Clifford Elementary Safe Routes to School

Feasibility and Implementation Study

Stanford University
Program on Urban Studies

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Executive Summary

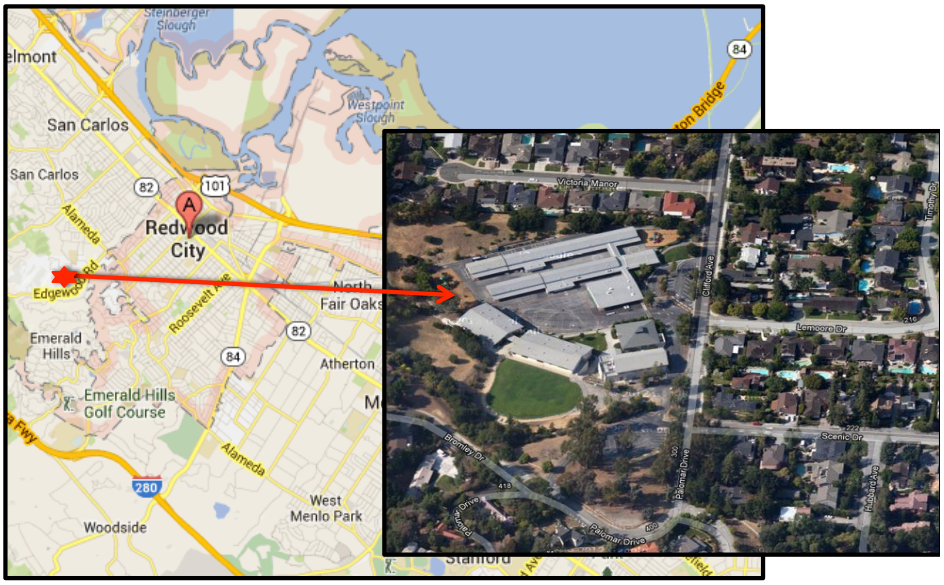
Redwood City 2020 is a collaborative of seven different private and government entities to support family and youth in Redwood City. In the past, RWC 2020 has worked with other Stanford student groups to develop Safe Routes to School for the school communities of Fair Oaks, Hawes, John Gill, and Adelante Elementary.

Safe Routes to School is an initiative under RWC 2020's Community Wellness program that seeks to promote alternative commuting to schools and improve sustainability, health, and educational components. SRTS is a large international initiative already active in 9 RWC school district schools. Clifford Elementary will be the 10th school in the RWC school district implementing a SRTS initiative.

Background

Clifford Elementary is a K-8 school that serves students from Redwood City, San Carlos, Menlo Park, Atherton, Woodside, and nearby unincorporated areas. Today, the school has reached a population of around 800 students with an average class size of 30. The student population is socioeconomically diverse though largely middle class, ethnically diverse, and notably serves a large Spanish speaking parent and student population. There is only yellow school bus service for students with disabilities in the district. Through conversations with school community members (including the principal and the president of the PTA) it became quickly clear that the majority of families drive their students to and from school in personal vehicles.

Map of Clifford Elementary



Project Purpose

In this project, we set out to gather best practices from current SRTS programs locally and nationally; assess current state of school commuting; evaluate the physical surroundings of Clifford school and neighborhood; develop prioritized list of potential initiatives; and develop the hypothesis of how SRTS might be able to drive academic performance.

In the end, the purpose of this project is to formulate a set of recommendations for next steps to encourage alternative modes of commuting (walking, biking, carpooling, and public transportation) based on existing neighborhood attributes and demographics. The project is positioned well within Redwood City 2020's Community Wellness program, simultaneously helping to improve the environmental sustainability of the Clifford school community while improving the physical and educational health of Clifford's students.

This project is important to the broader themes of sustainable cities because it explores the question of what sustainable, measurable, and effective changes can be made in the short-term and in the long-term to encourage alternative commuting. Children's health and wellbeing are our top priority, and we believe SRTS can significantly contribute to the safe learning environment that Clifford Elementary so closely promotes.

Literature Review and its Impact on Our Methodology

For our project at Clifford, we conducted literature reviews on (1) past Safe Routes to School reports by Stanford students and (2) general studies showing the link between physical activity and academic performance. This section focuses mainly on (1) and its influence on our methodology.

Past reports and case studies from our first literature review informed our project methodology by providing us with best practices on collecting data and feedback. The 2009 Active School Travel Report – a literature review in itself – outlined SRTS initiatives and collected case studies of schools where these initiatives were successful. With the general list of initiatives from this report, we were able to propose the different initiatives to students and parents to see which ones they preferred. Additionally, with the report's case studies, we saw the effectiveness of prizes at schools and sought to integrate incentives into our parent survey.

The 2010-2012 reports documented projects at Hawes, John Gill, and Adelante Elementary, serving as case studies for our own literature review. In terms of methodology, these reports showed an overwhelming inclination towards parent feedback, community meetings and site observations – all of which we sought to recreate at Clifford Elementary.

1. Parent Feedback: past students sought parent feedback in the forms of (1) parent surveys and (2) meetings with the school PTOs.

2. Community Meetings: past students met with students, teachers, school principals, neighborhood residents, and transportation engineers to discuss current situations and obtain feedback on proposals.

3. Site Observations: past students (1) observed traffic into and out of the school area during rush hour and (2) performed walking audits to evaluate infrastructural needs, some eventually using the data from these audits to produce GIS maps.

We utilized all of the above methods but tailored them according to Clifford's needs and resources.

1. Parent Feedback: Clifford forwards "email blasts" to parents in addition to sending home weekly information packets. Thus, for our parent survey, we not only made hard copies to be included in the packets, but also created an electronic survey that parents could access through their emails.

2. Community Meetings: unlike past teams, our team focused more on findings from meetings with students, the PTO, and transportation engineers than on parent surveys to formulate our recommendations. We wanted to hear more about what students had to say about the program instead of simply tallying how many of them took certain modes of transportation to school. We also immediately got a sense of the transportation system at Clifford from the PTO and engineers, and because these are the people who work the morning and afternoon traffic, represent the parent population, and play an integral part in infrastructural developments that affect traffic, we felt that our meetings with them were a great complement to the more conventional parent survey. Through these multiple sources of data, we were able to develop a comprehensive understanding of a wide variety of points of view.

3. Site Observations: past GIS maps have displayed good/bad infrastructural points and park/walk zones, but we decided to focus on student use of SamTrans. This is because with many of the students travelling long distances to and from Clifford, carpooling and taking the bus are more viable options to explore and encourage. Provided with a student density map from Jessica Manzi, we mapped SamTrans bus routes in the city to see whether or not buses were serving high population density areas to reach students who needed them the most.

Overall, our literature review helped us realize the limited extent of our project at Clifford Elementary. Ten weeks is too short of a time frame to achieve much more than recommendations based on our observations and brief conversations with the community. Many of our recommendations, especially infrastructural ones, are long-term changes that require months – maybe even years – of community agreement, development, and implementation. Past reports have mentioned this limitation, and we acknowledge that similarly with Clifford, many of our recommendations require action that falls outside our scope of work.

