SPEED LIMIT SETTING POLICY AND STEP-BY-STEP PROCEDURES

CITY OF RICHLAND

APRIL 2024

PREPARED FOR THE CITY OF RICHLAND

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INTRODUCTION

The most common method to determine speed limits in the United States is to use a prevailing speed-based method, typically using the 85th percentile speed (the speed at which 85 percent of free-flowing drivers travel at or below). Engineers determine the prevailing speed at a location by taking field measurements, and then set the new speed limit by rounding up or down from the calculated 85th percentile speed to the nearest 5-mph increment. This method determines posted speed limits based on observed driver behavior instead of bringing driver behavior in line with safety goals and considering other factors such as roadway context, road configuration and other modes on the roadway.

This policy is intended to utilize recent changes in methodologies and research that incorporated contextual factors such as bicycles, pedestrians, adjacent land use and roadway context. The City of Richland has developed this policy to support its aims to better protect members of the community and improve safety by reducing fatal and serious injuries. This policy, requested by City Council, is an important part of the City's Vision Zero goal to eliminate fatal and serious injury crashes on Richland streets by 2035, and was funded by a Transportation Improvement Board (TIB) grant for Complete Streets.

The methodology utilized in the policy is an expert system approach based upon using both the 50th percentile and 85th percentile speeds of motor vehicles and incorporating other key context data into the system to achieve a Suggested Speed Limit. Engineers review those outputs, applying engineering judgement to develop the Engineer's Recommended Speed Limit. Finally, the established political process is conducted to arrive at the Council's Approved Speed Limit that will be posted on the roadway.

This document is separated into the following chapters:

- Chapter 1: Definitions & Descriptions
- Chapter 2: Process & Evaluation
- Chapter 3: Recommended Speed Limit Procedure
- Chapter 4: Secure Council Approved Speed Limit

CHAPTER 1: DEFINITIONS & DESCRIPTIONS

The following chapter provides important definitions and descriptions that will be used in the following chapters, including:

- Roadway Type
- Roadway Context
- Speed Limit Setting Groups
- Speed-Related Definitions

ROADWAY TYPE

Table 1. Roadway type (Functional Classification)[1]

Roadway Type	Definition
Principal Arterial	Provide travel service (high mobility) for major traffic movements within the city. They serve as major centers of activity, intra-area travel between suburban centers, between larger communities, and between major trip generators.
Minor Arterial	Interconnect with and augment the principal arterial system. Minor arterials connect major arterials to collector streets and small generators. Minor arterials allow for more emphasis on land access than the principal arterial system but are still mobility oriented.
Major Collector	Distributes trips between the principal and minor arterials and the ultimate destination or may collect traffic from the local streets and channel it into the arterial system. Major collector streets provide both land access service and traffic mobility with emphasis given to access.
Minor Collector	Lower-volume collectors that distribute and/or collect traffic from the local streets onto the primary arterial and collector street system.
Local	Focused on local access, all streets owned by the city and not designated as one of the higher-level classes are designated local streets.

[1] Source: https://www.codepublishing.com/WA/Richland/html/Richland12/Richland1202.html

ROADWAY CONTEXT

Roadway context provides information about the immediate surroundings of a road. Roadway context involves several factors, including building setbacks, density, land use, traffic volume, and expected mix of road user modes. Table 2 provides the descriptions for four different roadway contexts.

Table 2. Roadway context

Roadway Context	Examples in Richland	Photo (Typical)	Description
Urban	Downtown on George Washington Way, Jadwin, Stevens & Lee.		Urban locations typically consist of low to medium rise structures for residential and commercial use. Urban areas include prominent destinations with specialized structures for public use, entertainment, athletic and social events. Wide sidewalks and bicycle facilities are typically present.
Suburban	South Richland areas like Keene, Queensgate, Duportail, and Gage. Parts of north central Richland like George Washington Way between McMurray and Spengler. Also, Wellsian Way.		Locations classified as suburban can include a diverse range of commercial and residential uses that have medium density and varied setbacks. Buildings tend to be multi-story with off-street parking. Sidewalks are usually present and bicycle lanes may exist.
Suburban Fringe	Primarily residential in North Richland near George Washington Way & Stevens. Horn Rapids, Reata, Dallas Road, and Badger Mountain in the South Richland area.		Suburban Fringe is characterized by low-density (low-rise) structures where the land use is primarily residential with some commercial use. The setbacks of structures are relatively small and transit service is limited and not frequent. Pedestrian and bicycle facilities are limited.

