

Seattle Pedestrian Master Plan

WORKING DRAFT

Pedestrian Issue Policy Review: Speed and Signage

October 23, 2008

SvR/TDG

Introduction

Motor vehicle speed and signage impact the pedestrian environment in Seattle in important ways. Motor vehicle speed is a fundamental issue in the safety of pedestrians. Higher motor vehicle speeds create a less comfortable environment for pedestrians and increase required stopping distance, while at the same time increasing the severity of pedestrian crashes. The municipal code includes standard speed limits throughout the City. As noted in Section 11.52.060, "Except in those instances where a different maximum lawful speed is provided by this subtitle or otherwise, no person shall operate any vehicle at speed in excess of twenty-five (25) miles per hour on any street." Section 11.52.080 notes a maximum lawful speed of thirty (30) miles per hour on arterial streets except in those instances where a different maximum lawful speed is provided. The City's Neighborhood Traffic Control Program implements design improvements such as chicanes, curb extensions, speed cushions and humps, and traffic circles to slow traffic throughout the City.

Signs also impact the pedestrian environment by regulating motor vehicle and pedestrian traffic and providing important directional guidance to roadway users. Seattle uses a range of regulatory, warning, and directional/guide signs, typically following the Manual on Uniform Traffic Control Devices (MUTCD) guidelines. There are more than 150,000 permanent/fixed signs in the City. In addition, the City employs dynamic message signs and radar speed signs in select locations. The City utilizes traditional pedestrian-related signage, such as the pedestrian warning sign (W11-2), at uncontrolled crossings and is experimenting with innovative signs such as the "Stop for Pedestrians When Turning" signs at signal-controlled intersections and the "Stop for Me – It's the Law" signs along arterial roadways.

Reducing speed limits and installing signage to inform motorists of these limits are only two tools to decrease actual vehicle speeds. Other tools that may change driver behavior include the installation of traffic calming devices, education and encouragement campaigns to reduce speeding, and enforcement of posted speed limits.

Current Programs and Goals

Current Programs

SDOT

- The *Traffic Signal Program* facilitates the smooth movement of that traffic on City streets. The signal operations team is made up of engineers who work with the existing network of streets, bridges, and highways to maintain and improve a functioning traffic system. Signals are managed through the Traffic Signal Optimization Program and Traffic Management Center. The program uses a variety of tools to manage traffic signals. For example, transit signal priority in urban villages gives transit vehicles a time advantage when approaching a signal. A sensor placed on the transit vehicle informs the signal of the approaching vehicle and holds the light green to allow it to pass.
- The *Safe Routes to School Program* aims to improve pedestrian and bicycle safety near schools through education, encouragement, enforcement, and engineering efforts. The program includes design and enforcement efforts to reduce speeds near

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schools and enhanced signage to increase driver and pedestrian awareness around schools.

- The *Pedestrian Program* seeks to improve pedestrian safety and to encourage more walking by creating an environment where pedestrians can walk safely and comfortably. The program deals with all pedestrian-related issues, including speed and signage.
- The *Neighborhood Traffic Control Program* seeks to reduce crashes and speeds on residential streets, thereby creating safer, more pleasant neighborhoods.
- The *Parking Program* addresses all topics related to the City's management of on-street parking and curb space use. The regulation and enforcement of parking includes many different types of signs. In addition, the presence of on-street parking can have the impact of narrowing the roadway and slowing traffic.
- The *Neighborhood Speed Watch Program* is a public awareness program designed primarily to "educate" drivers to slow down and exercise caution when using neighborhood streets. The program includes distributing radar units, setting up Speed Watch Trailers, and coordinating requests for the Police Department to provide follow-up enforcement and/or provide traffic safety campaign flyers for distribution by the local residents within the problem area.
- SDOT also has a sign design and production shop where signs are designed and produced.
- SDOT has developed pedestrian *wayfinding* signage that includes directional information and routes to neighborhood destinations. A preliminary installation of Seattle's pedestrian wayfinding signage can be found along the Cheshiahud Lake Union Loop. In addition to signage, Organizations such as Feet First and Seattle Public Schools have developed maps of neighborhood walking routes.

