Spring 5-2020

Pupil Transportation Alternatives: an Analysis of Alternative Pupil Transportation Models

Jarrett Garife
San Jose State University

Follow this and additional works at: https://scholarworks.sjsu.edu/etd_projects

Part of the [Education Policy Commons](#), [Policy Design, Analysis, and Evaluation Commons](#), [Public Administration Commons](#), and the [Transportation Commons](#)

Recommended Citation

Garife, Jarrett, "Pupil Transportation Alternatives: an Analysis of Alternative Pupil Transportation Models" (2020). *Master's Projects*. 952.
DOI: <https://doi.org/10.31979/etd.f7np-kmy2>
https://scholarworks.sjsu.edu/etd_projects/952

This Master's Project is brought to you for free and open access by the Master's Theses and Graduate Research at SJSU ScholarWorks. It has been accepted for inclusion in Master's Projects by an authorized administrator of SJSU ScholarWorks. For more information, please contact scholarworks@sjsu.edu.

Pupil Transportation Alternatives:
An Analysis of Alternative Pupil Transportation Models

By
Jarrett Garife

A Thesis Quality Research Paper
Submitted in Partial Fulfillment of the
Requirements for the Master's Degree in
PUBLIC ADMINISTRATION

Professor Frances Edwards, Ph.D.
Adviser

The Graduate School
San Jose State University
May, 2020

TABLE OF CONTENTS

INTRODUCTION	5
Problem Statement	5
BACKGROUND	6
Pupil Transportation Policy	6
Funding	7
School Bus Policy and Regulation Background	9
Passenger Van Policy	10
Child Ridesharing Agencies	11
School Bus Driver Shortage.....	12
Extended Student Travel Time and Student Readiness	13
School Districts Researched	15
San Francisco Unified School District	15
Monterey Peninsula Unified School District	15
Salinas City Elementary School District.....	16
Chualar Union School District	16
Monterey County Office of Education.....	17
Alternative Pupil Transportation.....	22
Safety	23
FINDINGS	26
Financial Analysis.....	26
San Francisco Unified School District.....	27

Monterey Peninsula Unified School District	29
Salinas City Elementary School District.....	31
Chualar Union School District.....	33
Monterey County Office of Education.....	35
Risk Assessment	37
ANALYSIS.....	39
Financial Analysis and Risk Assessment.....	39
Program Analysis.....	43
Limitations	46
CONCLUSION.....	48
APPENDIX A.....	49
SFUSD Financial Analysis	49
APPENDIX B	50
MPUSD Financial Analysis	50
APPENDIX C	51
SCESD Financial Analysis	51
APPENDIX D.....	52
CUSD Financial Analysis	52
APPENDIX E	53
MCOE Financial Analysis	53

REFERENCES	54
------------------	----

List of Tables

TABLE 1: SFUSD INCOME CALCULATION	27
TABLE 2: SFUSD EXPENSE DETERMINATION (OPERATIONAL COSTS)	28
TABLE 3: MPUSD INCOME CALCULATION	29
TABLE 4: MPUSD EXPENSE DETERMINATION (OPERATIONAL COSTS)	30
TABLE 5: SCESD INCOME CALCULATION	31
TABLE 6: SCESD EXPENSE DETERMINATION (OPERATIONAL COSTS)	32
TABLE 7: CUSD INCOME CALCULATION	33
TABLE 8: CUSD EXPENSE DETERMINATION (OPERATIONAL COSTS)	34
TABLE 9: MCOE INCOME CALCULATION	35
TABLE 10: MCOE EXPENSE DETERMINATION (OPERATIONAL COSTS)	36
TABLE 11: TOTAL COST TO DISTRICTS	37
TABLE 12: INJURY/FATALITY ACCIDENT PROBABILITY	37
TABLE 13: ESTIMATED RISK OF DISTRICTS	38
TABLE 14: STUDENTS TRANSPORTED BY DISTRICT.....	41
TABLE 15: NUMBER OF VEHICLES NEEDED	42
TABLE 16: OPERATIONAL COST COMPARISON (MPUSD, SCESD, & CUSD).....	42

List of Figures

FIGURE 1:TRANSPORTATION PROGRAM ANALYSIS LOGIC MODEL	19
FIGURE 2: SFUSD OPERATIONAL COST COMPARISON	40
FIGURE 3: MCOE OPERATIONAL COST COMPARISON	41
FIGURE 4: MCOE AVERAGE TRAVEL TIME FOR SOUTH MONTEREY COUNTY STUDENTS	45

INTRODUCTION

School busing has evolved over the years and alternate modes of pupil transportation have emerged. In California, school districts have developed alternate pupil-transportation models (e.g., using passenger vans, child ridesharing agencies like Zum, Kango, or HopSkipDrive) to transport students on limited state pupil-transportation funding contributions (Thompson, 2019). Child ridesharing agencies operate like Uber or Lyft, but only transport students. The use of passenger vans for pupil transportation is another alternate transportation model that is being used by California school districts.

Problem Statement

The purpose of this study was to examine whether alternative pupil-transportation models are more cost efficient and safer for students than traditional school bus transportation in California. The study also focused on the fiscal and safety challenges that school districts face when transporting students. For the purpose of this analysis, “safer” will be defined in relation to the estimated injury or fatality costs resulting from a vehicle/school bus accident during pupil transportation.

The study analyzed the transportation departments of five California school districts (San Francisco Unified School District, Monterey Peninsula Unified School District, Salinas City Elementary School District, Chualar Union School District, and Monterey County Office of Education) to study the effects of using alternate types of transportation on various types of school districts (e.g., number of students transported, district size, and service area).

BACKGROUND

School busing was created to transport students, who lived in rural areas, back and forth to consolidated schools. School buses in America can be traced as far back as 1886, when they were horse drawn carriages known as “school hacks” or “kid hacks”. In the early 1900’s when automotive technology was taking off, a company named Wayne Works introduced the first all steel bus in 1930 that was equipped with safety glass windows. In 1939 school bus standards were created and the yellow school bus was born (The Newswheel, 2015).

In 1869 the Commonwealth of Massachusetts passed legislation allowing public funds to be used for transporting students, which was the first program of its kind. By 1919 all of the continental forty-eight states had enacted similar legislation because of the consolidation of public schools and compulsory attendance (Tull, 2019).

Pupil Transportation Policy

In California, districts are not required to transport general education students and state law allows districts to determine whether to provide transportation for those students. On the other hand, federal law requires districts to provide transportation to three groups of students: students with disabilities (special education students), homeless students, and students attending federally sanctioned schools (Taylor, 2014).

The federal Individuals with Disabilities Education Act (IDEA) requires all districts to provide students with disabilities free and appropriate public education; and if school officials determine that transportation to and from school is necessary to the student’s education, then the districts must provide transportation (Taylor, 2014). California Education Code section 56040 also requires districts to provide every individual with exceptional needs (i.e., students with

disabilities) with special education instruction and related services (i.e., any service related to providing special education instruction such as transportation) (California Department of Education, 2018). Some students with disabilities require a special needs transportation nurse to accompany them on the bus to school, and from school to home, which falls under the “related services” definition. A special needs transportation nurse is responsible for caring for the students with disabilities on the bus during transportation, and is responsible for administering medication as prescribed by a physician, or to administer emergency care if the student has a health emergency on the school bus (Duff, 2014).

Transportation of homeless students is covered by the federal McKinney-Vento Homeless Assistance Act (Taylor, 2014). The McKinney-Vento definition of homelessness includes children and youth who lack a fixed, regular, and adequate nighttime residence (e.g., sharing the house with others due to loss of housing, economic hardship, living in shelters or cars) (SchoolHouse Connection, 2018). Under the McKinney-Vento Homeless Assistance Act, districts are required to provide transportation to the homeless student’s school of origin for the remainder of the academic year (SchoolHouse Connection, 2018).

Funding

In California, pupil-transportation funding has changed over the years. In 1947, California established the Home to School Transportation Program (HTST), which reimbursed school districts for transportation costs on a sliding scale covering between 50 percent and 90 percent of costs beyond certain established spending thresholds (Taylor, 2014). In 1951-52, California created a Special Education Transportation program that would reimburse 100 percent of costs associated with Special Education pupil transportation (Taylor, 2014). In 1981-82, in response to

the passage of Proposition 13, California revised the HTST Program's formula and froze funding allocations at prior-year levels and for future years. Since then the only way to increase HTST allocations was through cost-of-living adjustments (COLA) which are given to all districts (Taylor, 2014). In 1984-85, the state consolidated General HTST and Special Education Transportation Funding and froze funding levels at 1983-84 levels (Taylor, 2014). During the 1992-93 fiscal year, California established a new HTST Program spending requirement for students with severe disabilities (Taylor, 2014). It requires districts to split HTST allocations into two separate funds, one for special education transportation and one for all other students; each fund will have a separate spending requirement (Taylor, 2014).

The next major funding change to California's HTST Program happened during the Great Recession in 2008-09. In the 2008-09 fiscal year the state made a number of changes in response to a California budget shortfall, which involved a change in funding for the HTST Program; it was reduced by 20 percent, but still required that the HTST Program funding be spent on transportation (Taylor, 2014). In 2011-12 California eliminated the HTST Program because state revenues fell below projections, but the state reinstated the HTST Program and rescinded cuts to the program (Taylor, 2014). In 2013-14 the Local Control Funding Formula (LCFF) was created, but the state kept the HTST Program, froze allocations at 2012-13 levels and eliminated the separate HTST Program's spending requirements for general and special education transportation (Taylor, 2014). Currently, the state's HTST Program funding allocations have not changed and are still locked in at the 2012-13 levels, and the districts will not receive future COLAs (Taylor, 2014).

The result of locking in HTST Program funding allocations at the 2012-13 levels is that, with each passing year, HTST Program funding allocations become more disconnected from the

financial needs of transportation departments due to increased operational costs and shrinking district budgets (Taylor, 2014). In order to compensate for the gap in HTST Program funding, some districts charge a fee for general education transportation (Taylor, 2014). District transportation funding will continue to need alternate funding sources to make up the short fall of state HTST Program funding (Taylor, 2014).

School Bus Policy and Regulation Background

In 1974 the United States Congress passed the School Bus Safety Amendments, which led the National Highway Traffic Safety Administration (NHTSA) to issue school bus specific safety standards (National Association of State Directors of Pupil Transportation Services, 2017). The NHTSA school bus safety standards took effect in 1977 and included federal requirements for licensure, training, school bus manufacturing, and qualifications of school bus drivers, which has resulted in providing a higher level of safety for transporting students (National Association of State Directors of Pupil Transportation Services, 2017)

In California there are three agencies that regulate school bus transportation: California Department of Education (CDE), California Highway Patrol (CHP), and Department of Motor Vehicles (DMV).

CDE is responsible for laws and regulations related to school bus use, authority of drivers, pupil safe riding practices, bus evacuation and lap/shoulder restraint use (Anderson, 2019). It also approves all courses of study and training activities for California school bus drivers, School Pupil Activity Bus (SPAB) drivers, farm labor vehicle drivers, transit system bus drivers, and commercial coach bus drivers (Anderson, 2019). The CDE is also responsible for

training and certifying driver instructors for school buses, SPAB's, farm labor vehicles, transit system bus drivers, and commercial coach bus drivers (Anderson, 2019).

