Needs Assessment: Porterville Unified School District

CTNA Report Cover Page

PUSD Energy and Sustainability Interns

Clean Mobility Options Voucher Pilot Program (CMO)

Porterville Unified School District – Porterville, CA
Community Transportation Needs Assessment

January 6, 2021 Submission

Prepared by: Porterville Unified School District

Clean Mobility Options

Cap and Trade Dollars at Work

California Climate Investments

PUSD Porterville Unified School District
Creating Opportunities: Changing Lives

Table of Contents

Acknowledgements

The Porterville Unified School District wishes to thank the following organizations for their contributions to the Clean Mobility for Porterville Schools Program as part of a community transportation needs assessment process from Clean Mobility Options (CMO). CMO is part of California Climate Investments (CCI), a statewide initiative that puts billions of Cap-and-Trade dollars to work reducing greenhouse gas emissions, strengthening the economy, and improving public health and the environment — particularly in disadvantaged communities.

On-site partners:

- Climate Action Pathways for Schools
- City of Porterville
- Tulare County Association of Governments
- Safe Routes Partnership
- The students, staff, and administration at all PUSD sites
- Porterville P8 Initiative
- The Energy and Sustainability Program interns
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Executive Summary

The Porterville Unified School District (PUSD) in partnership with the non-profit Climate Action Pathways for Schools (CAPS) received a $48,802 needs assessment grant from the Clean Mobility Options Voucher Pilot Program (CMO) to determine transportation gaps, needs, and preferences of the Porterville school community. This included connecting gaps in clean mobility plans developed by the City of Porterville and the Tulare County Association of Governments (TCAG) to the needs of the school community. Our results are able to link the school communities' mobility needs to solutions, with a plan to follow-up and continue engagement with community members after the grant is completed.

Needs Assessment Goals and Objectives:
PUSD's Energy & Sustainability Program, established in 2019, aims to provide every PUSD student an option to get to and from school with zero pollution and zero greenhouse gas (GHG) emissions. The Program goals include reducing PUSD's GHG emissions by 80% by 2030. To support that Program, the goals of our CMO needs assessment include:

- Determining PUSD community stakeholders and current clean mobility options in Porterville
- Collecting baseline data about how students get to and from school
- Understanding the demographic profile of the PUSD school community
- Hearing from community members about transportation infrastructure improvements they would like to see developed in their community.
- Gauging community members interest in clean mobility options, including active transportation and electric vehicle upgrades
- Receiving feedback from community members about current clean mobility projects

Methodology
Work for the needs assessment started with a kickoff meeting with the key PUSD school community stakeholders, followed by a broad-based community survey concerning sustainable development at PUSD. Results from our survey were supplemented with focus groups, interviews, and engagement events with PUSD staff, parents, and students. All work was completed with the support of student interns from multiple PUSD Pathways programs. Once respondent results were compiled, PUSD and CAPS met with TCAG and the City of Porterville concerning issues and potential solutions identified during the survey and community engagement events and brainstormed ways to connect our individual clean mobility projects.

Key Findings:
Active Transportation Findings

- 61% of middle and high school students and 76% of elementary school students are driven in a private vehicle to school every day.
- For parents and students who lived within the walkability radius: 52% of students are driven/drive and 62% of parents drive their children.
- Students noted that distance, time, and weather were the top reasons they chose not to walk or roll to school.

- Parents noted that safety infrastructure barriers (including intersection safety, sidewalk discontinuity, and traffic conditions) kept them from letting their children walk or roll to school. Sidewalk discontinuity was corroborated by interns while conducting a safety infrastructure walk audit.
- The City of Porterville has an innovative Rails to Trails Program underway which is a great complement to our program, but the PUSD school community has limited familiarity with that development.

Vehicle Mobility Findings

- Parents, teachers, students, and principals noted that route logistics, bus conditions (e.g. overcrowding and climate controls), and routes need to be improved upon.
- The stakeholders broadly and strongly supported a plan to acquire more electric buses.
- The PUSD transportation team expressed concerns about the mileage range and the reliability of the relatively new electric school bus technology.
- High school students preferred driving but were open to more on-demand micro-transit if it were free or very affordable.
- PUSD's district boundary of 3,000 square miles presents unique challenges for students.
- The City of Porterville and TCAG are innovating in vehicle clean mobility, though the PUSD school community has limited familiarity with these programs, including:
    - The City Porterville is one of the first public transit agencies in the nation to convert its entire bus fleet to all electric.
    - The City of Porterville has Invested in a fleet of battery-electric vans, creating a new way for residents to access on-demand curb-to-curb service (aka, Micro-Transit). Its Micro-Transit program is designed to disrupt a traditional and underperforming public transportation model and provide effective and clean mobility to the residents of Porterville.

Next Steps:

Informed by the needs assessment, the next steps by the PUSD Energy & Sustainability Program to advance clean mobility options in the PUSD school community are as follows:

- *Advancing Active Transportation Projects.* This includes continuing our efforts with the Safe Routes Partnership and working with the City of Porterville to improve street safety for walking and rolling, especially those proximate to the City's Rails to Trails corridors.
- *Transitioning PUSD's School Bus and Service Fleet to Zero-emissions Electric Vehicles*. This will include converting PUSD's approximate 40 school bus fleet to zero-emission electric school buses, improving routing and bus service, and installing onsite solar electric systems to charge the new electric school buses and electric fleet vehicles.
- *Increasing Awareness of Clean Mobility Options in the School Community*. This will include leveraging the work of the PUSD Energy & Sustainability Program to increase awareness within the school community of available clean mobility options, especially through active transportation improvements offered with the Rails to Trails Program, and the Micro-Transit Program offered by the City of Porterville and TCAG.

Introduction

Project Background

The Porterville Unified School District (PUSD) in partnership with the non-profit Climate Action Pathways for Schools (CAPS) received a $48,802 needs assessment grant from the Clean Mobility Options Voucher Pilot Program (CMO) to determine transportation gaps, needs, and preferences of the school district's community across Porterville. This was done to support the development of the PUSD Energy and Sustainability Program, whose goal is to provide every student in the district with the ability to get to and from school with zero-pollution and zero greenhouse gas emissions option. This needs assessment was critical to the development of the program and focused on what the community wishes regarding clean transportation development for students. The purpose of the survey and community engagement events are to determine transportation gaps, needs, and preferences of the school district's community across Porterville. The needs assessment will address the gap connecting the clean mobility plans developed by the City of Porterville and the Tulare County Association of Governments (TCAG) to the needs and capacity of the local school community. This Summary Report will link the school communities' mobility needs to solutions, with a plan to follow-up and continue engagement with community members after the grant is completed. It will include, but is not limited to the following: detailed survey findings; community event findings, key takeaways and event details; a summative analysis of the transportation access findings, and a plan to follow-up and continue the engagement with community members.

Project Team

The project team consisted of PUSD and CAPS, a non-profit organization who partners with school districts to reduce greenhouse gas emissions through project-based student internships. They were chosen due to their previous history with the district and their mission of including students in the planning process, as this is an integral part of PUSD's graduation outcomes. PUSD provided project administration and management while CAPS led the project design and implementation, including development and implementation of the needs assessment survey and student internship program. Student interns assisted in survey development, translation, and analysis.

Community Transportation Needs Assessments

CMO is a statewide initiative that provides funding for zero-emissions shared mobility options to under-resourced communities in California. CMO is available throughout California to eligible under-resourced communities, as well as eligible low-income tribal and affordable-housing communities, to increase access to safe, reliable, convenient, and affordable transportation options. CMO is funded by California Climate Investments (CCI), a statewide initiative that puts Cap-and-Trade dollars to work reducing greenhouse gas emissions, strengthening the economy, and improving public health and the environment – particularly in disadvantaged communities. The CMO Voucher Pilot Program provides two types of vouchers for eligible applicants in order

to support communities that are in different stages of preparation towards implementing clean mobility projects. Available vouchers include, (a) Clean Mobility Project Voucher (Mobility Project Voucher), and (b) Community Transportation Needs Assessment Project Voucher (Needs Assessment Voucher). PUSD received a Community Transportation Needs Assessment Project Voucher.

The goal of needs assessments is to ensure any proposed project is responsive to the specific transportation needs, preferences, and choices of community residents. The needs assessment must consider community preferences for mobility solutions identified through meaningful, broad-based, representative engagement, and must prioritize community decision-making in the project.

Needs assessments generally follow this work sequence:

- Analyze hard data to develop inferences about a project area.
- Administer a resident survey to challenge or reinforce inferences from the hard data.
- Conduct one community engagement event to validate inferences from resident surveys.
- Conduct a second community engagement with a more specific population based on your validation from the previous community engagement.
- Develop solutions with residents.

Conducting a needs assessment is a valuable first step and empowers residents to shape the clean transportation investments happening in their communities. This is a key lesson for pilot project design, and an approach that can be modeled in other communities that want to increase access to clean transportation and mobility options. The project team collected qualitative and quantitative data through online surveys, interviews, and community focus groups from the Porterville school community. In total, 2,929 survey responses were received across PUSD sites from parents, teachers, students, and principals. The information gathered from the survey was supplemented with four focus groups, interviews with seventeen principals, and three transportation district employees. With the results provided in this report, the project team developed a potential implementation plan for zero-pollution and zero greenhouse gas emissions transportation for PUSD students.

Project Area

The project area is located within five census tracts identified as disadvantaged communities: 6107003901, 6107003902, 6107003700, 6107004101, 6107004102 (see figure 1). Porterville has a median household income of $43,823 (California $75,235), a poverty rate of 27.5% (California 11.5%), and an unemployment rate of 8.2% (California 6.9%) as of Nov. 2021. The planning area faces interrelated health, environmental, and economic challenges which was in part why it was chosen as the project area. With a population of 62,623, the 2021 demographics of our Planning Area include:

- 65.6% Hispanic
- 25.6% White

- 0.6% African American
- 1.1% Native American
- 5% Asian American
- 3.8% Two or more races

The project area was selected due to its track record of collaborating on environmental and economic challenges; the recent historic drought provides an example. East Porterville was a poster child for the drought's immense impact. Water in East Porterville was almost entirely provided by shallow wells fed by the Tule River. In 2014 wells began to run dry. To take on the catastrophe, ten governmental agencies and local nonprofits collaborated on the 'East Porterville Water Supply Project', completed in 2018. It is a tremendous success and a model for meeting the drinking water needs of disadvantaged communities, winning a Helen Putnam Award for Excellence in 2018.

Additionally, Porterville was chosen as the project area due to its developing capacity to take on environmental and economic challenges. As an example, to improve educational attainment PUSD launched an innovative and career-centered academy program, called Pathways in 2011. It's tightly linked to the community, with strong support from local government and business leaders. The development of work within the project area was undertaken, in part, by Pathways student interns. Students from four different pathways worked on this project: (1) the Academy of Engineering, (2) the Alternative Energy Resource Occupations Academy, (3) the Environmental Science Academy, and (4) the Multi-Media and Technology Academy.

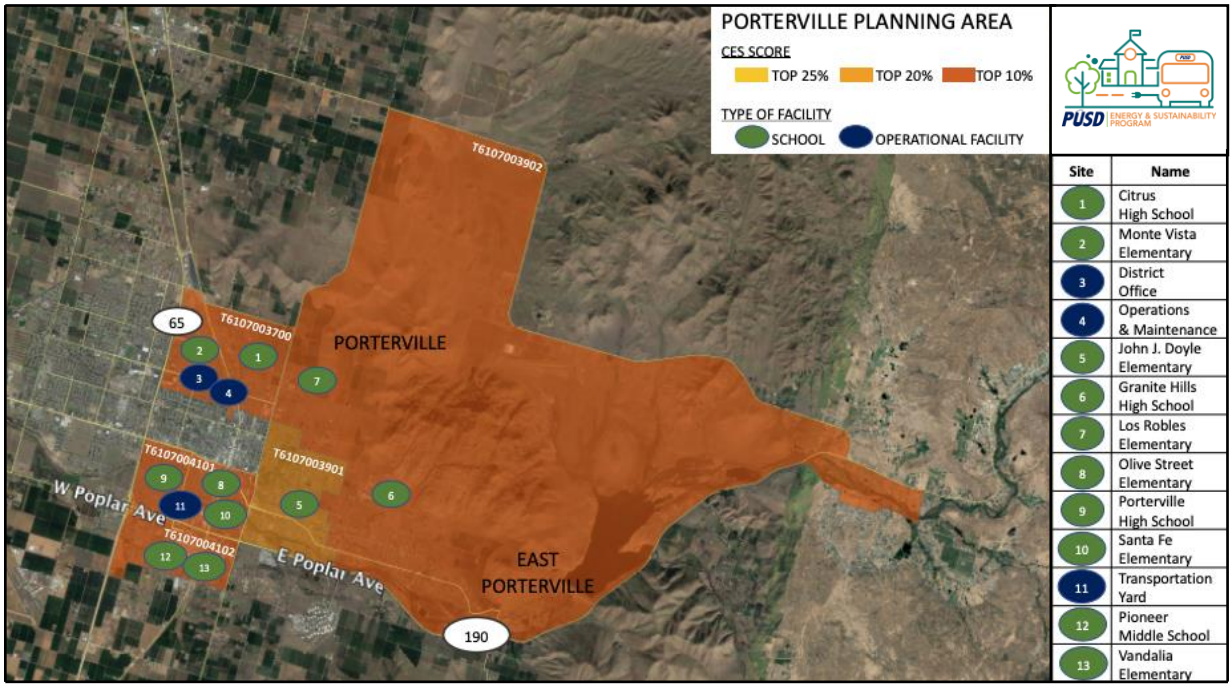


Figure 1: Map of the Porterville Planning Area, outlining where schools are located.

Purpose of the Report

This report was prepared to detail the steps taken by the project team to complete the needs assessment, summarize key findings, and share lessons learned. We intend for this report to serve as a helpful resource for other organizations considering conducting a transportation needs assessment in their own school communities.

Methodology

Timeline

Work for this project took place from December 2020 to December 2021 (see figure 2). Project work started by recruiting and selecting the student interns who would assist on the project, as well as holding a kickoff meeting with relevant stakeholder entities. The stakeholders included in the kickoff were CAPS, PUSD staff, the City of Porterville, and the Tulare County Association of Government (TCAG). The next step was to design and write the broad-based community survey that would be released to the PUSD school community. Survey distribution and collection began with virtual interviews of PUSD principals in late April and finished in early June at the end of the online survey distribution. In July, our interns began analyzing the data for each school site which finished in December. During the summer we also worked on planning and outreach regarding community engagement events. Our first community engagement event was in July, when students interviewed three of the district's transportation employees concerning their thoughts regarding bus electrification and the six new electric buses. Once school was back in session, we held four focus groups throughout the fall with parents and students. In November, we worked with TCAG and the City of Porterville to identify intersections of high priority, specified by district staff and parents, for pedestrian safety improvements in Porterville. This needs assessment was designed to understand the school community's current transportation habits as well as what challenges exist in the development of clean mobility projects.

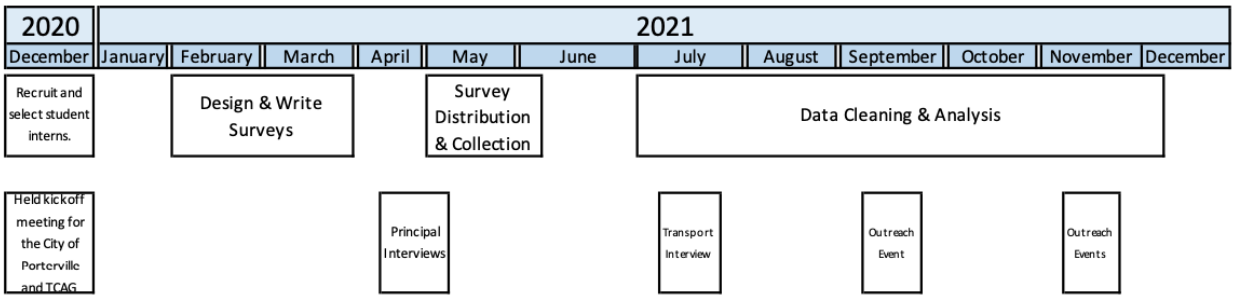


Figure 2: Timeline of the project.

Transportation Access Data Analysis

This analysis is intended to identify and improve the understanding of travel behavior of students at PUSD, specifically how they get to and from school.

Accessibility Indicators

In the development of the transportation data analysis, we used the following three accessibility indicators: (1) median household income, (2) EPA's Walkability Index, and (3) the Clean Mobility Programs available in Porterville.

a. Median household income

The median household income was chosen as an accessibility indicator as it suggests the general level of economic development in an area. Income is generally used as a measure of the economic well-being of individuals and communities providing information about the financial resources available to community members and is tied to employment levels, educational attainment, and health. For this needs assessment, median household income can help us understand financial barriers to clean mobility.

b. EPA's Walkability Index

The EPA's Walkability Index was chosen as it quantifies how easily students can walk to school from an engineering and built environment perspective. This aligns with part of our project goals to make walking and rolling to school safer for students who live within the district's walkability radius and thus do not qualify for district busing (for distances see table 1). The Walkability Index helps us prioritize improvements and outreach efforts to areas with a lower ranking. Through this accessibility indicator we hope to better understand the barriers to student's ability to walk or roll to school.

Table 1. Distribution of the grade levels and maximum walking distances for PUSD students who do not qualify for busing due to proximity. This information was provided by PUSD.

Grade Level	**Distance**
K – 3	0.75 Miles
4 – 8	1 Mile
9 - 12	2 Miles

c. Clean Mobility Projects in Porterville

Our third transportation indicator is a list of the various Clean Mobility Projects in Porterville and Tulare County. This indicator was chosen due to the recent innovations the City of Porterville's has taken regarding clean transportation. They recently converted their public buses to electric models and purchased twelve new 7-passenger vans to start an electric micro-transit system operated through Uber that allows for on-demand rides. The rural make-up of Porterville presents a unique problem to clean mobility as accessibility is low without a car. Our program would like to promote the clean mobility programs that already exist within Porterville.

Survey Development and Collection

Survey questions were developed through a combination of questions developed during a pilot survey by the PUSD Energy and Sustainability Program in 2020 at Harmony Magnet Academy and through a sample survey provided by Safe Routes Partnership (SRP). The PUSD Energy and

Sustainability Program is a districtwide sustainability development program that began in 2019, in partnership with CAPS, whose goal is to reduce greenhouse gas emissions by 80% by 2030. SRP is a national nonprofit that works to advance walking and rolling to school, improving the health and well-being of people of all races, income levels, and abilities to build a healthy thriving community for everyone. We believed the survey provided by SRP held questions most relevant for student commutes. They recommended these questions after working with school districts across the country in facilitating programs to promote walking and rolling to school.

The goal of the survey was to get baseline transportation data for PUSD, this includes information relating to how many students walk or roll to school and if not, what barriers exist. It also provided us with information on how the PUSD community views and wishes to develop sustainability initiatives at their school sites.

The first set of questions are basic demographic questions surrounding the participant's school, grade, and/or name. The next subset of questions addresses participants' basic understandings of sustainability. We then asked participants to rate their school along a variety of sustainability categories (energy, waste, food, water, and transportation). These questions were included to get baseline knowledge about what the PUSD school community understands about sustainability, where they would like sustainable development focused, and where school sites need improvements. The final section of the survey asks participants to give transportation related information; for example, how they get to and from school.

Different surveys were developed for three demographic groups: parents (of children grades K-5), students (grades 6-12), and teachers (all grade levels). Surveys for the different demographic groups were slightly different, but each contained a subset of the same questions. Parent and student questions were identical, while teacher surveys did not contain questions relating to commutes. To view survey questions for each demographic group please see Appendix 1-3.

Once questions were drafted, they were approved by district staff. The survey was administered and distributed through Survey Monkey. Survey Monkey was chosen due to the ease in distribution and analysis. We originally used Google Surveys but, when tested, it was impossible to distribute without an email list and students had access to edit questions. Distribution within Survey Monkey was done through a link. The survey was in English for teachers and students. For parents, the survey was provided in English and Spanish.

Figure 3: Students hard at work analyzing survey responses.

Through the guidance and recommendation of district officials, it was decided that the survey would be released in May, as this was the most opportune time for school employees given the workload increase of the schools reopening in April 2020. To facilitate distribution, we met and interviewed 18 of the 20 PUSD principals. At the end of the principal interviews, we asked for their recommendation regarding survey delivery at their school site then followed the principals' recommendations for distribution. The vast majority of middle and high school principals recommended we email them survey link(s) for teachers and students and they would handle distribution. Those who didn't recommend this process for students wanted the survey to be sent through ParentSquare, the district's family communication tool. Elementary school principals exclusively recommended we use ParentSquare to connect with parents. Responses were collected from May 4th through June 7th.

Community Engagement Efforts

Interviews with PUSD Principals

Interviews were undertaken with 18 of the 20 PUSD principals. They were conducted over Zoom between April 29th and May 7th. This was done to get a more in-depth look at each school site than what principals could provide solely taking the online survey. Principals were asked a similar set of survey questions as teachers, and each interview took about 30 minutes (for a full list of principal interview questions please see Appendix 4). Once interviews were completed, they

were transcribed and their answers were entered into Survey Monkey so we could conduct a broader analysis. Their responses were crucial to our online survey development, as each principal knows their sites the best and were able to make targeted advice for survey development.