Our project seeks to address current gaps in the literature review by including another literature review, which is literature review (2) mentioned above. This review is a compilation of studies showing the correlation between physical activity and academic performance. School administrators are first and foremost concerned with the academic performance of their students, so to gain the support for SRTS at Clifford Elementary from these stakeholders, we wanted to create a database from which SRTS proponents can draw upon in the future for proof of the program's academic benefits. The 2009 Active School Travel Report provided an extensive list of research on SRTS, but this list looks at the program in general, including findings on topics

such as health and environmental benefits. Our literature review, on the other hand, seeks to narrow in on a list of studies that specifically address concerns with academic performance.

Methodology

With any project that needs to take into account the diversity of different stakeholders and variables, it should not be surprising that a large number of different pieces of information were needed to understand the issue and build up a solution. To be able to get information that was not only current, but was specific to the idiosyncrasies of Clifford, a variety of original research was completed.

Over the course of the project, our team completed:

- Parent survey - To learn about the current commuting habits of Clifford families and understand how specific factors of the school and its community could create opportunities and barriers for potential solutions.
- Walking survey of area surrounding Clifford - To get a first-hand account of the physical infrastructure around the school
- Meetings with key stakeholders – To ensure any/all proposals are feasible and executable, we met with a long list of stakeholders to understand the politics of the situation and leverage the learnings that already exist

Parent Survey

Within the first hour of work on the project, it quickly became clear that any project or initiative we suggested would need to work within the framework of school norms and habits. In a school, the greatest influencers of these norms are not necessarily students or teachers, but the parents. While on one-hand parents can be leveraged to help drive behavior change in their kids and thus can be a huge resource, if not managed properly, parents can be an obstacle that prevents any activity from happening. To ensure that we properly took into account the current prevailing norms and made sure that we worked within the community instead of against it, we developed a survey that both worked to understand current behavior and see what initiatives might have the most enthusiasm behind them (See Appendix A).

While surveys can uncover extremely important and useful information, we wanted to make sure that the data we used was truly representative of the full school population. As mentioned above, Clifford has an extremely diverse student population. We wanted to make sure that we were able to pull responses for our survey from this full population, and not just those parents who might have more time to think about commuting, who understand English, or who are more involved with the school already.

We make several concerted efforts to ensure that we were pulling representative data for the full school. While it would have been much easier to purely launch a survey online, from conversations we had with parents and teachers, many parents still feel more comfortable with hard-copy responses. We thus launched the survey through two channels, both online (sent through the school-wide email blast) and in hard copy through the packets sent home each week with students. In addition, as not all families use English as their primary language, we worked

with the San Mateo County survey to translate all questions into Spanish as well. In a school that has a high Hispanic population, this extra effort ensured that we would understand the needs of this community as well.

Walking Survey

Outside of the community's openness to potentially changing commuting habits, the physical infrastructure of the area around Clifford is perhaps the most important factor in determining what initiatives might have the most impact on the school. While we were able to get a bit of information from google maps, we knew it would be vital to have a detailed idea of what students would be dealing with everyday. To do this, using a GPS program called XX, our team walked out the potential routes that students would traverse. Being careful to identify any potential infrastructure issues or places of danger with picture documentation, we paced out the routes to get a good feeling for the timing and difficulty of some of the routes we are proposing.

With this survey, we were then able to easily figure out what might be a plausible walk for a younger child, and which routes might be too difficult or dangerous. With a more focused number of routes, it was then easier to prioritize potential improvements and allow the enthusiasm for the overall program to be directed towards specific initiatives that could be put in place.

Interviews with Stakeholders

With a project that impacted so many people's lives, we wanted to make sure that we had all stakeholders feel as if their voice was being heard. The benefit from this was two-fold. Not only did we then ensure that these diverse voices would continue to be supportive of the project instead of acting as barriers, but we were then also able to leverage some of the work that had previously been done. In conversations with people as varied as the Clifford Student Council and the San Mateo County Director of Public Works, we were able to tease out what is most important to each player and how to best leverage these preferences to help drive real change.

Through the project, we interviewed the following:

- Nadine Levin, Redwood City 2020
- Alonso Barahona, Redwood City 2020
- Jammie G. Behrendt, Clifford Principal
- Don Diaz, Head of Facilities of RWC Schools
- Bunnie Morrow - Volunteer parent extraordinaire
- Christine Sullivan - Head of PTA
- Clifford Student Council
- Jessica Manzi, Senior Transportation Coordinator for Redwood City
- Diana Shu, San Mateo County Roads and Transportation
- Ashley Osbourne, Redwood City Police

The interviews also allowed us to see how the different parties interacted with each other. In a situation where there are so many key stakeholders with such strong opinions, navigation through politics can make or break success, and it was only through countless hours of discussions and meetings that we could see this first hand.

Findings

After meeting with almost ten different stakeholders, making five visits to the school grounds during key commuting times, and counting more than 200 surveys, a number of very interesting patterns evolved that should inform how the school goes about thinking how to implement Safe Routes to School.

Different Stakeholders Have Very Different Goals and Motivations
While all of the people involved with the school clearly have the same high-level long-term goals, to create an environment that encourages the development of happy, healthy, and well-educated kids, there was a wide range of differing views on what intermediate steps might be most important to be able to achieve this goal. With this in mind, it is key to think through how each of the different players involved might be approaching the situation and how this could affect not only their enthusiasm for the project, but what potential obstacles they might throw up to prevent the project's progress. Previous attempts to try to change the commuting habits and traffic patterns at Clifford have been met with considerable resistance and have not been able to be implemented for a whole host of reasons. To ensure that any of the initiatives that might be proposed have any chance of being implemented long-term, the many different motivations (from the safety of children, to their academic performance, to the convenience of the residents in the area, to the convenience to parents, to being within limited resources that are available in any of the many players that have jurisdiction over the neighbourhood surrounding Clifford) need to be carefully considered at every juncture.

Resources are limited for any initiative
Due to the difficulty in being able to directly tie changes in commuting habits to student performance or economic impacts, it is generally very difficult to be able to draw resources for the initiatives. While some of the initiatives that we brought to the table require very little to no investment, there were a number of initiatives that would require tens of thousands of dollars and new lines added to budgets.

There are some limited sources of funding from federal, state, and municipal entities, but in a time where many are still feeling the effects of the Great Recession, funding is often tight and many different programs are all clamouring for the little amount that does exist.

Children's Safety Needs to be 100%
In retrospect not a completely surprising finding, but parents, administrators, and even general community members refused to even consider any initiatives that could not ensure the complete safety of children. There were a number of potential initiatives that were completely safe outside of one intersection, or could be considered a safe walk on all days where the garbage trucks were not present, but none of these got any traction with any of the stakeholders. When it comes to a child's safety, the downside risk, however unlikely is always so great, that it needed to be eliminated completely.

