

ODOT Region 2 – Central Linn Elementary

Baseline Data Evaluation Report



FINAL June 24, 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 in the spring immediately after construction is complete. 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: Central Linn Elementary

Summary

Central Linn Elementary School is a K-6 public school in the Central Linn School District serving 322 students, 42% of whom are eligible for the Federal Free and Reduced-Price Lunch Program. English and Spanish are the primary language spoken by students, and 7% are registered as Ever English Learners.¹

Central Linn Elementary is located in Halsey, which is separated by OR99E, a busy trucking route. In the area of Central Linn Elementary, there are no crossings that meet current standards. Because the Central Linn campus is located on the west side of this road, students living on the east side of OR99E lack safe pedestrian access to the school.

The Oregon SRTS 2019-2020 Competitive Construction Grant funded two enhanced pedestrian crossings at C Street and H Street. The crossings include a combination of pedestrian-activated beacons, refuge islands, striping, and illumination. The construction of these two crossings will address the known barrier of OR99E and provide opportunities for safe active transportation.

In terms of other activities around SRTS at this school, the principal at Central Linn Elementary is especially concerned with traffic patterns around the school and has worked with the City to improve signage immediately around the school. Projects like this, as well as school activities around SRTS, will complement the planned street improvements.

Key information from Central Linn Elementary parent surveys:

- 25% of students live within a mile of the school, while 69% live more than two miles from school.
- Approximately 55% of students ride the school bus to school, and 64% take the bus home.
- 5% of students walk to school, and 4% walk home.
- 88% of parents or caregivers surveyed reported that they would not allow their student to walk to/from school, even accompanied by another child or adult. This was also true for 94% of parents when it came to biking to and from school.
- Parents report that the time it takes to commute by active means is the most common barrier to walking/biking to school. Other barriers include:
 - the convenience of driving,
 - bad weather, and
 - concerns about personal safety or crime.

¹ Unless otherwise noted below, demographic data are from the Oregon Department of Education 19-20 SY, collected October 1, 2019

Most parents (54%) view walking/biking to school as healthy for their student, while 43% described it as fun for their student.

Contact Information

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SCHOOL DISTRICT:	Central Linn School District
CONTACT:	District Office: (541)369-2813
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Enrollment and Demographics

Central Linn Elementary School is a public school enrolling 322 students ranging from Kindergarten to 6th grade. The school serves low income populations in Halsey and Linn County, with 42% of students eligible for the Federal Free and Reduced-Price Lunch Program. English and Spanish are the primary language spoken by students, and 7% are registered to be Ever English Learners.²

ENROLLMENT: 322	GRADE LEVELS SERVED AND SCHOOL TYPE: K-6, Public
STUDENT ETHNIC/RACIAL DEMOGRAPHICS: American Indian/Alaska Native: 0.9% Asian: 0.0% Hispanic or Latino: 13% Native Hawaiian/Pacific Island: 0.0% Multiracial: 3.7% Black/African American: 0.0% White: 82.3%	PREDOMINANT LANGUAGES SPOKEN IN CENTRAL LINN SCHOOL DISTRICT: English: 644 Spanish: 47
STUDENTS LIVING WITHIN 1-MILE OF SCHOOL: 25% ³	TITLE 1 STATUS: Yes ⁴
EVER ENGLISH LEARNERS: 7% ⁵	FREE AND REDUCED-PRICE LUNCH ELIGIBILITY: 42%

² Unless otherwise noted below, demographic data are from the Oregon Department of Education 19-20 SY, collected October 1, 2019

³ SRTS Program parent surveys, 2019

⁴ Title 1 schools are schools where 40% or more of students are enrolled in USDA's Free and Reduced-Price Meals Program.

⁵ 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

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.⁶ 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.

Central Linn Elementary School is located in the City of Halsey and serves the city and wider rural Linn County. The block group encompasses city limits and a swath of county jurisdiction. According to the Place Type Tool, the area surrounding Central Linn Elementary School is categorized as a Low Density/Rural, meaning it contains very low density development and the surrounding census block group generally contains more residential than commercial development, with 1,108 people residing and 339 people working within the census block. The area has a very low level of access to regional employment centers and destinations. The overall level of street connectivity in the area is characterized as “very 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)

Low Density/Rural

- Very low densities of jobs and housing
- Very low accessibility to jobs and services
- Generally outside of UGB or undeveloped areas within UGB
- Auto dependent transportation, due to low densities of jobs and services

DEVELOPMENT TYPE describes more detailed physical characteristics of each neighborhood (transit supportive development, mixed use, employment, residential, rural/ low density):

Low Density/Rural

- Very low densities of jobs and housing
- Very low accessibility to jobs and services
- Generally outside of UGB, or undeveloped areas within UGB
- Auto dependent transportation, due to low activity densities