Interviews with PUSD Transportation Employees

On July 27th, two of our student interns anonymously interviewed three PUSD employees regarding their feedback on the district's current and future bus electrification plans. This was done after the district had received two of the six electric buses and were able to test drive them. Interview questions surrounded concerns in a transition, differences in maintenance, and potential positive outcomes from the switch. For a full list of the questions please see Appendix 5. Questions differed based on the position of the interviewee; however, for the sake of anonymity, the appendix does not differentiate between employee's titles and positions. Afterwards, interns transcribed the interview so we could note broader implications. PUSD transportation employees were chosen to interview as they are the stakeholder group that will experience the greatest change in their responsibilities and behavior throughout a transition to EV vehicles, so taking their concerns into consideration will be crucial to the success of any transition implementation plan. The users of EV vehicles (i.e., students and parents) will certainly feel the effects of a quieter bus and climate control; however, the service provided will remain the same.

Figure 4: Student interns getting the district's first EV bus ride.

Monte Vista Elementary Event on September 14th

Over the course of the grant period, we conducted four community outreach events. Our first was completed on September 14th at Monte Vista Elementary during a Back-to-School-Event. This event was chosen as it is the first large event the school holds each year and many parents partake in order to meet their child's teacher for the year, allowing us to reach more stakeholders than we could on our own. Monte Vista was chosen for outreach as they had one of the highest percentages of elementary students who live within the walkability radius during the 2020-21 school year (50%), and the school is in close proximity to the future pedestrian Rails to Trails Program the city is developing. Student interns set up a booth and spoke to parents and guardians as they arrived and exited the event. Throughout the night parents and guardians participated in a short five question paper survey surrounding transportation (to see the full list of questions please see Appendix 6). There were two kinds of surveys, one for parents and guardians whose children qualified for district busing and another for parents and guardians with children within the walkability radius. Both were asked to answer basic questions surrounding their student's commute as well as what would be the best time and methodology (either in-person or virtual) for a follow-up event. We received 73 responses and, in the days following, interns entered the results into Survey Monkey for analysis. Outreach was conducted in Spanish and English for both written and verbal communication.

PUSD Staff Presentations

There are 22 schools within the Porterville Unified School District. In order to spread awareness about the PUSD Energy and Sustainability Program, student interns have been presenting weekly to each school's staff since October 6th. During these presentations, interns discuss the program's accomplishments, future goals, and facilitate a question and answer session. These presentations support important outreach efforts, as well as build community between schools.

Porterville High School Event on November 9th

Using the relationships our program has garnered in the past two years we reached out to a Pathways teacher at Porterville High School to conduct a focus group with students. This teacher was part of the Alternative Energy Resource and Occupations (AERO) Pathway that focuses on renewable energy installation, mechanics, electronics, and architecture. This teacher also connected us to an architecture teacher that sees students outside of the AERO pathway. We held a focus group in both of their classes to discuss active transportation and busing at Porterville High. The topics discussed covered what would convince more students to walk or roll to school and if they lived outside the walkability radius what would convince them to take the bus. In addition, we also discussed the electric micro-transit service operated by the City of Porterville through Uber. We asked if students were familiar with the program and if they would use it as an option for school commutes, especially if it was made available to students for free. A full list of the topics discussed is located in Appendix 7. Porterville High School was chosen due to the high number of survey responses we received from this site, and also due to the unique make-up of Porterville High students who oftentimes come from surrounding towns and the

nearby Native American reservation and thus presented with distance challenges of a nearly 100-mile school commute.

Monte Vista Parent Night Event November 16th and 18th

The Monte Vista team was incredibly helpful in organizing the first parent night and we utilized their help again to plan focus group meetings with parents to get a more in-depth understanding behind their survey results. They hold parent nights once a month, with one session held for Spanish speaking parents and another for English speaking parents. We attended both with three of our student interns. During the event interns facilitated three interactive activities where parents were asked to annotate a map with desired infrastructure improvements, state how their child got to and from school, and their interest in active transportation in Porterville. Once the activities were completed interns facilitated a broader discussion with probing questions regarding student transport at Monte Vista and noted their responses. Monthly parent nights were held at 5:30 for Spanish speaking parents, to account for a greater percentage of working parents, while English speaking parents met at 5:00.

Findings

Transportation Access Data

Accessibility Indicators

a. Median Household Income

According to the U.S. Census Bureau the household median income for Porterville is $43,823 as of 2019, whereas California's is $75,235. The poverty rate is also 16% higher than the state of California as well. Over 80% of Porterville students qualify for free or reduced meals. Since Porterville is not as economically equal to the rest of California this could present certain challenges to clean mobility.

b. EPA Walkability Index

We used the EPA's Walkability Index's interactive map tool to see where twenty of PUSD's school sites were ranked. Of the twenty schools, two (Harmony Magnet Academy and Strathmore High School) are in Strathmore, CA. They were not included in this analysis as they are outside of the project area. Of the remaining eighteen schools, two were in the lowest rated index level of Least Walkable, fourteen were in the third index level of Below Average Walkable, and two were in the second index level of Above Average Walkable (see table 2). No PUSD schools were within the highest ranked index level of Most Walkable. For a map of PUSD school sites within the Walkability Index please see figure 5. For a complete list of each school's rating please see Appendix 8.

Table 2. Number of schools that fell within each ranking level of the EPA's Walkability Index.

Walkability Index Rating	Number of Schools
Least Walkable	2
Below Average Walkable	14
Above Average Walkable	2
Most Walkable	0

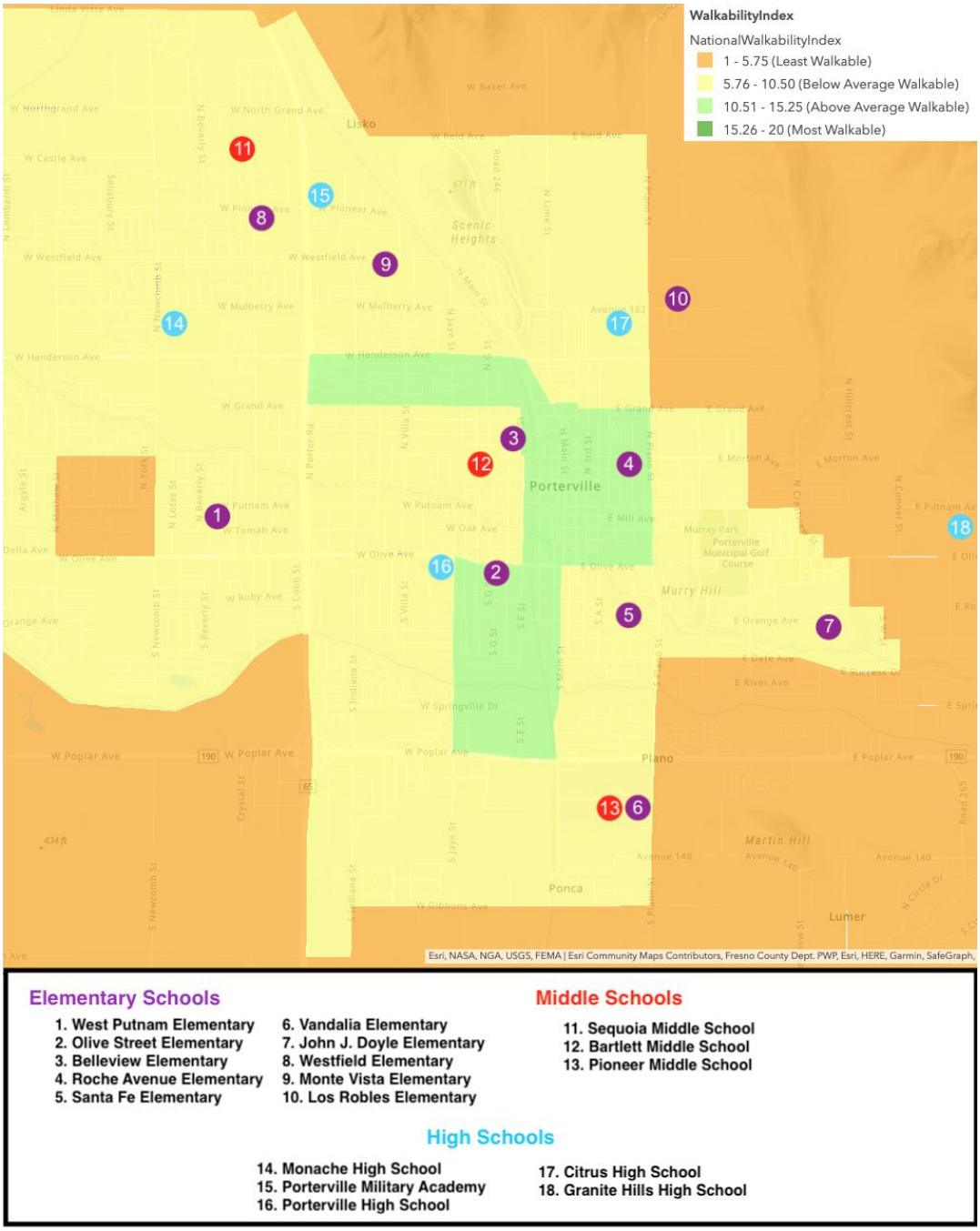


Figure 5: Map of PUSD school sites within the EPA's Walkability Index.

c. Clean Mobility Projects in Porterville for Students

Below is a full list of clean mobility projects available for Porterville students that can provide alternatives for school commutes and travel throughout the area.

1. Busing provided by Porterville Unified

PUSD consists of twenty-two school sites comprising two preschools, ten elementary schools, three middle schools, four comprehensive high schools, a continuation school, a large adult school, and three alternative program sites. At the high school level PUSD has fourteen Career Technical Education programs called Pathways. These Pathways combine career technical training with academic standard-based teaching. The Pathways program presents a unique challenge for both the district and Pathways students, as certain Pathways programs may be outside of a student's zoned high school. The district has remedied this by promising district busing for all Pathway students. This means students are first bused to their zoned high school then transfer to their Pathways' high school. The district also provides busing to their surrounding fifteen feeder districts/schools covering an extensive area. For example, students in the Sierra Mountain foothills can travel two hours to get to school covering up to 100 miles. For a breakdown of the percentage of students at each school site that live within the walkability radius or qualify for busing please see table 3. However, please note that some of these students may live outside of district boundaries, a prime example being Harmony Magnet Academy that accepts students from other non-feeder towns. These students are not provided transport by PUSD.

This means busing is an important and expensive aspect of the PUSD budget. Looking at the 2019 calendar year, to remove any anomalies caused by the pandemic, PUSD spent $205,439.13 on busing and used a total of 77,766 gallons of diesel to run their fleet. This accounts for approximately 1,027.34 tons of CO_2e emissions for 2019. The current PUSD bus fleet consists of 43 buses, 37 diesel and 6 electric. The district has promised Southern California Edison that they will increase their fleet to ten electric vehicles by 2025. Buses range in age from 1991 to 2019.

Table 3. Breakdown of the number of students at each site that live within or outside the walkability radius.

Porterville Unified School	Current Enrollment 21/22	Within Walking Distance	Outside of Walk Zone	Percent Walkers (%)
Belleview Elem	366	190	176	52%
Doyle Elem	608	302	306	50%
Los Robles Elem	430	101	329	23%
Monte Vista Elem	473	208	265	44%
Olive Elem	631	344	287	55%
Roche Elem	327	130	197	40%

Santa Fe Elem	820	175	645	21%
Vandalia Elem	569	14	555	2%
West Putnam Elem	494	182	312	37%
Westfield Elem	678	277	401	41%
Elementary Totals	**5,396**	**1,923**	**3,473**	**36%**
Bartlett Middle	509	277	232	54%
Pioneer Middle	745	72	673	10%
Sequoia Middle	501	165	336	33%
Middle Totals	**1,755**	**514**	**1,241**	**29%**
Granite Hills High	1,214	504	710	42%
Monache High	2,148	1,097	1,051	51%
Porterville High	2,247	725	1,522	32%
Strathmore High	666	193	473	29%
High Totals	**6,275**	**2,519**	**3,756**	**40%**
Citrus Continuation High	155	26	129	17%
Vine Street Community Day	9	2	7	22%
Other Totals	**164**	**28**	**136**	**17%**
District Sub-Totals	**13,590**	**4,984**	**8,606**	**37%**
Butterfield Charter High	285	67	218	24%
Harmony Magnet Academy	527	74	453	14%
Porterville Military Academy	244	42	202	17%
Charter Subtotals	**1,056**	**183**	**873**	**17%**
District Totals	**14,646**	**5,167**	**9,479**	**35%**

2. Porterville Public Transit

Porterville has several public bus routes (see figure 6). They use an app and Google Transit to share this information with the public. The city has completely transitioned to EV models. The buses also allow residents to ride with their bikes. Passengers may pay a $1.50 cash fare each time they board the bus or may choose from a variety of pass types that may be a more affordable option**.** For a full list of prices and day passes please see this website. For a monthly pass students are given a 63% discount.

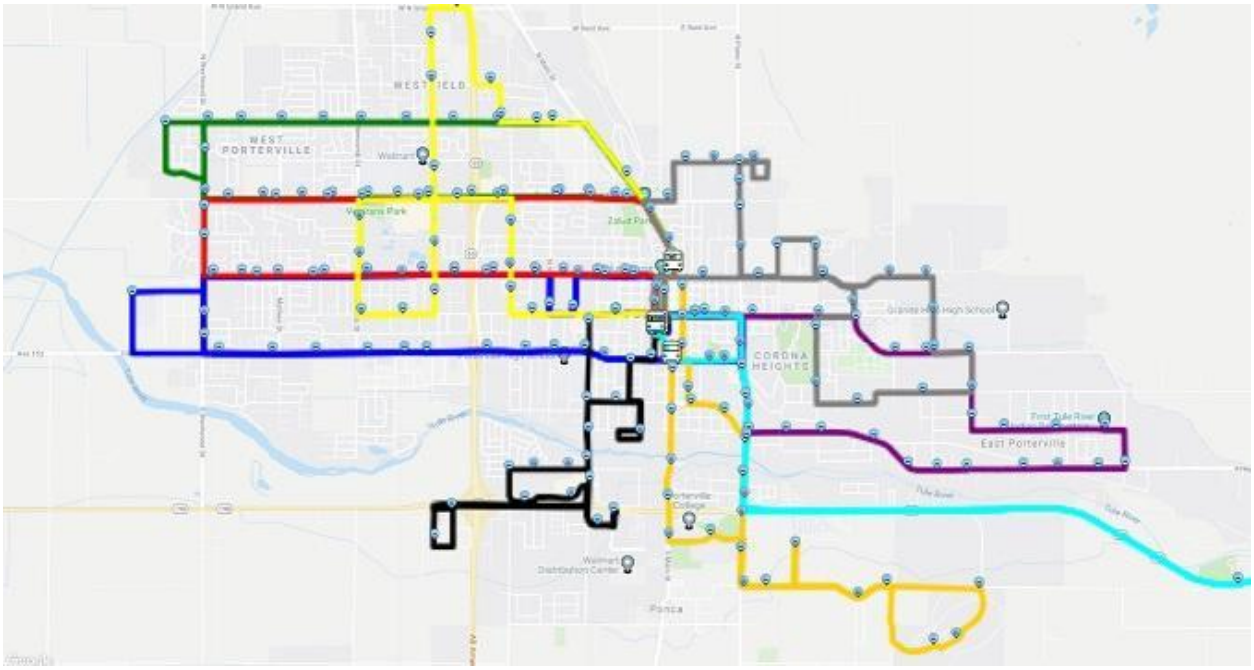


Figure 6: map of the public bus routes in Porterville (Source)

3. Dial-a-COLT

Dial-A-COLT is a shared ride, advanced reservation, origin-to-destination service for persons with disabilities who are unable to use the regular fixed route public transit service because of their disability. Dial-A-COLT is designed to meet the Americans with Disabilities Act service criteria established by the federal government. Porterville Transit's ADA Paratransit service, called Dial-A-COLT, is offered in strict accordance with the ADA Act of 1990. Cost per ride is $5 for a general ride and $2.50 for seniors/veterans/disabled/Medicare card holder. Personal attendants ride for free, but you are limited to one. (Source)

4. Rails to Trails Program

The City of Porterville has received nearly $8 million from the state to expand their Rails to Trails Program which converts old railway lines to paved walking and biking trails for residents. They already have a few trails in place and the grant will help expand that. The newest proposed trail is called Butterfield Corridor; it will run through Main Street and is represented in pink below. The city hopes to break ground in December of 2024. Please see figure 7 for a list of present and future development.

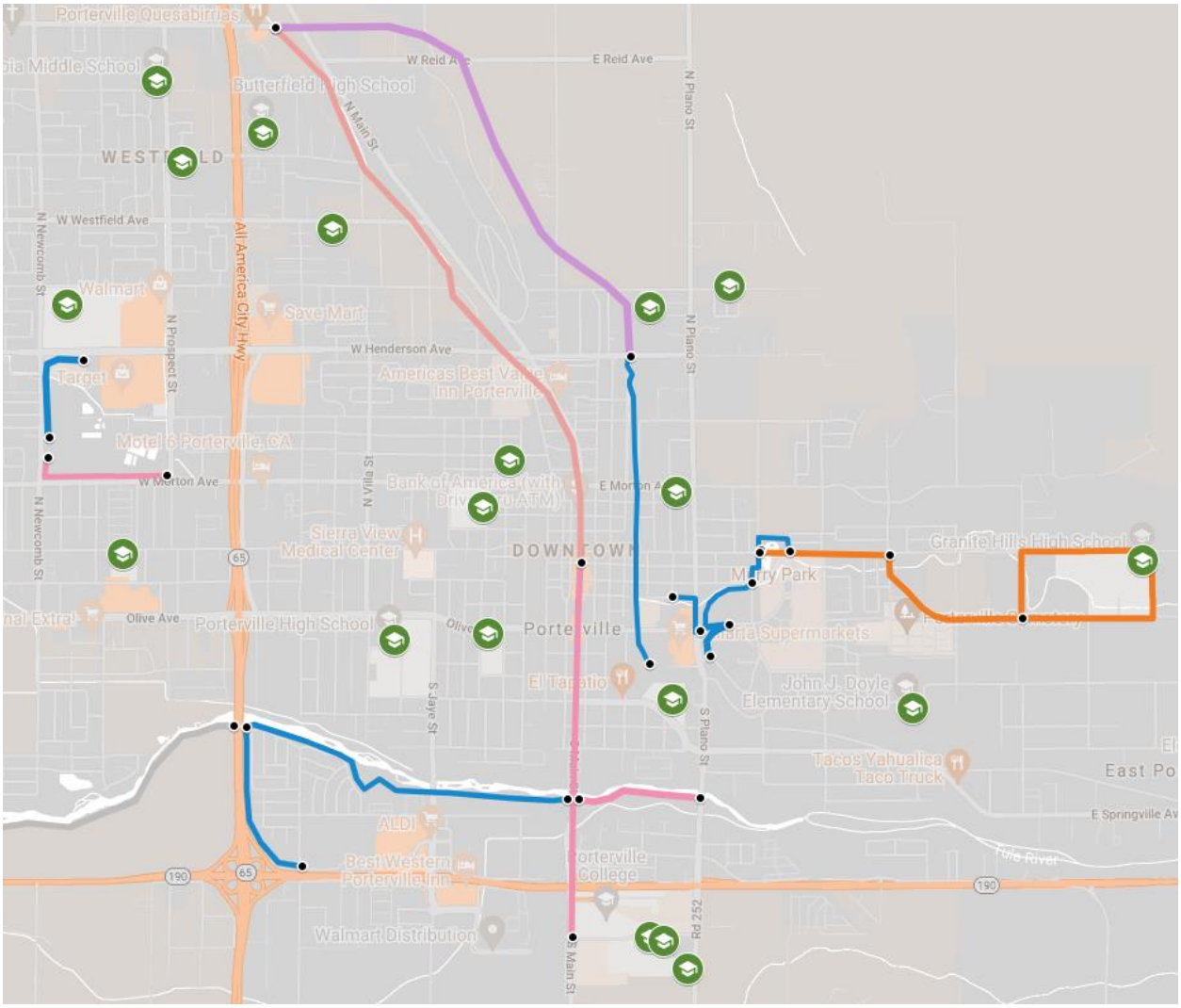


Figure 7: Map of the current and future rails-to-trails routes in Porterville and noting their proximity to school sites. The blue are current trails, the pink are in-development trails, the purple are future planned trails, and the orange is a bike lane path for Granite Hills High Students.

5. Loop Bus

The LOOP Bus provides at-risk youth with free transportation to free activities that connect them to mentoring and gang prevention programs throughout Tulare County. The program is funded by Measure R and the Tulare County Board of Supervisors. Participants complete an application four weeks before the requested date service to ensure proper scheduling, processing, and require route planning. They are also partnered with Sequoia Shuttle to bring youth to Sequoia National Park. (Source, Source)

6. Tulare County Area Transit

TCaT connects the towns and communities of Tulare County with fixed route service 7 days a week (for a map please see figure 8). Routes 10-90 offer curb-to-curb service for ADA-eligible

riders with advance reservation. TCaT also provides weekday Dial-a-Ride transportation. Full fare costs $2 one-way or $1 for seniors, disabled residents, and Medicare residents. There are also reduced-price monthly passes. (Source) (Source)

Figure 8: map of TCaT routes to the surrounding area (Source).

7. Uber Micro-Transit

Porterville now offers twelve electric vans that students can order for on-demand trips through the Uber app. Each van holds seven passengers and one wheelchair accessible seat. Porterville is only the fourth public transportation provider to partner with Uber for a software as a service program. The program costs riders $3 per passenger to go anywhere within Porterville Transit's coverage area. The van will also pick up others en-route to your location and reroute the van's GPS.

Figure 9: Photo of one of the EV vans. *(Source)*

Community Survey Findings

Survey responses were collected in the spring semester of the 2020-21 school year. In total, we received 2,485 responses from students, 126 from parents, and 318 from teachers.

