

A G E N D A

Traffic Safety Advisory Committee

Council Chambers

Meeting Date: May 18, 2010

Time: 8:00 AM to 9:00 AM



Voting Members:

Agency Staff:

Nick Arnis Chair; Doug Koellermeier, City of Bend Fire Department; Mel Oberst, City of Bend Community Development Department; Jim Porter, City of Bend Police Department; Denice Blake, Bend La-Pine School District; Joel McCarroll (Dan Serpico), ODOT Region 4 Traffic Engineer.

Citizen Members:

Thomas Stump, Vice-Chair; Harold Anderson, Winchell Craig, Erik Huffman, Robert Tyler

1. **Welcome and Introductions**
2. **Approval of Minutes for April, 2010**
3. **Comments from the Public – 15 minutes**
4. **Review Agenda**

5. **Alliance for Community Traffic Safety in Oregon (ACTS)**

Background: A representative from ACTS Oregon, a statewide organization dedicated to improving traffic safety people-to-people will attend the meeting.

Attachments: None

Action Requested: Discussion

6. **Portland Avenue Stop Signs and Request for a 4-way stop at Awbrey Road**

Background: Vice-Chair Thomas Stump requested this item be placed on the agenda. A citizen who lives on Awbrey Road requests a 4-way stop at the Portland Avenue/Awbrey Road intersection. Portland Avenue is a mixture of traffic control devices/stop signs that according to staff are inconsistent and potentially create more issues than improving safety. The multiple traffic issues on Portland Avenue are significant and there is not the resources now in the Transportation Engineering Division to take this on as a project.

Attachments: City of Bend Standard Operating Procedure (SOP) for stop signs and MUTCD section on stop sign applications and placement, City of Portland criteria, and research paper Multi-way stops – The Research shows the MUTCD is Correct! (

Action Requested: Discussion about Portland Avenue existing traffic controls, stop sign warrants and purpose of stop signs.

7. **Proposed Transportation System Development Charge (SDC) project list**

Background: City is currently updating the Transportation SDC project list. The proposal is for the project list to contain multi-modal and safety projects. The draft SDC methodology and project list will released in June and staff will be conducting meetings with stakeholders such as the Home Builders.

Attachments: None

Action Requested: Discussion

Information Items

- ✓ City webpage for TSAC has been updated and is located Departments/Public Works/
Transportation Engineering

Comments from Committee Members/Next Agenda item**Public Comments – Items added to Agenda****Next TSAC Meeting: June 15, 2010**

M E M O R A N D U M

TO: BEND CITY COUNCIL
FROM: BEND TRAFFIC SAFETY ADVISORY COMMITTEE
SUBJECT: APRIL 20, 2010 MEETING MINUTES

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Bend Traffic Safety Advisory Committee
Voting Members

Bend City, Public Works Director—Chair
Bend City, Citizen Member—Vice Chair
Bend City, Community Development
Bend City, Fire Department
Bend City, Police Department
Bend/LaPine School District
Deschutes County Road Department
Oregon Department of Transportation
Citizen Members

Nick Arnis (Absent)
Thomas Stump
(Vacant)
Doug Koellermeier
Jim Porter (Designee)
Denice Blake
George Kolb (Absent)
Daniel Serpico (Absent)
Harold Anderson
Winchell M. Craig
Erik Huffman
Robert Tyler

City Staff

Cindy Hartman
Chris Carney

Engineering Technician
Police Department

Guests

Mike Lovely
Jim Gattey
Bill Brisson
Mike Marshall
Rex Wolf

Citizen, SWBNA
Citizen, CWNA
Citizen, OFDNA
Citizen
Citizen

COMMUNICATIONS:

- 1) **Welcome & Introductions:** Vice Chair, Tom Stump welcomed members and guests, introductions were made.
- 2) **Approval of Minutes:** Mr. Stump called for approval of the March minutes. A motion to approve the minutes was made and seconded. The motion to accept the March 2010 minutes, as written, passed unanimously.

Public Comments: Mike Lovely reported on the Citizen Service Requests in his Neighborhood Association. The only one for this month involved a burned out street light, the request was forwarded to Public Works for repair.

