

Safe Routes to School Plan

Kailua Elementary School

Kailua, Hawaii

April 2016

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## **I. Introduction**

### **a. Kailua Elementary School**

Established in 1929, Kailua Elementary School (referred to as “KES” or “school” herein) serves students from the community of Kailua. The school includes 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> grades.

The mission of the school is “to provide a child-centered environment that promotes creativity, critical thinking, and excellence. We encourage everyone to be contributing members of our community.

### **b. Safe Routes to School**

Safe Routes to School (SRTS) is a multi-faceted approach to make walking and bicycling to school safer and more accessible for children through addressing the **5Es** – *engineering (infrastructure), education, encouragement, enforcement, and evaluation/planning*. SRTS aims to turn around the decline in children walking and bicycling to and from school that has occurred since the 1960s. In 2005, the federal government established a program to fund SRTS as part of *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)*, which provided state departments of transportation funding dedicated for SRTS programs from 2005 to 2012. In 2012, the State of Hawaii created a special fund for Safe Routes to School (Chapter 19-109, Hawaii Administrative Rules) that allocates a special speeding violation surcharge to the counties for SRTS projects.

Engineering, education, encouragement, enforcement, and evaluation/planning all play important roles in making it safe for children to walk and bicycle to school.

#### **Engineering**

Engineering (infrastructures) changes may include adding bike lanes, improving pedestrian crossings, installing traffic calming measures, and other physical improvements to make it safer to walk or bicycle to school.

#### **Education**

Educational programs can target students, parents, or the community with the objective of making it safer for children to walk or bicycle with existing infrastructure. Programs may include those directly targeted at children that walk and bike or those targeted at parents and community members that drive in and around the school area.

#### **Encouragement**

Encouragement programs work to convince children and parents that biking or walking to school is a safe, fun, and healthy activity. Encouragement activities may include walking and biking school buses, walk and bike to school days, and other initiatives designed to make it safer and more fun to walk and bike. Encouragement activities should be carefully coordinated with education, enforcement, and engineering.

#### **Enforcement**

Enforcement of traffic laws can be very effective in increasing compliance with laws designed to ensure traffic safety and may address laws such as speed limits, stopping at crosswalks, stopping at traffic signals, and bicycle helmet use.

Evaluation and planning is crucial to forming any SRTS program and in monitoring its continued effectiveness and guiding changes.

In July 2015, the Hawaii Bicycling League (HBL) reached out to Kailua Elementary School about the possibility of creating a SRTS plan for the school. Parent Community Network Coordinator Bridget Tapper became involved in the SRTS planning effort for the neighboring Kailua Intermediate School. In October, work began on the SRTS plan for KES.

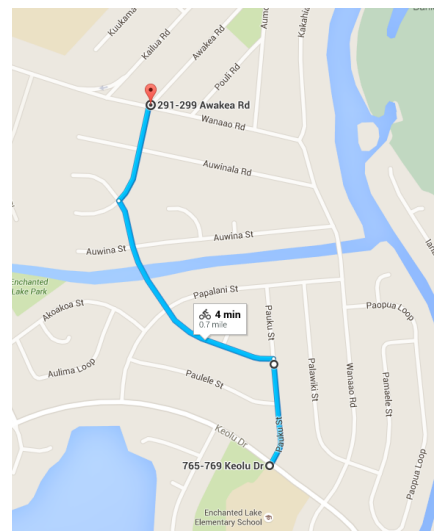
- James Rippard, Principal of KES
- Bridget Tapper, Parent Community Network Coordinator of Kailua Elementary School
- Daniel Alexander, Planning Director at HBL
- KES Parent Teacher Students Association members – due to the extensive PTSA involvement, all the PTSA members were essential team members

- *Where would you like to see the school in 5 years?*
- *What are your concerns?*
- *What solutions do you think are most important?*

### III. Existing Conditions

In 2009, KES with the assistance of the Kailua Urban Design Task Force undertook a SRTS planning effort focused on Kuulei Road between Oneawa Road and Kainalu Drive. The effort involved parent surveys and parent meetings and resulted in a detailed proposal for improving bicycle and pedestrian safety on Kuulei Road through installation of a multi-use path on east side of the street and landscaped medians. The project ended up stalling due to some concern from community members.

