SafeRoutes

Eugene-Springfield Safe Routes to School

Guide to Using and Adapting the
Eugene-Springfield Safe Routes to School
Infrastructure Prioritization Tool

Introduction

With enormous need and limited funding for infrastructure improvements to make walking and biking to school safer for students, infrastructure needs must be prioritized for implementation. Without an objective means of doing so, priority may be given to issues raised by community members in a position to organize or those identified by staff members who live in and know the problems of a certain neighborhood, regardless of whether the projects raised are those most urgently needed. The Eugene-Springfield Safe Routes to School (SRTS) team created the Infrastructure Prioritization Tool, with input from agency partners, in order to objectively identify those projects that would address the worst infrastructure gaps in terms of safety and equity for students using active transportation for their school commute. The tool allows the user to rank multiple infrastructure needs around schools based on assessments of safety, equity, proximity to a school, additional benefits of a project and other factors. Use of the tool results in a spreadsheet of projects whereby every infrastructure need, or project, is assigned a score. As such, the spreadsheet can easily be modified or sorted by project type to find the best fit for a particular funding opportunity. The tool doesn't require specific computer software and can be used by a lay person with basic computer skills.

This document is meant to serve as a guide to use the tool and, if desired, to modify the tool for use in different communities. The tool can easily be adapted for use in any community in that the weight of the factors can be modified to match the values of your community and information sources can be substituted for those used in the Eugene-Springfield area.

Using the Tool

To begin using the tool, modify or use the existing scorecard and spreadsheet as they are. Next, select projects to score from Safe Routes to School plans, walkabouts around schools or from needs previously identified by the local jurisdiction. Note that only a problem, or infrastructure gap, rather than a solution must be identified in order to score a project. Once infrastructure needs are identified, follow the process described in the remainder of the guide to score and rank projects. This guide is based on the availability of online tools like Google Maps as well as tools that may not be available everywhere. If using this tool outside of Lane County, Oregon, there may be proxies for some of the resources used in the original tool.

The spreadsheet developed for use by the Eugene-Springfield SRTS team automatically adds the results from the columns shaded with colors (rather than grayscale), which correspond with the groups of measures described in this guide. The other columns within each section do not auto-sum because they hold raw data along with the assigned points, such as road width, number of crashes within a block, etc. that could be useful at a future date. If it does not seem worthwhile to retain raw data, the entire spreadsheet could be set to calculate automatically.

Part 1: Project Overview

The items in the Project Overview section are intended solely to provide information about the potential project and are not assigned a score. Information follows about the items in that section.

District, Project Title, and Focus School

The ***project title*** should include both a location identifier and what need the project will address, such as "pedestrian facilities" or "crossing," so that stakeholders utilizing the spreadsheet can more easily search for certain project types. Labeling the school district is helpful if there is more than one in the same spreadsheet so that data can be sorted by district.

The ***focus school*** is defined as "the closest school that contains the project within its boundary." The focus school is used for the equity scoring, to sort projects by school and to answer several questions including: "does the project shorten route" and "proximity to school." In some cases, an infrastructure gap may be closer to a school that it doesn't serve than the school that it does serve. It is important to know the attendance boundaries so that the project is assigned to the school for which it will actually be used. Find out which school boundaries a project falls in by looking at boundary maps for the school districts or using a tool like the RLID Quick Look provided for Lane County schools.

Project Type, Schools and Populations Served, Location Description, Problems/Solutions and Jurisdiction

The following information is not used for scoring and is purely to provide more information on the project that can be useful when multiple people are viewing the scoring spreadsheet in order to help them better understand the issue.

Determine under what ***project type*** the given infrastructure need falls. Types include bike, pedestrian, school zone (i.e. improving school zone signage), or enhanced crossing projects. This item allows for sorting for all the potential crossing projects, for example, if there is funding available solely for crosswalks.

The ***"Schools and Populations Served"*** section captures which schools are most affected by this project. Using the process for finding the focus school, list all schools served (elementary, middle and high school). Number of students served includes all the students at those schools and can be collected from the school district, potentially on the district's website. In a broad sense, these numbers illustrate the number of students the projects will benefit. However, because the project may not be on many of these students' route to school, the measure is not scored.

Give a specific ***location description*** of the project to help orient other involved stakeholders that have not visited the project site themselves.