Roadway Context	Examples in Richland	Photo (Typical)	Description
Industrial	Horn Rapids Industrial area. North Stevens Drive and Robertson Drive. Areas near Wellsian Way.	 	The Industrial context is primarily used for industrial land uses, outdoor recreation, agriculture, and/or resource extraction. Existing conditions in Industrial areas are less likely to include pedestrian or bicycle facilities, or on-street parking. Newer facilities are incorporating features for bicycles and pedestrians. Setbacks for structures are usually large and transit service is limited or non-existent.

SPEED LIMIT SETTING GROUPS (SLSG)

A Speed Limit Setting Group is a list of combined roadway contexts and types where a similar speed limit setting decision process will produce the most appropriate suggested speed limit. The Speed Limit Setting Groups (SLSG) are categorized by the matrix columns (roadway context) and rows (roadway types) as A, B and C.[2]

Table 3. Speed limit setting groups (SLSG)

		Roadway Type			
Speed Limit Setting Groups (SLGS)	**Roadway Context**	**Urban**	**Suburban**	**Suburban Fringe**	**Industrial**
	Principal Arterial	A	B	C	C
	Minor Arterial	A	B	C	C
	Major/Minor Collector	A	A	B	C
	Local	A	A	B	B

[2] Fitzpatrick, K., et al, *User Guide for Posted Speed Limit Setting Procedure and Tool,* NCHRP Project Number 17-76, 2020.

ADDITIONAL SPEED-RELATED DEFINITIONS

Table 4. Speed-related definitions

<table>
<tr><th></th><th>Definition</th></tr>
<tr><td>Posted Speed</td><td>The maximum speed a driver is legally permitted to travel along a roadway. This numeric speed limit value is displayed on regulatory speed limit signs.</td></tr>
<tr><td>Operating Speed</td><td>The speed at which motor vehicles generally travel on that road.</td></tr>
<tr><td>50th Percentile Speed</td><td>The speed at which 50% of free-flowing drivers travel at or below. Often referred to as the “Median Speed”.
<table>
<tr><td>C50</td><td>Closest 50th Percentile: The 50th percentile speed rounded to the closest 5-mph increment.</td></tr>
<tr><td>RD50</td><td>Rounded Down 50th Percentile: The 50th percentile speed rounded down to the nearest 5-mph increment.</td></tr>
</table></td></tr>
<tr><td>85th Percentile Speed</td><td>The speed at which 85% of free-flowing drivers travel at or below.
<table>
<tr><td>C85</td><td>Closest 85th Percentile: The 85th percentile speed rounded to the closest 5-mph increment.</td></tr>
<tr><td>RD85</td><td>Rounded Down 85th Percentile: The 85th percentile speed rounded down to the nearest 5-mph increment.</td></tr>
</table></td></tr>
<tr><td>Suggested Speed Limit</td><td>Speed limit determined by the Richland Speed Limit Setting Tool’s decision matrix (based on data inputs)</td></tr>
<tr><td>Target Speed</td><td>Speed limit (or range) that is considered appropriate for a given roadway context and set of characteristics.</td></tr>
<tr><td>Engineer’s Recommended Speed Limit</td><td>Recommended speed limit based on the Suggested Speed Limit and engineering experience and judgment.</td></tr>
</table>

CHAPTER 2: PROCESS & EVALUATION

The City will take the following approach to identifying the most appropriate speed limit for each study facility (see Figure 1) by incorporating collision history, road system design, pedestrian and bicyclist activities and facilities, and surrounding context. Understanding the road setting and urban context can help determine the most appropriate speed limit and lead to additional design treatments to improve safety for all users.

