City of Medford –City of Medford Schools
Baseline Data Evaluation Report

FINAL August 18, 2020

Introduction

This Case Study Evaluation measures the impacts of Oregon Safe Routes to School (SRTS) 2019-2020 Competitive Construction (Infrastructure) Grants in communities across the state. The evaluation will assess the effectiveness of individual SRTS projects, techniques, and programs designed to reduce barriers to biking and walking to and from school. Evaluation research questions include:

- What are the impacts for standalone construction grants, and combined outreach and education and construction grants?
- How do different combinations of interventions effectively address the barriers identified by communities and affect mode shift, safety and perceptions of safety, program lifespan, and equity?

The Baseline Data Evaluation Report represents the "pre-construction" data and provides an overview of existing travel conditions and school site attributes. The Baseline Data Evaluation Report is intended to contain the majority of the information needed to plan for the post-construction data collection. The baseline report summarizes the funded improvement project, demographics of affected schools, and data from Oregon Department of Transportation (ODOT) and local roadway authority crash records, parent surveys, and student travel hand tallies.

Plan for the Final Case Study Evaluation Report

The Final Case Study Evaluation Report will represent the "post-construction" data. A draft outline for this report is included in Appendix A. For data consistency, the post-construction data will be collected as soon as possible after construction is complete, likely starting in spring 2021. This will reduce weather-related impacts and also allow time during the school year for families to establish or change their travel habits. In addition to the standard parent surveys and student travel hand tallies, post-construction data collection methods for the evaluation report may also include: parent focus groups and surveys or interviews with school staff.

The Final Case Study Evaluation Report will measure shifts using the evaluation metrics laid out in this document to identify the successes of SRTS projects and provide insight on opportunities for further improvement. SRTS performance metrics measured during this evaluation process will include:

- **Mode split:** Are more students walking and biking to school after a project's completion than at the time of baseline data collection?
- **Access to safe infrastructure:** Do students have better access to sidewalks, bike lanes, or safe crossing locations on their route to school after the completion of the project?
- **Safety/perception of safety:** Do parents and students feel safer or more comfortable walking and biking to school after the project's completion?
- **Program lifespan/partnerships:** Is the SRTS program functioning efficiently and providing adequate support for partner jurisdictions, schools, and districts?

- **Equity:** Are students from a diversity of ethnic/racial and socioeconomic backgrounds benefiting from the investments being made?

In addition to reporting on grant effectiveness, data presented in the Baseline Data Evaluation Report and the Final Case Study Evaluation could be used for a variety of transportation and program planning purposes at the local level. Having a comprehensive set of quantitative data and qualitative feedback on transportation conditions and trends around these sites could help inform decisions on school/district policy, SRTS event and program planning by schools/districts/local jurisdictions, planning future infrastructure projects, as well as providing supporting documentation for future grant applications.

Baseline SRTS Snapshot: City of Medford Schools

Summary

The City of Medford has been approved for funding for projects primarily impacting three different schools in the city (Wilson Elementary, and Washington Elementary, and McLoughlin Middle School).

- Wilson Elementary School is a public school enrolling students in grades K-6, more than 95% of whom qualify for the Free and Reduced-Price Lunch Program. The school is ethnically- and racially-diverse, with a student body that is 56% white and 33% Hispanic. Additionally, 16% of Wilson students are registered as Ever English Learners.
- Washington Elementary School is a public school enrolling students in grades K-6, more than 95% of whom qualify for the Free and Reduced-Price Lunch Program. The school is ethnically- and racially-diverse, with a student body that is 53% white and 42% Hispanic. Additionally, 29% of Wilson students are registered as Ever English Learners.
- McLoughlin Middle School is a public school enrolling students in grades 6-8, more than 95% of whom qualify for the Free and Reduced-Price Lunch Program. The school is ethnically- and racially-diverse, with a student body that is 55% white and 37% Hispanic. Additionally, 19% of Wilson students are registered as Ever English Learners.

Each of these schools experiences issues with the safety and consistency of pedestrian and bike infrastructure around the school. The roads targeted for SRTS improvements do not have sidewalks on either side. As a result, students must walk in the street or through landscaped areas. Besides the lack of sidewalks, Table Rock Road and Columbus Avenue are busy arterial streets, which are barriers to walking.

The Oregon SRTS 2019-2020 Competitive Infrastructure Grant has provided funds to fill in gaps in otherwise continuous segments of sidewalk and enhance safety at crossings of busy arterial roads to provide safe walking routes to Wilson Elementary, and Washington Elementary, and McLoughlin Middle Schools. The identified projects will also provide secondary safety benefits for North Medford High, Jefferson Elementary, Kids Unlimited Charter, Central Medford High, and South Medford High schools, since they are within a one-mile radius of these schools.

The three primarily-impacted schools have not yet participated in any education and engagement activities around SRTS. However, the City of Medford recently was awarded a Non-Infrastructure SRTS Grant and hired a SRTS Coordinator who will be working with schools within the City of Medford.

Key information from parent surveys:

- Half the families surveyed at Wilson Elementary School lived within a quarter-mile of the school. However, 60% of these students use a private vehicle to get to school.
- Almost a quarter of families surveyed at McLoughlin Middle School[1] live more than two miles from the school.
- At McLoughlin Middle School, riding in a family vehicle was the most common way to get to/from school, but more than a quarter of students walk and around another quarter take the school bus.
- Among surveyed families who live within a quarter-mile of McLoughlin Middle School, all trips reported were by active modes.
- At Wilson Elementary School, 10 parents reported that they wouldn't allow their student to take the school bus, while only 8 said they wouldn't allow them to bike, and 5 prohibited walking to school.
- Parents (with students at all schools) who responded to this survey report that the most common barriers to walking/biking to school include:
    - Concerns about personal safety and criminal activity
    - Poor driver behavior near the school,
    - Lack of facilities or bike parking,
    - Lack of crossing guards
    - The greater convenience of driving and
    - Bad weather.
- At Wilson Elementary School, half of surveyed parents felt riding a bike was fun for their student, but almost all (13) felt it was healthy.
- At McLoughlin Middle School, most parents (72%) view walking/biking to school as healthy for their student, while only 36% described it as fun for their student.

Contact Information

JURISDICTION:	City of Medford
CONTACT:	Karl MacNair, karl.macnair@cityofmedford.org
SCHOOL DISTRICT:	Medford School District
CONTACT:	Amy Tiger: (541)842-1139
OTHER CONTACTS:	None

Enrollment and Demographics

Wilson Elementary School is a public school enrolling students in grades K-6, 91% of whom qualify for the Free and Reduced-Price Lunch Program. The school is ethnically- and racially-diverse, with a student body that is 56% white and 33% Hispanic. Additionally, 16% of Wilson students are registered as Ever English Learners.

[1] *McLoughlin Middle School was the only school to return enough surveys for the evaluation team to report results.*

Washington Elementary School is a public school enrolling students in grades K-6, 95% of whom qualify for the Free and Reduced-Price Lunch Program. The school is ethnically- and racially-diverse, with a student body that is 53% white and 42% Hispanic. Additionally, 29% of Wilson students are registered as Ever English Learners.

McLoughlin Middle School is a public school enrolling students in grades 6-8, 72% of whom qualify for the Free and Reduced-Price Lunch Program. The school is ethnically- and racially-diverse, with a student body that is 55% white and 37% Hispanic. Additionally, 19% of Wilson students are registered as Ever English Learners.

	WILSON ELEMENTARY SCHOOL	WASHINGTON ELEMENTARY SCHOOL	MCLOUGHLIN MIDDLE SCHOOL
ENROLLMENT	491	368	994
GRADE LEVELS SERVED AND SCHOOL TYPE	K-6, Public	K-6, Public	6-8, Public
STUDENT ETHNIC / RACIAL DEMOGRAPHICS			
American Indian/Alaska Native:	0.8%	0.5%	0.4%
Asian:	2.6%	0.5%	1.0%
Hispanic or Latino:	33.0%	41.8%	36.8%
Native Hawaiian/Pacific Island:	1.8%	1.1%	0.6%
Multiracial:	4.7%	2.4%	5.3%
Black/African American:	1.2%	0.5%	0.8%
White:	55.8%	53.0%	55.0%
PREDOMINANT LANGUAGES SPOKEN IN MEDFORD SCHOOL DISTRICT		English: 12,393 Spanish: 2,217 Tagalog: 27	
STUDENTS LIVING WITHIN 1 MILE OF SCHOOL[2]	Data not Available	Data not Available	Data not Available
TITLE 1 STATUS[3]	Yes	Yes	Yes
EVER ENGLISH LEARNERS[4]	16%	29%	19%
FREE AND REDUCED-PRICE LUNCH ELIGIBILITY	90%	95%	72%

[2] SRTS Program parent surveys, 2013
[3] Title 1 schools are schools where 40% or more of students are enrolled in USDA's Free and Reduced-Price Meals Program.
[4] Number of students who have been served or were eligible for an English language development program during 2018-19 or at any time in the past. Oregon Department of Education 18-19 SY collected May 1, 2019.

Community Context and Place Type - Wilson Elementary School

Place type describes attributes of a built environment, including: access to destinations, density, walkability, mixing of uses, and presence of transit. The evaluation team compiled Oregon Department of Land Conservation and Development's (DLCD) measures of place type for each community studied. Each attribute is rated as "Very Low, Low, Medium, or High" by block group. Place type characteristics provide important context for transportation opportunities and challenges in a community and influence the transportation decisions people make.

Wilson Elementary School is located in the City of Medford, and the block group encompasses a small area within the city limits. According to the Place Type Tool, the area surrounding Wilson Elementary School is categorized as Close-in Community, meaning it contains medium density development, and Employment, meaning the surrounding census block group generally contains more commercial than residential development, with 1,938 people residing and 1,115 people working within the census block group. The area has a high level of access to regional employment centers and destinations, and a high mix of uses; however, the overall level of street connectivity and access to transit in the area is characterized as "low."

AREA TYPE describes the role of each neighborhood district compared to the rest of the region (regional center, close-in community, suburban/town, low density/rural)	Close-In Community • Medium densities of housing and employment • Located adjacent and with good access to the region's employment center • Lower densities decrease multi-modal access to jobs
DEVELOPMENT TYPE describes more detailed physical characteristics of each neighborhood (transit supportive development, mixed use, employment, residential, rural/ low density):	Employment • Land use is dominated by commercial or industrial activities • Low diversity of land uses • Jobs/Housing balance: mostly jobs • Missing either the density or street design required of mixed use
JURISDICTION POPULATION (ACS 5-YEAR ESTIMATES):	City of Medford 80,051 people
CENSUS BLOCK GROUP POPULATION (2010):	1,938 people
NUMBER OF JOBS IN CENSUS BLOCK GROUP (2010):	1,115 jobs
ACCESS TO DESTINATIONS - describes the number of regional jobs within 5 miles:	High
DENSITY LEVEL- jobs and households per acre within ¼ mile:	Medium
DESIGN LEVEL- level of street connectivity, pedestrian-oriented street density:	Low
DIVERSITY LEVEL- Mix of housing and employment:	High
TRANSIT LEVEL- Afternoon peak hourly transit service within ¼ mile:	Low

Community Context and Place Type - Washington Elementary School

Place type describes attributes of a built environment, including: access to destinations, density, walkability, mixing of uses, and presence of transit. The evaluation team compiled Oregon Department of Land Conservation and Development's (DLCD) measures of place type for each community studied. Each attribute is rated as "Very Low, Low, Medium, or High" by block group. Place type characteristics provide important context for transportation opportunities and challenges in a community and influence the transportation decisions people make.