Student Demographics

Out of the 2,483 respondents the majority were high school students (75%). Grade distribution is important as those in the younger grades (52%) (6th, 7th, 9th, and 10th graders) will have, in some cases, not spent any time on their campuses yet and their understanding of school logistics is thus limited. This is due to the fact that some students chose to remain online in the 2021 spring semester; the seventh and tenth graders will have only been on campus for a semester and a half before the lockdowns; and the online sixth and ninth graders will have never visited campus.

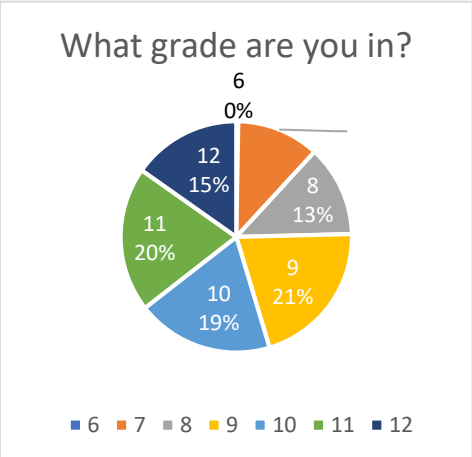


Figure 10. Breakdown of the grades represented in student responses.

The majority of responses came from 4 schools: Granite Hills High School (45%), Porterville High (23%), Bartlett Middle (16%), and Pioneer Middle (8%). Differences in response rates depend on methodology of survey release and support from school administration. For example, Porterville High School had teachers promote the survey

by providing extra credit for participants. Whereas schools like Monache High, Porterville Military Academy, and Sequoia Middle asked to have their survey released through ParentSquare and their response rates are low, we believe, as a result.

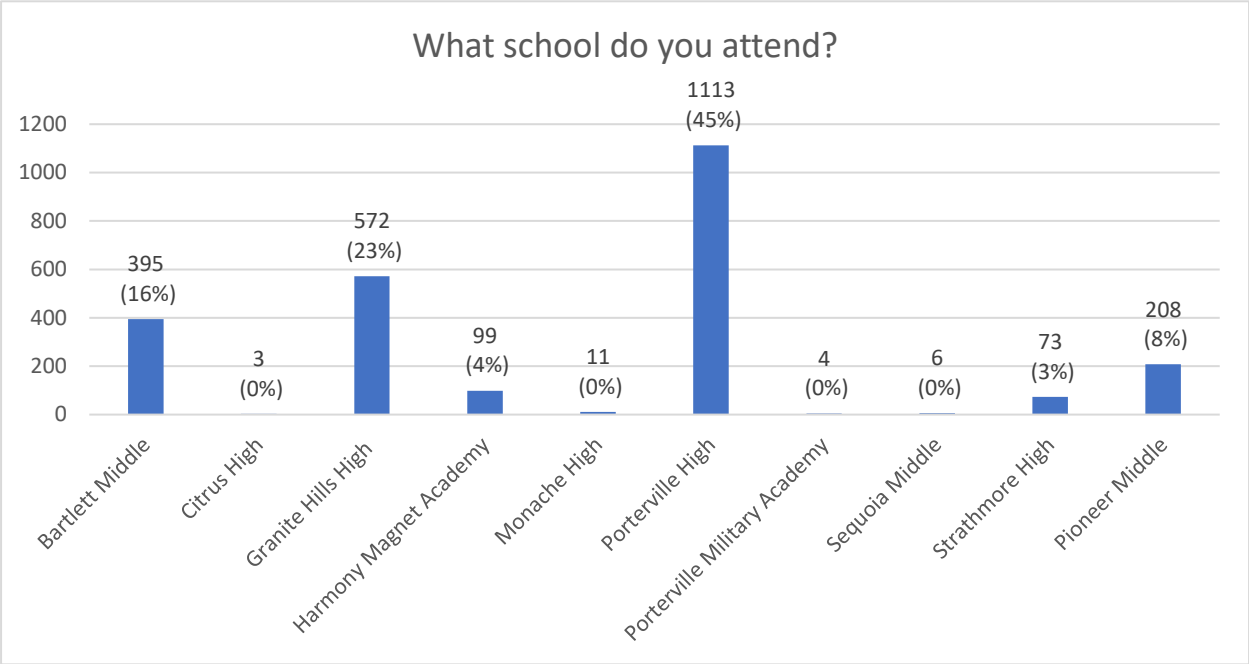


Figure 11: Breakdown of the schools represented in student responses.

Teacher Demographics

Of the surveyed teachers the majority of respondents worked at the three largest high schools: Porterville High School, Monache High, and Granite Hills High. This makes sense as they have the greatest number of faculty. Of the respondents, 16% were middle school teachers, 54% were high school teachers, and 31% were elementary teachers.

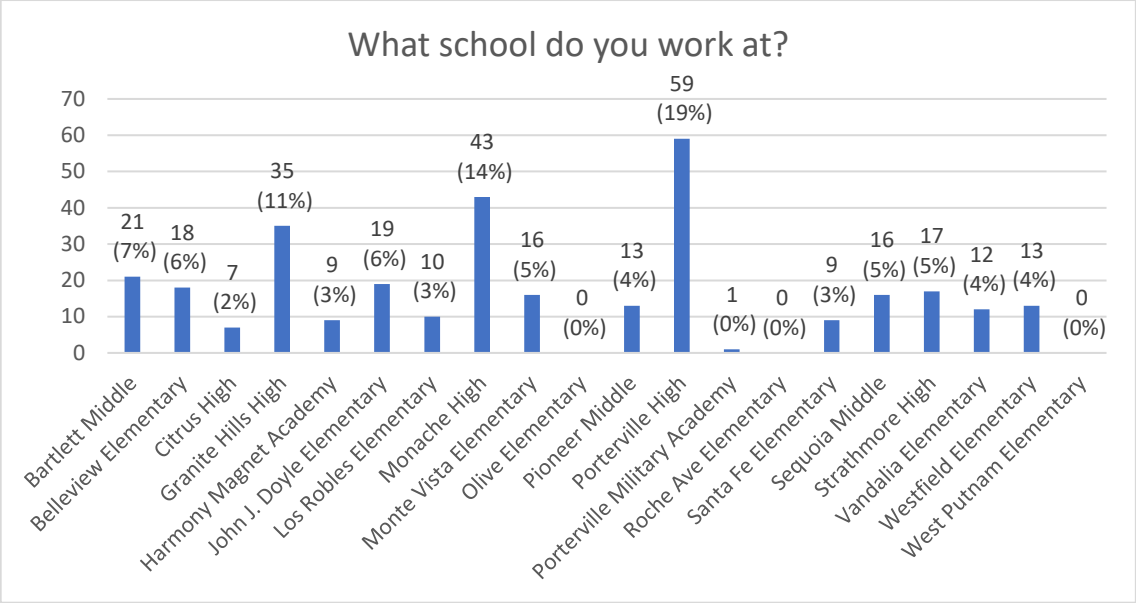


Figure 12: Breakdown of the schools represented in teacher responses.

Parent Demographics

63% of respondents had children in grades K-3 and 37% of respondents had children in grades 4-6. This data is relevant as K-3 students have a smaller walkability radius than 4-6 students as defined by PUSD. K-3 students' walk radius is 0.75 miles, while 4-6 students' walk radius is 1 mile. The largest number of respondents had children who attend Santa Fe Elementary (25%) and Westfield Elementary (21%).

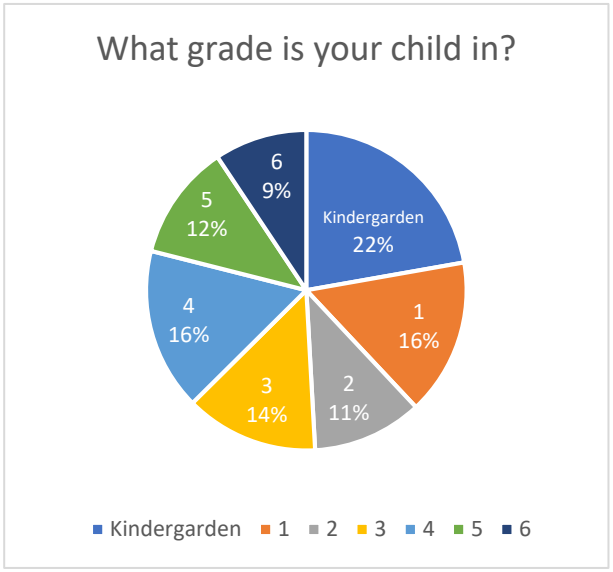


Figure 13: Breakdown of the grades represented in parent responses.

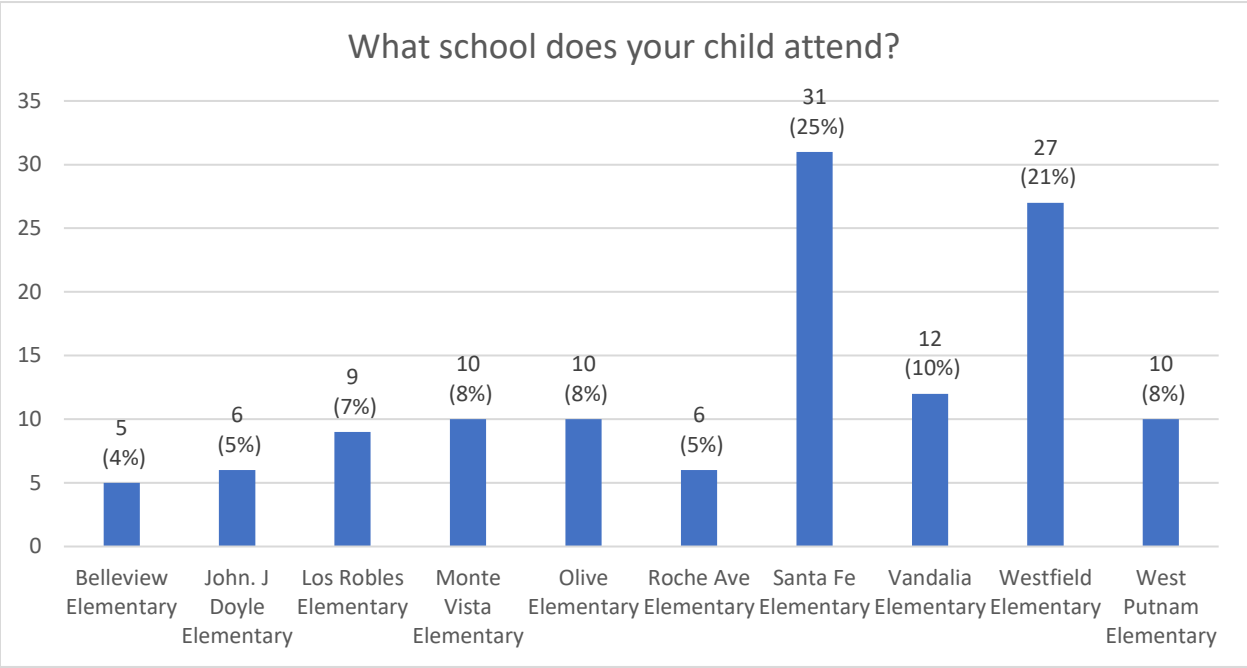
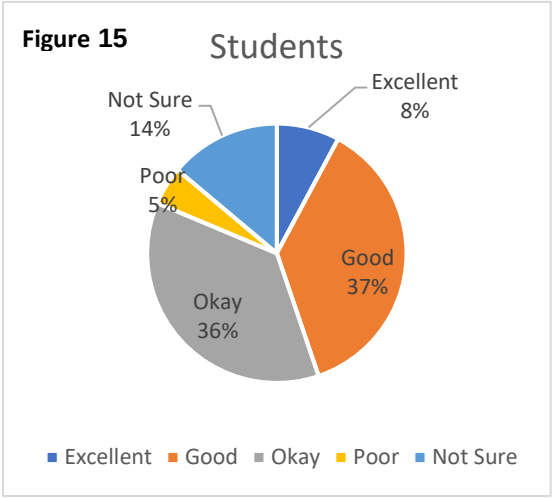


Figure 14: Breakdown of the schools represented by parent responses.

Responses: Level of understanding of sustainability

Figure 15



The largest percentage for students, teachers, and parents for their understanding of sustainability was a ranking of "good". The most common response was 'good' with a response rate varying between 37% and 43%. The greatest difference between the three demographics was within the 'excellent' category. The adult respondents (teachers and parents) ranked their school sites 5-10% higher than students did, pointing to the potential need for a more sustainability integrated curriculum. There was also a slight variation between the 'not sure' ranking between teachers and students/parents. Teachers had the lowest 'not sure' ranking at 3% while parents and students were closer at 11% and 14% respectively. Teachers, students, and parents all had similar percentages for the poor ranking.

Figure 16

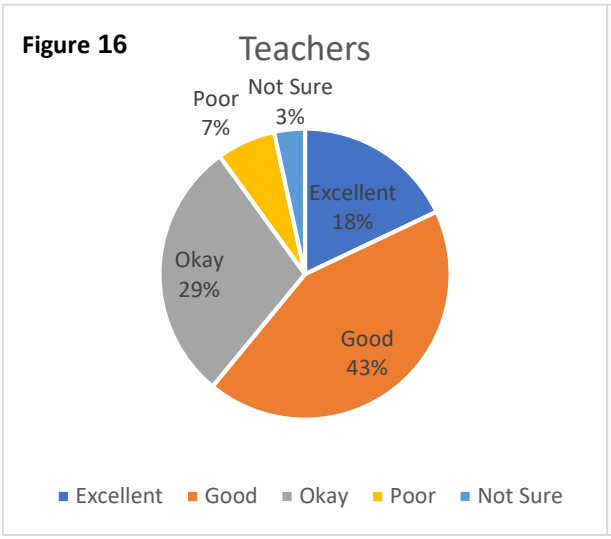
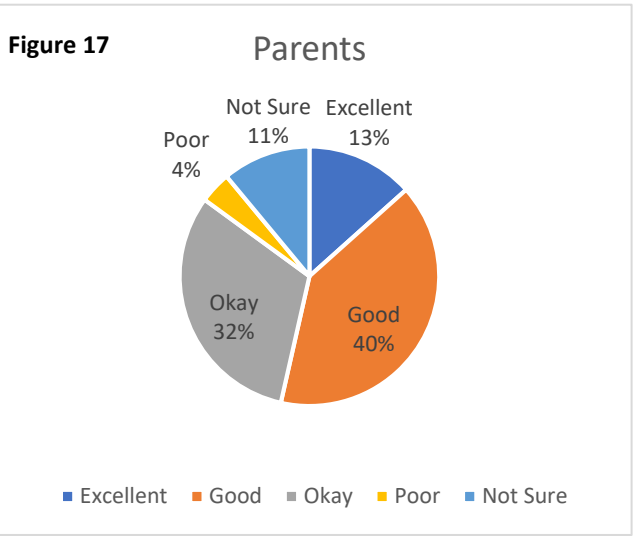


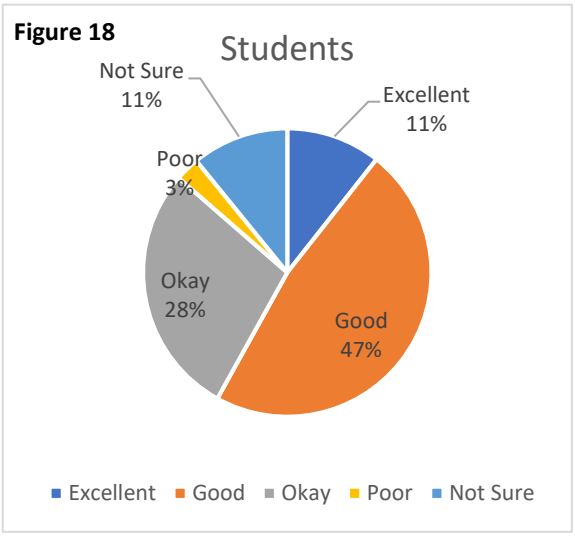
Figure 17



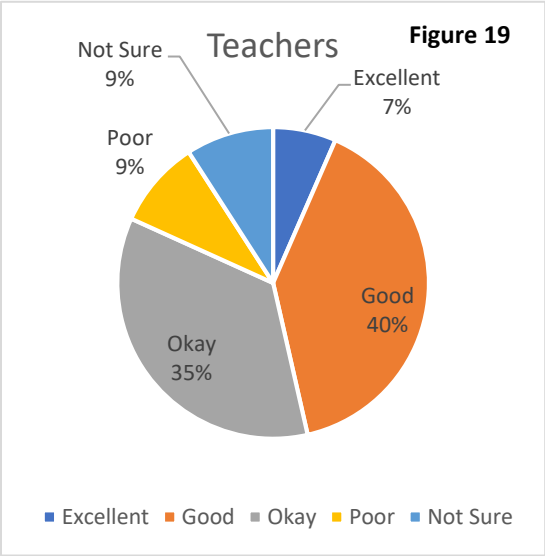
Figures 15-17: Breakdown of respondent answers to: What is your level of understanding of sustainability?

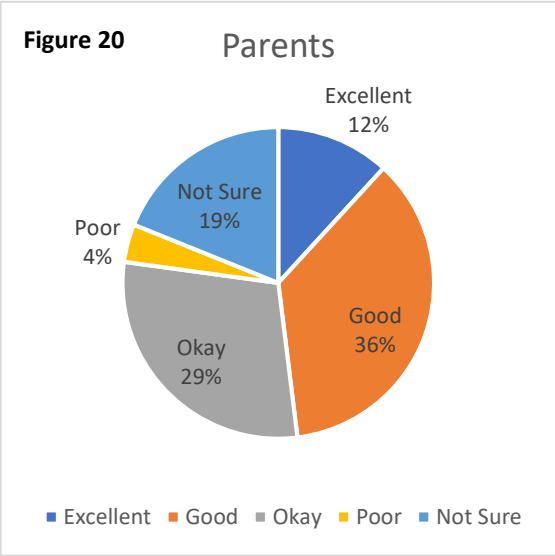
Responses: School sustainability rankings

Figure 18



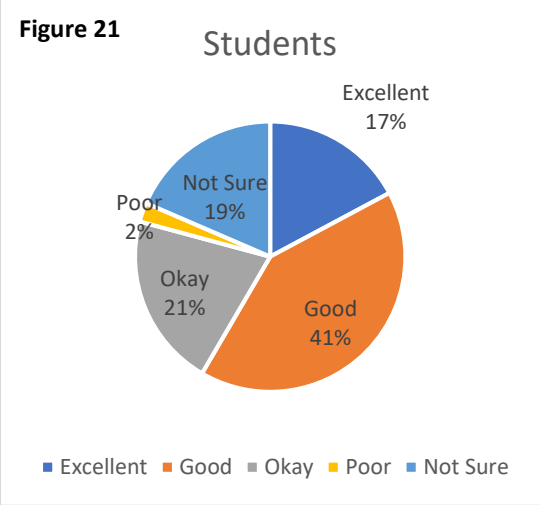
A very low percentage of respondents stated that their school site had 'excellent' sustainability with teachers ranking their sites the lowest at 7%. Between all three demographics the largest number of respondents believed their school had 'good' sustainability and the second highest ranking was 'okay'. Teachers had the highest percentage of 'poor' rankings between the three demographics at 9%. In the last question teachers ranked themselves the highest in terms of sustainability understanding, so it's probable they are also judging their school sites more harshly than parents and students. The disparity of answers between students/parents and teachers could be due to the greater understanding of sustainability. Overall, about 50% of respondents believe their school has a ranking of 'good' or 'excellent'.



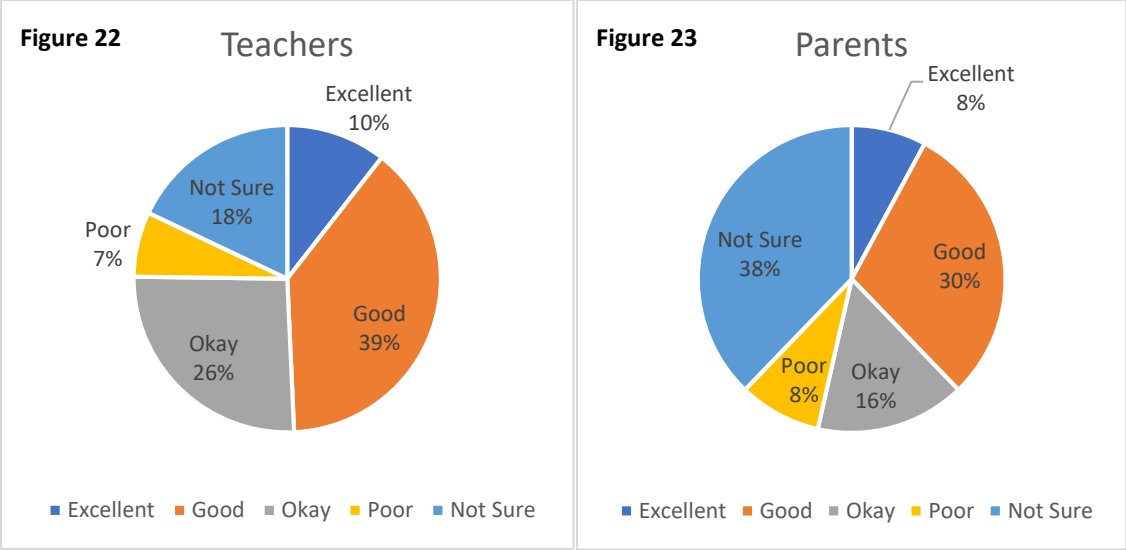


Figures 18-20: Breakdown of respondents' answers to: How would you rate your school in terms of sustainability?

