see the SDOT Recommended Street Tree List for spacing recommendations and the [Standard Plan # 030](#) for clearances and installation details). However, because trees are living infrastructure, growing in size over time, each project is reviewed and inspected on a site specific basis to ensure the optimum outcome for the project, the neighborhood, and the city as a whole.

The street tree design criteria in this section are based on transportation safety requirements and on minimum requirements for street trees to achieve a mature canopy for effective reduction of both storm water runoff and reflected heat from paved street and sidewalk surfaces.

4.14.1 Links to Standard Plans and Specifications

[Std Specification 1-07.16\(2\) Tree Vegetation and Soil Protection](#)

[Std Specification 8-01.3\(2\)B Tree Vegetation and Soil Protection Plan \(TVSPP\)](#)

[Std Specification 8-02 Landscape Construction](#)

[Std Specification 8-14 Cement Concrete Sidewalk](#)

[Standard Plans 030 through 142](#)

[Standard Plans Section 100: Landscape Planting](#) (includes standard plans for trees, shrub and ground cover, irrigation, tree protection, soil preparation and grading)

[Standard Plan 424a and b: Tree Pit Detail](#)

4.14.2 Design Criteria

Clearances from street trees Street trees require access to air and water, space for growth and must be located, installed and managed for compatibility with the built environment. Standards for layout of trees and other infrastructure within a transportation corridor described in this manual are established to establish corridors, setbacks and depths for various elements including utilities (i.e. storm drains, sanitary sewer lines, water lines, etc.) to ensure that minimum clearances from trees and other objects in the right-of-way can be met.

Clearances from street trees—at grade: With limited right-of-way, SDOT will evaluate site conditions and may permit one or both of the following:

- variances from the standard clearances from face of curb and/or sidewalk edge based on the [street classification](#) (arterial or non-arterial), tree species, curb lane use (parking or travel lane) and recorded or projected information about pedestrian volumes for the corridor; and
- variances from the typical planting strip and/or tree pit location within the street cross section (i.e. tree planting in bulb outs within a parking lane, behind the sidewalk, etc.)

Clearances from street trees—below grade: The design of street improvements must consider underground utilities in relation to standard utility corridors. The location of private service connections must also consider clearances from street trees. Though less than optimum for both utilities and trees, a minimum standard of 5' lateral clearance is required. Where right-of-way width allows allocation of more than 5', the investment to provide additional space up front often provides a long-term benefit through reduced impact on trees due to utility line maintenance and repair.

- Where both utilities and street improvements are proposed by a project, the design must follow standards, including the 5' clearance standard between service connections and street trees.
- Where street improvements are proposed in a ROW with existing utilities that **do** occupy standard

corridors, the standard 5' clearance between street trees and service connections is required.

- Where utilities are proposed within a ROW with existing street trees, the design must follow standards with regard to placement of utilities within designated utility corridors and the 5' standard clearance for service connections.
- Where street improvements are proposed within a ROW with existing service connections and the 5' clearance standard conflicts with proposed street trees in standard planting strips or tree pits, Street trees will still be required with additional mitigation measures to help protect both the trees and the service connection. The mitigation measure must be approved by SDOT.
- Where street improvements are proposed within a ROW with existing utilities that **do not** occupy standard corridors, Street trees will still be required with additional mitigation measures provided to protect the street tree and public utility. The mitigation measures are subject to approval by SDOT and the public utility.

In some cases, depending upon the age, depth, and material of the utility, mitigation may not be possible, and the utility may be required to relocate if trees are required.

Possible Mitigation Measures – Other mitigation measure may be considered as new technologies become available and are assessed as to their feasibility for the project.

- Vertical Root Barrier
- Horizontal Root Barrier
- Ductile Iron Pipe
- Concrete Pipe with Rubber Gaskets (post 1960) after review by utility owners.
- Utility Line Relocation

Planting strip dimensions and clearances: Maintain 5 feet 0 inches clearance between the back of the sidewalk and inside edge of the curb (5 feet 6 inches to the curb face) to allow a setback for street trees measuring 3 feet 6 inches from the centerline of the tree to the curb face and 2 feet 0 inches from the centerline of the tree and sidewalk edge.

Planting strip treatments: Plants in planting strips vary greatly in their potential to provide optimum pedestrian and environmental benefits. Though SDOT allows the installation of grass the department encourages the installation of low (24-30 inches) shrubs, perennial or groundcover plantings that provide a superior degree of separation between the sidewalk and street at reduced maintenance costs. Under some conditions, a combination of the plantings and grass or plantings and pavers may be appropriate depending on the street classification and need to accommodate parking in the curb lane.

Refer to [Chapter 6.4 Green Stormwater Infrastructure](#) for guidance on integrating stormwater conveyance and treatment into the planting plan.

Planting strips—grading: The final grade of soil surfaces in planting strips must accommodate runoff from sidewalk surfaces cross-sloped to drain toward the street. In cases where a swale or depressed planting strip is proposed, see [Chapter 6.4 Green Stormwater Infrastructure](#). In cases where a mounded planting strip is proposed to provide a more effective separation between the sidewalk and street, a centerline height of 6" above the adjacent sidewalk grade is typical and gaps between mounded areas must be provided so that backup of runoff and ponding does not occur on the paved sidewalk.

Planting strip paving: Up to 40% of the area in planting strips may be paved if the following conditions are met:

- Paving is done in combination with street trees;

- Related landscape architectural features pose no public safety concern; and
- The combination of paving and trees provides an equal or better balance of functional and environmental benefits than a fully planted condition.
- Paved area is not used for parking.

Pervious pavement materials are encouraged to allow for the infiltration of runoff from the sidewalk before it enters the street to maximize the water quality entering the planting strip. Paving materials and installation details are subject to approval by SDOT.

Tree pits: are typically used as an alternative to planting strips in business districts where additional sidewalk width is important to accommodate pedestrian volumes.

When permitted as an alternative to planting strips, tree pits shall be constructed per [Standard Plan 424](#), dimensioned to meet or exceed the minimum size required to meet standards. The minimum square footage for a tree pit is 24sf of open area (typically 4 feet x 6 feet or 5 feet x 5 feet). Any proposal dimensioned below minimum standards shall be subject to site-specific review to ensure that:

- conditions justify the substandard size;
- the design meets public safety standards; and
- the design provides adequate conditions to support trees.

Tree pits—grading : Shall be graded to provide a soil surface 2 inches below the adjacent sidewalk and curb elevation and be top dressed with bark, wood chips, cinders, or crushed angular aggregate material that is routinely maintained to minimize the grade differential between the sidewalk and open pit area.

Street Tree Permit: Please refer to [Chapter 2.9.2](#) of the Right-of-Way Manual.

Tree grates: Often proposed as an architectural design element and/or as a means to maximize the pedestrian accessible area in the right-of-way, tree grates may be permitted by SDOT, but are not recommended. When permitted, tree grates shall be maintained routinely by the property owner to ensure a flush condition between the grate surface and surrounding pavement, to replace broken segments, and to expand the opening as appropriate to accommodate the growth of the tree.

Tree and plant material—selection : See SDOT [Recommended Street Tree List](#)

Tree and plant materials--installation and maintenance responsibilities: It is the responsibility of the property owner to ensure that installation and maintenance of grass, plantings and related improvements in planting strips meet public safety and industry standards. Street tree and landscaping improvements required by the Land Use Code must be maintained to meet public safety standards for the life of the project. This includes:

- watering to ensure establishment of plant material;
- mulching to minimize water use, discourage weeds and protect against erosion
- pruning low shrubs and groundcover to control overgrowth onto sidewalks
- pruning street trees(after first obtaining a street use permit) to ensure appropriate clearances over streets and sidewalks.

Tree protection and maintenance: Removal or pruning of street trees proposed requires a permit and is subject to review and, when approved, subject to inspection by the SDOT Landscape Architect's Office.

Permit applications may be required to include public notification and/or mitigation for the lost value of the tree(s) proposed for removal. In cases where the applicant is not the owner of the property abutting the

proposed work, applications must include signatures of adjacent property owners. The extent of notification is determined on a case by case basis to ensure public safety and awareness and/or approval of the project. Names and addresses of contacts may be submitted for approval or provided as a component of the permit review process by SDOT Urban Forestry. All permitted work must be completed within 60 working days unless otherwise defined by the permit.

4.14.3 Design Considerations

- Trees and related landscape architectural treatments that are strategically planned for maximum public benefit within the often limited space within the street right-of-way provide a “sense of place” critical to the vitality of neighborhoods and their business districts.
- The value of street trees to the urban environment is enhanced when they are combined with understory planting, specialized pavements, street furniture and public art.
- Planting strips serve a number of important functions including:
 - pedestrian safety--they provide a buffer between the sidewalk and roadway;
 - reduction of runoff by providing area for rainfall to infiltrate;
 - water quality by infiltrating runoff from sidewalks before it enters the street; and
 - the growth and longevity of street trees.
- Tree health and maintenance: because the standard, whether it be a 5 feet wide planting strip or 5 feet x 5 feet tree pit is not optimum to meet the horticultural requirements of a typical street tree, allocating larger areas to accommodate trees is encouraged whenever right-of-way space allows. Allocation of space is a key factor in the management of trees for compatibility with adjacent paved surfaces and other improvements, with the investment of more space up front often providing a substantial payoff in terms of reduced need for replacement or repair of paved surfaces and related improvements.

4.15 Introduction to Utilities Design Criteria

One of the important functions of the right-of-way is to provide space for water, sewer, electricity, street lighting, traffic signals and other utilities, both above and beneath the street surface. There are standard locations for each utility in relation to roadway pavement, curbs, planting strips, and sidewalks, and there are requirements for utility clearances.

The following sections define the design criteria for utilities in the right-of-way:

[4.16: Street Lighting](#)

[4.17: Street Drainage, Storm Drains and Sewers](#)

[4.18: Water Mains](#)

[4.19: Fire Protection](#)

In addition to these sections, the following design criteria apply for utility easements and relocation.

4.15.1 Design Criteria

Utility Easements

Need for utility easements: When public utilities for sewer, storm, or power facilities are constructed on private property, a utility easement will need to be granted to the City. These easements are needed to establish rights for the City including, but not limited to, construction, operation, and maintenance access as needed to own and operate the facility.

Easement width: The width of the required easements are governed by factors such as the type of utility, its depth, size or diameter, the equipment needed for maintenance, etc. Sewer, drainage, water, and solid waste easements are prepared by SPU Real Property Services. Minimum easement widths for sewers and storm drains are found in [SPU Client Assistance Memo \(CAM\) 1180: Design Guidelines for Public Storm Drain Facilities](#). For water mains, the minimum easement width is 20 feet. These are minimums, and site constraints may warrant greater easement widths.

Approvals for easements: Note that all easements (acquisition, relinquishment, and readjustments) for City owned facilities require approval by the Seattle City Council. For utilities owned by other entities, the applicant must contact the owner to determine required approvals for easements. Planning ahead and working with the City early is highly recommended in order to get all the legal documents signed and recorded in a timely manner before any work is permitted. Council action can take up to 18 months in some cases.

Pipe location within an easement: For individual water, sewer or storm mains, the pipe shall be located in the centerline of the easement. The standard pipe material within an easement is Ductile Iron Pipe (DIP). For certain site conditions and buildover scenarios, SPU may require restrained joint ductile iron pipe, inside a steel casing pipe. For such installations, SPU requires a 25 feet “pit easement” on either the up hill or down hill side of the casing for the event that the pipe and/or casing must be removed. No private connections shall be allowed within the limits of the casing pipe. Generally casing pipes should have a 5 feet minimum distance past the edge of the building in the event of a buildover.

The easement needs a legal description prepared by a licensed professional land surveyor in the state of Washington.

Sewer and storm drains within the same easement: The minimum separation between the sewer and storm drain shall be 7 feet. The width of the easement on one side or the other will depend on pipe size and influence lines between the pipe and the building foundations (if any).

Utility Relocation:

Need for relocation: It may be necessary to relocate or adjust existing utilities to accommodate new street grades or to attain [standard clearances](#) when constructing street improvements. This may include street lighting, traffic signal facilities, water, sewer, and drainage mains and appurtenances. It also may be necessary to relocate curb ramps and bicycle facilities.

Site assessment: The applicant is responsible for obtaining and reviewing surveys and as-built plans, taking field measurements, and contacting the affected utilities to determine if relocation or adjustment is required and the associated costs. The cost of utility relocation and adjustment is the responsibility of the applicant.

Relocated utilities as well as new utilities to serve the development site shall be shown on street improvement plans when street improvements are required.

Pole consolidation: When installing new utilities or relocating existing utilities, it is the standard practice of the City of Seattle to reduce the number of poles where possible by combining utilities on one pole.

4.16 Street Lighting

Street lighting is intended to create an environment at nighttime in which people can see comfortably and can quickly and accurately identify objects on traveled roadways. Street lighting can improve, safeguard, facilitate, and encourage vehicular and pedestrian traffic. SDOT is responsible for ensuring that recommended light levels are achieved and reviews street and pedestrian lighting requests.

4.16.1 Links to Standard Plans and Specifications

4.16.2 Design Criteria

Conformance with Local, State and National Standards: The design of all electrical and lighting systems shall be in conformance with the Seattle Municipal Code and National Electrical Code, the National Electrical Safety Code, Washington State Electrical Code WAC [Chapter 296-45](#).

New or relocated street lighting—non-arterial streets: Street lighting for non-arterial streets should be designed using the most recent edition of the recommended IES guidelines, unless otherwise approved by Seattle City Light.

Arterial Street lighting: SDOT has established design guidelines for arterial street lighting. Existing street light systems may be required to meet the design criteria and new street light systems shall be designed to them. During the review process additional information on type and style of luminaires will be provided. To maintain reliability and maintenance only fixtures approved by SCL will be acceptable.

Pedestrian lighting: Pedestrian lighting illuminates the pedestrian walkway and is typically mounted 12 - 14 feet above the sidewalk. This lighting should be considered when calculating the maintained foot candles and uniformity of roadway lighting.

Pedestrian ways not adjacent to the roadway may require lighting as determined by the Traffic Engineer. For additional information about lighting on non-arterial streets, contact [Seattle City Light](#).

[Refer to Figure 4-21 Pedestrian Lighting Sections.](#)

Get more information about [pedestrian lighting in neighborhood business districts](#).

4.16.3 Design Considerations

Good outdoor lighting can create and encourage a pedestrian friendly environment, which is especially beneficial to neighborhood business districts. Pedestrian lighting improves walkway illumination for pedestrian traffic and enhances community safety and business exposure. Lighting for pedestrians is especially important along Main Streets, Mixed Use Streets and Local Connectors, and in other locations where the land use supports large volumes of pedestrians and vehicles.

4.17 Street Drainage, Storm Drains and Sewers

Street design includes provision for the collection and discharge of storm water. Drainage system components such as pipe, catch basins, and inlets are considered integral street improvement elements as are curbs, sidewalks and pavement. All of the Street Drainage, Storm Drains and Sewer requirements in this section are to be considered requirements and are not optional.

When property development includes the installation of new or replaced paving or other impervious surfaces, there may be a need to improve existing drainage systems in the street to accommodate the additional stormwater or sanitary flows that will be incurred. This may trigger a requirement to make [grading improvements](#), or to extend or upgrade existing storm drains, inlets, and catch basins, and there may be requirements for flow control and/or treatment facilities triggered by the City Stormwater Code. Factors such as the amount of impervious surface involved, the project location, the availability and

capacity of existing infrastructure, among others, play a role in determining these requirements.

All these drainage improvements are required and shall be designed and constructed in accordance with the City of Seattle Standard Plans and Specifications which establish acceptable materials, dimensions, locations, installation and testing requirements, and other requirements for pipelines, manholes, connections, flow control facilities and other system improvements.

Seattle Public Utilities (SPU) is responsible for the plan review of new street drainage and stormwater treatment and flow control facilities, as well as for the review of project impacts to existing SPU infrastructure.

The following design criteria apply for storm drains and street drainage including drainage appurtenances, sanitary and combined sewers, and side sewers and service drains.

4.17.1 Links to Standard Plans and Specifications and other Resources

[Standard Plans 200 Series](#)

[Standard Specifications Divisions 7](#)

[Standard Specifications Divisions 9](#)

[Stormwater Code SMC Ch. 22.800](#)

[Stormwater Flow Control and Water Quality Treatment Technical Requirements Manual DPD DR 17-2009/SPU DR 2009-005 Volume III](#)

[Green Stormwater Infrastructure – Requirements for Projects DR \(Under Development\)](#)

[Design Guidelines for Public Storm Drain Facilities SPU CAM 1180](#)

[Side Sewer Code – SMC Ch. 21.16](#)

[Requirements for Design and Construction of Service Drains \(Drainage Water Discharges\) DPD DR 3-2006/SPU DR 02-06](#)

[Requirements for Design and Construction of Side Sewers \(Wastewater Discharges\) DPD DR 2-2006/SPU DR 01-06](#)

[SPU Core Tap Procedures](#)

[Side Sewer Permits for Buildover Agreements DPD CAM 507](#)

4.17.2 Stormwater Code Compliance

Project Type. There are six types of projects identified with different minimum requirements for each. [See Section 2.3 of Volume 3 of the Stormwater Director's Rules.](#) The 2009 Stormwater Code differentiates between projects on private property and projects in the ROW for the purposes of determining thresholds and minimum requirements. All work in the ROW is treated as a separate project when determining minimum requirements. As such all mitigation for work in the ROW must occur in the ROW and all mitigation for work on private property must occur on private property. The two project types specific to the ROW are listed below:

- Sidewalk Only – This involves only the creation, or replacement, of a sidewalk and only the associated work within the roadway prism needed to construct the sidewalk.
- Roadway – This involves creation or replacement of an existing roadway.

Minimum Requirements for All Projects, Amended Soils: All new, replaced and disturbed topsoil that will be left uncovered by impervious surfaces shall be amended with organic matter. See [Volume 3 Chapter 4](#) of the Stormwater Director's Rules for detailed requirements.

Adding organic compost or mulch to soil improves its ability to support plants and absorb stormwater. Healthy soil is the backbone of green stormwater infrastructure.

Due to the concern that compost amended soils may compact irregularly, Seattle City Light (SCL) and Puget Sound Energy (PSE) require a 3-foot setback around all utility infrastructures. In this 3-foot setback amending soils with compost is not allowed. Seattle Public Utilities also recommends the 3-foot setback from water meters. Soils should also be compacted within one foot of a curb or sidewalk.

