

# Launching a Transit Revolution: Addressing Barriers Preventing Youth from using Public Transportation to Get to and from School

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## Introduction

### *Safe Routes to School*

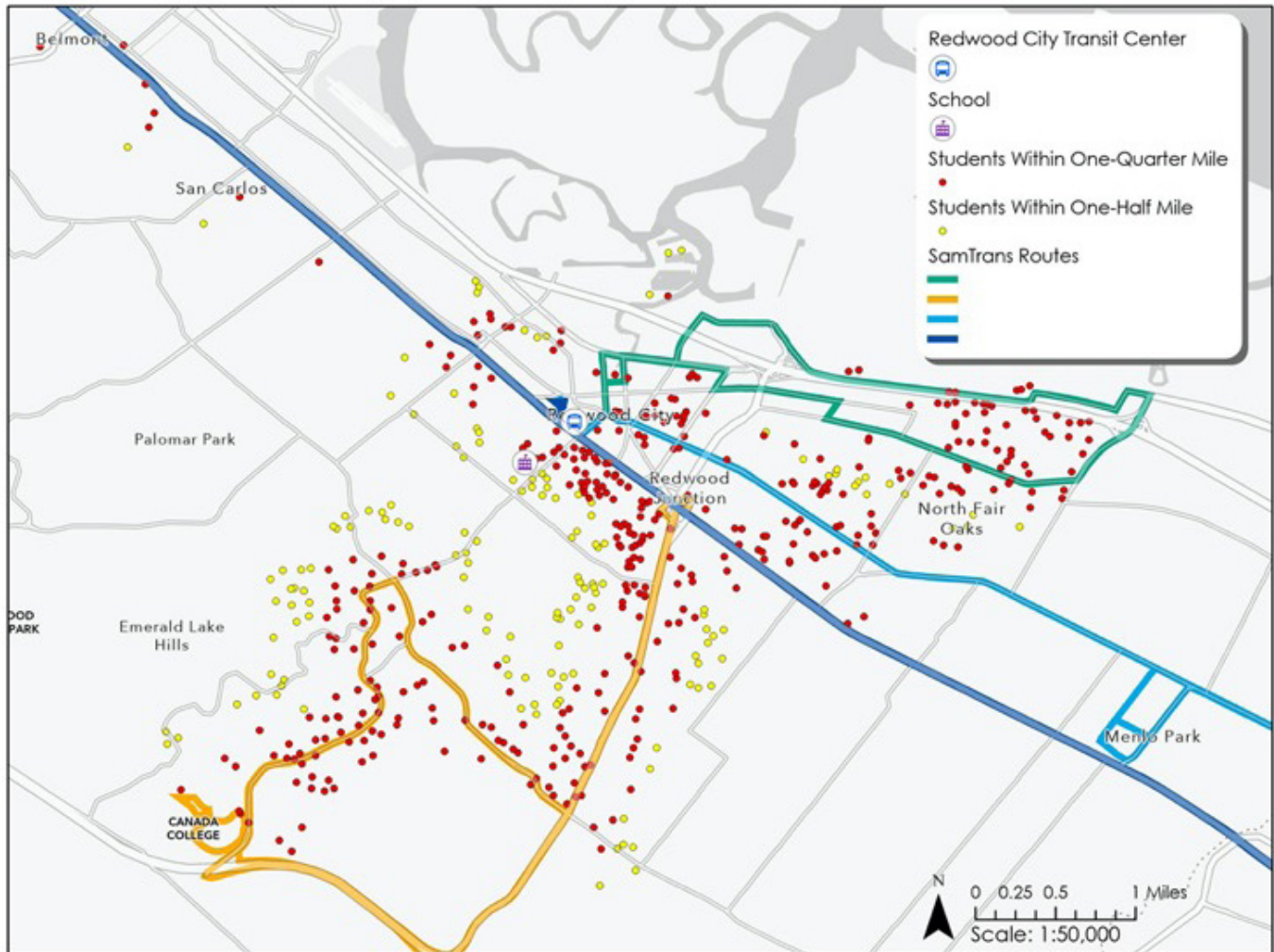
Some remember a time when most kids walked or bicycled to school, often only a few blocks down the road. However, over the last few decades, the popularity of charter schools, schools of choice, and private schools have made it more difficult for children to travel to school independently. Meanwhile, traffic in cities has worsened—not only with work commuters, but also with more parents driving kids to school.

The Safe Routes to School program (SRTS) was designed to encourage more kids to use active transportation—namely walking or biking—to get to and from school. According to the CDC, only about 1 in 8 children in grades K-8 get to school using an active mode of transportation.<sup>1</sup> Despite the World Health Organization declaring obesity a global epidemic in 1997, in the US, childhood obesity has continued to rise.<sup>2</sup> Even though many children now live farther away from schools than in prior decades, most SRTS information rarely includes public transit, which can solve the distance challenge between home and school, often cited as a significant barrier in many studies.<sup>3</sup>

This report presents the findings from research exploring one promising school commute option: public transit. In many communities, walking or biking to school is simply not feasible, and in California, the lack of funding for school buses has placed the onus on families to transport their kids to school, resulting in an overwhelming number of students transported by private vehicle.<sup>4</sup> Findings from a qualitative study analyzing the barriers preventing students from using public transportation to get to and from school will be presented along with steps for developing a program to increase youth transit riders. The research draws together findings from interviews with parents and administrators, a review of literature on school commutes, and lessons from successful SRTS programs. Recommendations for school districts, transit operators, and local governments, among others, will be provided for consideration, particularly in California, which is less likely than other states to have school bus programs.

Leveraging public transit is one way to solve the distance challenge and permit children to get themselves to school, reducing the commute burden on parents as well as fostering children's independence. Empowering ridership habits of youth can create lifelong transit users, relieve traffic and congestion, improve mental and physical health, increase access for buses and bikes due to fewer automobiles on city streets, build friendships and a sense of community, and so much more. Diversifying transit ridership by age, demographic, and socioeconomic status can transform American driving habits. Over the long term, with more people relying on public transportation, city streets will be safer with fewer potentially dangerous drivers, such as those who are speeding, distracted, or driving under the influence, thus improving safety for pedestrians and the community at large.

Public transit has proved to be a successful mode of transport for students attending certain schools located in San Francisco Bay Area cities such as Belmont, San Carlos, and Menlo Park. To understand this phenomenon, this research explores why students at two schools in neighboring Redwood City were not using public transportation for their school commute—even though 80% live within one-half mile of a public transit route serving the Redwood City Transit Center, which is relatively close to the school campus, as shown in Figure 1.



