

## KING COUNTY WALKER ROLLER SAFETY TOOLKIT

KING COUNTY  
TRAFFIC SAFETY COALITION

DATE: 8.19.2025

TO: King County Active Transportation Safety Champions (KCATS Champions)

FROM: DKS Associates

SUBJECT: Safety Toolkit

Project #25480-000

### BACKGROUND

The King County Active Transportation Safety Champions (KCATS Champions) has developed a Pedestrian Safety Task Force around walker and roller safety. This Project has been introduced through King County Target Zero Traffic Safety Coalition. The King County Target Zero Coalition was formed by Public Health – Seattle & King County in 1998 through limited funding from the Washington Traffic Safety Commission and flexible state public health funding. It is currently supported through state-funded grants. The Coalition brings together partners to engage in efforts that support inclusive and equitable traffic safety planning throughout King County. The King County Target Zero Coalition is comprised of organizations and community partners that work together to plan and implement programs to reduce injuries and deaths and increase safety. As part of the Walker Roller project, the KCTZ Coalition brought together experts from the active transportation field to create the KCATS committee.

The aim for this project is to improve safety for pedestrians and active transportation users and share useful training resources countywide. Active transportation is defined in the WSDOT Active Transportation Plan as any method of travel that is human scale and often person-powered, such as bicycles or wheelchairs. This document highlights the top 21 best practices and will be shared on the [King County Target Zero website](#).

The 21 best practices inventory is organized by broad sections and includes the following for each best practice:

- Photo of the best practice
- Project name
- Example(s) in King County

- Showcase how it has been implemented
- Research-backed benefits, if available
  - <https://cmfclearinghouse.fhwa.dot.gov/>
  - Key resources:
    - Federal Highway Administration (FHWA) Proven Safety Countermeasures
    - Crash Modification Factors (CMF) Clearinghouse
    - National Highway Traffic Safety Administration (NHTSA) Countermeasures that Work
- Cost Range
  - \$ = Less than \$10,000
  - \$\$ = \$10,000 to \$100,000
  - \$\$\$= over \$100,000

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# SCHOOL RELATED



## WALKING SCHOOL BUSES

**Project Name:** Walking School Buses

**Cost Range:** [\\$<sup>1</sup>](#)(less than \$10,000)

### Description:

A walking school bus is a group of students who walk to school together with an adult along a set route. Kids, including those who are usually driven by a parent or guardian, can join at designated stops. This approach promotes walking, boosts safety for pedestrians, and gets both kids and caregivers involved in school travel safety initiatives.



Photo Source: [SDOT Blog<sup>2</sup>](#)

### Examples in King County:

- [King County Metro SchoolPool<sup>3</sup>](#): Through the King County Metro Safe Routes to School Toolkit, King County Metro is encouraging school districts, such as the Northshore School District, to use SchoolPools. KC Metro SchoolPool is the overall coordinating partnership between schools and cities to facilitate SchoolPools. Additionally, the school district is increasing awareness of walking school bus groups and parent carpools.
- [Sammamish SchoolPool<sup>4</sup>](#) : In Sammamish, McAuliffe Elementary is actively utilizing parent sign-ups through an online portal for a rideshare SchoolPool. The rideshare SchoolPool allows parents to connect with other parents via the SchoolPool portal and matches student families that would like to carpool together or join walking or biking groups.
- [Bellevue SchoolPool<sup>5</sup>](#): The Bellevue SchoolPool encourages students and parents to consider alternative modes of transportation. The SchoolPool aims at reducing congestion near the school particularly at drop off and pick up points. The Bellevue SchoolPool hosts two flagship events, Walk and Roll to School Week and Bike and Roll to School Week. The program also offers incentives to participating schools to fund small capital projects, purchase safety equipment, or educational materials. In 2024, the Bellevue School District reported that districtwide 62% of students use alternative modes of transportation that are not being driven alone in a car, suggesting an increase in mode shift.
- [Redmond SchoolPool<sup>6</sup>](#): Through the Lake Washington School District, educational materials and SchoolPool events are hosted. The Redmond SchoolPool program is aimed at reducing congestion near schools and improving air quality and safety. The Redmond SchoolPool program also includes monetary incentives which are awarded to participating schools' parent student teacher associations (PTAs).

### Researched Benefits:

- [NHTSA Countermeasures that Work<sup>7</sup>](#) – Mode shift and safe crossing behaviors, may have some additional safety benefits.

### Other Resources:

- [The Walking School Bus](#): Combining Safety, Fun and the Walk to School<sup>8</sup>
- [Step by Step: How to start a walking school bus at your school<sup>9</sup>](#)

<sup>1</sup> [NHTSA Walking School Bus](#)

<sup>2</sup> [SDOT Blog](#)

<sup>3</sup> [King County Metro SchoolPool](#)

<sup>4</sup> [Sammamish SchoolPool](#)

<sup>5</sup> [Bellevue SchoolPool](#)

<sup>6</sup> [Redmond SchoolPool](#)

<sup>7</sup> [NHTSA Walking School Bus](#)

<sup>8</sup> [The Walking School Bus](#)

<sup>9</sup> [Step by Step: How to Start a Walking Bus at Your School](#)

## SAFE ROUTES TO SCHOOL

**Project Name:** Safe Routes to School

**Cost Range:** [\\$<sup>10</sup>](#) (Less than \$10,000)

### Description:

Safe Routes to School/Transit are community programs that encourage children to walk, bike, or use transit to get to school. Through education, incentives, and improved infrastructure, it not only promotes active transportation but also enhances street safety around school campuses.



Photo Source: [Seattle Safe Routes to School<sup>11</sup>](#)

### Examples in King County:

- [Seattle Safe Routes to School<sup>12</sup>](#): Seattle Department of Transportation (SDOT) has a five-year Safe Routes to School (SRTS) action plan that provides near term recommendations and strategies to promote active transportation as a form of commuting among students. SDOT has partnered with several elementary schools to implement infrastructure and education training to students to promote walking and biking in neighborhoods surrounding the schools.
- [Kirkland Safer Routes to School Action Plans<sup>13</sup>](#): The City of Kirkland has adopted a Safer Routes to School (SR2S) Action Plan to address population growth, increased traffic near schools, and improve school safety. Kirkland's SR2S Action Plan developed a framework for implementing SR2S projects and educational initiatives. Through the Action Plan, Kirkland has created several project recommendations such as sidewalk and crosswalk improvements based on high, medium, or low priority.
- [School Streets, Madison Middle School<sup>14</sup>](#): In West Seattle, Madison Middle School has a designated "School Street". The School Street is closed to vehicle traffic during school hours on school days and is only open to families walking, rolling, or biking. Currently, the School Street program has three permanent school streets and over a dozen schools participating in the program.

### Researched Benefits:

- [CMF Clearinghouse<sup>15</sup>](#) – Crash Modification Factor (CMF) 0.87 = Reduced vehicle/bicycle, vehicle/pedestrian crash types of all severities by 13%.

### Other Resources:

- [Washington State Safe Routes to School Program<sup>16</sup>](#)

<sup>10</sup> [NHTSA Safe Routes to School](#)

<sup>11</sup> [Seattle Safe Routes to School](#)

<sup>12</sup> [Seattle Safe Routes to School](#)

<sup>13</sup> [Kirkland Safer Routes to School Action Plan](#)

<sup>14</sup> [Seattle School Streets](#)

<sup>15</sup> [CMF ID: 2200, Pedestrian and Bicyclist Safety Effects of the California Safe Routes to School Program \(2008\)](#)

<sup>16</sup> [WSDOT Safe Routes to School](#)

# ENGINEERING RELATED



**Project Name:** Rechannelization/Road Diets/Complete Streets

**Cost Range:** \$\$\$\$<sup>17</sup> (\$10,000 to greater than \$100,000)

**Description:**

Complete Streets are planned or designed to be safer and more accessible for users of all types including people walking, biking, rolling, taking transit or driving. This may involve implementing a road diet or rechannelization to reduce the number of through lanes, calm traffic, and provide space for parking and other modes of travel.

A road diet is a treatment that typically involves converting an existing four-lane undivided roadway to a three-lane roadway consisting of two through lanes and a center two-way left turn lane.<sup>18</sup>

Rechannelization is a broader term that refers to any change in how the lanes are organized or used on a roadway. It includes road diets but can also mean lane additions, changes in turn lane configurations, or adjusting lane widths.

