

The City of Bellingham

Neighborhood Traffic Safety Program

(N T S P)

2008

NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)

ENHANCING NEIGHBORHOODS THROUGH TRAFFIC CALMING

Traffic conditions on residential streets can greatly affect neighborhood livability. When streets are safe and pleasant, quality of life is enhanced. When traffic problems become a daily occurrence, sense of community and personal well-being may become threatened.

The City of Bellingham has developed a Neighborhood Traffic Safety Program (NTSP) to enhance the safety and livability of residential streets in neighborhoods. Under this program, the City's NTSP Team works with residents to help identify neighborhood traffic problems and implement solutions that are both acceptable and appropriate for the residential streets in their neighborhoods.

Citizen involvement is an important part of all traffic calming projects. The people who live and work in the project area have the opportunity to become actively involved in the planning and decision-making process.

WHAT IS A RESIDENTIAL STREET?

Residential streets, or local service streets, make up the majority of Bellingham's street system. These streets serve local auto, bicycle, and pedestrian circulation needs and provide access to local residences and businesses. Residential streets, unlike arterials, should not carry significant volumes of through-traffic. **The City does not apply the NTSP program to designated arterial streets (see below).**

WHAT ARE THE PROBLEMS?

The most common problems on residential streets are high vehicle speeds and excessive volumes of through-traffic. Consequently this can lead to related problems such as traffic noise, increased pedestrian and bicycle conflicts, and an overall decrease in quality of life.

NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)

SOLUTIONS

the three E's

Traffic calming projects look at three kinds of possible solutions:

Education alerts people to ways they can help ease traffic problems, such as driving slower in residential areas, using alternative modes of transportation, and obeying all traffic and pedestrian laws.

Enforcement enlists the help of the Bellingham Police Department and Transportation staff to focus their efforts on the problem areas and increase community awareness of speeding problems.

Engineering tools include a variety of traffic calming devices that can reduce speed, decrease volumes, and improve safety. For example, speed humps and traffic circles can be used to slow traffic, and curb extensions can reduce speeds and pedestrian crossing distances to increase safety. Stop signs are NOT appropriate for traffic calming.

All of these approaches are carefully considered when analyzing a residential neighborhood street for problems and potential traffic calming solutions. Residents also help identify specific neighborhood characteristics that should be taken into account when deciding what type of traffic calming is necessary. The City works closely with all interested citizens to find solutions that best serve the interests of the neighborhood and reduce the identified problem(s).

NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)

Traffic Calming Devices are NOT Appropriate on Arterial Streets

The NTSP is designed for use only on public residential streets. Where necessary, the City will install physical traffic calming devices on public residential streets to discourage speeding and cut-through traffic and direct drivers to the arterial streets. It is NOT appropriate to install physical traffic calming devices on arterial streets. Bellingham's arterial streets are designed to carry higher traffic volumes than residential streets with speed limits between 25 mph and above. The City has adopted level of service (LOS) standards that establish carrying capacities for arterial streets, which are managed and maintained in compliance with the transportation concurrency requirements of the Washington State Growth Management Act (GMA). **Non-NTSP arterial safety measures are presented at the end of this document.**



NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)

HOW THE PROGRAM WORKS (pg 1 of 2)

The Neighborhood Traffic Safety Program is broken down into two different phases. Phase 1 consists primarily of the first two "E's", education and enforcement. Phase 2 involves the third "E", Engineering, and design and installation of traffic calming devices.

PHASE 1

Many neighborhood traffic safety concerns will be alleviated during Phase I. Phase I solutions are a relatively inexpensive yet effective means to reduce traffic impacts on neighborhood streets. If the minimum threshold (6 points) is met, then the NTSP Team will meet with the Neighborhood Association to discuss potential Phase 1 educational approaches, which include:

Speed Watch - The Bellingham Police Department/Traffic Division will set up a readerboard/radar display to show your neighbors just how fast they're going. This helps to educate drivers, including neighborhood residents, of the posted speed limit.

Neighborhood Speed Watch - The Traffic Division will loan a radar gun to local residents to track speeders by recording license plate numbers. The city then verifies the license plate numbers and sends the registered owner a letter encouraging the driver to slow down in your neighborhood.