Next, describe the ***problem*** and, if identified, the ***solutions*** for the infrastructure gap.

Next, determine the ***jurisdiction*** of the streets involved in the project by looking at a jurisdiction map, if available (ex: Lane County Jurisdiction Map[1])

Part 2a: Safety - Impact on Network Connectivity

This section asks about the area surrounding the project, specifically regarding safety and mobility barriers and whether or not the project shortens students' route.

Scoring for the significance of the barrier or gap illustrates whether or not an active transportation user could physically use this route without improvements and whether there is a considerable threat to their safety if someone does use the route as is. Base the scoring of this section on the examples that follow. A passable barrier or gap without limitations could be a road with a marked crosswalk. A passable gap with safety and mobility limitations could be a high speed and high volume road without any marked crossings. An unpassable gap could be privately owned walkway to the school with a locked gate or a railroad or freeway without a crossing.

When considering whether or not a project shortens the route, use a map to determine if a student travelling to the focus-school could have a shorter route to their destination with an infrastructure improvement. Projects that could shorten a route receive a higher score, as a shorter, safe route is more likely to be used than a longer route.

Part 2b: Safety - Level of Risk

This section considers variables that lessen or heighten the risk to active transportation users. These include posted speed limit, width of the roadway, past reported crashes, number of lanes, lighting and road classification. These factors are included because higher speeds, wide roadways and poor lighting are correlated with the level of risk to safety for people walking and on bikes. For

example, a report conducted by the National Complete Streets Coalition found that, "more than half of all pedestrian fatalities occur on arterial roads, and over 60 percent of these tragedies occur on roads with speed limits of 40 mph or higher."[2] When people walking are struck by a car, fatalities occur about 85 percent of the time if the car is traveling 40 mph or more; when cars are traveling 20 mph, fatalities occur 5 percent of the time.[3] Areas with more than one crash within the block receive more points because multiple crashes are an indicator that the crashes could be related to street design, rather than solely human error.

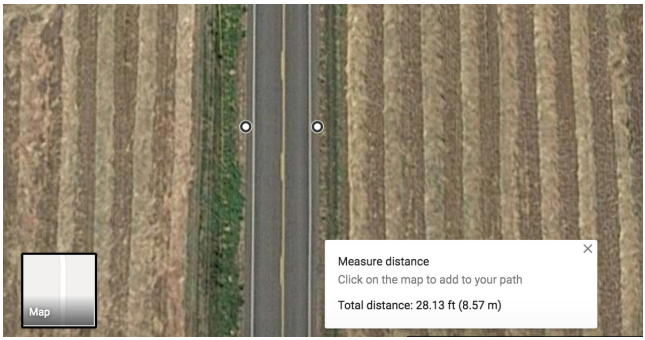
These safety measurements can be taken from Google Maps, in-person observations, and through various data and resource maps. Details follow.

Speed, Number of Lanes

If not assessing the posted speed in person or through a jurisdictional map or database, Google Maps' **street view** can provide an initial view of the highest posted speed in the area (scroll through until finding a speed limit sign). In the photograph above, the speed, number of lanes and lighting can be determined. Use the posted speed and the number of lanes closest to the potential project site. Alternatively, if assessing an entire corridor, use the highest posted speed and greatest number of lanes in order to capture the area of greatest risk. Do note the year that Google captured the image, as it may be unreliable if too out of date. It is best to field check all data if possible.

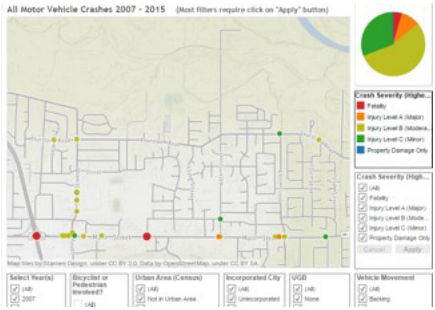
Total Width of Road

Use the "measure distance" tool in the **satellite** view of Google Maps over the street. Zoom in and find a location at the project site where there is a visible view of both curbs. Measure the distance from curb-to-curb to get the street width. Here is a photograph showing the measuring tool on Google Maps.



Street Lighting

If not assessing in person, in Google Maps use the **street view** feature as shown previously to determine whether or not there is lighting along the road near the project site.