**Examples in King County:**

- [\*\*Seattle Stone Way Rechannelization\*\*](#)<sup>20</sup>: In 2010, Seattle published a rechannelization of Stone Way. Stone Way was a four-lane roadway with no bike lanes and several unmarked crosswalks. In 2007, the Seattle Bicycle Master Plan identified Stone Way for bicycle facilities and the roadway needed updated paving. The city found that speeds and volume decreased on the roadway after the rechannelization or road diet while bicycle traffic increased by 35%.
- [\*\*City of Renton South 7th Street Corridor Improvements\*\*](#)<sup>21</sup>: The City of Renton will be constructing a multi-use path, intersection improvements, and bicycle facility improvements along the S 7th Street Corridor. The improvements include separated walking and biking facilities, green bike lanes, and crosswalk improvements. The project incorporated complete street designs and aligns with City [complete street policy](#)<sup>22</sup>.
- [\*\*King County 16th Avenue SW\*\*](#)<sup>23</sup>: King County will begin construction on 16th Avenue SW for a road diet, reducing the existing roadway from 2 lanes per direction to one lane per direction with a center turn lane and will implement new bike lanes.
- [\*\*Shoreline Richmond Beach Road Rechannelization\*\*](#)<sup>24</sup>: In 2019, Shoreline completed construction of rechannelization on Richmond Beach Road. The previous roadway configuration was 2 lanes per direction with a center turn lane but has since been reduced to one lane per direction with a center turn lane and bike lanes. The project goal is to address safety concerns, and the city is monitoring collisions, speeds, and volumes on an ongoing basis.



Photo Source: [FHWA Proven Safety Countermeasures](#)

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<sup>17</sup> [How Much Does a Road Diet Cost?, FHWA-SA-16-100, \(2016\).](#)

<sup>18</sup> [FHWA Road Diets](#)

<sup>19</sup> [Seattle Stone Way Rechannelization](#)

<sup>20</sup> [Seattle Stone Way Rechannelization](#)

<sup>21</sup> [South 7th Street Corridor Improvements](#)

<sup>22</sup> [City of Renton Complete Streets Policy](#)

<sup>23</sup> [Seattle 16th Avenue SW Pedestrian Safety Improvements & Traffic Calming Project](#)

<sup>24</sup> [Shoreline Richmond Beach Road Rechannelization](#)

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### Researched Benefits:

- [Federal Highway Administration \(FHWA\)](#)<sup>25</sup>: Converting traditional or flush buffered bicycle lanes to a separated bicycle lane with flexible delineator posts can reduce crashes up to 53% for bicycle/vehicle crashes.

### Other Resources:

- [FHWA Road Diets \(Roadway Reconfiguration\)](#)<sup>26</sup>
- [FHWA Road Diet Informational Guide](#)<sup>27</sup>
- [Safe Transportation for Every Pedestrian: Road Diets](#)<sup>28</sup>

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<sup>25</sup> (CMF ID: 5554, 2841) Evaluation of Lane Reduction "Road Diet" Measures on Crashes, FHWA-HRT-10-053, (2010).

<sup>26</sup> FHWA Road Diets (Roadway Reconfiguration)

<sup>27</sup> FHWA Road Diet Informational Guide

<sup>28</sup> STEP Road Diet

## QUICK BUILD/TEMPORARY DEMONSTRATION PROJECTS

**Project Name:** Quick Build/Temporary Demonstration Projects

**Cost Range:** \$\$<sup>29</sup> (\$10,000 to \$100,000)

### Description:

Quick Builds can be a cost-effective and time-efficient way to test certain roadway improvements in a community before committing to a full project. Often, they are used to improve the safety of those walking and biking and can be implemented rapidly to address certain concerns or mobility issues.

A Temporary Demonstration Project involves installing temporary safety improvements so that community members can experience the changes firsthand and share their feedback before any permanent decision is made.

Unlike quick-build projects, these trials are set up before jurisdictions decide on a long-term solution, allowing residents to test potential changes and help shape final plans.

### Examples in King County:

**Bellevue Demonstration Greenway**<sup>31</sup>: In 2021, Bellevue installed the East Greenway Demonstration project to improve bicycle and pedestrian connectivity. The greenway is 2 miles long and is a quick build, low-cost treatment that residents were encouraged to provide feedback on the demonstration during and after its installation. Based on feedback received, the project met all goals and needs of the community and is now funded through the Neighborhood Safety, Connectivity, and Congestion Levy to become permanent.

**Seattle Sidewalk Development Program**<sup>32</sup>: The Seattle Sidewalk Development Program is a program that aims at improving and building sidewalks in the city and providing connections to destinations. The program is funded by the Seattle Transportation Levy and implements quick build neighborhood walkways. The quick build walkways are primarily placed on local streets and are "at grade" asphalt or concrete sidewalks separated from the roadways with delineators and bollards.

### Researched Benefits:

- [Easy Bellevue Demonstration Greenway](#)<sup>33</sup> – This project showed a decrease in the percentage of drivers traveling faster than 25 MPH, a 160% increase in bicycle traffic, and a 18% increase in pedestrian traffic

### Other Resources:

- [Safety Demonstration Projects](#) - Washington State Complete Streets Leadership Academy<sup>34</sup>



Photo Source: [NACTO](#)<sup>30</sup>

<sup>29</sup> [Cal Bike Quick Builds for Safer Streets](#)

<sup>30</sup> [NACTO Quick Builds for Better Streets](#)

<sup>31</sup> [Bellevue Demonstration Greenway](#)

<sup>32</sup> [Seattle Sidewalk Development Program](#)

<sup>33</sup> [East Bellevue Demonstration Greenway Evaluation Report](#)

<sup>34</sup> [Safety Demonstration Projects](#)

## SPEED HUMPS/CUSHIONS

**Project Name:** Speed Humps/Cushions

**Cost Range:** [\\$10,000 to \\$100,000](#)

### Description:

A speed hump or cushion is a raised section of pavement about 3 to 4 inches high that stretches across the entire street. Typically used on residential streets or other low speed roads, it's designed to slow down drivers and enhance pedestrian and bicyclist safety.



Photo Source: [Kent Residential Traffic Calming Program](#)<sup>36</sup>

### Examples in King County:

[Kent Residential Traffic Calming Program](#)<sup>37</sup>: Kent, WA has a Residential Traffic Calming Program (RTCP) which is a neighborhood traffic program prioritizing safety. The RTCP addressed safety issues within a neighborhood through various countermeasure approaches such as speed bumps, raised crosswalks, radar speed signs, and bulb-outs.

[Renton Traffic Calming Program](#)<sup>38</sup>: The City of Renton's Traffic Calming Program aims to improve roadway safety through reduced vehicle speeds. Renton divides their traffic calming treatments into two tiers. Tier 1 is defined as treatments that do not physically disrupt the path of a motor vehicle such as driver feedback signs or signing and pavement markings. Tier 2 is defined as treatments that physically disrupt the path of a motor vehicle. Speed cushions are in Renton's Tier 2 category and are limited to local and collector roads with speeds of 25mph or less.

### Researched Benefits:

- [CMF Clearinghouse \(CMF ID: 132, Handbook of Road Safety Measures. Oxford, United Kingdom, Elsevier, \(2004\)\)](#)<sup>39</sup> Crash Modification Factor (CMF) Factor 0.6 = On local roads, reduction in all crash types by 40%.
- [A Matched Case – Control Study Evaluating the Effectiveness of Speed Humps in Reducing Child Pedestrian Injuries](#)<sup>40</sup>: the presence of speed humps is associated with lower odds of children being injured within their neighborhood (adjusted odds ratio [OR] = 0.47) and being struck in front of their homes (adjusted OR = 0.40).

### Other Resources:

- [Seattle's Home Zone Program: Speed Humps](#)<sup>41</sup>
- [FHWA Module 3: Toolbox of Individual Traffic Calming Measures: Speed Hump](#)<sup>42</sup>

<sup>35</sup> [SRTS Guide, Bushell, Poole, Zegeer, Rodriguez, 2013](#).