Clifford Sits at an Awkward Geographic Intersection
Unlike many schools, Clifford sits at an awkward geographic intersection whose neighbourhood falls under three different municipal jurisdictions. With this, the construction of a real sidewalk between a key intersection and the school requires not just one municipality to find funding for their stretch, but for three separate budgets to agree that this is a project worth investing in. As

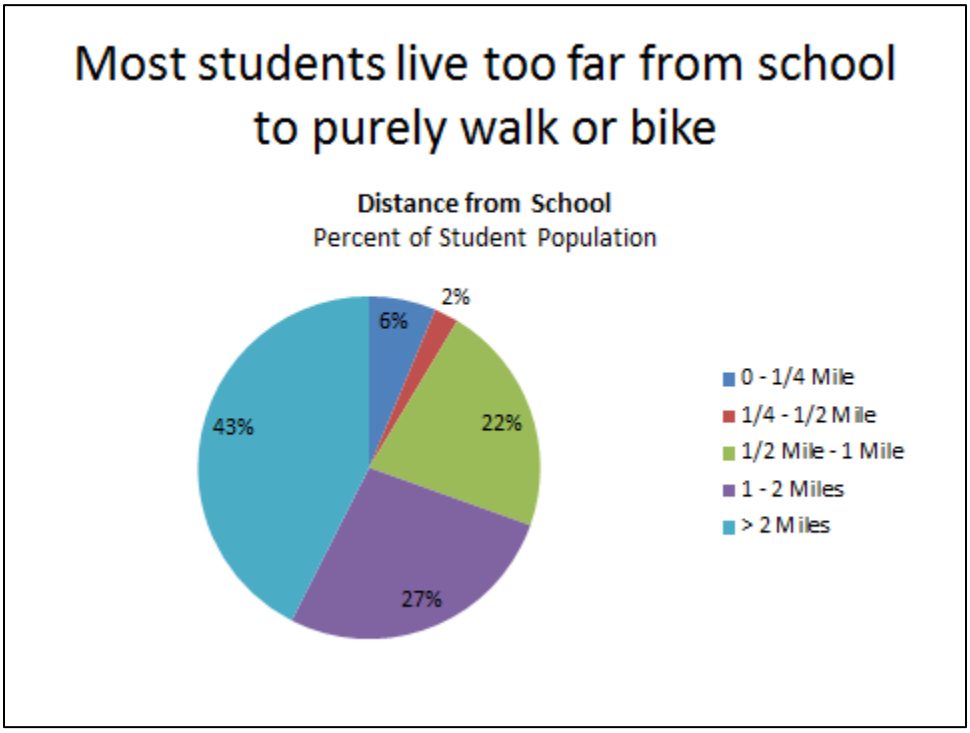
mentioned above, when it comes to the safety of children, 95% is not good enough and thus if even one of the partners is not on board the whole project might as well be cancelled.

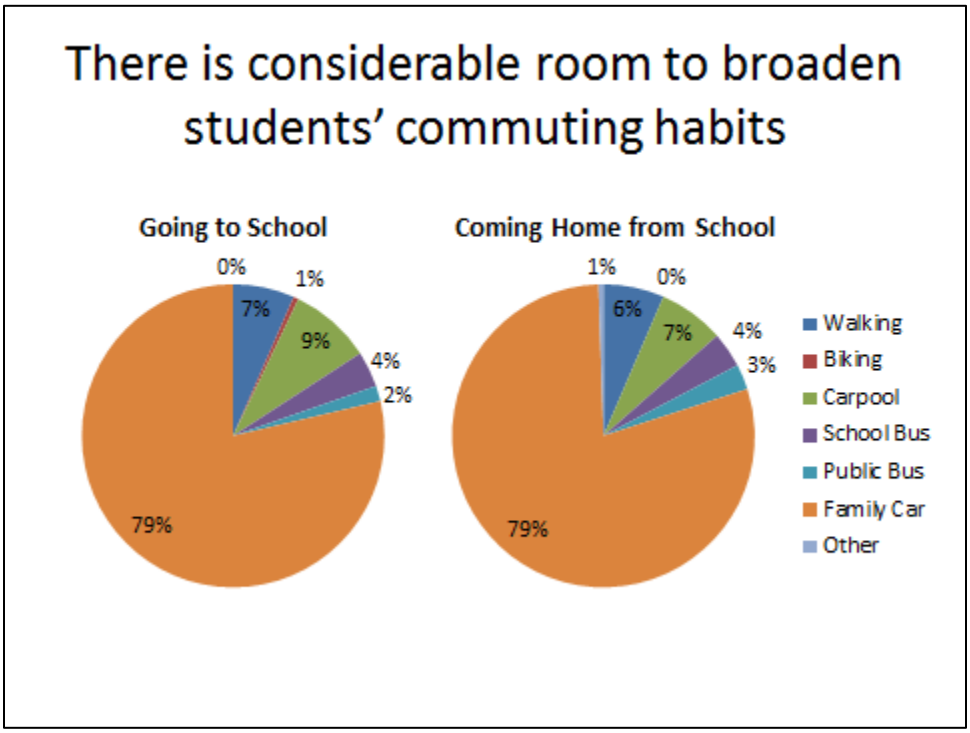
Despite Great Efforts by Volunteers, Peak Times were Slow and Potentially Dangerous
Clifford is lucky in that it has a great group of parent volunteers that give up hundreds of hours each year to help the school deal with their traffic flow and to help facilitate students getting to/from school. Despite this, multiple trips to the school proved that while valiant, their best efforts could not completely eliminate the downsides and risks of the current commuting situation. Fortunately, the school has not had any real injuries around the school due to the current traffic pattern, but in many ways, it seems like it is only a matter of time. Parents, often in a rush on their way to work, or frustrated by sitting in their car for ten minutes waiting in traffic, are looking to be as efficient as possible. There were numerous times that our team witnessed kids dashing to and fro without being seen by parents looking for their own children. The volunteers have definitely had a huge positive impact, but when you have almost 800 students running around and jumping in and out of almost 400 cars each day, it is impossible to keep track of everything.