Washington Elementary School is located in the City of Medford, and the block group encompasses a small area within the city limits. According to the Place Type Tool, the area surrounding Washington Elementary School is categorized as a close-in community, meaning it contains medium density development and the surrounding census block group generally contains more residential than commercial development, with 1,329 people residing and 141 people working within the census block group. The area has a medium level of access to regional employment centers and destinations, and medium mix of uses; however, the overall level of street connectivity and access to transit in the area is characterized as "low."

AREA TYPE describes the role of each neighborhood district compared to the rest of the region (regional center, close-in community, suburban/town, low density/rural)	Close-In Community • Medium densities of housing and employment • Located adjacent and with good access to the region's employment center • Lower densities decrease multi-modal access to jobs
DEVELOPMENT TYPE describes more detailed physical characteristics of each neighborhood (transit supportive development, mixed use, employment, residential, rural/ low density):	Residential • Land use is dominated by housing • Low diversity of land uses • Jobs/Housing balance: mostly housing Missing either the density or street design required of mixed use
JURISDICTION POPULATION (ACS 5-YEAR ESTIMATES):	City of Medford 80,051 people
CENSUS BLOCK GROUP POPULATION (2010):	1,329 people
NUMBER OF JOBS IN CENSUS BLOCK GROUP (2010):	141 jobs
ACCESS TO DESTINATIONS - describes the number of regional jobs within 5 miles:	High
DENSITY LEVEL- jobs and households per acre within ¼ mile:	Medium
DESIGN LEVEL- level of street connectivity, pedestrian-oriented street density:	Low
DIVERSITY LEVEL- Mix of housing and employment:	Medium
TRANSIT LEVEL- Afternoon peak hourly transit service within ¼ mile:	Low

Project Description

A map of the project improvements from the City of Medford grant application is included in Appendix B.

PROBLEM STATEMENT:	The roads in this application do not have sidewalks on either side. Students must walk in the street or through landscaped areas to get to/from school. Table Rock Road and Columbus Avenue are busy arterial streets, which are especially large barriers to walking and cycling.
DESCRIPTION OF BARRIERS TO WALKING AND BIKING:	a) Several pedestrians have been involved in vehicle crashes at the intersection of Prune Street and S Columbus Avenue. b) At the intersection of Morrow Road and Velia Street, there is a need for sidewalk infill and curb ramp construction. c) W 13th Street and W 14th Street lack complete sidewalks.
PROJECT DESCRIPTION:	a) This project will consist of installation of a Rapid Flashing Beacon, as well as sidewalk and curb ramps, at the intersection of Prune Street and S Columbus Avenue. b) This project will construct 300 linear feet of sidewalk at the intersection of Morrow Road and Velia Street. c) This project will construct approximately 350 linear feet of sidewalk improvements on W 13th Street and W 14th Street.
ESTIMATED PROJECT TIMELINE:	June 2021 (a and b), December 2021 (c)
PRIORITY SAFETY CORRIDOR?[5]	Yes
OUTREACH AND EDUCATION:	The City of Medford was awarded a ODOT SRTS Non-Infrastructure grant in 2019 and hired a SRTS coordinator to conduct outreach and education with schools in the city.

[5] A road where the posted speed or 85th percentile speed of traffic is 40 mph or greater OR if and two of the following apply: posted speed limit of 30 mph or greater, more than two lanes or a crossing distance greater than 30 feet, 12,000 AADT or greater, has a demonstrated history of crashes related to school traffic.

Access Analysis for Students Walking and Biking to School

Wilson Elementary School

The project team conducted an analysis to estimate the number of people who would gain walking and biking access to Wilson Elementary when the project improvements are constructed, shown in Table 1 and Figure 1. First, the project improvements were evaluated to understand the geographic areas that would gain safe access to the school once the funded project was constructed. Next, American Community Survey (ACS) data was combined with zoning data to estimate the number of people and school-age children that live within the new access areas.

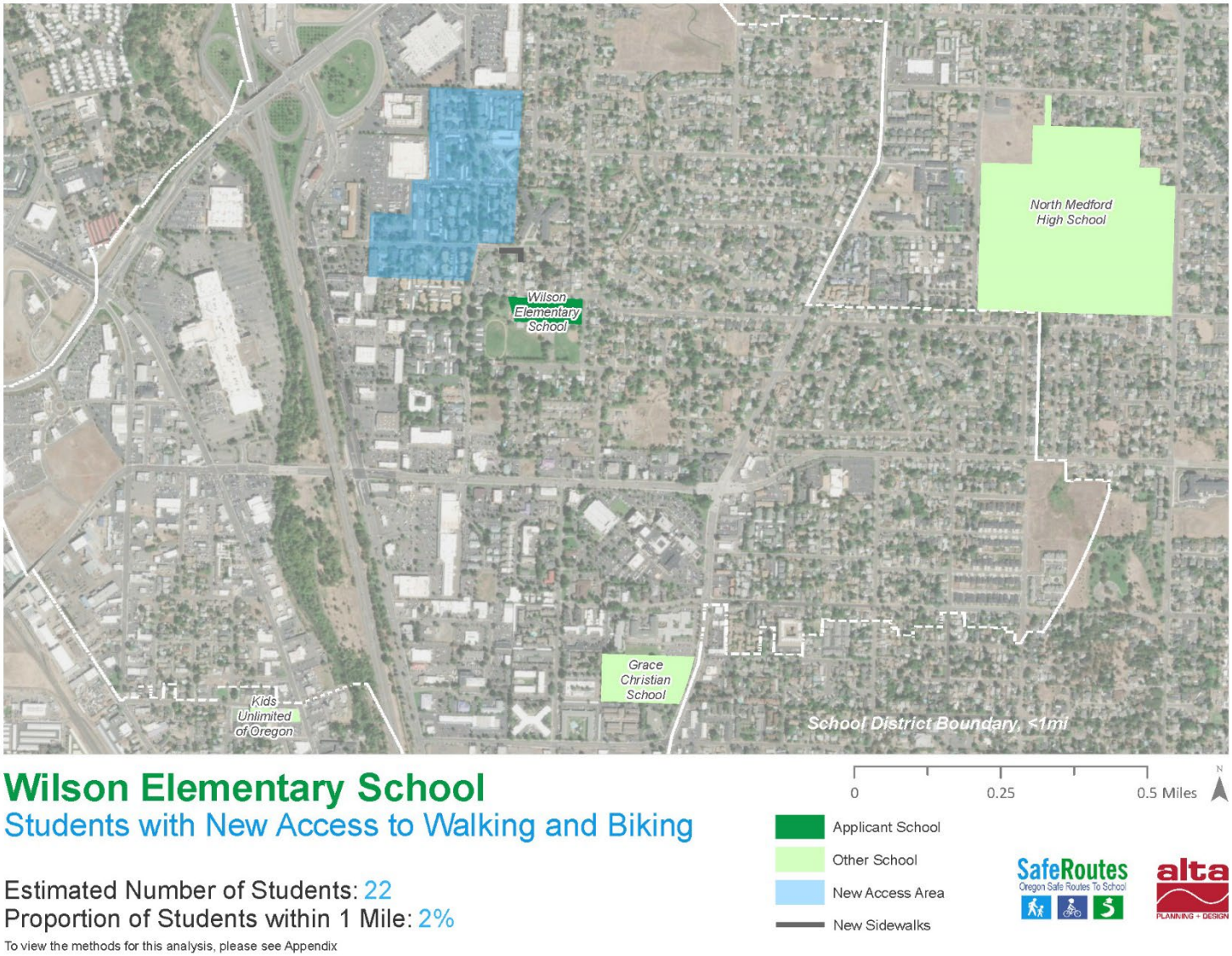
This analysis estimates that approximately 155 students, or 12% of the Wilson Elementary School student body living within a mile of the school, would gain safer walking or biking access to the school.

Table 1. Wilson Elementary Access Analysis Results[6]

METRIC	VALUE
Total Population of New Access Areas	1163
School Age Population of New Access Areas[7]	155
Percentage of Students within the School Areas Gaining Access[8]	12%

[6] New Access Area assumptions: For Wilson Elementary, the eastern access area excludes residential areas south of E McAndrews Road because the sidewalk on the south side is not ADA accessible. The western access area for Wilson High School excludes residential areas to the south because of a path that connects the school to Poplar Dr.
[7] Calculated using the proportion of school-age children (5-17 years old) within the City of Medford.
[8] The School Area is defined as the area within the school enrollment area that is within one mile of the school.

Figure 1. Wilson Elementary New Access Area for Students Walking and Biking



Washington Elementary School

The project team conducted an analysis to estimate the number of people who would gain walking and biking access to Washington Elementary when the project improvements are constructed, shown in Table 2 and Figure 2. First, the project improvements were evaluated to understand the geographic areas that would gain safe access to the school once the funded project was constructed. Next, American Community Survey (ACS) data was combined with zoning data to estimate the number of people and school-age children that live within the new access areas.

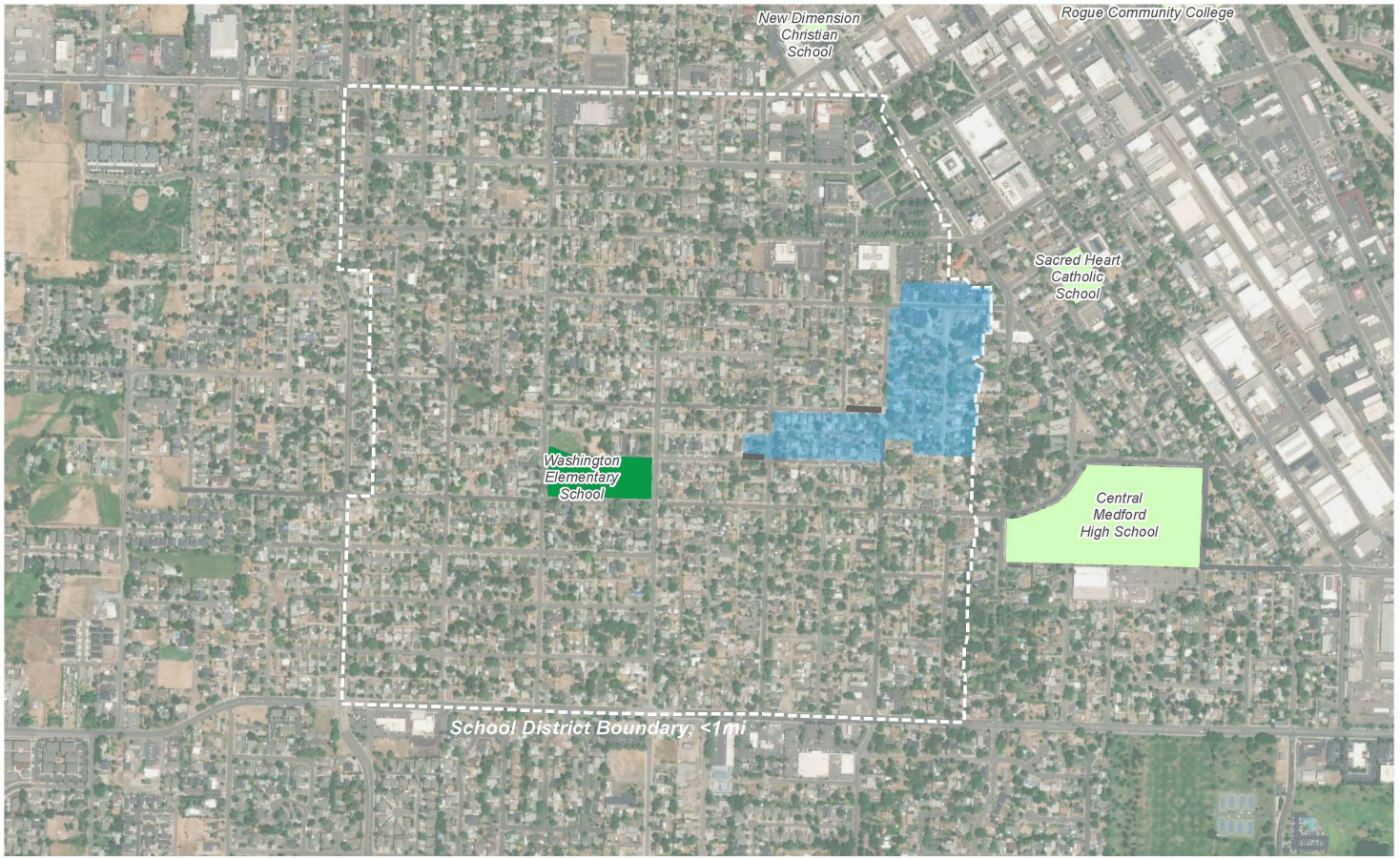
This analysis estimates that approximately 26 students, or 4% of the Washington Elementary School student body living within a mile of the school, would gain safer walking or biking access to the school.

