

DRAFT Seattle Pedestrian Master Plan Issue Paper: Street Types November 1, 2008

Introduction

The following is a review of the role of Street Types in creating a walkable city. Street Types are design criteria described in the Seattle Right-of-Way Improvements Manual. The Seattle Pedestrian Master Plan examined City of Seattle policies and practices related to the pedestrian environment and experience, specifically focusing on the American Disabilities Act (ADA) transition plan, construction zones, lighting, intersection design, maintenance, snow and icy conditions, speed and signage, street types, and trees and sidewalks. This process was also informed by discussions with staff of the Inter-Agency Team¹ and the Pedestrian Master Plan Advisory Group².

Street Types are a design tool to determine physical features that support adjacent land use and the type and volume of transportation on a specific street (TSP, p.57). While Arterial Classifications (based on guidelines from the American Association of State and Highway Transportation Officials—AASHTO) are used to define a city-wide network, Street Types are “site specific” and may be used to define a short stretch along a street (e.g., a four-block corridor in an urban village may be designated as a Main Street) (TSP, p.57).

The Transportation Strategic Plan (TSP) (2005) and Comprehensive Plan (2004) designate Street Types for the City of Seattle. Recent Council actions, such as the Complete Streets Ordinance (2007), call for the incorporation of pedestrian friendly (among other things) planning and design into the plans mentioned above and the Right-of-Way Improvements Manual (ROWIM). The ROWIM provides design guidelines for important pedestrian-related features based on these Street Type designations.

Current Programs and Goals

Comprehensive Plan

City of Seattle Comprehensive Plan Transportation Goal 13 calls for a street type overlay designation. Each Street Type corresponds to a Street Classification and adjacent land use (see attached Summary Table of Street Type/Street Classification Design Features). Maps that illustrate Seattle Arterial Classifications, Transit Classifications, Major Truck Streets, and Street Type Designations are provided in the TSP (please see Links). SDOT is in the process

¹ The Inter-Agency Team consists of staff from eighteen agencies and departments within the City of Seattle, King County, and Washington State.

² The Pedestrian Master Plan Advisory Group (PMPAG) is an ad hoc group appointed by the City of Seattle, consisting of twenty-three members representing various groups and organizations.

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of updating the Street Type map (i.e., SDOT is designating Main Streets in the downtown area and anticipates a draft review in winter 2008 or early 2009).

In addition to the design features prescribed for Street Types, SDOT installs a variety of traffic calming facilities according to Street Classification. Comprehensive Plan Goals 2 and 7, and Policy 17, call for traffic calming techniques to be used in neighborhoods to improve pedestrian and bicycle safety, reduce neighborhood cut-through traffic, and to reduce vehicle speeds. Traffic calming is done through the [Neighborhood Traffic Control Program \(NTCP\)](#), established in 1978 as part of the Capital Improvement Program (CIP), to “reduce accidents and speeds on residential streets, thereby creating safer, more pleasant neighborhoods” (ROWIM, 6.5.2). The NTCP annually updates maps of traffic circle locations (one of the traffic calming techniques utilized in Seattle).

Complete Streets Ordinance

Besides the plan goals relating to Street Types mentioned above, the Seattle City Council passed a Complete Streets Ordinance (#122386) in April 2007. This ordinance calls for the Seattle Department of Transportation (SDOT) to “plan for, design, and construct all new City transportation improvement projects” for all users (i.e., pedestrians, bicyclists, transit, freight). Complete streets principles are to be incorporated into the “Transportation Strategic Plan, Seattle Transit Plan, Pedestrian and Bicycle Master Plans, Intelligent Transportation System Strategic Plan, and other SDOT plans, manuals, rules, regulations and programs as appropriate” (City of Seattle, 2007).

Applicable/Related Regulations – Guidelines

Street Types

Chapter 4.2.1 of the Right-of-Way Improvements Manual (ROWIM) provides design guidelines for each of the designated Street Types (see attached summary table of Street Type/Street Classification Design Features). When new development or re-development occurs that requires right-of-way improvements, a designer uses the TSP Street Type map to determine the Street Type for their site, and then refers to the ROWIM for design criteria. The majority of the design criteria incorporates features related to the pedestrian environment.

Priority design features are specified for each Street Type as well as a number of other design features detailed in Attachment 1 *Summary Table of Street Type/Street Classification Design Features in SDOT Right-of-Way Improvement Manual*, Section 4.2.1.