- 3) **Agenda Review: The representative from ACTS Oregon did not attend the meeting this month so Item #5 was deleted. It was suggested to reverse Items #6 & 7 in the hopes that Nick Arnis would be back to the meeting by that time.**
- 4) **Mt. Washington Pedestrian Crossings – Officer Christopher Carney**

Officer Carney explained that during the last month he and the volunteers in his department took on the job of studying the pedestrian activity and interaction with vehicles in and around NW Crossing at Mt. Washington. They made observations over three weekdays at several intersections at varying times of day. They compiled the results in a report that was distributed at the meeting. Also during the month the City of Bend street maintenance crews cleared an enormous amount of shrubbery and landscaping out of the center median and landscaping strips on both sides of Mt. Washington. The results point to an improved visibility for motorists to see pedestrians and all of the observed interactions of vehicles to pedestrians being positive. No further action needed.

- 5) **TSAC Annual Report**

Harold Anderson suggested the annual report contain the Standard Operating Procedure for the Citizen Service Requests. It was suggested that this action would best fit in the 2009-2010 report, since we did the work in this fiscal year.

Robert Tyler commented on the improvements to Mt. Washington Drive at Simpson intersection, he noted that the rumble strips have already helped and that there have been not new accidents at this site.

- 6) **Portland Avenue Stop sign request**

It was suggested that the Portland Avenue Stop Sign request for a 4 way stop at Awbrey Road be studied by Century West & Summit West Neighborhood Associations. The request is to remove the stop sign at 5th and add a stop sign at Awbrey Road. The areas should be observed for the next month and a report will be submitted back to TSAC with the results of that observation. Special interest is the traffic back-ups or queuing at stop signs and also traffic from Portland and Wall backing up over the bridge. It was suggested that AM/PM peak times would be best for observation. Erik Huffman suggested that a sign stating that cross traffic does not stop would be appropriate in this situation.

Agenda Items for the next TSAC Meeting

Report on Awbrey Road Stop sign request
Adjourn 8:45 AM

Joel McCarrol announced that the ODOT Safe Routes to School – Planning Grants application process just opened. This is for new SRTS only.

Next Meeting: Tuesday, June 15, 2010, 8:00 am, City Hall Council Chambers.

Section 2B.06 STOP Sign Applications

Guidance:

01 *At intersections where a full stop is not necessary at all times, consideration should first be given to using less restrictive measures such as YIELD signs (see [Sections 2B.08](#) and [2B.09](#)).*

02 *The use of STOP signs on the minor-street approaches should be considered if engineering judgment indicates that a stop is always required because of one or more of the following conditions:*

- A. The vehicular traffic volumes on the through street or highway exceed 6,000 vehicles per day;*
- B. A restricted view exists that requires road users to stop in order to adequately observe conflicting traffic on the through street or highway; and/or*
- C. Crash records indicate that three or more crashes that are susceptible to correction by the installation of a STOP sign have been reported within a 12-month period, or that five or more such crashes have been reported within a 2-year period. Such crashes include right-angle collisions involving road users on the minor-street approach failing to yield the right-of-way to traffic on the through street or highway.*

Support:

03 The use of STOP signs at grade crossings is described in [Sections 8B.04](#) and [8B.05](#).

Section 2B.07 Multi-Way Stop Applications

Support:

01 Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.

02 The restrictions on the use of STOP signs described in [Section 2B.04](#) also apply to multi-way stop applications.

Guidance:

03 *The decision to install multi-way stop control should be based on an engineering study.*

04 *The following criteria should be considered in the engineering study for a multi-way STOP sign installation:*

- A. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*
- B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*
- C. Minimum volumes:*

1. *The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and*
 2. *The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but*
 3. *If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.*
- D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.*

Option:

05 Other criteria that may be considered in an engineering study include:

- A. The need to control left-turn conflicts;
- B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;
- C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and
- D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

**CITY OF BEND
STANDARD OPERATING PROCEDURE**

STOP SIGNS

Standard Operation of: Stop Sign Installation on public roads.
Approved By: Nick Arnis Author: Robin Lewis
Subject: Guidance on stop sign installation on the public roadway system
Scope and Location: Public Streets within City of Bend
List of Tools/Equipment/Material: Manual on Uniform Traffic Control Devices, Engineering Study
Hazards Identification: N/A
Purpose: Provide standard guidance on stop sign installation on the public roadway system.