Drainage Review Thresholds: “Small Project” drainage review will be required for street improvements which involve more than 750 square feet of land disturbing activity but less than 5,000 sf of new plus replaced impervious surface and less than 7,000 sf of land disturbing activity. “Large Project” drainage review will be required for street improvements which involve more than 5,000 sf of new plus replaced impervious surface or more than 7,000 sf of land disturbing activity.

Stormwater Flow Control : In areas served by a combined sewer, storm drains of inadequate capacity, or areas that discharge to non-designated receiving waters, stormwater flow control will be required for roadway projects that have a total new and replaced impervious areas exceeding 10,000 square feet, in accordance with the [Stormwater Code](#) . Stormwater flow control systems shall be either an off-line system or an in-line system as approved by SPU. Standard pipe material for flow control systems located within the City right-of-way and owned and operated by SPU shall be concrete or ductile iron pipe.

Stormwater Water Quality: If the new or replaced pollution generating impervious surface exceeds 5,000 square feet, except for areas that discharge to the combined sewer, there will be requirements for stormwater water quality. (See City Stormwater Code for street specific impervious surface requirements). Public treatment facilities are installed in the right of way, and upon successful inspection they are turned over to SPU for operation and maintenance. Technical standards for the design of these facilities are provided in published [SPU Director’s Rules](#).

Green Stormwater Infrastructure: All right-of-way projects with 7,000 square feet or more of land disturbing activity or 2,000 square feet or more of new plus replaced impervious surface must implement green stormwater infrastructure to infiltrate, disperse, and retain drainage water to the maximum extent feasible without causing flooding, landslide, or erosion impacts. Technical standards for the design of these facilities are provided in published [SPU Director’s Rules](#).

4.17.3 Stormwater Collection

Drainage: Shall be provided for improved streets and alleys and shall include catch basins and inlets that discharge to a public combined sewer, public storm drain, or other discharge point approved by Seattle Public Utilities (SPU).

Surface drainage: Establishing appropriate street grades is very important for drainage. Standards for cross slopes and longitudinal slopes are important for vehicular and pedestrian safety as well as surface water conveyance. A standard street cross section diagram can be [viewed here](#) and shall have a centerline crown elevation. Cross slope shall ensure surface drainage gets to the gutter and flows down to drainage pickups. Streets shall generally have a centerline crown elevation, with some exceptions, such as super-elevated streets. Refer to [Chapter 4.4 Grading](#) and [Chapter 4.5 Design Cross Section](#) for more information.

- Drainage shall be collected at the low point of all closed contours, the downstream end of developed alleys upstream of the sidewalk, and upstream of all ADA ramps. If the distance from a high point to the intersection, crosswalk, or end of an alley is less than 100 feet, drainage pickup may not be necessary.
- Water from no more than 1,000 total lineal feet of curb may discharge into one catch basin. This includes the length of curb for inlets which discharge into a catch basin as well as the catch basin itself.

- At closed-contour low points and other locations where extra capacity is needed, use [Standard Plan 242B](#) catch basins. At low points in the roadway use two Standard Plan 242B catch basins, one on each side of the street, each with an independent connection to the storm drain. Additional drainage structure may be required where tree leaves are prevalent.
- Existing inlets that do not conform to current standards must be replaced if located in areas where new full-depth pavement will be installed. Existing inlets which do not conform to [Standard Plan 250](#), located along new curbs, must be replaced.
- Arterial streets with a grade flatter than 1% shall have drainage pickups (catch basins and/or inlets) at least every 350 feet. Gutter flow calculations may be required.

4.17.4 Drainage and Sewer Conveyance



Public storm drains: A new public storm drain may be required when

- there is no available public storm drain or public combined sewer, and there is no acceptable discharge point;
- to achieve adequate capacity; and

New public storm drains shall be sized to handle all upstream tributary area from the drainage basin in which they are located. They shall be designed to be continuous with existing and future storm drain pipes that are or will be part of the storm drainage system. The engineer shall provide the hydraulic calculations used in the pipe design for review by SPU. Refer to [Chapter 6.4 Green Stormwater Infrastructure](#) for guidance on providing a natural drainage conveyance system.

Storm drain pipes:

- Storm drains must be designed for full gravity peak flow with 4% annual probability (25-year recurrence flows). The storm drain's surcharge level (hydraulic grade line) for that peak flow may be no higher than four feet below the street's gutter elevation or one foot below the service elevation of adjacent private property, whichever is lower. The service elevation is defined as two feet below the lowest elevation served on the site (such as the lowest catch basin or footing drain.)
- If calculations show that a storm drain is surcharged, the Hydraulic Grade Line must be shown on the pipe profiles of the contract drawings. Use the high water elevation of the receiving waters to calculate hydraulic gradients. High water for Lake Union and Lake Washington is +18.6; for Elliott Bay and the Duwamish River it is +12.14 (NAVD88).
- Storm drains must be a minimum of 12 inches in diameter. The minimum slope for storm drains is 0.5% with 1.0% or greater being desirable. Flatter slopes may be considered, but pipe slope must achieve a minimum velocity of three feet per second (fps) and shall require SPU approval.
- The effects of excess energy shall be investigated whenever pipe velocity exceeds 20 feet per second (fps). Energy dissipation features may be required. The design shall minimize or mitigate hydraulic jumps.
- The crowns of all pipes shall match at the manholes. Invert elevations shall be calculated by projecting the pipe slopes to the center of the manholes.
- Manholes are required every 375 feet. Generally, manholes are required at pipe junctions, breaks in grade, and changes in horizontal alignment. When a small diameter storm drain intersects a very large diameter storm drain, it may be appropriate to set the manhole on the

small diameter pipe 10 to 30 feet away from the junction. Manholes are needed at the end of all pipe runs unless the pipe is 100 feet in length or shorter.

- Storm mains may have one horizontal or vertical bend (maximum 22.5°) between manholes, subject to approval by SPU.

Sanitary and Combined Sewers

In general, requirements for sanitary and combined sewer mains are as described above for storm drain pipes with the following differences:

- All sewer pipe must be designed and constructed to give mean velocities, when flowing full, of not less than 3 fps.
- Pipe located in the ROW must have a minimum slope of at least 2%. Pipe slopes exceeding 50% requires the use of restrained joint ductile iron. Pipes slopes that are <0.5% must have SPU approval.
- Minimum pipe diameter is 8 inches
- Manholes are required every 350 feet.
- Minimum pipe depth is 12 feet.

4.17.5 Side Sewers

Side sewers and service drains: The pipeline between the building and the sewer or storm drain main is a side sewer or service drain, respectively. All side sewer and service drain work within the right-of-way requires a [Street Use Utility Permit](#) issued by DPD on behalf of SDOT.

Minimum grade, pipe size and materials, connection details, installation and testing requirements: Side sewers and service drains shall be designed and installed in accordance with the [City of Seattle Standard Plans and Specifications](#). New core taps shall be per SPU's [Core Tap Procedure](#)

Ownership: Side sewers and service drains are owned and maintained by the property owner. The minimum grade is 2%. Pipe material and size shall be according to the [Seattle Side Sewer Code](#).

Use of existing side sewers: It is possible to use existing side sewers in lieu of a new connection in some cases See the Side Sewer code for more details.

4.17.6 Additional Information

Build-Overs: For build-overs for SPU owned sewer and drainage appurtenances, the applicant shall follow the guidance of [DPD's build-over CAM](#).

Ditch Modifications:

The City does not permit the filling of a ditch if that ditch functions as part of the City's informal drainage system in the street right of way and is located within a creek watershed. Creek watersheds are identified on the City GIS system, and on the Seattle Creek Watersheds map. The SDOT Director may approve a requested exception per the Street Use Code [SMC 15.04.112](#) if the Director determines that the modification is likely to be equally protective of public health, safety and welfare, the environment, or public and private property. If the proposed modification is not equally protective, the Director may approve a requested exception if substantial reasons are documented such as:

- An emergency situation necessitates approval of the exception;
- A reasonable use of the adjacent property is not possible unless the exception is approved; or harm or threat of harm to public health, safety and welfare, the environment, or public and private property is at risk unless the exception is approved.

Exceptions to the ditch filling moratorium policy include culvert installations that are necessary to implement driveway permits, and required street improvements. If you are considering modifying the ditches within a creek watershed, the City encourages use of an NDS approach. The capacity calculations will be required to show that the proposed system can, at a minimum, provide the level of service of the existing conditions.

Deviation from Drainage and Wastewater Standards: All requests for exceptions to the drainage and wastewater standards and requirements must be approved by the Drainage and Wastewater Appeals Board.

4.18 Water Mains

New water mains are subject to the approval of [Seattle Public Utilities \(SPU\) Project Management and Engineering Division \(PMED\)](#).

4.18.1 Links to Standard Plans and Specifications

[Standard Specification 1-07](#)
[Standard Specification 7-10.3\(5\)C](#)
[Standard Specification 7-11](#)
[Standard Specification 9-30](#)
[Standard Plan 030: Desirable Locations for Utilities \(Residential Street\)](#)
[Standard Plan Section 300: Watermain Appurtenances](#)
[Standard Plan 286a and 286b: Sewer and Water Spacing and Clearances](#)
[Standard Plan 330a and 330b: Water Main Thrust Blocking Vertical Fittings](#)

4.18.2 Design Criteria

Water main design: SPU PMED provides design criteria for water mains during SIP design guidance

SPU reviews water system designs through the street improvement process. SPU also reviews proposed work within the right-of-way that may impact existing water mains or water facilities.

Protection of existing facilities: special measures to protect existing or proposed facilities may be required depending on the scope and impact of the proposed water main project. Special protection measures may include the use of restrained joint pipe, corrosion protection, and construction methods that minimize vibration and impacts of excavation to existing utilities.

Pipe material: All materials for water distribution shall be new and conform to [Standard Specifications Section 9-30](#).

Standard location for water mains within the public right-of-way: Water mains will be generally located on the north and east side of the public right-of-way. In the event that the standard location for water mains is not available the best alignment will be determined during SIP design guidance.

Water valves: Water valves will generally be placed aligned with the perpendicular right-of-way margins, as shown in [Figure 4-22: Typical Valve Location](#). If this location is otherwise unavailable SPU PMED will determine the alternative position. SPU PMED will approve the final location for all water components constructed in the City right-of-way.

Water main, sewer and other utilities separation: Water mains and water service lines shall designed

for appropriate separation from the following:

- sanitary sewers;
- storm sewers;
- combined sewers;
- house sewer service connections;
- drains;
- sanitary sewer force mains; and
- gas, telecommunications, electrical, and other utilities.

Spacing between water mains and other utilities should comply with City of Seattle [Standard Specifications 1-07](#), and [Standard Plans 286a and 286b](#).

Depth of pipe cover: All pipe shall be laid to a minimum depth as indicated in [Standard Specification 7-10.3\(5\)C](#) and [Standard Plan No. 030](#).

Thrust block: Provide concrete thrust blocks at points where piping changes directions or at dead ends. Thrust blocks shall be designed and installed as indicated in [Standard Specification 7-11](#). Also, thrust blocks must conform to [Standard Plan Nos. 330a and 330b](#).

For pipes larger than 12 inch diameter, or where water pressures are higher and/or soil conditions are poor, the developer engineer shall design the correct block size. All thrust block designs will require the approval of SPU PMED prior to installation. The stamped calculations shall be submitted to SPU PMED for review and approval.

Test pressure for field testing water main pipe: Field pressure testing for water mains shall be in accordance with [Standard Specification 7-11. 3\(1\)](#). Field hydrostatic testing of various diameter ductile iron water main pipes and appurtenances shall be:

Test Pressure for Field Testing Water Main Pipes

Diameter Pipe (inches)	4	6	8	10	12	16 or larger
Test Pressure (psi)	300	300	300	300	300	250

Flushing and disinfection: Before being placed in service all newly installed pipes, valves, hydrants and appurtenances shall be flushed, disinfected and kept clean, and an acceptable bacteriological report shall be obtained. Flushing and purification shall be in accordance with [Standard Specification 7-11](#).

Vault location: Prior to water service approval, SPU Customer Service shall coordinate all work associated with installation of service vaults. The table below provides some preliminary information. SPU Water Crews will perform all service work.

Water services: For further inquiries regarding water services please contact [SPU Customer Service](#) or refer to:

http://www.seattle.gov/util/Engineering/Obtain_Utility_Services/Apply_for_Water_Service/index.asp

- Get more information on [water service standard charges](#)
- Get more information on [metering](#)
- Get more information on [drinking water rates](#)

Vault Location by Meter Size and Type

Vault Meter Size and Type	General Location in the ROW
Domestic	
3/4" & 1" Domestic	See City of Seattle Std. Plan #286b
1 1/2" & 2" Domestic	See City of Seattle Std. Plan #286b
3" & 4" Domestic	Vault plan required. Installation by SPU Crews), contact SPU Customer Service
6" Domestic	
Fire	
2" DC Fire Service	Direct-bury in approved enclosure (meter box), standard pending. Installation by SPU Crews, contact SPU Customer Service
4"-10" x 3/4" DC Fire Service	
Combination	
4" Combination Service	Vault plan required. Installation by SPU Crews, contact SPU Customer Service
6" Combination Service	
8" Combination Service	

4.18.3 Design Considerations

- Consider how to maintain fire flow during construction activities.
- Coordination with SPU water operations is required for all new connections, services, meter installations and any temporary cut and caps or temporary mains to facilitate your construction.
- Provide notice to the Fire Department if flow will be impeded and what provisions have been made – also note if access at the site will be limited or if street access will be limited.
- Be sure to check for utilities in the project alignment especially around large service locations as they could interfere with water mains, blocking, or meter vault installations.
- Only SPU crews are allowed to operate the existing water system for public health and safety reasons. Plan to coordinate with SPU water crews well in advance of starting construction to have your work added to crew work schedules.

4.19 Fire Protection

4.19.1 Links to Standard Plans and Specifications

[Standard Specification 7-14: Hydrants](#)
[Standard Plan 310a and 310b: Type 310 Hydrant Setting Detail](#)
[Standard Plan 311a and 311b: Type 311 Hydrant Setting Detail](#)
[Standard Plan 312: Fire Hydrant Marker Layout](#)
[Standard Plan 313: Wall Requirements for Hydrants](#)
[Standard Plan 314: Fire Hydrant Locations and Clearances](#)

4.19.2 Design Criteria

Hydrant pressure: The [Seattle Fire Department](#) requires that hydrants operate at a minimum residual pressure of 20 psi. Design and construction of fire protection features should comply with [Seattle Fire](#)

Code and the Standard Plans and Specifications.

Hydrant resets, relocations and adjustments: Any hydrant resets, relocations and/or adjustments will be identified during the design approval process or with construction scheduling. These changes require 4-6 weeks advance notice. Please contact SPU Customer Service at 684-5800.

Fire flow requirements: The Seattle Fire Department and SPU Engineering will authorize all designs impacting fire flow. The following requirements apply, however they are general and should be confirmed with the Fire Department.:

- Required FF 1000 gpm (single family)
- Required FF 4000 gpm (commercial)
- Required FF 8000 gpm (major institution)

Fire hydrant Locations: Fire hydrant locations must conform to Standard Specification 7-14 and Standard Plan 314.

Use of fire hydrants under non-firefighting conditions: Temporary use of a hydrant by private individuals, businesses or organizations will be allowed under certain conditions. To this extent, Seattle Public Utilities will control use of all hydrants within the distribution system. A temporary water service from the distribution system, for less than six months, may be authorized via a hydrant use permit or hydrant use meter issued by SPU Customer Service. For information regarding Hydrant Permits please contact the [SPU Customer Service](#).

Reference: <http://www.seattle.gov/util/Services/Water/Rates/index.asp>.

4.19.3 Design Considerations

- During survey activities, be sure to note the location of existing hydrants and planned hydrant spacing appropriately.
- Hydrants should not be placed next to driveways or other private access points where they may impede existing access.
- Seattle Public Utilities supplies all hydrants. Please contact SPU Customer Service for more information.
- Changes to fire service including street access during construction require coordination with the [Seattle Fire Department](#).

4.20 Seattle City Light

Electrical facilities and driveways: If an existing power pole or underground vault is in the middle of the future driveway, the applicant will be required to pay SCL, in addition to providing SCL with sufficient lead time, to reconfigure or to relocate its electrical facilities to resolve the conflict(s).

Electrical service entry points: It is also beneficial, financially and schedule-wise, for the applicant to pay attention to the electrical service entry point for the new building relative to SCL's facilities in the public right-of-way. The farther the service entry point from SCL's facility, the more complicated, time consuming and costly the service installation will be.

Underground ordinance areas: Certain areas in the City have been designated as underground ordinance areas. There is still a fair amount of overhead electrical distribution facility in some of the recently declared underground ordinance areas. Regardless of whether the existing electrical distribution system in the underground ordinance areas are overhead or underground, the electrical services to developments in these areas are required to go underground. Please contact other overhead utilities such

as telephone and cable television companies for their undergrounding requirements in these areas.

Easements: Occasionally, if the available space, or the lack of available space, precludes SCL from serving the building(s) directly from its system in the public right-of-way, easement(s) from the property owner(s) or their neighbor(s) may be required for placing a local distribution system. This may include (but is not limited to) poles, anchors, wires, vaults, handholes, or conduits on site.

Further guidance and contact information: The *Requirements for Electrical Service Connection Manual*, which is currently being updated, will be available as a service installation guide for homeowners, developers.

SCL and DPD staff will work closely with you to accomplish appropriate clearances required for design, during construction and at final build-out. Communication and resolution of required clearances are critical to final design and construction approval of your proposal. Contact [City Light Customer Engineering](#) for more information regarding service requirements.

4.21 Clearances

Clearances are the minimum distances between elements in, under and above the street right-of-way. Clearance requirements are a key factor in how space within the right-of-way and on private property adjacent to the right-of-way can be used. Maintaining appropriate clear distances between certain elements in the right-of-way and on private property is necessary for a variety of reasons. Safety is a key consideration—for the traveling public, the property owner and for operations and maintenance crews who must access elements in the right-of-way for routine maintenance or repair. Appropriate clearances also enable the proper growth and development of trees and landscaping, and help protect and maintain both overhead and underground utilities.

This section describes required lateral and vertical clearances as well as special circumstances where additional clearance requirements may apply. The minimum clearances defined in this section are requirements. When minimum clearances cannot be met due to site condition constraints, the City staff will work with the applicant to determine an acceptable solution. Deviations from the standard clearances in this section are considered on a case-by-case basis and are evaluated by SDOT, SPU and other departments as needed.