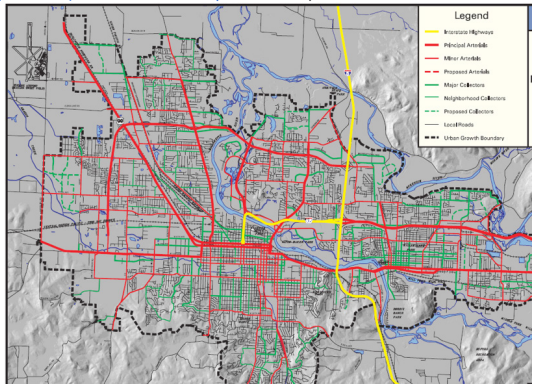


Bicycle/Pedestrian Crashes Within the Block

Find your city's crash data to determine the bicycle/pedestrian crashes score. Determine the number of crashes involving people walking and on bikes within one block of the proposed project site. Bicycle/pedestrian crashes can be found on the Lane Council of Governments (LCOG) crash data portal[4], pictured above.

Road Classification

Using a road classification map for your city (such as this Road Classification map from LCOG for Eugene, Oregon, also shown to the right), identify the street type.



Part 2c: Safety-Crossing/Pedestrian/Bike Project

The next questions are divided into three sections based on whether the barrier/gap is related to crossing, bike or pedestrian infrastructure. A bike project is any project that is focused on enhancing a bike route such as adding bike infrastructure like buffered bike lanes. A pedestrian project is any project that focuses on improving a pedestrian route along the length of a route (i.e. sidewalks, separated paths), rather than just at a crossing.

After determining which category or categories the project falls under (projects that include multiple improvements may fall under multiple types and therefore would be scored for both or all), score the projects based on the specified measures. Use a mapping program and/or personal observations to score this section.

On the next page are examples from the spreadsheet of infrastructure needs from Eugene 4J school district near North Eugene High School. The first infrastructure need on Grove Street was scored for people both walking and biking, as the roadway was an unimproved, County-owned road leading directly to

an elementary school that does not include pedestrian facilities and has a bike lane just on one side of the street. The second infrastructure need listed is a controlled intersection where many crashes involving people biking and walking have occurred. At this location, a five-lane arterial with a freeway onramp and off ramp, fast food and other retailers and a transit station intersects a neighborhood collector with three schools. The intersection is dangerous for people crossing as well as for people walking and biking on either of the streets leading up to the intersection, and some of the possible solutions being considered included improvements that extended beyond the intersection itself, so it was scored for all three. The final project showed below for North Park Avenue refers to a location where an overpass could be built over a highway where no crossing currently exists. The crossing would allow people to avoid using a dangerous arterial for walking and biking. As such, the infrastructure need was scored for crossing, bike and pedestrian projects.

Focus School for Data Collection	Project Title (Name, location)	Project Type (Enhanced Crossing, Traffic Calming, School Zone, Ped Facility, Bike Facility, Lighting, Other)	Crossing Projects Only	Distance from Nearest Enhanced Crossing on That Street (crossing projects only)	Pedestrian Projects Only	Shoulder or Sidewalk (pedestrian projects only)	Bike Projects Only	Bike Facilities (bike projects only)
North Eugene High School	Grove Bike/Ped Improv	Bike Facilities, Ped F	0	skip	10	10 - none	7	7pts= un-buffered lanes
North Eugene High School	River Road/Silver Inters	Enhanced Crossing/	1	1 - <1/8 mi - there is a light	0	skip	0	skip
North Eugene High School	North Park Avenue Ove	Enhanced Crossing/	10	10pts= >1/4 mile	1	1- complete side	7	7pts= un-buffered lanes

Crossing Projects Only

Use a distance measurement tool like on Google Maps to measure from the project site to the nearest enhanced crosswalk along the project's street. Crossing projects without any nearby crossing options will receive more points than those that are near or at an existing enhanced crossing. Note that the nearest crossing must be on the same street, i.e. meeting the same need, as the site being scored.

Pedestrian Projects Only

Score based on whether a complete sidewalk exists on both sides of the street, if there are gaps in the sidewalk, if there is a walkable shoulder, or if there is a viable place for someone to walk.

