



## Speed Limit Standard Operating Procedures (SOP)

### Principles

Speed limits are established to inform motorists of the maximum allowable vehicle travel speed for a roadway under favorable conditions. Posted speed limits provide a basis for law enforcement and should be consistent in their application and purpose when advising motorists of the maximum reasonable and safe operating speed for a roadway.

Every state has a basic speed statute requiring drivers to operate their vehicles at a speed that is reasonable and prudent for conditions. Washington State legislation [RCW 46.61.400](#) establishes this basic rule and reads as follows:

#### ***Basic rule and maximum limits.***

1. *No person shall drive a vehicle on a highway at a speed greater than is reasonable and prudent under the conditions and having regard to 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 the highway in compliance with legal requirements and the duty of all persons to use due care.*
2. *Except when a special hazard exists that requires lower speed for compliance with subsection (1) of this section, the limits specified in this section or established as hereinafter authorized shall be maximum lawful speeds, and no person shall drive a vehicle on a highway at a speed in excess of such maximum limits.*
  - a. *Twenty-five miles per hour on city and town streets...<sup>1</sup>*

*The maximum speed limits set forth in this section may be altered as authorized in RCW [46.61.405](#), [46.61.410](#), and [46.61.415](#).*

In addition, Washington State legislation [RCW 46.61.415](#) authorizes local authorities (e.g., City of Bellevue) to establish or alter speed limits and reads as follows:

---

<sup>1</sup> Excerpt from the entire basic rule section which provides further requirements on appropriate safe travel on the roadway.



***When local authorities may establish or alter maximum limits.***

1. *Whenever local authorities in their respective jurisdictions determine on the basis of an engineering and traffic investigation that the maximum speed permitted under RCW [46.61.400](#) or [46.61.440](#) is greater or less than is reasonable and safe under the conditions found to exist upon a highway or part of a highway, the local authority may determine and declare a reasonable and safe maximum limit thereon which
  - a. *Decreases the limit at intersections; or*
  - b. *Increases the limit but not to more than sixty miles per hour; or*
  - c. *Decreases the limit but not to less than twenty miles per hour.**
2. *Local authorities in their respective jurisdictions shall determine by an engineering and traffic investigation the proper maximum speed for all arterial streets and shall declare a reasonable and safe maximum limit thereon which may be greater or less than the maximum speed permitted under RCW 46.61.400(2) but shall not exceed sixty miles per hour.*
3.
  - a. *Cities and towns in their respective jurisdictions may establish a maximum speed limit of twenty miles per hour on a nonarterial highway, or part of a nonarterial highway, that is within a residence district or business district.*
  - b. *A speed limit established under this subsection by a city or town does not need to be determined on the basis of an engineering and traffic investigation if the city or town has developed procedures regarding establishing a maximum speed limit under this subsection. Any speed limit established under this subsection may be canceled within one year of its establishment, and the previous speed limit reestablished, without an engineering and traffic investigation. This subsection does not otherwise affect the requirement that cities and towns conduct an*



*engineering and traffic investigation to determine whether to increase speed limits...<sup>2</sup>*

City of Bellevue is authorized to establish speed limits on the basis of an engineering and traffic investigation. In general, the City of Bellevue Transportation Department will evaluate and develop findings for the appropriate speed limit of a roadway consistent with national and local practices while the City Council will ultimately serve as the legislative body approving, denying, or modifying the recommendations of the department. All regulatory speed limits are established by City Ordinance.

The exception to performing an engineering and traffic investigation is when 20 mile-per-hour (MPH) "Neighborhood Slow Zones" are created. As noted above in RCW 46.61.415, the City of Bellevue does not need to use an engineering and traffic investigation if a procedure has been created to establish a 20 MPH speed limit. More detail regarding this procedure can be found in the "Procedure" section below.

In addition to regulatory speed limits described above, drivers are expected to reduce speeds further from the posted speed limit under certain conditions (e.g., poor visibility, adverse weather, congestion, warning signs). Advisory signing may be utilized in particular areas to alert motorists of a specific roadway condition and provide added guidance for the appropriate travel speed on a roadway for a given location. While advisory limits do not carry the same force of law as posted regulatory speed limits, motorists can be cited under the basic speed rule as driving too fast for the prevailing condition.