The CHP inspects and certifies buses, driver records, and preventative maintenance records. The CHP also adopts rules and regulations designed to promote the safe operation of all vehicles listed in Vehicle Code (VC) 34500. The CHP investigates all school bus accidents, approves certain school bus stops, administers testing for bus driver applicants, and issues temporary driver certificates for bus operation. The CHP interprets and enforces laws and regulations governing the equipment and safe operation of buses (Anderson, 2019).

The DMV defines vehicles, vehicle use, and substantiates license requirements. The DMV also ensures that driver applicants and holders of a special driver certificate maintain eligibility. It also ensures that all applicants for a special driver certificate (e.g., School Bus Driver Certificate) meet the requirements of the applicable laws and regulations before issuing the permanent special driver certificate. The DMV conducts hearings upon request for drivers or applicants whose certificates have been denied, suspended, or revoked (Anderson, 2019).

Passenger Van Policy

Federal law defines a “bus” as any vehicle designed to carry 10 passengers or more, and a “school bus” is defined as a bus that is intended for use in transporting students to and from school or school-related activities (Federal Motor Vehicle Safety Standards, 1970). In 2005, the U.S. Congress extended the authority of the U.S. Department of Transportation to prohibit schools or school systems from purchasing or leasing passenger vans designed to transport 10 to 14 passengers, since those vehicles would be defined as a “school bus” under federal law (National Association of State Directors of Pupil Transportation Services, 2017). A

“nonconforming school bus” is defined as a van that is designed to transport students and carry nine passengers or less. Schools and school districts are able to buy and use nonconforming school buses, although the drivers of these vehicles are not required to obtain a special driving certificate or commercial driver’s license; moreover, the vehicle safety standards of nonconforming school buses are not up to school bus vehicle safety standards (National Association of State Directors of Pupil Transportation Services, 2017).

Child Ridesharing Agencies

Child ridesharing agencies are a new option that is being used by school districts to work around shrinking transportation budgets and bus driver shortages. Child ridesharing agencies transport students home from school, school to home, and to school related activities. They operate using a network of drivers who use their personal vehicles to transport students. Zum, HopSkipDrive, and Kango are the major agencies that school districts have begun to use. Child ridesharing agencies offer flexible routes and reduced transportation costs because of the nature of their operation. For the purpose of this analysis, HopSkipDrive was the child ridesharing agency analyzed (Thompson, 2019).

HopSkipDrive was founded in 2015 by three mothers who had seen the need for an alternative solution for home to school transportation. HopSkipDrive is a child ridesharing agency that uses a network of drivers and their personal vehicles to transports students to and from school. Currently, the organization is operating in seven states (California, Washington, Nevada, Arizona, Texas, Arkansas, and Virginia). HopSkipDrive has developed their own transportation software that allows them to track each driver’s location, create driver routes, and create student profiles (HopSkipDrive, 2020). HopSkipDrive drivers must be a minimum age of

23 years old, pass a criminal background check, and pass an FBI fingerprint check, along with other safety/security requirements. HopSkipDrive's website (<https://www.hopskipdrive.com>) has all their driver requirements, rates, and policies listed (HopSkipDrive, 2020).

School Bus Driver Shortage

The school bus driver shortage is a nationwide problem that challenges school districts to effectively and efficiently transport students. A number of factors are associated with school bus driver shortages, for example, limited working hours and high barriers to entry. Drivers need to obtain a commercial driver's license, which requires training that sometimes is not paid for by the district. School bus driver shortages lead to school districts relying on office staff, management, or mechanics to fill bus driver voids. The shortage of drivers has led to school districts eliminating routes, leading to crowded buses, longer student wait times at bus stops, and reduced transportation services. School bus driver shortages also affect students' time of arrival to school because districts are forced to combine routes (Schulte, 2018).

The dynamics of pupil transportation are changing and so are the priorities of those who are job seeking. The majority of job seekers are looking for a full-time job. School bus driving is considered, in a majority of districts, as part-time work. A typical school bus driver works a few hours early in the morning to transport students to school and then, returns back in the late afternoon to work another few hours to transport students home; most districts only guarantee school bus drivers six hours of work a day. As current school bus drivers begin to retire, school districts will be challenged to attract and retain new and younger school bus drivers (School Transportation News, 2020).

Extended Student Travel Time and Student Readiness

The average one-way ride time for elementary students is 30 minutes, and for middle school and high school students it is 60 minutes, but for students in rural areas it could be longer (Howley, 2001). Longer student travel time limits the student's ability to enjoy leisure time, which is important for children and adolescent social and emotional development (Melman, Little, & Akin-Little, 2007). According to Melman et al. (2007), "Leisure has been defined as a perceived sense of freedom, intrinsic motivation, and enjoyment" (p.20). Leisure activities play an important role in self-development and allow children to learn social norms (Melman et al., 2007). Free play is another aspect of leisure time and it is important to the social and emotional development and a child's cognitive development. Children and adolescents who have less time for leisure or free play time are vulnerable to the effects of pressure and stress, which increase the likelihood of developing childhood or adolescent depression (Ginsburg, 2007).

Students who ride the school bus have to wake up earlier than students who live close to their schools or who do not need school bus transportation. Students who wake up early to catch the school bus each day are more likely to fall asleep at school; their ability to retain what is taught to them in class is affected as well. For example, a student whose morning one-way ride time is 60 minutes and school start time is at 8:00 a.m. will have to arrive at the school bus stop by 6:45 a.m. If it takes the student one hour to get ready in the morning, the student would have to wake up at 5:45 a.m. (Adolescent Sleep Working Group, 2014).

A policy statement released by the American Academy of Pediatrics (2014) states, "Several studies from different perspectives indicate that adolescent sleep needs do not decline from preadolescent levels, and optimal sleep for most teenagers is in the range of 8.5 to 9.5 hours per night" (p. 643). The American Academy of Pediatrics also points out that the average

teenager has a hard time falling asleep before 11:00 p.m., so they conclude that the best time for teenage students to wake up is 8:00 a.m. Insufficient sleep leads to decreased academic achievement and student readiness (Adolescent Sleep Working Group, 2014). Insufficient sleep in students also increases the likelihood of a student developing anxiety and mood disorders. Increased risk of cardiovascular disease and diabetes are other risks associated with insufficient sleep. Therefore, a student who rides a school bus will be less likely to get the recommended 8.5 to 9.5 hours of sleep. (Adolescent Sleep Working Group, 2014). In California this research led to the passage of California State Senate Bill 328 (2019) (SB 328), a law requiring California school districts to start middle schools no earlier than 8:00 a.m. and high schools no later than 8:30 a.m. (California Department of Education, 2019b)

SB 328 was signed by Governor Gavin Newsome on October 13, 2019 and made California the first state to require later start times for middle schools and high schools. SB 328 added section 46148 to the California Education Code that requires the start time for middle schools to begin no earlier than 8:00 a.m. and high school to start no earlier than 8:30 a.m. (EC § 46148). SB 328 has to be implemented no later than July 1, 2022, but does not apply to rural school districts (California Department of Education, 2019b).

The opponents of SB 328, including the California Teachers Association, Association of California School Administrators, and the School Board Associations, argued that SB 328 would negatively impact school bus scheduling, before and after school programing, and union contracts, among other programs (Fensterwald, 2019). Other concerns about the implementation of SB 328 are the affects that it will have on low-income families who depend on their older children to work after school, or care for their younger siblings because the family cannot afford the cost of child care (Fensterwald, 2019).

School Districts Researched

San Francisco Unified School District

San Francisco Unified School District (SFUSD) is the sixth largest school district in California and encompasses 232 square miles. SFUSD has 64 elementary schools, 13 middle schools, 15 high schools, 14 charter schools, 2 continuation schools, 8 county schools, and 12 early education schools (San Francisco Unified School District, 2019). SFUSD is a K-12 unified school district, and in the 2018-19 school year SFUSD had an enrollment of 60,390 students and transported 3,555 students (California Department of Education, 2019a). SFUSD contracts out their pupil transportation to First Student, that provides school buses and school bus drivers. SFUSD employs six transportation schedulers who are in charge of creating school bus routes and communicating district needs to First Student. SFUSD provides limited general education home to school (HTS) transportation for elementary and middle school students. SFUSD also provides transportation for field trips, foster youth students, homeless students, and special education students who are required to have transportation based on their Individual Education Plan (IEP) (San Francisco Unified School District, 2018).

Monterey Peninsula Unified School District

Monterey Peninsula Unified School District (MPUSD) is a K-12 unified school district that is located in Monterey, California and was established in 1961 (Monterey Peninsula Unified School District, 2020a). MPUSD serves the cities of Marina, Seaside, Sand City, Del Rey Oaks, and Monterey. The 2018-19 school year enrollment was 10,658 students, and they transported 1,360 of those enrolled students (California Department of Education, 2019a). MPUSD has a total of 32 schools: 11 elementary schools, 3 middle schools, 3 high schools, 1 alternative high

school, 3 charter schools, 1 adult school, 8 after-school learning academies, and 2 early childhood education learning centers (Monterey Peninsula Unified School District, 2020a). MPUSD provides HTS transportation to K-12 students, special education students who have transportation listed on their IEP's, foster youth students, homeless students, and also provides transportation for school field trips. MPUSD's transportation department employs 24 school bus drivers and 4 administrative staff members (Transparent California, 2020c).

Salinas City Elementary School District

Salinas City Elementary School District (SCESD) was founded in 1868 in Salinas, California. SCESD's service area is 13.7 square miles and serves the elementary students of Salinas. SCESD is a K-6 elementary school district that had an enrollment of 8,689 students and transported 1,022 students in the 2018-19 school year (California Department of Education, 2019a). SCESD has a total of 14 elementary schools, all located in the Salinas area (Salinas City Elementary School District, 2020a). SCESD transportation department provides HTS transportation for K-6 students, special education students who have transportation listed on their IEP, foster youth students, homeless students, and for school field trips (Salinas City Elementary School District, 2020c). SCESD transportation department employs 23 school bus drivers and 4 administrative staff members (Transparent California, 2020d).

Chualar Union School District

Chualar Union School District (CUSD) was founded on 1908 in Chualar, California. Chualar is a rural town located between Salinas and Gonzales with a population of 1,190 people (Chualar Union School District, 2020b). CUSD is an elementary school district that has only one elementary school that enrolled 309 students and transported 50 of those students in the 2018-19

school year (California Department of Education, 2019a). CUSD only has one school bus that provides HTS transportation for general education students (Chualar Union School District, 2020b).

Monterey County Office of Education

Monterey County Office of Education (MCOE) is a county office of education that supports all 24 school districts of Monterey County. MCOE's transportation department employs 27 school bus drivers and 5 administrative staff members (Transparent California, 2020b). MCOE provides transportation services to Monterey County school districts that have students who attend MCOE's special education programs (Autistic Spectrum Disorders Programs, Blind and Vision Impaired Itinerant Services, Deaf and Hard of Hearing Program, Infants and Toddlers with Disabilities, Severely Orthopedically Impaired Program, and Therapeutic Intervention Program) (Monterey County Office of Education, 2020). School districts that elect to have MCOE transport their students to MCOE special education programs are billed for the cost of transportation. MPUSD, SCESD, and CUSD are participating districts that pay MCOE for transportation services (Monterey County Office of Education, 2012).