Planning and Development Department

- The *Design Review Program* provides a forum for citizens, developers, and the City to review and guide the design of qualifying commercial and multifamily development projects.
- DPD's permit-related work impacts intersections, for example through public notice and involvement for master use permits, design review, permit approval for construction, site development, and approval for signs and billboards.
- DPD's compliance-related work also impacts intersections, for example responding to land use violations and addressing building code, site development, and other technical code violations.

Other

- The Seattle Police Department establishes enforcement efforts throughout the city, including patrols in target areas as well as ticketing speeding violations and other dangerous driver behavior.

Washington Department of Transportation

- The Washington Department of Transportation plans, designs, builds, and maintains state roads in Seattle, which have their own speed limit, signage, and other laws and regulations associated with them.

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- The WDOT Pedestrian and Bicycle Program coordinates the statewide vision for pedestrian transportation and provides safety resources, funding, and educational opportunities to encourage walking throughout the State of Washington. It provides funding for pedestrian projects as well as pedestrian design information and other resources.

Federal Government

- The Federal Highway Administration is charged with the broad responsibility of ensuring that America's roads and highways continue to be safest and technologically up-to-date.

Selected Goals in the Comprehensive Plan

Speed

- T14: 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.
- NBH-P16: Strive to implement neighborhood traffic calming control devices and strategies that protect local residential streets from through traffic, short-cutting, high volumes, and high speed traffic as growth occurs within the urban village.
- RB-P21: Seek to strengthen provisions for code enforcement of transportation related violations such as speeding, and parking violations.

Signage

- BI-G7: Encourage clear directional signage to and from the BINMIC to regional highways.
- DT-UDP12: Regulate signs to: Subject signage within the Pioneer Square Preservation District, International Special Review District, and the Pike Place Market Historical District to the regulations and approval of the appropriate boards or commissions.
- NBH-P10: Seek improvements, such as crosswalks, pedestrian activated crossing signals, signage, curb bulbs or other devices that will improve pedestrian safety along Beacon Avenue, that support increased access to shopping and transit.
- Sign guidelines
 - LU42: Regulate signs to facilitate adequate identification of businesses, reduce visual clutter, protect the public interest, provide opportunities for communicating information of community interest, and enhance the city's appearance and safety. Adapt provisions to correspond with the character and scale intended for each area.
 - LU43: Allow flexibility in the height or overall area of signs on existing or new buildings that use a comprehensive design plan to create visual harmony between the sign, the building, and the site where it is located.
- DT-UDP12: Regulate signs to:

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- 1. allow adequate identification of businesses and allow businesses to advertise their products;
- 2. add interest to the street level environment;
- 3. protect public safety;
- 4. reduce visual clutter, and
- 5. enhance the appearance and safety of the downtown area.

Selected Goals in the Transportation Strategic Plan

Speed

- 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 the arterial streets, reducing the impacts of cut through traffic on neighborhoods.
- S3. Define Seattle's Street Classification System to Guide the Design and Operation of the City's Street System.
- TR1. Develop and Implement Seattle's Future Transit Network.
- W9. Continue Installing "Road Diets."

Signage

- W16. Support Signage and Wayfinding Projects.
- P14. Publicize the City's Parking Programs, Rules and Regulations.

Selected Applicable/Related Regulations – Guidelines

Seattle Municipal Code

Speed

- SMC 11.52.020: General speed stated. A. No person shall drive a vehicle on a street, alley or way open to the public at a speed greater than is reasonable and prudent under the conditions and having regard for the actual and potential hazards then existing. In every event speed shall be so controlled as may be necessary to avoid colliding with any person, vehicle or other conveyance on or entering such street, alley or way open to the public in compliance with legal requirements and the duty of all persons to use due care. B. The driver of every vehicle shall, consistent with the requirements of this section, drive at an appropriate reduced speed when approaching and crossing an intersection or railway grade crossing, when approaching and going around a curve, when approaching a hill crest, when traveling upon any narrow or winding roadway, and when special hazard exists with respect to pedestrians or other traffic or by reason of weather or roadway conditions. (RCW 46.61.400(1) and (3))
- SMC 11.52.040: Maximum speed. No person shall operate any vehicle at a speed in excess of the stated or posted speed limits on any street or alley.