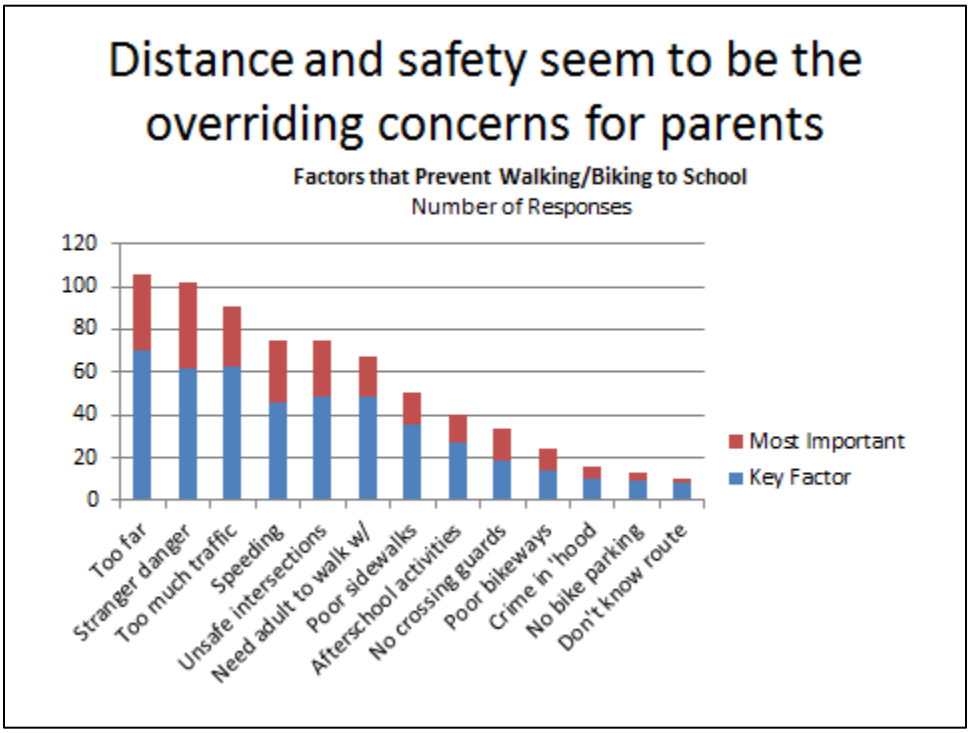
Infrastructure Around the School Discourages Walking and Biking
As part of an incorporated area not officially part of Redwood City, the neighbourhood surrounding Clifford was not developed with either walking or biking in mind. At one time, the edge of the town, as sprawl as extended out, a formerly rural neighbourhood and school have become overwhelmed by traffic. Instead of having established, clearly delineated sidewalks, the neighbourhood was originally built with sidewalks at the same height as the road. While this facilitates street parking, which is one of the main concerns of residents of the neighbourhood, it makes it considerably more dangerous for students to either walk or bike.

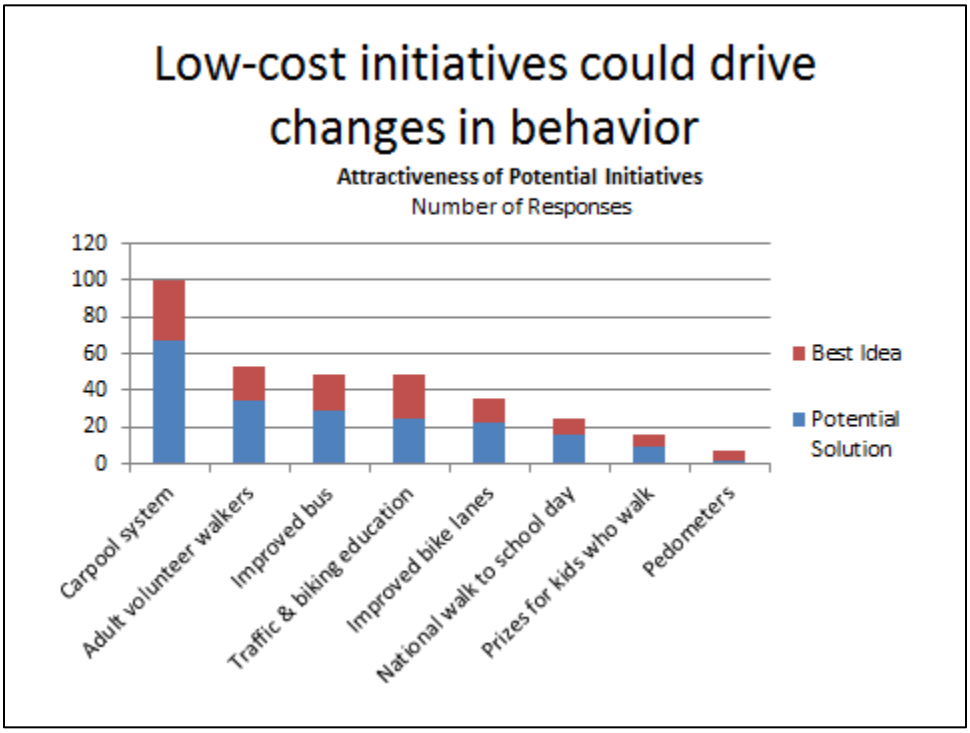
Signage Could Often be Improved and are Often Ignored
Over the years there have been a number of attempts made to improve the safety of the area with the addition of signage and regulations. Unfortunately many of these signs are small, obscured by foliage, or unclear. Due to this, throughout our visits to the school we often saw parents and residents either purposely or accidentally ignoring the signs and the traffic regulations in place. Our conversations with key stakeholders confirmed this difficulty of enforcement. Without a police officer in place standing watch, these behaviors have been the norm.

From the Survey









Recommendations

1. *Maze Day Presence*

Maze Day is a day at Clifford during which parents can sign up for school services and register their students at school. The nurse, the librarian, PTO members, and others all have a presence at

Maze Day to introduce parents new and old to the school community. Safe Routes to School should consider making a presence at Maze Day, the plans for which are available on the Clifford PTO website (http://www.cliffordschoolpto.org/calendar/), in order to better reach parents, students, teachers, and administrators.

In addition to informing parents about the many benefits of alternative commuting habits, the PTO and administration could reach out to parents to volunteer. No matter which initiatives Clifford chooses, there will be a much greater need for parent volunteers. Maze day is one of the few opportunities through the year in which all parents come together to the school.

2. *Carpooling*

Carpooling should be an integral part of Clifford's Safe Routes to School plan. Parents from the PTO, parent volunteer Bunnie, and the Clifford student council all agreed that carpooling was rarely encouraged to parents even though parents often knew the other parents of Clifford students living nearby to them. Strategies that could be used to encourage carpooling among Clifford parents might include: time reduction both in line at school and via shared responsibility, planning websites such as the one listed on our survey, increased social reach, and improved Clifford community. Our survey and the many conversations we had with parents show the potential power of this idea. Most people we discussed this plan with quickly saw the benefits for their own lives and wondered aloud why it had not been launched in the past. We believe that the school is uniquely positioned to coordinate the resources within the school to connect parents to each other and provide the logistical help to get it off the ground.

In addition to being warmly received by parents, carpooling would also require very limited resources. As the main infrastructure required is already present (parents driving cars), the main investment would need to be in marketing the program to parents. Thankfully there are many websites that have been developed to help facilitate carpooling. By leveraging these websites (from www.schoolpool.511.org to carpoolassist.com) and utilizing communication channels already in place (such as Maze day and the email blasts), carpooling is something that could quickly get off the ground.

