

Portland Office Of  
Transportation

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# Northwest District Pedestrian Safety Issues

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Response to NWDA Requests

April 27, 2006

**DRAFT**

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# NW District Pedestrian Safety

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## Background

### Fatal Crash

On January 31, 2006, at 7:35 PM, Sara Cogan and her daughter-in-law Danielle Cogan left the restaurant Pastini on the NE corner of NW 23<sup>rd</sup> Avenue and Quimby Street. They waited on the NE corner to cross NW 23<sup>rd</sup> Ave and reach their parked car. Southbound driver Jon Justice yielded to allow the pedestrians to cross. They were struck by northbound driver Colleen McClure in the northbound lane within the legal crosswalk. Sara Cogan suffered fatal injuries and Danielle Cogan suffered a broken leg and scrapes. Colleen McClure was not physically harmed.

Neither the surviving pedestrian nor the driver involved claim to have seen each other. It was nighttime and raining heavily. Sara Cogan was wearing black clothing, and Danielle Cogan was wearing jeans and a green raincoat. Ms. McClure had her headlights on and was not using her cell phone. The Police Officers state that she did not appear to be intoxicated. Her speed was calculated to be approximately 30mph. Mr. Justice was the only direct eyewitness. He stated that the pedestrians slowed or stopped after they entered the roadway. He said that the northbound vehicle had its headlights on, but did not slow down.

See the attached police report for details and theories on why neither party saw each other.

### Existing Conditions

#### Street Classifications

NW 21<sup>st</sup> and NW 23<sup>rd</sup> Avenues between W Burnside Street and NW Vaughn Street are classified as Neighborhood Collectors. NW 23<sup>rd</sup> Ave. is a Major Transit Priority Street and NW 21<sup>st</sup> Ave. is a Transit Access Street. In general, both streets are 36 ft. wide with on-street parking on both sides. They have yellow centerlines and are not posted for speed. The cross-streets of NW Vaughn St., Thurman St., Lovejoy St., and Westover Rd. are classified as Neighborhood Collectors while Burnside St. is a

Major City Traffic Street. All other cross streets are classified as Local Service Streets.

#### Traffic Volume and Speed

Traffic Volumes on and Speeds on NW 21<sup>st</sup> Ave. and NW 23<sup>rd</sup> Ave. are shown in the table below.

Street	Cross-Street	Date	Ave. Weekday Volume (vpd)	Speed 50% (mph)	Speed 85% (mph)
NW 23 <sup>rd</sup>	Lovejoy	2003	9,500	N/A	N/A
NW 23 <sup>rd</sup>	Savier	1999	14,000	N/A	N/A
NW 23 <sup>rd</sup>	Johnson	2004	11,000	N/A	N/A
NW 21 <sup>st</sup>	Marshall	1999	7,000	19	23
NW 21 <sup>st</sup>	Glisan	2004	11,000	N/A	N/A
NW 21 <sup>st</sup>	Savier	2001	5,400	N/A	N/A

There are no speed zone orders in effect for NW 21<sup>st</sup> Avenue or NW 23<sup>rd</sup> Avenue between W Burnside Street and NW Vaughn Street. That means that the speed zones on those streets were established by state statute. The statutory speed for a business district is 20 mph. A “business district” as defined by ORS 801.170 is “the territory contiguous to a highway when 50 percent or more of the frontage thereon for a distance of 600 feet or more on one side, or 300 feet or more on both sides, is occupied by buildings used for business.” The segments of NW 21<sup>st</sup> Ave. and 23<sup>rd</sup> Ave. between Burnside St. and Vaughn St. meet this definition and are therefore regulated by the statutory speed of 20 mph. There were no speed limit signs posted along these segments.

#### Traffic Controls

NW 21<sup>st</sup> Ave. is stop controlled at its Tintersection with the Vaughn-Thurman ramp. The intersections of 21<sup>st</sup> and Lovejoy, 21<sup>st</sup> and Glisan, 21<sup>st</sup> and Everett, and 21<sup>st</sup> and Burnside are all signalized. For those signalized intersections, there are parallel bar crosswalk markings in adequate condition on all legs with pedestrian signal heads. The intersection of 21<sup>st</sup> and Thurman is all-way stop controlled with no marked crosswalks or stop bars. The intersection of 21<sup>st</sup> and Northrup is all-way stop controlled with parallel bar crosswalks on all legs. The intersection of

21<sup>st</sup> and Marshall is all-way stop controlled with flashing red beacons for all approaches and stop bars. It has no marked crosswalks. Savier is one-way WB and is stop controlled at its T intersection with 21<sup>st</sup>. There is a ladder style crosswalk across the south leg of the intersection. This is to accommodate pedestrians who cross 21<sup>st</sup> at this location between the office buildings and parking lots located on either side of the street. For all other intersections bounded by the subject location, there were no marked crosswalks, but the cross-streets were two-way stop controlled (east and west approaches).