JURISDICTION POPULATION (ACS 5-YEAR ESTIMATES):	City of Halsey 919 people
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CENSUS BLOCK GROUP POPULATION (2010):	1,108 people
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NUMBER OF JOBS IN CENSUS BLOCK GROUP (2010):	339 jobs
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ACCESS TO DESTINATIONS - describes the number of regional jobs within 5 miles:	Very Low
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DENSITY LEVEL- jobs and households per acre within ¼ mile:	Very Low
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DESIGN LEVEL- level of street connectivity, pedestrian-oriented street density:	Very Low
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DIVERSITY LEVEL- Mix of housing and employment:	Very Low
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TRANSIT LEVEL- Afternoon peak hourly transit service within ¼ mile:	Very Low
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⁶ More information about OLCD's Place Type Tool is available at: www.oregon.gov/lcd/CL/Pages/Place-Types.aspx

Project Description

A map of the project improvements from the Central Linn Elementary grant application is included in Appendix B.

PROBLEM STATEMENT:	OR99E runs through Halsey with Central Linn Elementary on the west side of the highway. All students living on the east side of OR99E must cross this busy and wide trucking route to get to school. There are no crossings that meet current standards.
DESCRIPTION OF BARRIERS TO WALKING AND BIKING:	Students on the east side of the highway must cross to the west side. There are currently not enhanced pedestrian crossings and the crosswalk markings at C Street are not up to current standards. Because this is a trucking route, there are mobility and safety challenges.
PROJECT DESCRIPTION:	The proposed project is for two enhanced pedestrian crossings at C Street and H Street. The crossings will include some combination of pedestrian activated beacons, refuge islands, striping, and illumination.
ESTIMATED PROJECT TIMELINE:	November 2023 Completion
PRIORITY SAFETY CORRIDOR? ⁷	Yes
OUTREACH AND EDUCATION:	None reported

⁷ 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

The project team conducted an analysis to estimate the number of people who would gain walking and biking access to Central Linn 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 15 students, or 8% of the Central Linn Elementary School student body living within a mile of the school, would gain safer walking or biking access to the school.

Table 1. Access Analysis Results⁸

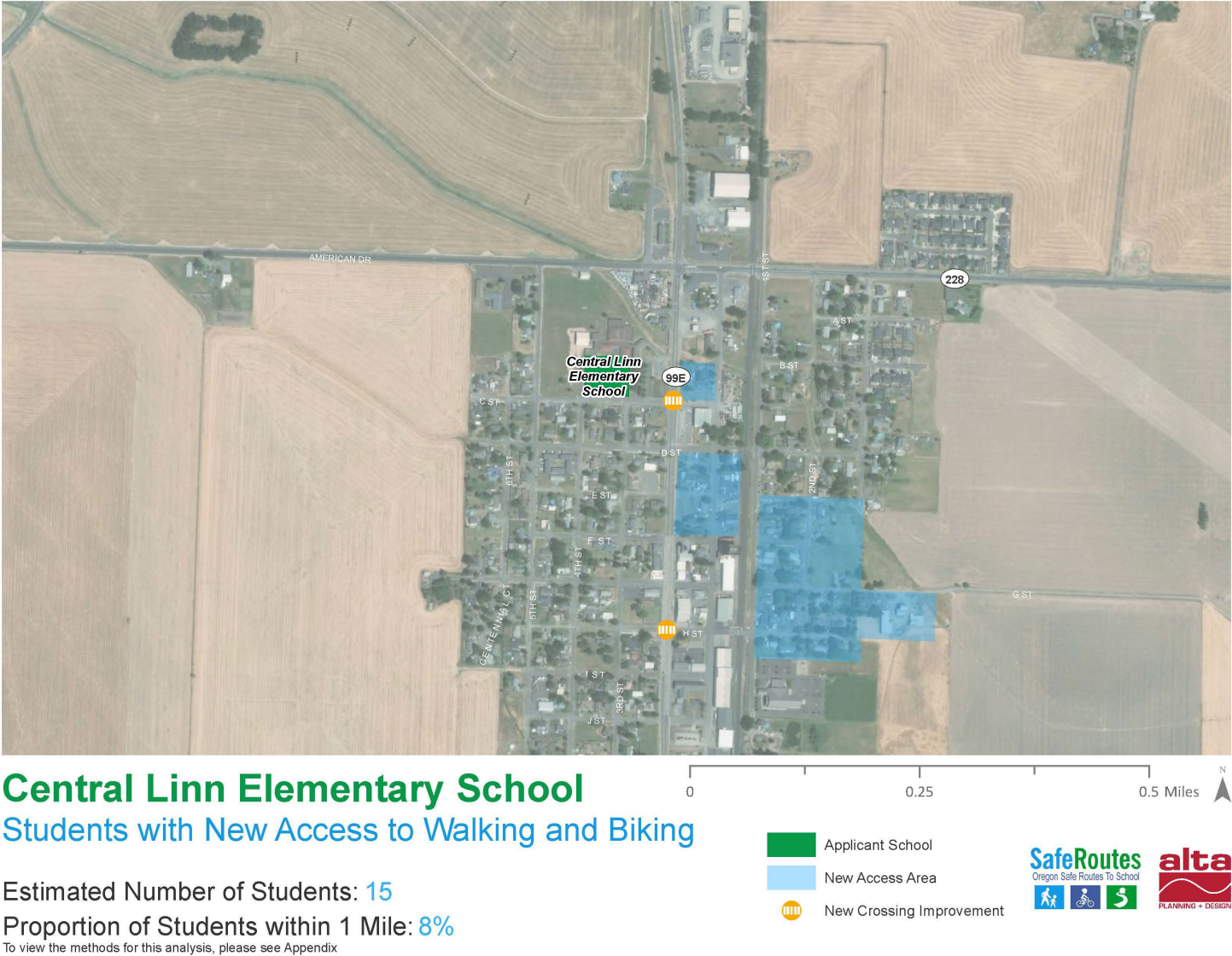
METRIC	VALUE
Total Population of New Access Areas	99
School Age Population of New Access Areas ⁹	15
Percentage of Students within the School Areas Gaining Access ¹⁰	8%