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- SMC 11.52.060: Twenty-five m.p.h. speed limits. Except in those instances where a different maximum lawful speed is provided by this subtitle or otherwise, no person shall operate any vehicle at speed in excess of twenty-five (25) miles per hour on any street. (RCW 46.61.400(2)(a))
- SMC 11.52.080: Thirty m.p.h. speed limits. Subject to Section 11.52.020, and except in those instances where a different maximum lawful speed is provided by this subtitle or otherwise, no person shall operate any vehicle at a speed in excess of thirty (30) miles per hour on arterial streets.
- SMC 11.52.100: Speed limit -- School or playground crosswalks or school or playground zones. Subject to Section 11.52.020 A, and except in those instances where a lower maximum speed is provided by this subtitle, no person shall operate any vehicle at a speed in excess of twenty (20) miles per hour when passing any marked school or playground crosswalk or when within any marked school or playground zone when such marked crosswalk or zone is fully posted with school speed limit signs or playground speed limit signs. The speed zone at the crosswalk shall extend three hundred (300) feet in either direction from the marked crosswalk, and the school or playground zone may extend three hundred (300) feet from the border of the school or playground, but may include only area consistent with active school or playground use. (RCW 46.61.440)
- SMC 11.52.220: Exceeding speed limit evidence of reckless driving. The unlawful operation of a vehicle in excess of the maximum lawful speeds permitted by this subtitle at the point of operation and under the circumstances described shall be prima facie evidence of the operation of a motor vehicle in a reckless manner by the operator thereof. (RCW 46.61.465)
- SMC 18.12.200: Use of driveways and boulevards – Speed limit. It is unlawful to ride, propel, drive or direct any animal or motorized vehicle over or through any park except along and upon the park drives, parkways and park boulevards, or to do so at a speed in excess of the posted speed limit, or to do so in excess of fifteen (15) miles per hour where no speed limit is posted.

Signage

- SMC 11.24.030: Signage that may be required by Traffic Engineer. Whenever the Traffic Engineer determines that, to protect life, limb, or property, facilitate the movement of traffic, prevent traffic congestion, or maintain the most efficient transportation use of the streets or alleys, any of the following vehicular movements should be prohibited or required, it shall be incumbent upon and the duty of the owner or agent of property designated by the Traffic Engineer, when so ordered by such official, to install and maintain on such property one or more signs subject to approval by the Traffic Engineer as to sign design and location, indicating that the following vehicular movement(s) are prohibited or required, as specified by the Traffic Engineer:

A. Making a left turn or right turn from an off-street garage, parking lot, or other vehicular facility served by a driveway or other route commonly used for travel;

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- B. Obtaining ingress to or egress from private property by way of a specified driveway or other route commonly used for travel;
 - C. Backing into a street area from a driveway; or
 - D. Stopping or yielding for oncoming traffic.
- SMC 23.55.040: Special exception for signs in commercial and downtown zones. The Director may authorize exceptions to the regulations for the size, number, type, height and depth of projection of on-premises signs in neighborhood commercial, commercial, downtown office core, downtown retail core, downtown mixed commercial and downtown harborfront zones as a special exception pursuant to Chapter 23.76, Procedures for Master Use Permit and Council Land Use Decisions, except that no special exception may be authorized for a sign using video display methods. When one (1) or more of the conditions in subsection A of this section have been met, the characteristics described in subsection B of this section shall be used to evaluate the merits of the proposal. Proposals must also meet the intent of the Sign Code as specified in Section 23.55.001, Intent. An exception shall not be granted for roof signs or signs prohibited in Section 23.55.003. In downtown zones, the Director shall consult with the Seattle Design Commission before issuance of the special exception decision.
 - Various signage regulations specific to different zones in the city.