Educational Materials - Transportation Planning staff will provide educational materials to be handed out to the residents on the residential street in question.

Specialized Enforcement - The Bellingham Police Department/Traffic Division will target their enforcement efforts utilizing the speed study results from Public Works.

Enhanced Visibility - The Public Works Department can abate vegetation that may be blocking visibility from vehicles, bicyclists and pedestrians.

Neighborhood Association - Transportation staff will work with the Mayor's Neighborhood Advisory Commission representatives to address traffic problems.

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HOW THE PROGRAM WORKS (pg 2 of 2)

PHASE 2

Many neighborhoods resolve their traffic problems with Phase I solutions. However, sometimes the more intrusive projects of Phase 2 may become necessary. Each year, representatives to the Mayor's Neighborhood Advisory Commission submit a "Top 3 NTSP Priority List" for residential streets in each of Bellingham's neighborhoods. City staff will conduct a traffic count on residential streets to measure and document traffic volumes, speeds, and time periods when speeding may be more prevalent. This data is used to evaluate the residential street and score it according to the NTSP criteria on the following pages. Residential streets are ranked city-wide for NTSP funding and the highest scoring streets become the City's top priorities for Phase 2.

If the minimum threshold (11 points) is met, then the NTSP Team will meet with the neighborhood to discuss the residential street location, potential traffic calming devices that may provide a solution, potential 'shifting' effect on other nearby streets, and potential cost and timing issues associated with installation of traffic calming devices. Other factors in considering project selection include project size, complexity, and compatibility with other transportation projects.

Bellingham NTSP traffic calming devices used on residential streets include:

- * Speed Humps on streets with slopes of less than 8%
- * Speed Tables where pedestrian trail crossings occur
- * Traffic Circles or Islands at uncontrolled intersections
- * Curb Extensions (Bulb-outs, Chicanes, Chokers) at intersections or mid-block
- * Neighborhood Entrance Treatments
- * Center Medians
- * Semi-Diverter
- * Diagonal Diverter
- * Full Diverter

- * **Stop signs are NOT used for traffic calming or speed control (See below).**

NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)



Stop signs are NOT used for traffic calming or speed control.

One of the most common requests that City staff receives is for the installation of stop signs to slow speeders in neighborhoods. To many people this seems like an obvious, inexpensive way to reduce vehicle speeds. However, what seems to be an obvious solution actually creates other problems.

When stop signs are used as "nuisances" or "speed breakers," there is a high incidence of drivers intentionally ignoring the stop sign. When vehicles do stop, the speed reduction is effective only in the immediate area of the sign, because a large percentage of drivers increase their speed to make up for lost time as they move away from the stop sign. This results in increased mid-block speeding.

The purpose of a stop sign is to improve safety at intersections where there are documented problems with traffic safety or accidents that warrant the installation of a traffic control device. For these reasons, the City of Bellingham does not use stop signs for traffic calming or speed control devices.

"Children at Play" Signs



Another frequent request received by City staff is for "Children at Play" signs. Some parents believe that the safety of their children playing in or near a public street can be enhanced through the installation of signs that declare "Slow Children" or "Children at Play."

Traffic studies have shown that installation of these type of signs on public streets does not cause drivers to slow down and that the presence of these type of signs does not reduce the number of pedestrian accidents. In fact, the installation of these type of signs on public streets may increase the potential for accidents by giving children and parents a false sense of security.

For these reasons, the City does not install these type of signs for traffic calming or speed reduction purposes. Instead, the City encourages parents and/or guardians to find alternative play areas for children, such as back yards, local parks, or school playgrounds.

NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)

NEIGHBORHOOD SELECTION & PRIORITIZATION CRITERIA FOR PHASE 2 PHYSICAL DEVICES

SELECTING RESIDENTIAL STREETS FOR A PROJECT

Traffic calming projects are selected from those with the highest rankings and meet the minimum threshold of 11 points. In selecting projects, there are other factors to consider including the project size, cost, complexity, compatibility with other transportation projects, and budget availability.