⁸ New Access Area assumptions: Given the rural context of Halsey, the two crossings of OR99E were determined to significantly improve the accessibility of Central Linn Elementary to the residents in the new access area, despite there not being a complete residential sidewalk network in these areas. Residents north of the access area were determined to have access via a northern route crossing OR99 using the light at American Dr. This count is likely an underestimate because the census population for this block was apportioned to a smaller area than it should have been due to the small amount of residentially-zoned land in this region. Thus, the estimated population of the new access area is likely a bit deflated.

⁹ Calculated using the proportion of school-age children (5-17 years old) within the City of Halsey.

¹⁰ The School Area is defined as the area within the school enrollment area that is within one mile of the school.

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



Baseline Data

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.

Hand Tallies

DATE COLLECTED:	June, 2019
DATA COLLECTION PROCESS:	15 classrooms surveyed about their trip to and from school
NUMBER OF STUDENTS:	324 students participated in hand tallies
TRIPS RECORDED	1,206 trips recorded by the hand tallies

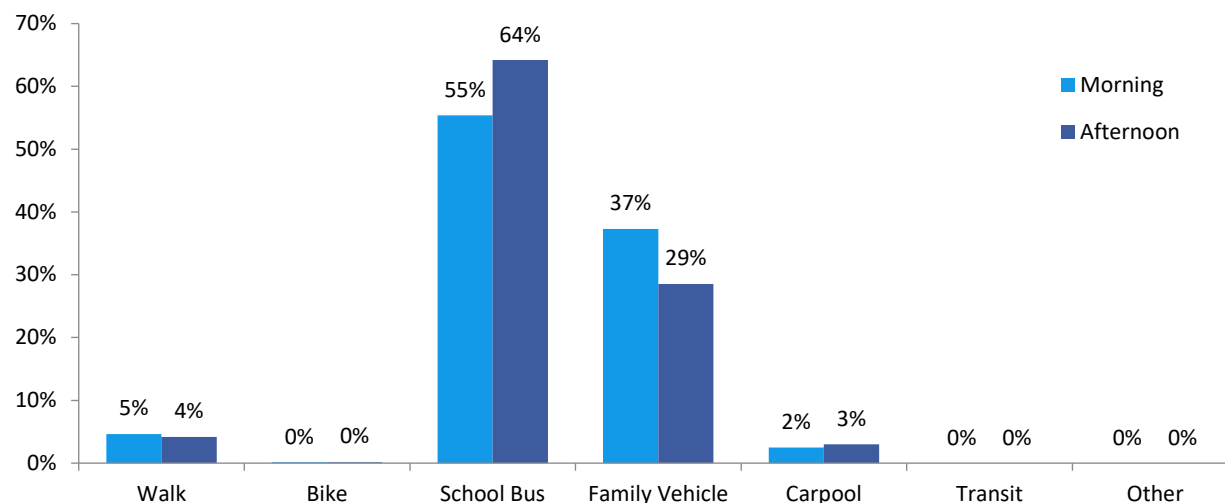
SUMMARY OF DATA COLLECTION AND METHODOLOGY

The May 2019 baseline hand tally data from Central Linn Elementary includes 1,206 recorded trips collected from 324 students in 15 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:

Central Linn Elementary hand tally data from 2019 indicates that a majority of students (51%) surveyed ride in a family vehicle to school, while around a third rode in a family vehicle (see Figure 2 and Table 2). Approximately 5% of students walk in the morning and 4% of students walk home in the afternoon. One student reported biking to school.