Revised Code of Washington

The Revised Code of Washington also includes regulations relevant to speed and signage in Seattle. Examples are included below.

- RCW 46.61.440: Maximum speed limit when passing school or playground crosswalks -- Penalty, disposition of proceeds.
- RCW 46.61.415: When local authorities may alter maximum limits.
- RCW 35.95A.140: Requirements for signage.
- Chapter 47.36 RCW: Traffic Control Devices (a complete list of approved traffic control devices is available at <http://search.leg.wa.gov/pub/textsearch/ViewRoot.asp?Action=Html&Item=0&X=1002025514&p=1>)
- RCW 47.36.100: Directional, caution, and stop signs.

Right-Of-Way Improvements Manual

Speed

- Roadway Posted Speed Limit Minimum Vertical Curve
 - 35 mph or less: 3 times the design speed (V d) where V d is 5 mph greater than the posted speed limit
 - Greater than 35 mph: 3 times the design speed (V d) where V d is 10 mph greater than the posted speed limit

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- 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: 20 mph, Design Radius: 125 feet
 - Design Speed: 25 mph, Design Radius: 205 feet
 - Design Speed: 30 mph, Design Radius: 300 feet
 - Design Speed: 35 mph, Design Radius: 420 feet
 - Design Speed: 40 mph, Design Radius: 565 feet
- Detailed information on vehicle speed is available in Section 6.5 Traffic Calming, which is available at http://www.seattle.gov/transportation/rowmanual/manual/6_5.asp.

Signage

- 4.25.2 Design Criteria: 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. 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 travel.
- 4.2.1f Industrial Access Streets. Truck route signage. Signage is encouraged that directs trucks to destinations such as Port facilities, inter-modal rail yards, the regional freeway network, and to Seattle's Manufacturing and Industrial Centers.

Other

- Bridge and Municipal Construction Standards: The 2008 edition of the City of Seattle's Standard Specifications and Standard Plans for Road, Bridge, and Municipal Construction are available at http://www.seattle.gov/util/Engineering/Standard_Plans_&_Specs/index.asp. This document provides standard plans and specifications for physical infrastructure that impacts speed and signage issues in Seattle.
- State of Washington Law: The complete list of State of Washington rules of the road is available at <http://apps.leg.wa.gov/RCW/default.aspx?cite=46.61>. A few notable elements are included below.
 - RCW 46.61.060: Pedestrian control signals.
 - RCW 46.61.085: *Traffic control signals or devices upon city streets forming part of state highways — Approval by department of transportation.*
- Americans with Disabilities Act Accessibility Guidelines (ADAAG): The guidelines are available at <http://www.access-board.gov/adaag/html/adaag.htm>. The guidelines provide standards, guidelines, and requirements for signage and other issues.
- FHWA Washington Division: The FHWA Washington Division implements federal government standards such as the ASAAG discussed above, as well as [State Roadway Design Manuals](#), [State Standard Drawings](#), Pedestrians and Accessible Design, and other areas that impact intersection design.

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The following publications provide additional information on speed and signage issues in Seattle:

- Facilities Guide to the Development of Bicycle Facilities. The American Association of State Highway Transportation Officials (AASHTO). Updated in 1999. Available from AASHTO at www.aashto.org/bookstore/abs.html
- Manual on Uniform Traffic Control Devices (MUTCD). Published by the U. S. Department of Transportation, Washington, DC, 2001. The manual is available at <http://mutcd.fhwa.dot.gov>
- Americans with Disabilities Act Accessibility Guidelines. U.S. Department of Justice, United States Access Board. Guidelines are available at <http://www.accessboard.gov/adaag/html/adaag.htm>
- Designing Sidewalks and Trails for Access: Part Two - Best Practices Design Guide. Published by U.S. Department of Transportation, Washington, DC, 2001
- International Building Code. Published by International Code Council (ICC), 2006.