4.21.1 Links to Standard Plans and Specifications

[Standard Plan 030: Standard Location for Utilities \(Residential Street\)](#)

4.21.2 Design Criteria

Lateral Clearances

From	To	Standard Clearance
Curb face	Closest part of any fixed object (excluding traffic control signs and parking meter posts)	3 feet
Edge of sidewalk	Closest part of any fixed object (excluding traffic control signs and parking meter posts)	1 foot
Textured surface of curb	Closest part of any fixed object (excluding traffic control	1 foot

ramp	signs and parking meter posts)	
Edge of sidewalk	Stair riser, rockery, retaining wall, fence	2 feet
Pole face, fire hydrant	Closest part of any fixed object (excluding traffic control signs and parking meter posts)	5 feet
Stop sign	Nearest parking space	30 feet
Obstruction in sidewalk	Closest part of any fixed object (excluding traffic control signs and parking meter posts)	5 feet
Multi-use trail, edge of pavement	Closest part of any fixed object (excluding traffic control signs and parking meter posts)	2 feet (3 feet preferred)

Vertical Clearances

From	To	Standard Clearance
Roadway surfaces	Any horizontal projection* over surface *includes traffic control signals or signs	20 feet
Sidewalk surfaces	Any horizontal projection over surface	8 feet
Roadway surfaces	Tree limbs	14 feet
Roadway surfaces	Bottom of bridge	16.5 feet
Alley surfaces	Any horizontal projection over surface	26 feet
Bicycle path surfaces	Any horizontal projection over named surface	10 feet

Trees : For more information about clearances and trees, including conditions for deviating from the standard clearance listed below due to site constraints; refer to [Section 4.14.2 Clearances from Street Trees](#). Factors to consider for a deviation from the standard required clearances between street trees and utilities may include the depth and age of the pipeline, the possible use of root barriers, the nature of the plantings, fire code requirements, and other factors.

Clearances from Trees

From	To	Standard Clearance
Centerline of Tree	Face of curb	3.5 feet
	Sidewalk or sidewalk landing	2 feet
	Driveway (measured from edge of driveway at sidewalk)	7.5 feet
	Edge streetlight poles	20 feet
	Edge of fire hydrants	5 feet
	Edge of utility poles	10 feet
	Extension of cross street curb at an intersection	30 feet

Underground utilities	5 feet (except ducts and gas pipes as shown on Seattle Standard Plan 030 for residential streets)
Roadway edge, where no curb exists	10 feet

Railroad clearances: Certain requirements apply if a project is in the on, over, under, or in the vicinity of land or facilities owned and/or operated by railroad operators. There are three reference points for determining clearances: 1) the franchise agreement for a particular piece of railroad in the right-of-way; 2) state requirements; and 3) federal requirements. Whether state or federal (or both) requirements apply depends on the track classification and function.

Standard Clearances from Railroad Facilities

From	To	Standard Clearance
Centerline of railroad track	Any obstruction 6" or more in height	Minimum lateral clearance of 8.5 feet (10 feet desired). This clearance shall be increased 1.5 inches for every degree of track curvature
	Sidewalk or sidewalk landing	2 feet
	Driveway (measured from edge of driveway at sidewalk)	7.5 feet

Other clearances pertaining to railroads shall conform to Clearance Rules and Regulations Governing Common Carrier Railroads prescribed by the Washington Utilities and Transportation Commission. Minimum clear distance above a railroad track shall be 23 feet.

If your project is on or adjacent to property owned by railroad operators, contact the operator for information about required clearances or additional permit requirements.

Bicycle parking clearances: In addition to the clearances defined in the table below, bicycle parking facilities must not encroach upon a minimum of 6 feet of clear sidewalk space. Narrow racks such as the inverted-U rack, must have a total minimum combined clearance of 6' around the rack, measured from any point on the rack.

Standard Clearances from Bicycle Parking

From	To	Standard Clearance
Bicycle parking	Curb when adjacent to parking	3 feet
	Curb when adjacent to vehicle travel lane	2 feet
	Street trees and street furniture for the rail-type rack	1 foot

Electrical utility clearance requirements: Applicants who are developing a new project must pay attention to the potential conflicts between existing electrical facilities in the public right-of-way and their new building during project planning, design, demolition and construction. The following criteria applies:

Minimum horizontal and vertical clearances between overhead power distribution and buildings or other structures: The Seattle City Light (SCL) Overhead Power Distribution requires a minimum horizontal and vertical clearance from buildings and structures. The purpose of this clearance is to keep the general public and workers without high voltage electrical expertise out of harms way. Clearances also provide adequate space for qualified electrical workers to operate safely and efficiently during construction and long term operations and maintenance activities. Additional clearances are required to allow for regular building maintenance such as window washing activities.

Zero lot line developments: Zero lot line developments often encounter clearance problems with high voltage overhead and underground electrical facilities and wires. Land use setback requirements alone, for example when minimal front yard setbacks are allowed, are likely not adequate to account for required clearances from overhead electric utilities. Note that clearances are also required where electrical facilities are located in alleys. Thus proposed buildings may need to be located further back from property lines to accomplish required clearances.

Permit applicants must adhere to electric utility clearance requirements. Please contact Seattle City Light to arrange a meeting as early as possible in your design process. We recognize that each proposed development location, adjacent utilities, streetscape, and development request is unique. Even if poles and wires are not immediately adjacent to your property at this time, it is best to assume clearances are needed until you meet with Seattle City Light and verify otherwise. Additional and relocated infrastructure will be needed to serve the demand for growth.

Refer to [Figure 4-23: Seattle City Light Utility Clearance](#).
Refer to [Electrical Utility Clearances Notes](#).

4.21.3 Design Considerations

The applicant is advised to document the existing site conditions early in the design phase to identify any elements that may have a required clearance to help avoid possible costly site modifications during permitting.

4.22 Structures Within the Right-of-Way

City-owned structures are structures in the City's right-of-way installed to benefit the general public, built according to approved plans and specifications, which then are owned and maintained by the appropriate public entity such as: Department of Transportation; Parks and Recreation; Public Utilities; Fleets and Facilities or other public agencies. The primary types of structures are retaining walls, bridges, stairways and other transportation structures. All design elements shall conform to [Chapter 4.21.2](#) of this manual. In addition, each public facility owner may have a specific acceptance policy by which the structural types, design details and construction practice are evaluated prior to approval.

Privately owned structures are installed with the development of private property and are maintained by the adjacent property owner. These structures, typically retaining wall systems, may require an annual permit and an indemnity agreement, insurance and the owner will be responsible for the costs of an annual structural inspection. All design elements shall conform to [Chapter 4.21.2](#) of this manual.

All proposed structures, shall require the approval of the Director of Transportation prior to the issuance of the construction permits. Submittal for approval shall include stamped plans and calculations,

specifications, relevant survey and geotechnical information used for the design.

4.22.1 Links to Standard Plans and Specifications

[Standard Plan 141: Rock Facing](#)

[Standard Plan 440a and 440b: Cement Concrete Stairway & Handrail](#)

[Standard Plan 441: Cement Concrete Steps](#)

[Standard Plan 442: Steel Pipe Handrail](#)

[Standard Plan 443a and 443b: Steel Pipe Railing for Bike Path](#)

[Standard Plan 800: Support Wall](#)

[Standard Plan 801: Curb Wall](#)

4.22.2 Design Criteria

Wall Location

Cuts and fills along the edge or end of a roadway occur when the existing ground and proposed elevations differ. A retaining wall system is required if the elevation difference cannot be maintained with a maximum allowable ground slope per design standards. The intent of the wall limit shall be clearly defined on the drawings, including details for the wall ends.

All retaining walls shall be at least 2 feet clear of the sidewalk and 3 feet clear of the curb face where there is no sidewalk, unless otherwise approved by the Director of Transportation. Barriers, railings or fencing at the top of these walls may be required to provide safe passage. This requirement will be determined by the Traffic Division of the Department of Transportation. Refer to [Std Plan 141](#) for the standards.

Design Standards

All design shall be performed by or under the direction of a professional structural engineer.

The following design standards shall be used:

1. City of Seattle Right-of-Way Improvements Manual
2. City of Seattle Standard Plans for Municipal Construction
3. City of Seattle Standard Specifications for Municipal Construction
4. [Washington State Department of Transportation \(WSDOT\) Design Manual](#)
5. WSDOT Bridge Standards Drawings.
6. AASHTO LRFD Bridge Design Specifications, 4th edition, with 2008 and 2009 interims.
7. International Building Code (case by case basis).

Wall Types and Details

Erosion facing/non-structural walls: When the soil is determined to be stable under static conditions by a geotechnical engineer, the erosion facing wall, such as rock facing or decorative stackable masonry blocks may be used. These are considered non-structural walls. Refer to Chapter [4.21.1 Rock Facing Wall](#) Standard plans. The maximum allowable height for this wall system is 8 feet.

Alternate erosion facing may include stackable masonry blocks, jut matting, etc. Any near vertical erosion facing needs to meet the same slope and clearance criteria as rock facing and requires the approval of the Director of Transportation.

Structural Walls: When soil is unstable under static conditions, a structural wall is required to support the soil permanently. SDOT accepts both the standard and non-standard structural wall types. For proposed structures that are non-standard and lack the long term performance history, pre-approval of the concept

is required before design work should proceed.

An example of a non-standard wall is structural soil (geoweb soil wrap) wall. This wall system may be designed where no utilities or excavations would be anticipated. Permission to use these types of walls is rare, due to future utility uses and the no-dig zone space required for the soil mass.

Proposed City-owned and maintained structures require the approval of the Roadway Structures group of the Department of Transportation.

General Requirements:

1. If a retaining wall is not designed to resist hydrostatic pressure, install a 6-inch diameter subsurface drain and 3-inch diameter PVC weep holes spaced 12 feet apart. The weep hole shall be placed 6 inches above the finished grade at the toe of the wall, per City of Seattle Standard Plans. The subsurface drain shall be tied into the City drain systems, as approved by SPU. Refer to the standard plans in [Chapter 4.21.1](#) for weep hole detailing.
2. If a retaining wall is designed on top of an existing retaining wall, the new retaining wall should be designed with the assumption that the lower wall is not contributing to the lateral support to the slope below the newly designed retaining wall unless approved by Roadway Structures. Similarly if the wall is designed at the toe of a slope below an existing retaining wall, the toe wall shall include the surcharge of the existing wall unless approved by Roadway Structures. (See [Standard Plans 800 and 801.](#))
3. Wall details that are water and debris traps should be avoided.
4. Pedestrian guardrail openings shall not exceed 4 inches wide and the general layout shall discourage climbing activity.
5. Private and public retaining walls shall not be built integrally. Total structural isolation is required for adjacent walls.
6. Concrete walls that are prone to graffiti shall be coated with a moisture barrier and anti-graffiti paint.

The following are types of structures common to the City:

Reinforced Concrete Cantilevered Retaining Walls: Standard WSDOT cantilever reinforced concrete retaining wall design is acceptable. For walls longer than 30 feet, those must have expansion joints at a maximum of 24 foot spacing.

Soldier pile walls: Soldier pile walls are applicable when the soil types are unsuitable for other wall systems and where the right-of-way is unavailable for a standard cantilever retaining wall. This wall system shall have a reinforced concrete face and may be constructed with shotcrete or cast-in-place methods. Precast concrete panels are also acceptable on case by case basis. Timber laggings are not considered as a permanent structure. Weep holes and drainage shall be provided behind the wall. Unless enclosed by structural concrete, steel wide-flange piles should be coated with zinc rich primer and coal tar epoxy per City standard Specifications from the top of the wall to a minimum of 2 feet below the bottom of the lowest lagging.

Stairways: Stairways in public right-of-way shall be designed according to Seattle [Standard Plans 440a and 440b](#) Pedestrian lighting shall be provided for stairways.

Handrails and pedestrian rails: Railings shall be designated as "handrails" or "pedestrian rails" and their usage shall be as determined by [Figure 4-24: Determination of Hand Rails vs. Pedestrian Rails](#).

Handrails shall be designed in accordance with [Standard Plan 442 or 443](#), as appropriate.

Pedestrian rails shall be designed in accordance with criteria established by the SDOT Director, in

compliance with guard requirement of the International Building Code (IBC), meaning that they shall have a maximum spacing of 4" for vertical elements of the railing.

Traffic barriers: Vehicular railings on bridges shall be designed in accordance with AASHTO standards. Vehicular railings on retaining walls shall be designed in accordance with AASHTO standards unless otherwise approved by the SDOT Director. Vehicular guardrails on approaches to structures shall be designed according to Washington State Department of Transportation standards. For guardrails not on structures, the SDOT Director will determine the type of guardrail required.

Pedestrian overpasses / underpasses and skybridges: Pedestrian overpasses and underpasses typically span a transportation right-of-way and provide a connection between destinations that have a high volume of pedestrian use. Pedestrian overpasses shall be designed in accordance with criteria established by the SDOT Director. Skybridge permit policies are defined in the [SMC section 15.64 Skybridge Permits](#). SDOT requires AASHTO LRFD standard designs over the street provided it does not conflict with the applicable code to the building where the bridge is bearing on.

Areaways: Use the IBC for structural design with 250 lbs/sf live load for sidewalk top or HS20 whichever governs. Include curb ramps in the surface of the areaway to mimic [Standard Plan 422](#) at intersections (including "T" intersections).

Bridges: Bridges shall be designed in accordance with AASHTO LRFD Bridge Design Specifications.

Other structures: Sign support structures and streetlight poles shall be designed in accordance with AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

Construction Specifications

Slope stability shall be maintained at all times during the constructions of the wall system. Common methods used include temporary cut slopes, temporary shoring or temporary shotcrete.

Submittal of the construction specifications are required for the mechanically stabilized earth (MSE) wall.

Permission: During construction access rights from adjacent property owners may be needed. A negotiation for these rights by the developer needs to begin as soon as the need is discovered. SDOT will provide the needed document for signature by the affected property owner giving the right to enter private property for the scope of the construction and maintenance of the project.

Ownership/Maintenance Acceptance: Acceptance of privately built retaining walls that will be maintained or owned permanently by SDOT require the following prior to formal acceptance:

1. As-built shop drawings and plans in Mylar and are filed in the City's Record Center, (SPU's Record Vault).
2. Reduced size as-built final design calculations with the Structural Engineer's stamp and signature as well as the geotechnical report submitted to Roadway Structure's staff and all punch list items are completed to the satisfaction of the inspector.

4.23 Turn arounds and Cul-de-Sacs

When an existing right-of-way is not platted through from street to street, or when topography or other conditions preclude a street from being improved to its full street-to-street length, a cul-de-sac or other vehicular turnaround shall be provided. Cul-de-sacs are required at all street dead ends, and turnarounds are required at private access easement dead ends.

4.23.1 Links to Standard Plans and Specifications

N/A

4.23.2 Design Criteria

Determination of through street: DPD, in consultation with SDOT, shall determine when a street does or does not have the potential to become a through street. When a street does not have the potential to go through a cul de sac or turnaround is required. Dedication of additional right-of-way width may be required to accommodate the turnaround.

Cul-de-sac and turnaround design: Refer to [Figure 4-25: Cul-de-sacs](#) for passenger vehicle cul-de-sac designs and [Figure 4-26: Alley and Easement Turnarounds](#) for turnaround designs approved by the SDOT Traffic Engineer.

Turnarounds for non-residential zones: Shall be designed to accommodate the types of vehicles using the street, alley, or easement. Maximum longitudinal slope permitted for a cul-de-sac or turnaround is 8%.

Alley turns and turnarounds: Turnarounds are required at alley dead ends when the connecting street is an arterial. [Figure 4-26: Alley and Easement Turnarounds](#) and [Figure 4-25: Cul-de-sacs](#) illustrate alley turns that are approved by the SDOT Director for SF, L1, and L2 zones. All other zones will need individual review. The turn shall be designed to accommodate the types of vehicles using the alley. Alternate designs may be proposed, and are subject to approval by SDOT.

The Fire Department may require additional criteria for cul-de-sacs or turnarounds and alley turns or turnarounds when needed for adequate fire access.

4.24 Traffic Operations

All traffic control devices, such as traffic signals, traffic signs, or channelization shall conform to the Federal Highway Administration's Manual of Uniform Traffic Control Devices ([MUTCD](#)). Any revisions or additions to requirements specified in the MUTCD are subject to approval by the SDOT Director. Normally, modifications, additions, and installation of traffic control devices will require appropriate documentation of need.

4.25 Transit Zones

Transit Zones include passenger waiting, queuing and boarding uses in the sidewalk area as well as bus layover and staging uses along curb spaces in the street.

- It is important to design transit facilities and amenities that will attract transit patrons, accommodate pedestrian movements between destinations and transit services, and to maintain and improve the speed and reliability of bus operations
- Transit zones should be easily identifiable, safe, accessible, secure, and provide a comfortable waiting area for transit passengers while providing for pedestrian sidewalk circulation and through block connections for pedestrian travel.

New development projects must coordinate directly with SDOT prior to assuming any changes in the right of way, including curb space designations.