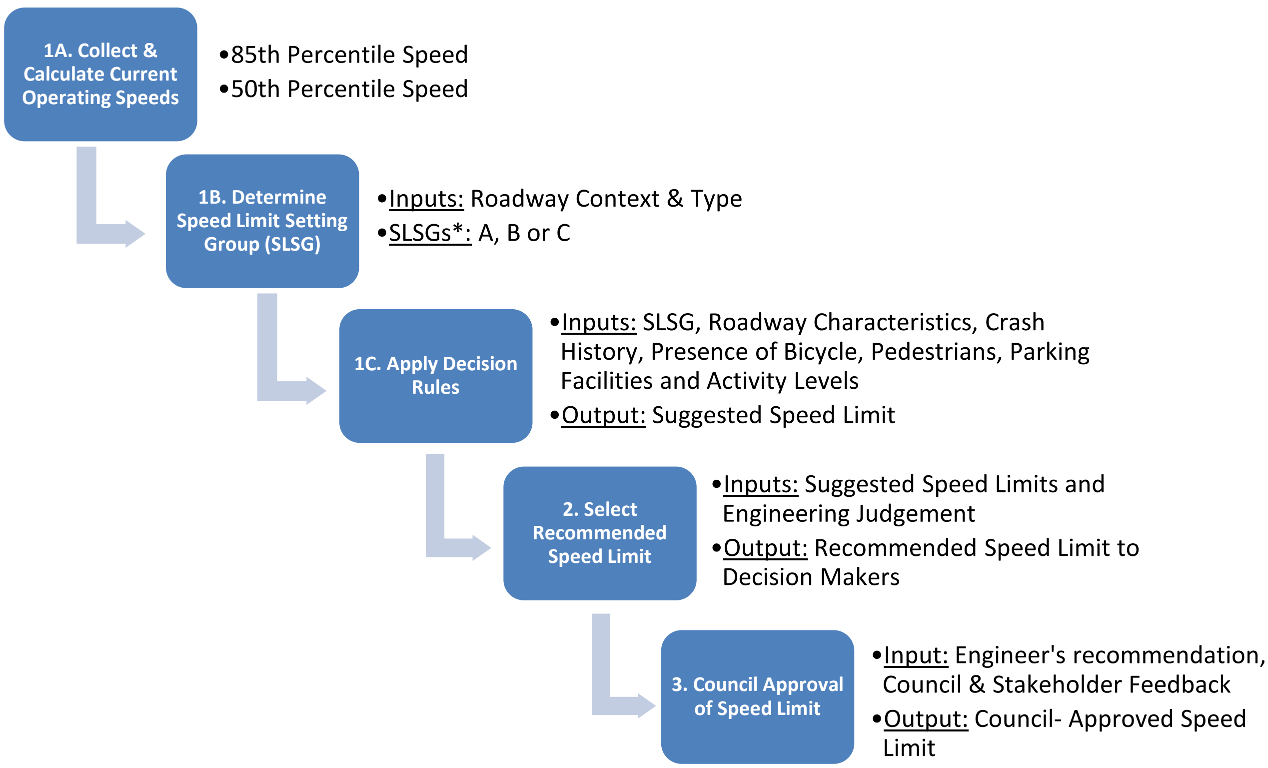

Figure 1: Overview of the Expert System Approach to a Speed Limit Setting Procedure (adapted from NCHRP Report 966)

*Note: SLSG stands for Speed Limit Setting Group

STEP 1. SUGGESTED SPEED LIMIT

The following steps will lead to a suggested regulatory speed limit using the methods adapted from *NCHRP Report 966 Posted Speed Limit Setting Procedure and Tool*.

STEP 1A: COLLECT & CALCULATE CURRENT OPERATING SPEEDS

The first step is to collect operating speeds for free-flow vehicles such as average speed, 50th percentile speed (median speed), and 85th percentile speed. Data collection techniques should capture free-flowing vehicles that are not affected by potential conflicts (e.g., driveways, intersections, crosswalks, or traffic signals) or traffic calming measures (e.g., speed bumps, speed cushions or radar speed feedback signs). There are several ways to collect this information:

1. In-road devices that are installed into or on top of the roadway surface (e.g., road tubes)
2. Out-of-road devices that are installed overhead or side of the roadway surface (e.g., radar data from Police Department armadillo units that hang from streetlights)
3. Big data sources from connected vehicle data (vehicle's electronic control units or controller access networks) or closed-circuit television systems CCTV (video analytics)[3]

STEP 1B: DETERMINE SPEED LIMIT SETTING GROUP (SLSG)

The next step in determining a posted speed limit is to select a Speed Limit Setting Group (SLSG) based on roadway segment context and type. These factors help City staff determine the most appropriate design criteria and elements to understand road user needs along a given segment. Tables 1 - 3 are referenced to help determine the SLSG for a particular roadway.