<sup>36</sup> [Kent Traffic Calming Program](#)

<sup>37</sup> [Kent Traffic Calming Program](#)

<sup>38</sup> [Renton Traffic Calming Program](#)

<sup>39</sup> [\(CMF ID: 132, Handbook of Road Safety Measures. Oxford, United Kingdom, Elsevier, \(2004\)\)](#)

<sup>40</sup> [A Matched Case-Control Study Evaluating the Effectiveness of Speed Humps in Reducing Child Pedestrian Injuries](#)

<sup>41</sup> [SDOT Speed Humps](#)

<sup>42</sup> [FHWA Module 3: Speed Hump](#)

## PEDESTRIAN SCALE LIGHTING

**Project Name:** Pedestrian Scale Lighting

**Cost Range:** \$\$\$<sup>43</sup> (\$10,000 to \$100,000)

### Description:

Pedestrian scale lighting uses low, closely spaced lights along sidewalks and walkways to enhance visibility at night. It not only improves sightlines for pedestrians, cyclists, and drivers, but also creates a safer atmosphere in shared community spaces.



Photo Source: [Seattle Urban Design Program](#)<sup>44</sup>

### Examples in King County:

- [Seattle Chinatown International District Neighborhood Lighting Study](#)<sup>45</sup>: In 2018, the Chinatown International District in Seattle developed an action plan to address lighting issues in the neighborhood to improve safety and encourage more pedestrian activity.
- [Renton Downtown Streetscapes](#)<sup>46</sup>: In 2024, Renton completed the upgrades to downtown streets and sidewalks to improve safety and create an improved pedestrian experience. The streetscape improvements include the replacement of streetlights with pedestrian scale streetlights.
- [Seattle Pedestrian Lighting Citywide Plan](#)<sup>47</sup>: The Seattle Pedestrian Lighting Plan is a citywide plan that outlines Seattle's approach to implementing pedestrian scale lighting to meet the needs of the city and improves safety, active transportation, and economic development.
- [Shoreline Streetlight Master Plan](#)<sup>48</sup>: The Streetlight Master Plan booklet describes how the City of Shoreline evaluates future street light needs. Scoring is evaluated by multiple factors, including proximity to schools, land use, existing bike and pedestrian facilities.

### Researched Benefits:

- [CMF Clearinghouse](#)<sup>49</sup> - Crash Modification Factor (CMF) Factor 0.58 = Reduced nighttime and vehicle/pedestrian crash type A (serious injury), B (minor injury), C (possible injury) by 42%

### Other Resources:

- [Federal Highway Administration \(FHWA\) Research Report: Street Lighting for Pedestrian Safety](#)<sup>50</sup>
- [WA Traffic Safety Commission report to the Legislature on Street Lighting and Safety Study](#)<sup>51</sup>

<sup>43</sup> INNOVATIONS IN LIGHTING FOR PEDESTRIAN SAFETY AND WALKABILITY, ITE Presentation, (2017).

<sup>44</sup> SDOT Pedestrian Lighting

<sup>45</sup> Seattle Chinatown International District Neighborhood Lighting Study

<sup>46</sup> Renton Downtown Streetscapes

<sup>47</sup> Seattle Pedestrian Lighting Citywide Plan

<sup>48</sup> Shoreline Streetlight Master Plan

<sup>49</sup> (CMF ID: 436, Handbook of Road Safety Measures, Elvik, R. and VAA, T. 2004)

<sup>50</sup> Research Report: Street Lighting for Pedestrian Safety

<sup>51</sup> WA Traffic Safety Commission Report to the Legislature on Street Lighting and Safety Study

## LEADING PEDESTRIAN INTERVALS

**Project Name:** Leading Pedestrian Intervals

**Cost Range:** [\\$<sup>52</sup>](#) (Less than \$10,000)

### Description:

A Leading Pedestrian Interval (LPI) is a signal operational change that allows pedestrians to cross an intersection a few seconds before it gives a green light to adjacent vehicles. This establishes the pedestrian in the crosswalk prior to permissive right turning or left turning vehicles are allowed to move. This provides better visibility of pedestrians to drivers and improves driver yielding behavior.



Photo Source: [FHWA Proven Safety Countermeasures<sup>53</sup>](#)

### Examples in King County:

- [Seattle Leading Pedestrian Intervals<sup>54</sup>](#): Leading Pedestrian Intervals are a safety countermeasure that prioritizes pedestrian right of way and safety at intersections. In 2019, Seattle adopted a policy, which requires evaluation of implementing a LPI at new traffic signals or traffic signal maintenance. Since adoption of this policy, where LPI's have been installed the city has seen a 48% reduction in pedestrian/vehicle turning collisions and a 34% reduction in serious or fatal pedestrian crashes.
- [Bellevue Safety Tools Downtown<sup>55</sup>](#): In Bellevue, a pilot project to study the effectiveness of leading pedestrian intervals in the downtown area. The study found that where LPIs are installed, a 42% reduction occurred in crashes between pedestrians and vehicles.
- [City of Redmond Safer Streets Action Plan<sup>56</sup>](#): The Safer Streets Action Plan identifies LPI's as an effective safety countermeasure to increase pedestrian visibility and is efficient with traffic signal operations. The City recognized multiple signals where LPIs could improve pedestrian safety. This plan states that implementation of LPIs can reduce pedestrian-vehicles crashes by 13% in some cases.

### Researched Benefits:

- [Federal Highway Administration \(FHWA\) Proven Safety Countermeasures<sup>57</sup>](#) – 13% reduction in pedestrian-vehicle crashes at intersections.

### Other Resources:

- [Seattle Department of Transportation \(SDOT\) Leading Pedestrian Intervals<sup>58</sup>](#)

<sup>52</sup> [Safe Transportation for Every Pedestrian – Leading Pedestrian Interval Countermeasure Tech Sheet](#)

<sup>53</sup> [FHWA Highway Safety Program - LPI](#)

<sup>54</sup> [Seattle Leading Pedestrian Intervals](#)

<sup>55</sup> [Bellevue Safety Tools Downtown](#)

<sup>56</sup> [Redmond Safer Streets Action Plan](#)

<sup>57</sup> [\(\(CMF ID: 9918\) "Safety Evaluation of Protected Left-Turn Phasing and Leading Pedestrian Intervals on Pedestrian Safety." Report No. FHWA-HRT-18-044, \(October 2018\)](#)

<sup>58</sup> [SDOT Leading Pedestrian Intervals](#)

## CURB IMPROVEMENTS (BULB OUTS AND RAMPS)

**Project Name:** Curb Improvements (Bulb outs and Ramps)

**Cost Range:** [\\$-\\$](#)<sup>59</sup> (\$10,000 to \$100,000)

### Description:

Curb Ramp: A curb ramp provides a safe and accessible transition between the sidewalk and roadway for people using wheelchairs, strollers, walkers, crutches, handcarts, bicycles, and others who may struggle with high curbs. Curb ramps offer individuals with mobility disabilities an alternative to being forced to navigate the street alongside traffic. Curb ramps should feature truncated domes, which offer a detectable warning that can be seen, felt, and heard.



Curb Extensions: Also known as curb bulb outs, shortens the distance needed to cross by extending the sidewalk. As an additional benefit, the bulb can be designed for "daylighting" (providing an easier visual of pedestrians) by restricting parking with 20 to 30 feet from a crosswalk. Curb Extensions allow pedestrians to cross the roadway in less time, decreasing the chance that they may be in conflict with oncoming traffic.



Photo Source: [NACTO Urban Street Design Guide](#)<sup>60</sup>

### Examples in King County:

- [Seattle Curb Ramp and Sidewalk Improvement Projects](#)<sup>61</sup>: Seattle Department of Transportation (SDOT) is actively maintaining and improving walking infrastructure that improves safety and comfortability through curb ramps and sidewalks. The city has allocated a budget for implementing curb ramps and improving sidewalks and currently, two specific projects are being constructed to implement ADA curb ramps and sidewalk improvements.
- [SR99/SR 516 to S 200th St – Paving & ADA Compliance](#)<sup>62</sup>: The goal of this project is to rehabilitate two miles of State Route 99 from the SR 516 intersection in Des Moines/Kent to South 200th Street in SeaTac. As a part of this process, pedestrian curb ramps will also be evaluated and updated to meet the current ADA and accessibility standards.