4.25.1 Links to Standard Plans and Specifications

[Standard Plan 423: Bus Shelter Footing](#)

[Standard Plan 630: Metro Bus Zone Sign Installation](#)

4.25.2 Design Considerations

Design guidelines are to be used for the design of transit facilities, the placement of transit passenger amenities, and to describe the process for developing transit facilities:

- Transit zones should be accessible. Americans with Disabilities Act (ADA) considerations will be given top priority in the siting and design of new and existing transit zones. Transit zones should consist of an accessible pathway and a wheelchair lift landing pad that are free from obstructions.
- Transit signage placement, equipment, service and schedule information will be provided for by King County Metro Transit and authorized by SDOT.
- Transit zones are common places for street furnishings and street lighting. Bus stop improvements should include transit shelters and other amenities including bicycle racks, pedestrian scaled lighting, signage, benches, litter receptacles, etc. Electronic real-time schedule information and other premium elements should be added where demand and funding exist as determined by SDOT. Elements must be consistent with SDOT and transit agency priorities, standards and criteria.
- Utilize and/or design adjacent overhangs, canopies, and building arcades to provide weather protection for transit patrons, including leaning rails, benches and pedestrian scaled lighting. The design of overhead weather protection should be coordinated with the lead transit agency.
- Bus stop design must include careful consideration of transit speed and reliability and overall traffic operations. Installation of bus stops which require buses to pull into and out of traffic should occur only where an in-lane stop configuration is not feasible. Improvements to any bus stop on that requires buses to pull into and out of traffic should include conversion to an in-lane stop configuration whenever feasible.
- For safety and other reasons, generally give preference to locating transit stops at the far side of intersections.
- Locate transit stops to assure comfort, convenience and safety for all transit users, including pedestrians, cyclists and people with mobility impairments. Consider well placed, well lit locations with good site distance in close proximity to crosswalks.
- Transit zones will be spaced to maximize the speed, reliability, rider comfort, and efficiency of transit service while providing adequate service coverage. The City of Seattle Transit Plan and current industry best practices call for approximately 1/4 mile stop spacing between bus stops in most cases.
- King County/Metro Transit requests pre-design coordination and requires plan review for projects adjacent to transit corridors, zones and facilities. [Contact Metro Transit's Transit Route Facilities Supervisor.](#)

4.26 Street Furniture, Public Art and Unique Objects in the Public Right-of-Way

Street furniture, public art, and other unique objects in the public right-of-way, including pedestrian amenities and bicycle installations, are important elements that can create an active, safe, and attractive public realm. Examples of street furniture include benches, litter and recycling receptacles, bike racks, multiple publication modular newsstands, water fountains, pedestrian-scaled lighting, bollards, and

planters. Public art may include art installations that have a functional or aesthetic component and that is either owned and maintained by a private or public entity. Some types of street furniture, such as kiosks and other atypical installations, are referred to as 'Unique Objects' because they are nonstandard and require location and design review.

The intent of this section is to promote consistency, predictability, safety, and design excellence in the type and location of public realm installations located in the right-of-way. Get more information on [street furniture](#).

4.26.1 Links to Standard Plans and Specifications

N/A

4.26.2 Design Criteria

To ensure pedestrian safety, the arrangement of installations in the sidewalk corridor should be divided into a landscape/furniture zone, a pedestrian zone, and a frontage zone.

Accessibility consideration: Pedestrians with vision impairments can detect objects mounted on walls or posts if they are installed so that the leading edge is less than 27 inches above the sidewalk grade. Items mounted above this height should not project more than 4 inches into any circulation route. Particular care should be taken to locate temporary signage so that it does not impede pedestrian mobility and access. The pedestrian zone shall be kept clear of all permanent or temporary installations.

Locating public art in the right-of way: The [Seattle Office of Arts and Cultural Affairs](#) is responsible for reviewing public art in the right-of-way. Like other types of street furniture, public art should be located outside the pedestrian zone. For additional information, please review the [Director's Rule on how Visual Artworks](#) are reviewed.



Frontage, Pedestrian and Street Furniture/Zones
(photo courtesy of Shelley Poticha)

Locating unique objects in the right-of-way: Unique objects in the right-of-way may include public art, commemorative plaques, memorials, bus shelters, wayfinding signage, and kiosks. SDOT will evaluate applications and serve as the first point of contact for applicants with recommendation from the [Seattle Design Commission](#) or other applicable advisory board. SDOT will also serve as the coordinating agency between the Design Commission, [Historical or Landmark District Preservation Board](#), and other appropriate review authorities.

Any street furniture, public art, or other unique objects in the right-of-way require an Annual Street Use permit to serve as the long-term record of ownership and maintenance responsibilities. This annual permit is in addition to any required Street Use construction permits for the installation work proposed.



Public Art—Unique Objects in the Right-of-Way

4.26.3 Design Considerations

Special pavement: Used appropriately special pavement, including tile, brick, finish treatments and scoring or colored concrete, can increase the quality of the pedestrian environment. Design considerations include ensuring that pavement is durable, slip resistant, and free of trip hazards. A further design consideration is the ease of accommodating future pavement cuts and restorations.

Examples of Public Art Seating



Louis Longi, 1999

Seating: Successful outdoor seating requires thoughtful design and placement. Seating should be designed to encourage appropriate use and be located to maximize user comfort and utility and not impact the mobility of pedestrians. Consider integrating seating into art installations or other hardscape installations. Seating should be clear of the pedestrian zone.



Jorg Dubin, 2000

Sidewalk Cafes: A sidewalk cafe is an outdoor seating area on a public sidewalk used by restaurant patrons for consuming food or beverages provided by an adjoining restaurant or cafe. Sidewalk cafes provide vitality and interest to the sidewalk environment and are encouraged where they can be accommodated. Refer to:

<http://www.seattle.gov>

[/transportation/stuse_sidewalkcafe.htm](http://www.seattle.gov/transportation/stuse_sidewalkcafe.htm) for more information.



Another type of outdoor seating option is the table and chairs permit is issued in SDOT's Street Use Division. This permit may allow a maximum of four tables with two chairs per table per permit depending on site characteristics. While the tables and chairs are available to the patrons of an adjoining business, they must be open for use by the general public, table service may not be provided, and alcohol cannot be consumed. Refer to [table and chair permits](#) for more information.

An Annual Permit is Required: The City of Seattle will require an Annual Street Use permit to serve as the maintenance agreement for the artwork, street furniture, or unique object installations. The City of Seattle may also require insurance and a hold harmless indemnity agreement, depending on the installation and the site location.

4.27 Access Easements – Design Criteria

Vehicle access easements serving one or two dwelling units shall be surfaced with crushed rock at least 6 inches in depth.

Vehicle access easements serving more than two dwelling units shall be surfaced with 3 inches of asphalt over 6 inches of crushed rock.

A 2 foot wide shoulder shall be provided on each side for clearance. Easements shall be graded to a crowned cross section with thickened edge or a “v” cross section to provide for collection of storm water. Control of storm water runoff from the easement shall meet the same drainage control requirements as the building lot. The top 12 inches of subgrade shall be prepared as specified in the Seattle Standard Specification 2.06.

Turnarounds must meet the requirements shown in Figure 4-25 or 4-26.

4.28 Contact Information

Organization Name/Website	Phone
Bicycle Facilities	(206) 684-7583
Clearances	(206) 684-5283

Crosswalks	(206) 684-7583
Cul-de-sacs and Turnarounds	(206) 684-5283
Curbs	(206) 684-5283
DPD—City Design	(206) 684-0763
Driveways	(206) 684-5283
Fire Protection	(206) 684-5976
Intersections	(206) 684-5283
Metro Transit Route Facilities Supervisor	(206) 684-1321
SDOT Policy, Planning and Major Projects Division, Planning, Street Classifications, and Street Types	(206) 615-0872
SDOT Street Paving, Roadway Pavement	(206) 233-0044
SDOT Street Use Division	(206) 684-5283
SDOT Street Use Division, Design Cross Section	(206) 684-5283
SDOT Street Use Division, Grading	(206) 684-5283
SDOT Street Use Division, Roadway Width	(206) 684-5283
SDOT Urban Forestry Division	
Seattle Municipal Tower PO Box 34996 700 5th Avenue, Suite 3900 Seattle WA 98124-4996	
Seattle City Light Customer Engineering: Seattle City Light North Electrical Services – north of Denny Way North Customer Engineering, 1300 N. 97th St. Seattle	(206) 615 0600
Seattle City Light Customer Engineering: Seattle City Light South Electrical Services – south of Denny Way South Customer Engineering, 3613 - 4th Ave. S. Seattle	(206) 386 4200
Seattle Office of Arts & Cultural Affairs	(206) 684-7171
Seattle Public Utilities Engineering Utility Customer Service Teams	(206) 684-5976 (206) 684-5800
Seattle Municipal Tower 700 5th Avenue Floor 31 Seattle, WA 98104	
Seattle Public Utilities (SPU) Records Vault Seattle Municipal Tower, 47th Floor	(206) 684-5132
Sidewalks	(206) 684-7583
Street Lighting	(206) 684-5197
Street Drainage, Storm Drains and Sewers	(206) 386-0028

Street Furniture, Public Art and Unique Objects in the Right-of-Way

Street Trees and Landscape Architecture	(206) 233-7829
Structures within the Right-of-Way	(206)-684-8325
Transit Zones	(206) 684-5283
Water Mains	(206) 684-5976

Additional contact information and resources are located in the [City of Seattle Staff Directory](#), which is searchable by Department, Division and individual staff.

Construction and Maintenance

5.1 Introduction

This chapter includes information and links to other resources that must be considered when working in the street right-of-way including:

- Pre-Construction Activities
- Inspection and Testing Procedures
- Creating an Accessible and Safe Work Site
- Traffic Control Requirements for In Street Work
- Locating Underground Utilities
- Protection of Survey Monuments
- Construction Stormwater Control
- Demolition and Grading During Construction
- Hazardous Materials Contamination
- Shoring, Excavation, and Safety Systems During Construction and Inspection
- Street and Sidewalk Pavement Opening Restoration Rules
- Acceptance and Warranty Period
- Record Drawings
- Annual Permits and Maintenance Responsibilities
- Contact Information

5.2 Pre-Construction Activities

Before work permitted under a Street Improvement Permit can begin, the Permittee must submit pre-construction materials for review and approval. The Pre-Construction materials may include:

- Construction Contact Form – This form identifies the billing party and general contractor for the construction phase of the project
- Construction Schedule – Provides the sequencing and duration of the work in the right-of-way.
- Request for Approval of Material Sources (RAMS) Form and Submittals – This form identifies all materials to be placed in the right-of-way, and provides specific information on the materials including mix designs, material certifications, catalog cuts, and material samples.
- Notice of Construction in the Public Right-of-Way – This is the notification required to be distributed to businesses and residents potentially affected by the upcoming construction. Additional information on notifications relative to contractor activities can be found in [Seattle Standard Specification 1-07.28 Notifications Relative To Contractor's Activities](#).
- Proof of Insurance – Shows that the Permittee or General Contractor has sufficient insurance and names the City of Seattle as an additional insured.
- Traffic Control Plan – Identifies temporary traffic revisions required during construction.

The assigned SIP project manager will identify the specific pre-construction materials that will need to be submitted for review and approval based on the location and scope of work at the time of permit issuance.

Once all of the pre-construction materials have been reviewed and approved, a pre-construction meeting will be held either at the project site or at SDOT offices, depending on the size and scope of

the project, to review the contractor or subcontractor schedules and confirm other construction-related information.

Refer to [CAM 2216](#) for more information regarding the pre-construction process.

5.3 Construction Inspection and Testing Procedures

The owner of the project, owner's representative, and/or General Contractor is responsible for scheduling all required inspections for their work and the work of their sub-contractors. Street Use Inspector will coordinate all inspections required by other City Inspectors such as electrical, landscaping, structural components, etc.

The Street Use Inspector will conduct the scheduled inspection and document the inspection. Results of the inspection will be forwarded to the owner, owner's representative, and/or General Contractor. Any corrective action and additional inspection will be coordinated through the appropriate parties as noted above.

Any deviations from the approved permit and plans will be documented. All significant changes and revisions of the permits shall be submitted to Street Use for review and approval. The contractor is responsible for all required corrective actions.

Street Use Inspectors are responsible for ensuring that work completed under Street Use permits is constructed in accordance with the rules and regulations of the City of Seattle such as: approved plans, permit requirements, City Municipal Code, Ordinances, Director's Rules, Traffic Control Manual, and the [City Standard Plans and Specifications](#).

Additional Special Inspectors (such as geotechnical engineers, structural inspectors, or material testing labs) may be required to be available during construction to provide reports and recommendations to the contractor and Street Use Inspectors. Street Use inspectors may also rely on other City inspectors (SDOT Urban Forestry, SDOT Signal Operations, SPU) for certain inspections.

5.4 Creating an Accessible and Safe Work Site

In general, Seattle's Standard Specifications contain baseline requirements addressing Safety Rules and Standards, Protection and Restoration of Property, Public Convenience and Safety, Notifications Required of Contractor Activities, Temporary Traffic Control (see [Standard Specifications 1-07.1\(2\)](#), [1-07.16](#), [1-07.23](#), [1-07.28](#), and [1-10](#)), and other General Requirements that may apply to a specific construction. These Standard Specifications may be amended by permit, by the Seattle City Council, or other legal authority for a site or project specific application.

[Chapter 49.17 RCW](#) Washington Industrial Safety and Health Act addresses the responsibilities of the employer to ensure safe working conditions. [Washington Administrative Code \(WAC\) Title 296](#) addresses the responsibilities of the Washington State Department of Labor and Industries as it relates to safe working conditions. [WAC Chapter 296-155](#) addresses most, but not all, construction safety elements typical of construction in the street right-of-way.

Other entities, including regulatory entities, may have additional requirements for safe and accessible work sites. The project applicant shall become familiar with working clearances and other safety requirements as applicable.

It is the responsibility of the contractor to ensure the safety of all persons and the protection of all property.

5.5 Traffic Control Requirements for In-Street Work

The [Traffic Control Manual for In-Street Work](#) defines the basic principles and standards to be observed by all those who perform work within a street right-of-way so that:

- Work areas are safe and congestion is minimized;
- Motorized and non motorized traffic is warned, controlled and protected; and
- All traffic is expedited through the work zone to the extent possible.

Consistent with the standards defined in the [Federal Highways Administration's Manual of Uniform Traffic Control Devices \(MUTCD\)](#), the Traffic Control Manual defines the following:

- required components of a traffic control plan;
- the circumstances under which a traffic control plan is required as a permit condition for work that takes place in or adjacent to the street right-of-way;
- the appropriate type and location of traffic control devices;
- procedures for obtaining permission to work in the street right-of-way;
- requirements for pedestrian access, control and protection;
- requirements for curb space management including loading, transit and special parking;
- detours and street closures;
- emergency work;
- constraints on time of construction to accommodate time of day and special event traffic volumes; and
- standard barricades and signing illustrations.

The Traffic Control Manual is produced and maintained by SDOT's Traffic Management Division.

Refer to the [Traffic Control Manual website](#) for more information.

SDOT requires a traffic control plan be submitted for review and approval prior to the commencement of work in the public right-of-way when:

- The project will impact pedestrian or vehicle movements on an arterial street; or
- The project will impact pedestrian or vehicle movements in a high impact area as defined by the City Traffic Engineer
- Traffic control cannot be made to match exactly sketches within the [City of Seattle Traffic Control Manual for In-Street Work](#) (Traffic Control Manual); or
- Other special circumstances exist as determined by the City Traffic Engineer.

When working near King County Metro facilities (trolley wires, bus stops, etc) the Permittee must also coordinate with King County Metro. Metro can be contacted at

Construction.Coordination@kingcounty.gov or (206) 684-2732. Additional information regarding King County Metro requirements can be found in the [Traffic Control Manual](#).

Additional information regarding traffic control plans can be found in [CAM 2110](#), [CAM 2111](#), and [CAM 2112](#).

5.6 Locating Underground Utilities

The locations of underground utilities can be obtained by calling the One Number Locator Service (ONLS) hotline (1(800) 424-5555) of the Utility Underground Location Center and requesting the location of underground utilities except side sewers. Staff from the center will mark the locations of all known public and private utilities in the right-of-way. The applicant can learn the location of a side sewer through SDOT's Street Use Section. Knowing these locations in advance will save time and money during design and construction. Information on existing utilities and new utilities required for the project must be included on the street improvement plans submitted to Street Use.

5.7 Protection of Survey Monuments

A Washington State Department of Natural Resources ([DNR](#)) permit is required ([WAC 332-120-040](#) and [RCW 58.04.015](#)) for any work that would remove, adjust, destroy or otherwise make a Survey Point or

Monument no longer visible or readily accessible. In addition, coordination with SPU Survey Unit, 206-684-4674, regarding street monument will be required prior to any work impacting existing survey point or monuments in the right-of-way. For more information on monuments, refer to the [Seattle Public Utilities Survey website](#) (especially [CAM 1401](#) Notes 4 and 21 and [CAM 1402](#)).

5.8 Construction Stormwater Control

The primary focus of construction stormwater planning is to prevent sediment and other pollutants associated with construction activity from impacting soil, air, and water quality. Such impacts can increase project costs through regulatory and legal fines, and through repair of site damage and delays to project delivery.

The Stormwater Code ([SMC 22.800-22.808](#)) and associated [Directors' Rules](#) have been revised to account for advances in urban stormwater runoff management practices. These regulations are in place to protect life, property, public health and the environment from the adverse impacts of urban stormwater runoff. Adverse impacts can include flooding, pollution, landslides and erosion.

Construction Stormwater and Erosion Control Plans (CSECP) are required to adequately and systematically identify and minimize project risk. The CSECP is needed to satisfy the construction stormwater pollution prevention requirements for all projects that require stormwater site plans.

All projects must apply appropriate best management practices (BMPs). Small projects (projects with less than 5,000 square feet of new plus replaced impervious surface) must implement the BMPs listed as conditions of the permit. It is the Permittee's responsibility to evaluate the eighteen elements listed in [SMC 22.805.020](#) to mitigate the project impacts. Large projects (projects with over 5,000 square feet of new plus replaced impervious surface) must have a CSECP, prepared by a licensed engineer, reviewed and approved as part of the Street Improvement plan set.

Additional resources for standard details include Standard Plans for tree protection [132](#), [132a](#), [133](#), and [134](#), as well as [DPD plan template](#) for small project construction stormwater control.

5.9 Demolition and Grading During Construction

Demolition, grubbing (removing material from the project site such as soil, pavement or vegetation), and grading (changing the surface of the ground) generally are the first activities that occurs during construction. Typically, the following requirements are needed before demolition, grubbing, and/or grading:

1. Installation and approval of [erosion and sediment control](#) Demolition, grubbing (removing material from the project site such as soil, pavement or vegetation), and grading (changing the surface of the ground) generally are as outlined in the Stormwater codes [SMC 22.800-22.808](#); and
2. Providing a survey to establish the designed elevations of the sub grade or surface of the improvement.

Excavating and placing soils may also require soils to be transported to an acceptable disposal site and/or importing soils from an approved source.

All work in the right-of-way, including demolition activities must be conducted with minimum impacts to existing trees; refer to [Ch. 4.14 Street Trees and Landscape Architectural Standards](#) and any other existing infrastructures.

5.10 Hazardous Materials Contamination

If suspected contamination is discovered during construction activities, work shall cease and the Street Use inspector shall be notified. Upon consultation with SDOT Environmental Services, the inspector may require the contractor to sample for contaminants and report the results to the City. The City may then require additional sampling to determine potential impacts to the right-of-way.