The neighboring Kailua Intermediate School, which KES students feed into, finished their Safe Routes to School plan in September 2015. KES PCNC Bridget Tapper was part of



KIS SRTS team and communicated overlapping needs of the two schools.

One of the key engineering needs that came out in the KIS SRTS plan was need for a safer walking and biking connection linking the school to Enchanted Lake.

Wanaao Road was noted by many parents as a major obstacle to children walking and bicycling from the Enchanted Lake neighborhood to KIS. The need is the same for KES, which sits immediately next to KIS and has students from Enchanted Lake. The section on Wanaao Road between Awakea Road and Auwina Street is a major issue it is a very narrow roadway with a 3-5 foot asphalt walkway in rough condition on one side without any curb or berm to provide additional protection. Given the constricted public right-of-way in the Awakea Road to Auwina Street section, improvements that properly accommodate both walking and bicycling would be a major and long-term project. In consideration of this, an alternative route was considered. Using a route that includes Awakea Rd. → Ke Awakea Rd. → Pauku St. does not increase the route distance compared to Wanaao Road when traveling between the corner of Kailua Road/Wanaao Road and Wanaao Road/ Keolu Drive. A bicycle boulevard treatment would work to reduce traffic levels and traffic speeds along this route, thereby making the route safer and more inviting for bicycling. A bicycle boulevard treatment may involve the following elements:

- Speed humps
- Mini traffic circles
- Reduce speed limit to 15mph or 20mph
- Elimination of the center line
- Sharrows and bicycle route signage
- Wayfinding finding on route and directing to route

**Figure 1 - Wanaao Road bicycle boulevard alternative route**



**Figure 2 - Bicycle boulevard example**



As seen in Figure 10, the route between Kailua Road and the bicycle boulevard section would require traveling on a single block portion of Wanaao Road. This section, shown in Figure 9 should have the mauka side walkway widened and protected with a curb or asphalt berm to provide a safer connection.

The above engineering issue and solution concept was sent by KIS to the City and County of Honolulu Department of Transportation Services (DTS) with a request for action. DTS worked in conjunction with KIS, KES, and HBL to prepare a funding application for the “Keiki Corridor project” and submitted this in December 2015.

## **b. Exiting Walking and Biking Infrastructure Audit**

An audit was conducted of existing walking and bicycling infrastructure within one-mile of Kailua Elementary School. The audit looked for bike routes, bike lanes, bike paths, signalized crossings, and paved walkways (recording whether on both sides or one). Notable infrastructure for bicycling includes the bike lanes on Kainalu Drive extending from Kailua Road to Kainui Drive, the bike path through Kailua Beach Park extending towards Lanikai, and the bike lanes on a short section of Kuulei Road. See Figure 3 for a map of existing walking infrastructure and Figure 4 for a map of existing bicycling infrastructure.

### c. Bicycle and Pedestrian Traffic Injury Data

The Hawaii Department of Health provides a map with the locations of traffic injuries requiring Emergency Medical Services response. Bicycle and pedestrian traffic injuries are available from 2007 to 2014. It should be noted that these injuries are relatively serious, as they warranted an ambulance response. These were analyzed as part of the SRTS planning process. Kuulei Road between Oneawa Street and Kainalu Drive stands out as having particularly high levels of bicycle traffic injuries relative to area roads. Figure 5 shows bicycle and pedestrian injuries for the years of 2013 and 2014.

#### d. Parent Surveys

Parent Surveys were sent home with all students in September 2015. A standardized parent survey form provided by the National Center for Safe Routes to School was used. One hundred and seventy-two completed surveys were received and entered into the National Center for Safe Routes to School Data Collection System. The Parent Survey responses show the following. (continue on Page 5).