Figure 2. Student Mode Split by Time of Day, 2019 Hand Tally Data



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

Table 2. Count of Student Mode Split to and From School, 2019 Hand tally Data

TIME OF DAY	WALK	BIKE	SCHOOL BUS	FAMILY VEHICLE	CARPOOL	TRANSIT	OTHER
Morning	28	1	334	225	15	0	0
Afternoon	25	1	387	172	18	0	0

Parent/Caregiver Surveys

DATE COLLECTED: June 2019

DATA COLLECTION PROCESS: The Oregon SRTS parent/caregiver survey was distributed online to parents at Central Linn 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: 57; 18% response rate

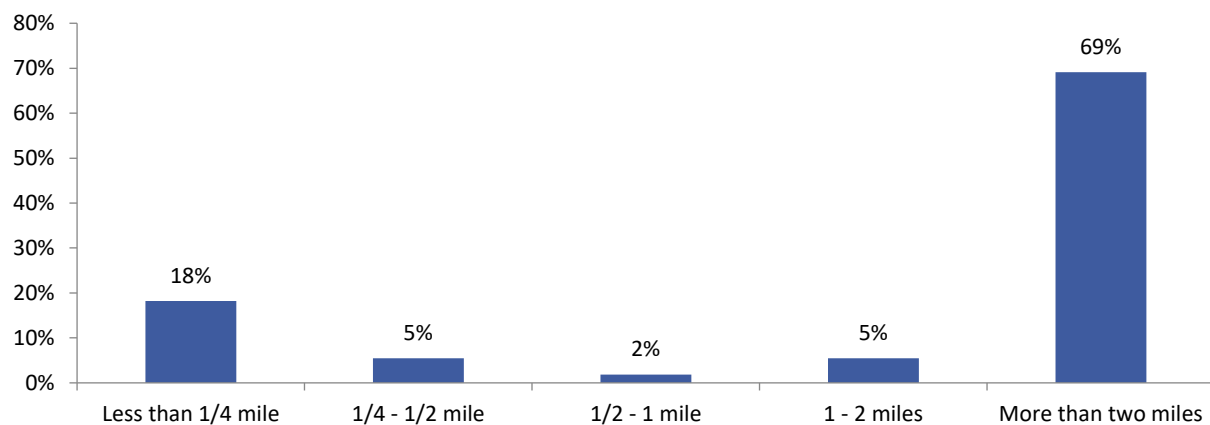
SUMMARY OF DATA COLLECTION AND METHODOLOGY

The parent/caregiver survey data included in this report was collected in June 2019 from 57 participants with students attending Central Linn Elementary.

SUMMARY OF RESULTS:

Parent/caregiver survey analysis found that about one fourth of respondents live within one mile of Central Linn Elementary, with an additional 5% living between one and two miles of the school site (see Figure 3). A majority (69%) live more than two miles from the school. This indicates that the majority of students are eligible for school bussing and live too far to easily walk or bike to school.

Figure 3. How Far Does your Family Live from School?, 2019 Parent/Caregiver Survey



Among those students who live less than a quarter mile from Central Linn Elementary, more than half used active modes (see Figure 4 and Table 3). This share decreased as the distance to/from school increased. For example, 28% of caregivers living between a quarter-mile and a half-mile from the school reported that their students used active modes. Family vehicles used by between a third and just over half of students at all distances from school. However, they were most popular among students living between a half-mile and one

mile from school and those living more than two miles from the campus. Among students living more than two miles from Central Linn Elementary, modes were split roughly between family vehicles and shared modes, particularly the school bus.