Director's Rules

- DPD Director's Rule 11-97: Sign Height and Building Facades
- Director's Rule on Street and Sidewalk Pavement Opening and Restoration
- Director's Rule 02-02: Posting of temporary signs on City owned utility poles, lampposts, and traffic signposts in planting strips
- SDOT Rule 01-1: Sign Kiosks Proposed in the Right-of-Way

Best Practices

Specific facility recommendations include techniques to reduce motorist speeds with engineering treatments such as raised crossings, reduced turning radii, realigned intersections and improved design, and increased use of pedestrian crossing islands. Enforcement programs could include expanding photo enforcement programs and increasing penalties for speeding infractions.

Design, Engineering, and Universal Access

- Jurisdictions around the country are implementing lane diets (narrowing existing travel lanes) as a strategy to slow motor vehicle traffic.
- In the City of Tucson, Arizona, HAWK signals are used to assist pedestrian crossings of multi-lane arterials with high vehicular volumes while minimizing vehicular delay to the arterial and discouraging minor roadway cut-through traffic. When combined with a media campaign, this has generated a high motorist yield rate, increasing compliance from 30 percent under normal conditions to 93 percent over an eight-month study period. This treatment is profiled in ITE's *Traffic Control Devices Handbook*.
- The City of Portland prioritizes the installation of Accessible Pedestrian Signals using a rating scale that assigns points to specific intersection features, as well as proximity to services for all pedestrians, such as transit, government offices, or shopping.
- Part 7 of the MUTCD, "Traffic Controls for School Areas" provides detailed standards and guidance on school areas. Standards and guidance are provided on a number of topics, including school zone signage, reduced speed zones, crosswalk markings, crossing guards, and many other topics. For example, the MUTCD standard clearly

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states that if used, the School Crosswalk Warning assembly shall not be used at marked crosswalks other than those adjacent to schools and those on established pedestrian routes." Further guidance is given, stating that "the School Crosswalk Warning assembly should be installed at marked crosswalk(s), including those at signalized locations, used by students going to and from school."

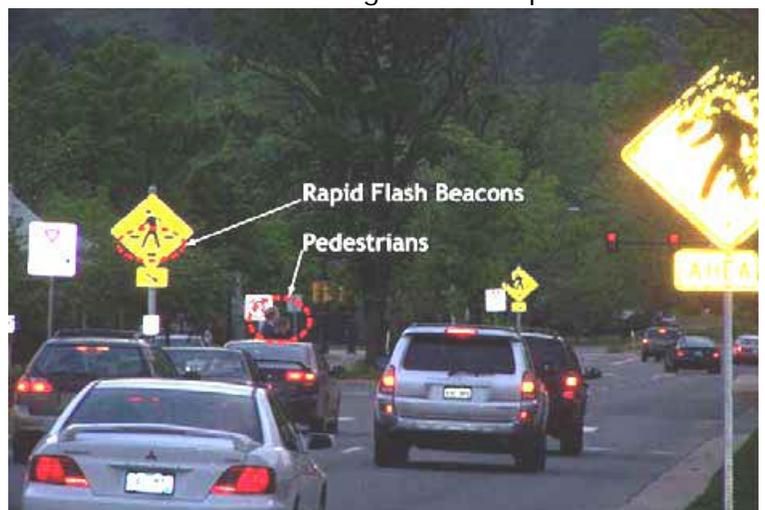
- Pedestrian Crossing Signs: The MUTCD allows use of the TURNING TRAFFIC MUST YIELD TO PEDESTRIANS sign (R10-15) as an additional reminder to drivers to yield to pedestrians while turning. Proposed changes to the 2009 edition of the MUTCD include an update of the design of the sign to improve its readability.
- The Portland, Oregon 1998 Pedestrian Design Guide provides detailed design guidelines for the placement and design of signs. It outlines a Furnishings Zone that buffers pedestrians from the adjacent roadway, and is also the area where elements such as street trees, signal poles, utility poles, street lights, controller boxes, hydrants, signs, parking meters, driveway aprons, grates, hatch covers, and street furniture are properly located.

Education

- Fairfax County successfully changed state law to allow the placement of signs at designated intersections indicating an increased fine for failing to yield to pedestrians. The signs reading, *Yield to Pedestrians in Crosswalks \$100 - \$500 Violation Fine*, are currently installed at approximately 100 intersections in Fairfax County and can be requested by citizens.