### Researched Benefits:

- [Pedestrian Safety Impacts of Curb Extensions: a case study](#)<sup>63</sup> – Curb extensions led to a 42.7% reduction in the number of vehicles that pass before a pedestrian can cross in the near lane, and a 33.9% reduction in the far lane

### Other Resources:

- [Federal Highway Administration \(FHWA\) Module 3: Toolbox of Individual Traffic Calming Measures: Corner Extension/Bulbout](#)<sup>64</sup>
- [Evaluation of Pedestrian-Related Roadway Measures Section 2.3: Curb Extensions](#)<sup>65</sup>

<sup>59</sup> [PEDSAFE Curb Extensions](#)

<sup>60</sup> [NACTO Curb Extensions](#)

<sup>61</sup> [Seattle Curb Ramp and Sidewalk Improvement Projects](#)

<sup>62</sup> [WSDOT](#)

<sup>63</sup> [Pedestrian safety impacts of curb extensions](#)

<sup>64</sup> [FHWA Module 3: Corner Extension/Bulbout](#)

<sup>65</sup> [Evaluation of Pedestrian-Related Roadway Measures Section 2.3: Curb Extensions](#)

## ENHANCED PEDESTRIAN CROSSING: RECTANGULAR RAPID FLASHING BEACON (RRFB) OR PEDESTRIAN HYBRID BEACON (PHB)

**Project Name:** Enhanced Pedestrian Crossing: Rectangular Rapid Flashing Beacon (RRFB) or Pedestrian Hybrid Beacon (PHB)

**Cost Range:** [\\$](#)<sup>66</sup> (\$10,000 to \$100,000)

### Description:

Signing (RRFB) or a specialized signal (PHB) that enhances the crossing for pedestrians by alerting vehicles to stop for pedestrians before they enter the crosswalk.



Photo Source: [FHWA Proven Safety Countermeasures](#)<sup>67</sup> [Photo Left]

[FHWA Pedestrian Hybrid Beacon Guide](#)<sup>68</sup> [Photo Right]

### Examples in King County:

- [Mercer Island RRFB](#)<sup>69</sup>: The City of Mercer Island has implemented several pedestrian safety improvements throughout the city that include RRFB's and pedestrian signals. The pedestrian improvements have been implemented to improve pedestrian safety and fill infrastructure gaps.
- [Shoreline Citywide Pedestrian Safety Project](#)<sup>70</sup>: Shoreline is currently constructing the Richmond Beach Road Midblock Crossing and Citywide Rectangular Rapid Flashing Beacon (RRFB) which implements pedestrian safety improvements at several intersections. The project has installed RRFBs at 11 locations, however as of February 2025, one intersection has RRFBs damaged due to a vehicle collision.
- [City of Kent 2024 Pavement Preservation Project](#)<sup>71</sup>: The City of Kent is currently improving pavement and pedestrian conditions within the City using traffic calming measures. At 132nd Avenue, new curb ramps and RRFB's will be installed to improve pedestrian crossing at this intersection.
- [Redmond Neighborhood Traffic Calming Program](#)<sup>72</sup>: The City of Redmond installed three RRFBs in 2020 through their Neighborhood Traffic Calming program, in order to improve pedestrian crossings at these specific intersections.
- [City of Woodinville New Signalized Pedestrian Crossing in Tourist District](#)<sup>73</sup>: The City of Woodinville, in partnership with King County and WSDOT, undertook a project to enhance pedestrian safety and provide connection to existing and future trails running through the Tourist District. A new Pedestrian Hybrid Beacon was installed along NE 145<sup>th</sup> St near Chateau Ste. Michelle and the Old Redhook Brewery to provide a protected crossing for pedestrian and cyclists using the new regional trail known as Eastrail.

### Researched Benefits:

- [Federal Highway Administration \(FHWA\) Proven Safety Countermeasures](#)<sup>74</sup> – 47% reduction of pedestrian crashes.

### Other Resources:

- [FHWA Proven Safety Countermeasures: Rectangular Rapid Flashing Beacons](#)<sup>75</sup>

<sup>66</sup> [NHTSA Low Cost Pedestrian Safety Zones: Countermeasure Selection Resource](#), (2023).

<sup>67</sup> [FHWA Highway Safety Program – Rectangular Rapid Flashing Beacons](#)

<sup>68</sup> [FHWA Highway Safety Program – Pedestrian Hybrid Beacon Guide](#)

<sup>69</sup> [Mercer Island Gov](#)

<sup>70</sup> [Shoreline Citywide Pedestrian Safety Project](#)

<sup>71</sup> [2024 Pavement Preservation - 116th Avenue SE near SE 223rd Street](#)

<sup>72</sup> [City of Redmond Rectangular Rapid Flashing Beacon](#)

<sup>73</sup> [City of Woodinville](#)

<sup>74</sup> [\(CMF ID: 9024\) NCHRP Research Report 841 Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments](#), (2017).

<sup>75</sup> [FHWA Proven Safety Countermeasures: Rectangular Rapid Flashing Beacons](#)

**Project Name:** Bike Lanes

**Cost Range:** [\\$1<sup>76</sup>](#) (\$10,000 to \$100,000)

**Description:**

A dedicated section of the roadway for cyclists or scooter users helps minimize conflicts between pedestrians, cyclists, and drivers. Using colored pavement within bike lanes enhances their visibility.

There are several types of bike lanes:

Protected bike lane: A lane physically separated from vehicle traffic with barriers like bollards, planters, parked cars, or curbs, offering the highest level of safety and protection.

Buffered bike lanes: A lane separated from vehicles by a painted buffer zone.

Conventional bike lane: A lane marked with white paint along the right side of the road.

Bike Boulevard: A shared road designed to prioritize cycling, featuring painted white sharrows to remind all road users to share the space.



Photo Source: [FHWA Proven Safety Countermeasures<sup>77</sup>](#)

**Examples in King County:**

- [City of Kent Cycling and Walking Guide<sup>78</sup>](#): The City of Kent developed a Cycling and Walking Guide for residents and visitors. The guide includes safety information, a list of walking and cycling facilities with available amenities, difficulty, and parking. The guide also includes a map of cycling and walking facility locations and where ADA accessible facilities are.
- [Bothell Citywide Bike Plan<sup>79</sup>](#): The City of Bothell adopted a Citywide Bike Plan to identify community needs, prioritize bike projects, and implementation plan for priority bike projects. The Citywide Plan was developed in support of the Puget Sound's Councils Active Transportation Plan objectives.
- [City of Redmond<sup>80</sup>](#): The City of Redmond is considered the "Bicycle Capital of the Northwest", due to its bicycle network and connectivity. Redmond offers several bicycle facility types, primarily shared-use paths, protected bike lanes, bike lanes, and sharrows. The City is actively improving the bicycle network such as the 156th Avenue Cycle Track project which will construct a two-way cycle track to existing bike infrastructure.
- [South Access - Surface Street Connections Project<sup>81</sup>](#): This project completed the final roadway work associated with the SR 99 tunnel and Alaskan Way Viaduct demolition projects and built new pedestrian and bicycle amenities that connect Seattle's stadiums to the waterfront. The scope of this project includes paving First Avenue South near Lumen Field, and building a new pedestrian plaza where Railroad Way South once ran between Alaskan Way and Occidental Avenue South.

<sup>76</sup> [FHWA Safety Countermeasures](#)

<sup>77</sup> [FHWA Highway Safety Programs – Bicycle Lanes](#)

<sup>78</sup> [City of Kent Cycling and Walking Guide](#)

<sup>79</sup> [Bothell Citywide Bike Plan](#)

<sup>80</sup> [City of Redmond](#)

<sup>81</sup> [WSDOT South Access – Surface Street Connections Project](#)

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### Researched Benefits:

- [Federal Highway Administration \(FHWA\) Proven Safety Countermeasures](#)<sup>82</sup> – Conversion of bike lanes to buffered bike lanes can reduce bicycle/vehicle crashes by 53%.
  - Bicycle lane additions reduce total crashes on urban 4-lane undivided collectors [and local roads up to 49% and up to 30% for total crashes on urban 2 lane undivided collectors or local roads](#)<sup>83</sup>.

### Other Resources:

- NACTO: Designing Protected Bikeways<sup>84</sup>

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<sup>82</sup> [\(CMF ID: 11296\) Developing CMFs for Separated Bicycle Lanes](#)

<sup>83</sup> [\(CMF ID: 10738, 10742\) Development of Crash Modification Factors for Bicycle Lane Additions While Reducing Lane and Shoulder Widths](#)

<sup>84</sup> [NACTO Urban Bikeway Design Guide](#)

## ACCESSIBLE PEDESTRIAN SIGNALS

**Project Name:** Accessible Pedestrian Signals

**Cost Range:** [\\$<sup>85</sup>](#) (Less than \$10,000)

**Description:** Accessible Pedestrian Signals (APS) and pushbuttons are a technology that informs pedestrians that are visually impaired an audible and vibrational queue when to safely enter the crosswalk. The audible information provided often informs the listener of the street crossing, when to walk, and more. The signs for the pushbutton can also be equipped with braille as well.