Table 2. Washington Elementary Access Analysis Results[9]

METRIC	VALUE
Total Population of New Access Areas	192
School Age Population of New Access Areas[10]	26
Percentage of Students within the School Areas Gaining Access[11]	4%

[9] New Access Area assumptions: For the Washington Elementary access area, it was assumed that the residents not included in the access area would use east-west routes of 13th Street, Dakota and 11th Street to access school.
[10] Calculated using the proportion of school-age children (5-17 years old) within the City of Medford.
[11] The School Area is defined as the area within the school enrollment area that is within one mile of the school.

Figure 2. Washington Elementary New Access Area for Students Walking and Biking



McLoughlin Middle School

The project team conducted an analysis to estimate the number of people who would gain walking and biking access to McLoughlin Middle School when the project improvements are constructed, shown in Table 3 and Figure 3. First, the project improvements were evaluated to understand the geographic areas that would gain safe access to the school once the funded project was constructed. Next, American Community Survey (ACS) data was combined with zoning data to estimate the number of people and school-age children that live within the new access areas.

This analysis estimates that approximately 58 students, or 3% of the McLoughlin Middle School student body living within a mile of the school, would gain safer walking or biking access to the school.

Table 3. McLoughlin Middle School Access Analysis Results[12]

METRIC	VALUE
Total Population of New Access Areas	435
School Age Population of New Access Areas[13]	58
Percentage of Students within the School Areas Gaining Access[14]	3%

[12] New Access Area assumptions: The Columbus Street improvements primarily affect McLoughlin Middle school students, and this analysis assumes that residents North of Meadow Avenue do not benefit from the improvement. Residents south of the crossing on Columbus Street were excluded from the access area because there isn't a sidewalk on the west side to connect to the Prune Street intersection.

[13] Calculated using the proportion of school-age children (5-17 years old) within the City of Medford.

[14] The School Area is defined as the area within the school enrollment area that is within one mile of the school.

Figure 3. McLoughlin Middle School New Access Area for Students Walking and Biking

Baseline Data – Wilson Elementary School

The following section presents pre-construction data, which will be compared against similar data collected after the project has been construction, in order to estimate the impact of the improvements. Data collection efforts were disrupted by the COVID-19 pandemic. Before the pandemic, Wilson Elementary School was able to collect parent surveys, but not student hand tallies.

Parent/Caregiver Surveys[15]

DATE COLLECTED:	Spring 2020
DATA COLLECTION PROCESS:	The Oregon Department of Transportation SRTS parent/caregiver survey was distributed online to parents at Wilson Elementary School to assess family perceptions about school travel options and behavior, with support from Alta Planning + Design for data collection materials and methods.
NUMBER OF SURVEYS:	14; 2.9% response rate[16]

SUMMARY OF DATA COLLECTION AND METHODOLOGY

The parent/caregiver survey data included in this report was collected from 14 participants with students attending Wilson Elementary School.

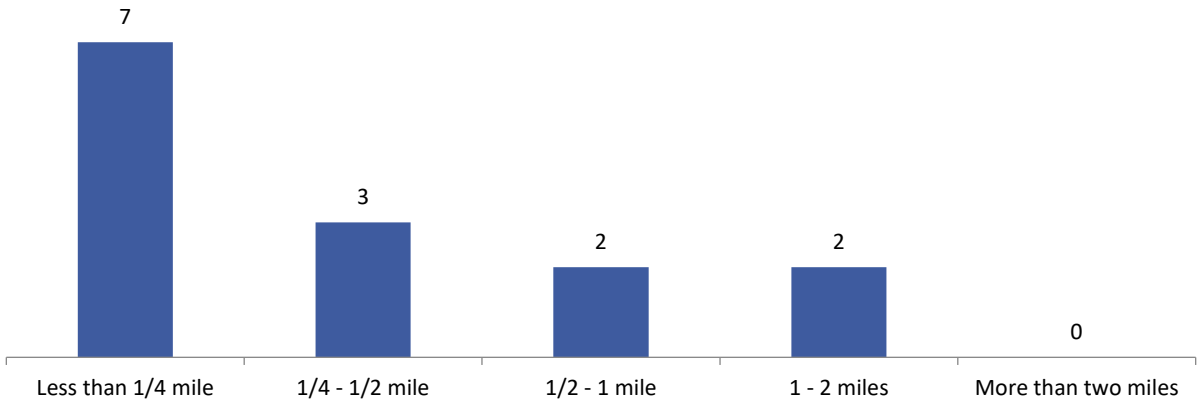
SUMMARY OF RESULTS:

[15] *Hand tally data was not available for Wilson Elementary School, because of disruptions caused by the COVID-19 pandemic.*

[16] *As this response rate is very low, this analysis is unlikely to be representative of the student body as a whole. For this reason, results are reported in nominal figures instead of percentages.*

Parent/caregiver survey analysis found that most respondents live within one mile of Wilson Elementary School, with an additional two living between one and two miles of the school site (see Figure 4). None of the respondents live more than two miles from the school.

Figure 4. How Far Does your Family Live from School?, 2020 Parent/Caregiver Survey



The chosen mode of transportation for survey respondents from Wilson Elementary School varied depending on how far they live from school. Among those who live less than a quarter mile from campus, 40% of trips were by active modes and the other 60% were by family vehicle. Among students living between a quarter-mile and a half-mile from school, two-thirds of trips were made using active modes. (see Figure 5 and Table 4). Family vehicles were the most popular mode for students who live between a half-mile and one mile from the school. Students living between one and two miles from Wilson Elementary School did not report using active modes to get to school. A majority of these longer-distance commuting students travel to and from school in family vehicles or shared modes, in this case riding the school bus.

Figure 5. Mode Split by Distance from School, 2020 Parent/Caregiver Survey

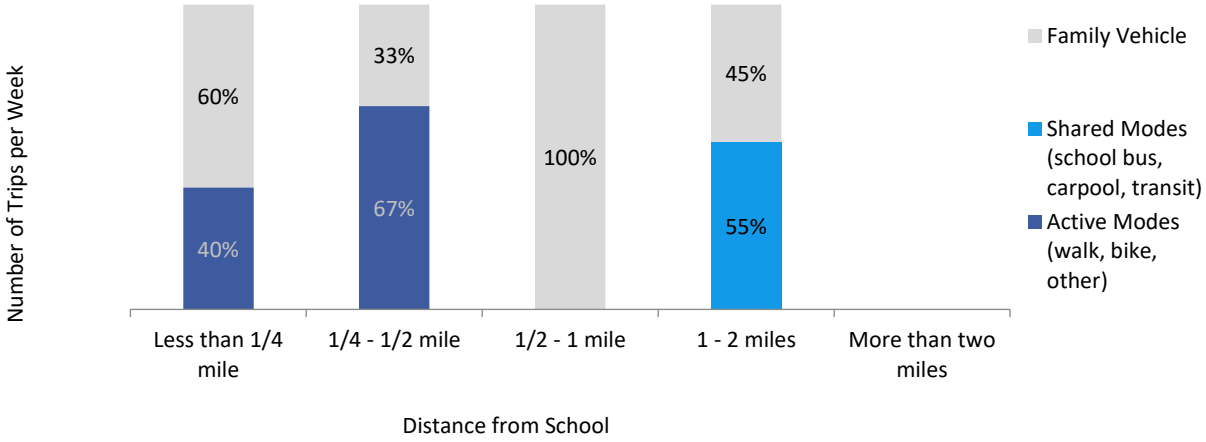
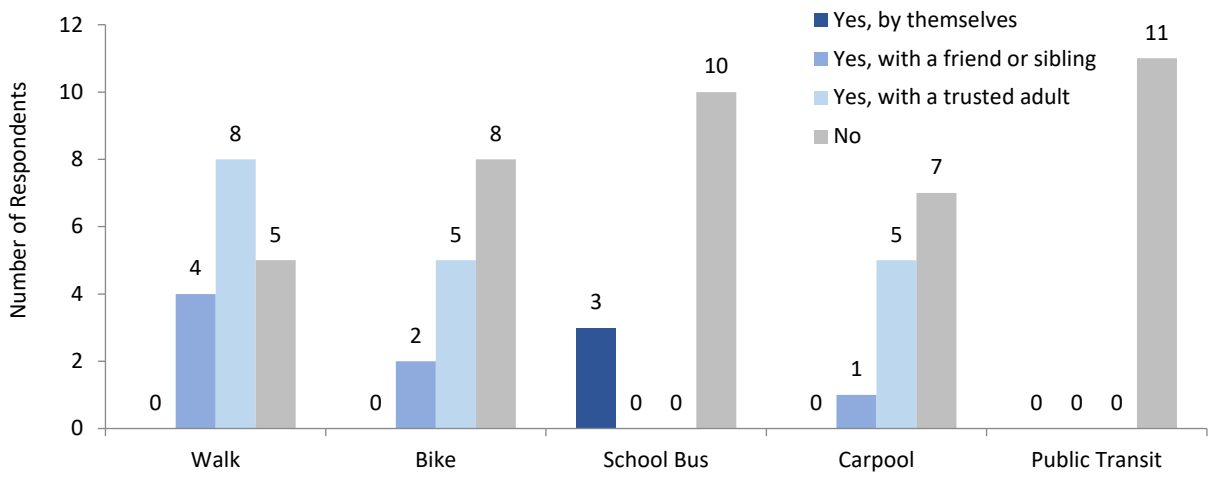


Table 4. Count of Trips by Distance the Family Lives from School, 2020 Parent/Caregiver Survey

DISTANCE	WALK	BIKE	SCHOOL BUS	FAMILY VEHICLE	CARPOOL	TRANSIT	OTHER
Less than 1/4 mile	28	0	0	42	0	0	0
1/4 mile up to 1/2 mile	20	0	0	10	0	0	0
1/2 mile up to 1 mile	0	0	0	20	0	0	0
1 mile up to 2 miles	0	0	11	9	0	0	0
More than 2 miles	0	0	0	0	0	0	0

As Figure 6 illustrates, no parents or caregivers surveyed reported that they would allow their student to walk to school by themselves. Four would allow walking if the student were accompanied by another child or sibling, while eight more would allow them to walk with a trusted adult. Five surveyed parents reported that they wouldn't allow their child to walk at all. Seven parents surveyed reported that they would allow their student to bike, (two themselves and five with a trusted adult).