**Factors influencing vehicle speeds.** The character or "feel" of a roadway can also influence travel speeds. Median islands, landscaped boulevards or urban design treatments, and varying roadside development are but a few examples of roadway features that can influence prevailing travel speeds. This is largely because drivers tend to select operating speeds based on the visual scene presented to them; therefore, the speed limit and design of the road must work in concert if desired operating speeds are to be achieved. Special situations also may exist which include school zones, work zones, and variable speed zones or other advisory speed conditions.

---

<sup>2</sup> Excerpt from the entire local authority section.



**Functional classification.** Arterial classifications also have a significant role in the setting of speed limits. By city ordinance, all streets are established as 25 MPH, unless otherwise posted. Streets that are posted otherwise, essentially fall into one of the arterial classifications: Major Arterial, Minor Arterial, or Collector Arterial, or reflect a specialty area such as school zone, work zone or “Neighborhood Slow Zone.” Generally, higher arterial classifications reflect higher traffic volumes, greater throughput, and higher level of traffic operating conditions. This may not always be the case, and hence engineering judgment and investigations are necessary to interject a systematic and reasonable approach for the setting of speed limits for a given roadway.

As a matter of policy, the procedures for establishing speed limits should be consistent with national and local practices, incorporating available research-based best practices. Where practical, Federal Highway Administration (FHWA) guidance may be consulted together with practices in this SOP to assist in determining the appropriate speed limit.

The above principles are to be used in conjunction with guiding policies contained within the city’s Comprehensive Plan and other approved city planning documents. Where applicable, the investigation should reflect these policies in its recommendation and in particular any relevant connection with the city’s goals for meeting its Vision Zero target of no fatal or serious injury collisions by the year 2030.

The methods for determining speed limits are further described herein.

## Criteria

Historical approaches to establishing speed limits focused primarily on current motor vehicle operating speeds and speed uniformity among motorists. Current best practice includes modernization of the traditional methods used to set speed limits to include explicit consideration of factors such as land use context, collision experience, pedestrian and bicyclist usage, and roadway and roadside characteristics.

Methodologies for setting speed limits are intended to:

- Relate to collision risk



- Provide a reasonable basis for enforcement
- Be fair in the context of traffic law
- Be accepted as reasonable by a majority of road users (e.g., motor vehicle drivers, bicyclists, pedestrians, etc.)

Factors that play a role in the selection of safe and efficient regulatory speed limits for a roadway include the following:

- Context (Suburban, Urban, Urban Core)
- Roadway Functional Class (Major Arterial, Minor Arterial, Collector Arterial, Local Street)
- Motor vehicle operating speeds, including:
  - 85th percentile speed (speed at which 85% of drivers travel at or below)
  - 50th percentile speed (median speed)
- Density of access points, including signalized intersections, unsignalized intersections, and driveways (residential and commercial)
- Number of travel lanes
- Presence of median
- Bicyclist and pedestrian activity
- Presence of bicyclist and pedestrian facilities
- On street parking activity and type of parking facilities
- Collision history

## Procurement

In establishing procedures for setting speed limits, it is important they be consistent with national and local practices, and emerging research. Procedures that have been tried and tested not only locally but by other jurisdictions across the nation foster greater respect for the speeds that are established and further support more conforming and safer operation of vehicles to keep all users safe. The following two sections describe the procedures for setting speed limits on arterials and local streets.



## Arterial

The procedures for determining the appropriate speed limit on an arterial should include a robust collection of data for the subject roadway segment. Speed studies should be conducted consistent with the Manual on Uniform Traffic Control Devices (MUTCD) that provides guidance on the collection of data.