Measure	Range	Points
<u>Traffic Volume</u> (ADT taken from speed study)	750-1000 ADT	2
	1001-1250	4
	1251 +	6
<u>Cut-through Volume</u> (From Arterial to Arterial through the neighborhood)	20%-30%	2
	30%-40%	4
	40%-50%	6
	50% +	8
<u>Traffic Speeds</u> (85th Percentile of all vehicles, both directions, following Phase I solutions)	1-4 mph over posted speed	0
	5-6	2
	7-8	4
	9-10	6
	11	8
	12+	10
<u>Accident History</u> (Reported collisions over 3 year period in study area)	0.5-1.0 accidents/year	1
	1.1-1.5	2
	1.6-2.0	3
	2.1-2.5	4
	2.6-3.0	5
	Over 3.0	6
<u>Schools/Other Ped Generators</u> (Schools, Parks, Senior Housing)	Within 1/4 - 1/2 mile	1
	Within 1/4 mile	2
	Designated Safe Route to School	3

NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)

DEVICE SUMMARIES (pg 1 of 9)

SPEED HUMPS

DESCRIPTION

Speed Humps are twelve foot long by four inch high asphalt mounds constructed on residential streets and spaced 200-750 feet apart.

PURPOSE

Speed Humps are intended to reduce vehicle speeds on residential streets to about 15 mph to create a disincentive to speeding and/or cut-through traffic.

ADVANTAGES

- Effectively reduce vehicle speeds
- Volumes typically decrease where cut-through traffic is a problem
- Do not require parking removal
- Do not affect intersection operations
- Relatively inexpensive

DISADVANTAGES

- Increased traffic noise from braking and accelerating vehicles driving over hump
- Slightly inhibited emergency vehicle response

INSTALLATION COST

Approximately \$5,000-10,000 each



Vallette Street
Bellingham, WA

Note: Speed Humps are not constructed on grades greater than 8%.

NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)

DEVICE SUMMARIES (pg 2 of 9)

SPEED TABLES

DESCRIPTION

Speed Tables are twelve foot long by four inch high asphalt platforms constructed on residential streets at intersections with trail crossings for pedestrians and bicycles.

PURPOSE

Speed Tables are intended to reduce vehicle speeds on residential streets to about 15 mph to slow vehicles and improve the safety of trail crossings.

ADVANTAGES

Effectively reduces vehicle speeds and increases trail crossing visibility and safety
Volumes typically decrease where cut-through traffic is a problem
Do not usually require parking removal
Do not affect intersection operations
Relatively inexpensive

DISADVANTAGES

Increased traffic noise from braking and accelerating vehicles driving over hump
Slightly inhibited emergency vehicle response

INSTALLATION COST

Approximately \$10,000 each



St. Paul Street,
Bellingham, WA

Note: Speed Tables are not constructed on grades greater than 8%.

NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)

DEVICE SUMMARIES (pg 3 of 9)

TRAFFIC CIRCLES & ISLANDS

DESCRIPTION

Traffic Circles are raised islands placed at residential street intersections. They are usually landscaped with ground cover and street trees. Traffic Circles require drivers to slow to a speed that allows them to comfortably maneuver around them.

PURPOSE

To slow high-speed traffic to about 15 mph on residential streets.

ADVANTAGES

- Effectively reduce vehicle speeds
- Reduce the number of approach-turn and right angle accidents
- Visually attractive
- Discourages cut-through traffic

DISADVANTAGES

- Can require addition of curb, gutter, sidewalk and sometimes parking removal
- Can slightly inhibit emergency vehicle response
- Can cause bicycle/auto conflicts at intersections due to restricted travel lanes

INSTALLATION COST (Neighborhoods maintain any landscaping)

Approximately \$20,000-25,000 each



Illinois/Racine
Bellingham, WA

NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)

DEVICE SUMMARIES (pg 4 of 9)

CURB EXTENSIONS (BULB-OUTS)

DESCRIPTION

Curb Extensions narrow the street by widening the sidewalk and/or the landscaped planting strip. They are used to make pedestrian crossing distances shorter and to provide a visual narrowing effect along the roadway which can reduce vehicle speeds.

PURPOSE

Curb Extensions are installed to enhance pedestrian circulation and physically narrow a section of the residential street.