### Figure 3 - Walking Infrastructure





Figure 4 - Biking Infrastructure



Figure 5 - Bicyclist & Pedestrian Injuries 2013-14

### ***Getting to/from School***

Nearly two-thirds of students were getting to (63%) and from (62%) school by family vehicle. A significant amount of students were walking (21% to, 24% from) and biking (4% to, 5% from). When looking at students that live less than 1 mile from the school, walking (28% to, 32% from) and biking (6% to, 7% from) rates are considerably higher. See Figure 6 for more information.

Nearly half (47%) of parents reported that their child had asked permission to walk or bike to/from school.

### ***Parents Concerns***

The Parent Survey form asks parents if 12 different factors affect their decision to allow their child to walk or bike to/from school. For parents whose child does not currently bike or walk to/from school the top three most noted factors were distance, safety of intersections and crossings, and amount of traffic along route. The list of all 12 factors with parents saying that if the factor changed it would impact their decision to let their child walk or bike to/from school is provided in Figure 7.

### ***e. Travel Tallies***

Travel tallies, using the standardized process and form provided by the National Center for Safe Routes to School, were taken by homeroom teachers in 11 classrooms. Each teacher asked for students to raise their hand based on how they got to school and how they intended to get home from school. The numbers shown in Figure 8 are largely consistent with those in the Parent Survey responses.