ROADWAY TYPE

To determine roadway type, refer to City of Richland Roadway Types Definitions as described in Table 1 in Chapter 1.

ROADWAY CONTEXT

To determine roadway context, refer to City of Richland Roadway Context Definitions as described in Table 2 in Chapter 1.

SPEED LIMIT SETTING GROUP (SLSG)

A Speed Limit Setting Group is a list of combined roadway contexts and types where a similar speed limit setting decision process will produce the most appropriate suggested speed limit. The Speed Limit Setting Groups are defined and selected by the Matrix in Chapter 1, Table 3.

[3] Sources for real-time traffic data: https://otonomo.io/blog/best-real-time-traffic-data-sources/

STEP 1C: APPLY DECISION RULES FOR SUGGESTED SPEED LIMIT

SPEED LIMIT SETTING OPTIONS

Speed limit options include the following values based on collected operating speeds and basic statistical calculations. These speeds should be established and documented for the speed setting process.

- The 85th percentile speed rounded to the closest 5-mph increment (C85).
- The 85th percentile speed rounded down to the nearest 5-mph increment (RD85).
- The 50th percentile speed rounded to the closest 5-mph increment (C50).
- The 50th percentile speed rounded down to the nearest 5-mph increment (RD50).

The operating speeds used in this process will typically be the lower of both directions on two-way facilities. Where multiple traffic studies exist on the same corridor, the lowest speeds of all the counts should be used assuming the engineer has determined that all studies are valid and were performed in a location that captured free flow speeds. Engineering judgement should be used in cases where these two traffic study locations or the two directions of travel are dramatically different.

REQUIRED DATA ELEMENTS AND PROCEDURE TO DETERMINE SAFETY RISK

Choosing the appropriate SLSGs leads to the decision process in the following tables to determine the suggested speed limit. Please refer to Table 3 in Chapter 1 to determine the appropriate SLSG based on roadway type and roadway context.

SPEED LIMIT SETTING GROUP: A

Check each of the variables in Table 6 to determine if the suggested speed limit should be set at either the Rounded Down 50th (RD50) or Closest 50th (C50) related to that variable. Upon completion of all the variables, **any single variable in the RD50 column determines RD50 as the suggested speed limit.**

For example, if C50 is selected for the first seven rows below, but Crash Rate is High or Medium, then the suggested speed limit is the Rounded Down 50th Percentile Speed (RD50). For more details on "High", "Medium" and "Low" assessments, please refer to **Appendix A.**

Table 5. Speed limit decision rules for SLSG: A

Variable	Rounded Down 50th (RD50)	Closest 50th (C50)
Signal density	8.01+ signals/mile	0-8 signals/mile
Access density	60.01+ driveways/unsignalized intersections per mile	0-60 driveways/unsignalized intersections per mile
Bicyclist activity – in motor vehicle lane, shoulder, or non-separated bike lane	High or Some	Negligible
Bicyclist activity – in separated bike lane	High or Some	Negligible
Sidewalk presence/width (none, narrow, adequate, or wide), sidewalk buffer (present or not present), and pedestrian activity (high, some, or negligible)	See Table 7	See Table 7
On-street parking activity	High or Some	Negligible
On-street parking type	Angle parking present for 40 percent or more of section	• No parking present • Angle parking present for less than 40 percent of section
Crash Rate (Societal Crash Cost per mile)	High or Medium	Low