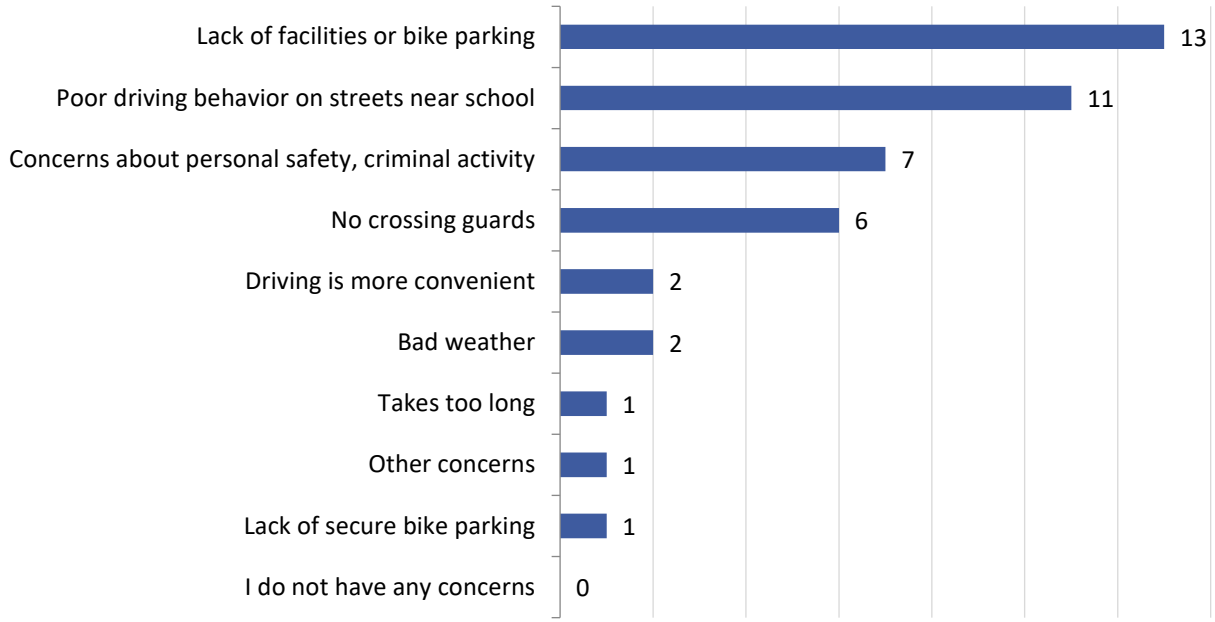
Figure 6. Do You Allow this Student to Travel to School in the Following Ways?, 2020 Parent/Caregiver Survey



While parents and caregivers reported varying concerns that limit their student's ability to walk or bike to school, some were more commonly expressed than others (see Figure 7). The following were top concerns for respondents within the Wilson Elementary School community:

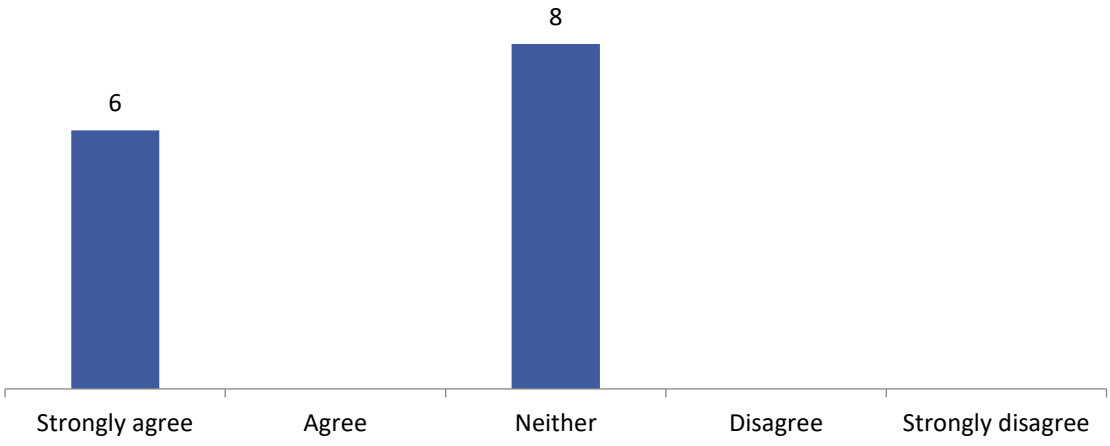
- Lack of facilities or bike parking
- Poor driver behavior on streets near the student's school
- Concerns about personal safety, documentation or criminal activity
- Lack of crossing guards

Figure 7. What Concerns Limit Your Student's Ability to Walk or Bike to/from School?, 2020 Parent/Caregiver Survey



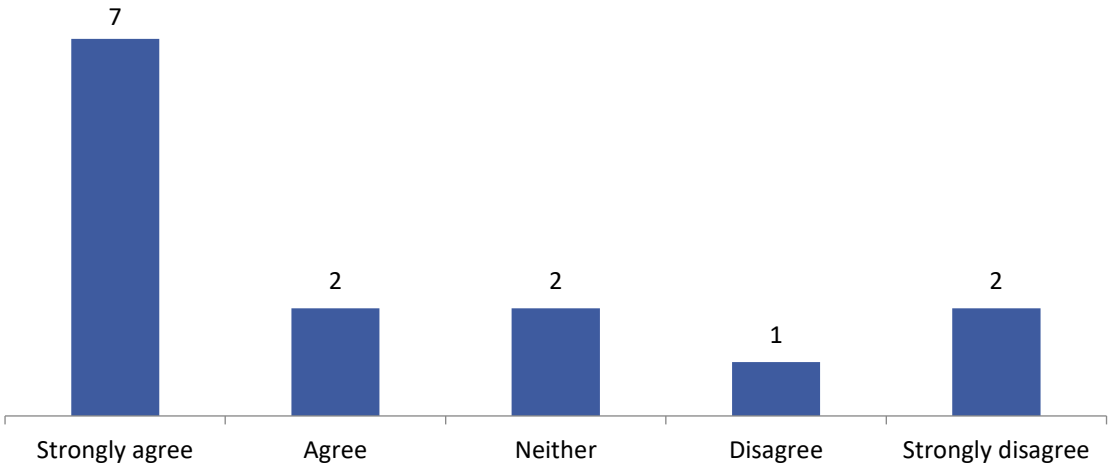
A majority of parent and caregiver respondents felt Wilson Elementary School neither encouraged or discouraged students from walking and biking to school at the time of the survey. Meanwhile, six strongly agreed that the school encouraged active transportation (see Figure 8).

Figure 8. Agree/Disagree: Walking/Biking to/from School is Encouraged by my Student's School, 2020 Parent/Caregiver Survey



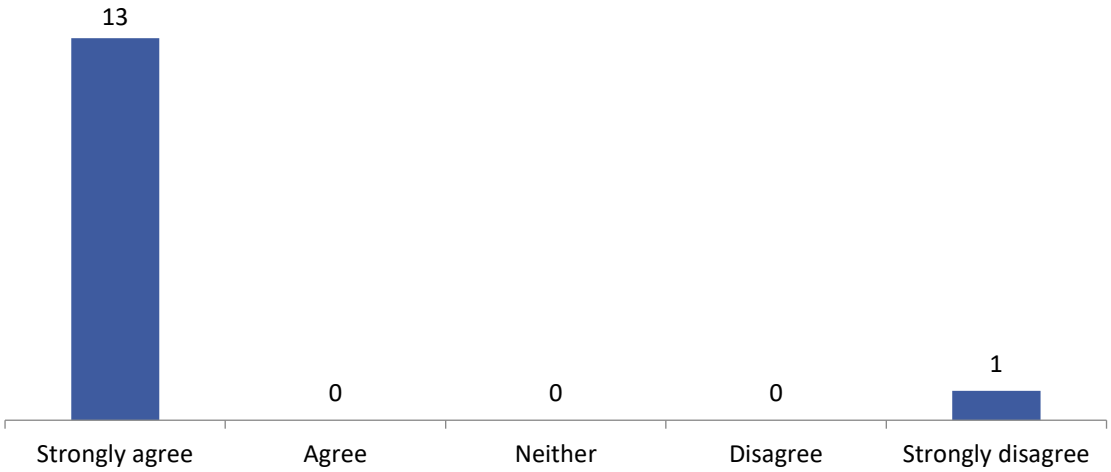
At the time of the survey, nine parents and caregivers reported that they agreed walking or biking to school would be a fun activity for their students, while only three disagreed. Two were neutral or unsure on whether their student would enjoy walking and biking to school (Figure 9).

Figure 9. Agree/Disagree: Walking/Biking to/from School is Fun for my Student, 2020 Parent/Caregiver Survey



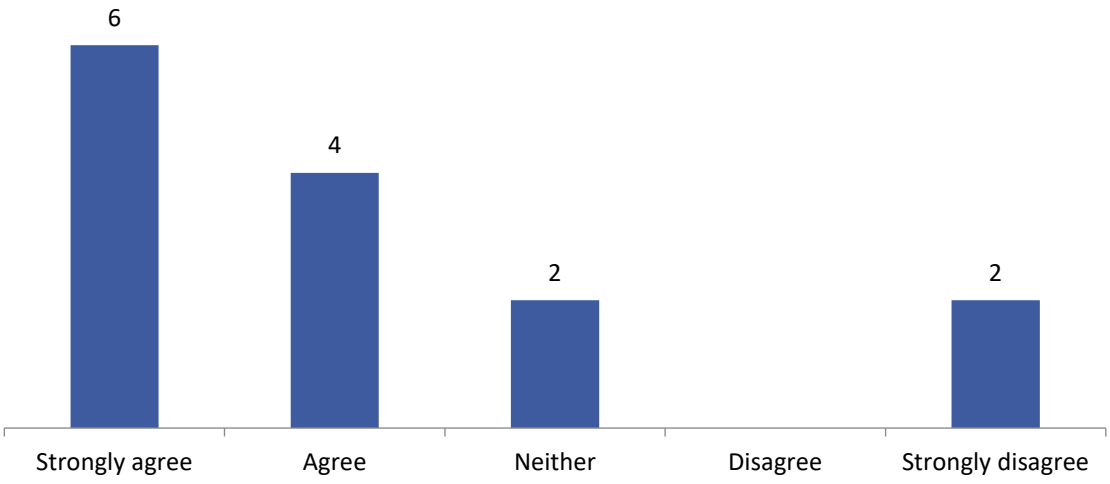
Almost all parents and caregivers who responded to this survey agreed about the health benefits of active transportation. Only one felt these activities would not be healthy for their student (see Figure 10).

Figure 10. Agree/Disagree: Walking/Biking to/from School is Healthy for my Student, 2020 Parent/Caregiver Survey



A majority of parent and caregiver respondents expressed that they wished their family walked or biked to school more often. Only two disagreed with the statement, indicating that they weren't interested in walking or biking, while another two were neutral on the matter (see Figure 11).