Responses: Rate the sustainability of transportation at your school?



Students ranked transportation the highest of the three demographic groups with 58% of students ranking transportation within the top two rankings. As well as having the smallest percent 'poor' ranking at 2%. Parents ranked transportation the lowest with only 38% ranking transport within the top two rankings. It is possible that while people were answering these questions that they thought about the overall efficiencies and feelings of transportation at PUSD rather than the actual sustainability of transportation. Besides food, transportation was the lowest ranked sustainability sector of parents. This could correlate to parents having more knowledge about transportation and food at their child's school as they are responsible for student commutes and likely hear about what they are eating.



Figures 21-23: Breakdown of respondents' answers to: How would you rate the transportation in terms of sustainability at your school?

Results of Sustainability Category Rankings:

Table 4. Breakdown of the rankings regarding the five sustainability categories.

	First	Second	Third	Fourth	Fifth
Students	Energy	Water	Transportation	Food	Waste
Teachers	Energy	Water	Transportation	Waste	Food
Parents	Energy	Waste	Water	Transportation	Food

The above table ranks the five sustainability categories by those which received the highest percent of respondents who ranked the category as either 'good' or 'excellent,' the two highest possible rankings. All stakeholders ranked energy as the most sustainable aspect of PUSD's campuses, perhaps due to the visible solar energy systems at each site, while food and waste were the categories ranked the lowest in terms of sustainability. Transportation fell within the mid-range of rankings.

Responses: Ranking sustainability categories for improvements

Across the three demographic groups, transportation was consistently, and by far, the sustainability topic of least interest regarding school improvements. This is interesting because transportation has the second highest greenhouse gas emissions, after buildings, when compared to the other sectors.

Students ranked energy as their top choice listed for improvements, teachers and parents voted food as their top, with parents choosing food by a significantly higher margin than teachers. This is interesting as students also listed energy as the aspect of their campuses that was the most sustainable, so you would believe they would also think it needs the least improvements. Whereas parents and teachers listed food as both the lowest ranked sustainability category (see above table) as well as the top category for campus improvements. All three demographic groups ranked waste as their second choice echoing thoughts by principals.

Transportation being ranked so low by respondents points to potential areas for education campaigns connecting the heavy greenhouse gas emissions associated with transportation.

Figure 24

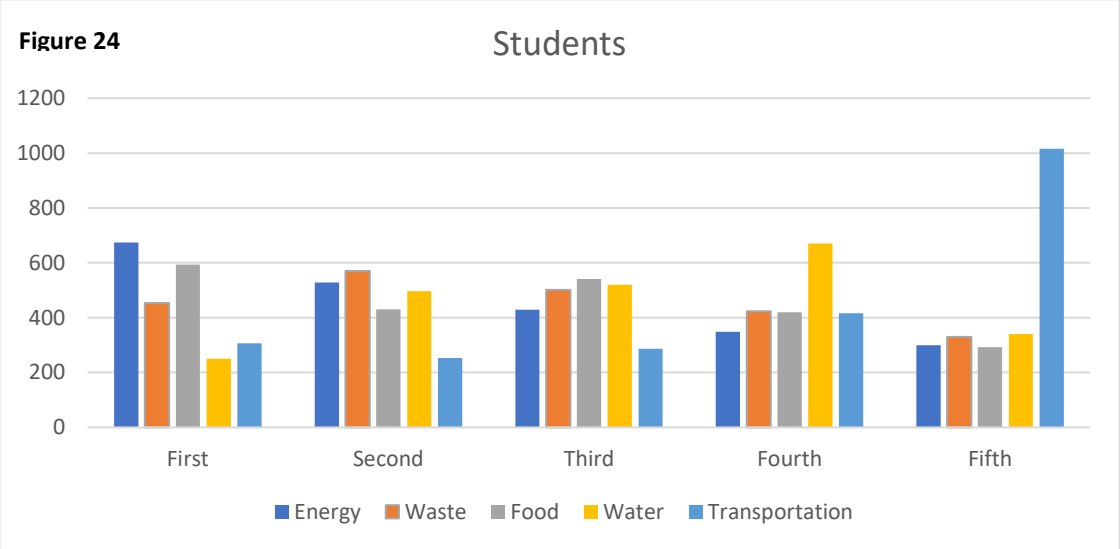


Figure 25

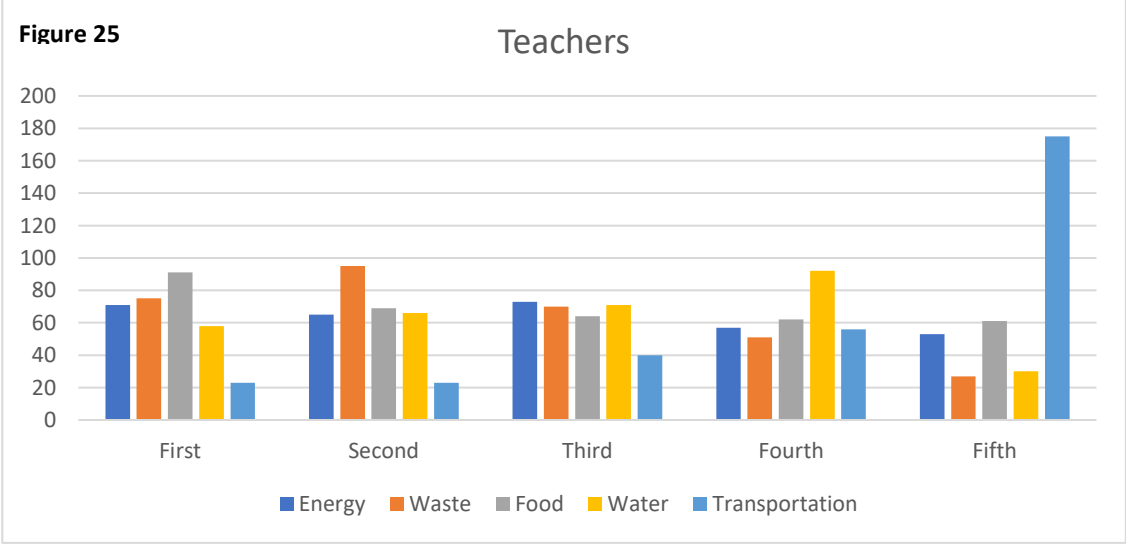
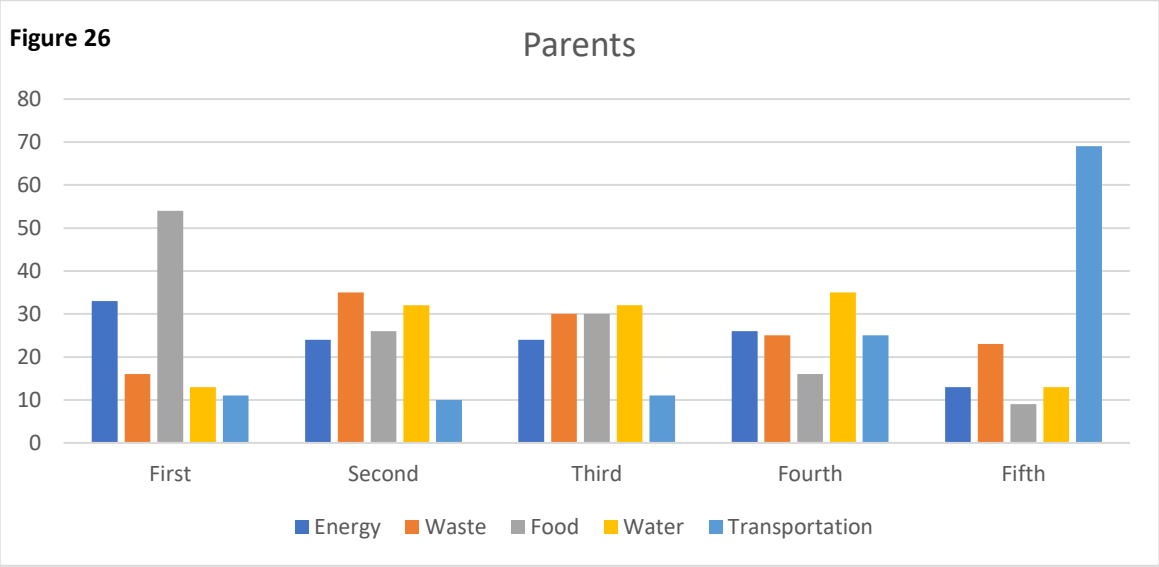


Figure 26



Figures 24-26: Breakdown of respondents' responses to: Which of these topics are you most interested in improving at your school? Rank: Energy Usage, Waste Management, Food Services, Water Usage, and Transportation.

Responses: How do you get to and from school?

Figure 27

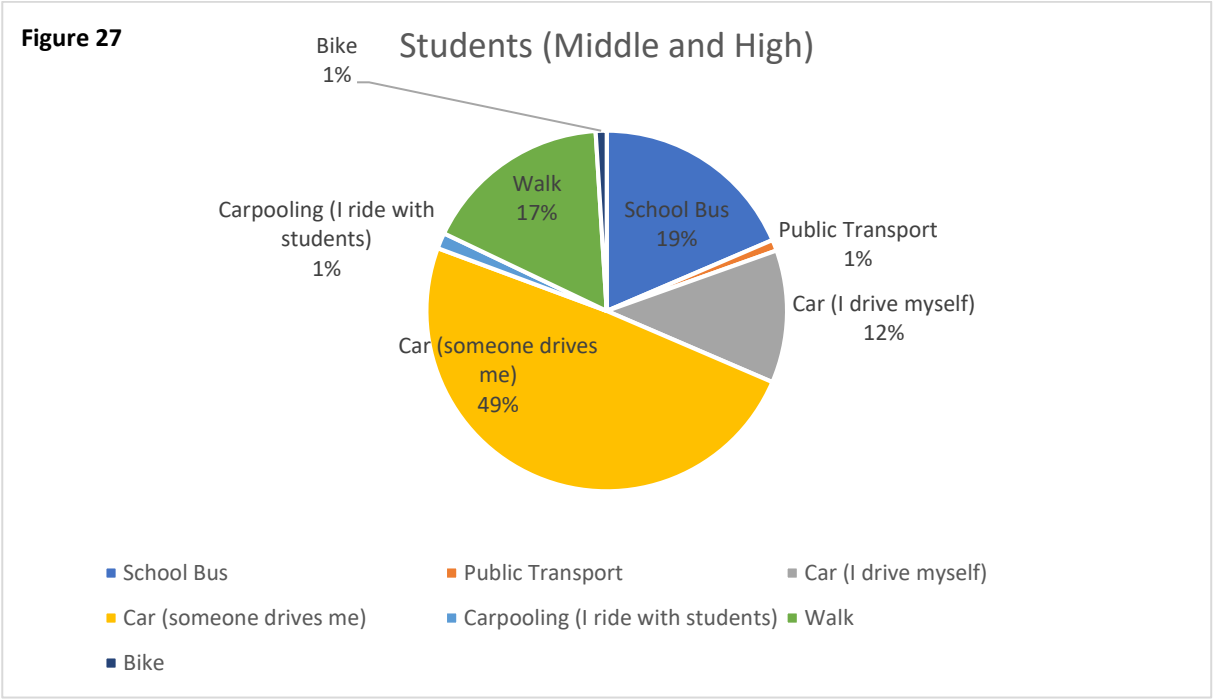
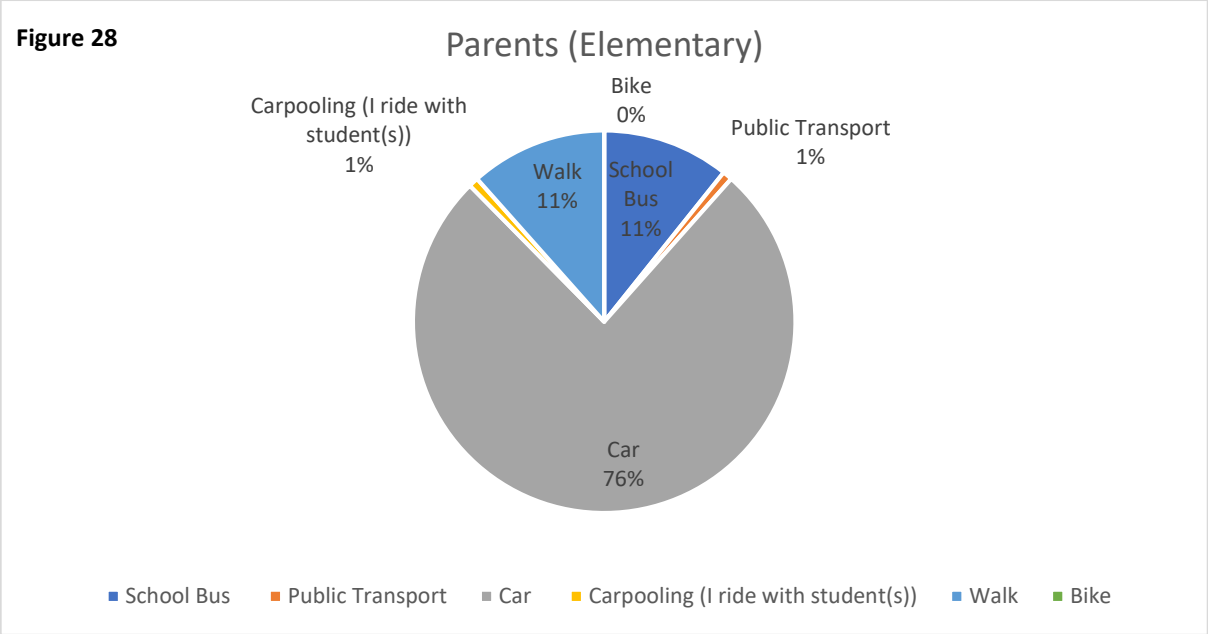


Figure 28

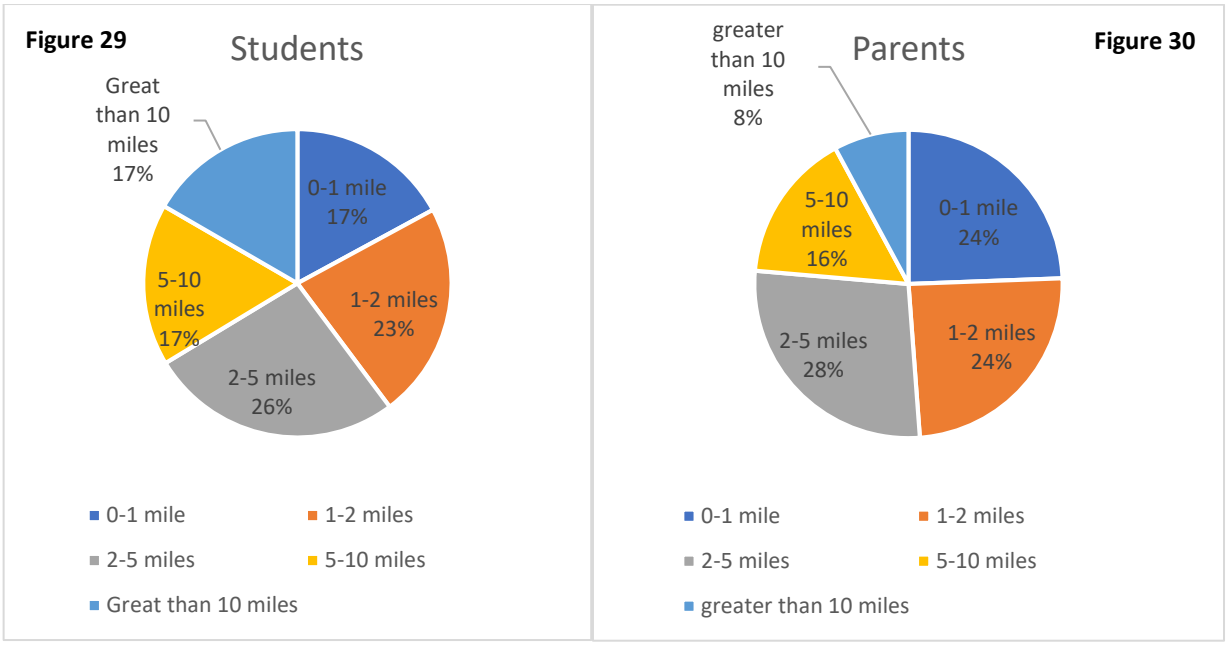


Figures 27 & 28: Breakdown of how respondents answered: How do you get to and from school?

About 60% of middle and high school students drive or are driven to school, while 76% of elementary aged students are driven to school. This points to a large majority of students who use personal vehicles for school transport. The reasoning behind this large influx of students being driven is unclear from this question but could point to systemic car culture within the U.S., potential barriers with busing (both logistical and sentimental), or a lack of active transportation infrastructure within Porterville.

Responses: How close do you live to your school?

There appears to be a fairly even distribution of distances between the two demographic groups with the exception of parents who had fewer children living greater than 10 miles away from their school site. This is mostly likely due to the greater number of elementary schools and the fact that students outside of the City of Porterville will go to elementary school within their town's district instead of being bused into Porterville. It is also likely due to the unique aspect of the Pathways program that allows students to attend a school outside of their zoned high school. Transportation distances at PUSD are a large factor to consider when thinking about student commutes as many students come from outside their home district for high school as smaller surrounding towns do not offer high school education. Some may need to travel up to 100 miles to get to school every day.



Figures 29 & 30: Breakdown of the distances that students live from their school sites.

Responses: Difficulty in walking or biking to school

Student responses were almost perfectly evenly distributed between the four different options with 48% saying that it was easy or somewhat easy to walk or bike to school. Parents however overwhelmingly said that it was somewhat difficult for their child to walk or bike to school.

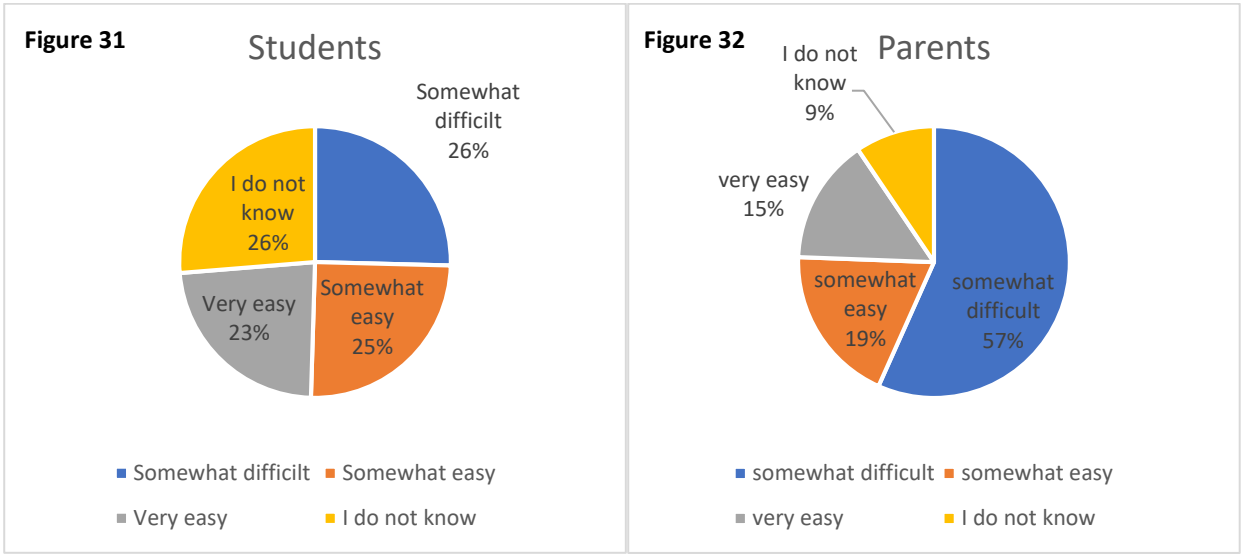


Figure 31 & 32: Breakdown of respondents' answers to: How easy is it to walk or bike to your school?

Free response answers to sustainability of transport at PUSD

This question was open ended and allowed respondents to write additional comments surrounding transportation. The majority of participants wrote no comment, but some left advice, the list and breakdown of their thoughts is below. For students, 55% wrote that transportation is good and very little changes were needed. Second highest response was that buses regularly come or drop off students late. The highest comment from teachers and parents was that they wished the district would invest in diesel alternatives powered electrically through solar energy. The other top comments from teachers stated that students primarily utilized other forms of transit, that they would like to see general improvements made to busing, and that not enough students can safely walk or roll. One common comment surrounding transportation was that the busing system and the buses themselves needed improvements and upgrades.

Table 5: Breakdown of student comments.

Comment	**Number**	**Percentage**
Transportation is good/adequate	320	55%
Bus schedules are inconvenient or confusing	18	3%
Buses come/drop off late	68	12%
Student get to school by other methods of transportation	33	6%
Diesel buses burn too much fossil fuels and pollute	20	3%
Want diesel bus alternatives (electric/solar)	18	3%
Bus temperature is an issue	5	1%
Pick up/drop off improvements	8	1%
General bus transportation improvements	25	4%
Buses are too crowded	27	5%
Buses are unclean	2	0%

New and improved buses are needed	5	1%
Less transportation due to Covid-19	1	0%
Bus routes are inconvenient	17	3%
More transportation is needed	11	2%

Table 6: Breakdown of teacher comments.

Comment	**Number**	**Percentage**
Transportation is good/adequate	12	11%
Bus pick up/drop off late	4	4%
Diesel busses burn too much fossil fuel	7	6%
Want diesel bus alternatives (electric/solar)	18	16%
There is not enough active transportation	5	4%
Want general transportation improvements	16	14%
Active transportation needs improvements	11	10%
Want bus pick up/drop off improvements	2	2%
More school transportation is needed	7	6%
Bus routes need improvements	3	3%
Bus size needs to be improved (smaller options)	5	4%

Students use a different form of transportation.	24	21%

Table 7: Breakdown of parent comments.