METHODOLOGY

California school districts are required to provide free transportation services to special education pupils, and need to provide transportation services to other populations to ensure that they have access to education. The problem is how school districts can fulfill the transportation mandate and provide service within their existing budget constraints, especially as they are also facing the difficulty of hiring bus drivers. The solutions available are traditional school busses, rideshare services, or district-owned vans. Each has benefits and drawbacks, as presented in the Background. Various districts have tried each of these solutions with varying degrees of effectiveness.

In order to accurately evaluate the effectiveness of the three pupil-transportation models (traditional school bus, child rideshare agencies, and district-owned van), this research was conducted using a mixed methods approach. First, a financial analysis of income and expenses was performed along with a risk assessment, followed by a program analysis to detail the problem, existing solutions, implementations, and finally, evaluate the financial impacts to determine the best solution, which is outlined in Figure 1 below. A financial analysis uses monetary income and costs to assess the effectiveness of organization processes (Sylvia & Sylvia, 2012). Program evaluation based on a financial analysis is ideal when the information can be easily expressed in monetary units. (Sylvia & Sylvia, 2012).

Figure 1:Transportation Program Analysis Logic Model

To implement the financial analysis, the income and direct and indirect costs of the transportation program were identified and calculated. The income and costs that were identified are as follows:

Income:

- Local Control Funding Formula (LCFF) allocation
- Bus pass revenue
- Field trip revenue
- Billback/ADA revenue

Expenses:

- Insurance Costs
- Annual driver salary
- Annual pro rata cost (benefits)

- Annual administrative salary
- Annual administrative pro rata cost (benefits)
- Fuel

Data used to perform the financial analysis and risk assessment came from the California Department of Education (CDE), California Highway Patrol (CHP), and the National Highway Traffic Safety Administration (NHTSA). Those public agencies provide a variety of data, for example, transportation department funding levels, accident statistics, and fatality statistics. The information was then converted into monetary units of measure that was used in the financial analysis and risk assessment.

To analyze all three models of pupil transportation (traditional school bus, district-owned van, and child rideshare agencies), each school district's (San Francisco Unified School District, Monterey Peninsula Unified School District, Chualar Union School District, Salinas City Elementary School District, and Monterey County Office of Education) transportation department funding amount was obtained. The information used for the expense items was derived from the operational costs from each school district and from each transportation model.

LITERATURE REVIEW

There is little peer reviewed literature about alternative pupil-transportation models (i.e., use of district-owned passenger vans and child ridesharing agencies). Research has been done on other aspects of pupil transportation, such as California pupil-transportation budgets, school bus safety, and California school bus training and training requirements. The goal of this literature review is to summarize the research that has been done to help understand the reason why alternative pupil- transportation models have developed.

Pupil transportation has been a part of the California education system for many years (Taylor, 2014). The transportation department budget is one part of a California school district's budget that often gets cut or eliminated altogether (McDonald & Howlett, 2019). In 2009, 15 percent of California school districts eliminated the general pupil-transportation budget altogether because general pupil transportation is not mandated in California (transportation for Special Education students is mandated in most cases) (McDonald & Howlett, 2019). In other words, school districts that do provide transportation have extremely limited and vulnerable budgets. LaFee (2009) discusses the problems that California pupil-transportation budgets face, the biggest of which is the rising cost of fuel. In 2009, it cost on average \$1,400 per student to transport in urban districts, and more than \$900 in rural areas. Local school districts or county offices of education pay for most of the cost; the state of California pays less than half (LaFee, 2009). McDonald and Howlett (2009) point out that passage of Proposition 13 in 1978 is another reason why California school pupil-transportation budgets have been cut. Proposition 13 changed the way property taxes were calculated, which reduced the property tax revenue that was collected. Since then, California funding for pupil transportation has been limited. One example of this is Redlands Unified School District. In 1989 the Redlands Unified School District

received \$700,000 for pupil-transportation costs; in 2005 the school district received the same amount, despite the rapid increase in transportation expenditures (McDonald & Howlett, 2009).

State funding for pupil transportation is based on the allowances received in the previous fiscal year; also, California allows school districts to charge students who would like to ride the school bus (McDonald & Howlett, 2009). The cost parents may have to pay for transportation services could be as much as \$400 per child (LaFee, 2009). However, in sum, rising costs to provide pupil transportation and a stagnant pupil-transportation budget make it difficult for local school districts to provide transportation, especially for their Special Education students.

Alternative Pupil Transportation

As a result, a trend has emerged in the use of non-conforming vans to transport pupils to and from school and for other school related activities. Many districts have moved to purchasing or leasing passenger vans in an effort to reduce transportation costs. By using a passenger van to transport students, a district can possibly avoid a number of federal, state, and local mandates, which reduces the amount of money a district would need for training and certification. A school bus driver has to possess a commercial driver's license (CDL) in order to operate a school bus, whereas a driver of a van does not. CDL drivers are required to participate in a random drug and alcohol screening pool, but a driver of a van is not required by law to participate; that is another expense that a district can save by using passenger vans (National Association of State Directors of Pupil Transportation Services, 2017). Passenger vans became popular for other advantages as well: they are cheaper to purchase and maintain, have more flexible routing options, are easier to drive through tight urban streets, and offer a better student to cost ratio. The final advantage of

passenger vans is the flexibility they provide for transporting special needs students (Beyond the Yellow Bus, 2014).

Passenger vans can be staffed by school district employees – but the entire service can be contracted out, as an alternative. Thompson (2019) focused on child ridesharing agencies that specialize in transporting students. Child ridesharing agencies (e.g., Zum, Kango, and HopSkipDrive) operate like Uber and Lyft, but use passenger vehicles to transport students. The biggest benefit of using a child ridesharing agency is the money it saves school districts due to eliminating the cost for staffing a school bus fleet. Child ridesharing agencies maximize a school district's transportation operational efficiency by offering a number of services beyond the home to school transportation they provide, such as shuttling students between campuses for after-school programs or transporting athletes to practices or sporting events (Thompson, 2019). Therefore, child ridesharing is another option a school district has to transport students when pupil-transportation budgets are tight and school bus drivers are in short supply.

Safety

Unsurprisingly, safety is a major issue surrounding the use of passenger vans for pupil transportation. In 1999, the National Transportation Safety Board (NTSB) wrote a special investigation report on pupil transportation in vehicles not meeting federal school bus standards. The report shows that some school districts, Head Start facilities, and contract transportation companies are using nonconforming buses for transporting students. The report goes on to suggest that this trend is potentially serious because it puts children at a greater risk of fatal or serious injury if involved in an accident while riding in a nonconforming bus, like a passenger van. The report investigated four crashes involving a passenger van used to transport students. The NTSB found that if school buses had been providing transportation in those instances,

instead of the nonconforming buses, the school buses would have sustained less damage and the students may have suffered fewer or less severe injuries (National Transportation Safety Board, 2019)

Rollover is another safety issue when using passenger vans to transport students. A study by the National Highway Transportation Safety Administration (NHTSA) found that passenger vans that hold 15 passengers have an increased rollover risk when there are more people on board (National Highway Traffic Safety Administration, 2009).

School buses are considered the safest mode of pupil transportation. The United States Government Accountability Office (GAO) released a report in 2017 that reported school bus safety research. The GAO studied accident data between the years 2000 and 2014 and found that there were only 115 fatal accidents nationwide that involved school buses. Those 115 fatal accidents represented only 0.3 percent of the 34,835 fatal accidents involving all motor vehicles nationwide. The report points out that there is oversight of school buses by a number of government levels (e.g., federal, state, or local) and involves a number of agencies (United States Government Accountability Office, 2017).

The school bus driver is another factor in the safe transport of students. The NHTSA looked at driver related factors for fatal school bus accidents and found that the two most common types of driver related factors were, first, miscellaneous (e.g. leaving the vehicle unattended with engine running, failing to keep the proper lane) and second, physical and mental condition of the driver. This is why continual training for school bus drivers is important. School bus drivers must have a CDL and must fulfill various training requirements to increase their skills, which in turn makes transportation in a school bus safer (United States Government Accountability Office, 2017).

The NHTSA also points out that school buses must be inspected for safety compliance and are examined for defects each year. Safety inspections also ensure that the school bus is in compliance with federal, state, and local rules (United States Government Accountability Office, 2017).

In California, there is a California School Bus Safety Law that requires school buses to have passenger restraint systems (Christiano, 2000). Federal law only requires seatbelts on Type II school buses (school buses that weigh less than 10,000 pounds), while California's School Bus Safety Law requires seatbelts on all school buses that were manufactured after January 1, 2002 (Christiano, 2000).

There are gaps in the research. Child ridesharing agencies are a relatively new industry that has emerged, and not much is known about the safety, efficiency, and effect they have on school districts. The intent of this research is to help fill those knowledge gaps.

FINDINGS

Financial Analysis

This section presents the financial analysis data collected for all five school districts researched (San Francisco Unified School District, Monterey Peninsula Unified School District, Salinas City Elementary School District, Chualar Union School District, and Monterey County Office of Education). The most current data available from all sources (i.e., California Department of Education, California Highway Patrol, Department of Motor Vehicles, etc.) was from the 2018-19 school year. The full detailed financial analysis for each school district is located in the appendix.

Data used for the income determination was obtained from each school district's transportation budget and the Local Control Funding Formula (LCFF) HTST funding allocations reported by the California Department of Education (CDE). The district's transportation budget combined with LCFF HTST funding allocation determined the total income.

The expense determination (i.e., operational costs) were calculated by adding transportation contract costs (cost associated with contracting transportation with an outside agency), vehicle insurance cost, annual driver and administrative wages, annual driver and administrative pro rata cost (benefits), and annual fuel costs. To calculate the rideshare agency's contract cost, HopSkipDrive's transportation contract rates were used (\$26 per route and \$2.50 per mile), which were obtained from HopSkipDrive's website (<https://www.hopskipdrive.com>). Vehicle insurance cost was calculated by multiplying the number of buses/vehicles by the average cost of insurance (\$522 for buses and \$276 for vehicles) (Monterey County Office of Education, 2012).

To determine the number of vehicles needed for district-owned van and rideshare transportation models, the district's number of students transported was divided by the maximum capacity of each vehicle type. School bus transportation bus counts used are the actual number of buses used in each district's transportation operation. Annual driver and administrative wages and pro rata costs (benefits) were retrieved from the Transparent California website (<https://transparentcalifornia.com>). Fuel cost was calculated by multiplying yearly route miles by average cost of fuel (\$3.61 per gallon of diesel and \$3.16 per gallon of gasoline) (American Automobile Association [AAA], 2019). For the purpose of this study, diesel fuel costs were used for school buses and gasoline fuel costs were used for district-owned passenger vans and child rideshare agencies. The final financial data for all five school districts are located in the following sections.

San Francisco Unified School District

Table 1: SFUSD Income Calculation

SFUSD Income Calculation	
LCFF Allocation per District	\$2,444,386
Add-on's to LCFF	\$4,405,904
District General Fund Contribution	\$20,496,034
County Office of Education Contribution	\$1,673,051
Local City Contribution	\$325,000
Fee payers	\$0
Trips/Charters	\$0
Billback/ADA	\$0
Total Income (Total District Funding)	\$29,344,375

Source: San Francisco Unified School District [SFUSD], (2018)

Table 2: SFUSD Expense Determination (Operational Costs)

SFUSD Operational Costs			
	School Bus	District Van	Rideshare
Transportation Contract Cost	\$27,322,446	\$0	\$33,354,788
Ave. Daily Route Miles	73	73	73
Total Yearly Route Miles	13140	13140	13140
Number of Students Transported	3555	3555	3555
Number of Routes/Driver/Vehicles	231	444	889
Insurance Cost	\$0*	\$122,648	\$0*
Annual Wage Per Driver	\$0*	\$32,391	\$0*
Total Annual Driver Wages	\$0*	\$14,393,751	\$0*
Annual Pro Rata Cost Per Driver (Benefits)	\$0*	\$15,413	\$0*
Total Pro Rata Cost Per Driver (Benefits)	\$0*	\$6,849,152	\$0*
Total Administrative Wages	\$375,279	\$375,279	\$0*
Total Administrative Pro Rata Cost (Benefits)	\$221,219	\$221,219	\$0*
Fuel	\$0*	\$1,153,220	\$0*
Total Operational Expense	\$27,918,944	\$23,115,268	\$33,354,788

*= Included in contract cost.