Background:

Stop signs are important traffic control devices, but are not necessary at every intersection. Stop signs lose their effectiveness when used to excess. Drivers ignore and/or coast through stop signs used for uses other than to control right of way priority at an intersection. Local street safety improves when responsibility of action is required of all users.

Criteria:

1. MUTCD warrants should be met for any stop sign installation.
2. Stop signs should not be used for speed control.
3. Stop signs should not be used as a means of attempting to influence traffic volumes on a street.
4. Stop signs should not be installed at local-local street intersections (including local-local street "T" intersections) in residential districts.
5. Stop signs should not be installed on the major street at an intersection with a minor street.
6. Stop signs should be installed at the intersection of a street entering a through highway, arterial or collector, unless control is provided by a traffic signal or roundabout.
7. Crash history/crash type.
8. AASHTO minimums for intersection sight distance for the 85th percentile speed or posted speed, whichever is greater.
9. Clear vision triangle provisions of the Bend Development Code and City standards and specifications.

Procedure:Subdivision/Site Plan Development/CIP Engineered Plan Sets:

Stop signs in compliance with this SOPP should be indicated on plan sets.

Stop Sign Requests: Requests may be received from staff, citizens or developers to investigate the installation or removal of a stop sign covered by this SOPP.

The Transportation Division will complete a traffic engineering investigation using the criteria and format provided in the SOPP for Traffic Control Device Installation Investigation/Engineering Study. Engineering judgment must be used to justify installation of a stop sign.

Multi-way Stops - The Research Shows the MUTCD is Correct!

W. Martin Bretherton Jr., P.E.(M)

Abstract

This paper reviewed over 70 technical papers covering all-way stops (or multi-way stops) and their success and failure as traffic control devices in residential areas. This study is the most comprehensive found on multi-way stop signs

The study looked at how multi-way stop signs have been used as traffic calming measures to control speed. There have been 23 hypotheses studied using multi-way stop as speed control. The research found an additional 9 hypotheses studied showing the effect multi way stops have on other traffic engineering problems.

The research found that, overwhelmingly, multi-way stop signs do NOT control speed except under very limited conditions. The research shows that the concerns about unwarranted stop signs are well founded.

Introduction

Many elected officials, citizens and some traffic engineering professionals feel that multi-way stop signs should be used as traffic calming devices. Many times unwarranted stop signs are installed to control traffic. The Manual on Uniform Traffic Control Devices (MUTCD)(16) describes warrants for installing multi-way stop signs. However, it does not describe many of the problems caused by the installation of unwarranted stop signs. These problems include concerns like liability issues, traffic noise, automobile pollution, traffic enforcement and driver behavior.

This paper is a result of searching over 70 technical papers about multi-way stop signs. The study concentrated on their use as traffic calming devices and their relative effectiveness in controlling speeds in residential neighborhoods. The references found 23 hypotheses on their relative effectiveness as traffic calming devices. One study analyzed the economic cost of installing a multi-way stop at an intersection. The reference search also found 9 hypotheses about traffic operations on residential streets.

The literature search found 85 papers on the subject of multi-way stops. There are probably many more references available on this very popular subject. The seventy-one references are shown in Appendix A. There was a problem finding the 14 papers found in literature searches. The 14 papers are listed in Appendix B for information only. Most of the papers were from old sources and are probably out of print.

Multi-Way Stop Signs as Speed Control Devices

A summary of the articles found the following information about the effectiveness of multi-way stop

signs and other solutions to controlling speeds in residential neighborhoods.