The intersections of 23<sup>rd</sup> and Vaughn, 23<sup>rd</sup> and Thurman, 23<sup>rd</sup> and Northrup, 23<sup>rd</sup> and Lovejoy, 23<sup>rd</sup> and Glisan, 23<sup>rd</sup> and Everett, and 23<sup>rd</sup> and Burnside are all signalized. For these signalized intersections, there are parallel bar crosswalk markings in adequate condition with pedestrian signal heads at all approaches except the west leg of Glisan at 23<sup>rd</sup> and the east leg of Vaughn at 23<sup>rd</sup>. For all other intersections bounded by the subject location, there are no marked crosswalks, but the cross-streets are two-way stop controlled (east and west approaches).

NW 20<sup>th</sup> Ave forms a tee intersection with Glisan from the south and is Stop-controlled at Glisan. Both roads were 36 ft. wide. Glisan is a two lane, one-way (WB) street. There is a school zone (Speed 20 When ChildrenAare Present) on Glisan between NW 20th and NW 21st Ave. The Metropolitan Learning Center school (grades K-12) is located on the north side of Glisan west of 20th. There is adequate intersection visibility. Parking is prohibited along the north and south sides of Glisan for approximately 110 ft east of 20th. Parking is prohibited along the north side of Glisan for approximately 26 ft. west of 20th. The “No Parking” Zone is clearly intended for intersection safety.

### Street Lighting

There are street lights at every intersection on NW 23rd Ave. and NW 21<sup>st</sup> Ave. from W Burnside St. to NW Vaughn St., as well as a few lights located at midblock. PDOT Signal and Street lighting Staff performed a night field visit. They identified three streetlights that were not working and reported them for maintenance. They evaluated the existing spacing of the lights and concluded that the existing 150-Watt luminaries meet the adopted light level and uniformity requirements for Neighborhood Collector Streets.

### Pedestrian Activity and Improvements

Pedestrian activity is higher on 23<sup>rd</sup> Ave. than on 21<sup>st</sup> Ave. There is a high demand for on-street parking on both streets. In general, we observed that most pedestrians crossed at the intersections; and through, right and left turning vehicles yielded to pedestrians at the intersections. The main

pedestrian flow appeared to be on the east and west sides of 21<sup>st</sup> and 23<sup>rd</sup>, crossing the intersections (north/south pedestrian movements). During off-peak traffic times we observed adequate gaps in traffic (NB/SB approaches) on both 21<sup>st</sup> and 23<sup>rd</sup> Avenues to accommodate the east/west pedestrian movements at the non-signalized intersections. Pedestrians were observed crossing at the intersections (east/west pedestrian movements) without difficulty.

There are curb extensions for increased pedestrian refuge into 21<sup>st</sup> at the following intersections:

- 21<sup>st</sup> and Northrup (NW & SE corners)
- 21<sup>st</sup> and Kearney (NW & SE corners)
- 21<sup>st</sup> and Irving (NW & SE corners).

There are curb extensions for increased pedestrian refuge on 23<sup>rd</sup> at the following intersections:

- 23<sup>rd</sup> and Westover (NW corner)
- 23<sup>rd</sup> and Flanders (NE & SW corners)
- 23<sup>rd</sup> and Irving (NW & SE corners)
- 23<sup>rd</sup> and Kearney (NW & SE corners)
- 23<sup>rd</sup> and Marshall (NW corner)
- 23<sup>rd</sup> and Overton (all four corners)
- 23<sup>rd</sup> and Raleigh (all four corners)

In general, the opposite corners of the mentioned intersections with the curb extensions were substandard regarding ADA requirements. There is adequate intersection visibility at the subject locations.

See the attached map and Existing Conditions spreadsheets.