Figure 11: Agree/Disagree: Walking/Biking to School is Something I wish we did more often, 2020, Parent/Caregiver Survey


6
4
2
2
Strongly agree
Agree
Neither
Disagree
Strongly disagree

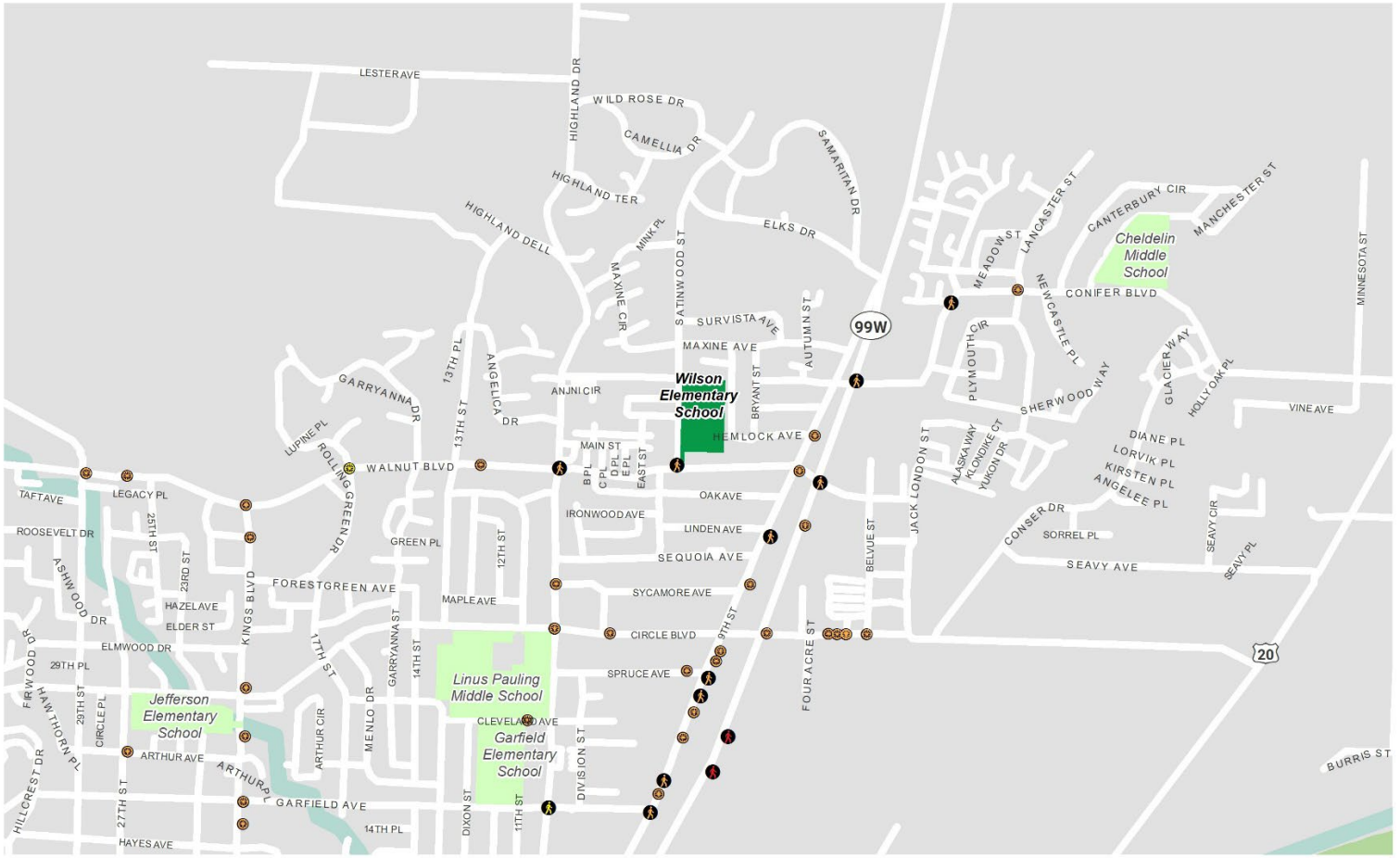
Crash Data – Wilson Elementary School

DATE COLLECTED:	2012-2016
DATA COLLECTION PROCESS:	Crash Data included in this report originates the ODOT SRTS Web Map Application, with supplemental data from roadway jurisdictions as available. This analysis does not determine whether the grant intervention caused any change in the occurrence of crashes, due to small sample size. Additionally, due to insufficient mode split data to calculate crash rates, this report offers a count and description of reported incidents.
NUMBER OF REPORTED CRASHES INVOLVING BIKES AND PEDESTRIANS WITHIN 1 MILE OF SCHOOL:	Between 2012 and 2016, 93 crashes involving a bicyclist or pedestrian were reported within a mile of the school.
TIME OF REPORTED CRASHES INVOLVING BIKES AND PEDESTRIANS WITHIN 1 MILE OF SCHOOL*:	85 of these reported crashes occurred during school commuting hours; the majority occurred during PM commuting hours. ** For these purposes school commuting hours were defined as 6 AM to 9 PM.*
NUMBER OF REPORTED INJURIES BY SEVERITY WITHIN 1 MILE OF THE SCHOOL:	All but one of the 93 reported crashes involved injury to a bicyclist or pedestrian. Of the 61 bike crashes reported, 60 involved non-fatal injuries and one involved property damage only. Of the 32 pedestrian crashes reported, 30 were non-fatal and two were fatal. Figure 12 illustrates the location of the crashes by type and injury severity.
ADDITIONAL CRASH DATA CONSIDERATIONS:	One recorded crash involving a non-fatal pedestrian injury was recorded along Morrow Road between 2012-2016, where sidewalk improvements are proposed.

Notes on Community Context or other Relevant Information:

None.

Figure 12: Wilson Elementary School Bicycle & Pedestrian Collisions (2012-2016)



Wilson Elementary School

Bicycle and Pedestrian Collisions (2012-2016)

- Bicycle: Fatal Injury
- Bicycle: Non-Fatal Injury
- Bicycle: No Injury
- Pedestrian: Fatal Injury
- Pedestrian: Non-Fatal Injury
- Pedestrian: No Injury
- Primary Affected School
- Other School

Source: Crash Analysis and Reporting Unit, ODOT (2012-2016)

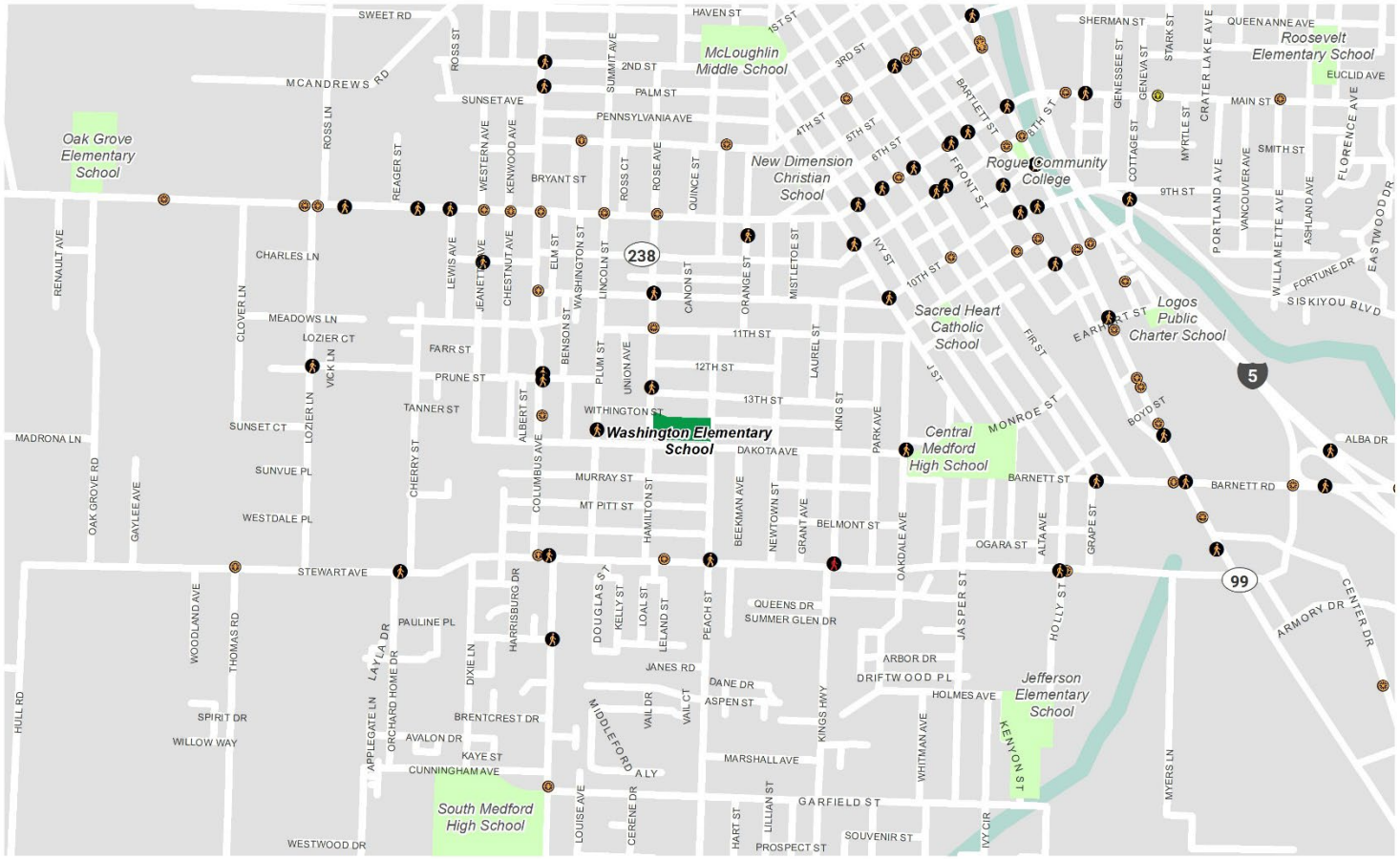
Baseline Data – Washington Elementary School

The following section presents pre-construction data, which will be compared against similar data collected after the project has been construction, in order to estimate the impact of the improvements. Data collection efforts were disrupted by the COVID-19 pandemic. Only two responses to Parent/Caregiver surveys were available for Washington Elementary. Those responses are not analyzed, as the response rate is too low to draw accurate conclusions about student travel and parent/caregiver attitudes. Additionally, Washington Elementary plans to collect hand tallies were canceled due to the pandemic.

Crash Data – Washington Elementary School

DATE COLLECTED:	2012-2016
DATA COLLECTION PROCESS:	Crash Data included in this report originates the ODOT SRTS Web Map Application, with supplemental data from roadway jurisdictions as available. This analysis does not determine whether the grant intervention caused any change in the occurrence of crashes, due to small sample size. Additionally, due to insufficient mode split data to calculate crash rates, this report offers a count and description of reported incidents.
NUMBER OF REPORTED CRASHES INVOLVING BIKES AND PEDESTRIANS WITHIN 1 MILE OF SCHOOL:	Between 2012 and 2016, 102 crashes involving a bicyclist or pedestrian were reported within a mile of the school.
TIME OF REPORTED CRASHES INVOLVING BIKES AND PEDESTRIANS WITHIN 1 MILE OF SCHOOL*:	92 of these reported crashes occurred during school commuting hours; the majority occurred during PM commuting hours. ** For these purposes school commuting hours were defined as 6 AM to 9 PM.*
NUMBER OF REPORTED INJURIES BY SEVERITY WITHIN 1 MILE OF THE SCHOOL:	All but one of the 102 of the reported crashes involved an injury to a bicyclist or pedestrian. Of the 52 bike crashes reported, 51 involved non-fatal injuries and one involved property damage only. Of the 50 pedestrian crashes reported, 49 were non-fatal and one was fatal. Figure 10 illustrates the location of the crashes by type and injury severity.
ADDITIONAL CRASH DATA CONSIDERATIONS:	Sidewalk infill, lighting and crossing improvements are proposed at Columbus and Prune, just west of the school and where several crashes have occurred. In its application the City of Medford identified the following crashes at, or in the vicinity of, the intersection of Columbus Avenue and Prune Street (most notably a fatal pedestrian crash recorded in 2017, outside of the date range of the data set used for the crash mapping analysis): • 01/03/2014 - Pedestrian non-fatal minor injury • 03/10/2014 - Pedestrian indirectly involved (not struck), minor injuries • 05/08/2014 - Pedestrian indirectly involved (not struck), moderate injuries • 02/14/2015 - Pedestrian non-fatal minor injury • 03/17/2016 - Pedestrian non-fatal minor injury • 11/03/2017 - Pedestrian fatal

Figure 13: Washington Elementary School Bicycle & Pedestrian Collisions (2012-2016)



Baseline Data – McLoughlin Middle School

The following section presents pre-construction data, which will be compared against similar data collected after the project has been construction, in order to estimate the impact of the improvements. Data collection efforts were disrupted by the COVID-19 pandemic. McLoughlin Middle School collected hand tallies and some parent surveys before the pandemic occurred.