1. Multi-way stops do not control speeds. Twenty-two papers were cited for these findings. (Reference 1, 2, 7, 8, 10, 12, 13, 14, 15, 16, 17, 19, 20, 39, 45, 46, 51, 55, 62, 63, 64, 66 and 70).
2. Stop compliance is poor at unwarranted multi-way stop signs. Unwarranted stop signs means they do not meet the warrants of the MUTCD. This is based on the drivers feeling that the signs have no traffic control purpose. There is little reason to yield the right-of -way because there are usually no vehicles on the minor street. Nineteen references found this to be their finding. (Reference 7, 8, 10, 12, 13, 14, 15, 17, 19, 20, 39, 45, 46, 51, 55, 61, 62, 63 and 64).
3. Before-After studies show multi-way stop signs do not reduce speeds on residential streets. Nineteen references found this to be their finding. (Reference 19 (1 study), 55 (5 studies), 60 (8 studies) and 64(5 studies)).
4. Unwarranted multi-way stops increased speed some distance from intersections. The studies hypothesizing that motorists are making up the time they lost at the "unnecessary" stop sign. Fifteen references found this to be their finding.(Reference 1, 2, 7, 8, 10, 13, 14, 17, 19, 20,39, 45,46, 51, 55, 70 and 71).
5. Multi-way stop signs have high operating costs based on vehicle operating costs, vehicular travel times, fuel consumption and increased vehicle emissions. Fifteen references found this to be their finding. (Reference 3, 4, 7, 8, 10, 14, 15, 17, 45, 55 ,61, 62, 63, 67 and 68).
6. Safety of pedestrians is decreased at unwarranted multi-way stops, especially small children. It seems that pedestrians expect vehicles to stop at the stop signs but many vehicles have gotten in the habit of running the "unnecessary" stop sign. Thirteen references found this to be their finding. (References 7, 8, 10, 13, 14, 15, 17, 19, 20, 45, 51, 55 and 63).
7. Citizens feel "safer" in communities "positively controlled" by stop signs. Positively controlled is meant to infer that the streets are controlled by unwarranted stop signs. Homeowners on the residential collector feel safer on a 'calmed' street. Seven references found this to be their finding. (Reference 6, 14, 18, 20, 51, 58 and 66).
Hypothesis twelve (below) lists five references that dispute the results of these studies.
8. Speeding problems on residential streets are associated with" through" traffic. Frequently homeowners feel the problem is created by 'outsiders'. Many times the problem is the person complaining or their neighbor. Five references found this to be their finding. (References 2, 15, 45, 51 and 55).
9. Unwarranted multi-way stops may present potential liability problems for undocumented exceptions to accepted warrants. Local jurisdictions feel they may be incurring higher liability exposure by 'violating' the MUTCD. Many times the unwarranted stop signs are installed without a warrant study or some documentation. Cited by six references. (Reference 7, 9, 19, 46, 62 and 65).
10. Stop signs increase noise in the vicinity of an intersection. The noise is created by the vehicle braking noise at the intersection and the cars accelerating up to speed. The noise is created by the engine exhaust, brake, tire and aerodynamic noises. Cited by five references. (Reference 14, 17, 20, 45, 55).
11. Cost of installing multi-way stops are low but enforcement costs are prohibitive. many communities do not have the resources to effectively enforce compliance with the stop signs. Five references found this to be their finding. (Reference 1, 10, 45, 51, 55).

12. Stop signs do not significantly change safety of intersection. Stop signs are installed with the hope they will make the intersection and neighborhood safer. Cited by five references. (Reference 55, 60, 61, 62, 63).

Hypothesis seven (above) lists seven references that dispute the results of these studies.

13. Unwarranted multi-way stops have been successfully removed with public support and result in improved compliance at justified stop signs. Cited by three references. (Reference 8, 10, 12).

14. Unwarranted multi-way stops reduce accidents in cities with intersection sight distance problems and at intersections with parked cars that restrict sight distance. The stop signs are unwarranted based on volume and may not quite meet the accident threshold. Cited by three references. (Reference 6, 18, 68).

15. Citizens feel stop signs should be installed at locations based on traffic engineering studies. Some homeowners realize the importance of installing 'needed' stop signs. Cited by two references. (References 56, 57).