Figure 4. Mode Split by Distance from School, 2019 Parent/Caregiver Survey

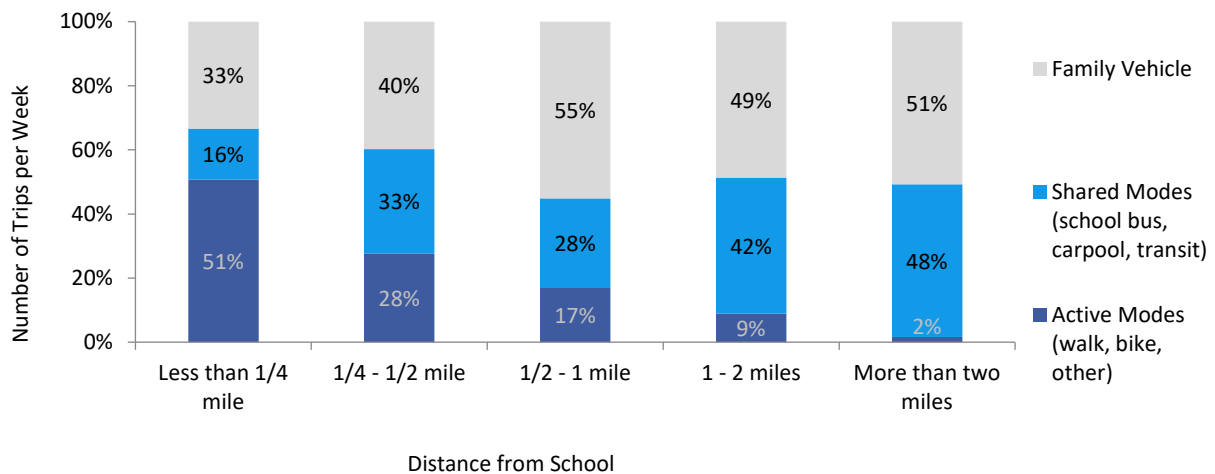
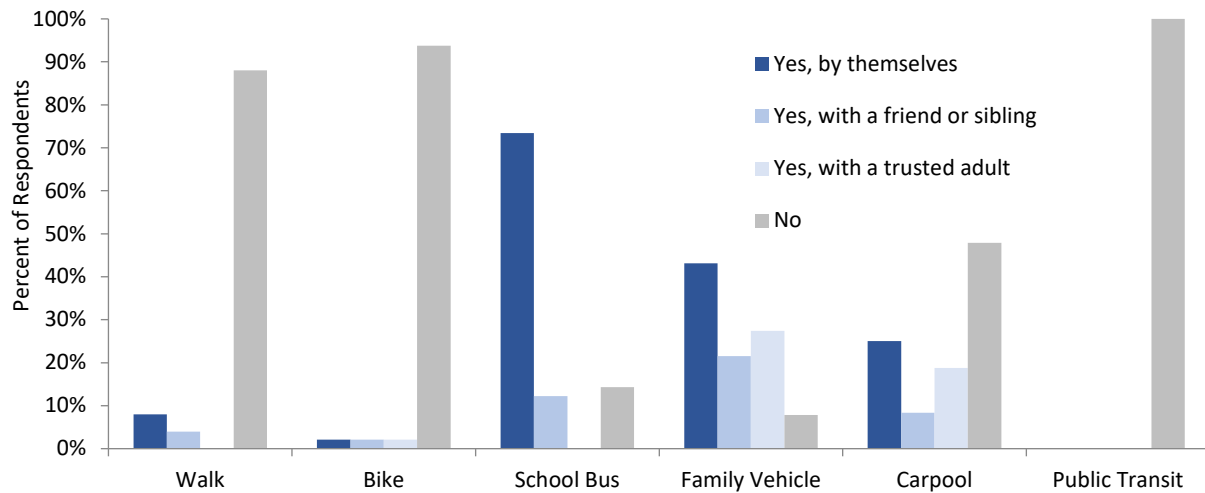


Table 3. Count of Trips by Distance the Family Lives from School, 2019 Parent/Caregiver Survey

DISTANCE	WALK	BIKE	SCHOOL BUS	FAMILY VEHICLE	CARPPOOL	TRANSIT	OTHER
Less than 1/4 mile	101	1	31	67	1	0	0
1/4 mile up to 1/2 mile	88	1	77	128	26	2	0
1/2 mile up to 1 mile	56	2	94	189	2	0	0
1 mile up to 2 miles	42	0	184	228	6	9	0
More than 2 miles	15	3	552	608	18	0	0

As Figure 5 illustrates, a small number (8%) of parents and caregivers surveyed reported that they would allow their student to walk to school by themselves. An additional 4% would allow walking if the student were accompanied by another child or sibling. Only 2% of parents surveyed reported that they would allow their student to bike, and this improved slightly if they were accompanied by either another child or sibling (2%) or a trusted adult (2%).