Photos Source: [Accessible Pedestrian Signal Guide<sup>86</sup>](#)

### Examples in King County:

- [SDOT APS Request<sup>87</sup>](#): Seattle Department of Transportation (SDOT) uses an online form for residents to make a request for an Accessible Pedestrian Signal. Currently, APS is only available for intersections operated by traffic signals. Additionally, the city maintains a web map of active APS' signals in the city.
- [Snoqualmie APS Policy<sup>88</sup>](#): In 2023, the City of Snoqualmie adopted an Accessible Pedestrian Signal Policy as part of its ADA Transition Plan. The APS Policy aligns with Washington State Department of Transportation (WSDOT) Local Agency Guidelines and Public Right of Way Guidelines (PROWAG) and is meant to guide the city with installing APS or modifying intersections to include APS.

### Researched Benefits:

- [Accessible Pedestrian Signal Guide<sup>89</sup>](#) - Researched effects of APS on specific crossing tasks

### Other Resources:

- [APS Guide<sup>90</sup>](#)
- [Roads' ADA Transition Plan and Accessibility Services<sup>91</sup>](#)

<sup>85</sup> [Cost Analysis of Public Rights-of-Way Accessibility Guidelines \(PROWAG\), \(2010\).](#)

<sup>86</sup> [Accessible Pedestrian Signals Guide](#)

<sup>87</sup> [SDOT APS Request](#)

<sup>88</sup> [Snoqualmie ADA Transition Plan, Appendix E.](#)

<sup>89</sup> [Street Crossing Guide](#)

<sup>90</sup> [APS Guide](#)

<sup>91</sup> [King County ADA Plan](#)

## HIGH-VISIBILITY ROAD MARKINGS AND SIGNAGE

**Project Name:** High-Visibility Road Markings and Signage

**Cost Range:** [\\$<sup>92</sup>](#) (Less than \$10,000)

**Description:**

Infrastructure designed to highlight or designate space for specific road users helps them detect each other's positions on the road. Additionally, it enhances visibility during nighttime.

It makes signs and markings more prominent, improving their visibility and readability, particularly during low-light conditions and at night.



*Photo Source: [FHWA Proven Safety Countermeasures<sup>93</sup>](#)*

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Examples in King County:

- [Bellevue Vision Zero Grant Awards<sup>94</sup>](#): The City of Bellevue was awarded two Federal Highway Administration (FHWA) grants to implement safety improvements such as bike lanes, crossings, and high-visibility crosswalks at 56 intersections. The need for high-visibility crosswalks were identified as a safety countermeasure needed at eight road safety assessments.
- [Redmond Hi-Visibility Crosswalks Pilot Project<sup>95</sup>](#): The City conducted public surveys at crosswalks with high rates of conflicts and the results of the survey determined priority locations for high visibility improvements. The City installed high visibility crosswalks at four locations and will be conducting additional surveys to gain insight into how pedestrians view the new crosswalks and visibility.
- [Bothell Citywide Pedestrian Safety Improvements Project<sup>96</sup>](#): Bothell is currently in the design phase of citywide pedestrian safety improvements at four locations. The project plans to implement Rectangular Rapid Flashing Beacons (RRFBs), high visibility crosswalks, additional signs, pavement markings, and curb ramps.

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**Researched Benefits:**

- [FHWA Proven Safety Countermeasures<sup>97</sup>](#) – High Vis crosswalks can reduce pedestrian injury crashes up to 40%.

Other Resources:

- [Evaluation of High Visibility Crosswalks Using Video Analytics - City of Bellevue<sup>98</sup>](#)
- [NACTO – An Overview and Recommendations of High-Visibility Crosswalk Marking Styles<sup>99</sup>](#)

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<sup>92</sup> [FHWA Crosswalk Visibility Enhancements](#)

<sup>93</sup> [FHWA Proven Safety Countermeasures](#)

<sup>94</sup> [Bellevue Vision Zero Grant Awards](#)

<sup>95</sup> [City of Redmond Walking Information](#)

<sup>96</sup> [Bothell Citywide Pedestrian Safety Improvements Project](#)

<sup>97</sup> (CMF ID: 4123) [The Relative Effectiveness of Pedestrian Safety Countermeasures at Urban Intersections - Lessons from a New York City Experience. \(2012\)](#).

<sup>98</sup> [Evaluation of High Visibility Crosswalks Using Video Analytics](#)

<sup>99</sup> [An Overview and Recommendations of High-Visibility Crosswalk Marking Styles](#)

## PROTECTED INTERSECTION

**Project Name:** Protected Intersection

**Cost Range:** [\\$\\$\\$](#)<sup>100</sup> (over \$100,000)

### Description:

A protected intersection uses physical barriers such as posts, bollards, or concrete structures to protect pedestrians and cyclists at road crossings.

Bike crossings are located near but still kept separate from pedestrian paths to reduce conflicts. This can also ease left turns for cyclists by offering a designated waiting area for a two-stage crossing.

The islands also serve to tighten the turn radius of vehicles in the intersection and increase the visibility of bikers and pedestrians by the time the driver pulls around the corner island



Photo Source: [Seattle Thomas Street and Dexter Avenue North](#)<sup>101</sup>

### Examples in King County:

- [Seattle Thomas Street and Dexter Avenue North](#)<sup>102</sup>: Seattle recently completed its first protected intersection. The protected intersection includes crossing upgrades for pedestrians and bicyclists to improve safety, connectivity, and accessibility. The protected intersection also closes a gap in the city's bike network.

### Researched Benefits:

- [Federal Highway Administration \(FHWA\) FHWA-HRT-23-052](#)<sup>103</sup>: Safety Evaluations of Innovative Intersection Designs for Pedestrians and Bicyclists
- [Vision Zero San Francisco Evaluation Program](#)<sup>104</sup>: In a protected intersection, 96% of drivers yield to cyclists, and 100% yield to pedestrians

### Other Resources:

- [Don't Give Up at the Intersection – National Association of City Transportation Officials NACTO](#)<sup>105</sup>
- [Raised Intersections - NACTO](#)<sup>106</sup>

<sup>100</sup> [Seattle redesigns dangerous intersection for pedestrian, biker safety](#)

<sup>101</sup> [SDOT Thomas St: 5th Ave N to Dexter Ave N](#)

<sup>102</sup> [Seattle Thomas Street and Dexter Avenue North](#)

<sup>103</sup> [FHWA-HRT-23-052: Safety Evaluations of Innovative Intersection Designs for Pedestrians and Bicyclists](#)

<sup>104</sup> [Vision Zero Safe Streets Evaluation Program: Reporting the Results](#)

<sup>105</sup> [Don't Give Up at the Intersection](#)

<sup>106</sup> [Raised Intersections](#)

## NEIGHBORHOOD TRAFFIC SAFETY PROGRAM

**Project Name:** Neighborhood Traffic Safety Program

**Cost Range:** Varies

**Description:**

A program that utilizes low-cost countermeasures and community engagement to raise awareness around safety in neighborhoods and reduce crashes. Some programs may implement a point-based system to communicate if engineering countermeasures may be implemented.



Photo Source: [Bellevue Local Street Speed Limit Reduction](#)<sup>107</sup>

**Examples in King County:**

- [Shoreline Neighborhood Traffic Safety Control](#)<sup>108</sup>: In 2001, the City of Shoreline developed a neighborhood traffic safety program that would address concerns of speeding and safety on local roads. In 2020, the city reevaluated the program and decided to include all city roads in the traffic safety program.
- [Federal Way Neighborhood Traffic Safety Program](#)<sup>109</sup>: The City of Federal Way created a Neighborhood Traffic Safety Program to provide neighborhoods with opportunities to reduce traffic speeds, cut traffic, and improve safety. The NTSP evaluates the need and effectiveness of speed reducing and traffic calming countermeasures.
- [Kirkland Neighborhood Traffic Control Program](#)<sup>110</sup>: In 1993, Kirkland created the NTCP to address residents' concerns for high speeds and volumes on local streets. The program provides solutions such as speed reducing and traffic calming countermeasures.