Hand Tallies

DATE COLLECTED:	February, 2020
DATA COLLECTION PROCESS:	27 classrooms surveyed about their trip to and from school
NUMBER OF STUDENTS:	Data not available
TRIPS RECORDED	2,602 trips recorded by the hand tallies

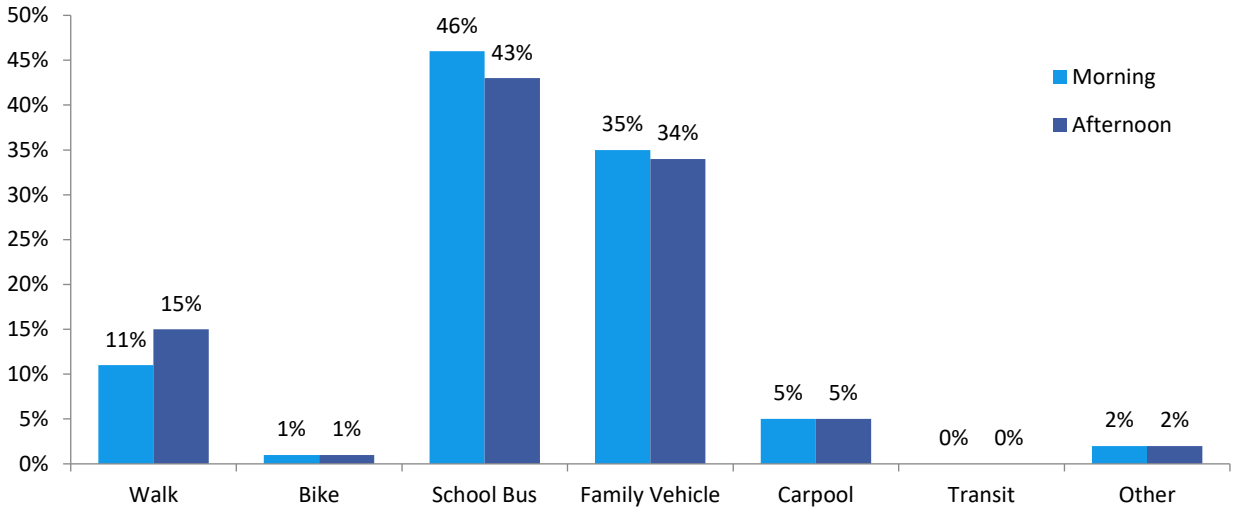
SUMMARY OF DATA COLLECTION AND METHODOLOGY

The February 2020 baseline hand tally data from McLoughlin Middle School includes 2,602 recorded trips collected from students in 27 classrooms. The hand tally process surveyed all students in each classroom on which transportation mode(s) they had used to get to and from school the day of the survey and the day prior to the survey. The National Center for SRTS's standard hand tally data collection forms and process were used. This data provides a snapshot of student travel behavior trends.

SUMMARY OF RESULTS:

McLoughlin Middle School hand tally data from 2020 indicates that a majority of students surveyed ride the school bus to and from school, while around a third rode in a family vehicle to and from school (see Figure 14 and Table 5). Approximately 11% of students walk in the morning and 15% of students walk home in the afternoon. Students reported 13 bike trips to school and 13 home.

Figure 14. Student Mode Split by Time of Day, 2020 Hand Tally Data



Note: Percentages may not total 100% due to rounding.

Table 5. Count of Student Mode Split to and From School, 2020 Hand tally Data

TIME OF DAY	WALK	BIKE	SCHOOL BUS	FAMILY VEHICLE	CARPOOL	TRANSIT	OTHER
Morning	143	13	598	455	65	0	26
Afternoon	195	13	559	442	65	0	26

Parent/Caregiver Surveys

DATE COLLECTED:	Spring 2020
DATA COLLECTION PROCESS:	The Oregon Department of Transportation SRTS parent/caregiver survey was distributed online to parents at McLoughlin Middle School to assess family perceptions about school travel options and behavior, with support from Alta Planning + Design for data collection materials and methods.
NUMBER OF SURVEYS:	35; 3.5% response rate

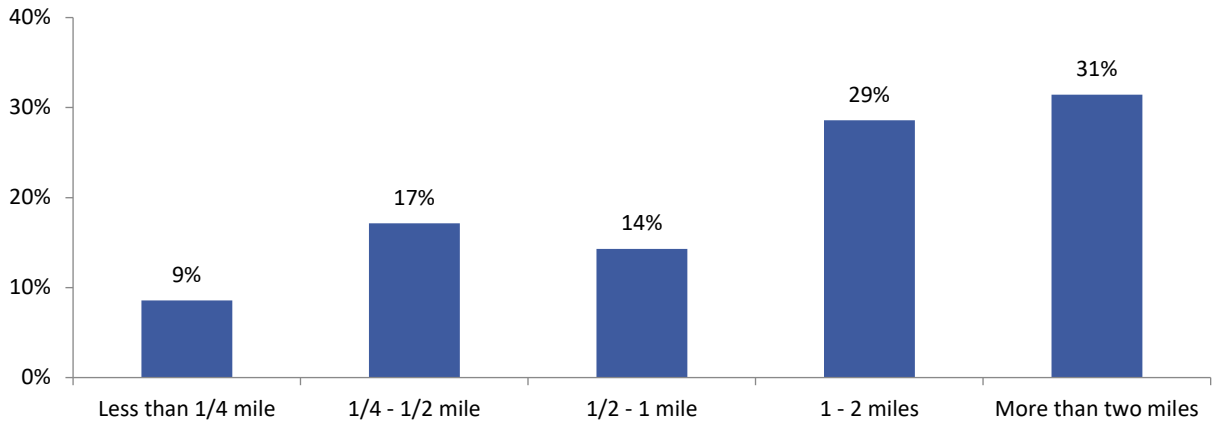
SUMMARY OF DATA COLLECTION AND METHODOLOGY

The parent/caregiver survey data included in this report was collected from 35 participants with students attending McLoughlin Middle School.

SUMMARY OF RESULTS:

Parent/caregiver survey analysis found that 40% of respondents live within one mile of McLoughlin Middle School, with an additional 29% living between one and two miles of the school site (see Figure 15). Around a third (31%) live more than two miles from the school.

Figure 15. How Far Does your Family Live from School?, 2020 Parent/Caregiver Survey



The chosen mode of transportation for students at McLoughlin Middle School varied greatly depending on how far they live from school. Among those who live less than a quarter mile from campus, all used active modes. Around half of students living between a quarter-mile and a half-mile from school also used active modes. (see Figure 16 and Table 6). Family vehicles were the most popular mode for students who live between one and two miles from the school. Students living more than two miles from McLoughlin Middle School do not generally use active modes to get to school. A majority of these longer-distance commuting students travel to and from school in family vehicles (58%), while 40% use shared modes, primarily riding the school bus but also carpooling.

Figure 16. Mode Split by Distance from School, 2020 Parent/Caregiver Survey

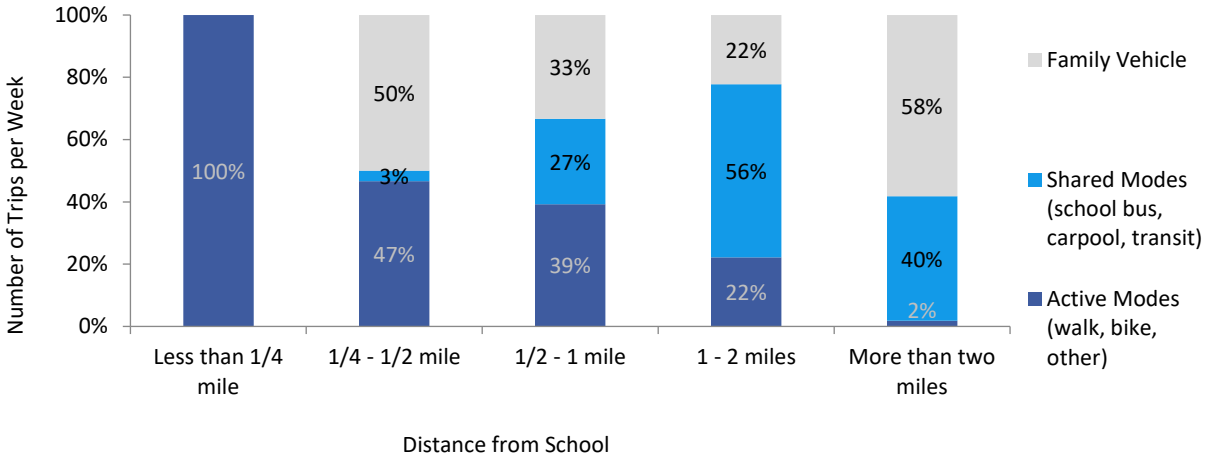
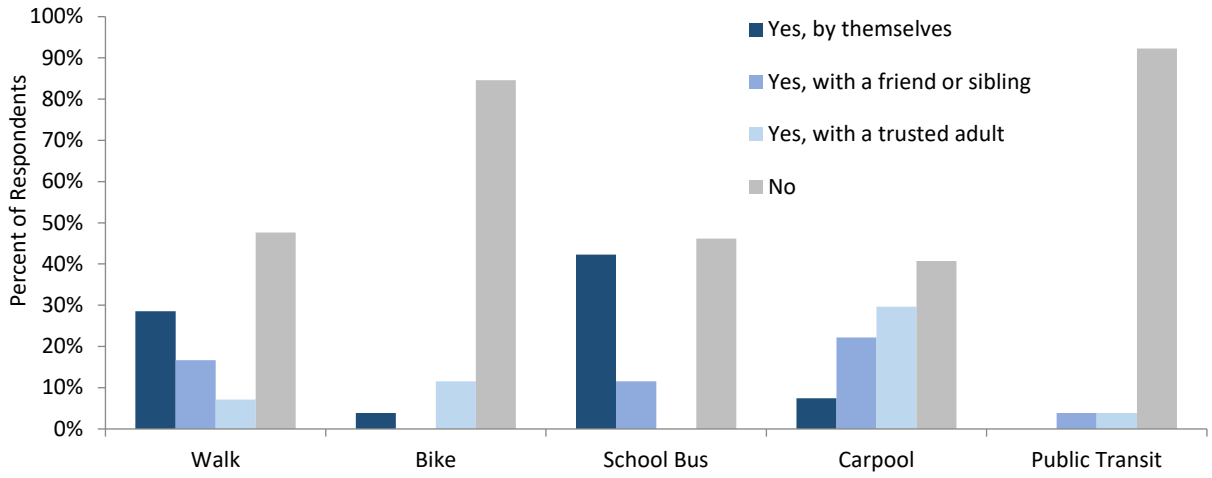


Table 6. Count of Trips by Distance the Family Lives from School, 2020 Parent/Caregiver Survey

DISTANCE	WALK	BIKE	SCHOOL BUS	FAMILY VEHICLE	CARPOOL	TRANSIT	OTHER
Less than 1/4 mile	30	0	0	0	0	0	0
1/4 mile up to 1/2 mile	28	0	2	30	0	0	0
1/2 mile up to 1 mile	20	0	9	17	4	1	0
1 mile up to 2 miles	14	0	37	22	18	0	8
More than 2 miles	2	0	32	64	12	0	0

As Figure 17 illustrates, over a quarter (29%) of parents and caregivers surveyed reported that they would allow their student to walk to school by themselves. An additional 17% would allow walking if the student were accompanied by another child or sibling, while 7% more would allow them to walk with a trusted adult. Almost half (48%) of surveyed parents reported that they wouldn't allow their child to walk at all. However, only 15% of parents surveyed reported that they would allow their student to bike, (4% by themselves and 12% with a trusted adult).