**Figure 1. Student Locations Compared to SamTrans' Bus Routes**

*Source:* C. Prosperi. Using ArcGIS Pro, digitized SamTrans bus routes prior to changes effective August 2022 and georeferenced student locations provided by RCSD on October 27, 2021 (no identifying information was included).

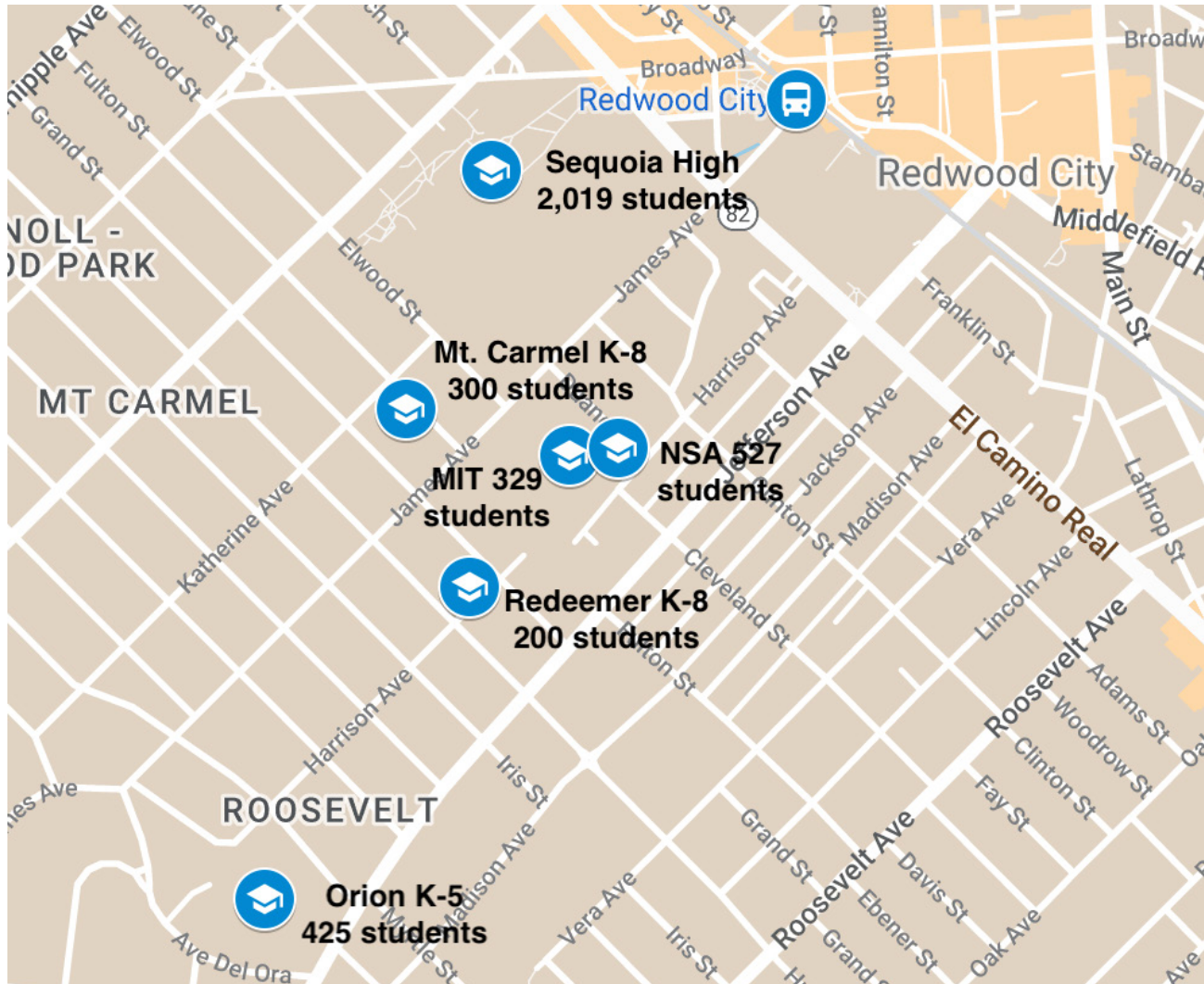
*Note:* The GIS platform did not consider individual bus stops, rather only transit routes. Approximately 80% of the total number of students on this campus were georeferenced, the difference likely attributable to siblings.

## About the Schools

The two schools studied share a campus in Redwood City, California, located in San Mateo County, approximately 27 miles south of San Francisco and 24 miles north of San Jose in an area known as “the Peninsula” of the San Francisco Bay Area. North Star Academy (or NSA, a 3<sup>rd</sup>-8<sup>th</sup> grade school designed to educate gifted and talented students) and McKinley Institute of Technology (or MIT, a technology-focused magnet school serving children in grades 6<sup>th</sup>-8<sup>th</sup>) are schools of choice with students arriving from various parts of the city and beyond.<sup>5</sup> The majority of students arrive at school by private vehicle

and 1.5% used public transit.<sup>6</sup> Demographically, there are stark contrasts among the schools with 70% of NSA's students identifying as either White or Asian, while 92% of MIT's students are Hispanic.<sup>7</sup>

There are 850 students on this campus and within a one-mile radius there are also four other K-12 schools (one public high school, two private K-8s, and one K-5 school of choice) with an additional 3,000 more students. This campus is located one-half mile from the Redwood City Transit Center, served by the local transit agency, SamTrans, as shown in Figure 2.



**Figure 2. Map of Schools Near the Redwood City Transit Center**

Sources: "My Maps," Google, created by M. Park on April 6, 2022, using most recent CDE data available (2020-2021); California Department of Education, DataQuest 2020-21 Enrollment by Ethnicity — Redwood City Elementary Report (41-69005) and Sequoia Union High Report (41-69062); Private school enrollment was confirmed by phone calls on October 19, 2021, to Mt. Carmel and on March 29, 2022, to Redeemer.

The bus stops closest to the schools studied are situated at the Redwood City Transit Center, located across a four-lane state highway from the campus, the El Camino Real, with a speed limit of 35 mph. The Transit Center is attached to the city's train depot at Redwood City Station and adjoining a parking lot where people who are unhoused regularly encamp. Immediately to the south, there is a large shopping center called Sequoia Station.





Front entrance of the Transit Center and Caltrain Station.



James Ave crossing at El Camino Real toward schools. Interviewees noted safety concerns crossing this four-lane state highway.