Comment	Number	Percentage
Transportation is good/adequate	5	20%
Want diesel bus alternatives (electric/solar)	5	20%
Distance for transportation needs to be extended	3	12%
We should encourage active transportation	2	8%
Buses need AC	1	4%
Buses need improvements	3	12%
Overcrowded busses	1	4%
Pollution is an issue	1	4%
Dropoff/pick up improvements	3	12%
More transportation is needs	1	4%

Responses: Active transportation barriers

For students, distance (47%) and time (48%) were the two major reasons why students did not walk or roll to school. This was followed by weather and climate (22%) as well as convenience of driving (18%). These answers make sense for the sizable land area covered within PUSD's high school district as well as the sweltering weather typical to Porterville. It is important to note that all students, even those who may qualify for busing, answered this question. Parents answered this question very differently, noting more infrastructure barriers than students. The top responses for parents were distance (53%), speed of traffic (44%), amount of traffic (45%), and safety of intersections (51%). This means 47% of responses listed by parents were street

infrastructure related. It is again important to note that all parents, even those who have children who qualify for busing, answered this question.

Figure 33

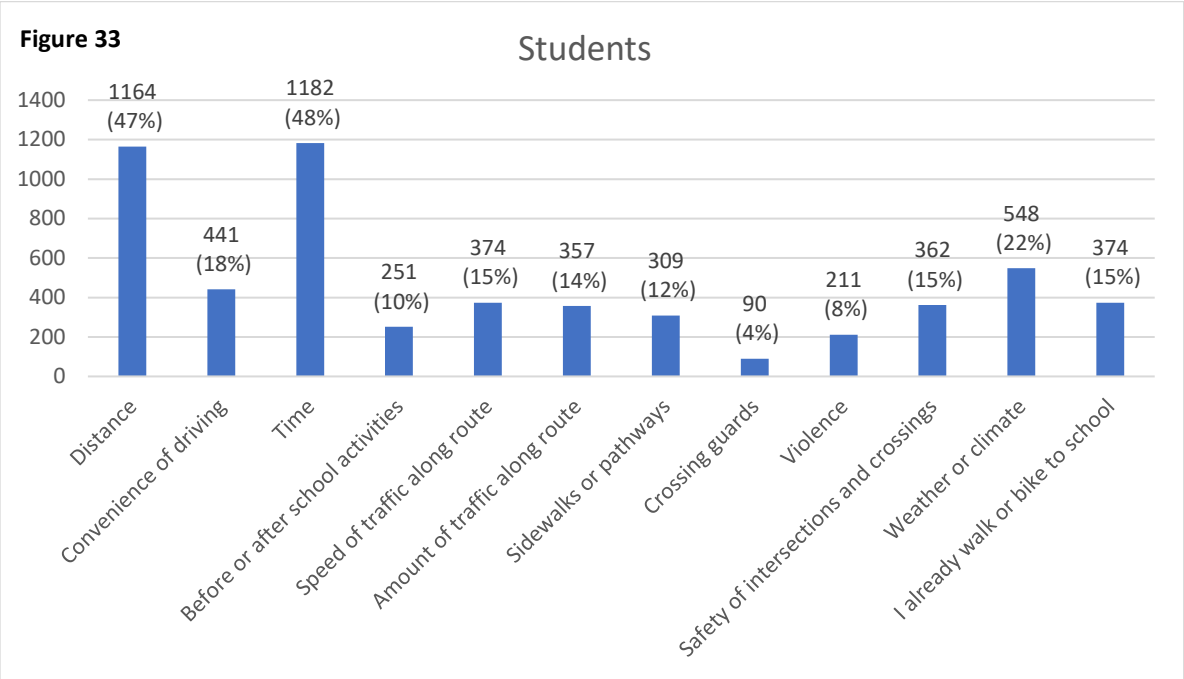
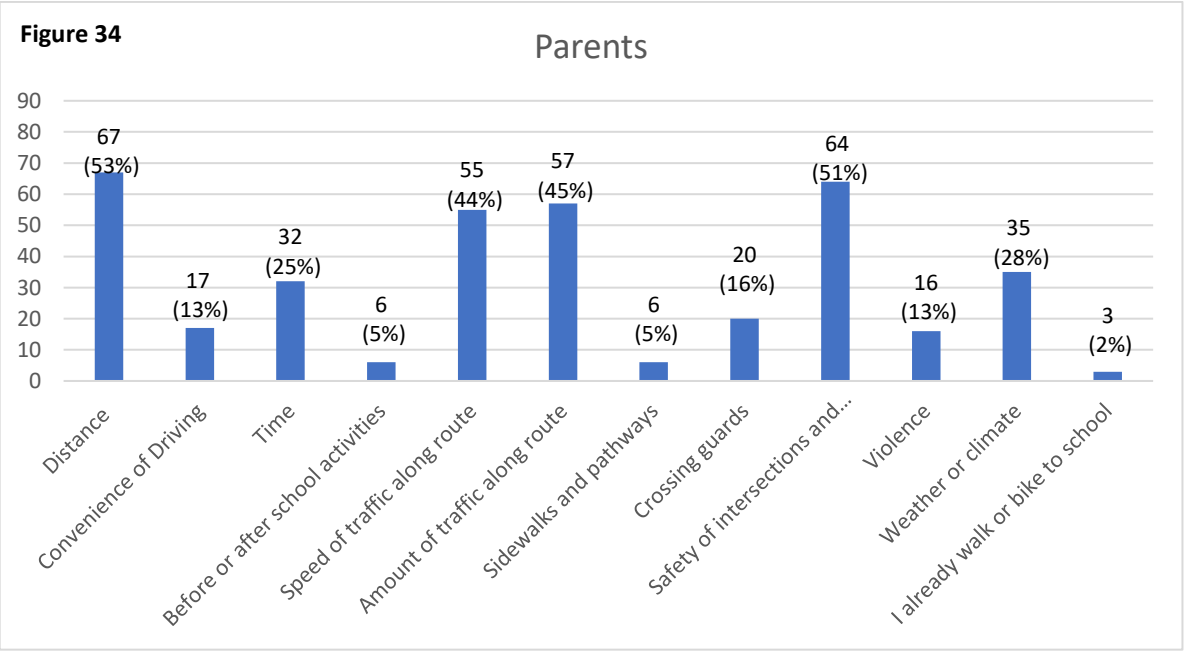


Figure 34



Figures 33 & 34: Breakdown of respondents' answers to the question: Which of the following issues affected your decision to walk or bike to/from school? Select all that apply.

Responses: Which barriers could we address to change habits

Figure 35

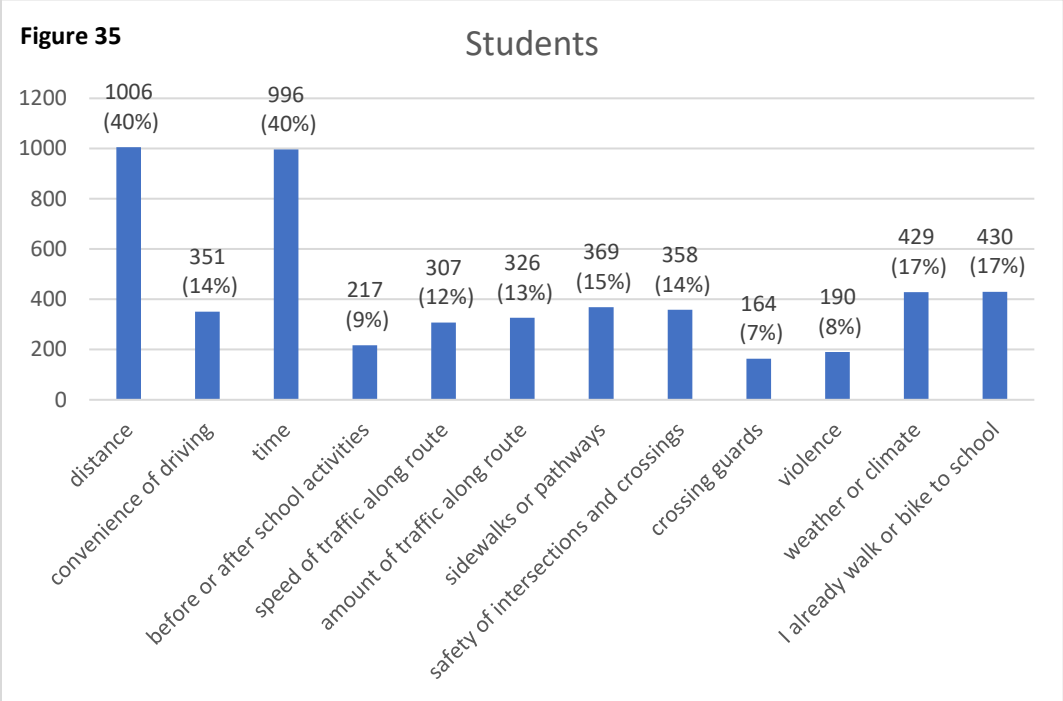
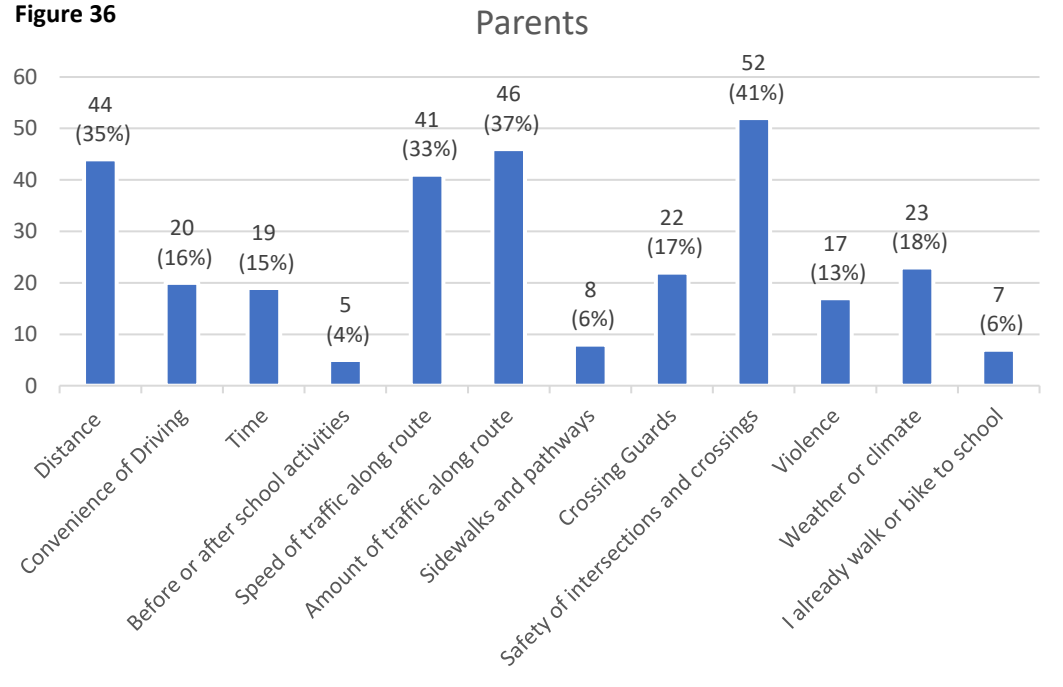


Figure 36



Figures 35 & 36: Breakdown of respondents' answers to the question: Would you walk or bike to school if the barriers were addressed? Select all that apply.

The answers for this question reflect similar trends as the previous question. The only difference is that the numbers for each category are predominantly slightly lower, pointing to a smaller

portion of students and parents who would be unwilling to change to more active transportation habits (although long distance commutes may make this impossible for some families). However, the majority of respondents stated that if the barriers they listed were addressed they would be more likely to walk or roll to school.

Active Transportation Respondents

When looking at the mobility questions, all respondents regardless of where they are located within the district were required to answer all questions. This means a number of students and parents outside of the walkability radius responded to active transportation questions. The following section will outline what the survey results found once filtering out respondents who self-identified as living outside of the walkability radius.

Responses: How do you get to school?

When filtering out students outside of the walkability radius the breakdown of student commutes changes significantly. The number of students who drive or are driven decreased from 61% to 52% and the percentage of students who walk or bike to school doubled (see figure 37).

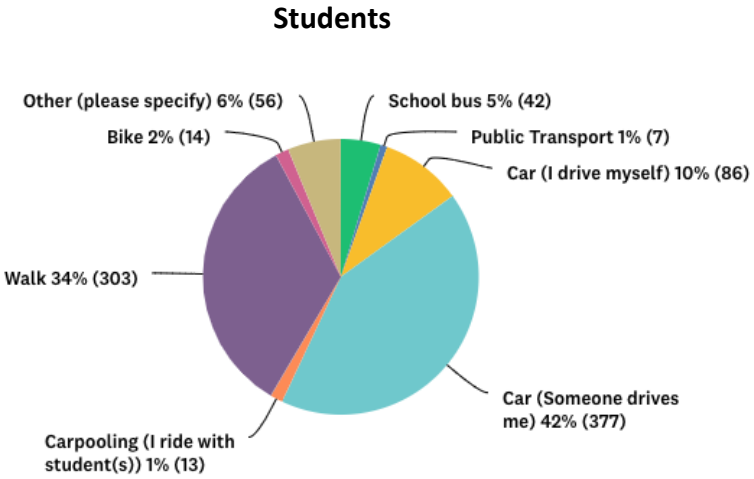


Figure 37: Breakdown of commutes for students who live within the walkability radius.

After filtering families outside of the walkability radius, the breakdown of student commutes showed only slightly more favorable results for active transportation. The percentage of parents with children who walked to school increased from 11% to 35%. But the number of parents who drove their children only decreased from 76% to 62%. So, the majority of parents who live within the walkability radius still utilize private vehicles to get to and from school.

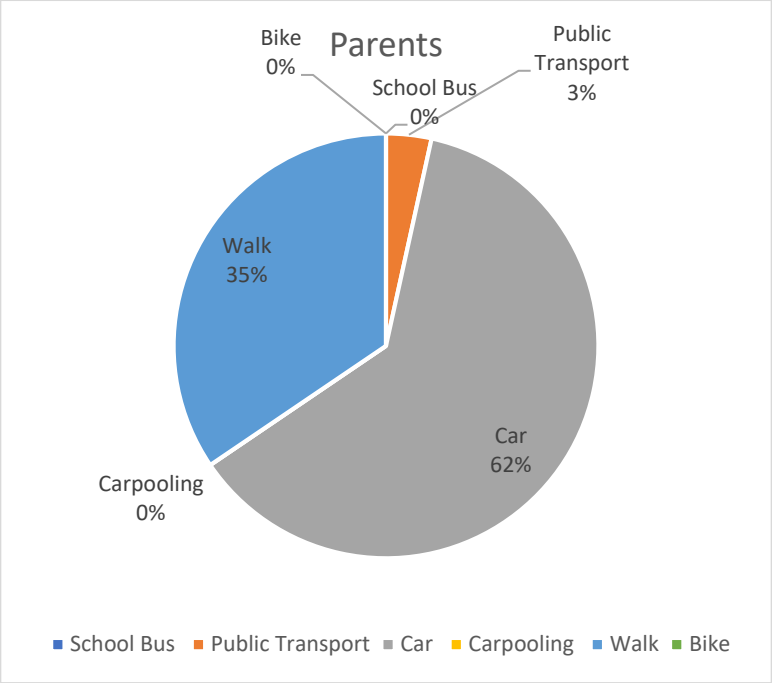


Figure 38: Breakdown of commutes for parents who live within the walkability radius.

Responses: Difficulty in walking and biking to school

After filtering there was an increase from 49% to 75% of students who stated it was either very easy or somewhat easy to walk to school and a decrease in the number of students who found it difficult from 51% to 9%.

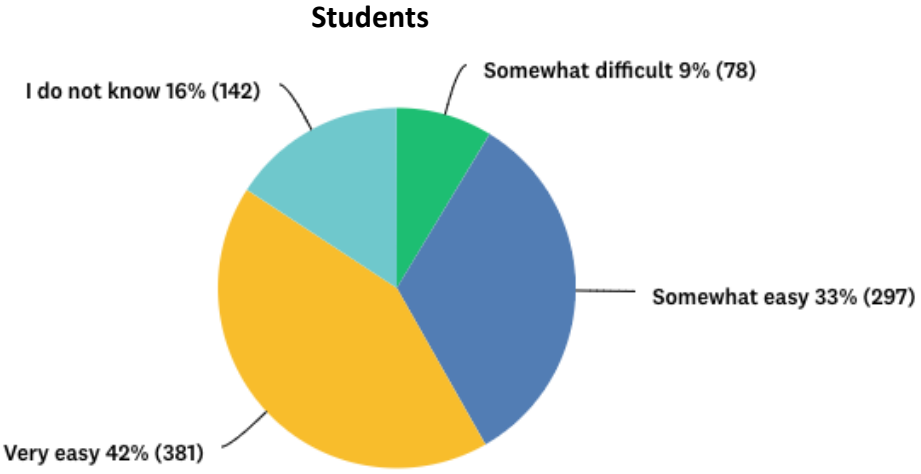


Figure 39: Breakdown of feasibility to walk or bike to school for students who live within the walkability radius.

For parents, the percentage of respondents who stated it was difficult to get their child to school dropped dramatically from 57% to 16%. Similarly, the number of parents who stated it was very easy or somewhat easy to get their child to school increased from 34% to 80%.

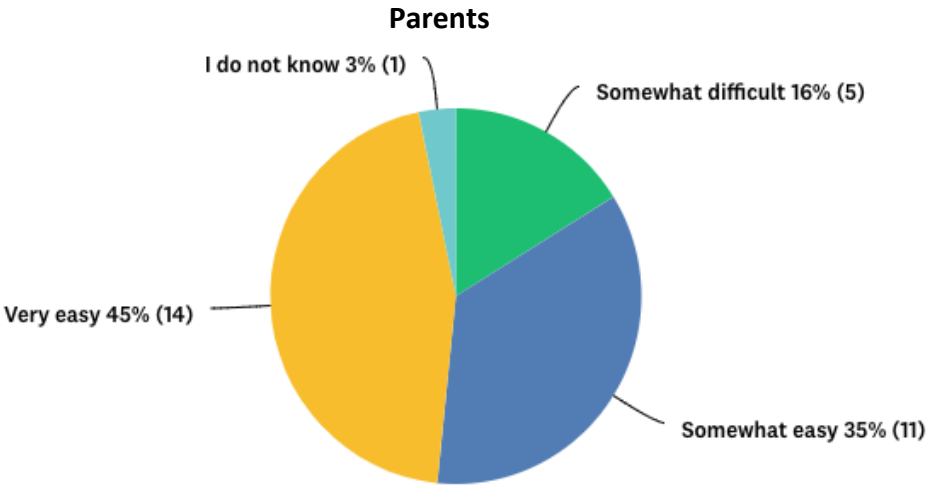


Figure 40: Breakdown of feasibility to walk or bike to school for parents who live within the walkability radius.

Responses: Active transportation barriers

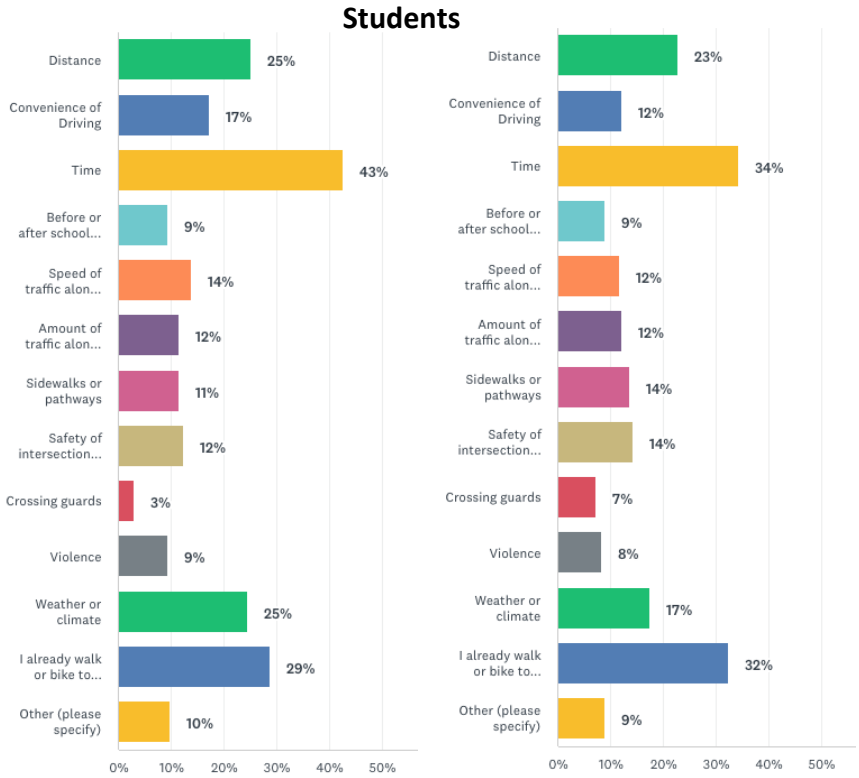


Figure 41: Side by side comparison of active transportation barriers identified by **students** (left) and which would need to be remedied to change behaviors (right).

Filtering only had a slight effect on the percentage of students who identified time as a barrier but decreased the percentage who identified distance by 22%. Weather and climate was the only other category that showed a change, it increased by 10%. The number of students who said they already walk or bike to school increased by 15%. Addressable barriers to change habits did not significantly change. Overall, time and distance were listed as the primary barriers to walking and biking to school for students.