Bike Projects Only

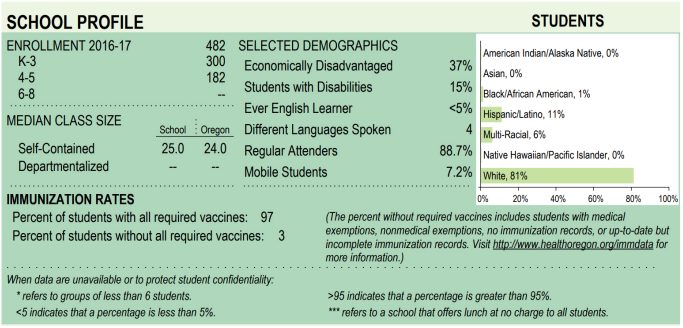
When scoring the safety of existing bike infrastructure, consider the street as a whole, rather than just the bike facilities. For example, a low-volume, low-speed, local street could still receive a low score (meaning that it is fairly safe to bike on) even if it doesn't have bike facilities. This is because the street is relatively safe and comfortable to bike on as compared to a high speed, high volume arterial road with a bike lane.

Part 3: Equity

The equity score is an attempt to address the issue of disproportionate crash rates among minority and low-income populations seen in the United States.[5] Schools with more students who are low-income, minority, English language learners and with disabilities will receive higher scores in this section so that projects serving those students can be prioritized. The equity section is based on the student demographics of the focus school and, to a lesser degree, the surrounding neighborhood. As such, unlike other sections, the equity score is likely to be the same for all the projects located around a particular school.

Student Population

Your state Department of Education may have relevant student data for this section. In Oregon, this information can be retrieved from the Oregon Department of Education's Report Card Portal.[6] Here, the percentage of "economically disadvantaged" students, English language learners, students with disabilities, and persons not identified as "white" from the school of choice can be collected. This image on the right is an example of Thurston Elementary School's 2016-2017 report card.



SCHOOL PROFILE

ENROLLMENT 2016-17	
K-3	300
4-5	182
6-8	--

MEDIAN CLASS SIZE	School	Oregon
Self-Contained	25.0	24.0
Departmentalized	--	--

SELECTED DEMOGRAPHICS	
Economically Disadvantaged	37%
Students with Disabilities	15%
Ever English Learner	<5%
Different Languages Spoken	4
Regular Attenders	88.7%
Mobile Students	7.2%

STUDENTS

American Indian/Alaska Native, 0%
Asian, 0%
Black/African American, 1%
Hispanic/Latino, 11%
Multi-Racial, 6%
Native Hawaiian/Pacific Islander, 0%
White, 81%

0% 20% 40% 60% 80% 100%

IMMUNIZATION RATES

Percent of students with all required vaccines: 97
Percent of students without all required vaccines: 3

(The percent without required vaccines includes students with medical exemptions, nonmedical exemptions, no immunization records, or up-to-date but incomplete immunization records. Visit http://www.healthoregon.org/immdata for more information.)

When data are unavailable or to protect student confidentiality:
** refers to groups of less than 6 students.*
<5 indicates that a percentage is less than 5%.
>95 indicates that a percentage is greater than 95%.
**** refers to a school that offers lunch at no charge to all students.*

Neighborhood

If it exists, use a measure for geographic equity along with the school demographics, as the students might not live in the neighborhood surrounding the school, so the student population may be different than the rest of the population served by the project.

Information regarding neighborhood health for projects in Lane County, Oregon comes from Lane County Public Health's Health Mapping Tool.[7] On the next page is a picture of the map showing that the region where Thurston elementary is located is ranked 61 out of 144 neighborhoods for overall health. The "Overall Rank" measure on this tool compiles multiple factors of health and advantage or disadvantage that the residents might be experiencing. The intention of this measure is to prioritize projects located in the least healthy neighborhoods because increasing safe walking and biking infrastructures can lead to healthier lifestyle choices and improve the overall health of that specific community.

Part 4: Mutual Benefit

This portion of the tool is intended to give additional points to those projects that would be used more than others. As such, it is a measurement of destinations that are located near and would be served by the project like bus stops, parks, faith centers, retail outlets and multi-family housing units. Use the ***measure distance tool*** in Google Maps to score this section, and scan the area for anything within ⅛ mile (660 ft.) of the project site. Assign one point, up to a maximum of ten points, for each bus stop, faith center, park, retail store, or other significant destination or source of travel located within 660 ft. of the site.