View of southwestern corner of Sequoia Station at El Camino near Jefferson Ave.



View from Sequoia Station northbound along El Camino Real, with four lanes of commuter and local traffic on the state highway as noted by interviewees.



Litter and debris near the Transit Center and Caltrain Station.



Unhoused individuals encamped near the parking lot adjacent to the Transit Center.

Source: M Park.

A collaborative, Redwood City Together—which includes elected officials as well as representatives from two school districts, city staff (planners and police) and the local transit provider (SamTrans)—manages the SRTS program for Redwood City.<sup>8</sup> Notwithstanding the group’s collaborative structure, this area remains plagued by school traffic. Many Redwood City schools, like other schools of choice, charter and private schools, face challenges since students may not reside in neighborhoods adjacent to their school and many school districts generally do not provide school bus services.

## Approach

Using a qualitative approach, seven people were interviewed, including five parents and two administrators, to understand the barriers that prevent families from using transit when it is too far to walk or bike to school. This campus was chosen because the majority of students are over the age of 10, an age in which children are typically able to get themselves to and from school safely.<sup>9</sup> Demographics were also considered; however, while certain studies conclude that minority and low-income youth walk to school more than higher-income White peers, given these are schools of choice coupled with other changes in the school district (e.g. school closures), without consistently available mode tallies over time, analyzing potential correlations was not performed. Admittedly, this was a small sampling of parents with 14 children in total, but, their concerns were consistent with many other studies.<sup>10</sup> For the broader research community, it would be valuable to continue studying these points in relation to public transportation for middle and high school students, as this study focusing on Redwood City may not be fully generalizable to the context of other communities.

## Interview Findings

As noted during interviews, the most commonly cited barriers that prevent parents from permitting their children to use public transit are the following: traffic safety concerns, insufficient transit service, lack of awareness about public transportation options, stigma, stranger danger, and complicated payment methods.

### 1. Traffic Safety Concerns

Traffic safety was the reason most frequently cited by parents for driving children to school, though the specific concerns varied. All parents feared distracted drivers and worried about kids crossing major thoroughfares, and their emotional responses to this topic generated the most discussion during interviews. One parent observed that “People [are] on their phones.” Another pointed out that “there’s tons of crosswalks, but I don’t think they are very functional—people drive right through them, and then you don’t feel safe letting your kids cross there by themselves. . . . People are not good at stopping.” All parents mentioned that there are just too many cars, one saying “having 300-400 cars show up in a 15-minute period—It’s not a solvable problem.”

Three parents mentioned concerns about drivers’ disregard for traffic laws and commented that several infrastructure improvements had neither improved traffic flow nor driver behavior. More specifically, parents observed that certain restriction signs (limiting the ability to turn left or make U-Turns) are disregarded by drivers, new pedestrian bulb-outs seemed to make an intersection “more confusing,” and a new traffic light and reconfiguration was viewed as further exacerbating traffic, in turn making drivers behave more aggressively because they are in a hurry and frustrated. One parent interviewed watched an illegal U-turn in front of a police officer who did not pursue the driver, resulting in a lack of confidence in police enforcement. Another parent commented that there are “a lot of drivers with high tempers—it’s a recipe for disaster.” Citing the infrastructure and directional changes intended to improve safety around schools, a parent responded, if you “continue to restrict the avenues people have to go . . . it just gets worse and worse, and it’s not solving the problem.”





James Ave drop-off and pick-up zone in front of MIT and NSA.



New traffic light on Jefferson Ave at Cleveland St restricts left turns onto Cleveland St and right turns on red. Interviewees commented that restrictions placed on streets near the school did not improve traffic or increase safety.



Left turn restriction sign and no pedestrian crossing sign on James Ave at Duane Ave. Interviewees commented that restrictions placed on streets near the school did not improve traffic or increase safety.

Source: M Park.

In addition, the parents interviewed highlighted concerns about youth judgment—that kids are not adults; young brains have not yet developed, and children could be distracted by their smartphones. As reported by UC Berkeley SafeTREC in its last three *Pedestrian Safety* reports, half of all fatal and serious injury crashes involved “Pedestrian Violations.”<sup>11</sup> Not surprisingly, one parent stated that we “should be risk averse when it comes to children.” In Redwood City, it was clear that parents did not want children crossing El Camino Real or waiting at the Transit Center—even with crossing guards and more police presence.

## 2. Insufficient Transit Service

Parents had concerns about arrival time, journey length, and frequency of public transit— specifically, their child being late for school as well as their child’s anxiety about being late. One parent mentioned the lack of transit frequency, noting that if a child misses the bus, it could be an hour before another one arrives. Furthermore, parents were not comfortable with a journey that takes significantly longer than it would take to drive. For example, when presented with information about a route substitution (replacing a discontinued route previously used by their family to get to school but which now terminates at the Transit Center, traversing considerably out of the way) the parent said, “it doesn’t make sense for us to ride this [bus route].” In fact, two of the families interviewed had previously sent their children (from 3rd grade) to and from school on a now discontinued transit route which used a bus stop adjacent to the school, but currently, neither family permits their children to ride transit. According to these parents, the substitute route is circuitous, taking significantly more time, and is also problematic because it terminates at the Transit Center. In addition to safety, the comments reveal the importance of reliability, journey length, and timing.

## 3. Lack of Awareness about Public Transportation Options

As noted above, two of the parents interviewed were familiar with local transit routes, but three of the parents had very little knowledge of public transit. A statement from one parent interviewed illustrates some of the challenges faced: “The biggest issue is that, when you arrive at the bus stop, there’s no way to know where the bus actually goes.” When shown the SamTrans’ website with the bus stops and times, this parent stated, “I have no idea of what . . . this means. . . . This is so complicated. If the school drop off is at 8:15, give me a list of the time and places that are relevant to me.”

No brochures, pamphlets or webpages exist to provide parents with detailed information about options to travel to and from school. There are walk/bike to school maps produced by external consultants, but which exclude transit route information.<sup>12</sup> Moreover, these maps were created in 2014 in a PDF format, presenting challenges to incorporating infrastructure changes. Further, these maps reside on a different organization’s website rather than linked to school district websites, making them difficult for parents to locate. In addition, there are no formal programs for student safety education (e.g., crossing streets, traveling in groups, what to do in case of emergency) during the school day, which could concurrently inform students about options to get to and from school. Rather, information about school commutes is focused on private vehicles—maneuvering the drop-off line or finding a location to park and walk.