Table 6. SLSG: A - Decision matrix for sidewalks and pedestrians

Pedestrian Activity	Sidewalk Presence/Width	Sidewalk Buffer	Suggested Speed Limit
High	Adequate	Not present	RD50
High	Adequate	Present	C50
High	Narrow	Not present	RD50
High	Narrow	Present	RD50
High	None	Not applicable	RD50
High	Wide	Not present	C50
High	Wide	Present	C50
Some	Adequate	Not present	RD50
Some	Adequate	Present	C50
Some	Narrow	Not present	RD50
Some	Narrow	Present	RD50
Some	None	Not applicable	RD50
Some	Wide	Not present	C50
Some	Wide	Present	C50
Negligible	Adequate	Not present	C50
Negligible	Adequate	Present	C50
Negligible	Narrow	Not present	C50
Negligible	Narrow	Present	C50
Negligible	None	Not applicable	C50
Negligible	Wide	Not present	C50
Negligible	Wide	Present	C50

SPEED LIMIT SETTING GROUP: B

Check each of the variables in Table 8 to determine if the suggested speed limit should be set at either Closest 50th (C50), Rounded Down 85th (RD85) or Closest 85th (C85). Upon completion of all the variables, any single variable in the C50 column determines C50 as the suggested speed limit. **Any single item in the left-most column determines the suggested speed limit.**

For example, if C85 is selected for the first four rows below (Access Points, Lanes/Median/AADT, Lane Width, and Shoulder Width), but Bicyclist Activity is High, then the suggested speed limit is the Closest 50th Percentile Speed (C50).

Table 7. Speed limit decision rules for SLSG: B

Variable	Closest 50th (C50)	Rounded Down 85th (RD85)	Closest 85th (C85)
Signal density	4.01+ signals/mile	3.01-3.99 signals/mile	3 signals/mile
Access density	60.01+ driveways/ unsignalized intersections per mile	40.01 - 60 driveways/ unsignalized intersections per mile	0 - 40 driveways/ unsignalized intersections per mile
Number of lanes/ median type (undivided, two-way left-turn lane [TWLTL], or divided)	N/A	Four or more lanes with undivided median	Four or more lanes with divided or TWLTL median Fewer than four lanes with any median type
Bicyclist activity – in motor vehicle lane, shoulder, or non-separated bike lane	High	Some	Negligible
Bicyclist activity – in separated bike lane	High	Some	Negligible
Sidewalk presence/width (none, narrow, adequate, or wide), sidewalk buffer (present or not present), and pedestrian activity (high, some, or negligible)	See Table 9	See Table 9	See Table 9
On-street parking activity	High	Some	Negligible
On-street parking type	Angle parking present for 40 percent or more of section	Parallel parking permitted Angle parking present for less than 40 percent of section	None
Crash Rate (Societal Crash Cost per mile)	High	Medium	Low

Table 8. Developed group - decision matrix for sidewalks and pedestrians

Pedestrian Activity	Sidewalk Presence/Width	Sidewalk Buffer	Suggested Speed Limit
High	Adequate	Not present	RD85
High	Adequate	Present	C85
High	Narrow	Not present	C50
High	Narrow	Present	RD85
High	None	Not applicable	C50
High	Wide	Not present	C85
High	Wide	Present	C85
Some	Adequate	Not present	RD85
Some	Adequate	Present	C85
Some	Narrow	Not present	C50
Some	Narrow	Present	RD85
Some	None	Not applicable	C50
Some	Wide	Not present	C85
Some	Wide	Present	C85
Negligible	Adequate	Not present	C85
Negligible	Adequate	Present	C85
Negligible	Narrow	Not present	C85
Negligible	Narrow	Present	C85
Negligible	None	Not applicable	RD85
Negligible	Wide	Not present	C85
Negligible	Wide	Present	C85

SPEED LIMIT SETTING GROUP: C

Check each of the variables in Table 10 to determine if the suggested speed limit should be set at either Closest 50th (C50), Rounded Down 85th (RD85) or Closest 85th (C85). Upon completion of all the variables, any single variable in the C50 column determines C50 as the suggested speed limit. **Any single item in the left-most column determines the suggested speed limit.**

For example, if C85 is selected for the first four rows below (Access Points, Number of Lanes, Lane Width, and Shoulder Width), but Crash Rate is High, then the suggested speed limit is the Closest 50th Percentile Speed (C50).