Source: SFUSD, 2020; Transparent California, 2020e; AAA, 2019

Monterey Peninsula Unified School District

Table 3: MPUSD Income Calculation

MPUSD Income Calculation	
LCFF Allocation per District	\$1,018,874
Add-on's to LCFF	\$0
District General Fund Contribution	\$0
County Office of Education Contribution	\$0
Local City Contribution	\$0
Fee payers	\$71,598
Trips/Charters	\$53,490
Billback/ADA	\$0
Total Benefit (Total District Revenue)	\$1,143,962

Source: Monterey Peninsula Unified School District [MPUSD], 2020b

Table 4: MPUSD Expense Determination (Operational Costs)

MPUSD Operational Costs			
	School Bus	District Van	Rideshare
Transportation Contract Cost	\$209,416	\$209,416	\$12,760,200
Ave. Daily Route Miles	73	73	73
Total Yearly Route Miles	13140	13140	13140
Per Trip Fee	\$0	\$0	\$26
Per Mile Fee	\$0	\$0	\$2.50
Number of Students Transported	1360	1360	1360
Number of Routes/Driver/Vehicles	24	170	340
Insurance Cost	\$13,248	\$46,920	\$0*
Annual Wage Per Driver	\$25,098	\$32,391	\$0*
Total Annual Driver Wages	\$602,361	\$5,506,470	\$0*
Annual Pro Rata Cost Per Driver (Benefits)	\$5,860	\$15,413	\$0*
Total Driver Pro Rata Cost (Benefits)	\$140,645	\$2,620,210	\$0*
Total Administrative Wages	\$217,005	\$217,005	\$0*
Total Administrative Pro Rata Cost (Benefits)	\$61,361	\$61,361	\$0*
Fuel	\$71,153	\$441,176	\$0*
Total Operational Expense	\$1,315,189	\$9,102,558	\$12,760,200

*= Included in contract cost.

Source: MPUSD, 2020c; Transparent California, 2020c; AAA, 2019

Salinas City Elementary School District

Table 5: SCESD Income Calculation

SCESD Income Calculation	
LCFF Allocation per District	\$315,709
Add-on's to LCFF	\$0
District General Fund Contribution	\$0
County Office of Education Contribution	\$0
Local City Contribution	\$0
Fee payers	\$220,107
Trips/Charters	\$481,441
Billback/ADA	\$0
Total Benefit (Total District Revenue)	\$1,017,257

Source: Salinas City Elementary School District [SCESD], 2020b

Table 6: SCESD Expense Determination (Operational Costs)

SCESD Operational Costs			
	School Bus	District Van	Rideshare
Transportation Contract Cost	\$793,423	\$793,423	\$9,588,915
Ave. Daily Route Miles	73	73	73
Total Yearly Route Miles	13140	13140	13140
Per Trip Fee	\$0	\$0	\$26
Per Mile Fee	\$0	\$0	\$2.50
Number of Students Transported	1022	1022	1022
Number of Routes/Driver/Vehicles	23	128	256
Insurance Cost	\$12,696	\$35,259	\$0*
Annual Wage Per Driver	\$36,832	\$32,391	\$0*
Total Annual Driver Wages	\$847,147	\$4,137,950	\$0*
Annual Pro Rata Cost Per Driver (Benefits)	\$22,797	\$15,413	\$0*
Total Driver Pro Rata Cost (Benefits)	\$524,340	\$1,969,011	\$0*
Total Administrative Wages	\$164,361	\$164,361	\$0*
Total Administrative Pro Rata Cost (Benefits)	\$95,811	\$95,811	\$0*
Fuel	\$68,188	\$331,530	\$0*
Total Operational Expense	\$2,505,966	\$7,527,345	\$9,588,915

*= Included in contract cost.

Source: SCESD, 2020c; Transparent California, 2020d; AAA, 2019

Chualar Union School District

Table 7: CUSD Income Calculation

CUSD Income Calculation	
LCFF Allocation per District	\$57,877
Add-on's to LCFF	\$0
District General Fund Contribution	\$0
County Office of Education Contribution	\$0
Local City Contribution	\$0
Fee payers	\$27,798
Trips/Charters	\$0
Billback/ADA	\$0
Total Benefit (Total District Revenue)	\$85,675

Source: Chualar Union School District [CUSD], 2020a

Table 8: CUSD Expense Determination (Operational Costs)

CUSD Operational Costs			
	School Bus	District Van	Rideshare
Transportation Contract Cost	\$34,333	\$34,333	\$469,125
Ave. Daily Route Miles	73	73	73
Total Yearly Route Miles	13140	13140	13140
Per Trip Fee	\$0	\$0	\$26
Per Mile Fee	\$0	\$0	\$2.50
Number of Students Transported	50	50	50
Number of Routes/Driver/Vehicles	1	6	13
Insurance Cost	\$552	\$1,725	\$0*
Annual Wage Per Driver	\$48,838	\$32,391	\$0*
Total Annual Driver Wages	\$48,838	\$202,444	\$0*
Annual Pro Rata Cost Per Driver (Benefits)	\$29,064	\$15,413	\$0*
Total Driver Pro Rata Cost (Benefits)	\$29,064	\$96,331	\$0*
Total Administrative Wages	\$65,748	\$65,748	\$0*
Total Administrative Pro Rata Cost (Benefits)	\$34,722	\$34,722	\$0*
Fuel	\$2,965	\$16,220	\$0*
Total Operational Expense	\$216,222	\$451,523	\$469,125

*= Included in contract cost.

Source: CUSD, 2020b; Transparent California, 2020a; AAA, 2019

Monterey County Office of Education

Table 9: MCOE Income Calculation

MCOE Income Calculation	
LCFF Allocation per District	\$756,946
Add-on's to LCFF	\$0
District General Fund Contribution	\$0
County Office of Education Contribution	\$0
Local City Contribution	\$0
Fee payers	\$185,847
Trips/Charters	\$5,469
Billback/ADA	\$2,030,333
Total Benefit (Total District Revenue)	\$2,978,595

Source: Monterey County Office of Education [MCOE], 2018

Table 10: MCOE Expense Determination (Operational Costs)

MCOE Operational Costs			
	School Bus	District Van	Rideshare
Transportation Contract Cost	\$0	\$0	\$1,144,665
Ave. Daily Route Miles	73	73	73
Total Yearly Route Miles	13140	13140	13140
Per Trip Fee	\$0	\$0	\$26
Per Mile Fee	\$0	\$0	\$2.50
Number of Students Transported	122	122	122
Number of Routes/Driver/Vehicles	27	15	31
Insurance Cost	\$14,904	\$4,209	\$0*
Annual Wage Per Driver	\$22,310	\$32,391	\$0*
Total Annual Driver Wages	\$602,361	\$493,963	\$0*
Annual Pro Rata Cost Per Driver (Benefits)	\$15,940	\$15,413	\$0*
Total Driver Pro Rata Cost (Benefits)	\$430,373	\$235,048	\$0*
Total Administrative Wages	\$316,562	\$316,562	\$0*
Total Administrative Pro Rata Cost (Benefits)	\$430,373	\$140,645	\$0*
Fuel	\$80,047	\$39,576	\$0*
Total Operational Expense	\$1,584,892	\$1,230,003	\$1,144,665

*= Included in contract cost.

Source: MCOE, 2018; Transparent California, 2020b; AAA, 2019

Total cost for all five districts used in this study are listed in Table 11. The total cost for each district was calculated by subtracting total income from total expense for each pupil-transportation model.

Table 11: Total Cost to Districts

	School Bus	District Van	Rideshare
SFUSD	\$1,425,431	\$6,229,107	(\$4,010,413)
MPUSD	(\$171,227)	(\$7,958,596)	(\$11,616,238)
SCESD	(\$1,488,709)	(\$6,510,088)	(\$8,571,658)
CUSD	(\$130,547)	(\$365,848)	(\$383,450)
MCOE	\$1,393,703	\$1,748,592	\$1,833,930

Risk Assessment

A risk assessment was used to monetarily quantify each district's estimated risk for all three models of transportation. To calculate each district's estimated risk the California Highway Patrol's (CHP) accident data were used to calculate probability of an injury or fatal accident for school buses, vans, and automobiles, which are displayed in Table 12.

Table 12: Injury/Fatality Accident Probability

	School Bus Probability	District-owned Van Probability	Rideshare Probability
Injury Accident Probability	16.15%	41.34%	56.98%
Fatality Accident Probability	0.19%	0.56%	0.80%

Source: California Highway Patrol, 2018

Legal cost was calculated using the possibility of student injury/fatality calculation and multiplying it by the average cost of injury settlement (\$549,684) and average cost of fatality

settlement (\$1,611,728) (Barrios, Jones, & Gallagher, 2007). Table 13 lists the total estimated risk for each district and for each pupil-transportation model.

Table 13: Estimated Risk of Districts

	School Bus	District Van	Rideshare
SFUSD	\$326,800,712	\$840,270,040	\$1,158,238,484
MPUSD	\$125,765,664	\$321,816,232	\$443,734,108
SCESD	\$93,921,316	\$241,637,016	\$332,809,912
CUSD	\$6,009,200	\$13,155,092	\$17,002,880
MCOE	\$12,605,408	\$29,095,928	\$40,089,608

Source: Barrios, Jones, & Gallagher, 2007

ANALYSIS

Financial Analysis and Risk Assessment

The intent of this study was to examine whether alternative pupil-transportation models are more cost efficient and safer than traditional school bus transportation in California. The financial analysis data shows that school bus transportation is the most cost-efficient transportation model for three of the five school districts (MPUSD, SCESD, & CUSD) as shown above in Table 11: Total Cost to Districts. SFUSD's financial analysis data shows that district-owned van is the most cost-efficient transportation model, while MCOE's findings identified the rideshare model as the most cost-efficient model. The financial analysis data also revealed that operational costs generally increase when using the district-owned van model or rideshare model.

Operational expenses identified in this study were operational costs associated with the HTST (Home to School Transportation) program. The data shows that SFUSD's transportation operational costs fluctuated between the three different pupil-transportation models as illustrated in Figure 2: SFUSD Operational Cost Comparison. The decrease in operational costs from school bus transportation to district-owned van transportation can be associated with SFUSD's transportation contract with First Student that provides the district's pupil transportation. Costs for field trips, athletic trips, and other transportation services not related to HTST service are included in the First Student contract, and are not included in the operational costs of the other four districts analyzed. An in-depth analysis of SFUSD's transportation contract with First Student would be needed in order to identify the areas where the increase in operational costs are.