## 4. Stigma

Two parents mentioned the stigma of riding public transit, which is not entirely surprising given that negative perceptions of transit are widespread, many associating it with the elderly, the poor, or the disabled.<sup>13</sup> One parent stated, “riding public transportation in a place where people.... have a lot of money and parents drive very fancy cars [the only people] who ride public transportation around here are people who don’t have cars, poor people, and homeless people.”

## 5. Stranger Danger

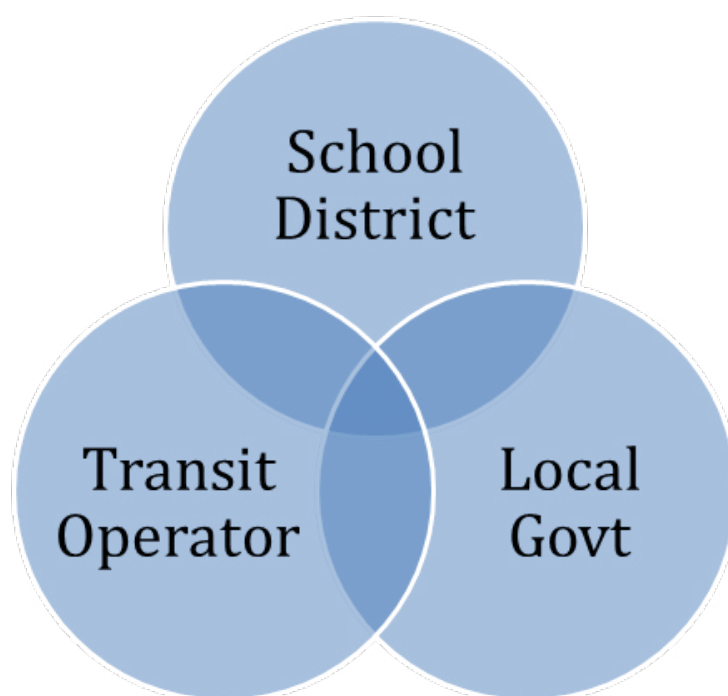
Only one parent specifically mentioned the homeless encampments in the parking lot adjacent to the Transit Center, as well as transient individuals around the vicinity of Sequoia Station. This parent described the area as “sketch,” stating, “I don’t want my kids to go to the train station [and adults] don’t even want to go there.” Other interviewees also alluded to these concerns, one stating, “you don’t want a 3<sup>rd</sup> grader walking through Sequoia Station by themselves.”

## 6. Complicated Payment Methods

Although none of the parents interviewed believed that the cost of transit rides was a barrier to their family, one parent described complications with making payments—youth tokens must be purchased in advance, Clipper Cards (the Bay Area transit card) don't always work, and new technologies, such as Apple Pay, have not been widely deployed.

## Recommendations

Several elements should be considered while formulating an SRTS program incorporating public transit to address the aforementioned barriers. The ideas discussed herein are derived from several sources: comments from parents interviewed, lessons from a city that introduced transit as part of its SRTS solution, and other academic sources, including Schneider's operational theory of routine mode choice decisions.<sup>14</sup> The following graphic illustrates how SRTS overlaps with the following groups:



## Roles and Responsibilities

The following discussion will outline the responsibilities of school districts, transit operators, and local governments in expanding active transportation options beyond walking and biking to school. It is also important to note that these agencies may be impacted by other entities at the county, state, and federal levels and certain institutional constraints may affect their ability to coordinate effectively to accomplish long-term goals. These issues will be discussed at the end of this section.

SRTS programs normally have a coordination team, sometimes led by a staff member at the city or the school district, or in Redwood City, as part of a separate organization. The SRTS owner organizes meetings and action plans among appropriate members, secures funding, and manages the program. This section will specifically address how a SRTS owner can facilitate a transit-oriented option to support youth commuting to and from school using public transportation, when appropriate. When coordinated effectively, such a program can bolster public transit usage and alleviate traffic, as well as address many other negative externalities.



## School Districts

### *Analyze Home Locations Compared to School Sites and Share Data*

To identify which modes students might use to travel to and from school, one must begin by understanding where students reside compared to where they attend school. Many school enrollment software packages include home address information with location plotting capability. School districts can provide this information to its SRTS partners (without any individually identifiable information) to formulate potential strategies for incorporating public transit. Some elements which require additional attention, as mentioned by parents, including evaluation of streets for lower speeds and volumes, protected crossings and crossing guards, suitable bus stops, among others. Figure 1 provides an example.

### *Use Back to School Events to Communicate Options to Get to School*

The start of the school year presents a valuable opportunity to form new habits. For this reason, it is essential that easy to understand, up-to-date information about safe ways to get to school by foot, bike, or transit is distributed early and often. Such information should be maintained in one consistent location so that families know where to access these resources in the future as well as how to leverage resources such as smartphone map applications. For example, the City of Palo Alto's webpage includes Walk and Roll maps for each of the 17 public schools in the area, which can then be linked to each school's parent communications.<sup>15</sup> According to Palo Alto's website, almost 60% of middle and high school students bike to school.<sup>16</sup> It's also important to note that most Palo Alto students attend schools with traditional neighborhood boundaries, enabling walking or biking to a greater extent compared to schools with lottery-based enrollment (e.g. charter school or schools of choice).<sup>17</sup> Further discussion about walk/bike/bus maps is included in the section pertaining to Local Government's role.

### *Deliver Safety Education Programs at Schools and Incorporate Activities around Transit*

High quality, age-appropriate safety educational programming should be delivered to students during the school day as part of the standard curriculum. Given the number of pedestrian violations associated with fatal and serious injuries, it is clear that every child must be taught how to cross streets safely, make eye contact with drivers, and know the general rules of the road.<sup>18</sup> As evidence of one success, a city in northern England reported a 50% reduction in the number of children who were seriously injured or killed in traffic incidents after the adoption of pedestrian safety programming in schools.<sup>19</sup> Providing education during the school day will ensure consistency of knowledge and wider awareness among all students. Even utilizing public transit for field trips where possible helps remove stigmas associated with transit. It is also important for administrators to clearly communicate to students and parents that children will not be penalized (e.g., tardy) in the event a bus is late, which can cause additional stress and anxiety. For parents, promoting transit as one way to attend school meetings may help increase exposure as a potential option. Indeed, when everyone partakes, stigmas about *who* uses transit may begin to diminish.