3. *Park and Walk, Sidewalk/Crosswalk Improvements*

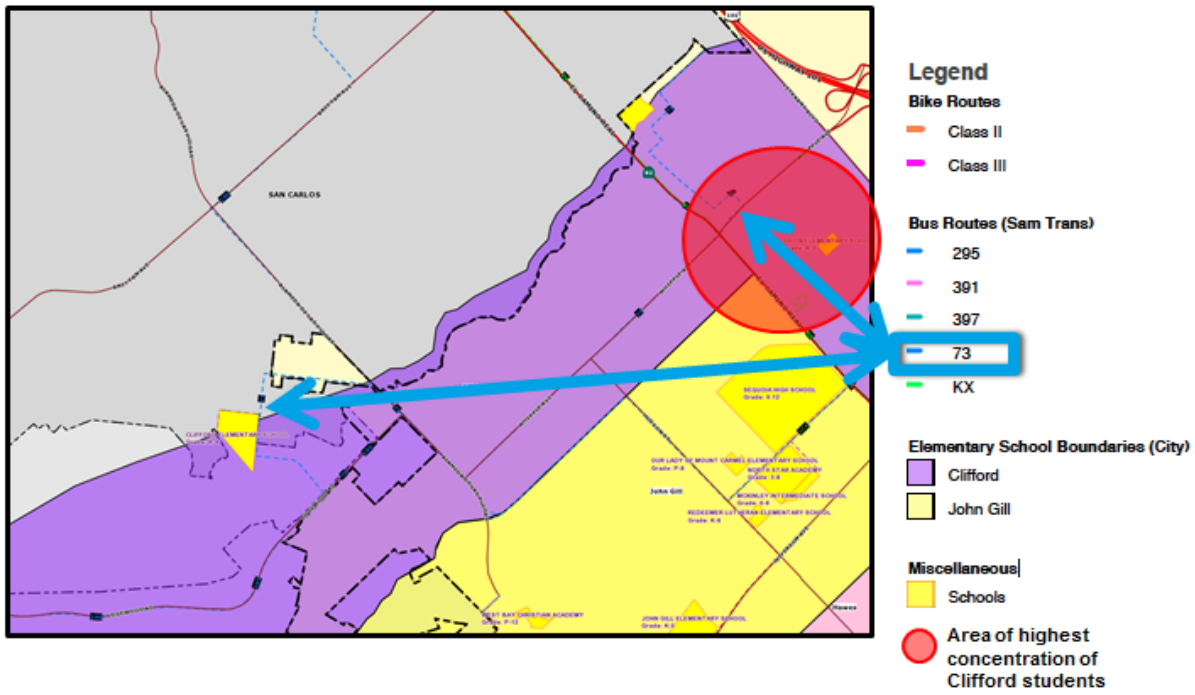
Using GPS mapping and tracking we saw that the walk from the Mormon Church on Edgewood Road to Clifford was about 650 yards and took approximately 8 minutes at a leisurely pace. This church could be used as a park and walk location to reduce traffic on the smaller streets near Clifford and encourage students to get some exercise. While there are some limitations to this approach inherently in that it would require volunteers and the consent of the church, we felt that the biggest obstacle to implementing this initiative would be sidewalk safety. Based on our conversations with engineers handling county and city roads, we felt that improving the safety and visibility of the sidewalks and crosswalks with paint, signage, and possibly some extra concrete would be a fairly low cost approach to making the route easily walk-able for children. Another improvement would be to employ crossing guards or police officers to handle traffic and ensure the safety of students and volunteers walking.

The full-scale improvement of the path may require many years and hundreds of thousands of dollars, but the initiative should not wait on these improvements to start implementing the park and walk program. With enough parent volunteers, a number of safety concerns would be highly alleviated, and real impact could be seen at the beginning of the next school year. The key next step for the school should be connecting with the church to ensure that they could use the site and setting in place a marketing plan to connect with parents and students.

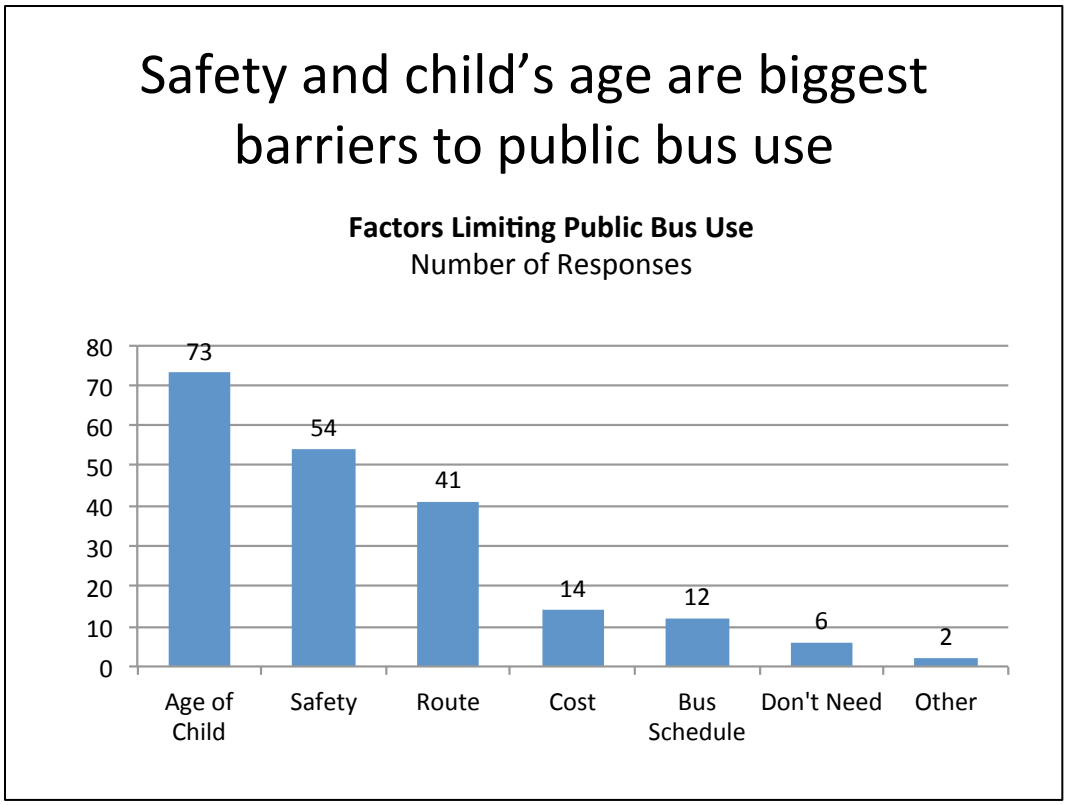
4. *SamTrans Bus Service*

We were provided with a "heat map" of concentrations of areas where most Clifford students live by a Redwood City traffic engineer, Jessica Manzi. Jessica Manzi also provided us with some insight into the fact that many of the roads directly surrounding Clifford were owned in part by the county and in part by Redwood City, sometimes making changes occur more slowly due to bureaucracy. By taking both Jessica Manzi's map and the GIS map we created it is clear that the SamTrans bus route "73" serves the Clifford population well. Clifford would likely benefit greatly from advertising the SamTrans service, which runs in both the mornings and the evenings. Clifford should also look into the possibility of subsidizing the current SamTrans "student pass" which runs at $36/ month per youth (under 17).