Figure 2: SFUSD Operational Cost Comparison

In contrast, the data shows that MCOE’s operational costs decreased for each alternate pupil-transportation model, as illustrated in Figure 3: MCOE Operational Cost Comparison. The decrease in operational costs can be related to the relatively small number of students that MCOE transports (122 students) compared to other districts researched, as shown in Table 14: Students Transported by District. MCOE serves all 24 school districts of Monterey County and only transports students who attend MCOE’s special needs programs, and does not transport general education students (MCOE, 2012).

Figure 3: MCOE Operational Cost Comparison

Table 14: Students Transported by District

School District	Number of Students Transported
San Francisco Unified School District	3,555
Monterey Peninsula Unified School District	1,360
Salinas City Elementary School District	1,022
Chular Union School District	50
Monterey County Office of Education	122

Source: SFUSD, 2018; MPUSD, 2018; SCESD, 2018; CUSD, 2018; MCOE, 2018

The financial analysis indicates that MCOE can transport their student base with fewer vehicles (27 school buses down to 15 district-owned vans), due to the average number of students whom MCOE transports per bus, which is about five students per bus. Table 15 shows the number of vehicles needed for each of the districts researched. A number of the students

whom MCOE transports have medical problems (e.g., students with feeding tubes, students who have seizures, etc.), and require either a special needs transportation nurse or bus monitor to ride on the bus with the student, which limits the student capacity in each school bus (MCOE, 2012). The number of special needs transportation nurses or bus monitors information is not identified in the financial analysis because the information is not publicly available.

Table 15: Number of Vehicles Needed

	School Bus	District Van	Rideshare
SFUSD	231	444	889
MPUSD	24	170	340
SCESD	23	128	256
CUSD	1	6	13
MCOE	27	15	31

Note: MCOE vehicle count decreased between school bus and district-owned van

The operational costs for MPUSD, SCESD, and CUSD increased incrementally from the traditional school bus transportation model, to district-owned van model, ending with child rideshare model as listed in Table 16. The increase in operational costs is due to the number of vehicles needed in each model.

Table 16: Operational Cost Comparison (MPUSD, SCESD, & CUSD)

	School Bus	District Van	Rideshare
MPUSD	\$1,315,189	\$9,102,558	\$12,760,200
SCESD	\$2,505,966	\$7,527,345	\$9,588,915
CUSD	\$216,222	\$451,523	\$469,125

Also, with the increased number of vehicles, the number of drivers increases as well. As discussed in the Findings section, the school bus transportation bus count is the actual number of buses used to transport their students during the 2017-2018 school year. Vehicle count doubled from the district-owned van model to the rideshare model for all five districts because the student capacity for each vehicle decreases (nine students per district-owned van and four students per rideshare vehicle).

The risk assessment data for all five school districts determined that traditional school bus transportation was the safest pupil-transportation model, followed by district-owned vans, and child rideshare agencies, as shown in Table 13. The probability of a student injury/fatality increases with each pupil-transportation model, starting with school bus transportation as the safest with the fewest injuries, and ending with child rideshare agencies with the highest probability of injury, and as previously shown in Table 12. The data indicates that federal and school bus safety mandates discussed in the Background and Literature Review sections are making a positive impact on student safety on school buses.

Program Analysis

One of the problems identified in this study is the school bus driver shortage. The financial analysis of three out of the five school districts (MPUSD, SCESD, & CUSD) and all five districts' risk assessments determined that school bus transportation is the safest and most efficient model of transportation. However, there has been an increase in the trend of using passenger vans to transport student. The school bus driver shortage continues to be a big reason for the increase in the use of vans (National Association of State Directors of Pupil Transportation Services, 2017).

Barriers to entry make it difficult to become a school bus driver. School bus drivers must possess a commercial driver's license and a school bus driving certificate, whereas a passenger van driver only has to have a standard Class C driver's license (Schulte, 2018). The research shows that school bus driver shortages can be attributed to a number of factors, like training requirements and costs, driver pay, and hours worked (Schulte, 2018). The lack of school bus drivers has prompted school districts to increase the use of passenger vans to transport students (National Association of State Directors of Pupil Transportation Services, 2017).

Another problem identified is the likelihood of childhood stress and depression among children or adolescents riding a school bus due to the amount of time spent on the bus going from home to school and from school to home. The research shows that students who ride a school bus also have less time for leisure (i.e., free play), which leads to increased childhood stress and depression (Ginsburg, 2007). Students who ride the bus have to get up earlier, so they are also more likely to fall asleep in class, and are more likely to retain less of what is taught to them in class (Adolescent Sleep Working Group, 2014).

The research also shows that the average travel time for students on a school bus is between 30 and 60 minutes, and for student who live in rural areas it can be longer (Howley, 2001). Traditional school bus transportation picks up multiple students on one bus, which is why students have longer travel times than students whose parents drive them to school. An example of this scenario can be found in MCOE's transportation operation. MCOE provides transportation for students from South Monterey County (King City, California, Greenfield, California, and Soledad, California) to schools in Salinas, California (Monterey County Office of Education, 2012). Use of district-owned vans or child rideshare agencies can help in decreasing the negative impact on leisure time by reducing the travel time of students who live in a rural

location. Figure 4 illustrates the positive impacts that district-owned van and child rideshare agency transportation has on MCOE’s student travel times from South Monterey County.

Figure 4: MCOE Average Travel Time for South Monterey County Students

Source: MCOE, 2018

As discussed in the Background, California’s new law mandating later middle school and high school start times will be a challenge that districts will face in the near future. SB 328 (2019) mandates that, beginning in 2022, middle schools must start no earlier than 8:00 a.m. and high schools must start no earlier than 8:30 a.m. (Adolescent Sleep Working Group for Adolescents, 2014). Looking forward, district-owned vans and child rideshare agencies may be an option for school districts to accommodate the later start times for middle school and high school. The later start time mandate may cause a logistical conflict due to different start times with elementary schools, and may prevent district transportation departments from getting

students to school on time. The later start times may also conflict with district specialized mandated pupil-transportation programs (e.g., special education students and homeless students).

One option would be to hire more school bus drivers and purchase more school buses to accommodate the bell schedule changes, but current school bus driver shortages and limited transportation budgets make this option unlikely. Another option for districts could be to use district-owned vans or child rideshare agencies in a limited capacity to help navigate those logistics problems by transporting those students who live in remote areas, and allowing the school buses with higher student capacity to transport students within city boundaries.

Limitations

Injury and fatality calculations in this study were based on CHP's accident data, which had some limitations. First, CHP data only indicate when an accident involving an injury or a fatality has occurred, and the data does not indicate the number of injuries. Therefore, the possibility of an accident involving multiple injuries or fatalities is not accounted for in the risk assessment.

The CHP data also groups all passenger van accidents in California together, and does not separate accidents involving school district-owned passenger vans. When calculating the probability of a district-owned passenger van accident, the CHP's total van accidents data were used. To get accurate district-owned passenger van accidents data, the CHP would have to delineate between school transportation passenger van accidents and non-school passenger van transportation accidents.

The availability of information for child rideshare agencies that specialize in pupil transportation is another limitation of this study. Child rideshare agencies that specialize in pupil transportation are an emerging industry that has evolved to solve pupil-transportation needs of

school districts. Accident statistics that involved child rideshare agency vehicles that are transporting students to school were not available through the CHP. The accident data used to calculate the probability of a child rideshare agency accident was based on total automobile accidents in California provided by the CHP.

Future Areas of Research

Pupil-transportation operations continue to evolve, and the research available does not reflect the current state of pupil-transportation operations today. School districts face a number of challenges transporting students to school that have led to the emergence of alternate pupil-transportation models (i.e., district-owned vans and child rideshare agencies). Further research can be done on the effects that alternate pupil-transportation models have on students who are being transported.

CONCLUSION

The research concluded that the school bus transportation model was the safest and most cost-efficient transportation model, but with transportation budget constraints, school bus driver shortages, and the negative effects of extended travel time, school districts will have to investigate other available alternatives to transport their students. Therefore, it is recommended that districts use a combination of two pupil-transportation models, school bus transportation and district-owned van transportation. The financial analysis and risk assessment data indicate that the district-owned van model costs districts the least, and is safer compared to child rideshare agencies. Using district-owned vans to transport those students who live in rural areas in combination with school buses used to pick up students in compact urban areas would mitigate the effects of those problems identified in this study.

APPENDIX A

SFUSD Financial Analysis

SAN FRANCISCO UNIFIED SCHOOL DISTRICT

PART 1: INCOME DETERMINATION

SFUSD TRANSPORTATION STATUS QUO FUNDING		SFUSD TRANSPORTATION DISTRICT OWNED PASSENGER VAN FUNDING		SFUSD TRANSPORTATION RIDESHARE AGENCY FUNDING	
LCFF Allocation per District	\$ 2,444,386	LCFF Allocation per District	\$ 2,444,386	LCFF Allocation per District	\$ 2,444,386
Add-on's to LCFF	\$ 4,405,904	Add-on's to LCFF	\$ 4,405,904	Add-on's to LCFF	\$ 4,405,904
District General Fund Contribution	\$ 20,496,034	District General Fund Contribution	\$ 20,496,034	District General Fund Contribution	\$ 20,496,034
County Office of Education Contribution	\$ 1,673,051	County Office of Education Contribution	\$ 1,673,051	County Office of Education Contribution	\$ 1,673,051
Local City Contribution	\$ 325,000	Local City Contribution	\$ 325,000	Local City Contribution	\$ 325,000
Fee payers	\$ -	Fee payers	\$ -	Fee payers	\$ -
Trips/Charters	\$ -	Trips/Charters	\$ -	Trips/Charters	\$ -
Billback/ADA	\$ -	Billback/ADA	\$ -	Billback/ADA	\$ -
Total Income (Total District Funding)	\$ 29,344,375	Total Income (Total District Funding)	\$ 29,344,375	Total Income (Total District Funding)	\$ 29,344,375

PART 2: EXPENSE DETERMINATION

SFUSD TRANSPORTATION STATUS QUO OPERATIONAL COSTS		SFUSD TRANSPORTATION DISTRICT OWNED VAN OPERATIONAL COSTS		SFUSD TRANSPORTATION RIDESHARE OPERATIONAL COSTS	
Transportation Contract Cost	\$ 27,322,446	Transportation Contract Cost	\$ -	Transportation Contract Cost (<i>\$26 per route plus \$2.50 per mile</i>)	\$ 33,354,788
Ave. Daily Route Miles	73	Ave. Daily Route Miles	73	Ave. Daily Route Miles	73
Total Yearly Route Miles (Daily Route Miles x 180 days)	13140	Total Yearly Route Miles (Daily Route Miles x 180 days)	13140	Total Yearly Route Miles (Daily Route Miles x 180 days)	13140
Number of Students Transported	3555	Number of Students Transported	3555	Number of Students Transported	3555
Number of Routes/Driver/Vehicles	231	Number of Routes/Drivers/Vehicles (By law only 9 per vehicle)	444	Number of Routes/Drivers/Vehicles (4 student max per vehicle)	889
Insurance Cost (Ave. Cost Per Bus \$552)	\$ -	Insurance Cost (Ave. Cost Per Vehicle \$276)	\$ 122,648	Insurance Cost	\$ -
Annual Wage Per Driver	\$ -	Annual Wage Per Driver	\$ 32,391	Annual Wage Per Driver	\$ -
Total Annual Driver Wages	\$ -	Total Annual Driver Wages	\$ 14,393,751	Total Annual Driver Wages	\$ -
Annual Pro Rata Cost Per Driver (Benefits)	\$ -	Annual Pro Rata Cost Per Driver (Benefits)	\$ 15,413	Annual Pro Rata Cost Per Driver (Benefits)	\$ -
Total Pro Rata Cost Per Driver (Benefits)	\$ -	Total Pro Rata Cost Per Driver (Benefits)	\$ 6,849,152	Total Pro Rata Cost Per Driver (Benefits)	\$ -
Total Administrative Wages	\$ 375,279	Total Administrative Wages	\$ 375,279	Total Administrative Wages	\$ -
Total Administrative Pro Rata Cost (Benefits)	\$ 221,219	Total Administrative Pro Rata Cost (Benefits)	\$ 221,219	Total Administrative Pro Rata Cost (Benefits)	\$ -
Fuel (Diesel Ave Price Per Gallon \$3.61)	\$ -	Fuel (Unleaded Ave Price Per Gallon \$3.16)	\$ 1,153,220	Fuel (Unleaded Ave Price Per Gallon \$3.16)	\$ -
Total Operational Expenses	\$ 27,918,944	Total Operational Expenses	\$ 23,115,268	Total Operational Expenses	\$ 33,354,788