16. Multi-way stops can reduce cut-through traffic volume if many intersections along the road are controlled by stop signs. If enough stop signs are installed on a residential or collector street motorists may go another way because of the inconvenience of having to start and stop at so many intersections. This includes the many drivers that will not stop but slowly 'cruise' through the stop signs. This driving behavior has been nicknamed the 'California cruise'. Cited by two references. (Reference 14, 61).

17. Placement of unwarranted stop signs in violation of Georgia State Law 32-6-50 (a) (b) (c). This study was conducted using Georgia law. Georgia law requires local governments to install all traffic controls devices in accordance with the MUTCD. This is probably similar to traffic signing laws in other states. Cited by two references. (Reference 19, 62).

18. Special police enforcement of multi-way stop signs has limited effectiveness. This has been called the 'hallo' effect. Drivers will obey the 'unreasonable' laws as long as a policeman is visible. Cited by two references. (Reference 39, 46).

19. District judge orders removal of stop signs not installed in compliance with city ordinance. Judges have ordered the removal of 'unnecessary' stop signs. The problem begins when the traffic engineer and/or elected officials are asked to consider their intersection a 'special case'. This creates a precedent and results in a proliferation of 'special case' all-way stop signs. Cited by two references. (Reference 59, 62).

20. Some jurisdictions have created warrants for multi-way stops that are easier to meet than MUTCD. The jurisdiction feel that the MUTCD warrants are too difficult to meet in residential areas. The reduced warrants are usually created to please elected officials. Cited by two references. (Reference 61 and 70).

21. Citizens perceive stop signs are effective as speed control devices because traffic "slows" at stop sign. If everybody obeyed the traffic laws, stop signs would reduce speeds on residential streets. Cited by one reference. (Reference 55).

22. Removal of multi-way stop signs does not change speeds but they are slightly lower without the stop signs. This study findings support the drivers behavior referenced in item #4, speed increases when unwarranted stop signs are installed. Speed decreases when the stop signs were removed! Cited by one reference. (Reference 64).

23. Multi-way stops degrade air quality and increase CO, HC, and Nox. All the starting and stopping at the intersection is bad for air quality. Cited by one reference. (Reference 68).

Speed Control Issues

24. There are many ways to "calm" traffic. Cited by twenty-two references. (Reference 1, 14, 20, 32, 33, 34, 35, 36, 37, 38, 40, 41, 42, 44, 45, 46, 47, 48, 50, 51, 53 and 66).

They include:

(a) Traffic Chokers (f) Sidewalks and Other Pedestrian Solutions

(b) Traffic Diverters (g) Neighborhood Street Design

(c) Speed Humps (h) On-Street Parking

(d) Roundabouts (i) One Way Streets

(e) Neighborhood Speed Watch (j) Street Narrowing

25. Other possible solutions to residential speed. Most speeding is by residents - Neighborhood Speed Watch Programs may work. This program works by using the principle of 'peer' pressure. Cited by seven references. (Reference 2, 30, 31, 36, 42, 48 and 53).

26. Reduced speed limits are not effective at slowing traffic. Motorists do not drive by the number on the signs, they travel a safe speed based on the geometrics of the roadway. Cited by five references. (Reference 1, 20, 39, 46 and 69).

27. Local streets should be designed to discourage excessive speeds. The most effective way to slow down traffic on residential streets is to design them for slow speeds. Cited by two references. (Reference 43, 52).

28. Speeding on residential streets is a seasonal problem. This is a myth. The problem of speeding is not seasonal, it's just that homeowners only see the problem in 'pleasant' weather. That's the time they spend in their front yard or walking the neighborhood. Cited by one reference. (Reference 2).

29. Speed variance and accident frequency are directly related. The safest speed for a road is the speed that most of the drivers feel safest driving. This speed creates the lowest variance and the safest road. Cited by one reference. (Reference 47).

30. The accident involvement rate is lowest at the 85th percentile speed. The 85th percentile speed is the speed that most drivers feel comfortable driving. The lowest variance is usually from the 85th percentile speed and the 10 mph less. Cited by one reference. (Reference 47).