Table 9. Speed limit decision rules for SLSG: C

Variable	Closest 50th (C50)	Rounded Down 85th (RD85)	Closest 85th (C85)
Access points (non-residential driveways and intersections per mile)	40.01+ access points per mile (divided) 30.01+ access points per mile (undivided)	20.01 – 40.00 access points per mile (divided) 15.01 – 30.00 access points per mile (undivided)	0-20 access points per mile (divided) 15 access points per mile (undivided)
Number of lanes, median type, AADT combination	N/A	Four or more lanes with no median (undivided) and AADT > 2000 veh/d	• Four or more lanes with divided median • Two lanes with any median type • Four or more lanes with no median (undivided) and AADT ≤ 2000 veh/d • Any number of lanes/median type combination when AADT ≤ 2000
Lane width (LW)	LW ≤ 9 ft and AADT > 2000 veh/d	9 ft < LW < 11 ft and AADT > 2000 veh/d	• LW ≥ 11 ft and AADT > 2000 veh/d • Any lane width when AADT ≤ 2000
Shoulder width	SW < 2 ft and AADT > 2000 veh/d	2 ft ≤ SW < 6 ft and AADT > 2000 veh/d	• SW ≥ 6 ft and AADT > 2000 veh/d • Any shoulder width when AADT ≤ 2000
Crash Rate (Societal Crash Cost per mile)	High	Medium	Low

> is Greater Than ≥ is Greater Than or Equal To < is Less Than ≤ is Less Than or Equal To

STEP 2. ENGINEER'S RECOMMENDED SPEED LIMIT

After completing the procedure to determine the appropriate **suggested** speed limit based on decision rules, conduct the following checks with engineering judgement to confirm the most appropriate **recommended** speed limit for the section.

DEVELOPMENT OF ENGINEER'S RECOMMENDED SPEED LIMIT

Upon determining the Suggested Speed Limit from the process described above, the engineer should then compare it to the Target Speed ranges, as shown in Table 11 below.

Based on the WSDOT Design Manual (1103.05), the objective of the target speed approach is to establish the design speed at the desired operating speed. The target speed selection is derived from other design controls, as well as transportation and land use context characteristics. Therefore, it is ideal if the Suggested Speed Limit falls into this range.

Target operating speed is the desirable speed for motorists to travel along a roadway within the particular context/roadway type combination. *NCHRP Research Report 855, An Expanded Functional Classification System for Highways & Streets*, grouped the target operating speed into three categories: Low (<30 mph and below), Medium (30-45 mph), and High (>45 mph).[4] This Policy adapts Report 855 by developing a set of target speed ranges appropriate for each Roadway and Context in the City of Richland shown in Table 11. When reviewing Target Speeds, consider other similar City streets by type and context that already have appropriate speed limits.

Table 10. Suggested target operating speed (mph) by roadway context and type

	Roadway Context			
Roadway Type	**Urban**	**Suburban**	**Suburban Fringe**	**Industrial**
Principal Arterial	25-35	30-40	35-45	45-55
Minor Arterial	25-30	25-35	35-40	40-50
Major Collector	25-30	25-30	25-35	35-45
Minor Collector / Local	20-25	20-30	25-30	25-35

If the suggested speed limit does not fit the suggested target speeds, confirm calculations, and then identify potential reasons for the difference. The engineer should identify any unique characteristics along the segment and consult traffic safety and operations resources related to speed limit setting (e.g., NCHRP Report 966, FHWA Office of Safety publications, established industry experts), to determine the Engineer's Recommended Speed Limit.

Once an **Engineers Recommended Speed Limit** has been determined for a segment there are other factors to consider such as continuity of roadway segments over longer distances, coordination with adjacent jurisdictions and frequency of roadway speed limit postings. These factors are covered in the next section.

[4] Transportation Research Board. 2018. *NCHRP Research Report 855: An Expanded Functional Classification System for Highways and Streets*. HTTPS://DOI.ORG/10.17226/24775

OTHER FACTORS TO CONSIDER

Speed Limit Segment Length. Speed limits should be assigned to roadway segments that are reasonably uniform in roadway characteristics, context, and type; and when a change to one of these variables occurs, a new segment should be defined. For example, changes to the number of lanes or roadway context (urban, suburban, suburban fringe, industrial) necessitates a new segment.