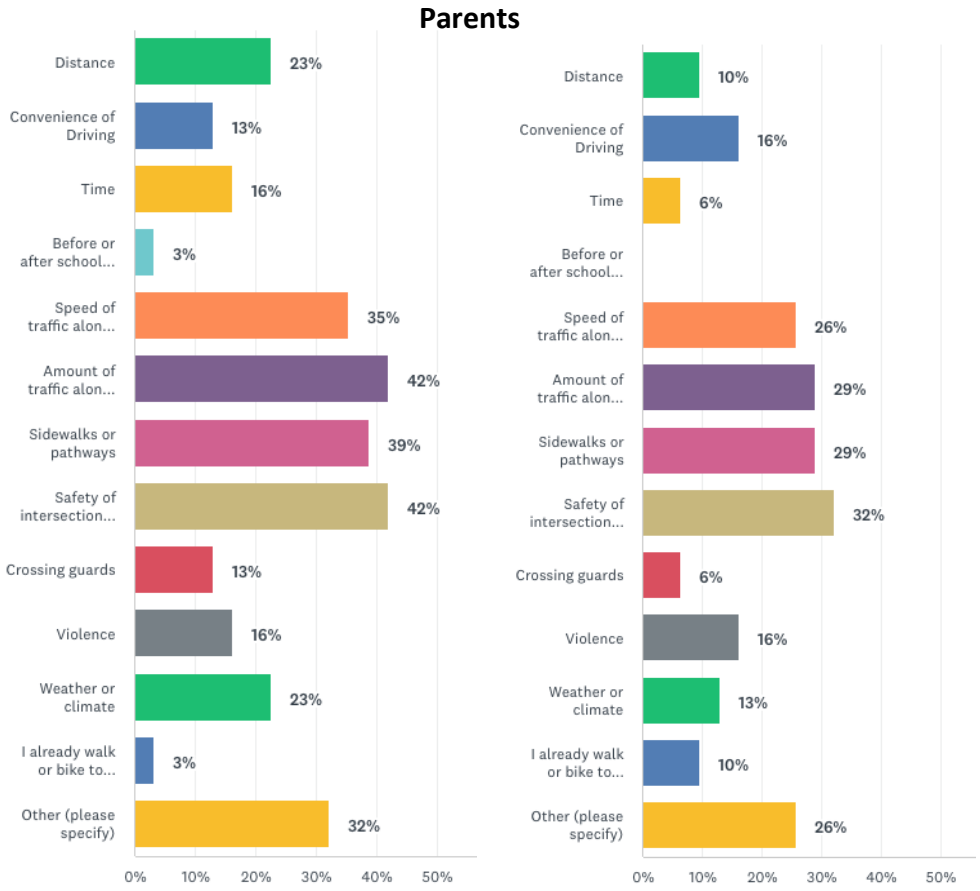


Figure 42: Side by side comparison of active transportation barriers identified by **parents** (left) and which would need to be remedied to change behaviors (right).

The findings for parents varied. In identifying barriers some percentages increased while others didn't. Speed of traffic, safety of intersections, and time all dropped by about 10%. Distance understandably dropped by 20%. The one topic that drastically differed after filtering was sidewalks and pathways which increased by 37%. In addressable barriers, only two categories showed a difference of over 10%: distance and sidewalks or pathways. Distance understandability decreased by 25%, while sidewalks and pathways increased by 23%. In filtering out families living outside of the walkability radius we find that they more heavily prefer infrastructure upgrades in the form of sidewalks and pathways when it comes to active transportation barriers.

Community Engagement Findings

Interviews with PUSD Principals

When interviewing PUSD principals we asked them a variety of questions relating to sustainability at PUSD along with specific clean mobility questions. This section will focus on the results from the clean mobility related questions. The majority of respondents (65%) said that their school site's sustainability was "okay" when asked to rank it from excellent, good, okay, poor to not sure. The remaining respondents ranked their school sites as "good" (24%) or excellent (6%). This means most principals rank their school sites in the mid-range regarding sustainability. When asked to rank the sustainability of the transportation system at their school sites; 50% gave it a ranking of good, 44% a ranking of okay, and 6% a ranking of poor, indicating that most principals believe the sustainability of students' transport is in the mid-range regarding sustainability. When asked to elaborate many noted the large land area of PUSD or their specific locale within the City of Porterville that brought its own challenges. Most noted that few students commuted through active transportation and that many students drove or were driven to school echoing survey findings. One principal noted that more parents were driving their kids to school out of social distancing concerns. Two commented that the district does not have enough buses for the number of students within the district and some parents may drive their child as a result of the inefficiencies this creates.

When asked if they had heard of the rails-to-trails routes around Porterville or the upcoming project along Main Street principals were split fairly evenly with seven saying no and eight saying yes. Some knew of other rails-to-trails paths in town, but were not aware of the proposed new one, while others knew of both. Two principals were not asked about the trails due to extensive distance from all rails-to-trails paths in Porterville. After answering this question, the interviewers showed principals a map of all trails within Porterville and any located near their school site. Those principals located near the in-development trail along Main Street expressed excitement about the future construction.

When asked to pick whether energy, food services, waste management, water conservation, or transportation would be their top choice for our program focus, the majority of principals chose energy (41%) and waste management (35%) and only three principals (18%) chose transportation. When asked to elaborate, those who chose energy and waste stated that those would be the easiest wins at their sites because those were the aspects they had the most control over. For example, Student Nutrition Services is controlled by federal free and reduced lunch regulations, which over 80% of PUSD students qualify for, and these regulations are hard to work around. One chose it because they didn't think they could impact food and waste, while regarding water usage as already sustainable. Another stated they wanted "[to] make it safe. For our children to and even our adults to have some pathways to walk." The last mentioned that while getting students to school was important, they wanted to improve transportation for networking opportunities for students. They want students to have the opportunity to visit college campuses

and see what their future could be, and that right now due to limited busing, taking these kinds of field trips are not always possible.

In choosing a second choice, results were more mixed (see figure 43). Food and waste were the top two choices, and most principals noted these due to nutrition concerns as well as the excessive amount of packaging and waste used that ends up as litter on their campus. Of the two principals who noted transportation as their second choice, one wanted to use savings created through energy conservation to fund transportation fixes for the district. The other was a site with a high number of students who lived within the walkability radius and wanted them to be able to walk to school safely.

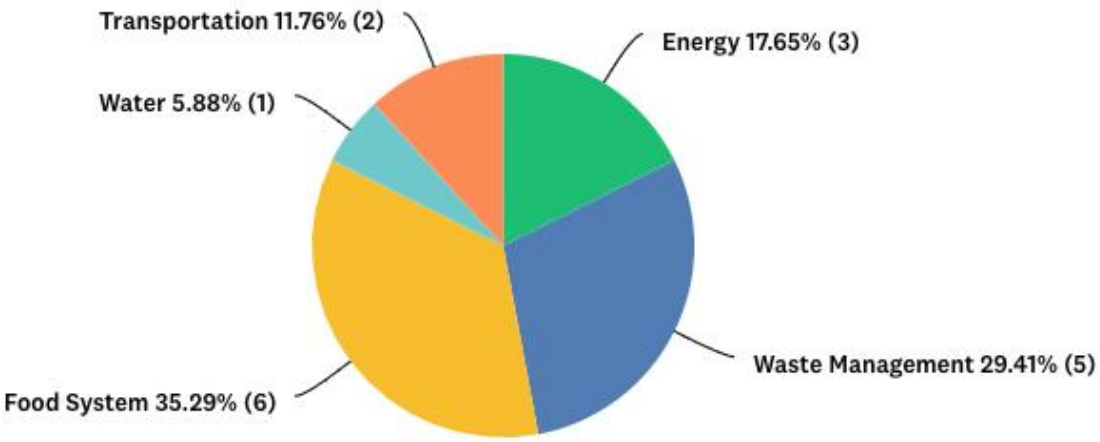


Figure 43: Principals' second choice for where our efforts could have the greatest impact.

Principals were also asked to speak more in-depth regarding transportation at their school sites. Some principals noted that not many of their students walk or roll to school and that most are driven by a parent. A couple noted that walking in Porterville, especially for younger students, is not safe and that they wouldn't let their own child walk to school. Biking was seen as even more dangerous. Multiple principals noted that busing in the district presents barriers to student commutes. They commented that there are not enough routes allowing students to get to school quickly and on time. One principal noted that the reduction in routes has happened over the past ten years in part due to the creation of the Pathways programs and in part financially based. Multiple principals also noted the unique distance barriers for students as well, particularly at the high school and middle school level, as the rural locale of Porterville means students need to be bused in from the foothills and Native American reservation.

Interviews with PUSD Transportation Employees

Throughout the interview with transportation employees the range limitations associated with electric vehicles was the main theme that came up most often. Due to the large land area covered within PUSD, buses are needed to travel 100 miles during each morning and afternoon route. It

was stated that at present batteries do not allow for this without midday charging capabilities, which isn't always a possibility due to schedules and availability of drivers, particularly, with the current shortage. Another comment was that current infrastructure limits longer field trips or sports engagements as charging might not always be available at the destination.

Currently, the transportation team is trying to figure out what the limitations are with the six new electric buses and how they can fit them into current routes. Another noted that, at the moment, manufacturers don't offer any training on the electrical components. So, from a maintenance perspective, PUSD cannot service most of the bus. It also means that when parts break, they need to contact the manufacturer and wait for a technician to become available. This was a current problem as the brand-new buses were not operating as promised and the wait time for a technician ended up being months.

Other concerns surrounded the fairly new technology and how that would develop as the buses aged and what their lifespan would be. No one is quite sure yet what to do with batteries at the end of their life, if they will last for the promised eight years, and what the costs will be to replace a battery at the end of their life. Interviewees also noted that a switch to electric models will necessitate a change in the way the transportation department is run as maintenance techs will be unable to touch certain parts of the bus and re-fuel times will go from minutes to 4-5 hours. Drivers may have to switch between buses if they are running routes from eight in the morning until eight in the evening.

When asked if they believed it would be possible to transition to an all-electric fleet the primary limitation noted was, again, the mileage. Not only just within the district, but also for longer field trips and sports games. However, they also stated that as electric vehicles become more of the norm the availability of bus charging infrastructure will increase. For example, six flags, a common field trip destination, already provides charging for electric buses.

The next question asked interviewees to note the potential positive outcomes to electric buses. One interviewee noted the potential fuel savings. They noted that at current prices electric charging would cost less than 25% of what the district is currently paying for diesel. This would save the district a lot of money and also help recoup the initial investment. Others noted the environmental benefits from reduced emissions, but they also stated that they still have tires, coolant, and brakes so they weren't sure how that compares as a whole. It was noted that we just aren't there yet when it comes to a complete comparison between a diesel and electric bus.

Monte Vista Elementary Event on September 14th

We received 73 responses total from the event. 64 of those responses came from parents who lived within the walkability radius and 9 came from parents whose child qualified for district busing. Of the walker responses, 85% of parents said they drive their child to and from school each day and only 11% said their child walked. 83% of parents then stated that it was either somewhat or very easy to get their child to school every day. Then when asked what kept them

from having their children walk or roll to school the top responses were distance (34%) and convenience of driving (24%) (see figure 44). We then asked if there were any street infrastructure improvements around the school site that parents would like to see. Many did not list anything but ten noted intersections they would like to see improvements at, which coincided with the list approved by TCAG and the City.

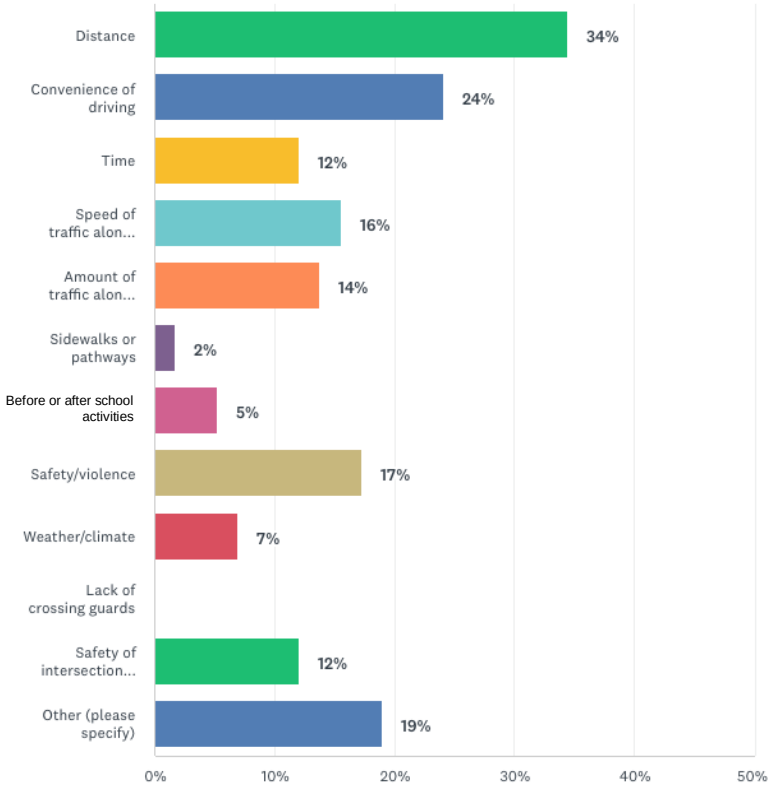


Figure 44: Distribution of answers to the question: If your child does not walk or bike to school, which of the following affects your decision to let your child walk or bike to school? (Select all that apply)

Of the respondents who stated they qualified for busing, 45.5% stated that their child took the bus to school, 27% of respondents drove their child to school, while the remaining took public transit (9%) or carpooled (9%). 78% of respondents claimed it was either very or somewhat easy to bring their child to school every day. The top responses for why their child did not take the bus were distance (33%) and that the pickup times were inconvenient (33%) (see figure 45).

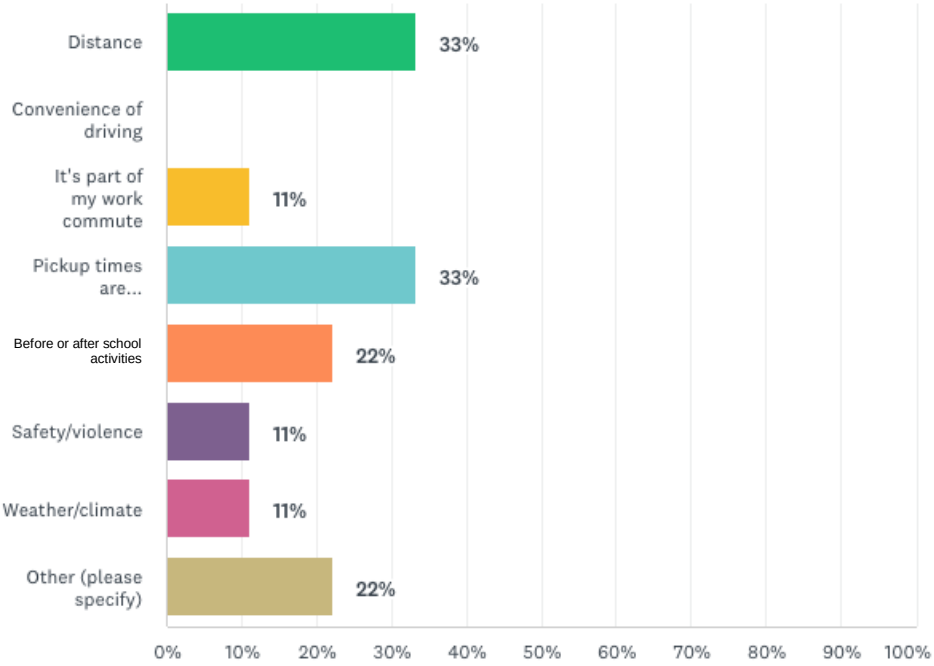


Figure 45: Distribution of answers to the question: If your child does not take the bus or public transit to school, which of the following affects your decision to let your child take the bus/public transit? (Select all that apply)

We also asked respondents to state whether electric vehicle bus development was something parents and guardians would like the district to invest in. Six respondents (67%) said yes, 1 (11%) said no and 2 (22%) said they didn't know or didn't care.

Regarding a follow-up event to discuss transportation topics more in-depth, 66% of both walking and busing respondents said that an in-person follow-up event would be preferable to a virtual one. The top response for the best time of day was after 5 pm on weekdays, gaining 88% of busing parents vote and 68% of walking parents. Given this response we are hoping to plan more in-person events after 5 pm on a weekday.

The responses we collected that day were helpful as the parent and guardian response rate to our initial survey was low in comparison to teachers and students. We received almost ten times more results than through our eight online survey responses. Getting more responses on a school-by-school basis also allows us to determine individual barriers at each school site instead of on a district-wide level.

PUSD Staff Presentations

Between October 6th, 2021 and PUSD's winter break, we were able to present to eight different school sites: two high schools, one middle school, and five elementary schools. The key purpose of the presentations was to build awareness of the PUSD Energy & Sustainability Program, including communicating its goal to reduce PUSD's greenhouse gas emissions by 80% by 2030.

We plan to continue this outreach effort in 2022 and beyond. This will provide a great platform for informing the PUSD school community about clean mobility options.

Figure 46: Energy and Sustainability interns presenting at Bartlett Middle School.

Porterville High School Event on November 9th

Focus Group Class 1

This class consisted of 32 students: 20 freshmen, 2 sophomores, 7 juniors, and 11 seniors). Of the 32 students: 6 walked or rolled, 3 drove themselves, 22 were driven by a parent, and 1 took the bus to school. For the purpose of understanding student responses, only 18 students lived within the City of Porterville. This is important as PUSD encompasses 3,000 square miles (equivalent to 1.5x the state of Delaware) and some high school students come from up to 100 miles away, presenting unique circumstances regarding student commutes. During the focus group students stated that driving was just the easier option and that it was simpler and easier to get into a car whenever you needed. Some students said that driving was far faster than busing as their commute was already over an hour, and that they didn't have to worry about bus schedules and making the bus, as they could just leave for school whenever they wanted. When asked what would convince them to walk/roll or take the bus to school, the consensus was that very little would convince them to change their habits. Some students who lived outside of Porterville said the bus from their area was not good in terms of times and routes. Student athletes mentioned that it's nice being able to drive and leave whenever you wanted. When asked if they were familiar with the electric micro-transit system provided by the City of Porterville through Uber, nobody was familiar with it nor had used it before, although a few stated they had seen them driving around town. After an explanation of the services some students stated that they might consider it, but only if it was free. The next question covered if students had a student pass for

the City of Porterville bus system and if they had used it before. Students stated they had never used it before and never felt the need to investigate bus schedules. If they need to travel somewhere, students either biked or had someone who could drive them. They stated riding the bus could be dangerous, but seemed excited when we mentioned that Porterville buses were now electric.

Focus Group Class 2

This class consisted of 21 students, all of them seniors. Of the 21 students: 6 walked or rolled, 5 drove themselves, 10 were driven by a parent, and none took the bus to school. 16 of the 21 students lived within the city limits. When asked about why students choose to drive, they reiterated feelings from the first class stating that walking to school takes too long and bus stops are often far from students' homes, making the time and convenience of driving the preferred option. One student stated they were too lazy to walk. When asked what would convince them to change their habits, they stated that biking is no longer cool anymore. Pointing out that the only students who bike in Porterville are middle school students on fixie bikes and that there were not many improvements that could be made that would convince them to walk. Some of the students mentioned that they had seen the micro-transit EV passenger vans around town, but no one had used them. Some students said they could consider using it if it was free. No students stated that they used the public transit system, and that when they drive around it is usually with two or more people and in a social capacity, so it's easier and makes more sense to drive. A couple students mentioned they might use the public transit system if they had known it was discounted for students. When we mentioned that the city's buses were all electric many thought that was great.

Figure 47: Student interns working with parents to find areas for infrastructure improvements.

Monte Vista Parent Night Event November 16th and 18th

On the first night we had two Spanish speaking parents. On the second we had five English speaking parents, although three of them worked for Monte Vista. During the focus groups we found that almost all parents are either somewhat or not interested in active transportation, which were the two lowest rankings, but they expressed interest in electric buses. All students of the attended parents were driven to school. When asked to annotate a map parents noted two intersections in front of the school that needed safety improvements, which helped inform the intersections identified with TCAG and the City. They also stated that the street in front of the campus has no streetlights and, in the winter, it feels unsafe to have students walk home when it is dark after school (particularly for students that are part of an after-school program for working parents.) They also noted streets where sidewalks are not continuous and students are known to wander off the correct path without a sidewalk to guide them. Multiple parents stated that dogs are a menace around campus and that students have been chased down the street or have been bitten, which they identified as a barrier to walking. Regarding busing, parents noted that buses often lack seatbelts, air conditioning and heat, are dirty, and can be gross with food leftovers and vomit if a child is sick during a route. They also stated that on some routes elementary aged children are placed on the same bus as high school students (it was not clear if this is something that has only happened this year with the driver shortage). The most concerning issue was that oftentimes there are not enough seats for all the students, and they will place their backpacks down and sit on them in the aisle. For a breakdown of the infrastructure improvements requested by parents please see figure 47.