## Crash History

According to the most recent records available from the Oregon Department of Transportation, there were 26 total pedestrian involved collisions within the subject locations during the 5 year period from 2000 through 2004. The total number for all crash types was 526 collisions. (Note: These numbers do not include the recent pedestrian fatality at NW 23<sup>rd</sup> & Quimby.) See the attached Crash History spreadsheets for additional detail.

Of the 26 pedestrian involved crashes, 8 were vehicle collisions with the pedestrian involvement being secondary. This means that either the crash was caused by one of the vehicles slowing suddenly for a pedestrian or that the collision between the vehicles entered the path of a pedestrian. No injuries to pedestrians were reported in these crashes.

Four of the 18 collisions that directly involved a pedestrian were caused by the pedestrian error of crossing between intersections. Another was caused by the pedestrian error of crossing diagonally at an intersection. Two were caused by the pedestrian error of lying on the road. The remaining 11 collisions that directly involved a pedestrian were caused by the driver error of not yielding the right-of-way to a pedestrian.

Three of the 26 pedestrian involved collisions were due to the driver error of not yielding the right-of-way to a pedestrian at an unmarked crosswalk. Eight of the 26 collisions were due to the driver not yielding the right-of-way to a pedestrian at a marked crosswalk. Seven of the 26 collisions were due to the pedestrian error of not crossing at a legal crosswalk (marked or unmarked). The remaining collisions were the 8 vehicular crashes that indirectly involved pedestrians. These crashes were caused by driver error, but were unrelated to the existence or absence of marked crosswalks.

For the intersection of NW Glisan St. and NW 20<sup>th</sup> Ave. available collision data between 2000-2004 showed five reported crashes for the intersection. None of these crashes involved a pedestrian.

#### Planned Improvements

Curb Extensions are planned for construction at three NW intersections as a part of Bikeway improvements for NW Portland. On NW 21<sup>st</sup> Ave. curb extensions will be constructed at Johnson and Flanders during the upcoming construction season. At NW 23<sup>rd</sup> Ave. and Johnson curb extensions are planned for construction during 2007. These improvements will significantly improve the corners and crossing environment for pedestrians.

#### Requests from NWDA

The Northwest District Association letter stated four requests:

- 1) Stripe crosswalks on every intersection on NW 21<sup>st</sup> and NW 23<sup>rd</sup> Avenues between Burnside and Vaughn, as well as the intersection on NW Glisan at 20<sup>th</sup> Avenue.
- 2) Put up a sign on the northbound side of 21<sup>st</sup> and 23<sup>rd</sup> between Burnside and Davis/Everett, and on the southbound side of 21<sup>st</sup> and 23<sup>rd</sup> between Vaughn and Thurman stating, "Yield to Pedestrians at Intersections." They also requested a sign on Glisan just prior to 19<sup>th</sup> Avenue.
- 3) Speed limit signs establishing 20 mph zone in busy commercial areas.

- 4) Take additional steps to increase visibility at intersections, including: marking and enforcing no parking zones, reviewing the adequacy of street lighting, and removing impediments that block the corners of crosswalks.

## NHBA Response

The NobHill Business Association wrote an initial letter supporting the NWDA request for Marked crosswalks. In a second letter they retracted their support for marked crosswalks and they also stated a position that on-street parking in the area should not be reduced. (See attached letters.)

The following evaluation responds to all of the NWDA requests and suggests possible alternative actions.

## Evaluation and Alternatives

### Speed Control

Speed was a factor in Ms. Cogan's death. If the vehicle that struck her had been traveling at a rate of speed closer to 20 mph it is much more likely that she would have survived the collision. We agree with NWDA's request that the statutory speed be posted in this District. Work orders have been approved to install "SPEED 20" signs notifying drivers of the 20 mph speed limit on these streets. There will be a total of 12 signs installed. They will be located at the entrances to the District and at two following locations for both directions of travel on both Avenues.

Driving 20 mph is an important safety message. We will work with the Neighborhood and Business Association to identify possible public messages that we can develop and deliver cooperatively that raise public awareness of the safety benefits associated with reduced speeding. In addition we will soon have new Speed Reader Boards ready for deployment upon request from neighborhoods, schools, and business associations. We recommend working with the NWDA and NHBA to identify problem areas for speeding and scheduling deployment of the Speed Reader Boards.