Some highlights include:

- *Curb bulbs:*
 - Main, Mixed Use, and Green Street Types: “Use in combination with on-street parking to support pedestrian activity at corners and shorten crossing distances.”
- *Bus bulbs:*

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- Main, Mixed Use and Green Street Types: "Appropriate for locations with high transit ridership. Impacts to on-street parking should be considered."
- Commercial and Local Connector Street Types: "Appropriate in locations to support high transit ridership where on-street parking is a lower priority."
- *Medians:*
 - Regional and Commercial Connector Street Types: "Use on streets with three or more lanes only. Appropriate in locations where high volumes of pedestrian crossings occur and depend on left turn movements."
 - Mixed Use Street Type: "Medians or crossing islands are encouraged, where right-of-way width allows, to manage traffic, improve the aesthetics of the right-of-way and improve pedestrian crossing conditions."
- *Crossing islands:*
 - Regional, Commercial, and Local Connector Street Types as well as Main and Mixed Use Street Types: "Use on streets with three or more lanes only. Typically at a crossing location not controlled by a traffic signal."
- *Sidewalks:*
 - Regional Connector Street Type: "As wide as possible to accommodate pedestrians once vehicle access needs are addressed. Additional sidewalk width is encouraged in the vicinity of transit zones."
 - Commercial Connector Street Type: "As wide as possible to accommodate pedestrians in balance with vehicle access needs."
 - Local Connector, Main Street, Mixed Use, and Green Street Types: "Wide sidewalks support pedestrian activity and are a high priority."
 - Industrial Access Street Types: "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:*
 - Regional, Commercial, and Local Connector Street Types: "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."
 - Main and Mixed Use Street Types: "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."
 - Industrial Access Street Type: "A planting strip with low landscaping or high branching trees is encouraged to support freight mobility and to provide separation between moving traffic"

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and pedestrians. Tree limbs should not interfere with truck movements."

- o Green Street Type: "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."
- o Neighborhood Green Street Type: "Wide planting strip, or double rows of street trees with mature street trees and landscaping, enhance the street for pedestrians."

Please note: In addition to the street tree and landscaping design criteria described above, developers building in commercial areas must meet City of Seattle Green Factor requirements. "The Seattle Green Factor is a menu of landscaping strategies for new development in neighborhood business districts...The Green Factor encourages the planting of layers of vegetation and larger trees in areas visible to the public and in the public rights-of-way directly adjacent to the property. There are additional bonuses for using rainwater harvesting and/or low water use plantings. Use of larger trees, tree preservation, green roofs and even green walls is encouraged" (City of Seattle, 2007).

- *Street furniture:*
 - o Regional Connector Street Type: "Bus shelters are appropriate in transit zones. Wayfinding signs and other street furnishings are appropriate where right-of-way width allows."
 - o Commercial and Local Connector Street Types: "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."
 - o Main, Green, and Neighborhood Green Street Types: "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."
 - o Mixed Use Street Type: "Benches, bus shelters, bicycle parking and signs and maps (wayfinding) are all encouraged to support pedestrian activity and comfort."
- *Pedestrian scaled lighting*
 - o Regional, Commercial, and Local Connector Street Types: "Prioritize at pedestrian crossing locations, in transit zones, where there are concerns about personal security, and where adjacent land uses support pedestrian activity."
 - o Main and Mixed Use Street Types: "Pedestrian scaled lighting illuminates the sidewalk and provides a consistent vertical design element to the streetscape. Prioritize at pedestrian crossing locations, in transit zones, where there are concerns about personal security, and where adjacent land uses support pedestrian activity."
 - o Green and Neighborhood Green Street Types: "Pedestrian scaled lighting that illuminates the sidewalk and provides a consistent vertical design element to the streetscape."

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- *Decorative elements:*
 - Regional and Commercial Connector Street Types: “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:*
 - Regional, Commercial, and Local Connectors and Green and Neighborhood Street Types: “Appropriate in locations where adjacent land uses support high pedestrian volumes, including transit zones.”
 - Main and Mixed Use: “Encouraged, especially in locations where adjacent land uses support high pedestrian volumes, including transit zones.”
- *Drainage:*
 - Neighborhood Street Type: “Natural drainage systems are encouraged in creek watersheds. Refer to Chapter 6.4 Natural Drainage Systems for more detail.”