Clifford Elementary School District Line and SamTrans Routes



Our research (through the survey and the conversations that we had) showed that many people were aware of the bus, but especially with the younger kids, were nervous about the safety of the children. To alleviate these concerns, we suggest the school look into a buddy system that would allow older kids to partner with younger kids to help them navigate the bus system.



5. International Walk and Bike to School Day

International Walk and Bike to School Day (http://www.walkbiketoschool.org/) would be a once a year initiative encouraging students and parents to consider how relatively easy it can be to get to school without a personal vehicle. While some families would be necessarily excluded from this because of mobility concerns, access to bicycles, or distance from Clifford, the students who live within a reasonable distance (less than a mile) could take this day to learn about alternative transport in a community-oriented space. An event like this one would also be fairly simple to implement because of the plethora of resources available online due to the massive nature of the movement. Additionally, Redwood City 2020 would be able to roll out some of their signs and banners to get parents further involved in the Safe Routes to School initiative more broadly.

6. Pedometers and Competitions

Redwood City 2020 and Clifford could invest in Pedometers for students who walk to school. Much like the Friekometer plan implemented at other schools (see Appendix C), pedometers could be used to encourage students to walk to and from school using prizes as potential incentives. Students and parents alike might enjoy tracking just how much distance a student could cover over a school year walking to, from, or to and from school each day (or even once a week!). Clifford student council members indicated to us that for a personal initiative like this one, students would probably want to receive prizes individually. Implementing such a program would be fairly low cost because Redwood City 2020 and Clifford already have access to small prizes that bear the Safe Routes to School name.

During our research, concerns about excluding students who would not ever have an ability to walk to school were brought up multiple times. To ensure all students would be able to participate, we would encourage the administration to think through how they could have a complementary program on school grounds to promote physical activity that could serve as a substitute activity. By utilizing the track on school grounds during recess or lunch, students could be a part of the school-wide push to increase walking.

Additional Point of Emphasis – Academic Benefits

To gain support for SRTS initiatives from school administrators, our strategic plan involves emphasizing the link between physical activity and student performance because school administrators are first and foremost concerned with the academic performance of their students. There is the idea that time spent on nonacademic pursuits like physical activity could in fact negatively impact student performance in school, and our goal is to dispel this misconception by demonstrating the connection between exercise and academics – or to at least recognize this perception as a concern. In addition to increased sustainability, decreased traffic congestion, healthier students, and a greater sense of community, SRTS has academic benefits and research (a small sample of which is included in this report) as evidence of these benefits to present to potential opposition from the academically concerned side of the issue.

We hope that the resources he have provided in the appendix can either be used off the shelf, or as a starting point for further work to help bolster the academic value of a program like Safe Routes to School in an environment where academic performance is key to any initiative in schools.

Next Steps

It is undeniable that it is not going to be easy to implement any of the recommendations at Clifford. But when it comes to the safety and education of children, few things are easy. The timing of this project is actually convenient as it allows the school to kick the next year off right with a focus on changing the commuting habits of the community. To ensure success, we suggest the following:

- **Have a presence at Maze Day –** This is one of the few times that you will be able to connect with a large number of parents. Make sure to take advantage of this opportunity to communicate any plans with parents and sign up any needed volunteers.
- **Encourage carpooling –** Using existing websites, encourage parents to connect with their neighbors to facilitate carpooling.
- **Upgrade the signage along Scenic Drive –** While signage could be improved throughout the neighbourhood, Scenic is likely to be at the heart of any improved commuting plan and thus improvements there will likely have the biggest impact.
- **Develop buddy system between younger and older students –** Many of the concerns of any new commuting system were around safety and the age of the students. A buddy system would give older students a chance to mentor the younger kids, while providing supervision to the younger kids that would help ensure their safety.
- **Connect with Mormon Church to set up Park and Walk Site –** The residential nature of the neighbourhood limits the options for potentially park and walk sites. The church is one of the only options, but is well placed to serve as a drop-off center. Close

to school and along a path that would require more limited upgrades, it is by far the best option for Clifford for any park and walk system.

- **Connect with SamTrans to discuss alternative student fare options**
- **Connect with appropriate municipalities to set up strategy to upgrade Scenic Drive –** More of a longer term strategy, more extensive walking would require an upgraded Scenic Drive (more established sidewalk, better signage, etc). Work with the local municipalities to think through potential funding options and timeline for construction.

Appendix A: Parent Survey (English & Spanish)

Clifford Safe Routes to School Parent/Caregiver Survey

The Safe Routes to School Program supports initiatives to increase the number of students walking, biking and carpooling for health, environment and traffic mitigation purposes. The survey may also be taken online at ***http://www.surveymonkey.com/s/NFZ39TT.*** *All responses are confidential. Thank you for your support.*

1. Grade Level(s):_____

2. What is the approximate distance from your home to the school?

   ☐ ¼ mile or less ☐ ¼ mile to ½ mile ☐ ½ mile to 1 mile
   ☐ 1 mile to 2 miles ☐ 2 miles or more

3. How does your child usually travel to school?

   ☐ Walk ☐ Bike ☐ Carpool ☐ School Bus
   ☐ Public Transit ☐ Family Vehicle (only your children) ☐ Other: _____

4. How does your child usually travel home from school?

   ☐ Walk ☐ Bike ☐ Carpool ☐ School Bus
   ☐ Public Transit ☐ Family Vehicle (only your children) ☐ Other: _____

5. At what grade level would you allow your child to walk or bike to/from school without an adult?
   Grade Level:_____

6. Do any of the following items concern or limit your child's ability to walk to/from school?

Important		Yes	Most
	Too far from school	☐	☐
	Child's before/after school activities	☐	☐
	Speeding along route	☐	☐
	Too much traffic along route	☐	☐
	No adults to walk or bike with	☐	☐
	Lack of sidewalks/paths	☐	☐
	Lack of bikeways	☐	☐
	Unsafe intersections	☐	☐
	No crossing guards	☐	☐
	Lack of bike parking at school	☐	☐
	Stranger danger	☐	☐
	Violence/Crime in neighborhood	☐	☐
	Don't know best route to school	☐	☐

   Other:_____

7. What limits your child's use of public transit?

   ☐ Limited Bus Route ☐ Bus Schedule ☐ Safety ☐ Cost
   ☐ Age of Child
   Other:_____

8. Which of the following initiatives might encourage you to use alternative ways of getting to/from school?

	Yes	Best Idea
Carpool System	☐	☐
Adult volunteer walkers	☐	☐

Pedometers	☐	☐
Improved bike lanes	☐	☐
Improved public bus system	☐	☐
Lottery prizes for kids who walk to school	☐	☐
National walk/bike to school day	☐	☐
Traffic & Biking Education	☐	☐

Encuesta de Rutas Seguras a la Escuela (*Safe Routes to School*) para Padres/Tutores

Rutas Seguras a la Escuela es un programa a nivel del condado cuya meta principal es promover y estimular a los estudiantes a ir a la escuela a pie o en bicicleta por medio de la implementación de proyectos y actividades para mejorar la salud, el bienestar, y la seguridad, lo cual a cambio resultará en una reducción de la congestión del tráfico y emisiones causadas por los viajes relacionados con la escuela. Por favor tome 10 minutos par completer esta encuesta o en linea a **http://www.surveymonkey.com/s/HHZ2MYY**.