### Crosswalk Markings

Marked crosswalks can provide some safety benefit for pedestrians. However, the conditions where a safety benefit can be expected are limited. PDOT's current practice for marking crosswalks is outlined below:

- Crosswalks are marked at all signalized locations to indicate to pedestrians the appropriate crossing route, facilitate crossing by the visually impaired, and to remind turning drivers of potential conflicts with pedestrians. This practice was initiated in the early 1990's at the request of groups representing the Visually Impaired community. PDOT now has almost 1000 signalized intersections with marked crosswalks.
- Crosswalks at uncontrolled intersections (i.e. approaches without signal control or stop signs) are marked under special conditions. These conditions include:
  - ◆ Intersections with complex geometry where crosswalk markings help orient pedestrians to the best crossing route.
  - ◆ Intersections where crosswalk markings orient pedestrians to the shortest crossing route and/or the route with the least exposure to vehicular conflicts.
  - ◆ Intersection locations where markings can be used to guide pedestrians to a location where they can best be seen by oncoming traffic.
  - ◆ Crossing locations where pedestrian improvements such as a median refuge islands have been constructed to improve the ease and safety of pedestrian crossings.
- Mid-block crossing locations where a crossing is needed and marking the crosswalk is necessary to establish a legal pedestrian crossing under City Code and State law.
- Crosswalks are typically not marked on intersection approaches with Stop sign control.

This practice recognizes the on-going cost of maintaining crosswalk markings as limiting factor. A more aggressive practice of marking crosswalks could dramatically raise PDOT's maintenance liability for this activity.

### Crosswalk Safety

Landmark research on crosswalk safety was published in 2001 by the Federal Highway Administration. This research compared pedestrian safety (5 years of crash data) at 1,000 marked and 1,000 comparable, unmarked crossing sites that were uncontrolled. According to the study,

"...under no condition did the presence of a marked crosswalk alone at an uncontrolled intersection result in a significantly lower pedestrian accident rate when compared to the pedestrian accident rate of an unmarked crosswalk. Furthermore, on multi-lane roads with traffic volumes greater than 12,000 vehicles per day, having a marked crosswalk alone (without other substantial improvements) was actually associated with a higher pedestrian accident rate when compared with an unmarked crosswalk."<sup>1</sup>

Additional research commissioned by the FHWA has focused on driver and pedestrian behavior at marked crosswalks. This research indicates some positive benefits with respect to behavior on lower speed, relatively narrow streets.

"In general, crosswalk markings at unsignalized intersections appear to have several positive effects and no observed negative effects. Specifically, drivers appear to be aware that pedestrians are in a marked crosswalk and drive slightly slower. Crosswalks also have the positive benefit of channeling pedestrians to the intersection. Also, there appears to be no evidence to support the contention that pedestrians feel protected in marked crosswalks and act more carelessly. In conclusion, it appears that marking pedestrian crosswalks at relatively narrow, low-speed, unsignalized intersections is a desirable practice."<sup>2</sup>

These research findings leave open the option to consider a policy for more aggressive use of crosswalks at uncontrolled intersections. This strategy may provide some marginal safety benefit for pedestrians. However, the research findings also suggest that the likely benefit/cost of this approach would not be attractive.

### Costs to Mark Crosswalks

The cost to mark a crosswalk depends on the type of crosswalks used and the width of the crossing. The typical practice we have used in Portland for selecting the type of crosswalk is to use ladder type crosswalks at uncontrolled intersections and parallel line type crosswalks at signalized intersections. Ladder type crosswalks are more visible to drivers than parallel bar crosswalks. The typical cost of installing a crosswalk on NW 23<sup>rd</sup> or NW 21<sup>st</sup> Ave. is \$325 based on a 36-foot street width. The annual maintenance cost for the same crosswalk is expected to be \$90 per year.

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<sup>1</sup> University of California Berkeley, Institute of Transportation Studies, Tech Transfer Newsletter – Spring 2003; quoting Zegeer, C., Stewart, J., and Huang, H. *Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations*. Report No. FHWA-RD-01-142, Federal Highway Administration, McLean, VA, May 2001. Executive summary at: <http://www.fhwa.dot.gov/safety/fourthlevel/pdf/Cros.pdf>

<sup>2</sup> U.S. Department of Transportation, Federal Highway Administration – *Pedestrian Crosswalk Case Studies: Richmond, Virginia; Buffalo, New York; Stillwater, Minnesota*. Report No. FHWA-RD-00-103 August 2001

## Crosswalk Marking Alternatives

NWDA Request: Install crosswalks at all uncontrolled intersections on NW 23<sup>rd</sup> and NW 21<sup>st</sup> Ave.