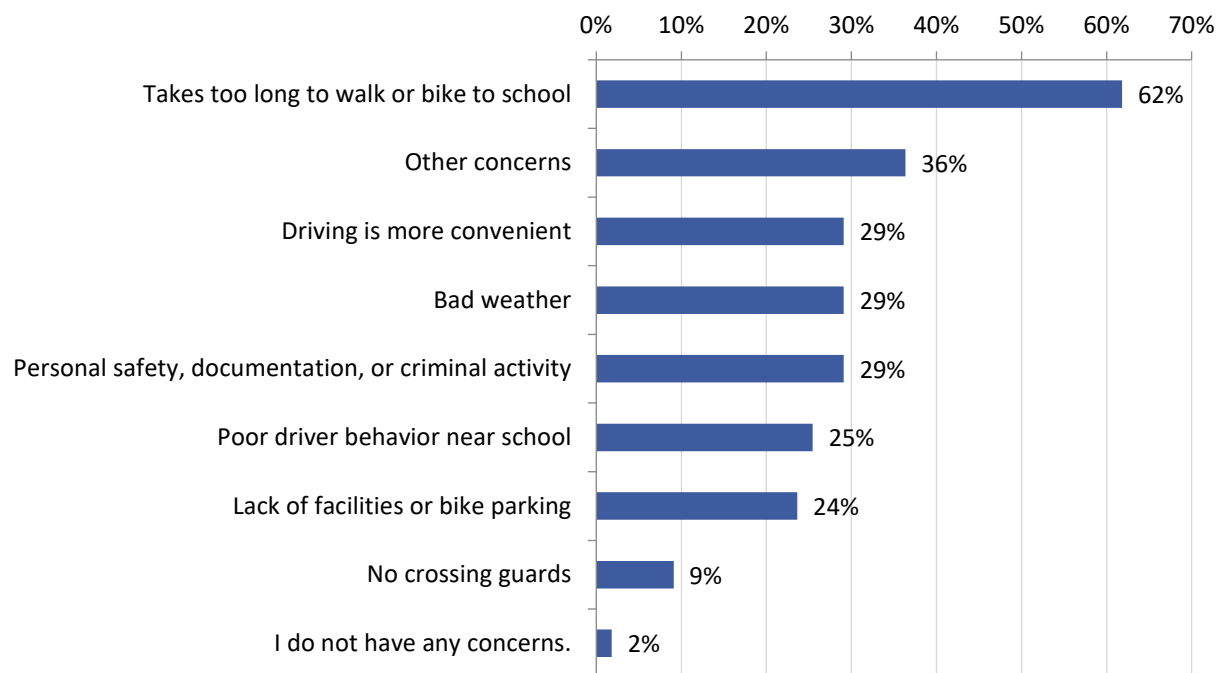
Figure 5. Do You Allow this Student to Travel to School in the Following Ways?, 2019 Parent/Caregiver Survey



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 6). The following were top concerns for the Central Linn Elementary School community:

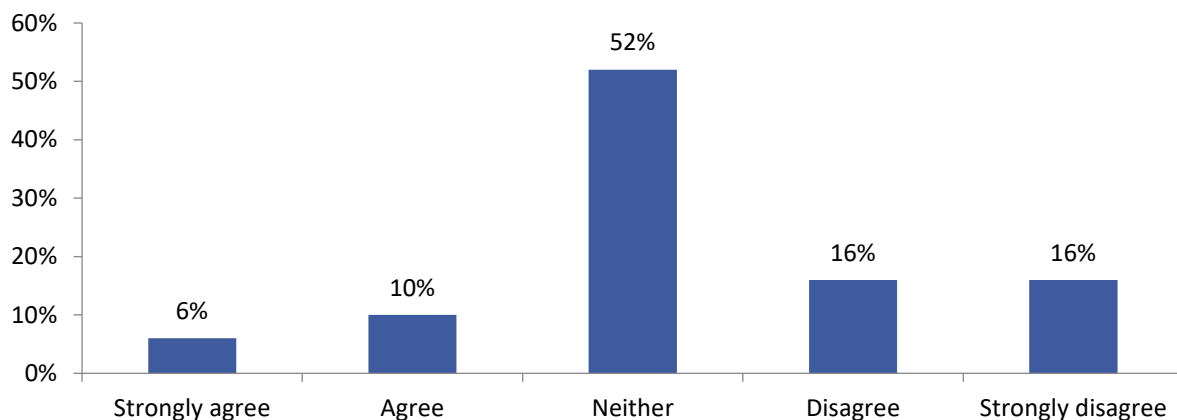
- The amount of time it takes to walk/bike to school
- The greater convenience of driving compared to other modes
- Bad weather conditions
- Concerns about personal safety, documentation or criminal activity