**Researched Benefits:**

- [17% reduction in fatal and serious injury crashes in Washington State](#)<sup>111</sup>

**Other Resources:**

- [Local Road Safety Plan Template - WSDOT](#)<sup>112</sup>
- [Developing Safety Plans: A Manual for Local Rural Road Owners](#)<sup>113</sup>

<sup>107</sup> [City of Bellevue Local Street Speed Limit Reduction](#)

<sup>108</sup> [Shoreline Neighborhood Traffic Safety Control](#)

<sup>109</sup> [Federal Way Neighborhood Traffic Safety Program](#)

<sup>110</sup> [Kirkland Neighborhood Traffic Control Program](#)

<sup>111</sup> [Local Road Safety Plans](#)

<sup>112</sup> [Local Road Safety Plans Template](#)

<sup>113</sup> [Developing Safety Plans: A Manual for Local Rural Road Owners](#)

# SAFETY EDUCATION RELATED



## SCHOOL EDUCATION SAFETY PROGRAMS

**Project Name:** School Education Safety Programs

**Cost Range:** \$\$-\$\$\$ (\$10,000 to over \$100,000)

### Description:

This is a program aimed at middle school and high school students to learn safe driving, walking, biking, and rolling habits.

Programs include:

- Teen Target Zero
- [Teens in the Driver's Seat](#)<sup>114</sup>
- [Safest Ride](#)<sup>115</sup>



**Photo Source:** [King County Target Zero Education](#)<sup>116</sup>

### Examples in King County:

- [Let's Go Safety Education Program](#)<sup>117</sup>: As part of Seattle's Safe Routes to School Program, the Let's Go Safety Education Program has been shared with public schools since 2015. The Let's Go program provides students with bike safety education for 3rd through 5th grade students and students with disabilities. Lessons include helmet safety and street crossing safety for both kids biking or walking. According to the 23/24 Let's Go Evaluation Memo, approximately 70 schools completed the program, with over 11,000 students participating.
- [PedBee Education Program](#)<sup>118</sup>: Bellevue has a city pedestrian safety mascot, PedBee, who visits city schools to educate students on transportation safety including street crossing tips, understanding traffic signs, bike, and bus safety. The city also hosts a webpage for PedBee resources and educational activities.

### Researched Benefits:

- [Bicycle Safety Education for Children - Countermeasures that Work](#)<sup>119</sup>: a review of 13 educational programs among children and youth found that education programs were effective at increasing observed helmet use

### Other Resources:

- [Classroom Transit Education Program - King County Metro](#)<sup>120</sup>

<sup>114</sup> [Teens in the Driver Seat](#)

<sup>115</sup> [Safest Ride](#)

<sup>116</sup> [Snohomish County DUI & Target Zero Task Force](#)

<sup>117</sup> [Aug. 6<sup>th</sup> 2025, King County Teen Target Zero Presentation](#)

<sup>118</sup> [PedBee Education Program](#)

<sup>119</sup> [Bicycle Safety Education for Children](#)

<sup>120</sup> [Classroom Transit Education Program](#)

**Project Name:** Road Safety Audits

**Cost Range:** [\\$](#)<sup>121</sup> (\$10,000 to \$100,000)

### Description:

A road safety audit (RSA) reviews specific, often high injury, routes with a multi-disciplinary team of community members to identify hazards, obstacles, and opportunities for improvements, whether through infrastructure changes or community programs.

An RSA includes a walkthrough with residents and road users to gather input about unsafe conditions for pedestrians and cyclists to support safer street initiatives.

This feedback is then used to generate a formal RSA report which addresses the concerns of community stakeholders.



*Photo Source: [Bellevue Road Safety Assessments](#) (photo by Veronica Sullivan)*<sup>122</sup>

### Examples in King County:

- [Bellevue Road Safety Assessments](#)<sup>123</sup>: The City of Bellevue was awarded a Safe Streets for All (SS4A) grant to conduct road safety assessments (RSA) on 13 miles of the city's high injury network. The city provides opportunities for the community to join RSA events to provide input or completing an online questionnaire.
- [Redmond Safe Streets For All](#)<sup>124</sup>: The City of Redmond is partnering with the community to conduct an RSA in order to identify key transportation safety issues, with particular emphasis on vulnerable users such as pedestrians and bicyclists. The city is seeking to engage community members to join the RSA to share their thoughts, experiences and ideas.

### Researched Benefits:

- [Federal Highway Administration \(FHWA\) Proven Safety Countermeasures](#)<sup>125</sup> – 10 to 60% reduction in total crashes
- [Benefits of Road Safety Audit in the Motorizing World](#)<sup>126</sup> – Average casualty savings of 1.25 per year for audited schemes

### Other Resources:

- [Pedestrian and Bicyclist Road Safety Audit \(RSA\) Guide and Prompt List](#)<sup>127</sup>
- [Model RSA Policy](#)<sup>128</sup>

<sup>121</sup> [FHWA Highway Safety Programs](#)

<sup>122</sup> [Bellevue Road Safety Assessment](#)

<sup>123</sup> [Bellevue Road Safety Assessments](#)

<sup>124</sup> [Lets Connect Redmond](#)

<sup>125</sup> [Road Safety Audits: An Evaluation of RSA Programs and Projects, FHWA-SA-12-037; and FHWA Road Safety Audit Guidelines, FHWA-SA-06-06.](#)

<sup>126</sup> [Benefits of Road Safety Audit in the Motorizing World](#)

<sup>127</sup> [Pedestrian and Bicyclist Road Safety Audit \(RSA\) Guide and Prompt List](#)

<sup>128</sup> [Model RSA Policy](#)

## BIKE RODEO

**Project Name:** Bike Rodeo

**Cost Range:** [\\$<sup>129</sup>](#) (Less than \$10,000)

### Description:

Bike Rodeos are educational and engaging events where kids learn safe riding skills for bikes, scooters, skateboards, and roller skates. They can include safety checks, helmet giveaways, maintenance tips, obstacle courses, and road rules to help them travel safely.



*Photo Source: [SeaTac Blog](#)<sup>130</sup>*

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### Examples in King County:

- [Maple Valley Bike Challenge & Bike Safety Rodeo](#)<sup>131</sup>: The City of Maple Valley hosts an annual Bike Challenge race for children between the ages of 5 through 14. The event also includes a Bike Safety Rodeo to inform riders of bike safety tips.
- [Lake Forest Park Kids Bike Safety Rodeo](#)<sup>132</sup>: In 2021, the Lake Forest Park police department hosted a bike safety rodeo. The rodeo was aimed to promote safe bicycling to children particularly at stop signs and crosswalks. The event also included an obstacle course and included a giveaway of 25 helmets.
- [West Woodlands Elementary Bike Rodeo](#)<sup>133</sup>: In May 2025 West Woodland Elementary held a Bike Rodeo including bike activities, obstacle courses, and snacks for students and families. The Rodeo focused on bike safety and skill building by practicing hand signals, learning proper helmet fitting, and gaining valuable tips on traffic safety.

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### Researched Benefits:

- [National Highway Traffic Safety Administration \(NHTSA\) Countermeasures That Work](#)<sup>134</sup>: Can lead to up to doubling helmet use. Studies indicate bike rodeos need to be part of a larger, more comprehensive program.

### Other Resources:

- [NHTSA Cycling Skills Clinic Guide](#)<sup>135</sup>

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<sup>129</sup> [NHTSA Countermeasures That Work](#)

<sup>130</sup> [SeaTac Blog](#)

<sup>131</sup> [Maple Valley Bike Challenge & Bike Safety Rodeo](#)