PART 3: COST DETERMINATION

SFUSD TRANSPORTATION STATUS QUO COST		SFUSD TRANSPORTATION DISTRICT OWNED PASSENGER VAN COST		SFUSD TRANSPORTATION RIDESHARE AGENCY COST	
Total Income	\$ 29,344,375	Total Benefit	\$ 29,344,375	Total Benefit	\$ 29,344,375
Total Expense	\$ 27,918,944	Total Costs	\$ 23,115,268	Total Costs	\$ 33,354,788
Total Cost To District	\$ 1,425,431	Total Cost To District	\$ 6,229,107	Total Cost To District	\$ (4,010,413)

APPENDIX B

MPUSD Financial Analysis

MONTEREY PENINSULA UNIFIED SCHOOL DISTRICT

PART 1: INCOME DETERMINATION

MPUSD TRANSPORTATION STATUS QUO		MPUSD TRANSPORTATION DISTRICT OWNED PASSENGER VAN		MPUSD TRANSPORTATION RIDESHARE AGENCY	
LCFF Allocation per District	\$ 1,018,874	LCFF Allocation per District	\$ 1,018,874	LCFF Allocation per District	\$ 1,018,874
Add-on's to LCFF	\$ -	Add-on's to LCFF	\$ -	Add-on's to LCFF	\$ -
District General Fund Contribution	\$ -	District General Fund Contribution	\$ -	District General Fund Contribution	\$ -
County Office of Education Contribution	\$ -	County Office of Education Contribution	\$ -	County Office of Education Contribution	\$ -
Local City Contribution	\$ -	Local City Contribution	\$ -	Local City Contribution	\$ -
Fee payers	\$ 71,598	Fee payers	\$ 71,598	Fee payers	\$ 71,598
Trips/Charters	\$ 53,490	Trips/Charters	\$ 53,490	Trips/Charters	\$ 53,490
Billback/ADA	\$ -	Billback/ADA	\$ -	Billback/ADA	\$ -
Total Income (Total District Revenue)	\$ 1,143,962	Total Income (Total District Revenue)	\$ 1,143,962	Total Income (Total District Revenue)	\$ 1,143,962

PART 2: EXPENSE DETERMINATION

MPUSD TRANSPORTATION STATUS QUO OPERATIONAL COSTS		MPUSD TRANSPORTATION DISTRICT OWNED VAN OPERATIONAL COSTS		MPUSD TRANSPORTATION RIDESHARE OPERATIONAL COSTS	
Transportation Contract Cost	\$ 209,416	Transportation Contract Cost	\$ 209,416	Transportation Contract Cost (<i>\$26 per route plus \$2.50 per mile</i>)	\$ 12,760,200
Ave. Daily Route Miles	73	Ave. Daily Route Miles	73	Ave. Daily Route Miles	73
Total Yearly Route Miles (<i>Daily Route Miles x 180 days</i>)	13140	Total Yearly Route Miles (<i>Daily Route Miles x 180 days</i>)	13140	Total Yearly Route Miles (<i>Daily Route Miles x 180 days</i>)	13140
Number of Students Transported	1360	Number of Students Transported	1360	Number of Students Transported	1360
Number of Routes/Drivers/Vehicles	24	Number of Routes/Drivers/Vehicles (<i>By law only 9 per vehicle</i>)	170	Number of Routes/Drivers/Vehicles (<i>4 student max per vehicle</i>)	340
Insurance Cost (<i>Ave. Cost Per Bus \$552</i>)	\$ 13,248	Insurance Cost (<i>Ave. Cost Per Vehicle \$276</i>)	\$ 46,920	Insurance Cost	\$ -
Annual Wage Per Driver	\$ 25,098	Annual Wage Per Driver	\$ 32,391	Annual Wage Per Driver	\$ -
Total Annual Driver Wages	\$ 602,361	Total Annual Driver Wages	\$ 5,506,470	Total Annual Driver Wages	\$ -
Annual Pro Rata Cost Per Driver (Benefits)	\$ 5,860	Annual Pro Rata Cost Per Driver (Benefits)	\$ 15,413	Annual Pro Rata Cost Per Driver (Benefits)	\$ -
Total Driver Pro Rata Cost (Benefits)	\$ 140,645	Total Driver Pro Rata Cost (Benefits)	\$ 2,620,210	Total Driver Pro Rata Cost (Benefits)	\$ -
Total Administrative Wages	\$ 217,005	Total Administrative Wages	\$ 217,005	Total Administrative Wages	\$ -
Total Administrative Pro Rata Cost (Benefits)	\$ 61,361	Total Administrative Pro Rata Cost (Benefits)	\$ 61,361	Total Administrative Pro Rata Cost (Benefits)	\$ -
Fuel (Ave. MPG 8.5) (<i>Diesel Ave Price Per Gallon \$3.61</i>)	\$ 71,153	Fuel (Ave MPG 16) (<i>Unleaded Ave Price Per Gallon \$3.16</i>)	\$ 441,176	Fuel (<i>Unleaded Ave Price Per Gallon \$3.16</i>)	\$ -
Total Operational Expenses	\$ 1,315,189	Total Operational Expenses	\$ 9,102,558	Total Operational Expenses	\$ 12,760,200

PART 3: COST DETERMINATION

MPUSD TRANSPORTATION STATUS QUO TOTAL COST		MPUSD TRANSPORTATION DISTRICT OWNED VAN TOTAL COST		MPUSD TRANSPORTATION RIDESHARE TOTAL COST	
Total Income	\$ 1,143,962	Total Benefit	\$ 1,143,962	Total Benefit	\$ 1,143,962
Total Expense	\$ 1,315,189	Total Expense	\$ 9,102,558	Total Expense	\$ 12,760,200
Total Cost To District	\$ (171,227)	Total Cost To District	\$ (7,958,596)	Total Cost To District	\$ (11,616,238)

APPENDIX C

SCESD Financial Analysis

SALINAS CITY ELEMENTARY SCHOOL DISTRICT

PART 1: INCOME DETERMINATION

SCESD TRANSPORTATION STATUS QUO		SCESD TRANSPORTATION DISTRICT OWNED PASSENGER VAN		SCESD TRANSPORTATION RIDESHARE AGENCY	
LCFF Allocation per District	\$ 315,709	LCFF Allocation per District	\$ 315,709	LCFF Allocation per District	\$ 315,709
Add-on's to LCFF	\$ -	Add-on's to LCFF	\$ -	Add-on's to LCFF	\$ -
District General Fund Contribution	\$ -	District General Fund Contribution	\$ -	District General Fund Contribution	\$ -
County Office of Education Contribution	\$ -	County Office of Education Contribution	\$ -	County Office of Education Contribution	\$ -
Local City Contribution	\$ -	Local City Contribution	\$ -	Local City Contribution	\$ -
Fee payers	\$ 220,107	Fee payers	\$ 220,107	Fee payers	\$ 220,107
Trips/Charters	\$ 481,441	Trips/Charters	\$ 481,441	Trips/Charters	\$ 481,441
Billback/ADA	\$ -	Billback/ADA	\$ -	Billback/ADA	\$ -
Total Income (Total District Revenue)	\$ 1,017,257	Total Income (Total District Revenue)	\$ 1,017,257	Total Income (Total District Revenue)	\$ 1,017,257

PART 2: EXPENSE DETERMINATION

SCESD TRANSPORTATION STATUS QUO OPERATIONAL COSTS		SCESD TRANSPORTATION DISTRICT OWNED OPERATIONAL COSTS		SCESD TRANSPORTATION RIDESHARE AGENCY OPERATIONAL COSTS	
Transportation Contract Cost	\$ 793,423	Transportation Contract Cost	\$ 793,423	Transportation Contract Cost (826 per route plus \$2.50 per mile)	\$ 9,588,915
Ave. Daily Route Miles	73	Ave. Daily Route Miles	73	Ave. Daily Route Miles	73
Total Yearly Route Miles (Daily Route Miles x 180 days)	13140	Total Yearly Route Miles (Daily Route Miles x 180 days)	13140	Total Yearly Route Miles (Daily Route Miles x 180 days)	13140
Number of Students Transported	1022	Number of Students Transported	1022	Number of Students Transported	1022
Number of Routes/Driver/Vehicles	23	Number of Routes/Drivers/Vehicles (By law only 9 per vehicle)	128	Number of Routes/Drivers/Vehicles (4 student max per vehicle)	256
Insurance Cost (Ave. Cost Per Bus \$552)	\$ 12,696	Insurance Cost (Ave. Cost Per Vehicle \$276)	\$ 35,259	Insurance Cost	\$ -
Annual Wage Per Driver	\$ 36,832	Annual Wage Per Driver	\$ 32,391	Annual Wage Per Driver	\$ -
Total Annual Driver Wages	\$ 847,147	Total Annual Driver Wages	\$ 4,137,950	Total Annual Driver Wages	\$ -
Annual Pro Rata Cost Per Driver (Benefits)	\$ 22,797	Annual Pro Rata Cost Per Driver (Benefits)	\$ 15,413	Annual Pro Rata Cost Per Driver (Benefits)	\$ -
Total Driver Pro Rata Cost (Benefits)	\$ 524,340	Total Driver Pro Rata Cost (Benefits)	\$ 1,969,011	Total Driver Pro Rata Cost (Benefits)	\$ -
Total Administrative Wages	\$ 164,361	Total Administrative Wages	\$ 164,361	Total Administrative Wages	\$ -
Total Administrative Pro Rata Cost (Benefits)	\$ 95,811	Total Administrative Pro Rata Cost (Benefits)	\$ 95,811	Total Administrative Pro Rata Cost (Benefits)	\$ -
Fuel (Ave. MPG 8.5) (Diesel Ave Price Per Gallon \$3.61)	\$ 68,188	Fuel (Ave MPG 16) (Unleaded Ave Price Per Gallon \$3.16)	\$ 331,530	Fuel (Unleaded Ave Price Per Gallon \$3.16)	\$ -
Total Operational Expenses	\$ 2,505,966	Total Operational Expenses	\$ 7,527,345	Total Operational Expenses	\$ 9,588,915