5.11 Excavation, Shoring, and Safety Systems During Construction

Excavation as defined in [RCW Ch 19.122](#), whether by open cut or trenchless technology method, shall not damage underground installations, surface improvements, or adjacent structures. Excavations that are classified as trenches are required to have a safety system (refer to the requirements defined in the [WAC 296-155 Part N](#). Additional requirements for safety systems apply to underground construction refer to the requirements defined in [WAC 296-155 Part Q](#).

Shoring is a means of supporting the earth in a trench or vertical cut for building and roadway construction or other underground installation activities. There are many types of shoring and ground support techniques for earth reinforcement or support of excavations. Properly installed shoring system for excavations is critical for maintaining the structural integrity of the adjacent roadway structures and underground utility infrastructure. The WAC has a number of regulations addressing shoring and excavations that depend on site specific site and subsurface conditions. Refer to the [Standard Specification 2-04](#) for more specific information on general trench shoring requirements, and for trench shoring regarding water mains.

Shoring review, approval and inspection of Utility and Street Improvement Permits are performed by SDOT through the permitting process. During building permit applications, DPD reviews the stability of the adjacent private property while SDOT reviews the plans to ensure stability of the right-of-way. For more information, refer to the [Street Use Shoring Review website](#).

5.12 Street and Sidewalk Pavement Opening Restoration Rule

The Pavement Opening and Restoration Rule (PORR) describes the requirements that applicants, contractors, and city crews shall meet when making or restoring openings within the street right-of-way. The rule describes the extent and type of restoration required for different street classifications and pavement types.

Refer to a full copy of the [Rule](#), as it is the best source of information on this practice.

5.13 Acceptance/Warranty Procedures for Improvement Projects



An SDOT Inspector will perform an acceptance inspection of the project. When there are no unresolved issues at this acceptance inspection, the project will be accepted as “complete”. If applicable, the SDOT inspector will then notify the DPD Inspector that the Permittee has complied with the Street Use requirements. A one-year bond period commences from the project acceptance date. The DPD Inspector may then issue a Certificate of Occupancy, or a temporary Certificate of Occupancy, whichever is applicable.

All surety bonds for street right-of-way improvements are kept for a year to ensure that all improvements retain functionality during that period. After one year, the SDOT Inspector returns to the project site to inspect for any apparent workmanship shortcomings that qualify as a safety hazard to pedestrian and vehicle traffic. If the area improvements meet specification standards and are performing satisfactorily, then the bond is released and the project considered closed.

5.14 Record Drawings

The City of Seattle is responsible for keeping records drawings on file as defined by [RCW Chapter 19.122](#). These drawings are kept in [SPU's record vault](#). Before issuance of a Street Right-of-Way Improvement Permit, a signed copy of the approved plan set is forwarded to the record vault. If any changes are made to the plan during construction, an as-built drawing is prepared and sent to the SPU record vault to be incorporated into the permanent plan set. The public has access to these plans for

future improvements and for maintenance activities

5.15 Annual Permits and Maintenance Responsibilities

There are numerous surface elements in the street right-of-way that require regular or periodic maintenance. Maintenance responsibility for these elements varies. Typically, the City of Seattle is responsible for the area between the curbs. With the exception of trees and other landscape improvements installed by the City of Seattle and/or otherwise recorded in the inventory maintained by the SDOT Street Use and Urban Forestry Division, the adjacent property owner is responsible for the area between the curb and property line, including the planting strip and sidewalk.

The City maintains public utilities that have been installed to serve the general public. The property owner is responsible for maintenance of service lines to their properties. Property owners are also responsible for the portion of their water service that extends from the union generally located at their property line to the shutoff valve of their residence or business. The City is responsible for the portion of the water service that extends from the union to the water main, including the meter and service line. Refer to [Figure 5-1: Water Service Responsibility Diagram](#) which illustrates City and property owner responsibilities regarding water service. For more information on [Side Sewers](#) contact Seattle Public Utilities.

If a property owner or project applicant installs or constructs a unique feature in the right-of-way that will be privately owned and maintained (e.g., rockery, street furniture, artwork), the City of Seattle requires a separate permit and indemnification. Depending on the type of encroachment the permit will either be an annual permit or a term permit (which requires City Council approval). The purpose of these permits is to clarify that the responsibilities for maintenance lie with the private property owner. In some cases, a bond may be required to deal with removal of a unique structure in the future, if necessary. Approved indemnity agreements are recorded at King County and become part of the property deed that is recorded with the King County Assessor's Office.

5.16 Contact Information

Organization Name/Website	Phone
Seattle Department of Transportation (SDOT) General Information	(206) 684-7623 (ROAD)
SDOT Street Use Inspectors	(206) 684-5253
SDOT Shoring Review Section	
SDOT Street Use Division	(206) 684-5283
SDOT Street Utility Coordination	(206)684-5280
SDOT Pavement Opening and Restoration Rule	(206) 684-5253
SDOT Traffic Management Division	(206) 684-5111
Seattle Public Utilities (SPU)	
General Information	(206) 684 3000
Records Vault	(206) 684 5132
SPU Land Survey Services	

[King County Metro](#)

(206) 684-2732

Additional contact information and resources are located in the [City of Seattle Staff Directory](#), which is searchable by Department, Division and individual staff.

6.1 Street Design Concept Plans

[6.1.1 Overview](#)

[6.1.2 Proposal Must Meet City Street Design Standards](#)

[6.1.3 Implementation is Voluntary](#)

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[6.1.5 Approval Process](#)

[6.1.6 Summary of Approval Conditions](#)

[6.1.7 Key SDOT Considerations In Review of Street Design Concept Plans](#)

[6.1.8 List of Approved Street Design Concept Plans](#)

6.1.1 Overview

Streetscape features, such as street lights, trees and landscaping, and street furniture can contribute to the unique character of a block or entire neighborhood. This chapter describes the process for developing a Street Design Concept Plan (Concept Plan) and the process for getting such a plan approved by the Seattle Department of Transportation (SDOT) and Department of Planning and Development (DPD). Refer to [Figure 6-1: Street Design Concept Plan Process](#).

Seattle has a growing number of areas where community groups, developers or property owners are interested in developing a design concept for a street or series of streets. Concept Plans solidify a vision for the street or streets included and can tie that vision back to other planning and design documents that the neighborhood or City may have developed. Concept Plans are also useful as a vehicle for discussion between the proponent and the City about appropriate streetscape elements given the adjacent land use and the street's operational characteristics. Refer to [Figure 6-2: Street Design Concept Plan Template-Plan](#) for a sample plan and to [Figure 6-3: Street Design Concept Plan Template-Context](#) for a sample plan within context.

Concept Plans are proposed by a project proponent, typically a property owner or developer seeking to create an enhanced streetscape treatment for their project. The proponent may also be a community group that is interested in enhancing or preserving certain street features that are unique to their neighborhood. The proponent will then work in consultation with SDOT and DPD to develop the Concept Plan.

Typically, the Concept Plan provisions are implemented over time by multiple property owners as parcels on the block re-develop. In order to make the submittal process as straightforward as possible for the proponent, and expedite the City review process, this chapter also includes a template for a Concept Plan submittal that can be adapted to suit the specific proposal.

6.1.2 Proposal Must Meet City Street Design Standards

Any project that is constructed in an area that has an adopted Concept Plan must still meet the currently adopted minimum requirements for the streetscape and roadway outlined in the Land Use Code, the design criteria in [Chapter 4 Design Criteria of the Right-of-Way Improvements Manual](#), and any applicable [City of Seattle Standard Plans and Specifications](#).

6.1.3 Implementation is Voluntary

The provisions in a Concept Plan are voluntary. However, property owners are encouraged to follow them in order to achieve their intent. Street Use Permit submittals that follow the provisions of the Concept Plan can be assured that the major design elements contained in their plans meet or exceed the requirements described in this manual. The City strongly encourages that the Concept Plan be followed especially for any proposals for curb alignment grade and utility locations.

6.1.4 Templates for Street Design Concept Plan Submittals

In order to simplify the process of preparing a Concept Plan for both the proponent and the City, the following template shall be used for submittals. Items in bold are required for all submittals:

6.1.4a Context

The context information should include the following:

- **Vision statement:** one or two paragraphs that describe the vision the proponent is trying to achieve through the Concept Plan. This should be supplemented with photos of existing conditions and illustrative sketches of the proposal.
- **Site map:** the purpose of this map is to locate the project and define its geographic scope.
- **Existing street section:** develop a scaled (1 inch=20 feet) is suggested), dimensioned street section that defines the existing street (e.g., number, width and typical purpose of travel lanes, location and width of sidewalks and planting strips).

Refer to [Figure 6-3: Street Design Concept Plan Template-Context](#).

6.1.4b Dimensioned Street Section of Proposal

Develop a scaled (1 inch=10 feet is suggested), dimensioned street section that defines the proposed street elements. This section should be accompanied by a short description of the features that are proposed to change if the Concept Plan is approved and implemented. Refer to [Figure 6-4: Street Design Concept Plan Template: Dimensioned Street Section](#) for an example. A plan section may be necessary to present the full concept. Scale for both the existing and proposal may change depending on the geographic size of the proposal.

6.1.4c Detailed Evaluation of Traffic Operations

Describe the proposed operations of the street(s) for traffic. Include, at a minimum, the following:

- One way or two way operations;
- Presence and configuration of parking;
- Sidewalk location and width;
- Presence of signals, regulatory signs or other roadway markings;
- Presence of traffic calming devices;
- Analysis of existing capacity, volumes and level of service on arterials and impact of proposal on future traffic operations along the street and adjacent arterial system;
- Impacts on non-motorized modes of travel (pedestrian, bicycle, people with mobility impairments); and
- Evaluation of freight mobility and local service deliveries.

6.1.4d Dimensioned, Plan View Sketch of Proposal

Develop a plan view sketch of the proposed street right-of-way features. The Concept Plan should define or illustrate all of the streetscape features proposed, as well as basic information about traffic operations and typical travel behaviors on the street or streets. Include, at a minimum, the following street right-of-way features:

Roadway

- Curblines (including curb bulbs if proposed) or roadway edge;
- Special curb space zones (e.g., loading zones, bus layover zones);
- Parking, on-street location and configuration;
- Traffic operations (as defined above);
- Transit routes (bus, light rail or streetcar);
- Service access and delivery needs; and
- Street classifications within a quarter mile of the proposed site (refer to [Chapter 4.2 Street Classifications and Types](#)).

Streetscape

- Sidewalks, walkways or other pedestrian space (location and dimensions);
- Bicycle parking;
- Paving material design;
- Trees and landscaping design, location and specimen type;
- Street furniture (e.g., benches, planters, waste receptacles), description and location;
- Weather protection (e.g., awnings);
- Signage, especially any non-standard or special signs;
- Public art or other unique features; and
- Transit stops or stations.

Utilities

- Lighting (roadway, pedestrian scaled or other);
- Utilities, type and location of water, power and drainage both above and below grade;
- Natural drainage proposals; (refer to [Figure 6-5: City of Seattle Creek Basin map](#) to determine if the location of your project is within a creek basin) and
- Private utility locations (refer to Chapter 2 - Navigating the City of Seattle Permit Process, [Chapter 2.10.11 Coordination Activities](#)).

6.1.4e Other Considerations or Unique Features Proposed

Include a description of streetscape features that are considered unique (e.g., special paving treatments or landscaping, special street and/or pedestrian lighting, non-standard stormwater or natural drainage treatments).

6.1.5 Approval Process



Concept Plans can be formally approved through a DPD/SDOT Joint Director's Rule. The Proponent develops a Street Design Concept Plan using the guidance provided in [Chapter 6.1.4](#).

6.1.5a Proposal of Preliminary Concept Plan

The Proponent proposes the preliminary concept to City.

6.1.5b Pre-Application Conference

Proponent attends a pre-application conference with staff from SDOT, DPD, Seattle Public Utilities and Dept. of Neighborhoods (if appropriate) to describe the vision for the Concept Plan and get input as to whether the proposal is feasible. In some cases, staff from other departments may need to be involved in making the final decision as to whether the concept proposed is feasible. In these instances, a final determination of whether the applicant should develop the Concept Plan will be made in writing within 30 days of the pre-application conference.

6.1.5c Develop Concept Plan

The Proponent develops [Street Design Concept Plan using the guidance provided in Chapter 6.1.4.](#)

6.1.5d City Review of Concept Plan

SDOT, in consultation with DPD, reviews the Concept Plan and describes the modifications or conditions that need to be met for City approval.

6.1.5e Proponent Revises Concept Plan as Requested by City

The Proponent modifies Concept Plan and re-submits to SDOT for final review and approval. SDOT will consult with DPD before a decision is made.

6.1.5f Approval by DPD/SDOT Joint Director's Rule

SDOT and DPD approve the Concept Plan by Joint Director's Rule. The Joint Director's Rule process has requirements for completion including listing the proposed design concept Rule in the Daily Journal of Commerce (DJC) and providing a 14 day appeal period prior to approval. The Rule must also be approved by the DPD and SDOT Directors. Once approved, the Concept Plan is appended to this Manual and listed in [Chapter 6.1.8: List of Approved Street Design Concept Plans.](#)

6.1.6 Summary of Approval Conditions



If a Concept Plan is approved by the City through a Joint DPD/SDOT Director's Rule, then the following applies:

- SDOT has agreed that the proposals described are appropriate for the street or streets defined.
- SDOT and DPD have determined the vision for the streetscape and features described in the Concept Plan are consistent with a recognized community or City sponsored plan for the area.
- The Concept Plan has had an appropriate level of review by SDOT and DPD and by other interested stakeholders.
- Once approved, the Concept Plan will be appended to this Manual and made available through this website. These actions will maintain a record of the proposed improvements, so that as new development proposals come forward within an area covered by a Concept Plan, the City can strongly encourage that the plan be followed.
- Improvements on streets that have an adopted Concept Plan may be implemented at one time, or over a longer period of time by multiple development or street right-of-way improvement projects.

- Preparation of a Concept Plan is encouraged for projects that are located on a designated Green Street or Neighborhood Green Street (refer to [Chapter 6.2 Green Streets](#)).
- Maintenance of any street right-of-way improvements that are beyond City standards is the responsibility of the property owners unless otherwise negotiated with SDOT. View more information about maintenance agreements related to streetscape improvements in [Chapter 6.2.6f Maintenance](#).

6.1.7 Key SDOT Considerations In Review of Street Design Concept Plans

Enhancements to the streetscape such as special paving treatments and street furnishings can contribute to the experience for pedestrians and help define neighborhood character. Well-designed streetscapes can support activities in neighborhood business districts, and make walking an attractive choice for getting around the city. SDOT recognizes and supports the range of benefits a well-designed streetscape provides for all pedestrians, including people with disabilities. For these reasons, SDOT reviews streetscape design elements very carefully to ensure that all of the materials, dimensions and design elements meet safety and accessibility requirements.

In addition to the aesthetic and practical benefits of a well-designed streetscape, SDOT must meet state and national safety and access standards for streetscape design. It should be possible to carry out the creative intent of a design proposal and meet the safety and accessibility requirements. SDOT and the Department of Planning & Development (DPD) are working together to better coordinate SDOT's early involvement and guidance with the design review process. The information below describes the key issues that SDOT street use permit reviewers and engineers must consider when reviewing streetscape designs:

6.1.7a Use of Materials

Pavement materials that result in a slippery or uneven pavement surface will not comply with standards established by the [Americans with Disabilities Act \(ADA\)](#) and therefore should be avoided.

6.1.7b Minimum Sidewalk Width, Areas Free of Obstructions

ADA requires a minimum of five feet of clear sidewalk space for two wheelchair users to pass one another. SDOT prefers six feet of unobstructed, linear sidewalk space that is free of street furniture, street trees, planters, and other vertical elements. These minimum widths are required to provide access to people with mobility impairments.

6.1.7c Curbside Management

Curb space to accommodate bike lanes, parking, loading zones, transit zones, and other street elements is in very high demand in Seattle neighborhoods. While wide sidewalks and planting strips may meet many City and neighborhood goals, on-street parking spaces in business districts may also meet multiple policies and goals. Trade-offs are often necessary among the numerous uses competing for limited amounts of curb space. Removing parking to add other street elements is possible in many locations and always requires careful consideration of business and neighborhood parking needs. Transit system needs, including bus zones, must be accommodated to support quick and reliable transit service throughout the city. For more information about [curb space uses](#). The reference for the [City of Seattle's Comprehensive Plan priorities for curb space uses](#).

6.1.8 List of Approved Street Design Concept Plans

Title	Streets Included	Special Designation	Reference Number
The Street Element of the Ballard Municipal Center Plan	20th and 22nd Avenues NW NW Market Street NW 56th-58th Streets	None	Joint Director's Rule 30-90 & 91-4
Terry Avenue N. Street Design Guidelines	Terry Avenue North between Denny Way and Mercer Street	None	SDOT DR 2002-04 DPD DR 15-2002
Pike/Pine Streetscape concept plan	Pike and Pine Streets between First and Fourth Avenues	None	Joint Director's Rule SDOT DR 03-08 DPD DR 20-2008 SPU DR 06-2008 SCL DR 01
Queen Anne Avenue North Streetscape Concept plan	Queen Anne Avenue North from West McGraw to West Galer	None	Joint Director's Rule DPD 11-2009 SDOT 7-2009
Maynard + Lane Green Streets Streetscape Concept Plan	Maynard Ave South and South Lane Street	None	Joint Director's Rule DPD 12-2010 SDOT 4-2010
West Seattle Concept Plan		None	Joint Director's Rule DPD2-2012 SDOT4-2012

6.2 Green Streets

[6.2.1 Background](#)

[6.2.2 Green Street Types](#)

[6.2.3 Green Street Locations](#)

[6.2.4 Basic Design Principles](#)

[6.2.5 Designating New Green Street and Neighborhood Green Streets](#)

[6.2.6 Green Street Design, Permit and Construction Process](#)

6.2.1 Background

A Green Street is a street right-of-way that, through a variety of design and operational treatments, gives priority to pedestrian circulation and open space over other transportation uses. The treatments may include sidewalk widening, landscaping, [traffic calming](#), and other pedestrian-oriented features. The purpose of a Green Street is to enhance and expand public open space, and to reinforce desired land use and transportation patterns on appropriate City street rights-of-way.

The original designation and mapping of Green Streets is in the City of Seattle 1985 Land Use and Transportation Plan for Downtown Seattle. Additional mapping of Neighborhood Green Streets occurred in the Northgate Area Comprehensive Plan (City of Seattle, 1993) and in a number of Neighborhood Plans affecting areas throughout Seattle.