Part 5: Proximity to School

Additional weight is given for infrastructure needs closest to a focus school because that project is likely to be used by more students. Projects located adjacent to the school will receive more points than projects located farther away from the school. Again, use the distance measuring tool to measure the distance to the focus school.

Part 6: In a Plan/Approved

A project that has already been included in a plan is one for which there is demonstrated need, that has been vetted and therefore is more likely to happen quickly, if funded. The plan could be a Safe Routes to School plan, a Transportation System Plan or another plan. Search local plans for projects in the area to see if the barrier and a solution are identified in a plan.

Part 7: Final Score

Upon completion of the form, add up all of the points within each section and manually place it in the shaded column at the start of the measures to get a total score. Compare your spreadsheet to the example of a completed spreadsheet (see links on the last page).

Conclusion

This tool is intended to reduce the effect of implicit or explicit biases held by decision makers and community members as they relate to important choices that affect the entire community. The tool can be adapted to meet the needs of the specific jurisdiction that is utilizing it by changing the types of variables being scored and the weights of those scores. Contact the Eugene-Springfield Safe Routes to School team with questions at ***info@eugenesrts.org.***

Links and Footnotes

Scorecard: *https://drive.google.com/open?id=1VsJvtY5lzWp9nmkj-gZJGi6ntLyxjlvD*

Spreadsheet: https://drive.google.com/open?id=1BUdjWo76xmt8zEwzxA9GyNpB-pY70za9bGvBj_v2UyOQ

RLID Quick Look: https://www.rlid.org/services/quick_look.cfm?do=quicklook.school

Jurisdiction Map: http://lcmaps.lanecounty.org/LaneCountyMaps/LaneCounty-MapsApp/index.html

LCOG crash data: http://www.thempo.org/913/Advanced-User-Data

Road Classification: http://www.lcog.org/DocumentCenter/View/47

Report Card Portal: http://www.ode.state.or.us/data/reportcard/reports.aspx

Health Mapping tool: http://www.preventionlane.org/lane-county-health-mapping-application

Completed: https://docs.google.com/spreadsheets/d/1BUdjWo76xmt8zEwzxA9GyNpBpY70za9bGvBj_v2UyOQ/edit?usp=sharing

[1] pg 3 To use Lane County Jurisdiction map, click on the Table of Contents button on the top row, then select Transportation > Jurisdiction. To the right of the Table of Contents button is the Legend button used to understand the map (it generates a different legend depending on which layers you highlight). Many streets in the core of a municipality are unmarked. Assume these are city facilities except in the case of interstate highways and some principal arterials (HWY-126, I-5) which are typically Oregon Department of Transportation (ODOT) facilities. If unsure, see ODOT's jurisdiction map. As the legend indicates, the thickest lines on the map are all ODOT facilities.

[2] pg 4 Seskin, Stefanie. "Dangerous by Design 2014 Highlights Preventable Pedestrian Fatalities." Smart Growth America. October 21, 2016. https://smartgrowthamerica.org/dangerous-by-design-2014-highlights-preventable-pedestrian-fatalities
3 pg4 Walljasper, Jay. "Zero Vision: A Plan to Make Our Roads Safe." Resilience. August 14, 2014. http://www.resilience.org/stories/2014-08-14/zero-vision-a-plan-to-make-our-roads-safe
[4] pg 5 In the Advanced User Tool deselect "all" in the "struck vehicle" category and select both bike and pedestrian "involved", then apply filters. As seen below, there was a Level C crash at this intersection, and a more serious crash only a couple blocks away.

[5] pg 8 Fox, Jenn, and Leah Shahum. "Vision Zero Equity Strategies for Practitioners." Vision Zero Network. May 3, 2017. https://visionzeronetwork.org/centering-equity-in-vision-zero

Zimmerman, Sara, Michelle Lieberman, Karen Kramer, and Bill Sadler. "At The Intersection of Active Transportation and Equity." Safe Routes to School National Partnership*, 2015. saferoutespartnership.org/resources/report/ intersection-active-transportation-equity*

[6] pg 8 Start by choosing the district that the school is located in from the tab at the top and then scrolling to the school. Then pick the school year that the information about the students should be taken from.

[7] pg 9 Select Overall Rank and zoom in on the neighborhood of the project to select the area. Pick out landmarks around the school in order to more easily find the health rank.


WALK+BIKE