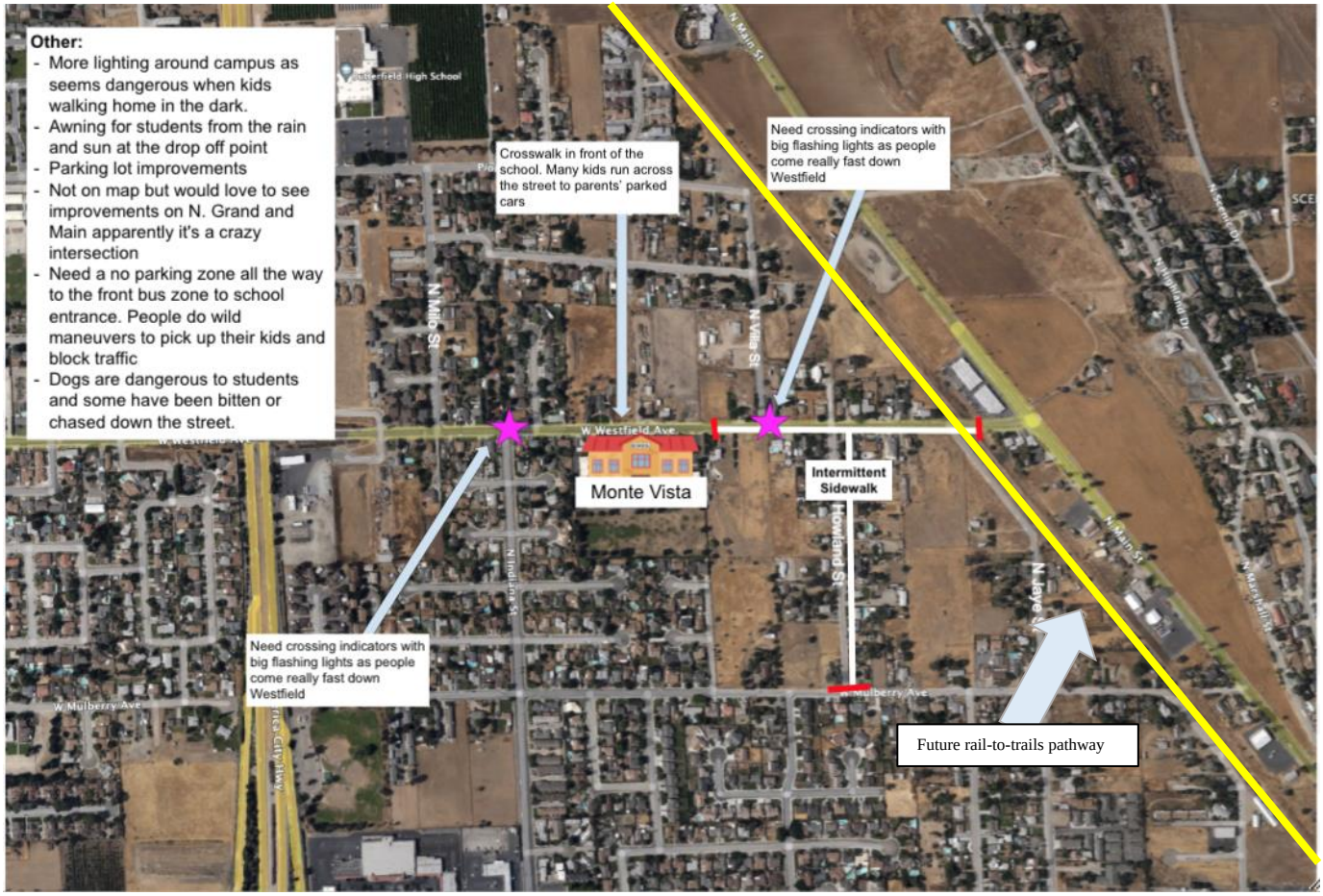


Figure 48: Combined results from the two parent outreach events at Monte Vista.

Discussion, Solutions, and Lessons Learned

This section details the key findings from the needs assessment results and how they were used to shape an implementation plan for clean mobility for Porterville students. It also highlights the lessons learned for the district when conducting a needs assessment. The findings from this needs assessment will be shared with the city, TCAG, PUSD board, and the school community.

Key Findings from the Needs Assessment Results

The needs assessment process allowed for a critical analysis of the school community's unique transportation needs and challenges along with the community's preferences for solutions, including interest in clean mobility options. The data collected from parents, teachers, district staff, and students enabled the project team to develop a community-based plan for how to address clean transportation development for student commutes. Key findings from the results include:

Summary of Community Survey Results

- Half of students and teachers thought that transportation was sustainable at their school sites, whereas only 40% of parents agreed.
- For all respondents, transportation was ranked 3rd or 4th out of five when it came to positive feelings about sustainability at their school sites.
- Transportation was ranked the lowest for topics of interest among all respondents when compared to other sustainability categories.
- 61% of middle and high school students and 76% of elementary school students are driven in a private vehicle to school every day.
- About 50% of students believe it is easy to get to school every day, while about 25% believe it is difficult.
- About 30% of parents believe it is easy to get their child to school every day, while 60% believe it is difficult.
- Distance, time, and weather were the top reasons why students chose not to walk or roll to school.
- Distance and various safety infrastructure related barriers keep parents from letting their children walk or roll to school.
- For parents and students who lived within the walkability radius:
    - 52% of students are driven
    - 62% of parents drive their children

Summary of Broader Findings and Community Engagement Results

- Porterville's rural locale and large district boundaries present unique commuting issues for the school community.
- Parents, teachers, students, and principals all noted that route logistics, bus conditions, and the number of routes need to be improved upon.
- The PUSD transportation team is open to acquiring more electric buses but say that range is a concern until technology improves.
- High school students prefer driving or being driven to school, and most did not anticipate solutions that would convince them to change their habits. A few students were open to more on-demand micro-transit if it were free or very affordable.
- In focus groups and in the survey, parents noted there are multiple infrastructure improvements that could be made to facilitate more active transportation, including: reducing traffic, intersection safety, and sidewalk discontinuity.
- Parents noted buses are overcrowded, lack climate control, and at times can be unsanitary.
- All stakeholders reported a desire to transition to electric vehicles and expressed excitement about a switch.
- Walking and/or rolling to school is seen as dangerous for students, and certain infrastructure improvements are needed to address barriers.

- The City of Porterville and TCAG are innovating in vehicle clean mobility, though the PUSD school community has limited familiarity with these programs, including:
    - The City Porterville is one of the first public transit agencies in the nation to convert its entire bus fleet to all electric.
    - The City of Porterville has Invested in a fleet of battery-electric vans, creating a new way for residents to access on-demand curb-to-curb service (aka, Micro-Transit). Its Micro-Transit program is designed to disrupt a traditional and underperforming public transportation model and provide effective and clean mobility to the residents of Porterville.

Overall, stakeholders reported that the primary clean mobility challenges for Porterville students are land area covered in PUSD's district, lack of safe active transportation infrastructure, convenience of driving private vehicles, and logistical issues within busing.

Progress Made in Addressing Mobility Needs Identified by the Community

Our first step after reviewing results from our survey was to identify active transportation safety infrastructure projects, as parents listed sidewalks and pathways and the safety of intersections as the major barriers to active transportation. To do this we collaborated with Safe Routes Partnership (SRP) to ensure an equitable active transportation plan for the district. To start, SRP recommended we conduct a preliminary walk audit of pedestrian infrastructure at Olive Elementary in the summer of 2020. Olive was chosen as it is located in a disadvantaged census tract and it was in close proximity to our intern's summer intensive classroom. Once those results were analyzed, we found fading crosswalk paint and discontinuous sidewalks, echoing barriers given by parents in our survey. Sidewalks and re-painting crosswalks are potential "quick start" projects we can propose to the city. In addition, interns ranked intersections overall safety. Their work showcased that a deeper investigation into intersection safety was needed.

Once school was back in session, we were able to engage with the school community on specific unsafe intersections, a top active transportation barrier identified by parents living within the walkability radius. In deeper conversations with stakeholders including principals, parents, and students, we identified 25 unsafe intersections near PUSD school sites. Upon gathering this data, we met with the City of Porterville and TCAG in November to collaborate on issues and projects regarding clean mobility. We reviewed the 25 intersections and agreed the intersections would benefit from an engineering assessment to determine if and what safety improvements could be made. Though the City of Porterville has a strong in-house engineering team, they're time constrained, and agree that this work could be outsourced. We agreed upon a local engineering firm, 4-Creeks, to take on this assessment work. The results from our meeting were extraordinarily positive and we will continue meeting regularly to discuss ongoing and future collaboration opportunities. Once the report is finished in January, we will meet with TCAG and the City to go over which of these intersections' right-of-way is within TCAG and the city's jurisdiction and identify a list of "quick start" intersection upgrade projects. TCAG believes we can accomplish this in the next few years as the county has the funds and wants to push it

forward; if the intersections fall within CalTrans or other jurisdictions the upgrade process would have to be extended.

For students who qualified for busing routes, parents and students all agreed that the comfort, safety, and aesthetic issues with the older buses need to be addressed in order to increase ridership. Newer electric models come with climate control, seat belts, and are quieter providing a safer and more comfortable ride for students. All stakeholders expressed enthusiasm about transitioning to electric buses, and PUSD is in the process of working with the Center for Transportation and the Environment to create an electric bus transition plan that addresses costs, range, viability of routes, charging infrastructure, and bus models. This report should be finished in early 2022. However, an increase in ridership could exacerbate the overcrowding issues noted by some parents. It is possible that the fuel and maintenance savings created by an increase in electric buses could facilitate an increase in routes available to students. At present the district is paying about $1 per mile in fuel costs. We recently spoke to Twin Rivers Unified School District, who has the largest electric school bus fleet in the country, about their fuel savings. They reported an 80% decrease in fuel costs indicating the district could potentially fund efficiency and route upgrades through an electric transition. Given the information we have regarding an electric transition it appears the school community would support this decision.

Lessons Learned

Conducting this needs assessment was an important first step towards ensuring that all students have access to a zero emissions and zero pollution commute to school. The assessment will help ensure that any future plans in clean mobility reflect the needs and interests of the community they are intended to serve.

Planning Phase

Gaining a strong working relationship with transit government agencies will be crucial in the adoption of clean mobility projects. When it came to active transportation measures at schools, the Safe Routes Partnership was an invaluable resource for us. Their experience in designing active transportation plans for school districts guided our survey and walk audits. However, any street infrastructure updates are impossible without collaboration and buy-in from the relevant government agencies. It was challenging to meet regularly with the City of Porterville and TCAG due to limitations brought on by the pandemic. However, in the fall we brought together all key stakeholders, and fortified the foundation for collaborating on current and future clean mobility projects.

Survey Development and Outreach

Survey outreach during school re-openings was a challenge in getting parent responses. Due to the unique nature of this needs assessment being conducted for a school district we were able to get substantial and broad-based survey responses from teachers and students. We did this by

asking principals to contact staff to participate and teachers were able to distribute the survey to students. Unfortunately, we did not get a very robust response from parents, despite being able to virtually contact all PUSD parents through ParentSquare. When this survey was released, parents were being inundated with school reopening surveys and participation might have been low as a result.

Paper surveys could garner greater participation with harder to reach families. When speaking to principals about survey development, many schools recommended we also provide a paper format of our survey, as not all families have access to reliable internet. At the time of survey development, we could not staff a door-to-door outreach, and getting COVID-19 permissions for in-person student involvement was difficult.

Community Engagement

Relying solely on pre-planned events at schools does not ensure broad based participation. The majority of our community engagement events with the public piggy-backed off pre-organized events scheduled by school sites. While our event during a Back-to-School night at Monte Vista Elementary reached a high number of parents, we weren't able to get deeper feedback due to the event logistics. At our focus group events at a monthly parent night we got incredible feedback from participants but only reached a total of seven parents. In the future, we need to conduct our own outreach for events or join onto an event where having deeper conversations is already built into event schedules.

Figure 49: Photo of PUSD Energy and Sustainability interns conducting energy related outreach to elementary school teachers at Olive Elementary.

Overall, this needs assessment provided critical information in understanding what the Porterville School community wants in regards to clean mobility, as well as the barriers it needs to overcome to meet the PUSD Energy & Sustainability Program GHG emissions reduction goals. One surprise for us was how interested and passionate members of the school community are regarding waste reduction. This was not a topic we expected the community would have such a strong interest in, but it was brought up frequently in principal interviews, and ranked high in the survey. The information also pointed to a gap in understanding within the school community about how transportation is connected to greenhouse gas emissions. Any future clean mobility work we do within the district should include a robust education campaign. This education campaign would cover how to safely walk and bike to school and connect transportation to pollution and greenhouse gas emissions. Safe Routes Partnership and TCAG have experience with this and we hope to leverage their support and knowledge.

Next Steps

PUSD is excited to build on the lessons, insights, and partnerships gained during the needs assessment process. We look forward to cultivating our relationship with the City of Porterville and TCAG, as well as continuing to work with local groups and community members to achieve our goal of a zero emissions and pollution-free commute for every student in the district.

Advance Active Transportation Projects

We are continuing our relationship with Safe Routes Partnership to help build a ten-year plan to create an equitable active transportation plan for Porterville students. This plan will address education campaigns about safe walking and biking behaviors as well as using the power of student advocacy to push for street infrastructure improvements in Porterville. An example is the students' walk audit work that can help the city identify "quick start" projects.

At present, we are working on a high-level report outlining the current dismissal patterns and behaviors at ten PUSD sites that are located within higher disadvantaged census tracts. This will give us baseline information surrounding walker numbers and what sites are already doing to get students home safe. At dismissal observations we will also be speaking to parents and staff about what transportation features they would like to see.

We are also working with the City of Porterville and TCAG to advance road improvements and increase usership of rails-to-trails pathways. CAPS, TCAG, and the City of Porterville are partnering on a Clean California grant that will bring upgrades and beautification to a rails-to-trails pathway near multiple school sites.

This grant has led us to PUSD working with a local engineering firm, 4-Creeks, to conduct investigations of the highest priority intersections near PUSD schools, and to determine how to

upgrade and make them safer for students to walk and bike school. In early 2022, we will reconvene with 4-Creeks, TCAG, and the City of Porterville to discuss findings, next steps in development, and funding opportunities for these updates.

Transition PUSD's School Bus and Service Fleet to Zero-emissions Electric Vehicles

PUSD has acquired six electric school buses, including charging infrastructure being provided by Southern California Edison (SCE) under their Charge Ready Transport Program. As part of the agreement with SCE in installing the charging infrastructure, PUSD committed to purchasing at least four additional electric buses by 2025. It may be an ideal time, both from an environmental and an economic perspective, for PUSD to fully transition to an electric fleet over the next few years if it can capture state and federal financial incentives to do so. PUSD is presently working with the Center for Transportation and the Environment (CTE) to develop an electric bus transition plan. Their report will address:

- Electric bus route feasibility
- Developing a charging model
- Developing a rate model for charging
- Infrastructure cost analysis
- Emissions inventory
- Incentive program review
- Full or partial transition plan for the district

Their preliminary report stated that PUSD has the capacity to support all of its routes with electric models that presently are market available. The only caveat being that about 57% of routes will necessitate midday charging. However, extracurriculars and transfer routes may make the logistics of this difficult for PUSD. The CTE recommended bus models can be supported with Level 2 chargers, although PUSD is currently installing six Level 3 chargers for their current electric models. CTE estimates that the total cost to replace the fleet will be approximately $15 million. A complete switch is estimated to reduce 614 tons of greenhouse gas emissions per year, and the emissions reductions would increase over time as California increases renewable power generation.

Figure 50: Student interns learning about EV charging at the City of Porterville bus yard.

Moving forward we need to work with the PUSD Transportation Department and Student Transportation of America (STA) (the contracting firm that handles student busing) to address CTE's findings and outline a reasonable transition plan. The current bus driver shortage is straining STA's time and resources, creating potential barriers to a faster transition. However, the district administration is on board with advancing a transition. Moving forward, we also hope to look into funding a solar shade structure that ensures not only a cooling effect for riders but would also guarantee renewable fuel, thereby sourcing a completely clean mode of transportation. A transition to electric vehicles would provide PUSD with extensive cost savings potentially allowing for PUSD and STA to complete an evaluation of routes to address respondents feedback surrounding overcrowding and the need for an increased number of routes.

In addition to bus electrification, we are also looking into transitioning the district's other vehicles used within the Operations, Student Nutritional Services, Grounds, and Custodial Departments totaling seventy-seven vehicles. While this fleet would not affect student mobility, PUSD represents one of the largest employers and industries in Porterville and a reduction in vehicle emissions would have a positive benefit on community health.

Increase Awareness of Clean Mobility Options in the School Community

There are impressive investments and efforts being made by the City of Porterville to increase clean mobility for members of the school community for which the community has limited awareness, including:

- The Rails to Trails Program
- The City of Porterville's zero emission transit fleet
- The micro-transit option provided by the City's zero emission passenger vans

As these developments are relatively new, it's understandable that they are not widely known in the school community. Efforts by the PUSD Energy & Sustainability Program could focus on educating the school community about these options, helping to ensure their success further advance the relationship between the city, TCAG and the PUSD school community.

Secure Funding for PUSD's Clean Mobility Infrastructure

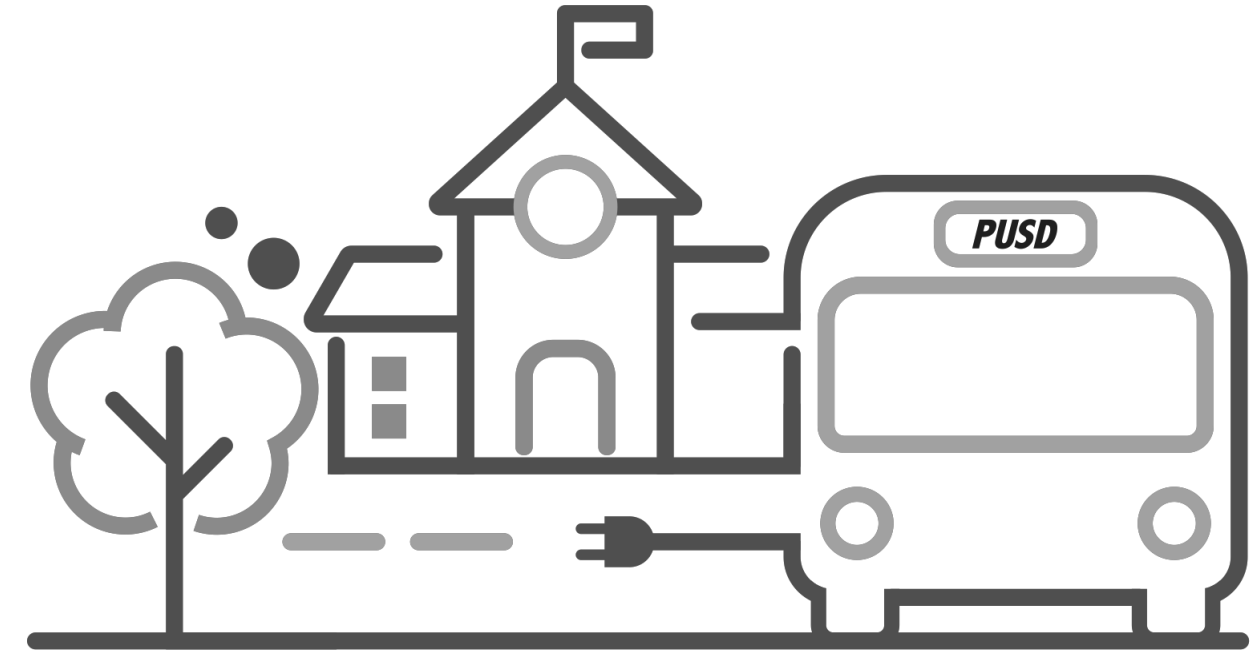
We will continue to work with the City and TCAG to secure funding for the work and infrastructure required to advance clean mobility in the district, such as:

- Upgrading street intersections for improved safety
- Purchasing electric school buses, electric fleet vehicles and charging infrastructure
- Installing solar electric systems to power PUSD electric vehicles
- Conducting an awareness campaign

A key next step for the PUSD Energy and Sustainability Program will be determining the cost of each of these clean mobility projects, identifying funding sources, and applying for the required funding. PUSD is expecting to apply for the 2021-22 CMO Project Voucher Program.

PUSD and CAPS are working together to reduce the district's greenhouse gas emissions by 80% by 2030 through the PUSD Energy & Sustainability Program. Meeting this goal requires providing every student a clean mobility option. The district is already conducting extensive work in making all PUSD buildings zero net energy and plans to increase efforts into clean transportation. This needs assessment is the first step in initiating the district's plan and ensuring stakeholders can be part of the planning process. We greatly appreciate CMO for giving us this opportunity.

Appendix 1: Student Survey



PUSD | ENERGY & SUSTAINABILITY PROGRAM

Student Energy & Sustainability Survey

We appreciate you taking the time to take our survey today. Completing this survey will help us to understand what you see as important regarding environmental protection and human health and will determine through what avenues we can provide benefits and funding to your school.

* 1. First Name

* 2. Last Name

* 3. PUSD Email

* 4. What grade are you in?

- 6
- 7
- 8
- 9
- 10
- 11
- 12

* 5. What school do you attend?

* 6. What is your level of understanding of sustainability

- Excellent
- Good
- Okay
- Poor
- Not Sure

* 7. Please provide your best attempt to define sustainability.

* 8. In your mind, what is the greatest environmental threat facing the Central Valley?

* 9. How would you rate your school in terms of sustainability?

- Excellent
- Good
- Okay
- Poor
- Not sure

10. Any comment on the sustainability of your school?

11. How would you rate ENERGY USAGE in terms of sustainability at your school? (for example, use of solar energy, lighting, heating and A/C at schools)

- Excellent
- Good
- Okay
- Poor
- Not sure

12. Any comment on the sustainability and ENERGY USAGE at your school?

13. How would you rate WASTE MANAGEMENT in terms of sustainability at your school? (for example, packaging, recycling etc.)