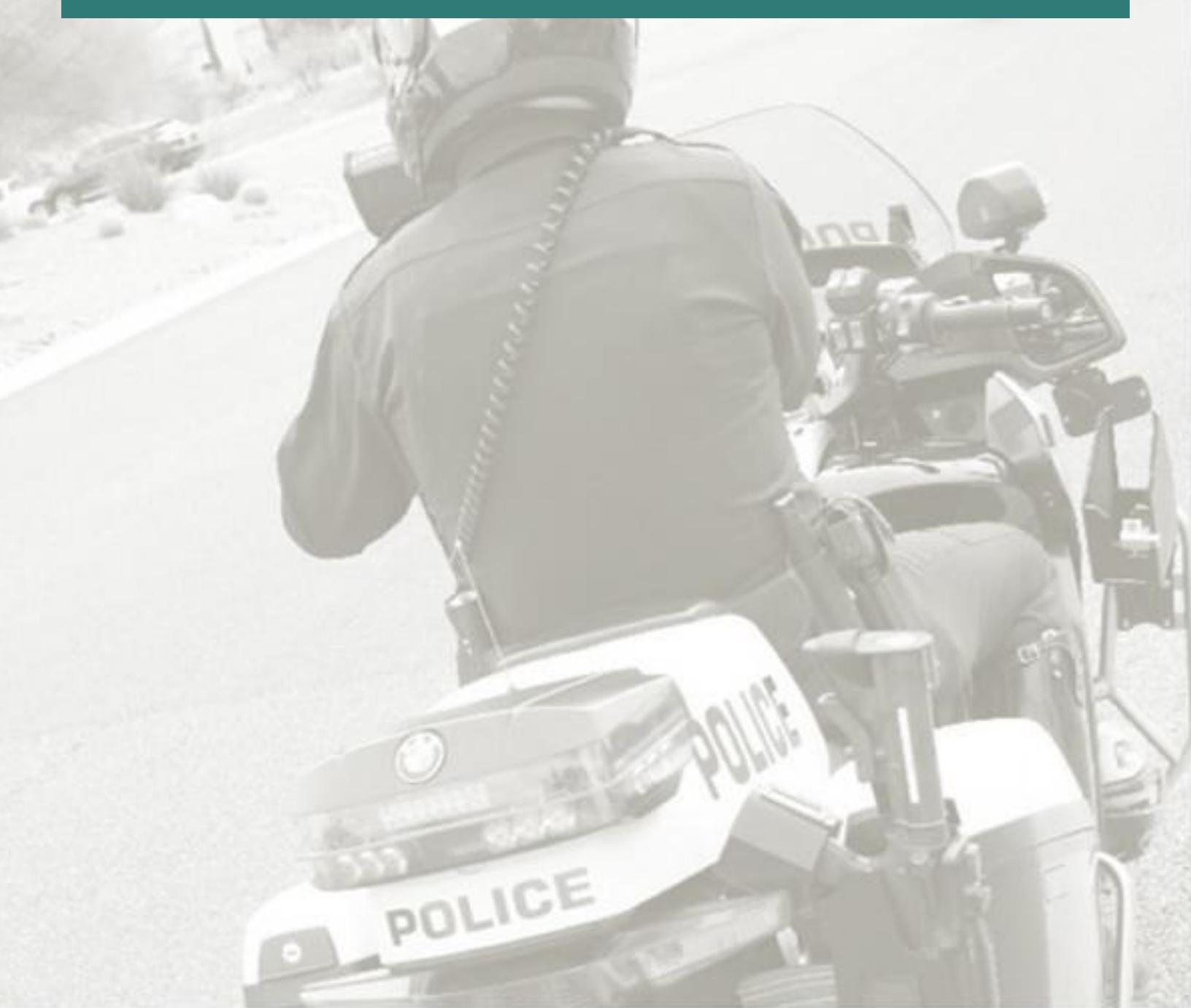
<sup>132</sup> [Lake Forest Park Kids Bike Safety Rodeo](#)

<sup>133</sup> [West Woodland Elementary Bike Rodeo](#)

<sup>134</sup> [NHTSA Countermeasures That Work](#)

<sup>135</sup> [Cycling Skills Clinic Guide](#)

# ENFORCEMENT RELATED



## AUTOMATED SCHOOL SAFETY CAMERAS

**Project Name:** Automated School Safety Cameras

**Cost Range:** \$\$\$<sup>136</sup>

**Description:**

Speed cameras installed specifically in high pedestrian areas like school zones to enforce the posted speed limit and raise awareness to pedestrian related activity.

This project requires crash data analysis, project site selection process, city council presentations, public awareness, policy updates, and many designs related items.

This program results in slower vehicles, which impacts the safety and comfort of students.



Photo Source: [Google Street View](#)<sup>137</sup>

**Examples in King County:**

- [Kenmore Automated Photo Enforcement \(KAPE\) Program](#)<sup>138</sup>: In 2023, the City of Kenmore launched the KAPE program. The KAPE program uses automated photos to enforce speeding. The program is a safety recommendation as part of the city's 2014 Pedestrian and Bicycle Safety Task Force and the program uses revenue from speeding fines to implement the city's pavement preservation and traffic safety programs. Currently, speed safety cameras are active at three schools and one intersection. The City releases annual reports on KAPE status and speeding statistics.
- [Seattle Automated Photo Enforcement Program](#)<sup>139</sup>: Since 2012, Seattle has used cameras to enforce school speed zone limits at four elementary schools and has since grown to be enforced at 15 additional schools. The school speed zone cameras operate when students arrive or leave from school. The City uses school speed zone cameras to improve safety.
- [Kirkland School Zone Speed Enforcement](#)<sup>140</sup>: Since a successful pilot program in 2019, Kirkland has installed four speed enforcement cameras within school zones in the city. This lowered the percentage of cars traveling over the speed limit in these designated school zones. The city posts an annual report of accidents and notices of infraction at each location.
- [City of Issaquah School Zone Speed Safety](#)<sup>141</sup>: The City of Issaquah installed its first school zone photo enforcement camera in 2008 to reduce speeding in the highly pedestrian trafficked area. The addition of these cameras in the school zone significantly reduced incidents of speeding and unsafe driving. 12,232 citations were issued from during 2024.

**Researched Benefits:**

- [Federal Highway Administration FHWA Proven Safety Countermeasure](#)<sup>142</sup> – In New York City, fixed units reduced speeding in school zones up to 63% during school hours.

**Other Resources:**

- [National Highway Traffic Safety Administration NHTSA - Speed Safety Camera Enforcement](#)<sup>143</sup>
- [Redmond Speed Camera Program Analysis](#)<sup>144</sup>

<sup>136</sup> [NHTSA Countermeasures That Work](#)

<sup>137</sup> [Google Street View](#)

<sup>138</sup> [Kenmore Automated Photo Enforcement \(KAPE\) Program](#)

<sup>139</sup> [Seattle Automated Photo Enforcement Program](#)

<sup>140</sup> [School Zone Speed Enforcement](#)

<sup>141</sup> [City of Issaquah Police](#)

<sup>142</sup> [Automated Speed Enforcement Program Report 2014-2017. New York City DOT, \(2018\)](#)

<sup>143</sup> [Speed Safety Camera Enforcement](#)

<sup>144</sup> [SPEED CAMERA PROGRAM ANALYSIS & RECOMMENDATIONS](#)

## SPEED MANAGEMENT PROGRAM

**Project Name:** Speed Management Program

**Cost Range:** [Varies](#)<sup>145</sup>

### Description:

Speed Management Programs aim to make changes that directly reduce the number and severity of speeding-involved crashes. Strategies include adding speed limit signs, speed feedback signs, speed bumps, and other infrastructure.

A Speed Management Program can also include enforcement (by officers or automated systems) and education strategies, including yard signs and media campaigns.



*Photo Source: [Bellevue Speed Management Plan](#)<sup>146</sup>*

### Examples in King County:

- [Bellevue Speed Management Plan](#)<sup>147</sup>: In 2024, Bellevue developed their Speed Management Plan. The Plan was created to guide the city in reducing traffic fatalities and reaching Vision Zero by 2030. The Plan provides a framework for reducing speeds on arterial roads and provides the city with a toolbox of countermeasures.

### Researched Benefits:

- [Engineering Speed Management Countermeasures](#)<sup>148</sup>: A Desktop Reference of Potential Effectiveness in Reducing Crashes November 2023

### Other Resources:

- [Federal Highway Administration \(FHWA\) Speed Management Reference Materials](#)<sup>149</sup>
- [Speed Management Action Plan Development](#)<sup>150</sup>
- [Speed Management Toolkit](#)<sup>151</sup>

<sup>145</sup> [Safe Speeds Bellevue](#)

<sup>146</sup> [City of Bellevue Speed Management Plan](#)

<sup>147</sup> [Bellevue Speed Management Plan](#)

<sup>148</sup> [Engineering Speed Management Countermeasures: A Desktop Reference of Potential Effectiveness in Reducing Crashes November 2023](#)

<sup>149</sup> [FHWA Speed Management Reference Materials](#)

<sup>150</sup> [SPEED MANAGEMENT ACTION PLAN: Development](#)

<sup>151</sup> [Speed Management Toolkit](#)

## HIGH VISIBILITY ENFORCEMENT

**Project Name:** High Visibility Enforcement (HVE)

**Cost Range:** [\\$\\$\\$](#)<sup>152</sup> (over \$100,000)

### Description:

High Visibility Enforcement (HVE) is a traffic safety strategy aimed at discouraging risky and illegal driving behaviors. This approach combines more active law enforcement efforts with public awareness campaigns to educate drivers and encourage voluntary compliance with traffic laws with the goal of making roads safer.