### *Survey Parents and Collect Student Commute Data*

Periodic surveys of parents are important to gauge insights local planners may not be aware of, such as those highlighted during interviews. This information could help decision makers determine where to site bus stops, place crossing guards, and identify infrastructure improvements. Additionally, mode share data (i.e., information about the proportion of students traveling by private vehicle, carpool, walking, biking, transit) is an important benchmark to share among partner organizations, as continuous monitoring of mode share may inform adjustments to SRTS programming. Moreover, schools need a routine process

to collect student mode share information at predetermined intervals, twice per year if possible, for ideal measurement of program effectiveness. Fall and spring are optimal times to survey students to gauge effectiveness of the SRTS program in order to identify adjustments to be made (e.g. communication approach, crossing guard locations, etc.). Performing surveys only once a year may skew results because students who graduate or are new to the school may reside in different areas the following year, making year over year comparisons of mode share less valuable. Based on a review of the Safe Routes Data System for certain schools in San Mateo County, many schools did not have consistent mode tallies reported.<sup>20</sup> Unfortunately, collection of mode data is required only for SRTS grantees in San Mateo County, omitting dozens of schools from consistent reporting requirements.<sup>21</sup> While collecting mode share data may be viewed as unnecessary or even cumbersome, other information, such as indicators of student wellbeing, may also be captured simultaneously, which can then be used to understand whether increases to active transportation are impacting the mental and physical health of students.

## Transit Operators

### *Reconsider Transit Routes Near Schools*

Based on information provided by the school district about where students reside compared to school of attendance, transit planners should analyze potential ridership on existing bus routes as well as discontinued routes in the area. In San Carlos, transit mode share rose to nearly 20% at a local middle school after the restoration of a discontinued transit route along with sound commitment to the program by the city and school district. In fact, restoring discontinued transit routes in Redwood City could achieve similar results. An analysis of data showed that 90% of students on this campus could get to school using two discontinued bus routes serving bus stops situated adjacent to the school on James Ave, a two-lane roadway, thereby eliminating the need for students to use the Transit Center or cross the four-lane state highway on foot.<sup>22</sup> Importantly, these two discontinued bus routes could potentially connect thousands of children attending nearly a dozen different schools in the area.<sup>23</sup> At Ralston Middle school in Belmont, for instance, where SamTrans bus routes drop off at the campus entrance, survey data indicated that public transit mode share exceeded 40% pre-pandemic.<sup>24</sup> Where possible, working to preserve transit service, rather than eliminating it when ridership declines, might prove a more enduring approach.

Based on parent commentary about the need for transit proximity to school sites, it is unlikely children would be permitted to transfer buses on route to school. As such, perhaps longer transit routes should be reexamined, such as those noted above that have been eliminated or truncated. Indeed, one of the discontinued bus routes studied here extended through several cities, which may have caused it to experience traffic delays, making it unreliable and not well utilized. In fact, LA Metro's return of ridership post-pandemic has demonstrated that expansive network connectivity has merit.<sup>25</sup> While many transit operators have truncated bus routes to improve on-time-performance, such goals might be achieved through other means, including bus-only lanes.

### *Remove Payment Barriers by Making Transit Free for Youth*

Payment challenges such as those noted above could be avoided by making transit free for youth. Further, free transit also may help overcome barriers beyond cost, encouraging ridership from all socioeconomic groups. In fact, three parents interviewed for the study agreed that free transit would be a strong incentive. In a London study, free bus access for youth was shown to shift travel habits from automobiles to buses.<sup>26</sup> Indeed, facilitating ridership from younger ages may increase long-term ridership habits, not only removing vast numbers of cars and improving bus speeds, but also developing future farebox revenue streams.



## *Improve Frequency*

SamTrans provides school-oriented transit service to various schools within the San Mateo County, on schooldays only, with timing that aligns with the start and end of the school day. This model works well for students at schools in Belmont, Menlo Park, San Carlos, among others.<sup>27</sup> However, this model has limitations. First, if a student misses the bus, there may not be any other options to get to school on time, resulting in tardiness or even missing school altogether. This leaves many parents opting to drive their children to school to alleviate potential stress and anxiety. Second, bus routes limited to school day schedules make it impossible for kids to become reliant upon transit. Improving transit frequency solves this challenge.

Transforming school-oriented routes into standard local routes that run all day, perhaps with increased frequency during peak times, could make transit a more reliable and attractive form of transport for younger generations. It would also eliminate time coordination issues among transit planners and the schools (e.g., last minute school start time changes, etc.). In San Mateo County, for example, there are 23 school districts, with over a hundred schools with different school starting dates, times, minimum days, and holidays.<sup>28</sup>

## *Communications*

Transit operators can heighten awareness about bus routes by posting maps and time schedules at bus stops near schools, as well as highlighting school locations on bus route maps on its website. It is also important that GTFS (General Transit Feed Specification) information is real-time so that students with smartphones can rely on map applications to determine when the next bus is arriving. While the SamTrans' website contains robust resources, it was clear from interviews that most parents will not take time to investigate them on their own.

## **Local Governments**

### *Bus Stop Locations*

This study revealed that bus stop locations were crucial to parents' decisions to send their children to school on public transit. Local governments should work intentionally with transit operators to site bus stops, considering parents' perspectives about crossing busy intersections or waiting for a bus in an area that might not be close to the school or perceived to be safe. With increases in traffic-related fatalities, worries about crossing busy intersections are a legitimate concern of parents. As noted during interviews, two of the families formerly used one of two bus routes serving bus stops adjacent to these schools on James Ave, which did not require crossing busy streets. What's more, all the parents interviewed indicated they would consider sending their child to school on the bus *if* the public transit route served the bus stop adjacent to the school, permitted the bus time worked for their family's schedule.<sup>29</sup>

### *Preserve Roadways for Future Transit Service*

Local planners should understand where transit service may have once existed—especially near schools—to preserve such roadways for future activation. As noted in San Carlos, restoring discontinued bus routes enabled transit to become a routine way to get school, serving hundreds of students and removing an equal number of cars from city streets. In fact, restoration of transit routes in San Carlos was relatively easy because the roadways had not changed; however, in places like Redwood City, studied here, returning the aforementioned discontinued transit routes near these schools may not be as simple. For example, in Redwood City, speed bumps have been installed on certain roadways along the former transit routes as part of traffic calming. Of course, a bus can traverse a speed bump, but transit operators may be wary of issues such as passenger falls and the associated liability stemming from potential incidents. Furthermore, speed bumps not only slow down cars, but also slow buses too, thus impacting journey times.