31. Psycho-perceptive transverse pavement markings are not effective at reducing the 85th percentile speed but do reduce the highest speed percentile by 5 MPH. Cited by one reference. (Reference 47).

32. The safest residential streets would be short (0.20 miles) non-continuous streets that are 26 to 30 feet

from curb to curb width. The short streets make it difficult of drivers to get up to speed. Cited by one reference. (Reference 52).

Economics of Multi-Way Stop Signs

Studies have found that installing unwarranted stop signs increases operating costs for the traveling public. The operating costs involve vehicle operating costs, costs for increased delay and travel time, cost to enforce signs, and costs for fines and increases in insurance premiums.

The total costs are as follows (Reference 55):

Operating Costs (1990) (\$0.04291/Stop)	\$ 111,737/year
Delay & Travel Costs (1990) (\$0.03401/Stop)	\$ 88,556 /year
Enforcement Costs (1990)	\$ 837/year
Cost of Fines (19 per year)	\$ 1,045/year
Cost of 2 stop signs (1990)	\$ 280
Costs of increased insurance (1990)	<u>\$7,606/year</u>
Total (1990)	\$210,061/year/intersection

The cost to install two stops signs is \$280. The cost to the traveling public is \$210,061 (1990) per year in operating costs. This cost is based on about 8,000 vehicles entering the intersection per day.

Another study (62) found that the average annual road user cost increased by \$2,402.92 (1988 cost) per intersection when converting from two to four way stop signs for low volume intersections.

Summary of Stop Signs as Speed Control Devices

Researchers found that multi-way stop signs do not control speed. In analyzing the 23 hypotheses for multi-way stop signs, five were favorable and 18 were unfavorable toward installing unwarranted all-way stop signs. The Chicago study (6) was the only research paper that showed factual support for "unwarranted" multi-way stop signs. They were found to be effective at reducing accidents at intersections that have sight distance problems and on-street parking.

It is interesting to note that residential speeding problems and multi-way stop sign requests date back to 1930 (63). The profession still has not "solved" this perception problem.

POL → Government → Bureaus & Offices → **Transportation**

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Stop Signs - Printable Version

- [Criteria for 2-way Stop Signs](#)
- [Criteria for 4-way Stop Signs](#)
- [Right of Way Rule](#)
- [Stop Signs and Speeding](#)
- [Stop Sign Placement](#)

The Portland Bureau of Transportation System Management encourages safe and calm travel on Portland streets. So when Portlanders call the Bureau about a traffic or safety problem, an investigation is conducted to determine the best solution -- such as a sign or signal.

The city installs stop signs where there might be a question about who should have the right-of-way to prevent crashes. However, stop signs placed at intersections where they're not needed could tempt drivers to run stop signs or cut through other neighborhood streets.

One problem often reported to the Bureau is speeding--so residents ask for a stop sign. Stop signs may often seem like a good solution to neighborhood speeding, but traffic studies and experience show that using stop signs to control speeding doesn't necessarily work. When stop signs are installed to slow down speeders, drivers may actually increase their speed between signs to compensate for the time they lost by stopping. Some drivers tend to accelerate rapidly after a stop, possibly creating an even more dangerous situation. In fact, most drivers reach their top speed within 100 feet of a stop sign.

So why not have a stop sign at every intersection? Too many stop signs could cause motorists to ignore the right-of-way rule or some drivers may simply choose to ignore the stop sign. More stop signs in a neighborhood can result in higher levels of pollution and more noise. In addition, providing stop signs at all intersections would be very expensive.

The Bureau considers where to place stop signs so they provide the best benefit for the neighborhood. Stop signs in one location could effect traffic on nearby streets. Drivers may seek new routes to avoid stop signs, which can lead to new traffic problems in adjacent neighborhoods. Also, putting a stop sign on one street could foster higher speeds on the intersecting streets.

The final decision to install a stop sign is made after traffic engineers at the City of Portland's Bureau of Transportation System Management consider the flow and volume of traffic, the configuration of the intersection and crash reports. If you believe your street might benefit from a stop sign, please review the following criteria before you contact the Bureau with your concerns.