While the Seattle Comprehensive Plan and Transportation Strategic Plan (TSP) contain the policy guidance for Green Streets, this Manual provides the design guidance and procedural information for an applicant who wishes to develop their project along a Green Street or Neighborhood Green Street. The information includes the planning and design process, the City approval process for Green Street and Neighborhood Green Street designs, and some information on construction and the maintenance of street

features.

A key component of the design guidance relates to the classification of Street Types (refer to [Chapter 4.2 Street Classifications and Street Types](#)) including Green Streets and Neighborhood Green Streets. For the types of street features that are appropriate to include on both Green Street types, refer to Chapter 4.2 Street Classifications and Street Types. For information on the bonus floor area for amenity features allowed is described in [SMC 23.49.013](#).

6.2.2 Green Street Types

There are two types of Green Streets:

1. Green Streets located in Downtown Seattle and defined and mapped in the Land Use Code; and
2. Neighborhood Green Streets that are designated through neighborhood plans or other City adoption process (e.g., City Council Ordinance or Director's Rule).

The City's original Green Streets policy offered a developer bonus in exchange for construction of an approved Green Street streetscape, and the bonus was limited to Downtown Seattle, consisting of the Belltown, Denny Triangle, Urban Core, Denny Triangle, Pioneer Square, and International District neighborhoods (refer to [Figure 6-6 Green Street Locations](#)). Subsequently, the City has allowed Green Streets to be designated in Neighborhood Plans outside of Downtown Seattle, where no funding incentive exists. These are referred to as Neighborhood Green Streets. A more complete description of each with the policy intent and purpose for follows:

Green Street Definition and Purpose

Definition

As defined in the [City of Seattle Comprehensive Plan Transportation Element](#), "Green Streets are designated on a number of non-arterial streets within Downtown Seattle. Landscaping, historic character elements, traffic calming, and other unique features distinguish Green Streets from other Street Types. Green Streets are designed to emphasize pedestrian amenities and landscaping in areas that have dense, residential land uses. Each Green Street has its own unique character and design. The street right-of-way dimensions can vary significantly from street to street and from segment to segment."

Purpose

- Enhance pedestrian circulation and create open space opportunities in medium to high density residential areas lacking adequate public open space.
- Create a vibrant pedestrian environment in the street right-of-way that attracts pedestrians.
- Strengthen connections between residential enclaves and other Downtown amenities by improving the streetscape for pedestrians, bicycles and transit patrons.
- Support economic activity in Downtown neighborhoods by creating an attractive and welcoming "front door" for pedestrians.
- Maximize opportunities for trees and other landscaping to create a high quality open space.

Location

Designated streets in Downtown Seattle (refer to [Figure 6-6 Green Street Locations](#)).

Typical Adjacent

Residential or mixed use

Land Use	
Street Classification	Non-arterial.
Authority	Designated by City Council Ordinance and adopted and mapped in the Land Use Code (SMC 23.49).
Implementation	The design and construction of Green Street improvements can be funded by developers in exchange for increased floor-area-ratio (FAR) or other land use code departures, as specified in Seattle's Land Use Code (SMC 23.49.013) .

Neighborhood Green Streets

Definition	As defined in the City of Seattle Comprehensive Plan Transportation Element , Neighborhood Green Streets may be on any non-arterial street – and in some cases low volume arterial streets – outside of Downtown Seattle. Similar to Green Streets, Neighborhood Green Streets emphasize pedestrian amenities, landscaping, historic character elements, traffic calming, and other unique features. Neighborhood Green Streets were designated in Seattle's neighborhood plans.
Purpose	<ul style="list-style-type: none"> • Reflect a local community's desire to target specific streetscapes for a pedestrian or open space enhancement. • Enhance the pedestrian environment and attract pedestrians. • Create open space opportunities in residential neighborhoods. • Retain unique street features (e.g., brick paving, mature landscaping that is adjacent to the roadway, curbless streets).
Location	Designated streets in neighborhoods outside of Downtown Seattle (refer to Figure 6-7: Neighborhood Green Street Locations in North Seattle and Figure 6-8: Neighborhood Green Street Locations in South Seattle).
Typical Adjacent Land Use	Residential or mixed use that includes residential uses.
Street Classification	Non-arterial.
Authority	Various. Neighborhood Green Streets are typically recommended in Neighborhood Plans or other transportation plans, and may subsequently be adopted into the Land Use Code through City Council Ordinance, designated by joint DPD/SDOT Director's Rule, or included in a city recognized subarea transportation plan.
Implementation	Neighborhood Green Streets do not have a dedicated funding mechanism in most cases. Funding to design and build Neighborhood Green Streets may come from a Local Improvement District, Neighborhood Matching Funds , and partnerships with other agencies (e.g., transit agencies), through private development or as part of a Seattle Public Utilities Natural Drainage Systems Project .



There are 17 adopted Green Streets in Downtown Seattle (refer to [Figure 6-6: Green Street Locations](#)). With the exceptions of Harbor Steps (University St. between 1st Ave. and Western Avenue) and portions of Occidental Ave S (Occidental Square Park), all of the Green Streets allow motorized vehicular traffic.

There are 15 adopted Neighborhood Green Streets (refer to [Figure 6-7: Neighborhood Green Street Locations in North Seattle](#) and [Figure 6-8: Neighborhood Green Street Locations in South Seattle](#).) Another 41 Neighborhood Green Streets have been recommended in neighborhood plans in various neighborhoods, but have not yet been formally adopted and are indicated as either “neighborhood plan recommended” or “tentative” in the figures.

- **Neighborhood plan recommended:** defined in one of Seattle’s 37 adopted neighborhood plans as a Green Street improvement.
- **Tentative:** described in an [adopted neighborhood plan](#) as a street that should have some kind of pedestrian or open space improvement, but were not formally called Green Streets.

6.2.4 Basic Design Principles



The following design principles apply to both Green Streets and Neighborhood Green Streets:

- **Emphasize pedestrians and open space over other street functions.** Green Streets serve both as pedestrian gathering places, and as pedestrian corridors connecting activity areas. They are designed to provide an inviting, attractive, and safe streetscape for pedestrians, bicyclists, and transit patrons. In certain cases, Green Streets may be designed to reduce vehicular travel speeds to the point where it becomes reasonable for pedestrians and vehicles to “share” space in the street right-of-way. In Seattle, a well-known example of this type of “shared street” is Pike Place.
- **Design should complement and enhance adjacent land uses.** Buildings in much of Downtown Seattle are required to have pedestrian friendly features at the ground floor (e.g., transparency, weather protection, prominent entrances). Green Street design should complement these features with improvements in the street right-of-way that encourage pedestrian activity.
- **Keep traffic speeds and volumes low.** Green Streets are typically designated on non-arterial streets and are expected to have lower traffic volumes and speeds than other streets in the City. One of the key factors to making a street safe and inviting for pedestrian is maintaining slow vehicle speeds and relatively low vehicle volumes. This is why Green Streets are designated on streets that do not, or are not anticipated to; contribute significantly to vehicle capacity in the area. Often, Green Streets are designated on non-through streets or streets that are not a key part of the street grid (e.g., dead ends and short segments of street created by the collision of street grids) Design features that tend to reduce vehicular travel speeds are good choices for Green Street designs ([Chapter 4.2 Street Classifications and Street Types](#)). A Green Street or Neighborhood Green Street designated on an arterial street must provide for traffic speeds and volumes that can support appropriate arterial operations and the mobility needs of all users.
- **Respond to site specific conditions.** Generally, Green Streets are conceived around a unified design concept—one that reflects or embellishes the unique character of the site. Ideally, such a design concept would be applied to every block of the Green Street. Green streets offer the opportunity to reinforce unique conditions or respond to site specific opportunities (e.g., solar access, historic buildings or street features, topography, stormwater mitigation, views).

6.2.5 Designating New Green Street and Neighborhood Green Streets



It is possible to designate new locations for Green Streets and Neighborhood Green Streets. A proposal for a new designation can be made by private development proponents, community groups, or any other organized local interest. A designation request may come through SDOT, DPD, or the [Department of Neighborhoods \(DON\)](#).

The City will assess the eligibility of the proposed Green Street or Neighborhood Green Street based on the criteria defined below in Chapter 6.2.5a Criteria for Designating New Green Streets and 6.2.5b Criteria for Designating New Neighborhood Green Streets.

6.2.5a Criteria for Designating New Green Streets

Designating a Green Street is a land use action that must be approved by the City through an Ordinance process. The Land Use Code (SMC Title 23) defines criteria for each type of land use and zoning designation to ensure that any change to land use or zoning is made according to a set of consistent criteria. The siting criteria for Green Streets are as follows:

1. Streets in medium and high-density areas where residents generally do not have access to private yards, existing open space is very limited, and land is not available for future open space development.
2. Streets within or providing connections to pedestrian-oriented neighborhood commercial areas where Green Street improvements could reinforce commercial and mixed use activity, and enhance the quality of the pedestrian environment without conflicting with the desired traffic circulation.
3. Streets at critical locations in redeveloping areas that could serve as a focus for new development and provide direction for desirable changes in land use patterns. Examples might include streets that, as Green Streets, could strengthen the residential character of areas where efforts are being made to promote residential development or stabilize an existing neighborhood.
4. Streets and street ends which provide safe pedestrian and bicycle connections with neighborhood attractions, such as schools, shopping areas, public facilities, institutions and public open spaces, or streets integrated with the City's urban trail network.
5. Streets that have a special character that is of interest to pedestrians, including streets providing shoreline access, streets with special views, and streets located in areas of unique historic or architectural interest.
6. Undeveloped streets within designated open spaces where it is desirable to retain the undeveloped conditions of the surroundings.

6.2.5b Criteria for Designating New Neighborhood Green Streets

There are no official criteria for Neighborhood Green Streets in the Seattle Municipal Code. This chapter identifies the following as appropriate criteria for Neighborhood Green Streets.

1. Neighborhood Green Streets shall support multiple functions in the street right-of-way, especially pedestrian access and landscaping. Streets that are good candidates for traffic calming are also appropriate, as streets with slower traffic enhance conditions for pedestrians and support the Neighborhood Green Street concept.
2. Streets that are direct links to major transit facilities and light rail stations.
3. Streets and street ends which provide safe pedestrian and bicycle connections with neighborhood attractions, such as schools, shopping areas, public facilities, institutions and public open spaces, or streets integrated with the City's Urban Trails Network.
4. Streets that have a special character that is of interest to pedestrians, including streets providing

shoreline access, streets with special views, and streets located in areas of unique historic or architectural interest.

5. Undeveloped streets or streets that are not fully improved (e.g., sidewalk, curb and gutter) where it is desirable to retain the undeveloped conditions of the surroundings. In some cases, property access on undeveloped streets may necessitate that a minimum level of improvements be completed, but not required at the full standard.

6.2.6 Green Street Design, Permit and Construction Process

Design and permit activities on designated Green Streets and Neighborhood Green Streets shall follow the following process, defined below and charted in [Figure 6-9: Green Street Design, Permit and Construction Process](#).

6.2.6a Initial Contact

The proponent (developer or community group representative) can start the Green Street design, permit and construction process by contacting either the [Seattle Department of Transportation \(SDOT\)](#) or [Department of Planning and Development Department \(DPD\)](#).

6.2.6b Prepare a Street Design Concept Plan

To assist in approval of a design along a Green Street or Neighborhood Green Street, applicants are encouraged to prepare a Concept Plan according to the guidelines and templates in [Chapter 6.1 Street Design Concept Plans](#). For Downtown Green Street projects seeking an increase in FAR (Floor Area Ratio) provide FAR calculations per [SMC Section 23.49.013](#).

At this point, the project proponent can decide to have the Concept Plan adopted by Joint DPD/SDOT Director's Rule or prepare the Concept Plan at a level of detail suitable for Street Improvement Permit Review. Refer to [Chapter 2.4.1 Street Improvement Permits](#).

6.2.6c Existing Street Design Concept Plan Review

If an approved Concept Plan exists for the Green Street or Neighborhood Green Street, it is the responsibility of the applicant to determine if the design concept is still viable given conditions in the area or the design standards that may have changed since the approval of the original Concept Plan.

6.2.6d Permit Review and Issuance

After incorporating comments from the City review for the Concept Plan, the Green Street proponent refines the Concept Plan to an adequate level of design to commence a [Master Use Permit \(MUP\)](#) and/or [Building Construction Permit](#) process, or if the proposal impacts the street right-of-way and not private property, the proponent will want to initiate a Street Improvement Permit process. For information about how to prepare a Street Improvement Permit, including early design guidance, plan requirements, and City of Seattle CAD standards, refer to [Chapter 2.4.1 Street Improvement Permits](#), in particular SDOT Client Assistance Memo (CAM) [#2200](#) and [SDOT CAM #2201](#)

6.2.6e Green Street and Neighborhood Green Street Construction

Construction of the Green Street that is part of a MUP or Building Construction Permit can commence once the DPD and SDOT reviews for the Street Improvement Permit and the MUP or Construction Permit are issued. The project is concluded by a final inspection and, where relevant, issuance of a Certificate of

Occupancy.

For Neighborhood Green Street projects that are not part of a MUP or Construction Permit, construction can commence when the Street Improvement Permit is issued. The process is concluded with the approval of a final inspection of the work completed.

6.2.6f Maintenance

Sidewalks with special paving treatments (such as pavers or stamped, colored concrete) add a unique design element to the streetscape and can enhance the walking experience for pedestrians. It is important to design special paving so that it retains its integrity over time. This is becoming increasingly important as the number of utility cuts on sidewalks increases to respond to the demands of higher density development. Carefully selected colors can be mismatched as the original color fades and new sections are applied. A successful design solution will address safety, access, and aesthetics.

To assure that maintenance is considered when streetscape design features are being selected, SDOT requires a maintenance agreement for all streetscape treatments that go beyond City Standards. The following sections provide an overview of what is expected of the property owner and SDOT regarding maintenance of streetscape features:

Responsibility: With their consent, the abutting property owners shall be responsible for the maintenance of the completed Green Street section unless there is an agreement in writing, acceptable to SDOT, which provides for an alternative maintenance and repair program. Said agreement shall be a written condition on any street use permit for a Green Street project.

Joint agreements: Proponents may enter into an agreement with other property owners adjacent to their Green Street section for shared maintenance responsibility.

Maintenance, repair and replacement: Maintenance responsibilities for Green Streets shall include on-going sweeping, debris removal, landscape maintenance, and responsibility for the repair and replacement of all auxiliary street design elements of the Green Street (i.e. fixture replacement, replacing tree grates, paver repair, replacement or repair of special amenities such as fountains, benches, and planters).

6.3 Neighborhood Based Plans

6.3.1 Neighborhood Plan Updates

6.3.2 Subarea Plans

6.3.1 Neighborhood Plan Updates

From 1995 through 2000, the City of Seattle collaborated with communities throughout the city to develop 38 Neighborhood Plans in order to manage the anticipated growth in both population and employment. The Neighborhood Plans defined a vision and identified issues and strategies to encourage growth in a way that would be compatible with the unique character of each participating neighborhood. Since neighborhood plans were completed, growth throughout Seattle has been generally consistent with expectations, but has varied by neighborhood.

Original neighborhood plans: <http://www.seattle.gov/neighborhoods/np/plans.htm>

Seattle Growth Report:

http://www.seattle.gov/dpd/Planning/Seattle_s_Comprehensive_Plan/ComprehensivePlan/ReportsonGrowth/default.asp

The City Council passed legislation in September 2008 that authorized city departments, led by the Department of Planning and Development (DPD) and the Department of Neighborhoods (DON) to work

with Seattle's residents to update neighborhood plans where appropriate.

Neighborhood Plan updates began in fall 2008 in North Beacon Hill, North Rainier, and MLK @ Holly (now called Othello). Each of these neighborhoods is home to the light rail stations and expecting significant new population and employment growth. The 2010 Neighborhood Plan updates are underway in the Rainier Beach and Broadview/Bitter Lake/Haller Lake neighborhoods.

Community members, developers, and property owners living or working in these neighborhoods should review the Neighborhood Plan updates for an understanding of the vision, goals, policies, and strategies for the community:

http://www.seattle.gov/dpd/Planning/Neighborhood_Planning/NeighborhoodPlanUpdates/default.asp

Urban Design Framework concepts that recommend specific design strategies, land use and transportation actions are also being developed for each of the neighborhoods:

- North Beacon Hill:
http://www.seattle.gov/dpd/cms/groups/pan/@pan/@plan/@neighborplanning/documents/web_informational/dpdp020299.pdf
- North Rainier:
http://www.seattle.gov/dpd/cms/groups/pan/@pan/@plan/@neighborplanning/documents/web_informational/dpdp020300.pdf
- MLK @ Holly (Othello):
http://www.seattle.gov/dpd/cms/groups/pan/@pan/@plan/@neighborplanning/documents/web_informational/dpdp020301.pdf

Please review Chapter 4.11.2 Design Criteria for sidewalk width requirements in the vicinity of transit stations. http://www.seattle.gov/transportation/rowmanual/manual/4_11.asp

6.3.2 Subarea Plans



Subarea transportation plans build on existing planning efforts to provide a comprehensive, data-driven analysis of an area and recommend specific actions to implement the plan recommendations. Subarea plans serve as an area-specific blueprint for financing, programming and prioritizing transportation improvements and also contain detailed project recommendations and preliminary cost estimates. Community members, developers, and property owners living or working in areas where subarea plans have been completed should review the documents when interested in learning about the variety of transportation improvements that SDOT and the community have identified:

- South Lake Union Transportation Study (2004):
<http://www.seattle.gov/transportation/southlakeunion.htm>
- Northgate Coordinated Transportation Investment Plan (2006):
<http://www.seattle.gov/transportation/nctip.htm>
- University Area Transportation Action Strategy (2008):
http://www.seattle.gov/transportation/university_actionstrategy.htm
- Southeast Transportation Study (2008): http://www.seattle.gov/transportation/ppmp_sets.htm

Continue to Chapter 6.4>>



6.4 Green Stormwater Infrastructure

6.4.1 Green Stormwater Infrastructure (GSI) in the Right-of-Way
6.4.2 Bioretention Design Guidance
6.4.3 Permeable Pavement Design Guidance

6.4.4 Compost Amended soils Design Guidance
6.4.5 Approval and Permit Procedures
6.4.6 Maintenance Responsibilities

6.4 Overview

The purpose of this chapter is to provide guidance to applicants required or interested in Green Stormwater Infrastructure (GSI) and/or Natural Drainage System (NDS) designs as part of their right-of-way improvement project. The project may incorporate such elements as bioretention or permeable pavement as a result of Stormwater Code compliance, Seattle Green Factor requirements, or simply to improve the environment around them. The information is intended to help lower the barriers for implementation of Green Stormwater Infrastructure approaches in the street right-of-way.