## *Communications and Public Awareness*

Easily accessible up-to-date maps of preferred routes to schools are critical. These should include routes for walking, biking, or transit, noting areas with presence of crossing guards, controlled crossings, and where to find additional information. As mentioned, the City of Palo Alto manages a webpage containing detailed walk/bike maps to each of the schools in the Palo Alto Unified School District. Processes are standardized to ensure maps are updated and distributed in a timely fashion, including references to transit timetables, along with important safety reminders.

Increasing public awareness about transit applications available on smartphones is another way to promote transit ridership. Additionally, public awareness campaigns might help highlight the number of fatalities associated with drunk and distracted driving, as well as the high numbers of deaths linked to pedestrian violations—reminding travelers to avoid crossing streets while looking at their smartphone.

## *Traffic Safety Measures*

Local governments can assist SRTS efforts through traffic enforcement, overseeing crossing guard programs, and maintaining high-quality infrastructure, such as visible striping, continuous sidewalks, and safe and clean bus stops. Enforcing traffic laws encourages law-abiding behaviors on roadways, especially near schools, deterring behaviors such as speeding and distracted driving.

## **Addressing Institutional Constraints**

Certain institutional constraints affect transportation objectives which, in turn, may hinder the achievement of crucial targets, including reduction of greenhouse gas emissions. In Redwood City, for instance, there are a dozen entities associated with roads, transport, education, and regulation.<sup>30</sup> Institutionalizing responsibilities among these parties can be difficult, as governmental agencies are subject to funding restrictions, grant cycles, staffing constraints, differing policies, and potentially opposing priorities. Clearly, this creates challenges when working toward the overarching goals supporting sustainability, and of course, spending finite financial resources wisely.

## *Prioritize Funds*

Funding models may in fact be thwarting SRTS programs. The majority of SRTS funding has historically been allocated to infrastructure, but as noted by McDonald and Aalborg, “reasons for driving children to school will be unaffected by infrastructure improvements.”<sup>31</sup> For instance, despite completion of many of the hardscape improvements recommended by external consultants, mode changes did not substantially improve at the NSA and MIT campus.<sup>32</sup> Unfortunately, even with growing popularity of traffic calming to improve driver behavior and deter traffic movement on certain routes, installing traffic calming only on certain roadways does not protect an entire route to school. Furthermore, significant investments in infrastructure amidst rising numbers of traffic-related fatalities raises important questions about whether attempts to slow, control, or “calm” traffic is an effective use of public funds. In fact, unknown to many, elements such as speed bumps may actually *increase* greenhouse gas emissions.<sup>33</sup>

Conceivably, grant programs could be launched to add funding for local transit agencies to serve more areas near schools. Prioritizing funding for additional transit service may not only provide meaningful alternatives to private automobiles—increasing the numbers of transit riders may also help address some of the highest risks associated with driving; nationally, fatalities from both drunk and distracted driving account for nearly 40% of annual traffic deaths.<sup>34</sup>



## Restructure and Consolidate

With diminishing funding, some countries have opted for consolidating governmental agencies to reduce costs and improve efficiencies. For example, in the UK, cities have been consolidated into county-level structures in certain areas, which include planning, land use, transportation, and education, among others.<sup>35</sup> In the city/county consolidations studied in the UK, the firm Deloitte highlighted savings of over 10% realized, demonstrating that “local government mergers can deliver material financial benefits.”<sup>36</sup> Additionally, with schools and transportation systems under a single governmental structure, programs can be more effectively prioritized (e.g., student education, mass transport, bus priority). With a population of approximately 750,000, San Mateo County includes nearly two dozen independent school districts, 20 incorporated cities, along with a handful of transportation providers.<sup>37</sup> Restructuring governmental agencies is one way to allocate public dollars according to best and highest use, appraising value for money, and may alleviate the need to reduce or eliminate transit or other public services in periods of downturn.

## Concluding Remarks

Historically, SRTS has been limited by the preconceived notion that the program only applies to walking or biking to school, which has minimized attention to public transportation. With growing popularity of non-traditional schools in recent decades, the most important takeaway from this study is rethinking school commutes through a multimodal lens.

Solving this challenge requires heightened collaboration efforts among entities such as those described herein, allocating more funding for public transit near schools, and addressing institutional barriers. If we want youth to be the catalyst for transforming American driving habits, the following must be prioritized: bus routes will need to serve more areas near schools with adequate frequency, bus stops must be safe and appealing, student education must be delivered appropriately, traffic enforcement and other safety measures need to be complimentary, and robust communication strategies must be developed. Today’s youth are keenly aware of the urgency of climate change, and focusing on their travel habits can accelerate modal shifts necessary to reduce emissions and reverse the devastating impacts of climate change.

Public transport requires a reawakening in the US. During pandemic lockdowns, air quality improved to levels unseen in decades—revealing what can happen when people stop driving.<sup>38</sup> Bloomberg CityLab’s article *Public Transit Use Must Double to Meet Climate Targets* notes the need for “public transit as a key tool for decarbonizing the transport sector.”<sup>39</sup> While it’s exciting to watch the development of electric and autonomous vehicles, replacing one vehicle type for another does little to solve overcrowded, congested roads that cause delays and stress, and ultimately limits the ability to redesign roadways to accommodate all forms of active transportation.

Changing course is complicated. But optimism persists—two Redwood City parents interviewed for the study were very hopeful, one saying, “I wish we would be a place that could send kids to school on a bus.” Another parent added, transit “could be a way to really make a difference; if it’s streamlined, if people know about it, if schools are supporting it, if lots of families decide to support it, it could make a huge difference.” As demonstrated in the City of San Carlos, commitment by key stakeholders—schools, transit operators, and cities—can lead to success. Ultimately, widespread acceptance of public transit as a preferred travel mode could diversify ridership, increase fare revenue, improve transit on-time performance, and reverse negative stigmas surrounding transit. Certainly, a better understanding of one another might be cultivated when people of different backgrounds have shared experiences, such as riding public transportation.<sup>40</sup> It’s time to shift gears.