It is important to keep segment lengths reasonable for driver expectation and maintenance feasibility. For example, changing speed limits too often can be confusing for road users and onerous for City staff to keep records of every change.[5]

If a roadway segment has an isolated speed-related concern, such as a horizontal curve, it should be addressed with standard warning treatments (e.g., a posted advisory speed), not by reducing the regulatory speed limit for the segment. For each case, an engineering study may determine a change to the segment length.

Coordination with Adjacent Jurisdiction. Speed limit studies near jurisdictional boundaries should be coordinated with the neighboring jurisdiction. The city engineer or city traffic engineer for the neighboring jurisdiction should initially be contacted to notify them of the study and to confirm when their section of the same road was last studied.

Speed Limit Sign Frequency. Speed limit signs should be placed in the following locations:

1. They are required at each point of change from one speed limit to another. Care should be taken to place the sign as close to where the speed limit ordinance identifies the change in speed.
2. Beyond major intersections and at other locations where it is necessary to remind road users of the speed limit that is applicable.
3. Downstream from where traffic may turn from an arterial corridor that has a different posted speed limit.
4. As needed to remind road users of the current speed limit. Engineering judgment should dictate the placement, balancing the competing values of reducing sign clutter and providing adequate information to road users.
5. On local streets, it is typical to add 25-mph sign within one-block when it comes from a higher posted speed facility. With regards to adding additional 25-mph signs, see guidance in **Appendix B.**

SETTING SPEED LIMITS ON NEW ROADWAYS

The Target Speeds in Table 11 can also be used to determine an initial posted speed limit for a newly constructed roadway. In general, if there is a 10-mph spread in the range above, then the initial Target Speed is likely the midpoint of that range. If the spread of the range is 5-mph, then the initial Target Speed will most likely be the higher point in the range. Other factors to consider when selecting the Target Speed of a new street:

- Pedestrian & Bicycle Facility Type and Quality
- Anticipated Pedestrian & Bicycle Activity Levels
- Presence of On-Street Parking
- Access Spacing of planned City Streets and anticipated Driveway Density

Once a decision has been made on the Target Speed of a new facility, staff should develop a proposed ordinance for approval by the Richland City Council.

[5] FHWA, USLIMITS 2, Table 2, pg 34 (44). Transportation Research Board. 2006. Expert System for Recommending Speed Limits in Speed Zones: NCHRP 03-67.

STEP 3. COUNCIL APPROVAL OF SPEED LIMIT

The final recommendation for a posted speed limit should be based on the procedures established in this document. and the application of engineering judgment. At a given location, factors outside the data elements used in this procedure may be appropriate to include, and those elements may help establish the most appropriate posted speed limit. Engineering judgement is often required when determining the Engineer's Recommended Posted Speed.

Speed limits are approved through an ordinance approval process with the Richland City Council. Typically, this involves working with the City Attorney's office to update the ordinance associated with the new speed limit, and then submitting this ordinance to Council for approval through the consent process. An agenda memo is required along with the ordinance change to explain why the speed limit is being changed.

A Council Study Session could be used if a particular speed limit change requires more discussion to explain the justification for the change or to provide more visibility for the change with the community. The ordinance would still be submitted through the consent process, assuming Council is in favor of the change.

Upon completion of the process, Public Works will make the necessary changes to the Posted Speed Limit signs according to the approved speed limit.

APPENDIX A – VARIABLES FOR DECISION MAKING

Bicycle Activity

Bicycle activity can be determined based on following criteria as guidance:

High	It is common to see bicyclists using marked bicycle lanes or vehicle lanes.
Some	There are occasional bicyclists using marked bicycle lanes or vehicle lanes.
Negligible	Bicyclists in bicycle lanes or on the roadway are rare.

Pedestrian Activity

Pedestrian activity can be determined based on following criteria as guidance:

High	It is common to see pedestrians on sidewalks or walking in, or adjacent to the roadway. There are multiple locations where pedestrians are observed to be crossing the roadway.
Some	Pedestrians occasionally walk along the route or cross the roadway.
Negligible	Very uncommon to see pedestrians along or crossing the roadway.