Traffic Calming

The location of traffic calming devices and strategies is outlined by Comprehensive Plan policy 14 which calls for their use “on collector arterials where they are compatible with the basic function of collector arterials” (Comp. Plan, 2008, p. 3.7). The ROWIM further specifies which traffic calming devices are appropriate for Non-Arterials, Collector Arterials, Minor Arterials, and Principal Arterials (ROWIM, 6.5.6—please refer to attached table). The ROWIM lists the following typical traffic calming devices as frequently used in Seattle: curb bulbs, on-street parking, streetscape improvements, signs, crossing islands or short medians, medians, “road diets” (reducing the number of traffic lanes), speed cushions, gateway treatments, neighborhood speed watch program, limited access, all-way stop, raised crosswalks, raised intersections, speed limit reduction, chicanes, chokers, diverters, partial street closure, pedestrian districts (woonerfs), speed humps, and traffic circles.

Curb Radii

One feature of intersection design that can also serve to calm traffic is known as the curb radius. The corner on an intersection can have smaller or larger curb radii, depending on how it is designed. A small curb radius produces a sharper turn, resulting in slower motor vehicle speeds. A small curb radius also provides shorter crossing distances for pedestrians. Effective curb radii can increase based on location of on-street parking and bike lanes. Some large vehicles, such as buses or trucks, may use the oncoming traffic lane when turning corners with smaller curb radii. Angled advance stop lines, such as those installed at some intersections in downtown Seattle, can help alleviate conflicts between waiting vehicles and those turning in these situations. The following table from the ROWIM, Section 4.8.3, provides standards for curb radii at intersections based on Street Classification:

Street Intersection	Curb Radius
When Vehicular Turn is Illegal	10 feet
Arterial to Residential Access	20 feet
Residential Access to Residential Access	20 feet



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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

Complete Streets Checklist (Internal SDOT)

SDOT currently uses an internal Complete Streets Checklist (updated May, 2008) in its review of proposed projects in the right-of-way. Complete Streets primary design features, organized according to Street Type, include buffers/planting strips, pedestrian weather protection and lighting at transit stops in areas adjacent to pedestrian friendly land uses, bicycle accommodation, wide sidewalks and a planting strip, curb bulbs where there is on-street parking, street trees and landscaping, pedestrian scaled lighting, street furniture, awnings and weather protection, bike parking in business districts, short-term on-street parking, truck route signage, load zones, low landscaping or high branching trees in planting strips, bus shelters, tight curb radii, minimization of driveways, and natural drainage. The checklist is reviewed by the project manager, project engineer, and the CPRS division director.

Gaps/Additions/Modifications

General Comments (based on above review of above policies and practices)

- No Street Type designation and design criteria for Residential Access Streets.
- No Street Type designation and design criteria for industrial access; non-principal streets within manufacturing and industrial centers do not have a Street Type overlay.
- Commercial streets downtown are undesignated.
- Natural drainage systems listed as a design feature in ROWIM only in Neighborhood Green Street Type when could be applied to other Street Types as well.
- No minimum sidewalk widths within ROWIM Street Type design criteria—is it listed elsewhere?
- Intersections of different street types/street classifications—how is it determined which design features are used?
- Decorative elements not addressed for Main and Mixed Use Street types when these are locations where the installation of public art is likely.
- Traffic calming devices might benefit from wider application along Arterials.
- Guidance on alternative sidewalk design and materials.
- Complete Streets checklist is only an internal checklist—might benefit designers and community if it were public. A legend would be helpful in the checklist chart defining the different shades of gray.
- Curb radii standards (especially from residential to residential streets) could be tighter.

The following comments regarding street types came out of meetings with the Inter-Agency Team, PMPAG, and the SDOT/SvR/TDG team:

Street type categories

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- Existing street designations may need to be revised and/or updated.
- The character description and design elements for industrial areas needs to better address pedestrians' needs.
- Areas with the largest gaps in sidewalk system are in North Seattle and industrial areas; however, many of these streets are classified as non-arterial residential or industrial access streets. As such, the ROWIM does not include design feature criteria for these streets in its Street Type criteria.
- The use of medians and crossing islands is too limited.
- The implementation of Street Types could be improved.
- More discussion and detail regarding transit stops, weather protection, public art and other issues may be needed.
- The use of alleys may need to be revisited.
- There may be a need for more discussion and detail on continuity and connectivity.
- The policy for designating street types for intersections when two different types cross each other should be clarified.

Zoning overlays

- The relationship between land use, zoning, and street type should be examined and clarified.
- There are general concerns with the implementation of the pedestrian overlay zone.
- West Seattle is an example of an area that was rezoned a long time ago and only now is the development catching up with the zoning.
- The relationship between the pedestrian overlay zone and street type classifications should be examined and clarified.