ADVANTAGES

- Reduce pedestrian crossing distance and time
- Make pedestrians more visible to drivers
- Can reduce vehicle speeds
- Can visually enhance the street through landscaping

DISADVANTAGES

- Usually requires on-street parking removal
- Only possible on residential streets that already have curbs
- May impede bicycle traffic by restricting travel lanes

INSTALLATION COST (Neighborhoods maintain landscaped areas)

Approximately \$10,000-12,000 each



NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)

DEVICE SUMMARIES (pg 5 of 9)

NEIGHBORHOOD ENTRANCE TREATMENTS

DESCRIPTION

Neighborhood Entrance Treatments consist of physical and textural changes to residential streets that are located at key entry ways into a neighborhood.

PURPOSE

Neighborhood Entrance Treatments create visual cues and surface changes which alert drivers that they are entering a local neighborhood residential area.

ADVANTAGES

Can enhance driver awareness of surrounding environment
Can be visually stimulating with or without landscaping

DISADVANTAGES

Possible increased noise from textured surfaces
Less effective at reducing vehicle volumes and speed

INSTALLATION COST (Neighborhoods maintain landscaping)

Approximately \$10,000-25,000 each



NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)

DEVICE SUMMARIES (pg 6 of 9)

MEDIANS

DESCRIPTION

A Median is a concrete curb or island that is located in the middle of the residential street between the travel lanes. Medians may or may not be landscaped.

PURPOSE

Medians are installed to reduce vehicle speed and volume on residential streets.

ADVANTAGES

- May improve safety through access limitations
- Can be designed to provide pedestrian refuge
- Visually enhance the street if landscaped
- Prevents cars from passing

DISADVANTAGES

- May require substantial on-street parking removal
- Prohibits or limits access to nearby driveways
- May hinder emergency response due to access limitations

INSTALLATION COST (Neighborhoods maintain landscaping)

Approximately \$20,000-25,000 each



NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)

DEVICE SUMMARIES (pg 7 of 9)

SEMI-DIVERTERS

DESCRIPTION

Semi-diverters are located at intersections and limit access to a street by blocking the "receiving" lane of the residential street.

PURPOSE

Semi-diverters are used to reduce traffic volumes on residential streets and divert traffic to nearby arterial streets.

ADVANTAGES

Effectively reduces traffic volumes where cut-through traffic is a problem
Can restrict vehicle access while retaining bicycle and pedestrian access

DISADVANTAGES

Prohibits access, limits circulation, and creates congestion on other streets
Restricts emergency vehicle access

INSTALLATION COST (Neighborhood maintains landscaping)

Approximately \$10,000-20,000 each



NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)

DEVICE SUMMARIES (pg 8 of 9)

DIAGONAL DIVERTERS

DESCRIPTION

Diagonal Diverters place a barrier diagonally across an intersection, disconnecting the residential street legs of the intersection.

PURPOSE

Diagonal Diverters are intended reduce cut-through traffic on residential streets by diverting traffic to nearby arterial streets.

ADVANTAGES

Effectively reduce traffic volumes on residential streets
Can restrict vehicle access while retaining bicycle and pedestrian access

DISADVANTAGES

Prohibits access, limits circulation, and creates congestion on other streets
Restricts emergency vehicle access

INSTALLATION COST (Neighborhood maintains landscaping)

Approximately \$20,000-40,000 each



NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP)

DEVICE SUMMARIES (pg 9 of 9)

FULL DIVERTERS

DESCRIPTION

Full Diverters completely close off residential streets at mid-block or intersections.

PURPOSE

Full Diverters are intended to completely block access from one end of a local street.

ADVANTAGES

Effectively reduce traffic volumes where cut-through traffic is a problem.

Restricts vehicle access

DISADVANTAGES

Prohibits access, limits circulation, and creates congestion on other streets

Restricts emergency vehicle access

INSTALLATION COST (Neighborhood maintains landscaping)

Approximately \$25,000-50,000 each



**Safety Measures Available
for Arterial Streets
Variable Message Signs
and
Enhanced Pedestrian Crossings**

The City of Bellingham does not install physical traffic calming devices on designated arterial streets. In fact, one of the purposes of the NTSP is to divert vehicle traffic to the arterial street system instead of using the local residential street network. The following information illustrates other safety measures that can be taken on arterial streets.