- Excellent
- Good
- Okay
- Poor
- Not sure

* 14. Any comment on the sustainability and WASTE MANAGEMENT at your school?

* 15. How would you rate FOOD SERVICE in terms of sustainability at your school? (for example, healthy food choices and food packaging)

- Excellent
- Not sure
- Good
- Okay
- Poor

* 16. Any comment on the sustainability and FOOD SERVICE at your school?

* 17. How would you rate the WATER USAGE in terms of sustainability at your school? (for example, sinks, restrooms, and water fountains)

- Excellent
- Good
- Okay
- Poor
- Not Sure

* 18. Any comment on the sustainability and WATER USAGE at your school?

* 19. How would you rate your school's TRANSPORTATION in terms of sustainability? (for example, in busing to school)

- Excellent
- Good
- Okay
- Poor
- Not Sure

* 20. Any comment on the sustainability and TRANSPORTATION at your school?

* 21. Which of these topics are you most interested in improving at your school? Rank: Energy Usage, Waste Management, Food Services, Water Usage, Transportation

Energy Usage

Waste Management

Food Services

Water Usage

Transportation

* 22. How do you get to school?

- School bus
- Public Transport
- Car (I drive myself)
- Car (Someone drives me)
- Carpooling (I ride with student(s))
- Walk
- Bike
- Other (please specify)

* 23. How close do you live to your school?

- 0-1 mile
- 1-2 miles
- 2-5 miles
- 5-10 miles
- Greater than 10 miles

* 24. How easy or difficult is it to walk or bike to your school?

- Somewhat difficult
- Somewhat easy
- Very easy
- I do not know

* 25. What of the following issues affected your decision to walk or bike to/from school? Select all that apply.

- [ ] Distance
- [ ] Convenience of Driving Time
- [ ] Before or after school activities
- [ ] Speed of traffic along route
- [ ] Amount of traffic along route
- [ ] Sidewalks or pathways
- [ ] Safety of intersections and crossings
- [ ] Crossing guards
- [ ] Violence
- [ ] Weather or climate
- [ ] I already walk or bike to school
- [ ] Other (please specify)

* 26. Would you walk or bike to school if the barriers were addressed? Select all that apply

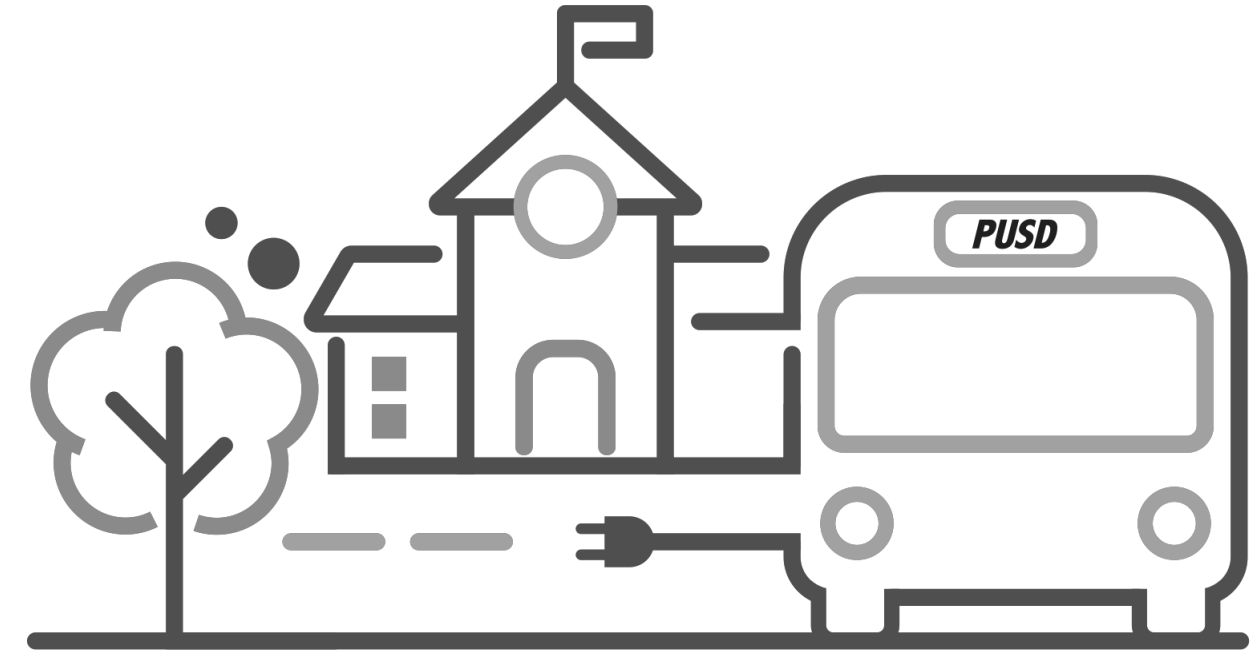
- [ ] Distance
- [ ] Convenience of Driving Time
- [ ] Before or after school activities Speed of traffic along route
- [ ] Amount of traffic along route Sidewalks or pathways
- [ ] Safety of intersections and crossings
- [ ] Crossing guards
- [ ] Violence
- [ ] Weather or climate
- [ ] I already walk or bike to school
- [ ] Other (please specify)

* 27. It's time to use your imagination! If you were to come back to school in ten years, and there was a great change at the school that made our environment more sustainable, what do you imagine that would be?

* 28. Are you interested in getting involved and helping out with the PUSD Energy & Sustainability Program?

- ◯ Yes
- ◯ No

Appendix 2: Parent Survey



PUSD | ENERGY & SUSTAINABILITY PROGRAM

Parent Energy & Sustainability Survey

We appreciate you taking the time to take our survey today. Your responses will help the PUSD Energy & Sustainability team move forward in planning how to develop environmental health benefits to Porterville's air and water. Completing this survey will help us to understand what you see as important regarding environmental protection and human health and will determine through what avenues we can provide benefits and funding to your child's school.

* 1. What grade is your child in? (check all that apply)

- ☐ Kindergarten
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- 6

* 2. What school does your child attend?

[ ]

3. What is your level of understanding of sustainability

- Excellent
- Good
- Okay
- Poor
- Not Sure

* 4. Please provide your best attempt to define sustainability.

* 5. In your mind, what is the greatest environmental threat facing the Central Valley?

* 6. How would you rate your child's school in terms of sustainability?

- Excellent
- Good
- Okay
- Poor
- Not sure

7. Any comment on the sustainability of your child's school?

* 8. How would you rate ENERGY USAGE in terms of sustainability at your child's school? (for example, use of solar energy, lighting, heating and A/C at schools)

- Excellent
- Good
- Okay
- Poor
- Not sure

9. Any comment on the sustainability and ENERGY USAGE at your child's school?

* 10. How would you rate WASTE MANAGEMENT in terms of sustainability at your child's school? (for example, packaging, recycling etc.)

- Excellent
- Good
- Okay
- Poor
- Not sure

11. Any comment on the sustainability and WASTE MANAGEMENT at your child's school?

* 12. How would you rate FOOD SERVICE in terms of sustainability at your child's school? (for example, healthy food choices and food packaging)

- Excellent
- Good
- Okay
- Poor
- Not Sure

13. Any comment on the sustainability and FOOD SERVICE at your child's school?

* 14. How would you rate the WATER USAGE in terms of sustainability at your child's school? (for example, sinks, restrooms, and water fountains)

- Excellent
- Good
- Okay
- Poor
- Not Sure

15. Any comment on the sustainability and WATER USAGE at your child's school?

* 16. How would you rate your child's school's TRANSPORTATION in terms of sustainability? (for example, in busing to school)

- Excellent
- Good
- Okay
- Poor
- Not Sure

17. Any comment on the sustainability and TRANSPORTATION at your child's school?

* 18. Which of these topics are you most interested in improving at your child's school? Rank: Energy Usage, Waste Management, Food Services, Water Usage, Transportation

Energy Usage

Waste Management

Food Services

Water Usage

Transportation

* 19. How does your child get to school?

- School bus
- Public Transport
- Car (I drive myself)
- Car (Someone drives me)
- Carpooling (I ride with student(s))
- Walk
- Bike
- Other (please specify)

* 20. How close do you live to your child's school?

- 0-1 mile
- 1-2 miles
- 2-5 miles
- 5-10 miles
- Greater than 10 miles

* 21. How easy or difficult is it to walk or bike to your child's school?

- Somewhat difficult
- Somewhat easy
- Very easy
- I do not know

* 22. What of the following issues affected your decision to let your child walk or bike to/from school? Select all that apply.

- [ ] Distance
- [ ] Convenience of Driving Time
- [ ] Before or after school activities
- [ ] Speed of traffic along route
- [ ] Amount of traffic along route
- [ ] Sidewalks or pathways
- [ ] Safety of intersections and crossings
- [ ] Crossing guards
- [ ] Violence
- [ ] Weather or climate
- [ ] I already walk or bike to school
- [ ] Other (please specify)

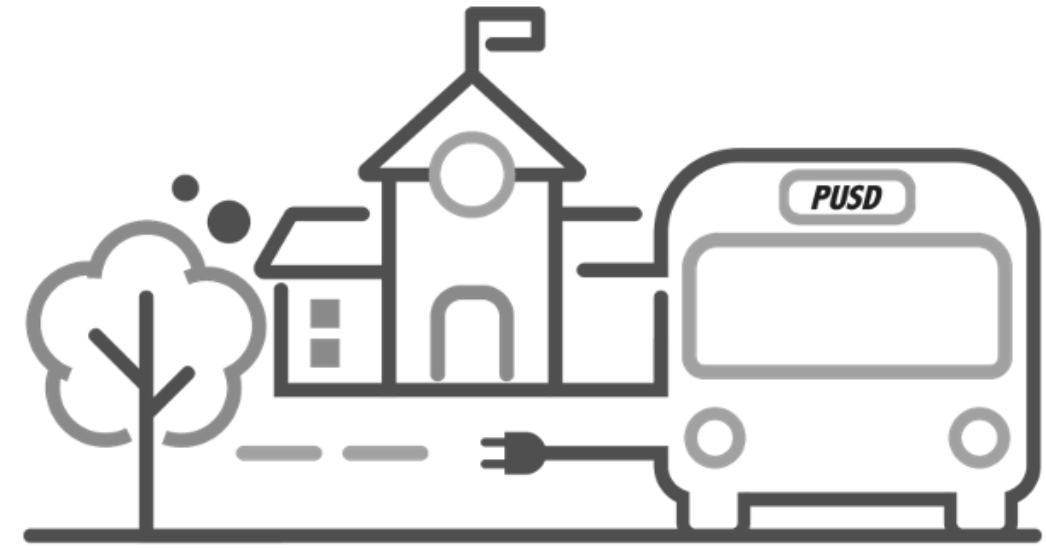
* 23. Would you let your child walk or bike to school if the barriers were addressed? Select all that apply

- [ ] Distance
- [ ] Convenience of Driving Time
- [ ] Before or after school activities
- [ ] Speed of traffic along route
- [ ] Amount of traffic along route
- [ ] Sidewalks or pathways
- [ ] Safety of intersections and crossings
- [ ] Crossing guards
- [ ] Violence
- [ ] Weather or climate
- [ ] I already walk or bike to school
- [ ] Other (please specify)

* 24. It's time to use your imagination! If you were to come back to school in ten years, and there was a great change at the school that made our environment more sustainable, what do you imagine that would be?

* 25. Are you interested in getting involved and helping out with the PUSD Energy & Sustainability Program? If so please leave your name and email and we would love to connect with you!

Appendix 3: Teacher Survey



PUSD | ENERGY & SUSTAINABILITY PROGRAM

Teacher Energy & Sustainability Survey

We appreciate you taking the time to take our survey today. Completing this survey will help us to understand what you see as important regarding environmental protection and human health and will determine through what avenues we can provide benefits and funding to your school.

* 1. First Name

* 2. Last Name

* 3. PUSD Email

* 4. What school do you work at?

* 5. What is your level of understanding of sustainability

- Excellent
- Good
- Okay
- Poor
- Not Sure

* 6. Please provide your best attempt to define sustainability.

* 7. In your mind, what is the greatest environmental threat facing the Central Valley?

* 8. How would you rate your school in terms of environmental sustainability?

- Excellent
- Good
- Okay
- Poor
- Not sure

* 9. Any comment on the sustainability of your school?

* 10. How would you rate ENERGY USAGE in terms of sustainability at your school? (for example, use of solar energy, lighting, heating and A/C at schools)

- Excellent
- Good
- Okay
- Poor
- Not sure

* 11. Any comment on the sustainability and ENERGY USEAGE at your school?

* 12. How would you rate WASTE MANAGEMENT in terms of sustainability at your school? (for example, packaging, recycling etc.)

- Excellent
- Good
- Okay
- Poor
- Not sure

* 13. Any comment on the sustainability and WASTE MANAGEMENT at your school?

* 14. How would you rate FOOD SERVICE in terms of sustainability at your school? (for example, healthy food choices and food packaging)

- Excellent
- Good
- Okay
- Poor
- Not Sure

* 15. Any comment on the sustainability and FOOD SERVICE at your school?

* 16. How would you rate the WATER USAGE in terms of sustainability at your school? (for example, sinks, restrooms, and water fountains)

- Excellent
- Good
- Okay
- Poor
- Not Sure

* 17. Any comment on the sustainability and WATER USAGE at your school?

* 18. How would you rate your school's TRANSPORTATION in terms of sustainability? (for example, in busing to school, walking, and biking)

- Excellent
- Good
- Okay
- Poor
- Not Sure

* 19. Any comment on the sustainability and TRANSPORTATION at your school?

* 20. Which of these topics are you most interested in improving at your school? Rank: Energy Usage, Waste Management, Food Services, Water Usage, Transportation

Energy Usage

Waste Management

Food Services

Water Usage

Transportation

* 21. It's time to use your imagination! If you were to come back to school in ten years, and there was a great change at the school that made our environment more sustainable, what do you imagine that would be?

* 22. Are you interested in getting involved and helping out with the PUSD Energy & Sustainability Program?

- Yes
- No

Appendix 4: Principal Interview Questions

1. What do you know about the PUSD Energy and Sustainability Program?
2. Our student interns specifically chose to include the term sustainability in our program name. What does sustainability mean to you?
3. How would you rank your school overall, in terms of sustainability? (Ranking: excellent, good, okay, poor, not sure) I sphere anything you wish to add about your ranking?
4. How would you rank your school in regard to energy usage, in terms of sustainability? (Ranking: excellent, good, okay, poor, not sure) I sphere anything you wish to add about your ranking?
5. How would you rank your school in regard to waste management, in terms of sustainability? (Ranking: excellent, good, okay, poor, not sure) I sphere anything you wish to add about your ranking?
6. How would you rank your school in regard to food services, in terms of sustainability? (Ranking: excellent, good, okay, poor, not sure) I sphere anything you wish to add about your ranking?
7. How would you rank your school in regard to water usage, in terms of sustainability? (Ranking: excellent, good, okay, poor, not sure) I sphere anything you wish to add about your ranking?
8. How would you rank your school in regard to transportation, in terms of sustainability? (Ranking: excellent, good, okay, poor, not sure) I sphere anything you wish to add about your ranking?
9. Have you ever heard of the rails-to-trails pathways in Porterville?
10. What is the top sustainability issue that you think we can have an impact on? (Options: energy usage, waste management, food services, water conservation, and transportation)
11. What would be your second choice? (Options: energy usage, waste management, food services, water conservation, and transportation)
12. What do you think is the biggest challenge facing the Central Valley?
13. In your opinion, what would be the best format for us to release a community survey to parents, students, and teachers?

Appendix 5: PUSD Transportation Employee Questions

This is the set of questions posed to PUSD transportation employees:

1. Are there any concerns that you may have about the new electric buses?
2. Do you feel that the electric buses were a good investment?
3. What positive outcomes do you see in using electric buses?
4. How is the maintenance different when it comes to time and price for the electric buses compared to diesel buses?
5. What time would buses charge and how often do they alternate?
2. Charging times: how long does it take to fully charge/charge per mile?
3. How early do workers come in? (Would morning charging be possible?)
4. Do you think it's possible to transition to an all-electric fleet? If not, what are your biggest concerns?
5. Do you believe the electric buses will run their routes more efficiently?
6. Do you believe maintenance would be different for EV Buses (costs, downtimes of buses etc.)? What are the benefits and drawbacks?
7. Has there been any feedback from the drivers about the EV Buses? If so, what has been their responses?
8. How do you think routes and fueling will change when compared to the diesel buses?

Appendix 6: Monte Vista Back-to-School Survey

1. Walking Parents Survey

1. How does your child get to and from school?

- ☐ Bus
- ☐ Carpooling
- ☐ Public Transport
- ☐ Walk
- ☐ Car (I drive them)
- ☐ Bike
- ☐ Other (please specify) _____

2. How easy or difficult is it to get your child to school?

- ☐ Difficult
- ☐ Somewhat easy
- ☐ Somewhat difficult
- ☐ Very easy

3. If your child does not take the bus or public transport to school, which of the following affects your decision to let your child take the bus/public transport? (select all that apply)

- ☐ Distance
- ☐ Convenience of driving
- ☐ Time
- ☐ Speed of traffic along route
- ☐ Amount of traffic along route
- ☐ Sidewalks or pathways
- ☐ Before or after school activities
- ☐ Safety/violence
- ☐ Weather/climate
- ☐ Lack of crossing guards
- ☐ Safety of intersections/crossings
- ☐ Other (please specify) _____

4. Are there any intersections near Monte Vista you would like to see infrastructure improvements on?

5. We are hoping to hold more events at Monte Vista surrounding student transportation to get a deeper understanding of parent and student needs. When would be the best time and format for you to participate?

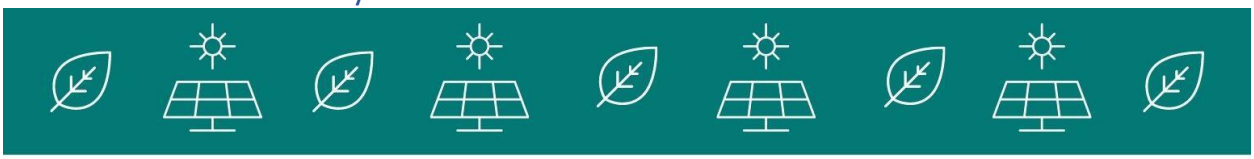
Format

- ☐ Virtual
- ☐ In-person

Time

- ☐ After 5 pm weekdays
- ☐ Weekends
- ☐ During the day on weekdays

2. Bus Parents Survey



1. How does your child get to and from school?

- ☐ Bus
- ☐ Carpooling
- ☐ Public Transport
- ☐ Walk
- ☐ Car (I drive them)
- ☐ Bike
- ☐ Other (please specify) _____

2. How easy or difficult is it to get your child to school?

- ☐ Difficult
- ☐ Somewhat easy
- ☐ Somewhat difficult
- ☐ Very easy

3. If your child does not take the bus or public transport to school, which of the following affects your decision to let your child take the bus/public transport? (select all that apply)

- ☐ Distance
- ☐ Before or after school activities
- ☐ Convenience of driving
- ☐ Safety/violence
- ☐ It's part of my work commute
- ☐ Weather/climate
- ☐ Pickup times are inconvenient
- ☐ Other (please specify) _____

4. The district has purchased six new electric school buses to replace old diesel buses. Is this something you want to see PUSD invest more in?

- ☐ Yes
- ☐ No
- ☐ I don't know

5. We are hoping to hold more events at Monte Vista surrounding student transportation to get a deeper understanding of parent and student needs. When would be the best time and format for you to participate?

Format

- ☐ Virtual
- ☐ In-person

Time

- ☐ After 5 pm weekdays
- ☐ Weekends
- ☐ During the day on weekdays

Appendix 7: Porterville High Student Focus Group Questions

Count of class grade level:

9th Grade: _____ 11th Grade: _____

10th Grade: _____ 12th Grade: _____

1. Get numbers from the students. (Total number of students present _____)
    a. How many people walk/bike to school? _____
    b. How many people drive themselves to school? _____
    c. How many people are driven by a parent? _____
    d. How many people take the bus? _____
    e. Any other forms of commute? _____
2. Give students no shame. But ask, for those of you who drive, why do you do so? What motivates you to drive? Bad walking conditions? Bus schedule annoying? Why?
3. What would convince you to walk or take the bus to school? Better intersections? Better busing? How can we improve?
4. Do you know about the all-electric on-demand micro-transit system through the city that you can order through the Uber app? Have you ever used it? If so, was it efficient? Would you use it again? Why or why not?
5. Does anyone have a student pass for the City of Porterville transit service? Have you ever used it? Do you know it exists?
6. What are the dangerous intersections around PHS? Where would you like to see street improvements?

Appendix 8: Results of EPA Walkability Index Ranking

Table 1. EPA's Walkability Index rating for eighteen PUSD school sites.

School Name	Walkability Rating
Belleview Elementary	Below Average Walkable
John J. Doyle Elementary	Below Average Walkable
Los Robles Elementary	Above Average Walkable
Monte Vista Elementary	Below Average Walkable
Olive Street Elementary	Above Average Walkable
Roche Avenue Elementary	Least Walkable
Santa Fe Elementary	Below Average Walkable
Vandalia Elementary	Below Average Walkable
West Putnam Elementary	Below Average Walkable
Westfield Elementary	Below Average Walkable
Bartlett Middle School	Below Average Walkable
Pioneer Middle School	Below Average Walkable
Sequoia Middle School	Below Average Walkable
Citrus High School	Below Average Walkable
Granite Hills High School	Least Walkable
Monache High School	Below Average Walkable
Porterville High School	Below Average Walkable
Porterville Military Academy	Below Average Walkable