The step-by-step method for setting regulatory speed limits is provided in the linked *Speed Limit Setting Methods and Step-by-Step Procedures* document. Briefly, the following procedures should be followed:

1. Observe vehicle operating speeds and conduct speed study data collection for subject segments under free flow traffic conditions. Determine 85th percentile speed and 50th percentile speed for the study segment.
2. Collect all other data required by the city developed, research-backed, *City of Bellevue Speed Limit Setting Tool* (see linked Excel file).
3. Determine the “suggested speed limit” based on data inputs that include operating speeds, roadway context and functional class, collision history, roadway conditions, etc. (see Criteria section, above).
4. Consider how the suggested speed limit impacts the target bicycle “Level of Traffic Stress” (LTS) for the corridor as defined in the [Mobility Implementation Plan](#).
5. If the “suggested speed limit” does not match the desired speed limit based on the engineer’s evaluation of the corridor, consider other interventions, as needed, to encourage lower driving speeds in conjunction with the speed limit reduction.
6. Collaborate with City Police Department in the formulation of findings for an appropriate speed limit. Consider the department’s opinions on the ability to feasibly enforcement regulatory speed limit on this segment.
7. Document the findings of the Engineering and Traffic Investigation in a written report. This evaluation should include a thorough description of any recommended speed limit that does not match the suggested speed limit produced through the *Speed Limit Setting Tool*.



8. Where modifications from the current Speed Limit Ordinance in effect are justified (either to raise or lower a posted regulatory speed), prepare proposed modifications to said ordinance and seek City Council approval based on the findings of the Engineering and Traffic Investigation.

### **Local Street**

Pursuant to RCW 46.61.415, the City of Bellevue has the authority to establish a maximum speed limit of twenty miles per hour on a nonarterial highway without an engineering study, so long as there are procedures that dictate where this may occur. As a result of a pilot speed limit reduction projects in Bellevue in 2020 and 2021 that showed reductions in vehicle speeds along with emerging speed limit setting guidance from the federal government (e.g. USLIMITS2, the National Roadway Safety Strategy), national transportation associations (e.g. NACTO, Vision Zero Network) and best practices from other cities (e.g. Seattle, Portland, Cambridge, MA, St. Louis Park, MN), Bellevue may consider lower speed limits on local streets without an engineering study. This may occur when the street context (e.g., known operating speeds, if available; transit use, proximity to pedestrian generators, existing channelization), community considerations, and applicability are reviewed and approved by the City Traffic Engineer. When a new local street(s) is considered for a 20 MPH speed limit, the following procedures shall be followed:

1. Identify the boundaries of the neighborhood that will receive the new maximum speed limit and assure all entrances to the neighborhood from arterials can be clearly defined with a new posted speed limit.
2. Confirm that streets within the boundary of the neighborhood will receive the new maximum speed limit. Determine if there are any streets that are classified "Local" but operate like an arterial and should maintain a 25 MPH speed limit.
3. Prepare a memo to file from the City Traffic Engineer documenting his/her approval of the proposed 20 MPH street or set of streets in a neighborhood.
4. Notify residents within the neighborhood of the anticipated speed limit change.
5. Complete the speed limit ordinance process to formally change the speed to 20 MPH.



6. Collect “before” speed and volume data before the speed limit change is approved and changed in the field.
7. Change the signage and markings in the field as needed.
8. Collect “after” data a minimum of three months after the speed limit is changed.

## Definitions

85th Percentile Speed – The speed at or below which 85 percent of free-flow motor vehicle traffic is moving.

50th Percentile Speed – The speed at or below which 50 percent of free-flow motor vehicle traffic is moving.

Engineering and Traffic Investigation – the assessment of conditions by a professional engineer licensed in the field of transportation and/or the assessment of conditions by a designee working under the direct supervision of a professional engineer licensed in the field of transportation with the purpose of determining findings that may inform further study, action, or recommended plan associated with a transportation related issue. The assessment may be qualitative based or quantified based on data, facts, or other pertinent information. Engineering and Traffic Investigations need not result in written documentation of the assessment and/or findings. Engineering and Traffic Investigations may however lead to a written report at the discretion of the Engineer, if resources allow and found necessary.

Speed Study – A summary report of the collected field data which reflects the speed at which vehicles are passing a particular location. The speed study shall include at a minimum the summary determination of the 85th percentile speed and 50th percentile speed for free flowing traffic by direction and may include other speed indicators such as mean or average speed. Where practical, influences from close proximity to traffic signals should be avoided and the general application of speed studies should be consistent with the guidance contained in the MUTCD.