Evaluating trade-offs

- The process for evaluating competing interests, trade-offs, and modal priorities should be examined.
- Street type criteria describe both curb bulbs and bike lanes configurations, but they do not provide guidance on design considerations and trade-offs when these recommendations compete.
- Lower cost designs are available and sometimes preferable to wide sidewalks and buffers; these situations should be examined further and guidance should be provided.
- Street trees in business districts can present challenges, for example through tree survival, maintenance, available ROW, tripping hazards, blocking signs, etc.; these situations should be examined further and guidance should be provided.
- Situations where consistent sidewalk width may not always be possible, necessary, or appropriate, should be examined.

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- Instances where utility design and placement can present obstacles in the pedestrian environment should be examined.
- Driveway dimensions may need to be adjusted (10-8 feet).

Configuration of the right-of-way

- Configuration of the right-of-way (ROW) can be challenging because there are often competing interests, for example between sidewalks, streets, trees, and transit. If you change the ROW to only benefit pedestrians, it could have spillover effects, for example by moving bus holding areas to another street. These situations should be further examined.
- The process for deciding when to move curbs is a major issue, and should be examined further, because it is often where the choice between different users of the right-of-way is made.
- Sidewalks should be provided at the entrance and exit points of stairs.
- The clearance section in the Right-of-Way Improvement Manual (ROWIM) should be improved.
- West Seattle is a good example of ROW issues and challenges.
- The question of whether the City has the ability to delegate its role in maintaining the ROW should be examined further.
- A discussion of steel grates, utility lids within the sidewalks (e.g., slippery surfaces on the steep streets), poles, and drainage may be needed in various policy and design documents.
- Additional discussion and detail on traffic calming within the ROW may be needed.
- The tendency to design around ROW encroachments instead of requiring property owners to remove private structures/objects in the public ROW should be examined.
- The revised preliminary assessment tool of the ROW for new or redevelopment should be reviewed for potential loopholes and/or suggested improvements.
- In some cases there is room to build a sidewalk but it would have to be in an easement (e.g., developer needs the "math" land, not the physical land), which brings up the option of enclosed sidewalk space. This issue should be examined further.
- The requirement that the sidewalk must slope two percent from the property line to the curb may not be feasible due to existing topography. Flexibility to accommodate existing conditions and surrounding land use should be allowed. For example, more flexibility could be granted on residential streets where there are lower pedestrian volumes.

Definition of "Complete Streets"

- More detail and guidance on the design of transit stations should be considered.
- Can the complete streets strategy be truly complete if it does not include all streets?

Need for flexibility

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- Reluctance to blend the “public-private edge” in what is allowed in sidewalk zone in Business Improvement Areas should be examined.
- In some cases, space is available for sidewalk cafes but the state liquor law requires fences around cafes. This issue should be examined further.
- Lack of funding and red-tape with existing funding with regards to assistance to property/business owners with façade improvements related to sidewalk cafes should be examined.

Potential Recommendations for Review

General: Address gaps identified above

- Provide Street Type design feature criteria for all streets, especially unclassified residential and industrial.
- Remove “Residential Green Streets” street type. In Complete Streets Ordinance and revised Stormwater Code all residential streets could be eligible for green stormwater infrastructure.
- Provide alternative sidewalk design and material alternatives.
- Analyze existing residential street pavement widths; overlay this with latent pedestrian demand modeling to determine potential traffic calming needs; overlay with information soil type and/or watersheds to determine natural drainage potential.
- Revise or develop new guidelines as necessary:
 - Sidewalk and Walkway Design Options (Alternative Materials)
 - Traffic Calming
 - Curb Radius
 - Transit Stop and Access

Links as Applicable

- *Street Type/Street Classification Design Features in Right-of-Way Improvements Manual*, Section 4.2.1:
http://www.seattle.gov/transportation/rowmanual/manual/4_2.asp#421
- *City of Seattle Street Type Designation Map*:
http://www.seattle.gov/transportation/docs/rowm_TSPStreetTypesSept292005.pdf
- *Figure 23: Seattle Arterial Classifications* (TSP, p.51):
<http://www.seattle.gov/Transportation/tsphome.htm>
- *Typical Traffic Calming Devices in Seattle Table* (ROWIM, 6.5.6):
http://www.seattle.gov/Transportation/rowmanual/manual/6_5.asp
- *Designated Green Streets Map*:
http://www.seattle.gov/transportation/rowmanual/manual/pdf/figure6_5.pdf

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