This option suggests that all crosswalks along the retail main streets of NW 23<sup>rd</sup> and NW 21<sup>st</sup> should be marked. This would require installing two crosswalks across the Avenues at uncontrolled intersections where none exist today. A total of 22 intersections would require treatment. The total installation cost estimate for crosswalks is \$14,200. The annual maintenance cost estimate is \$4,300.

The logical basis to support this alternative would be to modify current policy and practice to support a more aggressive use of crosswalks on Main streets and/or in Pedestrian Districts throughout the City. There are numerous streets and areas in the City in addition to NW 23<sup>rd</sup> and NW 21<sup>st</sup> that have retail activity and pedestrian use that would be good candidates for pedestrian improvements. Some examples include: Pearl District, South Downtown/PSU, Central Park Blocks, portions of SE Division, SE Hawthorne, SE Belmont, SE Tacoma, SE 13<sup>th</sup> Ave, SE Woodstock, NE Glisan, NE Alberta, NE Killingsworth, N Denver, N Mississippi, N Lombard, E Burnside, NW Lovejoy, NW Northrup, NW Vaughn, and SE 92<sup>nd</sup> Ave. Marking crosswalks on all the portions of these streets classified as Community Main Streets would incur costs in the range of \$200,000 to \$300,000, and annual maintenance costs of \$55,000 to \$85,000. The annual maintenance cost is significant given the already limited resources for this activity.

### Evaluation

The expected safety benefits resulting from this strategy would be modest. No significant reduction in pedestrian crashes would be expected. Public reaction would likely be very positive initially. Over time there would likely be public pressure to expand the program further to address perceived needs for parks, neighborhoods, and schools. The installation and maintenance costs are high, possibly prohibitive, given current resources.

### Mark Crosswalks at Transit Stops with Curb Extensions

This compromise alternative would limit locations to be treated to transit stop locations with curb extensions. This option is more consistent with current practice. Curb extensions were constructed at some transit stops along NW 23<sup>rd</sup> and NW 21<sup>st</sup> in the early 90's to benefit transit operations. In most cases the construction included two curb extensions at an intersection. It is our general practice to install marked crosswalks to compliment other pedestrian crossing improvements, especially median refuge islands. The logic of this practice is that the location has received

pedestrian safety improvements that differentiate it from other intersections, and marking the crosswalk will help attract pedestrians to use the improved crossing location. While this strategy is more consistent with current practice, there are numerous locations where curb extensions have been constructed and crosswalks were not marked. Applying this practice consistently would require marking additional crosswalks throughout the city. No estimate of the number of locations is available.

Pursuing this alternative just on NW 21<sup>st</sup> and NW 23<sup>rd</sup> would result in marking crosswalks at 7 intersections. These intersections are: NW 21<sup>st</sup>/Irving and Kearney; NW23rd/Flanders, Irving, Kearney, Overton, and Raleigh. The estimated installation cost is \$4,000 and the annual maintenance cost is \$1,300.

### Evaluation

The expected safety benefits resulting from this strategy would be low. No significant reduction in pedestrian crashes would be expected. Public reaction would likely be positive, but the public may also question the logic of marking only a fraction of the crossings when they perceive the need to be more universal. Over time there would likely be public pressure to expand the practice further to include all pedestrian crosswalks along Main streets. The installation and maintenance costs are modest, but would grow significantly if other intersections in the City received the same treatment.

### Status Quo

There are several very good reasons to maintain the status quo practice of marking uncontrolled intersections only when special circumstances exist. First, drivers must recognize that pedestrians can legally cross (and will) at unmarked crosswalks. No matter how aggressive a practice we pursue for marking crosswalks in high activity areas, there will still be thousands of unmarked crosswalks in the City. We do not want drivers to infer that marked crossings are the only locations where they need to be alert for pedestrians crossing the street. Secondly, our maintenance resources are very constrained and service levels have already been reduced as system growth has outpaced maintenance resources. Without an increase in resources for pavement marking maintenance, a more aggressive practice for marking crosswalks is not sustainable. It is questionable to consider expanding our pavement marking assets significantly if the resources are not available to maintain these assets in acceptable condition. Finally, the safety benefits of the alternatives are very marginal and the benefits would probably fall short of break-even in a benefit/cost test.