SAFETY MEASURES FOR ARTERIAL STREETS

VARIABLE MESSAGE SIGNS (VMS)

DESCRIPTION: Variable Message Signs electronically flash a programmed visual cue, such as the posted speed limit, or a message like "Slow Down", to an approaching vehicle driver.

PURPOSE: The purpose of a VMS device is to attract a vehicle driver's attention and alert them to a street condition that requires a slower speed and increased focus.

ADVANTAGES

Highly visible and very effective at providing and communicating information
Very effective at slowing vehicle speeds

DISADVANTAGES

May not slow all drivers
Relatively expensive per unit cost

INSTALLATION COST

Approximately \$10,000 per sign



Variable Message Signs on 30th Street collector arterial in South Neighborhood, Bellingham

CRITERIA FOR THE INSTALLATION OF IN-PAVEMENT "FLASHING CROSSWALKS"

CROSSWALK SELECTION & PRIORITIZATION CRITERIA FOR IN-PAVEMENT FLASHING CROSSWALKS

SELECTING LOCATIONS FOR A PROJECT

Flashing crosswalks are pedestrian enhancements, but are not traffic calming devices. Flashing crosswalk projects are selected from those with the highest rankings and meet the minimum threshold of 7 points. Before projects are considered for installation, the following minimum qualifications must be met:

- * **crosswalk must be on an arterial street**
- * **crosswalk must be at an uncontrolled location**
- * **there must be a documented lack of adequate gaps in traffic flow for safe pedestrian crossings**

Measure	Range	Points
<u># of Travel Lanes</u> (Including turn lanes)	2 Lanes	0
	3	1
	4	2
	5	3
<u>Traffic Volume</u> (ADT taken from speed study)	<5000 ADT	0
	5001-7000	1
	7001-9000	2
	9001 +	3
<u>Traffic Speeds</u> (85th Percentile of all vehicles, both directions)	30-34 MPH	1
	35-39	2
	40 +	3
<u>Pedestrian Accident History</u> (Reported collisions over 3 year period in study area)	0 Accidents/year	0
	< 0.5	2
	> 0.5	3
<u>Schools/Other Ped Generators</u> (Schools, Parks, Senior Housing)	Within 1/4 mile	2
	Designated School Route	3

IN-PAVEMENT "FLASHING CROSSWALKS"

ENHANCED PEDESTRIAN CROSSWALKS

DESCRIPTION: Enhanced pedestrian crosswalks are on-demand electronic devices that include flashing lights on signs or mast arms or flashing lights embedded across the pavement surface of arterial streets.

PURPOSE: Allows pedestrians to push a button to trigger the flashing lights, which are designed to alert vehicle drivers to the presence of pedestrians who wish to walk across the arterial street.

ADVANTAGES

Highly visible and very effective at alerting drivers to the presence of pedestrians.
More effective than painted crosswalks

DISADVANTAGES

Relies on driver attention and compliance and may not slow all drivers
Relatively expensive per unit cost

INSTALLATION COST

Approximately \$25,000 per crosswalk



Enhanced Pedestrian Crosswalk, Samish Way arterial in Samish Neighborhood, Bellingham

PUBLIC WORKS INFORMATION & STAFF CONTACTS

Neighborhood Traffic Safety Program (NTSP)

www.cob.org/services/neighborhoods/community-planning/transportation/index.aspx

Public Works Transportation Staff

Public Works Engineering Division, 210 Lottie Street.....676-6961

Contact the following Public Works staff for specific transportation issues:

Chris Comeau, Transportation Planner.....ccomeau@cob.org
Neighborhood Traffic Safety Program, Comprehensive Plan Transportation Element,
Transportation Concurrency Requirements, Transportation Impact Fees

Kim Brown, Transportation Options Coordinator.....kimbrown@cob.org
Bicycles, Pedestrians, Safe Routes to School, Commute Trip Reduction

Brent Baldwin, Development Manager.....bbaldwin@cob.org
Development Requirements