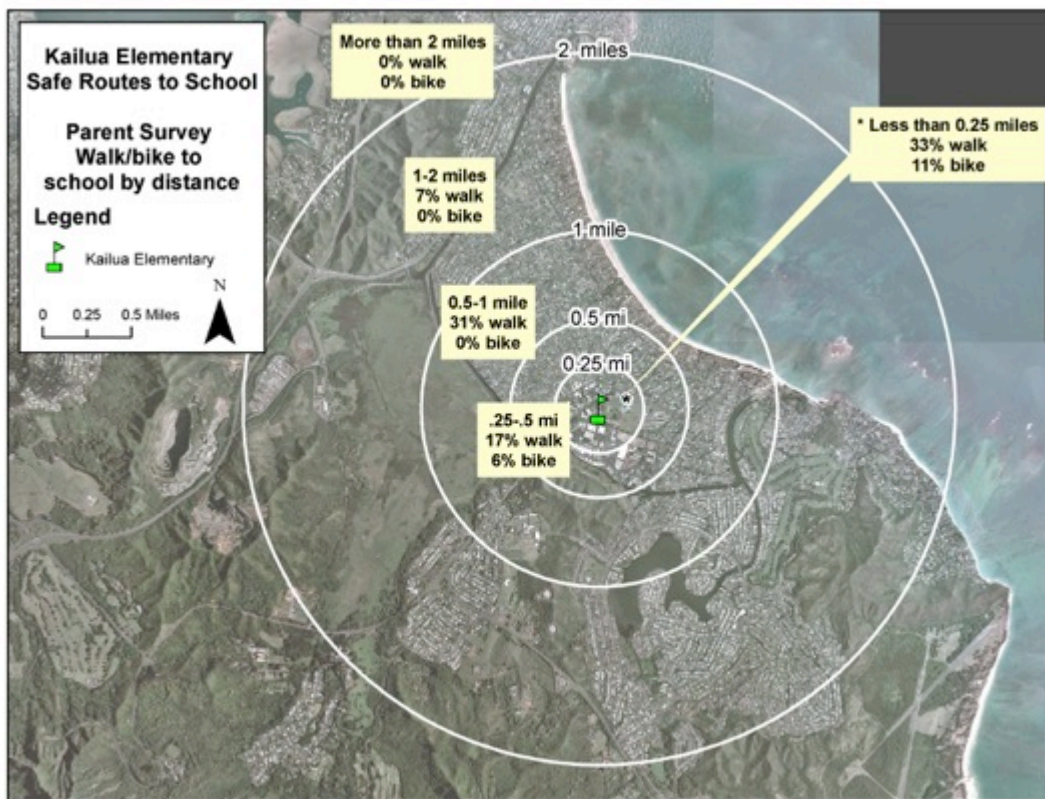


Figure 6 - Walking and Biking Rates by distance from school

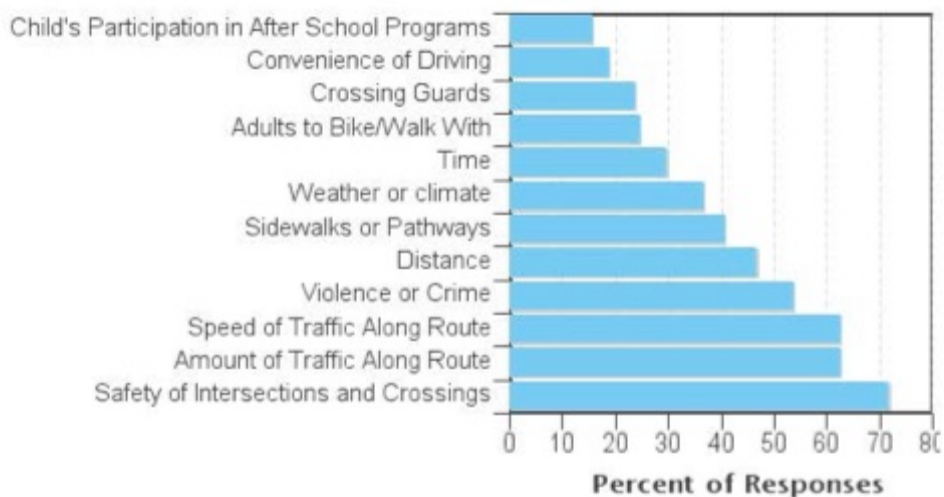


Figure 7 - Factors that if changed would impact the decision to allow their child to walk or bike

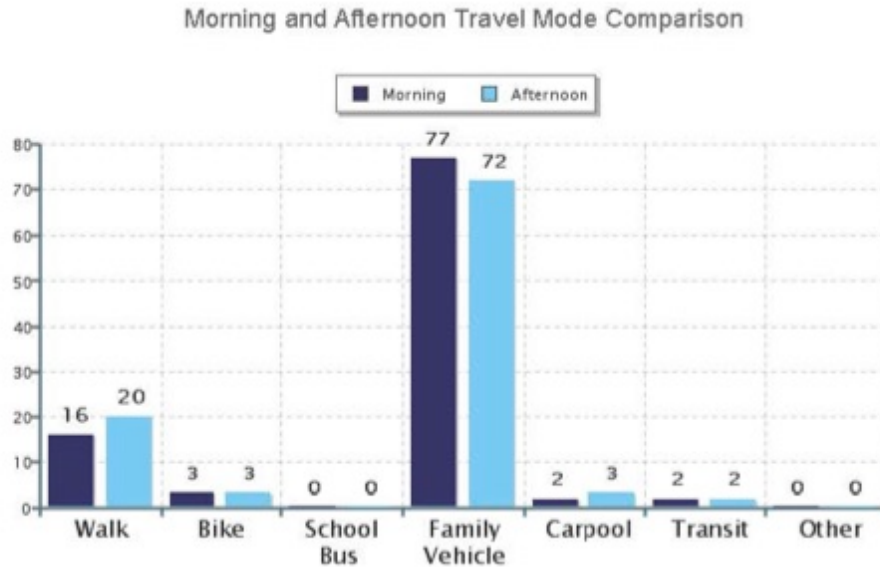


Figure 8 - Travel Tallies for Getting to/from School

## IV. Issue & Solution Identification

Based on existing conditions, parent surveys, travel tallies, traffic injury data, and feedback during the SRTS planning meeting, the SRTS team identified key issues and some solutions. This list highlights those that were identified as most important.

### a. Issues

#### *Engineering*

There are a number of engineering or infrastructure needs to make walking and bicycling to and from KIS safer and more attractive.