## Parking Removal

The NWDA also requested that the we, "...take additional steps to increase visibility at intersections so that drivers can see pedestrians and vice versa by: clearly marking and enforcing a no parking zone in the 20 feet before crosswalks on 21<sup>st</sup> and 23<sup>rd</sup> Avenues (Oregon Law)." The NHBA in their response of March 15<sup>th</sup> correctly notes, "In regard to the issue of restricting parking, Oregon state law (ORS 811.560) provides a specific exemption to the 20 foot restriction at crosswalks for [...vehicles acting in compliance with law or at the direction of a police officer or traffic control device.] Parking signs regulate parking along the entire length of NW 21<sup>st</sup> and NW 23<sup>rd</sup> for their entire length from W Burnside St. to NW Vaughn. Visibility at intersections along the Avenues has been reviewed on a case-by-case basis over time and many intersection approaches have some parking restrictions in effect. If a minimum of 20' of parking restriction were to be provided on all N/S intersection approaches to the cross streets along NW 21<sup>st</sup> and 23<sup>rd</sup>, an additional 23 parking spaces would need to be removed. The 23 spaces include 13 spaces on NW 23<sup>rd</sup> and 10 spaces on NW 21<sup>st</sup>. In response to the NWDA request a field review for visibility was performed by staff and no locations were found where additional parking restrictions were recommended at this time. However, this finding recognizes the very high parking demand noted by NHBA in their letter and consequently a practice of minimizing removal. The removal of more parking would improve visibility and benefit pedestrian safety. In fact, parking removal would probably provide more tangible safety benefits than marked crosswalks would. Additional dialogue between residents and business stakeholders on this issue is needed to raise awareness and better define the appropriate trade-off between pedestrian safety and parking supply. We recommend that PDOT meet with NWDA and NHBA to define a strategy agreeable to all parties for removing parking at high priority intersections in the district to improve visibility and safety.

## Street Lighting

Street Lighting staff found that there are some opportunities for improvements. Specifically, additional luminaries can be mounted on approximately 10 existing power poles. Of the available power poles, most are located in the more industrial areas at the north ends of both streets. We will pursue installation of these additional street lights. However, not funding is identified for this activity in PDOT's current or proposed budget. Another potential action that could improve light conditions is to remove numerous street trees that are planted less than 15' from existing street lights. This would increase the amount of light the reaches the street area. However, street tree removal would likely be very controversial within the neighborhood and we don't recommend it for this reason.

## Remove Obstructions

The Street Systems Management Department of the City of Portland responds to issues regarding the placement of newspaper boxes. They investigate the issues on a per location/complaint basis. Their complaint line phone number is 503-823-7002. City of Portland policy only regulates the placement of the newspaper boxes if they restrict the pedestrian walkway. The boxes must be placed so that they do not restrict the minimum walkway width as required by Federal Law (Americans with Disabilities Act). We do not regulate the number or content of the boxes at any location in compliance with the First Amendment regarding free speech. [Information from Alex Bejarano, Development Services Manager]