Seattle Stormwater and Drainage Control Code requirements, including information on the requirement to use Green Stormwater Infrastructure to the Maximum Extent Feasible, provided in [Ch. 4.17](#).

6.4.1 Green Stormwater Infrastructure (GSI) in the Right-of-Way



GSI can be used as part of partial street improvements or full right-of-way retrofit. Partial street improvements usually include improvements to sidewalk and planting strip areas. Full right-of-way improvements are less common and involve sidewalks, planting strips and full roadway width reconstruction.

It is sometimes challenging to construct surface stormwater elements while meeting the multiple other needs within the City's rights-of-way, including addressing public safety and public mobility needs. The information provided in this section is intended to provide applicants with designs that have undergone review from the various City departments involved in street improvement permitting. All sites are different so the project's engineer may need to modify the details provided to address local conditions.

If GSI approach is being considered, the must obtain 60% Complete SIP approval through an SDOT design guidance meeting with City staff to discuss possible site constraints, transportation needs, soil conditions, design and accessibility issues, and maintenance responsibilities.

6.4.1a GSI as part of Partial Street Improvements

GSI constructed as part of partial street improvements include bioretention in the planting strip area and permeable pavement sidewalks. See the Green Stormwater Infrastructure BMP Flow Chart for Sidewalks ([Figure 6-14](#)) to help establish what alternatives are most suitable to your project site. After determining the approach appropriate for the given site, see the design sections below for bioretention ([Ch. 6.4.2](#)) and permeable pavement ([Ch. 6.4.3](#)). Setbacks for compost amended soils are provided in [Ch. 4.17.2](#)

6.4.1b GSI as part of Full Right-of-Way Reconstruction

Implementation of large scale GSI techniques as part of full right-of-way reconstruction is sometimes used by Seattle Public Utilities (SPU) or desired by applicants for the aesthetic benefits in combination with the stormwater function and traffic calming. SPU's projects where full rights-of-ways were reconfigured to achieve stormwater retrofit goals are called Natural Drainage Systems; these projects are described in detail in SPU's green infrastructure [website](#).

Low volume streets: The primary function of residential access streets is to provide access to neighborhood land uses and connections to higher level traffic streets, such as arterials. Residential access streets typically have lower traffic volumes, lower speeds and lower volumes of trucks and buses than arterial streets. At this time the City will only consider full street right-of-way NDS concepts on residential streets and low volume collector streets.

Sufficient Right of Way width: The right-of-way width must be at least 56 feet.

Adjacent Land Use: Due to the competing space needs for high density areas, NDS designs are encouraged only in Single Family or LR1 zoning areas.

Locations with existing informal drainage: [Seattle's creek watersheds](#) are largely served by informal drainage (e.g., ditch and culvert systems) or no formal system at all. Full right-of-way NDS improvements provide an opportunity to enhance the existing informal system. The City encourages the use of NDS as a means of providing transportation and pedestrian improvement to these areas as a way to protect our receiving water bodies.

If the above criteria are met and your project is considering proposing a full right-of-way NDS design the applicant is encouraged to participate in an SDOT [design guidance meeting](#). Figures 6-11 through 6-13 contain NDS conceptual design details the City has used on previous projects to assist in the design and review process.

[Figure 6.10](#) Evaluation of NDS Full Street Concept as a part of Full Street Improvements, is available to help determine if NDS Full Street Concept is feasible for a particular street.

6.4.2 Bioretention Design Guidance

Bioretention cell designs may vary based on design goals and site conditions. Generally all the cells include: surface grading, and soil and plant complexes to manage stormwater. Factors influencing the design include: native soils, longitudinal and cross slopes, presence or absence of curbs, and space availability. Design information on the various types of cells is provided in the Chapter 4 of the [Stormwater Manual](#). The information provided here is specific to placing bioretention within the street ROW. Additional guidance is provided for surface grading features commonly used in combination with bioretention. To aid the designer, the City has compiled the following Bioretention details:

Bioretention, general applications

- Bioretention Biofiltration Cell ([Figure 6-15](#))
- Bioretention Biofiltration Cell with Underdrain ([Figure 6-16](#))
- Check Dam ([Figure 6-20](#))
- Tree Planting within Bioretention Swale ([Figure 6-22](#))

Typical details for site reconfiguration with Bioretention

- Conveyance Swale ([Figure 6-17](#))
- Curb Drain Cut Opening for Swale ([Figure 6-18](#))
- Concrete Inlet, Channel and Grate ([Figure 6-19](#))

- Overflow Structure (Figure 6-27)
- Curb Extension (Figure 6-21)

The above details are generic in nature. They must be modified to match your site. CADD drawings of these files are available at the SPU GSI [website](#).

Additional design guidance for bioretention systems is provided below:

- Bioretention plants for systems in the right-of-way installed for stormwater code compliance or Seattle Green Factor requirements shall use plants identified in the [Seattle Green Factor list](#).
- Provide for sediment pre-settling if drainage area exceeds 2,000 SF. The intent of pre-settling is to provide a settling location for larger diameter sediment and easy maintenance access to remove this sediment. For pipe entrance bioretention facilities the first cell should be designated as a pre-settling facility and have a 50 square foot minimum footprint and be designed to accommodate wheelbarrow access.
- Longitudinal Slope: Grade elevation through the length of the cell should be flat or gradual (<2% slope).
- Soils: The soils for use in bioretention systems should be designed for Stormwater Code compliance using the [City's Bioretention Soil Specification](#). If designing for 2-inch ponding then the underlying soil may be amended with compost per [Volume 3 of Stormwater Code Director's Rule 4.4.1.2](#) rather than importing bioretention soil

Additional drainage design guidance is provided on Seattle Public Utilities [website](#). Information includes minimum bioretention area requirements for bioretention being installed for stormwater compliance and design phase reviewers checklist.

6.4.3 Permeable Pavements as part of Partial or Full Street Improvements

Permeable pavement is a paving system which allows the rainfall to percolate into an underlying soil or aggregate storage reservoir, where stormwater is stored and infiltrated to underlying subgrade, or removed by an overflow drainage system. Permeable pavements can be used to achieve City of Seattle Stormwater Code Flow Control and GSI to the MEF Core Requirements.

At this time, permeable pavements are limited to non-street surfaces, such as sidewalks, and planting strips.

Permeable pavement systems can either be designed as permeable pavement facilities or permeable pavement surfaces. Permeable facilities are designed to infiltrate surface water run-on for up to three times the square footage of the permeable pavement area and have a thicker aggregate discharge subbase layer for increased water storage. Permeable pavement surfaces are designed only for the rainfall that falls directly on the permeable pavement; with no run-on. Permeable pavement systems for stormwater code compliance can be designed for 100 percent impervious area credit or 50 percent impervious area credit depending on the type of facility and longitudinal slope of the proposed installation location.

Refer to [Stormwater Manual Vol. 3, Stormwater Flow Control and Water Quality Treatment Technical Requirements Manual](#) for detailed stormwater calculations and design guidance for permeable pavement facilities and permeable pavement surfaces. The Stormwater Manual should be used in conjunction with this section of the ROWIM and the Standard Specification and Plans for the design of permeable paving within the right of way. With respect to structural and maintenance concerns, **any permeable pavement system proposed for use in the street ROW must be on listed as accepted in the Permeable Pavement CAM 2215.**

The following are categories of permeable pavement systems that can be incorporated in the street ROW, as a walking surface:

- **Permeable Cement Concrete:** The permeable cement concrete mixture omits the fines to create stable air pockets encased within it. Depending upon the mix design, permeable cement concrete can have a rougher surface than conventional cement. Construction of Permeable Cement Concrete shall follow the requirements for Permeable Pavement Construction per Section 5-06 of the Standard Specifications.

The following are categories of permeable pavement systems that can be incorporated in the street ROW, outside the limits of the designated walking surface, i.e. in the planting strip:

- **Permeable Asphalt Concrete:** Permeable asphalt concrete is open-graded asphalt with reduced fines and stable air pockets encased within it that allow water to drain to the base below. Aggregate binders and additives can be added to increase durability. Like conventional concrete it is laid with traditional asphalt paving equipment.
- **Permeable Cement Concrete:** Permeable cement concrete is similar to permeable asphalt concrete in that the mixture omits the fines to create stable air pockets encased within it. Depending upon the mix design, permeable cement concrete can have a rougher surface than conventional cement.
- **Interlocking Concrete Pavers:** Interlocking concrete paver blocks themselves are not always permeable, but they are typically installed with gaps between them to allow stormwater to infiltrate into the subsurface. The gaps, typically 10 percent of the surface area, are filled with a permeable material, usually small clean stone.
- **Open-Celled Paving Grid with Vegetation:** Open-celled paving grids consist of a rigid grid composed of concrete or a durable plastic that is filled with a mix of sand, gravel, and topsoil for planting vegetation. The cells can be planted with a variety of grasses or low-growing groundcovers. The support base and the ring walls prevent soil compaction and reduce rutting and erosion by supporting the weight of traffic and concentrated loads.
- **Open-Celled Paving Grid with Gravel:** The same open-celled grid structure is employed but the voids in the rings are filled with a mix of gravel.

To aid the designer, the City has compiled the following Permeable Pavement Design details for project designers to evaluate, modify and incorporate into their Street Improvement Plans:

- Permeable Pavement Sidewalk ([Figure 6-23](#))
- Permeable Pavement Facility, Sidewalk ([Figure 6-24](#))
- Permeable Pavement Facility, Sidewalk, Check Dam, Interceptor ([Figure 6-25](#))
- Permeable Pavement Facility in Planting Strip ([Figure 6-26](#))

6.4.4 Compost / Amended Soils

See [ROW IM Ch. 4.17](#)

6.4.5 Approval and Permit Procedures

If you are interested in using bioretention or permeable pavement within the street right-of-way, you must get a [Street Improvement Permit](#).

6.4.6 Maintenance Responsibilities

As with other types of street improvements, adjacent property owners are responsible for maintaining sidewalks, driveways and parking pads as well as landscaping in the street right-of-way. However, the City also has a maintenance role in bioretention and permeable pavement installed in the right-of-way for stormwater code compliance which is described below. The following sections provide general maintenance guidelines specific to bioretention landscaping and permeable pavements.

6.4.6a Maintenance for Bioretention

In bioretention cells healthy plants and soils break down pollutants through natural processes. Maintaining healthy plant and soil communities is a critical part of the system functioning.

Establishment of plantings takes approximately 3 years.

Year 1: Plants are working very hard below the ground to develop new roots. Appropriate soil moisture will make the difference between success and failure during the first year. Plants need watering, a minimum of once per week for shady areas and twice per week for sunny areas, throughout the first summer. Pruning should be limited to the removal of damaged limbs, since plants and trees need maximum foliage to generate energy to develop new roots.

Year 2: Plants will begin to put on new growth and continue to develop root systems. Soil moisture is less critical than during the first year, so watering can be done less frequently. Weeding will be necessary. Pruning is still discouraged, except to remove damaged or dead limbs.

Year 3 and beyond: Successfully established plantings will flourish in the third year. Weeding will continue to be necessary but as the planted areas mature the abundance of weeds decrease. Periodic trimming, thinning and pruning of plantings and trees will be necessary to ensure that the sidewalk or the swale edge is not completely obscured. This is particularly important on narrow rights-of-way so that pedestrians, bicyclists and drivers are aware of the change in elevation between the roadway and the swale.

Natural lawn and garden care only: Pesticide use is not allowed in the City's drainage system including bioretention systems. Refer to the [City's Natural Lawn and Garden Care website](#) for tips regarding smart water and pesticide use.

Plant replacement during establishment: Adequate plant coverage is necessary to guard against soil erosion. Ideally the original planting will include a wide selection of species spaced to provide more than adequate coverage. If there is adequate coverage of the swale soils, not all plants that fail to thrive will need to be replaced. If patches of bare soil emerge, plantings should be replaced. If groups of plants are lost, a different species may need to be considered.

Sediment Removal: Minimizing sediment accumulation in the bioretention system is critical to allowing the infiltration of stormwater through the bioretention soil. Sediment is likely to accumulate where concentrated flows enter the bioretention cells; removing the sediment accumulated at those locations is an easy way to help ensure the long term success of the system. If sediment accumulates within the bioretention cells; that debris should be hand removed.

Maintenance of the mulch layer: is important for both moisture retention and weed control. Spring and Fall are excellent times to mulch and prune trees and shrubs where needed.

The City's Role: Once bioretention installed for stormwater code compliance within the right-of-way is accepted by the City, SPU will supplement the maintenance after the first year of plant establishment. Bioretention design requirements for stormwater code compliance are documented in the Stormwater Manual. Additionally, the minimum size of a bioretention landscaped area for stormwater code compliance is 500-square feet. The applicant is solely responsible for the first year of plant establishment and the required plant establishment reporting refer to [Ch. 4.17.2](#) for plant establishment requirements. Systems that are accepted by are entered into SPU's long term maintenance program. SPU maintenance focuses on function, not aesthetics and includes removal of noxious weeds and

rehabilitating the system should the ponded area hold water for more than 72-hours past the end of a rain event. Systems that are not installed for stormwater code compliance, as well as code facilities not passing City inspection and therefore not taken over for maintenance by the City are solely the maintenance responsibility of the adjacent property owner. Maintenance responsibilities are defined in [Appendix D of the Stormwater Code Technical Manual Volume Three](#).

6.4.6b. Maintenance for All Permeable Pavements

Best Management Practices for the on-going maintenance of permeable pavement can be found in the [Appendix D](#) of the Stormwater Code Technical Manual Volume Three. If permeable pavement installation meets the requirements set forth in [CAM 2215](#), and installations passes SDOT acceptance, SDOT will assume maintenance responsibilities.

The City's Role: Once permeable pavement installed for stormwater code compliance within the right-of-way is accepted by the City, SDOT will accept all maintenance responsibilities. Permeable pavement design requirements for stormwater code compliance are documented in the Stormwater Manual. Additionally, SDOT requires that a minimum area of permeable pavement be met prior to accepting ownership and maintenance. Refer to [CAM 2215](#) for the acceptance thresholds. Systems that are accepted by are entered into SDOT's long term maintenance program. Systems that are not installed for stormwater code compliance, as well as code facilities not passing City inspection and therefore not taken over for maintenance by the City are solely the maintenance responsibility of the adjacent property owner. Maintenance responsibilities are defined in [Appendix D of the Stormwater Code Technical Manual Volume Three](#).

6.4.6c. Restoring Damages to GSI from Construction or Vehicular Damage

Bioretention of Permeable pavement impacted negatively due to construction activities, utility cuts, vehicular accidents, or damage from oil spills, fertilizers, or other harmful substances must be properly repaired to restore the systems. Restoration of bioretention usually includes plant removal, bioretention soil excavation and replacement to original depth, mulch replacement, and replacement of landscaping to equal or better than the original design.

6.5 Traffic Calming

- [6.5.1 Overview](#)
- [6.5.2 Policy Guidance for SDOT's Neighborhood Traffic Control Program \(NTCP\)](#)
- [6.5.3 Neighborhood Traffic Control Program Goals](#)
- [6.5.4 Considerations for Traffic Calming on All Streets](#)
- [6.5.5 Additional Considerations for Traffic Calming on Arterial Streets](#)
- [6.5.6 Typical Traffic Calming Devices in Seattle](#)
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6.5.1 Overview

Traffic calming is a way to design streets to improve safety, reduce the amount of cut-through traffic traveling on residential streets, and generally encourage people to drive more slowly. Along with education and enforcement, traffic calming has been used in many Seattle neighborhoods to slow speeds on residential streets and improve neighborhood livability by reducing cut-through traffic and improving the environment for pedestrians.

Traffic calming relies on physical and visual cues in, and adjacent to, the roadway to induce drivers to travel at slower speeds. Traffic calming is self-enforcing. The design of the roadway results in the desired effect, without relying on compliance with traffic control devices such as signals, signs, and without enforcement. Street trees and lighting complement traffic calming devices and are often used to provide the visual cues that encourage people to drive more slowly.

Traffic calming is such a powerful tool because it is effective. Some of the effects of traffic calming, such as fewer and less severe crashes, are clearly measurable. Others, such as supporting community livability, are less tangible, but equally important. Experience throughout Europe, Australia, and North America has shown that traffic calming, if done correctly, reduces traffic speeds, the number and severity of crashes, and noise level. Research on traffic-calming projects in the United States supports their effectiveness at decreasing automobile speeds, reducing the numbers of crashes, and reducing noise levels in certain locations.

This section defines the Seattle Department of Transportation's (SDOT) traffic calming policy, including appropriate tools for use on residential and arterial streets. Also included is a description of the steps that community members must take to get SDOT to evaluate traffic calming requests and prioritize them for design and construction.

6.5.2 Policy Guidance for SDOT’s Neighborhood Traffic Calming Program (NTCP) 

Seattle’s [Neighborhood Traffic Calming Program \(NTCP\)](#) was established in 1978 as part of the City’s annual Capital Improvement Program (CIP). Since then, Seattle’s residents, in partnership with the City, have been involved in the installation of over 800 traffic circles and other traffic calming devices on neighborhood streets. The purpose of the NTCP has been to reduce accidents and speeds on residential streets, thereby creating safer, more pleasant neighborhoods. Traffic circles are the most common tool used and can be seen in most residential neighborhoods throughout the City. SDOT’s NTCP is guided by specific goals and policies in the [City of Seattle Comprehensive Plan \(2008\)](#) and the [Transportation Strategic Plan \(2005\)](#) as follows:

Comp. Plan Goal TG2	Manage the street system safely and efficiently for all modes and users and seek to balance limited street capacity among competing uses.
Comp. Plan Goal TG7	Protect neighborhood streets from through traffic.
Comp. Plan Policy T17	Use neighborhood traffic control devices and strategies to protect local streets from through traffic, high volumes, high speeds, and pedestrian/vehicle conflicts. Use these devices and strategies on collector arterials where they are compatible with the basic function of collector arterials.