PART 3: COST DETERMINATION

SCESD TRANSPORTATION STATUS QUO TOTAL COST		SCESD TRANSPORTATION DISTRICT OWNED VAN TOTAL COST		SCESD TRANSPORTATION RIDESHARE TOTAL COST	
Total Benefit	\$ 1,017,257	Total Benefit	\$ 1,017,257	Total Benefit	\$ 1,017,257
Total Expense	\$ 2,505,966	Total Expense	\$ 7,527,345	Total Expense	\$ 9,588,915
Total Cost To District	\$ (1,488,709)	Total Cost To District	\$ (6,510,088)	Total Cost To District	\$ (8,571,658)

APPENDIX D

CUSD Financial Analysis

CHULAR UNION SCHOOL DISTRICT

PART 1: INCOME DETERMINATION

CUSD TRANSPORTATION STATUS QUO		CUSD TRANSPORTATION DISTRICT OWNED PASSENGER VAN		CUSD TRANSPORTATION RIDESHARE AGENCY	
LCFF Allocation per District	\$ 57,877	LCFF Allocation per District	\$ 57,877	LCFF Allocation per District	\$ 57,877
Add-on's to LCFF	\$ -	Add-on's to LCFF	\$ -	Add-on's to LCFF	\$ -
District General Fund Contribution	\$ -	District General Fund Contribution	\$ -	District General Fund Contribution	\$ -
County Office of Education Contribution	\$ -	County Office of Education Contribution	\$ -	County Office of Education Contribution	\$ -
Local City Contribution	\$ -	Local City Contribution	\$ -	Local City Contribution	\$ -
Fee payers	\$ 27,798	Fee payers	\$ 27,798	Fee payers	\$ 27,798
Trips/Charters	\$ -	Trips/Charters	\$ -	Trips/Charters	\$ -
Billback/ADA	\$ -	Billback/ADA	\$ -	Billback/ADA	\$ -
Total Income (Total District Revenue)	\$ 85,675	Total Income (Total District Revenue)	\$ 85,675	Total Income (Total District Revenue)	\$ 85,675

PART 2: EXPENSE DETERMINATION

CUSD TRANSPORTATION STATUS QUO OPERATIONAL COSTS		CUSD TRANSPORTATION DISTRICT OWNED VAN OPERATIONAL COSTS		CUSD TRANSPORTATION RIDESHARE OPERATIONAL COSTS	
Transportation Contract Cost	\$ 34,333	Transportation Contract Cost	\$ 34,333	Transportation Contract Cost (<i>\$26 per route plus \$2.50 per mile</i>)	\$ 469,125
Ave. Daily Route Miles	73	Ave. Daily Route Miles	73	Ave. Daily Route Miles	73
Total Yearly Route Miles (<i>Daily Route Miles x 180 days</i>)	13140	Total Yearly Route Miles (<i>Daily Route Miles x 180 days</i>)	13140	Total Yearly Route Miles (<i>Daily Route Miles x 180 days</i>)	13140
Number of Students Transported	50	Number of Students Transported	50	Number of Students Transported	50
Number of Routes/Driver/Vehicles	1	Number of Routes/Drivers/Vehicles (<i>By law only 9 per vehicle</i>)	6	Number of Routes/Drivers/Vehicles (<i>4 student max per vehicle</i>)	13
Insurance Cost (<i>Ave. Cost Per Bus \$552</i>)	\$ 552	Insurance Cost (<i>Ave. Cost Per Vehicle \$276</i>)	\$ 1,725	Insurance Cost	\$ -
Annual Wage Per Driver	\$ 48,838	Annual Wage Per Driver	\$ 32,391	Annual Wage Per Driver	\$ -
Total Annual Driver Wages	\$ 48,838	Total Annual Driver Wages	\$ 202,444	Total Annual Driver Wages	\$ -
Annual Pro Rata Cost Per Driver (Benefits)	\$ 29,064	Annual Pro Rata Cost Per Driver (Benefits)	\$ 15,413	Annual Pro Rata Cost Per Driver (Benefits)	\$ -
Total Driver Pro Rata Cost (Benefits)	\$ 29,064	Total Driver Pro Rata Cost (Benefits)	\$ 96,331	Total Driver Pro Rata Cost (Benefits)	\$ -
Total Administrative Wages	\$ 65,748	Total Administrative Wages	\$ 65,748	Total Administrative Wages	\$ -
Total Administrative Pro Rata Cost (Benefits)	\$ 34,722	Total Administrative Pro Rata Cost (Benefits)	\$ 34,722	Total Administrative Pro Rata Cost (Benefits)	\$ -
Fuel (<i>Ave. MPG 8.5</i>) (<i>Diesel Ave Price Per Gallon \$3.61</i>)	\$ 2,965	Fuel (<i>Ave MPG 16</i>) (<i>Unleaded Ave Price Per Gallon \$3.16</i>)	\$ 16,220	Fuel (<i>Unleadedn Ave Price Per Gallon \$3.16</i>)	\$ -
Total Operational Expenses	\$ 216,222	Total Operational Expenses	\$ 451,523	Total Operational Expenses	\$ 469,125

PART 3: COST DETERMINATION

CUSD TRANSPORTATION STATUS QUO TOTAL COST		CUSD TRANSPORTATION DISTRICT OWNED VAN TOTAL COST		CUSD TRANSPORTATION RIDESHARE TOTAL COST	
Total Benefit	\$ 85,675	Total Benefit	\$ 85,675	Total Benefit	\$ 85,675
Total Expense	\$ 216,222	Total Expense	\$ 451,523	Total Expense	\$ 469,125
Total Cost To District	\$ (130,547)	Total Cost To District	\$ (365,848)	Total Cost To District	\$ (383,450)

APPENDIX E

MCOE Financial Analysis

MONTEREY COUNTY OFFICE OF EDUCATION

PART 1: INCOME DETERMINATION

MCOE TRANSPORTATION STATUS QUO		MCOE TRANSPORTATION DISTRICT OWNED PASSENGER VAN		MCOE TRANSPORTATION RIDESHARE AGENCY	
LCFF Allocation per District	\$ 756,946	LCFF Allocation per District	\$ 756,946	LCFF Allocation per District	\$ 756,946
Add-on's to LCFF	\$ -	Add-on's to LCFF	\$ -	Add-on's to LCFF	\$ -
District General Fund Contribution	\$ -	District General Fund Contribution	\$ -	District General Fund Contribution	\$ -
County Office of Education Contribution	\$ -	County Office of Education Contribution	\$ -	County Office of Education Contribution	\$ -
Local City Contribution	\$ -	Local City Contribution	\$ -	Local City Contribution	\$ -
Fee payers	\$ 185,847	Fee payers	\$ 185,847	Fee payers	\$ 185,847
Trips/Charters	\$ 5,469	Trips/Charters	\$ 5,469	Trips/Charters	\$ 5,469
Billback/ADA	\$ 2,030,333	Billback/ADA	\$ 2,030,333	Billback/ADA	\$ 2,030,333
Total Income (Total District Revenue)	\$ 2,978,595	Total Income (Total District Revenue)	\$ 2,978,595	Total Income (Total District Revenue)	\$ 2,978,595

PART 2: EXPENSE DETERMINATION

MCOE TRANSPORTATION STATUS QUO OPERATIONAL COSTS		MCOE TRANSPORTATION DISTRICT OWNED VAN OPERATIONAL COSTS		MCOE TRANSPORTATION RIDESHARE OPERATIONAL COSTS	
Transportation Contract Cost	\$ -	Transportation Contract Cost	\$ -	Transportation Contract Cost (<i>\$26 per route plus \$2.50 per mile</i>)	\$ 1,144,665
Ave. Daily Route Miles	73	Ave. Daily Route Miles	73	Ave. Daily Route Miles	73
Total Yearly Route Miles (Daily Route Miles x 180 days)	13140	Total Yearly Route Miles (Daily Route Miles x 180 days)	13140	Total Yearly Route Miles (Daily Route Miles x 180 days)	13140
Number of Students Transported	122	Number of Students Transported	122	Number of Students Transported	122
Number of Routes/Driver/Vehicles	27	Number of Routes/Drivers/Vehicles (By law only 9 per vehicle)	15	Number of Routes/Drivers/Vehicles (4 student max per vehicle)	31
Insurance Cost (Ave. Cost Per Bus \$552)	\$ 14,904	Insurance Cost (Ave. Cost Per Vehicle \$276)	\$ 4,209	Insurance Cost	\$ -
Annual Wage Per Driver	\$ 22,310	Annual Wage Per Driver	\$ 32,391	Annual Wage Per Driver	\$ -
Total Annual Driver Wages	\$ 602,361	Total Annual Driver Wages	\$ 493,963	Total Annual Driver Wages	\$ -
Annual Pro Rata Cost Per Driver (Benefits)	\$ 15,940	Annual Pro Rata Cost Per Driver (Benefits)	\$ 15,413	Annual Pro Rata Cost Per Driver (Benefits)	\$ -
Total Driver Pro Rata Cost (Benefits)	\$ 430,373	Total Driver Pro Rata Cost (Benefits)	\$ 235,048	Total Driver Pro Rata Cost (Benefits)	\$ -
Total Administrative Wages	\$ 316,562	Total Administrative Wages	\$ 316,562	Total Administrative Wages	\$ -
Total Administrative Pro Rata Cost (Benefits)	\$ 140,645	Total Administrative Pro Rata Cost (Benefits)	\$ 140,645	Total Administrative Pro Rata Cost (Benefits)	\$ -
Fuel (Ave. MPG 8.5) (Diesel Ave Price Per Gallon \$3.61)	\$ 80,047	Fuel (Ave MPG 16) (Unleaded Ave Price Per Gallon \$3.16)	\$ 39,576	Fuel (Unleaded Ave Price Per Gallon \$3.16)	\$ -
Total Operational Expenses	\$ 1,584,892	Total Operational Expenses	\$ 1,230,003	Total Operational Expenses	\$ 1,144,665

PART 3: COST DETERMINATION

MCOE TRANSPORTATION STATUS QUO TOTAL COST		MCOE TRANSPORTATION DISTRICT OWNED VAN TOTAL COST		MCOE TRANSPORTATION RIDESHARE TOTAL COST	
Total Benefit	\$ 2,978,595	Total Benefit	\$ 2,978,595	Total Benefit	\$ 2,978,595
Total Costs	\$ 1,584,892	Total Costs	\$ 1,230,003	Total Costs	\$ 1,144,665
Cost-Benefit	\$ 1,393,703	Cost-Benefit	\$ 1,748,592	Cost-Benefit	\$ 1,833,930

REFERENCES

- Adolescent Sleep Working Group, Committee On Adolescents, & Council On School Health. (2014). School Start Times for Adolescents. *Pediatrics*, 134(3), 642-649. doi:10.1542/peds.2014-1697
- Alexander, M. D. (1990). Public school pupil transportation: Rural schools. *Journal of Education Finance*, 16(2), 226-246.
- American Automobile Association. (2019). Gas Prices. Retrieved February 21, 2020, from <https://gasprices.aaa.com/?state=CA>
- Anderson, D. (2019). School bus laws and regulations [PowerPoint presentation]. Retrieved from https://drive.google.com/open?id=10ZSd468Xtt6lnU_IZIdtY5NuOUc_2R6dQQO3vIDG9JM
- Barrios, L. C., Jones, S. E., & Gallagher, S. S. (2007). Legal liability: The consequences of school injury. *Journal of School Health*, 77(5), 273-279. doi:10.1111/j.1746-1561.2007.00203.x
- Benish Jr., J. (2019). NSTA advocacy in action - advocating for a safe return to school. *School Bus Fleet*, Retrieved from <https://www.schoolbusfleet.com/article/734873/nsta-advocacy-in-action-advocating-for-a-safe-return-to-school>
- Butterworth, J. E. (1943). Pupil transportation. *Review of Educational Research*, 13(4), 359-362. doi:10.2307/1168585
- California Department of Education. (2018). Special Education Transportation Guidelines. Retrieved from <https://www.cde.ca.gov/sp/se/lr/trnsprtgdlns.asp>

California Department of Education. (2019a). *2018-2019 Student Enrollment by School*.