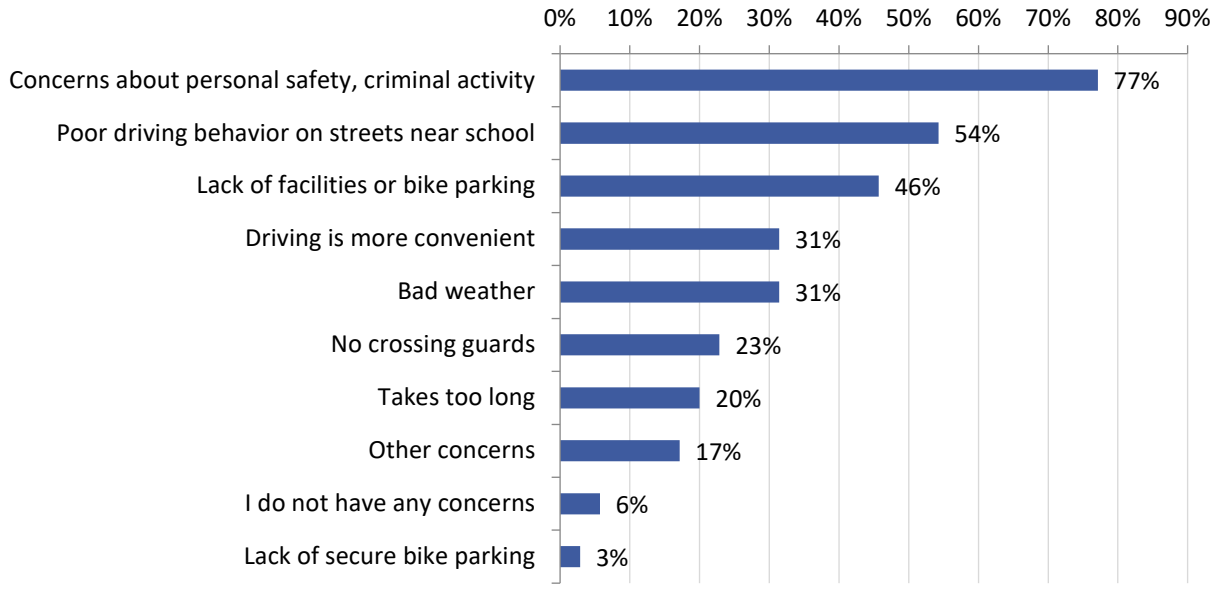
Figure 17. Do You Allow this Student to Travel to School in the Following Ways?, 2020 Parent/Caregiver Survey



While parents and caregivers reported varying concerns that limit their student's ability to walk or bike to school, some were more commonly expressed than others (see Figure 18). The following were top concerns for the McLoughlin Middle School community:

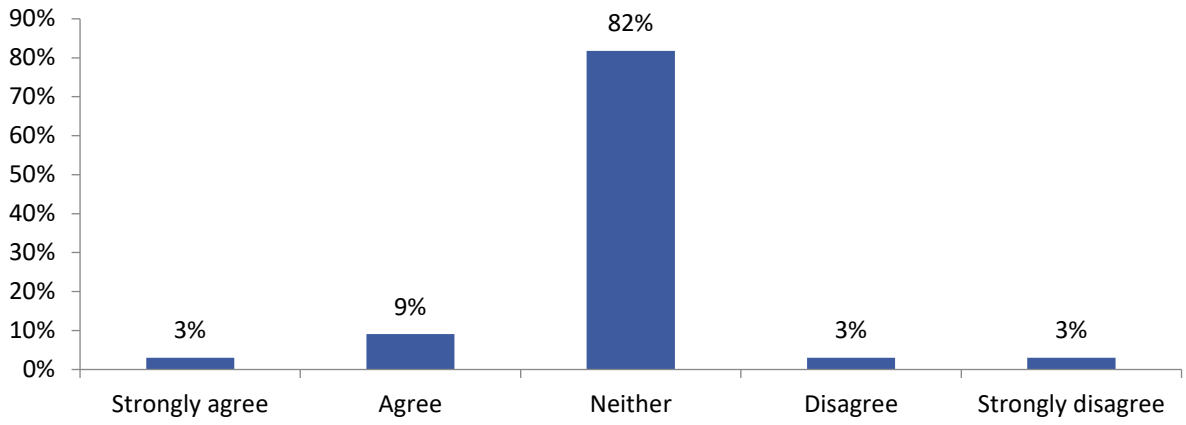
- Concerns about personal safety, documentation or criminal activity
- Poor driver behavior on streets near the student's school
- Lack of facilities or bike parking
- The greater convenience of driving compared to other modes
- Bad weather

Figure 18. What Concerns Limit Your Student's Ability to Walk or Bike to/from School?, 2020 Parent/Caregiver Survey



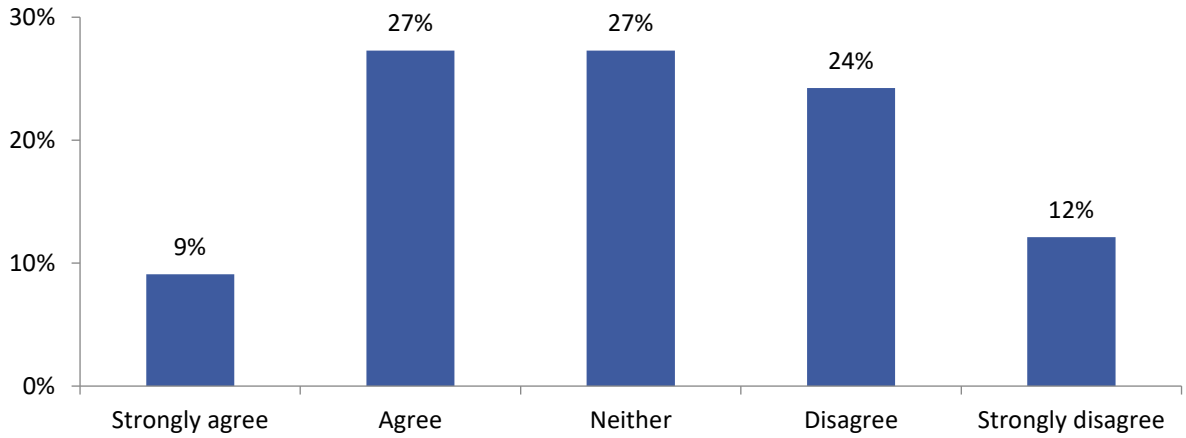
A majority of parent and caregiver respondents felt McLoughlin Middle School neither encouraged or discouraged students from walking and biking to school at the time of the survey (82%). Only 12% felt the school encouraged active transportation, and only 6% disagreed or strongly disagreed (see Figure 19).

Figure 19. Agree/Disagree: Walking/Biking to/from School is Encouraged by my Student's School, 2020 Parent/Caregiver Survey



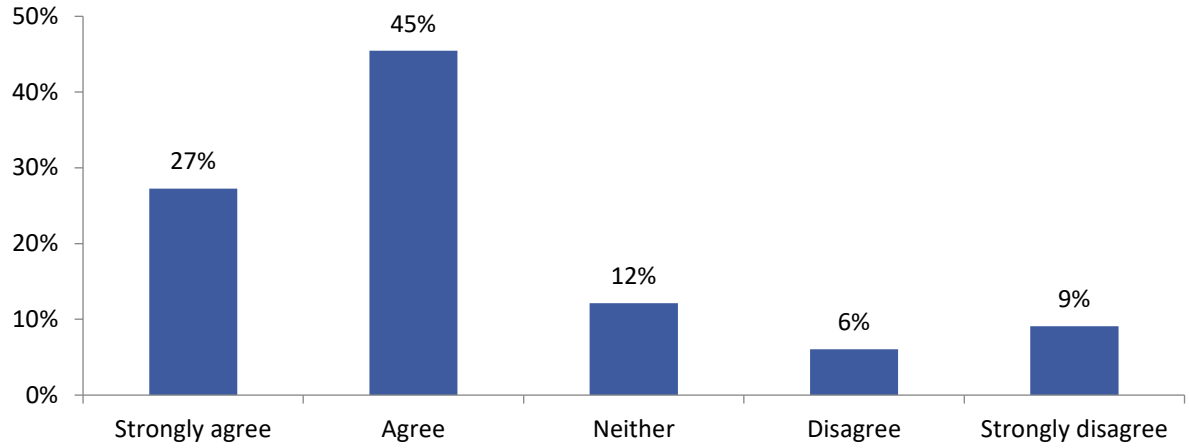
At the time of the survey, 36% of parents and caregivers reported that they agreed walking or biking to school would be a fun activity for their students, while 36% disagreed. An additional 27% were neutral or unsure on whether their student would enjoy walking and biking to school (Figure 20).

Figure 20. Agree/Disagree: Walking/Biking to/from School is Fun for my Student, 2020 Parent/Caregiver Survey



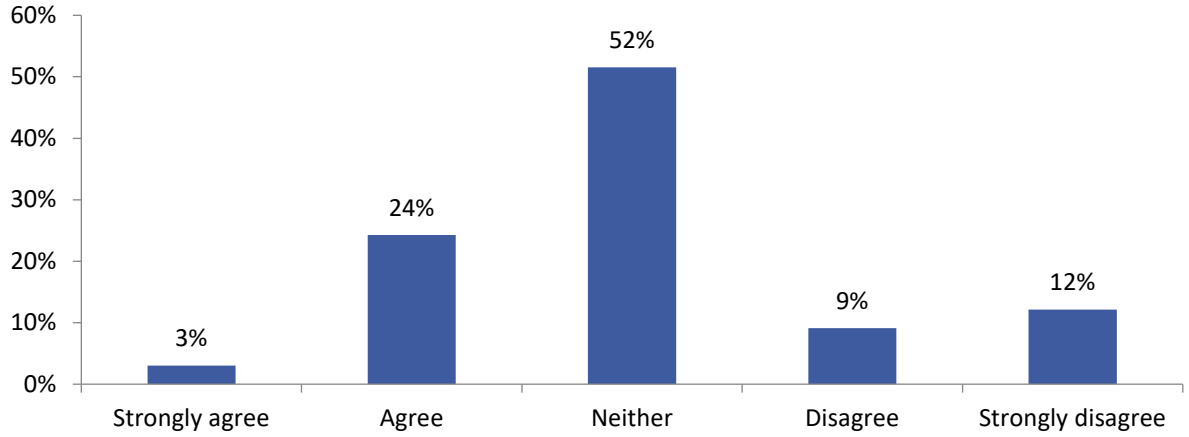
A majority of parents and caregivers recognized the health benefits of active transportation, with 72% reporting that walking or biking to school would be healthy for their student. An additional 12% were neutral regarding the health benefits of walking and biking, and 15% didn't believe these activities would be healthy for their student (see Figure 21).