## Endnotes

1. 12.7%. "Safe Routes to School (SRTS)," Centers for Disease Control and Prevention, last modified October 19, 2018, <https://www.cdc.gov/policy/opaph/hi5/saferoutes>.
2. Stanley J. Ulijaszek, "Obesity: Preventing and Managing the Global Epidemic, Report of a WHO Consultation, WHO Technical Report Series 894," *Journal of Biosocial Science* 35, no. 4 (2003): 624-625; Teri M. McCambridge, David T. Bernhardt, Joel S. Brenner, Joseph A. Congeni, Jorge E. Gomez, Andrew J.M. Gregory, Douglas B. Gregory, et al., "Active Healthy Living: Prevention of Childhood Obesity Through Increased Physical Activity," *Pediatrics* (Evanston) 117, no. 5 (2006): 1834, <https://doi.org/10.1542/peds.2006-0472>; Centers for Disease Control and Prevention, "Health, United States 2019," accessed April 6, 2022, <https://www.cdc.gov/nchs/data/hs/2019/021-508.pdf>.
3. Orion Stewart, "Findings from Research on Active Transportation to School and Implications for Safe Routes to School Programs," *Journal of Planning Literature* 26, No. 2 (2011): 129, <https://doi.org/10.1177/0885412210385911>.
4. Christopher Schiermeyer and Mark Becker, "The bus stops here: Time to fund transportation for all California students," EdSource, May 12, 2022, <https://edsource.org/2022/bus-stops-here-time-fund-school-transportation-all-california-kids/672110>.
5. "School of Choice," Redwood City School District, accessed April 6, 2022, <https://www.rcsdk8.net/our-programs-and-services/enrollment/school-of-choice>.
6. Parisi Transportation Consulting, Walking and Bicycling Audits, Redwood City School District, McKinley Institute of Technology, North Star Academy (August 2014) 3, <https://www.rwc2020.org/wp-content/uploads/2015/12/McKinley-North-Star-Walking-and-Bicycling-Audit.pdf>.
7. School data based on enrollment and demographics information from California Department of Education DataQuest website for 2020-2021 school year (2021-2022 data was not yet available), accessed March 31, 2022. City data per US Census Bureau Quick Facts for Redwood City, accessed April 6, 2022, <https://www.census.gov/quickfacts/fact/table/redwoodcitycalifornia,US/PST045221>.
8. Redwood City Together, accessed November 27, 2022, <https://www.rwctogether.org>.
9. Teaching Children to Walk Safely as they Grow and Develop: A Guide for Parents and Caregivers, National Center for Safe Routes to School, 10-6, <http://guide.saferoutesinfo.org/pdf/TeachingChildrenToWalkSafely.pdf>.
10. Orion Stewart, "Findings from Research on Active Transportation to School and Implications for Safe Routes to School Programs," *Journal of Planning Literature* 26, No. 2 (2011): 129, <https://doi.org/10.1177/0885412210385911>; Noreen C. McDonald and Annette E. Aalborg, "Why Parents Drive Children to School: Implications for Safe Routes to School Programs," *Journal of the American Planning Association* 75, no. 3 (2009): 332.



11. Katherine L. Chen, Bor-Wen Tsai, Garrett Fortin, and Jill F. Cooper, Traffic Safety Facts: Pedestrian Safety for 2020, UC Berkeley, Safe Transportation Research and Education Center, Summer 2021, [https://safetrec.berkeley.edu/sites/default/files/publications/safetrecfactspedsafety\\_2021.pdf](https://safetrec.berkeley.edu/sites/default/files/publications/safetrecfactspedsafety_2021.pdf); Katherine L. Chen, Bor-Wen Tsai, Garrett Fortin, and Jill F. Cooper, Traffic Safety Facts: Pedestrian Safety for 2019, UC Berkeley, Safe Transportation Research and Education Center, Spring 2020, [https://safetrec.berkeley.edu/sites/default/files/publications/safetrecfacts\\_pedsafety2020.pdf](https://safetrec.berkeley.edu/sites/default/files/publications/safetrecfacts_pedsafety2020.pdf); Katherine L. Chen, Bor-Wen Tsai, Garrett Fortin, and Jill F. Cooper, Traffic Safety Facts: Pedestrian Safety for 2018, UC Berkeley, Safe Transportation Research and Education Center, Summer 2019, <https://safetrec.berkeley.edu/sites/default/files/safetrecfactspedsafety2019.pdf>.
12. Parisi Transportation Consulting, Walking and Bicycling Audits, Redwood City School District, McKinley Institute of Technology, North Star Academy (August 2014) 11, <https://www.rwc2020.org/wp-content/uploads/2015/12/McKinley-North-Star-Walking-and-Bicycling-Audit.pdf>.
13. William Black, "Chapter 17: Educating for Change," in Sustainable Transportation: Problems and Solutions (New York: Guilford Press, 2010), 203.
14. Robert J. Schneider, "Theory of routine mode choice decisions: An operational framework to increase sustainable transportation." Transport Policy 25 (2013): 128-137.
15. "Walk and Roll Suggested Route Maps," City of Palo Alto, last modified November 18, 2022, <https://www.cityofpaloalto.org/Departments/Transportation/Safe-Routes-to-School/Walk-and-Roll-Suggested-Route-Maps>.
16. "Palo Alto Middle and High School Student Bicycle Mode Average," City of Palo Alto, last updated August 22, 2022, <https://www.cityofpaloalto.org/Departments/Transportation/Safe-Routes-to-School>.
17. DataQuest 2021-22 Enrollment by Grade — Palo Alto Unified Report (43-69641), <https://dq.cde.ca.gov/dataquest/dqcensus/enrgdrlevels.aspx?agglevel=District&year=2021-22&cds=4369641>, "Choice Programs," Palo Alto Unified School District, accessed November 1, 2022, <https://www.pausd.org/enrollment/choice-programs>.
18. Katherine L. Chen, Bor-Wen Tsai, Garrett Fortin, and Jill F. Cooper, Traffic Safety Facts: Pedestrian Safety for 2020, UC Berkeley, Safe Transportation Research and Education Center, Summer 2021, [https://safetrec.berkeley.edu/sites/default/files/publications/safetrecfactspedsafety\\_2021.pdf](https://safetrec.berkeley.edu/sites/default/files/publications/safetrecfactspedsafety_2021.pdf); Katherine L. Chen, Bor-Wen Tsai, Garrett Fortin, and Jill F. Cooper, Traffic Safety Facts: Pedestrian Safety for 2019, UC Berkeley, Safe Transportation Research and Education Center, Spring 2020, [https://safetrec.berkeley.edu/sites/default/files/publications/safetrecfacts\\_pedsafety2020.pdf](https://safetrec.berkeley.edu/sites/default/files/publications/safetrecfacts_pedsafety2020.pdf); Katherine L. Chen, Bor-Wen Tsai, Garrett Fortin, and Jill F. Cooper, Traffic Safety Facts: Pedestrian Safety for 2018, UC Berkeley, Safe Transportation Research and Education Center, Summer 2019, <https://safetrec.berkeley.edu/sites/default/files/safetrecfactspedsafety2019.pdf>.
19. County Durham, Local Transport Plan 2: 2006-2011 (Durham County Council), 100.