The primary reason for stop signs in the City of Portland --

Stop signs are installed at intersections where drivers cannot safely apply the right-of-way rule, resulting in an increase in crashes.



Criteria for Two-Way Stop Signs --Two-way stop signs are used:

- Where a street enters a Through street; or
- Where a safe approach speed is less than 10 mph due to permanent visibility obstructions -- such as buildings, trees or shrubs; or
- Where crash history indicates three or more reported crashes over the last three years, and the crashes could have been avoided by the use of a stop sign; or
- Where circumstances and crash history indicate that observing the normal right-of-way rule could still be hazardous, resulting in crashes.

Contact Us

Bureau of Transportation
 1120 SW Fifth Ave, Suite 800
 Portland, OR 97204
 Phone 503-823-5185
 Fax 503-823-7576
 Hrs: 8 AM to 5 PM, Mon-Fri
[Email us](#)

What's Happening

PUBLIC ALERTS - breaking news & info on service disruptions in Portland area.

Keep Portland Moving

Check downtown traffic impacts and upcoming special events.

Transportation Budget Request FY 2010-11

Recovery Act Funding City of Portland by Formula

Help shape the Portland Plan!



New Police Training Video re: Bicycles & Traffic Safety

This video is one positive outcome from the City Council-adopted [Community Policing Transportation Safety Agreement](#).

Safer Routes to School Newsletter Spring 2010

Pothole Repair

Check phone numbers for City of Portland and other jurisdictions to report potholes.

Bicycle Brown Bag Series

Thrd Thursday of every month.

Upcoming Events

- [Senior Strolls Walk: The Grotto](#) 05/12/2010
- [Ten Toe Express Walks: Gateway Green](#) 05/13/2010
- [Adaptive Bike Day Clinic](#) 05/16/2010
- [NE Sunday Parkways Ready Rider Workshop](#) 05/16/2010
- [Senior Strolls Walk: Montavilla Community Center](#) 05/19/2010

[full calendar](#)

Questions & Comments

If you have any questions or



comments, please contact our [site administrator](#).

4-WAY Criteria for Four-Way or All-Way Stops:

In most cases, a two-way stop sign is sufficient to define who has the right-of-way. A four-way or all-way stop is considered only when an intersection with a two-way stop is the site of numerous crashes or traffic congestion problems. Four-way stop signs are used:

- Where traffic signals are needed; four-way or all-way stops may be used as an interim measure; or
- On local streets, where there has been five or more reported crashes in a two-year period. These crashes would likely have been prevented by an all-way stop; or
- On through streets, where within a two-year period the intersection had at least 1.5 crashes per million vehicles entering the intersection, and the crashes would likely have been prevented by all-way stops; or
- Where the number of vehicles entering an intersection averages at least 500 vehicles per hour for any eight hours of a typical day, and the combined vehicular and pedestrian volumes from the minor street averages at least 200 per hour for the same eight hours.

Right of Way Rule - The failure to yield the right of way at an uncontrolled intersection.

A person commits the offense of failure to yield the right of way at an uncontrolled intersection (an intersection without any traffic signs or signals) if the person is operating a vehicle that is approaching an uncontrolled intersection and the person does not look out for and give right of way to any driver on the right simultaneously approaching a given point, regardless of which driver first reaches and enters the intersection. (ORS 811.275)



Getting Around Portland

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- [SmartTrips](#)
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- [Current Traffic Conditions](#)
- [Safe Routes to School Portland](#)

Permits & Guidelines

- [Permits](#)
- [Design Guidelines](#)
- [Consultant Information](#)
- [Standards for Construction](#)
- [Survey Markers](#)
- [Transportation System Development Charges](#)

Services & Assets

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- [24/7 Maintenance & Repair](#)
 - [Asset Management](#)
 - [Emergency Response](#)
 - [I Want To...](#)
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Projects & Planning

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City of Portland Bureau of Transportation
For general Transportation questions, please call 503-823-5185.

The Bureau of Transportation fully complies with Title VI of the Civil Rights Act of 1964, related statutes and regulations in all programs and activities.