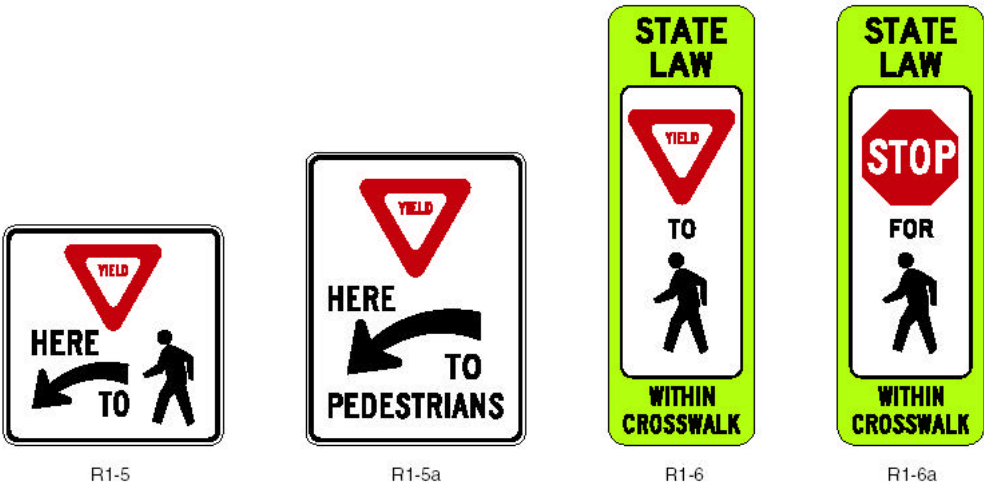
The Bureau of Development Services issues permits for sandwich boards. The permits are issued per business and are regulated by Title 32 in City of Portland Code. They are to be no more than 30" wide and 42" tall. They must be placed at least 6" from the curb and are not to block sidewalk passage or curb ramps. The B.D.S. canvasses the NW 21<sup>st</sup> and 23<sup>rd</sup> Avenue area periodically to check for permits and compliance with regulations. Otherwise they respond to individual complaints at 503-823-2369. More detailed information is available at [portlandonline.com/bds](http://portlandonline.com/bds) in the "Signs" tab within the "Forms/Publications" menu. [Information from Patty Van Antwerp, Bureau of Development Services]

## Yield to Pedestrians/Stop for Pedestrians

### Signs

Because state law requires drivers to stop for pedestrians at all crosswalks, it has been our practice not to restate this requirement via regulatory signs. The requirement is a general one that applies to all intersections and crosswalks throughout the City and State. However, there is a new regulatory sign that has recently been approved for use that conveys a message very similar to the one suggested by the NWDA. An image of this sign (R1-6a) is shown below. The sign is designed for placement in the street along the centerline of the roadway at a crossing. It may also be placed at the roadside. We experimented with a sign similar to this one on SE Division Street near the former Natures Store. The sign was placed in the street at an uncontrolled crosswalk. The sign was mounted on a flexible post and required frequent maintenance due to vehicles running into/over it. We believe that there are better methods or locations for mounting the signs that would reduce the maintenance requirements. We recommend that PDOT experiment further with these signs and use the NW district as a demonstration area. We will meet with

neighborhood stakeholders to define the best locations and mounting for the signs.



Outreach/Education

Undoubtedly, some drivers are ignorant of the law and to that end we are attempting to provide education and outreach that will improve awareness and compliance with the law. We have worked closely with Portland Traffic Police to implement Crosswalk Enforcement actions that target drivers that ignore pedestrian safety at crosswalks. As noted by NWDA in their letter, an Enforcement Action was held at NW 23<sup>rd</sup>/Pettygrove on August 31<sup>st</sup>, 2005. We have also developed a presentation on pedestrian safety that targets both drivers and pedestrians. We have delivered this presentation to 63 community groups and over 2000 people within the

past year. This service is available on request and we are anxious to provide this presentation to any groups in NW that would like to host it. We will continue to evaluate other services that can effectively raise awareness of driver responsibility for pedestrian safety. We are open to developing other methods, such as bus bench advertising to deliver traffic safety messages such as “Stop for Pedestrians” to drivers.

## Summary of Recommendations

### Speed Mitigation Measures

- Install “Speed 20” signs on NW 23<sup>rd</sup> Avenue and NW 21<sup>st</sup> Avenue. This action is proceeding.
- Promote obeying the posted speed limit as a safety message. Work with the NWDA and HNBA to develop message/campaign for the District.
- Deploy Speed Reader Boards to raise driver awareness and improve compliance with the posted speed.

### Crosswalk Safety Measures

- Work with NWDA and NHBA to define a strategy for removing parking at high priority intersections to improve visibility and safety.
- Install “Stop for Pedestrian” signs. The locations and mounting methods for the signs should be determined in collaboration with NWDA and NHBA.
- Seek funding for approximately 10 “infill” Street Lights in the northern portion of the District.
- Providing crosswalk safety training presentations to NW community groups upon request.
- Continue coordination with Portland Police to provide Crosswalk Enforcement Actions in NW Portland and city-wide.

### Follow-up Actions

- Do not mark additional crosswalks at this time. Evaluate the results of the above actions after one year’s time. Reconsider marking crosswalks if further action is needed.