**Figure 6. What Concerns Limit Your Student’s Ability to Walk or Bike to/from School?, 2019
Parent/Caregiver Survey**



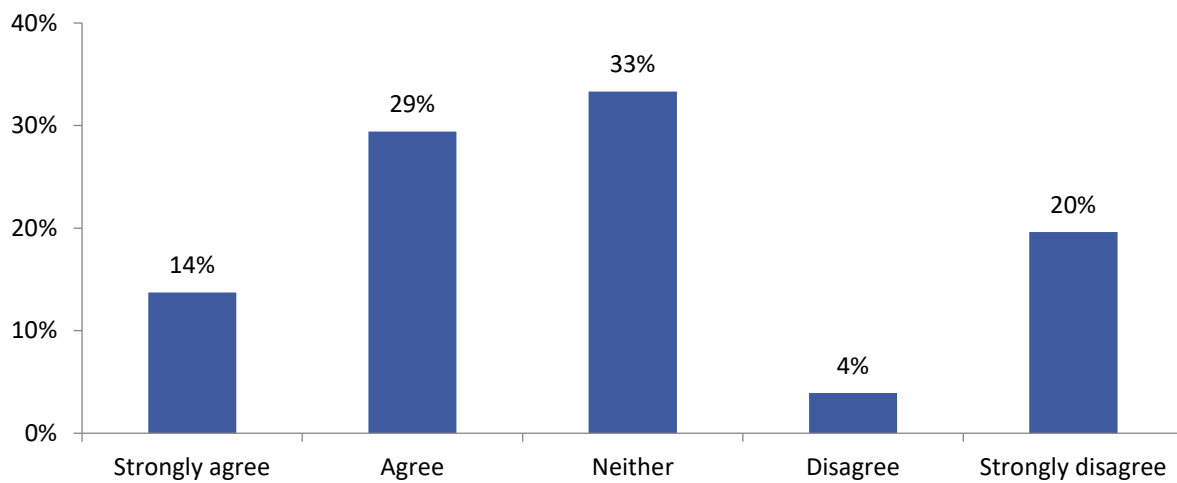
A majority of parent and caregiver respondents felt Central Linn Elementary neither encouraged or discouraged students from walking and biking to school at the time of the survey (52%). An additional 16% felt the school encouraged or strongly encouraged active transportation, while 32% characterized the school as discouraging walking and biking (see Figure 7).

**Figure 7. Agree/Disagree: Walking/Biking to/from School is Encouraged by my Student’s School, 2019
Parent/Caregiver Survey**



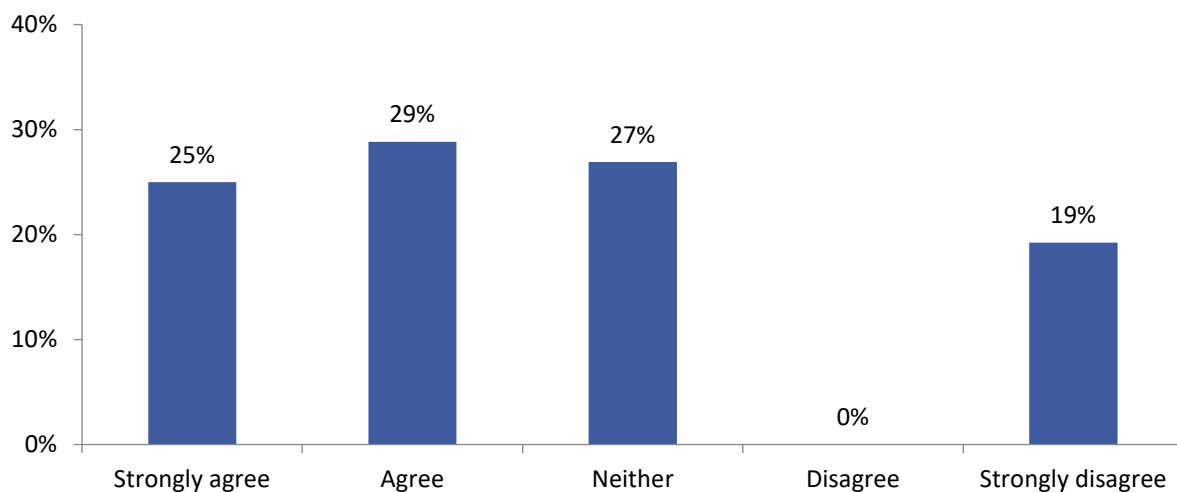
At the time of the survey, 43% of parents and caregivers reported that they agreed walking or biking to school would be a fun activity for their students, while 24% disagreed. An additional 33% were neutral or unsure on whether their student would enjoy walking and biking to school (Figure 8).

Figure 8. Agree/Disagree: Walking/Biking to/from School is Fun for my Student, 2019 Parent/Caregiver Survey



About half of parents and caregivers recognized the health benefits of active transportation, with 54% reporting that walking or biking to school would be healthy for their student. An additional 27% were neutral regarding the health benefits of walking and biking, and 19% didn't believe these activities would be healthy for their student (see Figure 9).

Figure 9. Agree/Disagree: Walking/Biking to/from School is Healthy for my Student, 2019 Parent/Caregiver Survey



Crash Data

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, no crashes involving a pedestrian were reported within one mile of the school.