- Kuulei Road between Kailua Road and Kainalu Drive – This multi-lane road lacks any bicycle facility, yet must be used or crossed by almost all students accessing campus.
- Kuulei Road/Aulike Street intersection crossing – The crosswalk at this intersection involves crossing four lanes of traffic and 2 parking lanes without a signal or a median refuge. This crosswalk is an important access for students walking and biking. See Figure 10 for photo of this crossing.
- Kailua Road between Kuulei Road and Wanaao Road – Conditions on this heavily traveled street are dangerous for bicycling and walking. Between Kuulei Road and the Kailua District Park there are paved sidewalks on both sides of the street and no dedicated bikeways. Between Kailua District Park and Aoloa Street there is a paved sidewalk on one side on the street and bike lanes in both direction. Between Aoloa Street and Wanaao Road there are varying width paved shoulders, no paved sidewalks and no dedicated bikeways. The varying and inadequate walking and biking facilities combined with the high traffic volumes and high speeds make this section of road dangerous to those that walk and bicycle.
- Wanaao Road between Auwina Street to Kailua Road – This street is very narrow and has a 3-4ft rough paved walkway on one side, which is shared with bicyclists due to the high volumes and high speed nature of Wanaao Road. Wanaao Road

serves as a link between the school and the Enchanted Lake community. While shown in City maps as a bike route, the road lacks any markings or signage. See Figure 9 for a photo of this section.

- Kailua Road between Wanaao Road and Kalaheo Avenue – Conditions are dangerous for walking and bicycling. The road is very narrow and has 3-5ft rough paved shoulder on mauka-bound side and 3-5ft rough paved walkway on the makai-bound side, both of which are shared by bicyclists, due to the high traffic nature of the road. While shown in City maps as a bike lane, the road lacks any markings or signage indicating the presence of a bike lane, nor does it appear to meet the minimum standards for a bike lane.
- Kainalu Drive between Kailua Road and Kuulei Road – The section has no sidewalks. The bike lanes on each side of the street that serve as both bicyclists and pedestrians. The lack of any physical separation for bicyclists and pedestrians creates an element of danger.
- 



Figure 9 - Wanaao Rd near Awakea Rd



Figure 10 - Kuulei Rd crosswalk at Aulike St

- Maluniu Avenue and Oneawa Street walkways – Both of these streets only have a walkway on one side.
- School zone reduced speed – Due to City rules setting the school zone speed at 25mph, the speed limit around the school is not reduced. The speed limit is 25mph, which can be hazardous with the unsignalized crossings and unprotected bike lanes.

### **Education**

- Students don't currently receive any formal bicycle safety education.
- Drivers often fail to yield to pedestrians at marked crosswalks, which may be the result of lack of awareness about the law requiring drivers to yield.
- The safest walking and biking routes are largely unknown by students and parents; students generally ride on the roads where their parents drive. On-street signage or a safe bike/walk routes map could help address this, where safer alternative routes exist.

### **Encouragement**

- There is an opportunity for bike and walk to school days and other encouragement activities.
- A program that involves bike helmet giveaways and education could help ensure students that bicycle use a helmet.

### **Enforcement**

- There is a need for a crossing guard at the intersection of Kuulei Road/Aulike Street.
- Speeding, running red lights, failure to stop for pedestrians, and other traffic violations play a role in making it more dangerous for children to walk and bike. Increased enforcement could reduce these illegal and dangerous activities.

### **Evaluation/Planning**

By way of this SRTS plan, extensive evaluation and planning has taken place. There will be a need for evaluation and planning on an ongoing basis to determine if programs are effective and possible changes.

## **b. Solutions**

Based on the identified issues and looking at SRTS best practices for the 5Es, the SRTS team identified a number of solutions. The below highlights two engineering solutions that warrant extensive explanation, a number of other important solutions are outlined in the Action Plan section.

### **Kuulei Road reconfiguration**

Most students, whether accessing the school by vehicle drop-off, foot, or bike, enter the school through Kuulei Road. The current design is hazardous for walking and bicycling. The most pressing issues are the need for pedestrian crossing improvements to the Aulike Street/Kuulei Road crossing and need for a dedicated bikeway along the length of the road between Kailua Road and Kainalu Drive. There are also significant speeding issues that provide a danger to students walking, biking, and in motorized vehicles.

Kuulei Road's crossing at Aulike Street involves crossing four lanes of traffic and 2 parking lanes without a signal or a median refuge. Traffic injury data shows alarming high number of bicycle injuries with 10 serious injuries in the last 5 years on this 0.3-mile stretch of road.