1. Grado Escolar:_____

2. ¿Aproximadamente cuál es la distancia de su casa a la escuela?
   - ☐ ¼ de milla o menos
   - ☐ ¼ de milla a ½ milla
   - ☐ ½ milla a 1 milla
   - ☐ 1 milla a 2 millas
   - ☐ Más de 2 millas

3. ¿Cómo llega(n) su(s) hijo(a)(s) a la escuela?
   - ☐ Caminando
   - ☐ En bicicleta
   - ☐ En autobús escolar
   - ☐ Viaje compartido o *carpool* (con otros niño(as))
   - ☐ Autobús de la ciudad/transporte public
   - ☐ En el auto familiar (solamente su(s) hijo(a)(s))

4. ¿Cómo se va(n) su(s) hijo(a)(s) a la casa después de clases?
   - ☐ Caminando
   - ☐ En bicicleta
   - ☐ En autobús escolar
   - ☐ Viaje compartido o *carpool* (con otros niño(as))
   - ☐ Autobús de la ciudad/transporte public
   - ☐ En el auto familiar (solamente su(s) hijo(a)(s))

5. ¿En qué grado escolar permitiría que su hijo(a) caminara o llevara su bicicleta a la escuela/casa sin la ompañía de un adulto?
   Grado escolar:_____

6. ¿Algunos de los siguientes casos le preocupan o limitan la habilidad de que su hijo(a) camine a la escuela/casa?

	Si	Mas Importante
Muy lejos de la escuela	☐	☐
Mi hijo tiene actividades escolares antes o después de clases	☐	☐
Alta velocidad del tráfico en camino a la escuela	☐	☐
Demasiado tráfico en camino a la escuela	☐	☐
No hay un adulto que lo pueda acompañar	☐	☐
No hay banquetas o caminos pavimentados	☐	☐
No hay carriles para bicicletas	☐	☐
Los cruces son peligrosos	☐	☐
No hay guardias que ayuden a cruzar	☐	☐
No hay donde estacionar la bicicleta en la escuela	☐	☐
Peligro por desconocidos/extraños	☐	☐
Violencia/crimen en el vecindario	☐	☐
No sé cuál sea la mejor ruta a la escuela	☐	☐

Otro:_____

7. ¿Qué limita que su hijo(a) utilice el transporte público?
   - ☐ Rutas limitadas
   - ☐ El horario del autobús
   - ☐ La seguridad
   - ☐ El costo
   - ☐ La edad de mi hijo(a)

   Otro:_____

8. ¿Cuál de las siguientes iniciativas podrían fomentar el uso de formas alternativas de llegar a / salir de la escuela (Escoja 3)?

	Si	La Mejor Idea
Sistema de Compartir coche	☐	☐
Caminantes voluntarios adultos	☐	☐
Podómetros	☐	☐
La mejora de los carriles bici	☐	☐
Mejora del sistema de autobuses públicos	☐	☐

Premios de la Lotería para los niños que caminan a la escuela	☐	☐
Nacional de pie / bicicleta al día escolar	☐	☐
Educación de Tráfico y Ciclismo	☐	☐

Appendix B: Past SRTS Stanford Group Projects, Literature Review

2009: Active School Travel Report

Best Practices:

1. The Freiker Program: the Freikometer (a solar-powered radio frequency ID tag reader) reads and logs the trips of students who walk or ride a bike to school. Students can earn prizes based on number of trips tallied. The program costs $4,990 the first year, and half of that for each following year. It qualifies for certain SRTS funds.

2. International Walk and Bike to School Day: international event held on the first Wednesday of October each year, when schools encourage their students to walk/bike to and from school. Many schools form walk to school parades with the help of parents and school officials, and students can earn prizes. Promote the event in (through flyers and info sheets) and out (through the media) of school.

3. Walk and Bike Safety Education: pedestrian safety education (for younger elementary schoolers) and bicycle safety (usually for 3rd-5th graders) usually held during school, involves the police department's participation, and is a classroom component with or without assemblies. Lessons are typically offered during the physical education period of the school day, and seminars for parents could also be included.

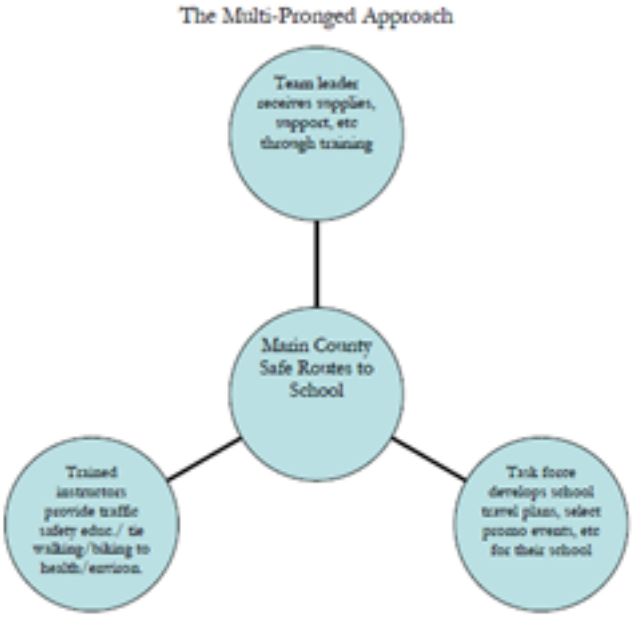
4. The Walking School Bus: a planned group of children who walk to school with adult supervision. This practice may be the top consideration for low-income communities because it requires the least funding. Success of the walking school bus depends on the commitment of volunteers and parents.

Case Studies:

1. Bear Creek Elementary (Boulder, CO): principal serves as a model (tries new forms of transportation himself and has been seen on a foot-powered scooter, skateboard, unicycle, carpooling); school programs are moving away from prizes and focusing on innate pride in commuting choices; Tour de French encourages students to record as many Car-Free Commute trips as possible in teams; school sets goals for International Walk to School Day

2. Eugene, OR: Commuter Solutions connects families and volunteers for walking school buses, biking trains, and carpools; the "Bike Phantom" gives out prizes on random days to bike and walk participants; parking enforcement officias help reinforce traffic laws to ensure safety; the city repainted crosswalks at two major intersections in front of the school; SRTS coordinator worked to improve and invest in bike racks, speed bumps, signage, and bike lanes; the school's PE teacher became a trained bicycle safety educator; International Walk to School Day, walking school bus, and Freiker program were also used

3. Marin County: One of two SRTS pilot programs, multi-pronged approach



4. Gunn High School (Palo Alto): GO-FAST program raised parking fees and restructured the school's parking permit policies to favor carpoolers, increased bus ridership by subsidizing monthly passes with the money from parking permit sales, laid new sidewalk and installed bike racks, and gave prizes to cyclists.The program also made information about commute alternatives available to parents/students in back-to-school packets, a monthly newsletter, and email updates.