TIME OF REPORTED CRASHES INVOLVING BIKES AND PEDESTRIANS WITHIN 1 MILE OF SCHOOL*: N/A

NUMBER OF REPORTED INJURIES BY SEVERITY WITHIN 1 MILE OF THE SCHOOL: N/A

ADDITIONAL CRASH DATA CONSIDERATIONS: It is possible that unreported incidents have occurred, as minor incidents and near misses are not always recorded.

Notes on Community Context or other Relevant Information:

None.

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. ODOT Region 2 estimates project completion is planned for November 2023.

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 2024 (assuming project completion)
PARENT SURVEYS:	Yes	At least 30 parents per school	Late spring 2024 (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 2024 (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*)

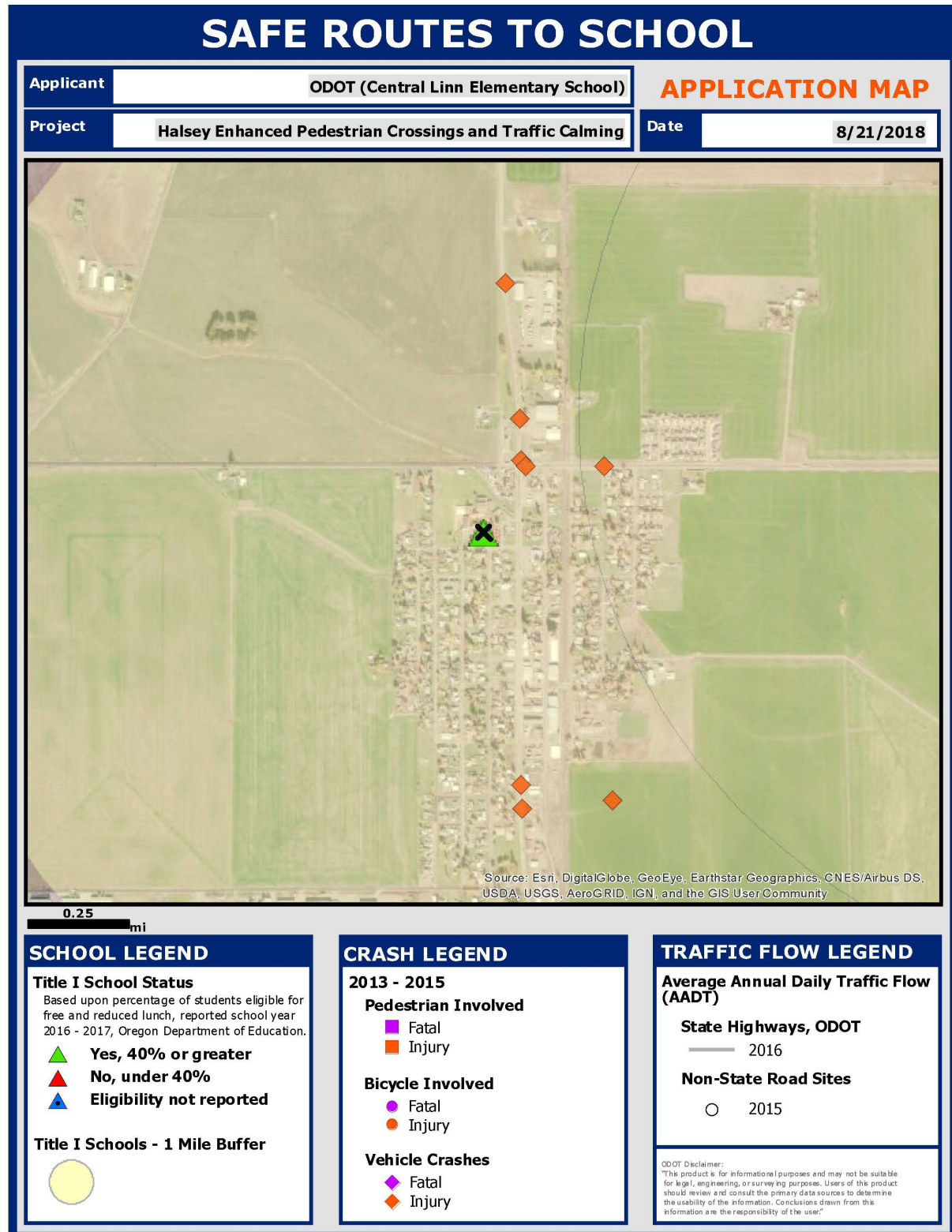
Chapter 3. Findings

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

- impact of infrastructure 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 Map

Figure 10. Central Linn Elementary Competitive SRTS IN Grant Funded Project Map



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.