Based on the needs and existing traffic conditions, a road “right sizing” should be considered. The 4 to 3 “right sizing” (also known as “road diet”) reconfigures a road creating new space for non-motorized users and making the road safer for all users without adversely impacting capacity. The Kuulei Road right-sizing would reconfigure the road to 1 through lane in each direction, and a center left turn. The “additional” lane of width could be used to create dedicated biking and walking space either in the form of bike lanes or a multi-use path. This configuration would provide room for pedestrian safety medians and curb extensions. The right sizing would have major safety benefits for all roadway users, while continuing to accommodate the 15,000-16,000 average daily vehicle trips. The City has implemented a right sizing on a section of Keolu Drive in the Enchanted Lakes neighborhood with great success and the recently completed on Kamehameha IV Road in Kalihi to a very positive reception by the two schools fronting the road.

Figure 11 shows Kuulei Road as it currently is and Keolu Drive, which could serve as a model for the right sizing reconfiguration. Note that an alternative that includes a multi-use path instead of bike lanes should be considered.



Figure 11 - Kuulei Road currently and Keolu Drive "right sizing" model

#### ***KES, KIS, Kailua District Park Super Block Multi-Use Path***

Kailua Road, Kainalu Drive and Kuulei Road wrap the super block from surrounding KES, KIS, and Kailua District Park. Improving these roads would touch the route of every single student accessing KES, as well as KIS. With the above described Kuulei Road “right sizing”, a multi-use path wrapping the entire super block should be considered. This would provide much needed walking and biking improvements on Kailua Road and would add provide protection and safety for those traveling on Kuulei Road. A off-road, multi-use path is of particular value when considered children K-5 grades as it provides physical separation and enhanced safety.



Figure 12 - Map of KES, KIS, District Park Super Block Multi-Use Path

## V. Action Plan

The action plan is where the SRTS plan comes to life; it is with the implementation of these actions that it will become safer to walk and bike to and from school and more students will do so. Many of these actions must be taken by parties besides KES and will therefore require further coordination to see what action is possible and a schedule for implementation. Table 1 outlines specific actions within each of the *5Es* SRTS strategies, action descriptions, involved parties, and specific actions.

The Wanaao Road Bicycle Boulevard Alternative was submitted by the City Department of Transportation Service for a Hawaii Department of Transportation-administered SRTS grant in December 2015. The project was submitted to serve Kailua Intermediate School and KES.

Table 1 - Action Plan Matrix

Strategies	Description	Involved Parties	Action
<b>Engineering</b>	Reconfigure Kuulei Road between Oneawa Street and Kainalu Drive to have bikeways and improved crossings	DTS	Request DTS consideration
	As part of the reconfiguration of Kuulei,	DTS	Request DTS



<b>Strategies</b>	<b>Description</b>	<b>Involved Parties</b>	<b>Action</b>
	install a pedestrian safety crossing island at the intersection with Aulike Street		consideration
	Install a multi-use path around the super block of Kailua Road, Kuulei Road and Kainalu Drive.	DTS	Request DTS consideration
	Create bikeways on Kailua Road between Oneawa Street and Hamakua Drive	DTS	Request DTS consideration
	Improve walkways on Maluniu Avenue between Uluniu Street and Kalama Street	DTS	Request DTS consideration
<b><i>Education</i></b>	BikeEd - Bicycle Safety Workshops	KES, HBL	KES & HBL action
	Safe Routes bike map	KES, HBL	KES & HBL action
<b><i>Encouragement</i></b>	Bike/Walk to School Day	KES, HBL	Consider SRTS application
	Walking/Biking School Bus	KES, HBL	KES & HBL action
<b><i>Enforcement</i></b>	Increased traffic enforcement around campus	HPD	Request HPD consideration
<b><i>Evaluation/Planning</i></b>	Annually evaluate SRTS programs	KIS, HBL	KIS & HBL action

DTS – City and County of Honolulu Department of Transportation Services

HBL – Hawaii Bicycling League

HPD – Honolulu Police Department

KES – Kailua Elementary School