TSP
Strategy S2

Continue Seattle's Neighborhood Traffic Control Program.

Consider requests from neighborhood organizations and citizens and consequently design and implement traffic circles and other neighborhood traffic control devices. These devices can be very effective to slow speeds and reduce collisions on neighborhood streets. In fact, to date, Seattle's traffic circles have resulted in a substantial reduction in accidents and speeds in neighborhoods. They can also encourage through traffic to stay on arterial streets, reducing the impact of cut through traffic on neighborhoods.

6.5.3 Neighborhood Traffic Control Program Goals



Consistent with the direction in the Comprehensive Plan and Transportation Strategic Plan, the [Neighborhood Traffic Calming Program \(NTCP\)](#) has established the following program goals:

- Traffic calming projects shall improve neighborhood livability in balance with transportation efficiency and the safety needs of the communities.
- The NTCP shall take a holistic approach to traffic management, resulting in streets that provide access to neighborhood destinations for all modes, including walking, bicycling, transit and automobiles.
- Traffic calming devices shall complement the overall transportation network and not result in shifting the problem to an adjacent street.
- Traffic calming is not designed to address dangerous intersections, mitigate traffic noise, redesign the overall transportation and street classification system or effect a modal shift.

6.5.4 Considerations for Traffic Calming on All Streets



Although traffic calming is typically used on residential streets, there are certain tools that are appropriate for use on some arterial roadways. When a traffic calming approach is considered for any street, SDOT applies the following guidance:

- **Vehicle speed** is more critical than volume in terms of safety and should be addressed first where there are constraints.
- **Neighborhood involvement** is important to successful implementation. Rationale for traffic-calming and management measures should be explained clearly to community residents and installation of these treatments should incorporate public input.
- Traffic-calming and management measures should fit into, and preferably **enhance, the street environment**.
- Traffic-calming designs should be **predictable and easy to understand** by drivers and other users.
- **Devices that meet multiple goals** are usually more acceptable. For example, a raised crosswalk may be more understandable to motorists than a speed hump. The former has a clear goal, whereas the latter may be perceived as a nuisance.
- **Treatments need to be well designed** and based on current available information on their applications and effects. Information on U.S. experiences with various traffic-calming measures can be found in ITE's [Traffic Calming Measures](#).

- Devices should **accommodate emergency vehicles**. Emergency response times shall be considered.
- Traffic-calming areas or facilities should be **adequately signed, marked, and lit** to be visible to motorists.
- **Treatments need to be spaced appropriately to have the desired effect on speed** —too far apart and they will have a limited effect, too close and they will be an unnecessary cost and annoyance. Devices, such as speed humps, usually need to be spaced about 300 to 500 feet apart. If they are spaced too far apart, motorists may speed up between them.
- **Whole street designs** are usually able to create an environment that supports slower speeds for the entire length.
- **Facilities should not be under-designed or they will not work**. Keeping the slopes too gradual for a speed table or curves too gentle for a chicane will not solve the problem and will appear as a waste of money and may ruin chances for future projects.
- Traffic-calming measures should **accommodate bicyclists, pedestrians and people with disabilities**.
- If a measure is likely to divert traffic onto another local street, **the area-wide street system should be considered** so as not to shift the problem from one place to another.
- Devices should be thought of as **elements of a traffic calming system** and be placed to improve pedestrian conditions throughout an area.

6.5.5 Additional Considerations for Traffic Calming on Arterial Streets



Seattle has streets within the arterial network that are primarily residential and are optimally used as routes to “collect” local traffic to move it to higher capacity arterial streets. Since Seattle’s street grid is largely built and congestion continues to increase, collector arterials are being used as cut-through routes by motorists trying to avoid congestion. Communities are concerned about higher traffic speeds and volumes on the collector arterials in their residential neighborhoods and are requesting traffic calming solutions. In order to balance the demands placed on the arterial network, including use by large vehicles such as buses, trucks and emergency responders, with neighborhood concerns, the City needs clear policy direction about traffic calming practices appropriate on arterial roadways.

1. Traffic calming on arterials is most successful when applied on arterial streets where adjacent land uses are primarily residential.
2. SDOT will attempt to resolve the issue using the following approaches: 1) education; 2) enforcement, and if education and enforcement do not solve the problem; and 3) engineering methods. If traffic calming devices are an appropriate solution, they shall be planned and designed in keeping with sound engineering and planning practices appropriate to the particular functions of the arterial street.
3. Through traffic should be encouraged to use higher-classification arterials (principal and minor arterials), as designated in Seattle’s Street Classifications.
4. Emergency vehicle access shall be maintained and traffic calming devices should not unreasonably degrade emergency vehicle response times.
5. Arterial traffic calming projects should not significantly impact transit service access, safety, and scheduling.
6. Pedestrian and bicycle movement should be given equal consideration with vehicle movement in

the design and implementation of arterial traffic calming projects.

7. Parking issues should be considered on a project-by-project basis. Parking needs of residents should be balanced with the equally important functions of traffic, emergency vehicle access, transit, bicycle, and pedestrian movement.
8. Traffic calming on arterials should not divert traffic to non-arterial roadways through the use of traffic diversion devices.
9. When arterial traffic calming is being considered, certain procedures should be followed by SDOT in processing traffic management proposals in accordance with applicable codes and related policies and within the limits of available resources. At a minimum, the procedures should provide for project selection and evaluation; citizen participation in plan development and evaluation; public and life safety review, and communication of any test results and specific findings to area residents and affected neighborhood organizations.

6.5.6 Typical Traffic Calming Devices in Seattle



The City of Seattle has used the following traffic calming devices in locations deemed appropriate by the SDOT in consultation with neighborhoods. Refer to the City of Seattle [Making Streets that Work](#) guide.

Not all traffic calming devices are appropriate for use on every type of street or in every location. Traffic Calming Device and Applications (table below) describes the name of the device, they type of issue it is typically used to resolve, and the street classification(s) where the device could be applied. The “typical use” category describes, in general, what kind of change each device can affect: managing traffic, conditions along streets, or pedestrian crossing conditions:

Managing traffic: Concerns about traffic speed and volume can be addressed through effective traffic management. The following devices are used to help manage traffic. Many of these devices restrict the movement of traffic on streets. In most cases the least restrictive method of solving a traffic management problem is the most cost effective, and the easiest for all to agree on.

Conditions along streets: Conditions along streets affect pedestrian travel, comfort, orientation, safety, and affect the aesthetic quality of our streets. This group of traffic calming devices includes on-street parking, lighting, street furniture, and plantings and trees.

Pedestrian crossing conditions: Crossing a street shouldn’t be unreasonably difficult, and there are devices that can help improve pedestrian safety, including pedestrian crossings.

Traffic Calming Devices and Applications

Traffic Calming Device	Typical Use	Residential Streets (non-arterial)	Collector Arterials	Minor Arterials	Principal Arterials
Curb bulbs	Pedestrian Crossing Conditions	•	•	•	•
On-street parking (parallel and angle)	Conditions Along Streets	•	•	•	•
Streetscape improvements (street trees, lighting, street furniture, special paving treatments)	Conditions Along Streets	•	•	•	•

Signs	Managing Traffic	•	•	•	•
Crossing islands or short medians	Pedestrian Crossing Condition		•	•	•
Medians	Managing Traffic		•	•	•
“Road Diets” (reducing number of travel lanes)	Managing Traffic		•	•	••
Speed cushions (for 25 mph or below)	Managing Traffic	••	•	••	
Gateway treatments	Pedestrian Crossing Conditions	•	•		
Neighborhood speed watch program	Managing Traffic	•	•		
Limited access	Managing Traffic	•	•		
All-way stop	Managing Traffic	•	•		
Raised crosswalk	Pedestrian Crossing Conditions		•		
Raised Intersections	Managing Traffic		•		
Speed limit reduction	Managing Traffic		•		
Chicanes	Managing Traffic	•			
Choker	Managing Traffic	•			
Diverters	Managing Traffic	•			
Partial street closure	Managing Traffic	•			
Pedestrian districts (woonerfs)	Pedestrian Crossing Conditions	•			
Speed humps	Managing Traffic	•			
Traffic circles	Managing Traffic	•			

Legend

Appropriate for Consideration (•)

May be Applicable (••)

6.5.7 Process for Installing Traffic Calming



SDOT has an evaluation process for all traffic calming proposals. Refer to [Figure 6-29: Traffic Calming Evaluation Process](#). This process is necessary due to the high demand and limited resources available for traffic calming projects. This section outlines the steps that must be completed before a location may be considered eligible for traffic calming. Note: locations with physical characteristics that do not allow the feasible placement of traffic calming will not be considered.

Step 1: Community Contacts SDOT with Traffic Calming Proposal

SDOT requires support from the residents of the affected area before constructing traffic calming devices. Responsibility for demonstrating community support for a traffic calming completion of this step lies with the community. To initiate the NTCP process, a community group must contact SDOT NTCP to request inclusion in the annual NTCP evaluation period. Refer to [Chapter 6.6 Contact Information](#) for more information. All requests should be made prior to July 15; any request received after this date will be considered for funding in June of the following year.

Step 2: SDOT Evaluation of Community Request and Initial Action

SDOT staff will work with NTCP applicants to determine conditions on the street that the community believes need to change. After initial evaluation, the SDOT Traffic Engineer may authorize actions be taken within the scope of his or her authority to address the applicant’s concern and solve the problem. If problem persists, SDOT may initiate education and enforcement activities to resolve the problem. The SDOT NTCP staff, in consultation with the Fire Department and King County/Metro Transit, may also deem the project to be infeasible at this point and recommend another course of action that does not

involve traffic calming.

SDOT will evaluate the safety record of each location which can include collision history, speed data emergency response implications, and traffic volume counts. The data will be used to prioritize the locations for construction on residential streets using the point criteria described in [Chapter 6.5.8. Point Criteria for Traffic Calming Project Ranking](#).

Step 3: Petition Process

If the problem is not successfully resolved in Step 2, SDOT will request a demonstration of community support for traffic calming. SDOT will provide the applicant with an NTCP petition and signatures must be gathered as follows:

- **Traffic Calming on a Residential Street:** Signatures are required from at least 60% of the households (owners or renters) and businesses (property or business owner) typically within one block of the proposed traffic calming device. For more restrictive traffic calming devices (e.g., diverters or partial closures) SDOT may specify a petition area beyond one block.
- **Traffic Calming on an Arterial Street:** Arterial roadways play a major role in moving people and goods within neighborhoods as well as throughout the city. For this reason, any traffic calming proposal on an arterial street must be supported by adjacent neighborhoods. In addition to the petition process defined above, additional letters of support will be requested from the community councils adjacent to arterial locations being considered for traffic calming, as well as the appropriate district council.

Only one signature per household or business is needed. Signed petitions must be submitted by July 15 each year, to be considered for the following year's construction. Completed petitions can be mailed or delivered to the [Seattle Department of Transportation - Traffic Circle Program](#). Projects that meet the required support rate will be considered for funding through an SDOT annual program.

Step 4: SDOT and Community Seek Funding for Project

If the location does not qualify for funding through SDOT's NTCP program, the contact person listed on the petition will be notified by mail. Information about other potential funding sources may be provided. If the location ranks sufficiently high on SDOT's prioritization list for Neighborhood Traffic Control Program (NTCP) funding, the contact person will be notified.

At this point in the process, SDOT staff will determine if it is necessary to hold a meeting in the neighborhood to discuss the project, including results of the traffic analysis, the design concept, and the procedures leading up to construction. Maintenance of landscaping in traffic calming devices, an important component of this project, and identification of a landscape volunteer will also be discussed during the meeting. For traffic calming on arterial streets, meeting notices will be sent to the community councils in adjacent neighborhoods as well as the appropriate district council.

Step 5: Project Funded

Project funding is identified and SDOT proceeds with the design and construction process.

Step 6: Design & Construction Overview

Traffic calming devices are designed according to the existing geometry of each intersection and sized to accommodate the passage of emergency vehicles. The Fire Department, Metro/King County Transit and other agencies review locations for new calming and may conduct a field test to check for maneuverability. Then, final plans are made and sent to construction crews with specifications. If a volunteer signs up to maintain plantings, soil and plants will be supplied; otherwise, the device will be

covered in asphalt.

Step 7: Construction

The first visible evidence that traffic calming devices will be built is typically an outline of the device drawn in on the street. Construction will follow, including any landscaping and signs (e.g., reflector or directional signs).

Step 8: Post Construction Monitoring

After construction of speed humps, speed cushions and chicanes, the traffic calming device will be monitored for a period of six months to one year. During this time, traffic speeds and volumes are measured to help determine the effectiveness of the device.

6.5.8 Point Criteria for Traffic Calming Project Ranking



SDOT ranks locations for traffic calming based on a number of criteria. For traffic circles, a point criteria is used to assign points to an intersection for accident history, traffic volumes and traffic speeds refer to point values in tables below include in Chapter 6.5.8a Accident History, 6.5.8b Traffic Volumes and 6.5.8c Traffic Speeds. The points assigned for accident history, traffic speeds and traffic volumes are then added together to prioritize the location based on need.

To address traffic calming requests at mid-block locations, SDOT evaluates each corridor based on number and type of mid-block collisions, speeds and volumes.

6.5.8a Accident History

Accident history is determined based on the average number of accidents per year over the most recent 3 year period. The annual accident rate is determined by the number of accidents/number of years over which they occurred. For example if a location has had 6 collisions in the last 3 years, the average annual rate per year is 2.000. As a result, 4 points would be assigned to this location for accident history.

Points	Annual Accident Rate (accidents/year) at Intersection
1	0.5 - 0.875
2	0.876 - 1.250
3	1.251 - 1.625
4	1.626 - 2.000
5	2.001 - 2.375
6	2.376 - 2.750

For midblock locations, a score of .5 is assigned if the accidents on the midblock section of street exceed two accidents per year over the last three years.

6.5.8b Traffic Volumes

Points for traffic volumes are assigned according to the number of vehicles per day on an average weekday.

Traffic Volumes (Vehicles per Day—Average Weekday Traffic)

Points	Residential Streets	Collector Arterial	Minor/Principal Arterial
0.5	500 - 1100	500 - 1500	2000 - 4000
1.0	1101 - 1700	1501 - 3000	4000 - 8000
1.5	1701 - 2300	3001 - 4000	8000 – 12,000
2.0	2300+	4000+	12,000+

6.5.8c Traffic Speeds

Points for traffic speeds are allocated based on the 85th percentile speed in miles per hour. The 85th percentile speed is the speed at which 85% of the vehicles are traveling at or below. Speed limits for residential streets are 25 miles per hour, unless otherwise marked. Speed limits for arterial streets are 30 miles per hour unless otherwise marked.

Points	Traffic Speeds (85th Percentile Speed—miles per hour)	
	Residential Streets	Collector/Minor/ Principal Arterial
0.5	26 - 29	31 - 33
1.0	29.1 - 32	33.1 - 36
1.5	32.1 - 35	36.1 - 39
2.0	35.1+	39.1+

6.5.9 Trials and Temporary Installations for Traffic Calming

In neighborhoods trying traffic calming for the first time, it may be useful to lay out a new design with cones or temporary markings to test it. This provides emergency vehicle drivers, residents, and others with an opportunity to test the design. Some communities have constructed elaborate temporary devices with concrete or plastic (“jersey”) barriers. These can instill a negative reaction in the community due to their unaesthetic appearance and they do not generally have any significant benefits over the simpler test devices.

6.5.10 Landscaping for Traffic Calming Devices

Neighbors are responsible for the planting and maintenance of traffic calming devices after they are built. Landscaping is installed during the planting season (spring or fall). [SDOT's Urban Forestry Division](#) staff takes input from residents about plant material selection during the months of January and June, depending on the season when construction is completed. Plants are chosen based on their drought tolerance, resistance to occasional car traffic and street right-of-way landscaping guidelines, which promote visibility. The [recommended street right-of-way plant list](#) contains a variety of suitable plants that have performed well in the past. Plants are delivered to the home of the landscape coordinator in the spring or fall and a planting party usually follows.

Residents are responsible for the [maintenance](#) of traffic circle plantings. Replacement plants are not typically available through the NTCP if the originals die due to neglect or automobile run-overs. Funding for vegetation rehabilitation is available through the [Department of Neighborhoods](#). View more information on traffic calming and landscaping through the on-line version of [Salmon Friendly Gardening Tips from Seattle Public Utilities](#).

6.5.10a Plants Provided at the Time of Installation

Each year SDOT provides plants for between 60 to 120 new traffic circles, chicanes, triangles and medians. Purchases are made in bulk to keep costs down, so this requires selecting a common plant pallet that accommodates the needs of everyone. Although every effort is made to get the plants neighborhood groups request we sometimes need to make substitutions. As always, purchasing depends upon plant availability. So, we ask for flexibility and patience as we are serving a considerable number of neighborhood groups.

Groups may purchase their own plant material if they would like to plant sooner or have specialty plants in mind that we might not be able to get. SDOT cannot reimburse groups for these expenses, but your planting plan should be sent to SDOT Urban Forestry staff for permitting before plant purchases are made. Flower bulbs are not provided, but they are a lovely addition and we encourage you to plant them! Daffodils, in particular, grow really well. They need little care and will increase in number as they bloom each spring!

A traffic circle must be at least 14 feet in diameter to qualify for a tree. For a typical 16 foot diameter device we usually provide:

Type of Landscaping	Amount
Trees	1
Shrubs (no more than two different types)	4-5
Perennials (no more than three different types)	12
Flats of groundcover (one type)	2

All plant material and trees must be maintained consistent with SMC 15.42.050: Planting Trees and Shrubs. Multi-stemmed trees and shrubs that can grow tall, such as roses and lilacs are not acceptable. It is also advisable not to plant shrubs that require shearing. Usually the plants remain long after the person willing to consistently maintain them has left.

6.6 Contact Information

Organization Name/Website	Phone
Department of Planning and Development (DPD) General Information	(206) 684-8850
DPD City Design	(206) 684-0763
SDOT Major Projects Division: Link Light Rail Team	(206) 615-1224
SDOT Neighborhood Traffic Control Program: Traffic Calming	(206) 684-0353
SDOT Street Use Division	(206) 684-5283
Seattle Public Utilities (SPU) General Information	(206) 684-3000
SPU Resource Planning Division, Natural Drainage Systems	(206) 615-0866

Additional contact information and resources are located in the [City of Seattle Staff Directory](#), which is searchable by Department, Division and individual staff.