Figure 21. Agree/Disagree: Walking/Biking to/from School is Healthy for my Student, 2020 Parent/Caregiver Survey



A majority of parent and caregiver respondents felt neutral about whether they wished their family walked or biked to school more often (52%). Another 21% disagreed with the statement, indicating that they weren't interested in walking or biking, while 27% expressed a wish to use active modes more often (see Figure 22).

Figure 22: Agree/Disagree: Walking/Biking to/from School is something I wish we did more often, 2020 Parent/Caregiver Survey



Follow-Up Data Collection Plan

Timeline

Post-grant field visits to collect follow-up data will be scheduled to take place the spring following the completion of each grant intervention. The City of Medford estimates project completion is planned for June - December 2021.

Follow-up Data Collection Process

METHOD	PLANNED AT THIS SITE?	TARGET SAMPLE SIZE	TARGET FIELD WORK DATE
STUDENT HAND TALLIES:	Yes	At least 2 classrooms per grade per school	Late spring 2022 (assuming project completion)
PARENT SURVEYS:	Yes	At least 30 parents per school	Late spring 2022 (assuming project completion)
PARENT FOCUS GROUPS:	Yes	4-10 parents	Late spring 2022 (assuming project completion)
STAFF SURVEYS:	Yes	1-3 school staff and administration	Late spring 2022 (assuming project completion)
CRASH DATA:	Yes	N/A	N/A
OTHER (LIST):	None	N/A	N/A

Appendix A. Final Report DRAFT Outline

Note: The following Final Report outline is subject to change.

Chapter 1. Introduction

- Description of SRTS IN Grant Program
- Description of Final Report purpose and contents

SUMMARY OF FUNDED INFRASTRUCTURE IMPROVEMENTS

- Project description
- Map of improvements
- Project timeline

BACKGROUND

- School demographics
- Summary of Non-Infrastructure SRTS Work
- Place Type

Chapter 2. Data Collection and Results

HAND TALLY DATA

- Data Collection Methods
- Change in walking and biking rates

PARENT SURVEY DATA

- Data Collection Methods
- Change in mode split by distance from school
- Change in barriers to walking and biking
- Change in perceptions of walking and biking
- Other observations

FOCUS GROUPS

- Data Collection Methods
- Change in barriers to walking and biking
- Change in perceptions of walking and biking

CRASH DATA

- Data included in analysis
- Change in crash data (*If available, otherwise this will provide updated baseline crash data from ODOT)*

Chapter 3. Findings

- Impact of Infrastructure improvements on mode split
- Impact of Infrastructure Improvements on Access to Safe Infrastructure

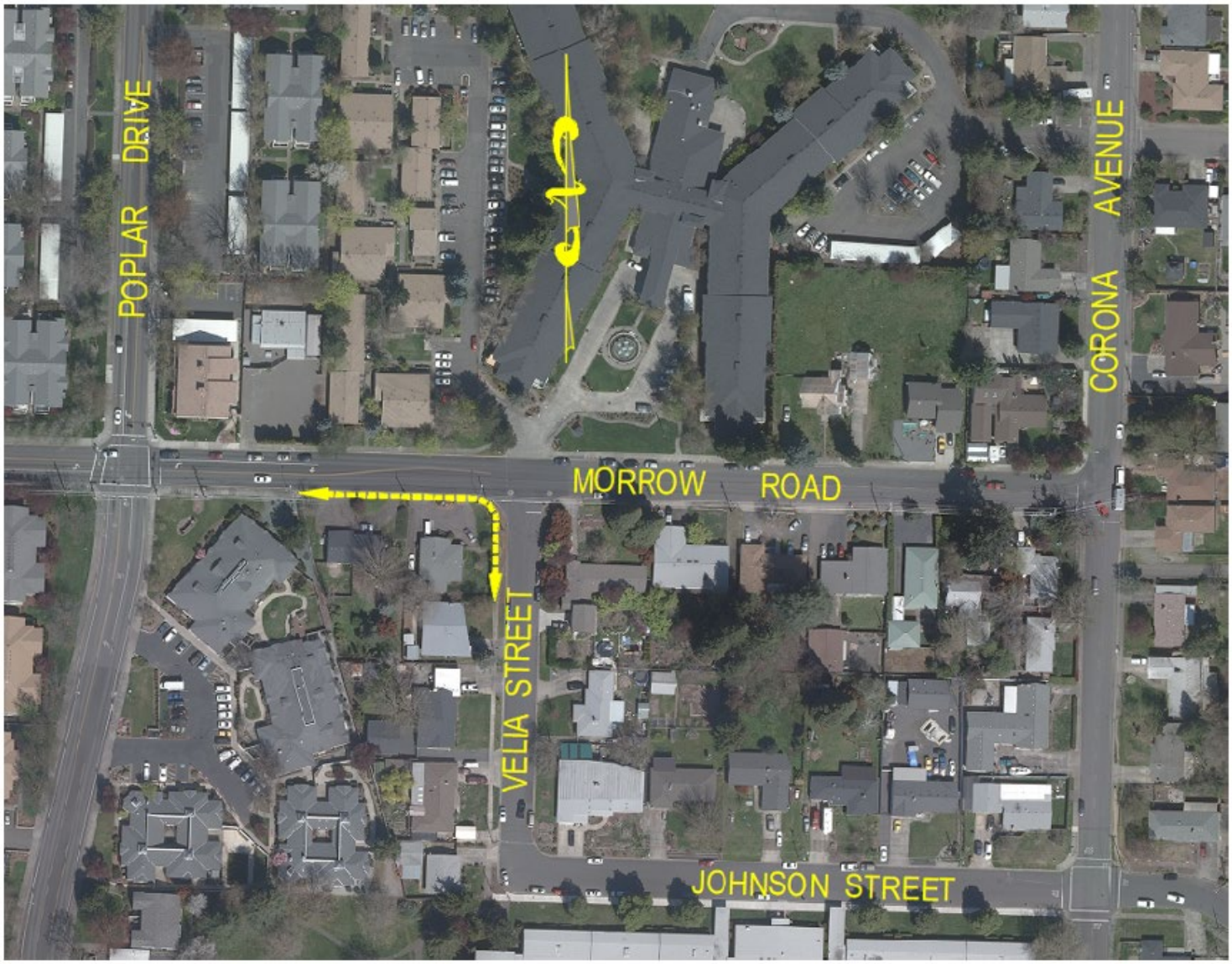
- impact of infratructure improvements on safety/perception of safety
- Impact of Infrastructure Improvements on Program lifespan/partnerships
- impact of infrastructure improvements on equity
- Other Findings
- Next Steps and Recommendations

Appendix B. Competitive SRTS IN Grant Funded Project Area Map

Figure 23. City of Medford Competitive SRTS IN Grant Funded Project Area Maps

a) Project 1: Columbus & Prune

b) Project 2: Morrow / Velia Sidewalk Infill



c) Project 3: W 13th / W 14th Sidewalk Infill

Appendix C. Access to SRTS Detailed Methodology

Purpose

The access map analysis was designed to estimate the number of students with new or significantly improved access to school upon the implementation of a proposed walking or biking facility. While determining the number of students who benefit from a proposed project is not an exact science, this analysis provides a common approach that utilizes school district boundaries, census population data and local zoning codes to generate rough estimates. These estimates lend greater insight into the impact of a particular Safe Routes to School project, allowing facility improvements to be compared and thus aid in prioritizing investments. This memo outlines the data sources, methods, and assumptions that inform the access map analysis described in this report.

Data Sources

Three primary data sources were used in this analysis in conjunction with the information provided in each project application:

Name	Source
American Community Survey (ACS) Population Estimates	US Census Bureau
Oregon School District Boundaries	Oregon Department of Education
2017 Oregon Statewide Zoning Map	Oregon Department of Land Conservation and Development

Methods

The analysis establishes two geographical areas in which census block population data are apportioned to: 1) the school area and 2) the access area. The school area is defined as the area that is within a 1-mile radius of the applicant school or within the enrollment boundary, whichever is closer. This area covers residents within reasonable walking or biking distance of the to school. The access area is the area that covers all residents who would experience new or significantly improved access to school upon the implementation of the proposed walking or biking facility.

Once both of these areas have been established, the consultant team identified the census blocks that intersect each. We then apportioned the population data from the census blocks to the school area and the access area, based on the relative coverage of each census block. To account for varying residential densities in each census block, we used residential zoning data to determine the proportion of the population that should be attributed to the school area and access area.

After the estimated populations of both the school area and the access area are calculated, the local jurisdiction's youth rate is applied to each to get the number of people ages 5-17 in those areas, which we refer to as the 'school age population'. Finally, the school age populations of the access area and the school area are compared. The percentage of school age students with new or improved access to school represents the proportion of students impacted by the project out of all the students in the school area who could reasonably walk or bike to school.

Defining the Access Area

The boundary of the school area is readily calculable using GIS and the rules described above. By contrast, the access area boundary was determined manually based on the project description and professional judgement of impact. While this method inherently includes subjective judgement, the high variability and nuance in the transportation context surrounding the proposed project makes this method more suitable for determining the residential areas would benefit from its implementation than a purely GIS-based workflow. The following assumptions and rules of thumb were adopted in order to make the assessment of the access areas as uniform as possible:

1. The analysis assumes people are willing to "walk around the block" half the distance of their street in the opposite direction of school in order to utilize a safe path to school.
2. The analysis assumes that Google Earth street view imagery is up to date, as this was used to determine sidewalk connectivity and condition, which informed the access areas.
3. Places without sidewalks, particularly in small towns, are considered walkable if the street is narrow, residential, and designed for a low volume of traffic (i.e., lacks a centerline)
4. The access areas consider ADA accessibility and account for those in wheelchairs or other mobility devices.
5. The access areas may include residents who have to walk more than one mile to school, based on the available street network.
6. Even if some residents may have already had access to school, they might be included in the access area if the proposed project would significantly improve their access to school.

Apportioning Census Population Data

As described above, census population data was apportioned to both the school area and the access area based on how much a census block covered them. However, to account for varying population densities across census blocks, residential zones in the census blocks were identified.

The statewide zoning data provided by the Oregon Department of Land Conservation and Development groups residential zones across all jurisdictions in the state into 13 categories of increasing density. Our team further consolidated these categories into just 4: Low Density, Medium-Low Density, Medium-High Density, and High Density. We then weighted these categories by their relative density compared to Low Density:

Residential Zone Group	Population Density Factor
Low Density	1
Medium-Low Density	2
Medium-High Density	5
High Density	15

These factors serve to more accurately distribute the population data across the residential zones within the census block. In other words, if the census block contained only Low Density residential zones, then the population of any given area within that census block is equal to the proportion of the census block that that area covers. By contrast, if a census block contains Low Density residential zones and High Density zones, we attribute 15 times the population of the census block to the High Density zones than the Low Density zones. The density factors were determined using the typical number of dwellings per acre in in each zone.

The analysis uses these four zoning categories to identify the spatial distribution of the population of the census block and apportion it to the overlaying school area and access areas based on how much those areas cover the residential zones of the census block.

General Assumptions

- This analysis assumes that the Oregon Statewide Zoning code reflects the actual residential densities of the current built environment.
- Areas that were zoned for housing that had no development on them according to the latest satellite imagery (and significantly impacted the output) were removed from the analysis in order to improve the accuracy of the estimates. This was only utilized in a few low-population jurisdictions.
- This analysis assumes that families are evenly distributed between each of the four residential zone groups.
- The reported number of school-age students includes all students ages 5-17, not just elementary or middle school students. Thus, the number of students who actually attend the applicant school is likely much lower than the reported figure.