Enforcement is intended to be widely publicized to maximize the general deterrence of speeding. The goal is to demonstrate to the driving public that speeding is likely to be detected and is therefore not worth the risk of receiving punishment.



Photo Source: [FHWA Speed Management Practices](#)<sup>153</sup>

### Examples in King County:

- [Washington Traffic Safety Commission](#)<sup>154</sup>: The Washington Traffic Safety Commission maintains a HVE dashboard. The dashboard is based on information from law enforcement of HVE activities and includes a number of warnings and infractions related to DUI, speeding, distractions, and seat belt enforcement.
- [King County Traffic Safety Coalition](#)<sup>155</sup>: The King County Target Zero program is a collaborative group that aims to achieve Target Zero on King County roadways. The program is supported by the Washington Traffic Safety Commission which provides grant funding for projects including HVE activities including "Click It or Ticket" and "Drive Sober or Get Pulled Over."

### Researched Benefits:

- [National Highway Safety Administration \(NHTSA\) Countermeasures That Work](#)<sup>156</sup> – HVE may deter speeding behavior, but effectiveness may diminish once program HVE ends.
- [Federal Highway Administration \(FHWA\) Highway Safety Programs](#)<sup>157</sup> – HVE program led to a 27% reduction in crashes.

### Other Resources:

- [High Visibility Speed Enforcement Toolkit - NHTSA](#)<sup>158</sup>

<sup>152</sup> [NHTSA High Visibility Enforcement](#)

<sup>153</sup> [FHWA Highway Safety Programs – High Visibility Enforcement](#)

<sup>154</sup> [Washington Traffic Safety Commission](#)

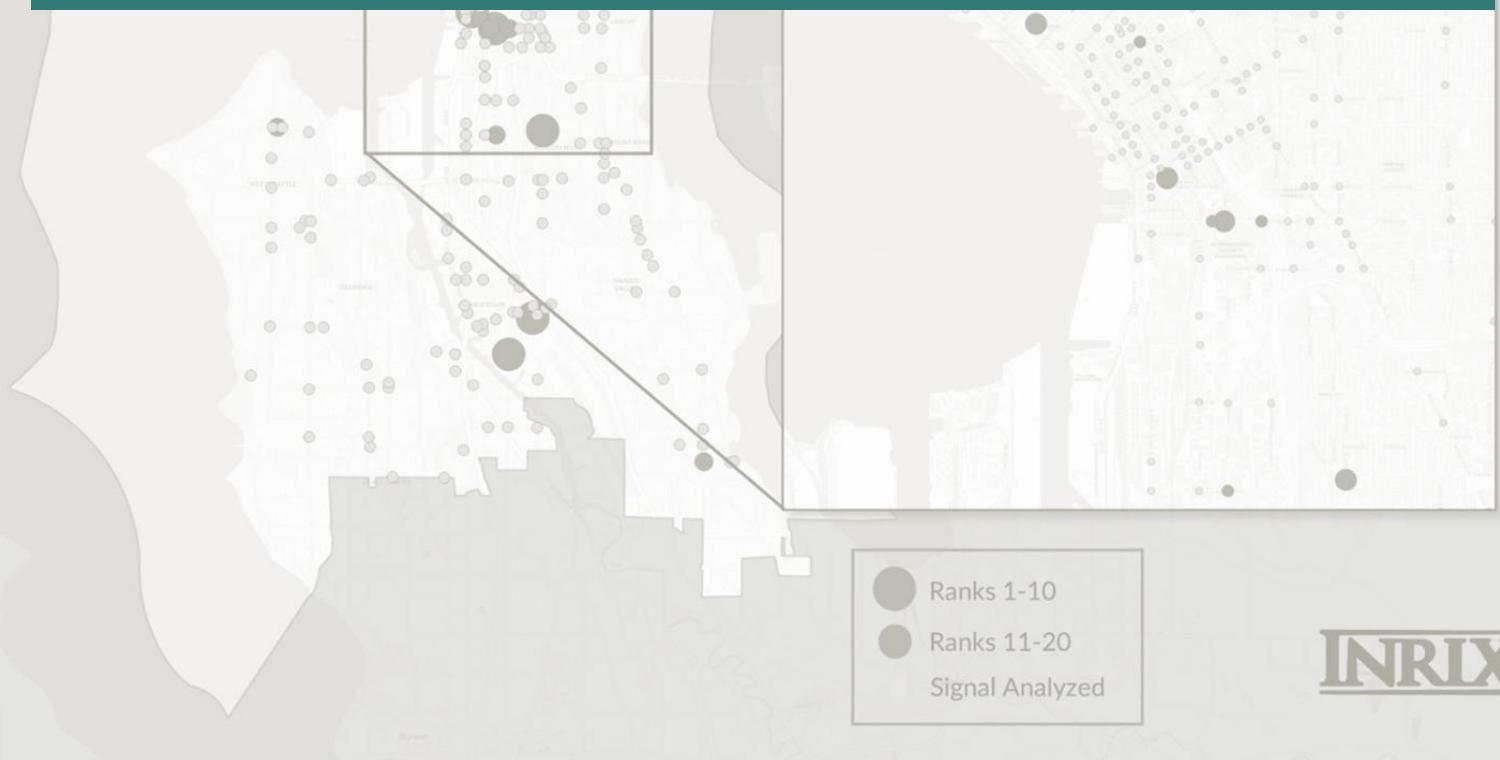
<sup>155</sup> [King County Traffic Safety Coalition](#)

<sup>156</sup> [NHTSA High Visibility Enforcement](#)

<sup>157</sup> [FHWA Highway Safety Program](#)

<sup>158</sup> [HVE Toolkit](#)

# EMERGENCY RESPONSE RELATED



## LINK CRASH AND MEDICAL DATA

**Project Name:** Link Crash and Medical Data

**Cost Range:** \$\$ (\$10,000 to \$100,000)

### Description:

Connecting information from hospitals, emergency responders, and other sources creates a powerful tool for quickly and accurately tracking collision injuries and deaths. This data not only helps prioritize safety projects but also supports the evaluation of these projects and their effectiveness.

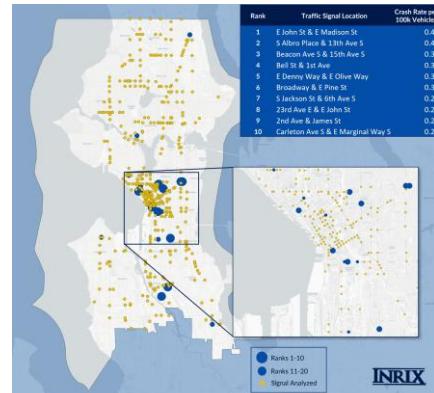


Photo Source: [INRIX](#)<sup>159</sup>

### Examples in King County:

- [Seattle Crash Data Retrieval Tool](#)<sup>160</sup>: The Seattle Police Department uses a crash data retrieval tool which uses data from vehicles Event Data Recorder (EDR) when investigating fatal or serious injury crashes. Seattle PD developed the Traffic Collision Investigation Squad (TCIS) which is the unit that uses the crash data retrieval tool.
- [Bellevue Vision Zero Collision Dashboard](#)<sup>161</sup>: Bellevue developed a collision dashboard to support its goal of reducing traffic fatalities by 2030. The dashboard is interactive and allows users to search for fatal and serious injury crash data over a 10-year period. The dashboard also includes where the city has implemented safety improvements as a result of the collisions.

### Researched Benefits:

- [The Impact of Misclassification of American Indian/Alaska Native \(AIAN\) Race in Describing the Burden of Traffic Related Injuries in Washington State](#)<sup>162</sup>
- [DOH Rapid Health Information Network \(RHINO\) Data Products](#)<sup>163</sup>
- [Linkage of the Comprehensive Hospital Abstract Reporting System \(CHARS\) and Washington Emergency Medical Services Information System \(WEMESIS\) Databases](#)<sup>164</sup>

### Other Resources:

- [WSDOT Crash Data Portal](#)<sup>165</sup>

<sup>159</sup> [INRIX](#)

<sup>160</sup> [Seattle Crash Data Retrieval Tool](#)

<sup>161</sup> [Bellevue Vision Zero Collision Dashboard](#)

<sup>162</sup> [The Impact of Misclassification of AIAN Race in Describing the Burden of Traffic Related Injuries in Washington State](#)

<sup>163</sup> [RHINO Factsheets](#)

<sup>164</sup> [Linkage of CHARS and WEMESIS](#)

<sup>165</sup> [WSDOT Crash Data Portal](#)