Encouragement

- The Chicago area has developed a campaign "to stigmatize and stop reckless driving" through the use of marketing and enforcement as well as street design (www.healthystreets.org/pages/drive_care.htm). The "Drive with Care" campaign, part of the Healthy Streets initiative, relies on local and regional support to improve safety through the following principles: "Public space should discourage reckless driving by design. There should be a high probability of fines for illegal behavior. And negative behavior should generate a guaranteed negative stigma."
- The City of Boulder, Colorado uses an in-street pedestrian crossing sign as a replacement for the warning sign assembly (W11-2). The City found that motorists yielding rates increased in locations with this sign, compared to locations with the W11-2 only. Boulder also developed warrant criteria for this sign which requires a minimum of 20 pedestrians crossing per hour and a minimum vehicular volume of 1,500 per day.



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Enforcement

- Arlington, VA has increased fines up to \$500 when a motorist fails to yield to a pedestrian in crosswalk locations with high pedestrian activity.
- Some local agencies, such as Boulder, CO, Arlington, VA, and Washington, D.C., have used innovative traffic control measures such as speed sensitive signals. This device involves using pavement loops to detect the speed of a vehicle. If the speed exceeds the speed limit, the traffic signal ahead displays a red light. Drivers learn that speeding on such streets will require them to stop at the light and be further delayed. The sign "speed sensitive signal" conveys that message to drivers.
- Progressive ticketing approaches are outlined on the Pedestrian and Bicycle Information Center's website at www.walkinginfo.org. Progressive ticketing is a method for introducing ticketing through a three-staged process. Issuing tickets is the strongest strategy of an enforcement program and it is usually reserved for changing unsafe behaviors that other strategies failed to change or that pose a real threat to the safety of pedestrians.
- The District of Columbia Metropolitan Police Department has been successfully operating a Photo Radar Speeding Reduction Program since 2001.
- Montgomery County, Maryland's *Safe Speed* campaign installed fixed speed cameras at seven locations in 2007 targeting residential streets, school locations, and streets with speed limits of 35 mph or less.

Gaps/Additions/Modifications

Speed

- Motor vehicle speeds in residential neighborhoods are perceived by some being too high.
- Speed limits on arterials that are greater than 30mph can make pedestrian crossings difficult and uncomfortable.
- A minimum arterial speed of 25 mph may be more appropriate for the baseline for Center City, TOD and Urban Villages, and park locations.
- Speed reduction initiatives should be examined and considered.
- Provide information to all roadway users on regulations ranging from speed limits to parking restrictions.
- Discourage motor vehicle speeding to increase the safety of walking.

Signage

- Existing and ongoing wayfinding efforts should be expanded.
- The strategy for addressing locations where there are pedestrian push buttons but no curb ramps should be evaluated.
- Provide directional guidance to drivers, walkers, and bicyclists.
- Language issues should be considered in signage.
- Installation of push buttons on traffic signals in areas with high pedestrian activity should be reviewed.

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Potential Recommendations for Review

- Align education, encouragement, and enforcement campaigns with installation of traffic calming devices and/or any new speed limit changes.
- Develop warrant criteria to determine when to provide pedestrian signs. Criteria may include vehicle volume, roadway cross section, motorist operating speed and sight distance, latent pedestrian demand, residential density, and proximity to major transit stops or stations.
- Explore flashing beacon guidelines and sign standard for use at uncontrolled marked crossings to better align with current research and best practices.
- Study whether there is a need for guidelines that relate sidewalk buffer quality and design to motor vehicle speeds and volumes.

Links as Applicable

- "Seattle's Sign Regulations," a handbook consolidating code and procedural regulations for sign installation in Seattle. Download pages [1-75, 83-115](#); view pages [76-82, Article 600](#) of the National Electrical Code (*read-only*).
- DPD's [Legal Billboards Database](#) provides location, photo, and details on all legal billboards installed in Seattle.
- Information about public notice signs and land use notices is available on DPD's [Notices website](#).