20. The Safe Routes to School Data Collection System, National Center for Safe Routes to School, accessed August 31, 2022.
21. Per V. Castro, Project Specialist at SMCOE on May 5, 2022.
22. Analysis performed C. Prosperi with ArcGIS Pro using digitized former SamTrans bus routes 295 and 278 compared to georeferenced student locations provided by RCSD.
23. SamTrans, Letter dated September 29, 2021 from Redwood City School District, Correspondence as of 10-1-2021, <https://www.samtrans.com/media/19840/download?inline>. Note Route 278 was temporarily suspended during the pandemic and eliminated in 2022. Route 295 was truncated in 2014.
24. National SRTS Database, Travel Tally report for Ralston Middle School Spring 2016 (pre-pandemic), accessed November 8, 2022.
25. Eliyahu Kamisher, "The Bay Area was California's transit mecca. Now car-crazy L.A. has more train and bus riders," Mercury News, August 22, 2022, <https://www.mercurynews.com/2022/08/28/the-bay-area-was-once-a-mass-transit-beacon-now-californias-car-capital-leads-the-state-in-riders-2/>.
26. Phil Edwards, Rebecca Steinbach, Judith Green, Mark Petticrew, Anna Goodman, Alasdair Jones, Helen Roberts, Charlotte Kelly, John Nellthorp and Paul Wilkinson, "Health impacts of free bus travel for young people: evaluation of a natural experiment in London," Journal of Epidemiology and Community Health 67, no. 8 (2013): 641.
27. Review of SRTS database displayed double-digit transit mode share (pre-pandemic) for Hillview Middle (2019 tally accessed November 8, 2022) Ralston Middle (2016 tally accessed November 8, 2022) and Tierra Linda Middle (2018 tally accessed April 11, 2022); "Get2School on SamTrans," SamTrans, accessed November 8, 2022, <https://www.samtrans.com/get-2-school#tab-808412-pane-3>.
28. "School District Information," San Mateo County Office of Education, accessed August 30, 2022, <https://www.smcoe.org/about/districts-and-schools/school-district-information/>.
29. In scenarios discussed with parents, individual bus routes were reviewed however bus transfers while traveling to and from school were not considered.
30. The City of Redwood City, Caltrans (State Highways), SamTrans, Caltrain, The San Mateo County Transportation Authority, City/County Association of Governments (C/CAG), the Redwood City School District, the Sequoia Union High School District, the County of San Mateo, [Commuter.org](https://www.commute.org/) (local shuttle service), the Bay Area Air Quality Management District, the County Office of Education, and the Metropolitan Transportation Commission.
31. Noreen C. McDonald and Annette E. Aalborg, "Why Parents Drive Children to School: Implications for Safe Routes to School Programs," Journal of the American Planning Association 75, no. 3 (2009): 332.

32. In fall 2021 mode tallies using Google forms were completed during homeroom. Data was provided by V. Castro at SMCOE on March 9, 2022. Approximately 400 students from both schools completed the survey, however, NSA's did not include middle school students. Preliminary results reveal that 70-80% of students were driven to school in private vehicles at MIT and NSA, respectively. Spring 2022 tally data for NSA per the National SRTS database revealed approx. 80% of students remained driven to and from school in private vehicles. The 2022 tally was not performed for MIT. Compared with data in Parisi Transportation Consulting, Walking and Bicycling Audits, Redwood City School District, McKinley Institute of Technology, North Star Academy (August 2014) 8, <https://www.rwc2020.org/wp-content/uploads/2015/12/McKinley-North-Star-Walking-and-Bicycling-Audit.pdf>.
33. T. Januševičius and R. Grubliauskas, "The effect of speed bumps and humps on the concentrations of CO, NO and NO<sub>2</sub> in ambient air," *Air Quality, Atmosphere, & Health*; Dordrecht. 12, no. 5 (2019): 635-642; Lucy Rogers, "Climate change: The massive CO<sub>2</sub> emitter you may not know about," *BBC News*, December 17, 2018, <https://www.bbc.com/news/science-environment-46455844>.
34. T. Stewart, Overview of Motor Vehicle Crashes in 2020, Report No. DOT HS 813 266, US Department of Transportation, National Highway Traffic Safety Administration, 2022, US Department of Transportation, <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813266>; US Department of Transportation, National Highway Traffic Safety Administration, "Quick Facts 2020," <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813321>; National Highway Traffic Safety Administration, "Distracted Driving 2020," <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813309>.
35. [UK.gov](https://www.legislation.gov.uk/ukpga/1992/19/contents). Local Government Act 1992, <https://www.legislation.gov.uk/ukpga/1992/19/contents>.
36. Deloitte, Sizing up Local Government mergers and service integration (2011), 3.
37. "Fast Facts," County of San Mateo, accessed November 27, 2022, <https://www.smcgov.org/fast-facts>; San Mateo County Transit District, accessed November 27, 2022, <https://www.smctd.com>; [Commute.org](https://commute.org), accessed November 27, 2022, <https://commute.org>.
38. The Year Earth Changed, narrated by Sir David Attenborough, Apple TV+, April 16, 2021.
39. Josyana Joshua, "Public Transit Use Must Double to Meet Climate Targets, City Leaders Warn," *Bloomberg CityLab*, November 10, 2021, <https://www.bloomberg.com/news/articles/2021-11-10/transit-use-must-double-to-meet-1-5-c-goal-mayors-warn>.
40. Michael J. Sandel, *What Money Can't Buy: The Moral Limits of Markets* (New York: Farrar, Straus and Giroux, 2013).



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## About the Author

Meredith spent the first decade of her professional career at a Big Four accounting firm in the Assurance and Advisory Business Services practice. Over the next decade, she assisted various nonprofit and school-related organizations, including volunteering on SRTS initiatives. In 2016, she was awarded a City Coin from the San Carlos City Council for her work advancing youth transit ridership, which not only alleviated traffic and congestion, but also reduced traffic danger around schools, the commute burden on parents, and fostered independence and resiliency. The experience prompted her to pursue a master's degree in Transportation Management at SJSU where she graduated in 2022. This piece is an abstract of her full capstone report. If your organization is interested in exploring this approach, Meredith can be contacted through LinkedIn.

This report can be accessed at  
[transweb.sjsu.edu/research/2256](https://transweb.sjsu.edu/research/2256)



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