Note that the presence and number of pedestrian generators can also be used as a basis for classifying Pedestrian Activity as “High”, or as “Some” based upon Engineering Judgement. Common pedestrian generators are typically transit stops, parks, hotels, recreational facilities or government facilities.

Sidewalk Width

Sidewalk width can be determined based on following criteria as guidance:

Wide	Greater than 5 feet in width.
Adequate	Approximately 5 foot in width.
Narrow	Less than 5 feet in width.

On-Street Parking Activity

On-street parking activity can be determined based on following criteria as guidance:

High	Can be characterized as having parking on at least one side of the road with or without parking time limits.
Not High	No on-street parking activity present or permitted.
N/A	Not Applicable (this option is not available to choose from)

Societal Cost Per Mile

The crash rate can be put into one of three categories:

High	Highest 1/3 of all study segments based on societal cost per mile
Medium	Middle 1/3 of all study segments based on societal cost per mile
Low	Lowest 1/3 of all study segments based on societal cost per mile

Societal Cost per Mile per year

The crash rate will be calculated based on the Societal Cost per Mile per year. The Societal Cost of a crash is monetary value that a state agency adopts to quantify the benefits of a change in safety performance as part of a benefit-cost analysis.[6]

The formula is as follows:

$$\begin{aligned}\text{Societal Cost per Mile}\\ &= [(\text{\#of K})\ \mathbf{x}\ (\text{Societal Cost of K}) + (\text{\# of A})\ \mathbf{x}\ (\text{Societal Cost of A}) + (\text{\#of B})\ \mathbf{x}\ (\text{Societal Cost of B})\\ &+ (\text{\# of C})\ \mathbf{x}\ (\text{Societal Cost of C}) + [(\text{\#of O})\ \mathbf{x}\ (\text{Societal Cost of O})] \div (\text{\# of years of crash data})\\ &\div (\text{length of segment in miles})\end{aligned}$$

Where Crash Type is abbreviated as follows:

Fatal Injury Crash	K
Suspected Serious Injury Crash	A
Suspected Minor Injury Crash	B
Possible Injury Crash	C
No Apparent Injury Crash	O

The Societal Cost per crash type can be updated as needed.

[6] Societal Cost Definition is based on the WSDOT Safety Analysis Guide: https://wsdot.wa.gov/publications/fulltext/design/ASDE/Safety-Analysis-Guide.pdf

APPENDIX B – GUIDELINES FOR POSTING 25-MPH SPEED LIMIT SIGNS

A 25-mph speed limit sign may be installed on a local residential street if it meets all the following criteria:

1. The local street must intersect a designated arterial or collector street; and;
2. The surrounding area must be predominately zoned residential; and,
3. The local street should be a minimum of one-quarter mile in uninterrupted length.

Where these criteria are met, then a 25-mph speed limit sign may be installed on the local street near the intersection of the higher established speed street. No additional speed limit signs to this or interior connecting local streets are warranted based on satisfaction of the above criteria. The Traffic Engineer may consider an additional speed limit sign where a local street is over ½ -mile in continuous uninterrupted length.

Local residential streets not meeting the above criteria may warrant a speed limit sign if the street meets one or more the following guidelines:

1. The local street has a minimum traffic volume of 800 vehicles per day and has an observed average speed in excess of 5-mph above the basic speed limit for city streets; or,
2. The local street has a minimum traffic volume of 800 vehicles per day of which thirty percent (30%) or more is cut-through traffic. Cut-through traffic shall be defined as vehicles using a local street(s) to travel between one arterial or collector to another arterial or collector without stopping (except for stop signs, etc.) for the purpose of by-passing congestion on the designated arterial or collector; or,
3. There are three or more reported collisions in a 12-month period, or four or more reported collisions in a 24-month period, on a local street, which are directly related to excessive speed.

Existing 25-mph speed limit signs that do not meet the above guidelines shall remain in-place until such time as they are scheduled to be replaced, or need to be repaired or relocated. At that time the Traffic Engineer shall determine if the signs should be removed or replaced/repaired/relocated based upon the above guidelines.

Nothing in this policy shall preclude the city's Traffic Engineer from installing, relocating or removing 25-mph speed limit signs on local streets based upon his/her engineering judgment at any time.