Retrieved from <https://www.cde.ca.gov/ds/sd/sd/filesenr.asp>

California Department of Education. (2019b). Waivers. SB 328, Portantino. Pupil Attendance:

School Start Time. Education Code (EC) 46148. Retrieved from

<https://www.cde.ca.gov/re/lr/wr/>

California State Senate Bill 328. (2019). Pupil Attendance: School Start Time. October 13. Ch.

868, Statutes of 2019. Retrieved from <https://www.cde.ca.gov/re/lr/wr/>

Canfield, J. (2013). A brief history of California school funding. (as the legislature debates a new funding for schools, a history lesson in California school finance provide context for what comes next). *Leadership*, 42(5), 26.

Christiano, P. M. (2000). Education: School bus safety revisited: California continues the debate over the effectiveness of seat belts. *McGeorge Law Review*, 31, 347-1129.

Chualar Union School District. (2020a). Business Services. Retrieved from

<http://www.chualarusd.com/business-services.html>

Chualar Union School District. (2020b). General Information. Retrieved from

<http://www.chualarusd.com/general-information.html>

Duff, C. (2014). School Nurses – New Roles for Better Outcomes. *NASN School Nurse*, 29(5), 216-218.

Duran, A., & Walkowicz, K. (2013). Statistical characterization of school bus drive cycles collected via onboard logging systems.6(2) doi:10.4271/2013-01-2400

- Ed-Data. (2020). Salinas City Elementary. Retrieved from <http://www.ed-data.org/district/Monterey/Salinas-City-Elementary>
- Federal Motor Vehicle Safety Standards. (1970). Title 49 Code of Federal Regulation § 571.3
- Fensterwald, J. (2019). California mandates later start times for middle and high school students. Retrieved from <https://edsources.org/2019/california-mandates-later-start-times-for-middle-and-high-school-students/618546>
- Ginsburg, K. (2007). The importance of play in promoting healthy child development and maintaining strong parent-child bonds. *Pediatrics*, 119(1), 182-91.
- HopSkipDrive. (2020). Where Heart and Minds Meet. Retrieved from <https://www.hopskipdrive.com/about>
- Howley, C. (2001). *The Rural School Bus Ride In Five States: A Report To The Rural School And Community Trust*. Retrieved from https://www.ruraledu.org/user_uploads/file/Rural_School_Bus_Ride.pdf
- LaFee, S. (2009). Running on empty: Schools cope with the roller-coaster world of cost run-ups and budget let-downs. *Education Digest*, 74(8), 4.
- Laing, H. E. (1941). Pupil bus officers: Work for safety in transportation. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 16(1), 12-14.
doi:10.1080/00098655.1941.11473137
- McDonald, N. C., Steiner, R. L., Palmer, W. M., Bullock, A. N., Sisiopiku, V. P., & Lytle, B. F. (2016). Costs of school transportation: Quantifying the fiscal impacts of encouraging

walking and bicycling for school travel. *Transportation*, 43(1), 159. doi:10.1007/s11116-014-9569-7

McDonald, N., & Howlett, M. (2007). Funding for pupil transportation: Framework for analysis. *Transportation Research Record: Journal of The Transportation Research Board*, 2009(2009), 98-103. doi:10.3141/2009-13

Melman, S., Little, S., & Akin-Little, K. (2007). Adolescent Overscheduling: The Relationship between Levels of Participation in Scheduled Activities and Self-Reported Clinical Symptomology. *The High School Journal*, 90(3), 18-30.

Monterey County Office of Education. (2012). *Review of the operations of the transportation department*.

Monterey County Office of Education. (2018). 2018-2019 Routes.

Monterey County Office of Education. (2020). Special Programs. Retrieved from <https://www.montereycoe.org/programs-services/special-education/programs/>

Monterey Peninsula Unified School District. (2020a). About Us. Retrieved from https://www.mpusd.net/apps/pages/index.jsp?uREC_ID=1019885&type=d&pREC_ID=1305113

Monterey Peninsula Unified School District. (2020b). Budget Reports. Retrieved from https://www.mpusd.net/apps/pages/index.jsp?uREC_ID=1013794&type=d&pREC_ID=1320246

- Monterey Peninsula Unified School District. (2020c). Transportation. Retrieved from https://www.mpusd.net/apps/pages/index.jsp?uREC_ID=1012610&type=d&pREC_ID=1321233
- National Association of State Directors of Pupil Transportation Services. (2017). Non-conforming vans used for school transportation. Retrieved from <https://education.ky.gov/districts/trans/Documents/Position%20Paper-Non-conforming%20Vans%20Used%20for%20School%20Transportation.pdf>
- National Highway Traffic Safety Administration. (2009). *Transportation Safety Facts: Fatalities to Occupants of 15-Passenger Vans, 2003-2007* (NHTSA Publication No. DOT HS 811 143). Washington D.C.: National Highway Traffic Safety Administration
- National Transportation Safety Board. (1991). *Highway Special Investigation Report: Pupil Transportation In Vehicles Not Meeting Federal School Bus Standards*. Springfield, VA: National Technical Information Service.
- The Newswheel. (2015). History of the school bus. Retrieved from <https://thenewswheel.com/history-of-the-school-bus/>
- Rafiq, R., & Mitra, S. (2018). Shared school transportation: Determinants of carpooling as children's school travel mode in California. *Transportation*, 1-19. doi:10.1007/s11116-018-9942-z
- Salinas City Elementary School District. (2020a). About Us and General District Information. Retrieved from <https://www.salinascityesd.org/about-us>

Salinas City Elementary School District. (2020b). Budgets. Retrieved from

<https://www.salinascityesd.org/business/budgets>

Salinas City Elementary School District. (2020c). Transportation Department. Retrieved from

<https://www.salinascityesd.org/transportation>

San Francisco Unified School District. (2018). Local Control & Accountability Plan. Retrieved

from [https://archive.sfusd.edu/en/assets/sfusd-staff/_%20VOL%20I%202018-](https://archive.sfusd.edu/en/assets/sfusd-staff/_%20VOL%20I%202018-19%20LCAP%20(2nd%20Reading)_For%20Print.pdf)

[19%20LCAP%20\(2nd%20Reading\)_For%20Print.pdf](https://archive.sfusd.edu/en/assets/sfusd-staff/_%20VOL%20I%202018-19%20LCAP%20(2nd%20Reading)_For%20Print.pdf)

San Francisco Unified School District. (2019). Facts at a Glance. Retrieved from

[https://archive.sfusd.edu/en/assets/sfusd-staff/SFUSD%20Facts%20at%20a%20Glance-](https://archive.sfusd.edu/en/assets/sfusd-staff/SFUSD%20Facts%20at%20a%20Glance-2019.School%20Data.pdf?_ga=2.141154038.573982342.1587947836-1187017622.1580757987)

[2019.School%20Data.pdf?_ga=2.141154038.573982342.1587947836-](https://archive.sfusd.edu/en/assets/sfusd-staff/SFUSD%20Facts%20at%20a%20Glance-2019.School%20Data.pdf?_ga=2.141154038.573982342.1587947836-1187017622.1580757987)

[1187017622.1580757987](https://archive.sfusd.edu/en/assets/sfusd-staff/SFUSD%20Facts%20at%20a%20Glance-2019.School%20Data.pdf?_ga=2.141154038.573982342.1587947836-1187017622.1580757987)

School Bus Fleet. (2017). School transportation: 2015-16 school year [Data file]. Retrieved from

<https://files.schoolbusfleet.com/stats/SBFFB18StateByState.pdf>

SchoolHouse Connection. (2018). McKinney-Vento Act: Two-page Summary. Retrieved from

<https://www.schoolhouseconnection.org/mckinney-vento-act-two-page-summary/>

School Transportation News. (2020). Navigating the school bus driver shortage today. Retrieved

from <https://stnonline.com/partner-updates/navigating-the-school-bus-driver-shortage-today/>

Schulte, G. (2018). School bus driver shortage creates headaches for districts. *Business*

Insider, Retrieved from [https://www.businessinsider.com/ap-school-bus-driver-shortage-](https://www.businessinsider.com/ap-school-bus-driver-shortage-creates-headaches-for-districts-2018-12)

[creates-headaches-for-districts-2018-12](https://www.businessinsider.com/ap-school-bus-driver-shortage-creates-headaches-for-districts-2018-12)

Sonstelie, J. (2008). Resource needs of California public schools: Results from a survey of teachers, principals, and superintendents. *Education Finance and Policy*, 3(1), 58-89.
doi:10.1162/edfp.2008.3.1.58

Sylvia, R. D., & Sylvia, K. M. (2012). *Program Planning And Evaluation For The Public Manager* (4th ed.). Long Grove, IL: Waveland Press, Inc.

Taylor, M. (2014). Review of School Transportation in California. Sacramento, CA: Legislative Analyst's Office.

Thompson, S. (2019). Schools choose ridesharing for greater efficiency, savings. Retrieved from <https://www.schoolbusfleet.com/article/735591/schools-choose-ridesharing-for-greater-efficiency-savings>

Transparent California. (2020a). 2018 salaries for Chualar Union School District. Retrieved from <https://transparentcalifornia.com/salaries/2018/school-districts/monterey/chualar-union/>

Transparent California. (2020b). 2018 salaries for Monterey County Office of Education. Retrieved from <https://transparentcalifornia.com/salaries/2018/school-districts/monterey/monterey-county-office-of-education/>

Transparent California. (2020c). 2018 salaries for Monterey Peninsula Unified School District. Retrieved from <https://transparentcalifornia.com/salaries/2018/school-districts/monterey/monterey-peninsula-unified/>

Transparent California. (2020d). 2018 salaries for Salinas City Elementary School District.

Retrieved from <https://transparentcalifornia.com/salaries/2018/school-districts/monterey/salinas-city-elementary/>

Transparent California. (2020e). 2018 salaries for San Francisco Unified School District.

Retrieved from <https://transparentcalifornia.com/salaries/2018/school-districts/san-francisco/san-francisco-unified/>

Tull, H. (2019). Transportation and school busing. State University. Retrieved

from <https://education.stateuniversity.com/pages/2512/Transportation-School-Busing.html>

United States Government Accountability Office. (2017). *Bus Safety: School Bus Safety: Crash*

Data Trends and Federal And State Requirements. (GAO Publication No. GAO-17-209).

Washington, D.C: United States Government Accountability Office

Vincent, J. M., Makarewicz, C., Miller, R., Ehrman, J., & Mckoy, D. L. (2014). *Beyond The*

Yellow Bus: Promising Practices for Maximizing Access to Opportunity Through

Innovations In Student Transportation. Berkeley, CA: Center for Cities + Schools,

University of California

Wolf, R., & Sands, J. (2016). A preliminary analysis of California's new local control funding

formula. *Education Policy Analysis Archives*, 24 doi:10.14507/epaa.24.2194