2010: Hawes Elementary

Methodology

1. Traffic observation: stood outside the school entrances on three mornings (both rainy and sunny days) and watched the traffic and student flow, tallying the number of walkers, bikers, and drivers

2. Student tally: to cross-check data from the traffic observation, the team had teachers and students fill out an in-class survey. For three days, teachers asked students how they had come to school, students answered by a show of hands by category, and teachers tallied answers onto a student tally sheet.

3. Walkability audit: group members walked the streets around the school, taking detailed notes on the conditions of both sides of the street (narrow, broken, or blocked) and eventually compiling information in an excel file to create a GIS map showing the collected attributes.

4. Student meeting and presentation: met with the actual students. Had coordinated with the school principal, who connected the team with a 4th and 5th grade class to conduct a student tally

5. Parent meeting: established time and date according to an already scheduled time for monthly parent meetings, meeting conducted in Spanish, presented maps of the Hawes attendance area and had parents mark the route they took to school from their home and areas they thought were dangerous and in need of improvement, asked to share stories and experiences to get a sense of transportation situation

Infrastructural Recommendations (team acknowledges that recommendations fall within the realm of the City and not the school district)

1. add a crosswalk
2. include speed bumps within the school zone
3. have two corssing guards at each critical location
4. install police officers at intersections to enforce responsible behavior from drivers
5. expand school zone area and add school zone signs
6. add pedestrian light on both sides of street
7. improve crosswalk conditions at intersections

Social Recommendations

1. create a parent committee/designate one parent coordinator to act as a liaison between parents, the school, and RWC 2020
2. provide incentives for students through class competitions and prizes
3. get teachers on board by having them discuss walk safety and benefits in the classroom and do regular student tallies to keep students engaged and aware
4. make International Walk to School Day a weeklong event

2011: John Gill Elementary

Methodology

1. attended PTA meeting and met with the school principal
2. asked teachers to do a tally in their classrooms
3. distributed a parents survey (in English and Spanish) with help from the principal – incentivized students to return surveys in weekly packets with promise of an ice-cream party
4. made a presentation in Spanish at a parent potluck/fundraiser put on by a group of Spanish-speaking parents, and got a list of interested parents from a more representative sample
5. reviewed case studies and realized the need for a program champion and coalition, a kick-off event, and traffic infrastructure improvements
6. created a GIS maps of student density and distance from the school

Recommendations

1. infrastructural improvements: moving the traffic light from an intersection, replacing the planter adjacent to the school with a loading/unloading zone, improving the no u-turn signage on Myrtle St.

2. Carpool/Walkpool Program: organizing parents into small groups that can bring several students to school by car or walking

3. integrating the Walkpool program with Morning Momentum, a parent-led walking program that would require more parent volunteers

4. Kick-off event: held in conjunction with the International Walk to School Day, could include a police presentation on driver education and safety, and offer signup sheets to collect contact info for clusters of nearby parents

2012: Adelante Elementary

Methodology

1. researched existing programs

2. community meetings: met and discussed SRTS with 1.) parents, teachers, and school principal, 2.) student council, and 3.) neighborhood resident and transportation engineer

3. site observation: made 4 different site visits to school and neighborhood, recording coded notes, adding GPS coordinates to a Google map via a smartphone, creating a dataset 14 different coordinate points to create a GIS map

4. parents survey: sent home in weekly packets

Recommendations

1. park and walk program: encourages parents to park their cars in adjacent neighborhood and walk in to school

2. carpool program: school-wide effort to organize groups of parents who live near each other to share responsibility of driving children to school. Team encouraged the use of carpoolassist.com, a carpool website that helps parents get in contact with one another to schedule carpools.

Appendix C: Research Linking Physical Activity to Academic Performance

School administrators are first and foremost concerned with the academic performance of their students. To gain the support for SRTS at Clifford Elementary from these stakeholders, we want to emphasize the link between physical activity and student performance. What follows is a compilation of past studies exploring this link to provide a database from which SRTS proponents can draw upon in the future for proof of SRTS's academic benefits.

Literature Reviews

1. Centers for Disease Control

In 2010, the CDC reviewed 50 studies that looked at physical activity (physical education, recess, classroom-based physical activity, and extracurricular physical activities) and academic performance (grades, test scores, on-task behavior, attendance, attention/concentration, memory, and mood).

Results: Correlation between the two factors was positive in 50.5% of the studies, not statistically significant in 48%, and negative in 1.5%.
http://www.cdc.gov/healthyyouth/health_and_academics/pdf/pa-pe_paper.pdf

2. Safe Routes to School National Partnership

The SRTS National Partnership has conducted its own literature review on the relationship between physical activity, weight, and academic achievement.
Results include some of the following:

1. curricular emphasis on physical education could result in small absolute gains in GPA (Trudeau, et al., 2008)
2. heavier children have a greater risk for school absenteeism than normal-weight children (Geier, et al., 2007)
3. compromised motor function in childhood may be an important factor driving the effects of obesity and physical inactivity on academic underachievement (Marko, et al., 2013)

http://www.saferoutespartnership.org/resourcecenter/research/the-relationship-between-physical-activity-weight-and-academic-achievement

Individual Studies

1. School-Based Physical Activity Does Not Compromise Children's Academic Performance

As pressure on children, parents, and school administrators to maximize academic performance increases, there is the perception that time spent on nonacademic pursuits like physical activity negatively impacts student performance in school. By comparing test scores between children who participated in an intervention program and those who did not in 8 schools, this study sought to evaluate the effectiveness of school-based physical activity for maintaining academic performance in a multiethnic group of elementary children.

Results: Children attending schools with no intervention had significantly higher academic performance scores than children attending schools with intervention at baseline. However, at follow-up, there was no difference in scores between the two group. (Ahamed, et al., 2010)

http://www.setantacollege.com/wp-content/uploads/Journal_db/School-Based%20Physical%20Activity%20Does.pdf

2. Exercise is positively related to adolescents' relationships and academics
This study administered to 89 high school seniors a questionnaire that gathered information on their exercise habits, relationships with parents and peers, depressive tendencies, sports involvement, drug use, and academic performance.
Results: Students with a high level of exercise had better relationships with their parents, were less depressed, spent more time involved in sports, used drugs less frequently, and had higher grade point averages than did students with a low level of exercise. (Field, et al., 2012)
http://psycnet.apa.org/index.cfm?fa=search.displayrecord&uid=2001-07201-008

3. Physical Fitness and Academic Achievement in Third- and Fifth-Grade Students
This study examined 259 public school students in third and fifth grades using fitness tests and ISAT results as an academic achievement test.
Results: Physical fitness, specifically aerobic capacity, was positively associated with academic achievement, whereas BMI was inversely related. (Castelli, et al., 2007)
http://www.kapoleims.k12.hi.us/campuslife/depts/electives/dance/Physical%20Fitness%20and%20Academic%20Achievement.2.pdf