

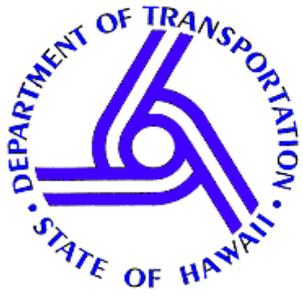


Highways Division

KALIHI STREET IMPROVEMENTS

Nimitz Highway to School Street



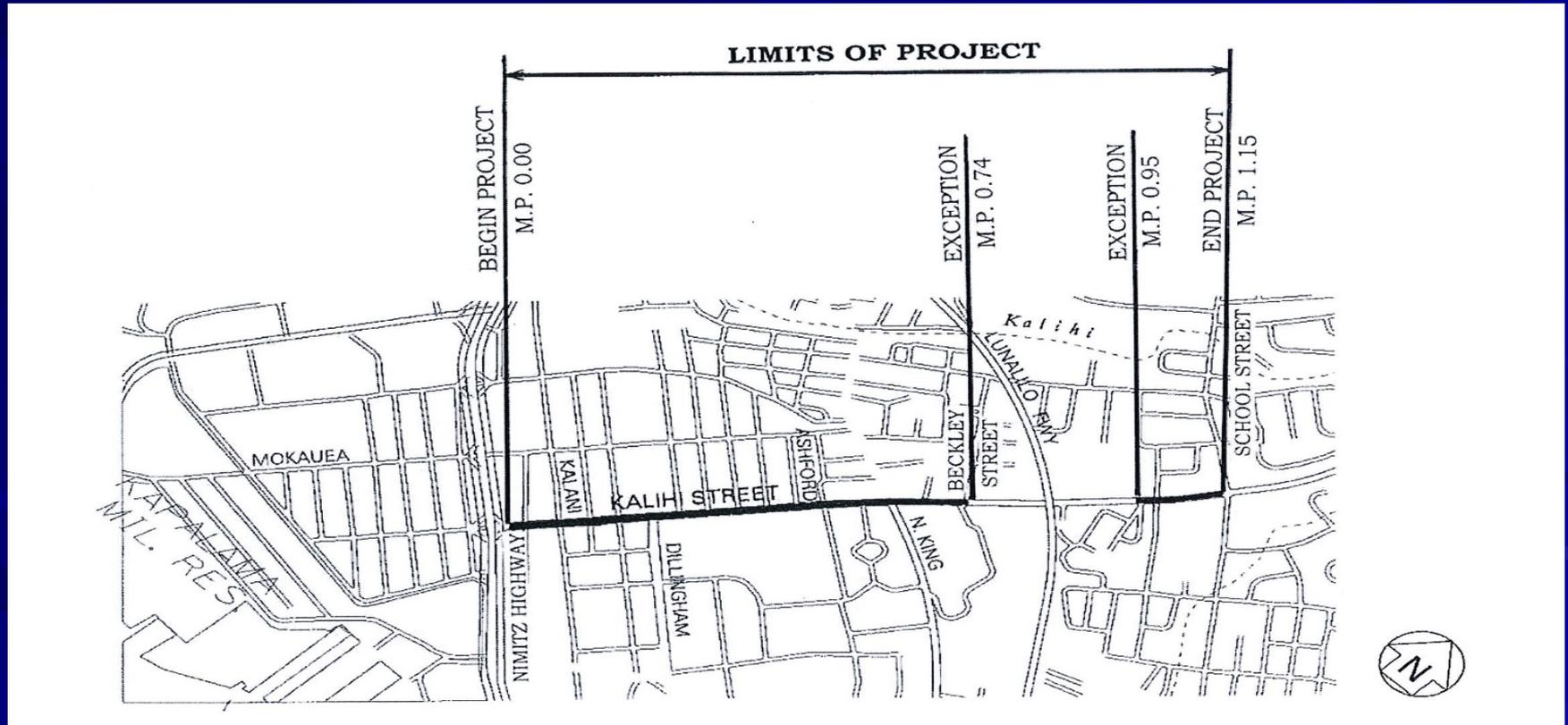


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KALIHI STREET IMPROVEMENTS

Nimitz Highway to School Street

Project Location





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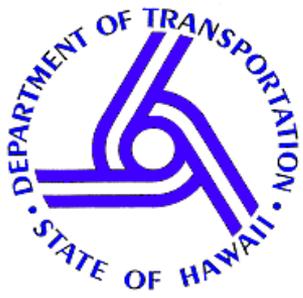
KALIHI STREET IMPROVEMENTS

Nimitz Highway to School Street

Project Purpose and Need

- 16,700 to 26,100 vehicles per day
- Roadway last resurfaced in 1995
- Deteriorated road surface due to years of heavy use
- Road surface, curbs and gutters, and other features need repair





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KALIHI STREET IMPROVEMENTS

Nimitz Highway to School Street

Project Scope

- **Cold planing**
- **Resurfacing**
- **Repairing weakened pavement areas**
- **Replacing curb, gutter & sidewalk on Diamond Head side**
- **Replacing planting strip with concrete to widen sidewalk**
- **Replacing drain inlet grates**
- **Installing loop detectors, pavement markings, striping and signing**
- **Adjusting utility manholes/handholes and pullboxes**
- **Relocating portion of chain link fence and widening sidewalk at Farrington HS corner at King Street**





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KALIHI STREET IMPROVEMENTS

Nimitz Highway to School Street

Environmental Clearances

- **NEPA – Categorical Exclusion** (pending Section 106)
 - Section 106 (determination letter at SHPD for concurrence)
 - Section 7 (approved)

- **HEPA (Section 343) – EIS Exemption** (pending)

- **NPDES permit** (approved)

- **Community Noise Variance** (pending public informational meeting)



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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY



— TOTAL STUDY AREA
— FOCUSED STUDY AREA



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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

- **DATA COLLECTION**

- COLLECTED JAN 24, 12 HR PERIOD
- PEDESTRIAN AND VEHICLE VOLUMES WERE TAKEN THROUGH VIDEO AND MANUAL COUNTS
- PEDESTRIAN BEHAVIOR WAS OBSERVED THROUGH FIELD OBSERVATIONS

- **DATA PROCESSING**

- PEDESTRIAN VOLUMES EXCEED 100 PER PEAK HOUR
- AM PEAK IS A STEADY FLOW OF STUDENTS
- PM PEAK HAS A LARGE CONCENTRATION OF STUDENTS CROSSING
- PEDESTRIANS COMPRISED OF SCHOOL CHILDREN AND GUARDIANS
- DRIVERS ARE GENERALLY AWARE PEDESTRIANS
- SPEED IS GENERALLY WITHIN THE SPEED LIMIT
- SB VOLUMES RELATIVELY LIGHT COMPARED TO NB TRAFFIC, WHICH IS ABOUT DOUBLE THE SB VOLUMES

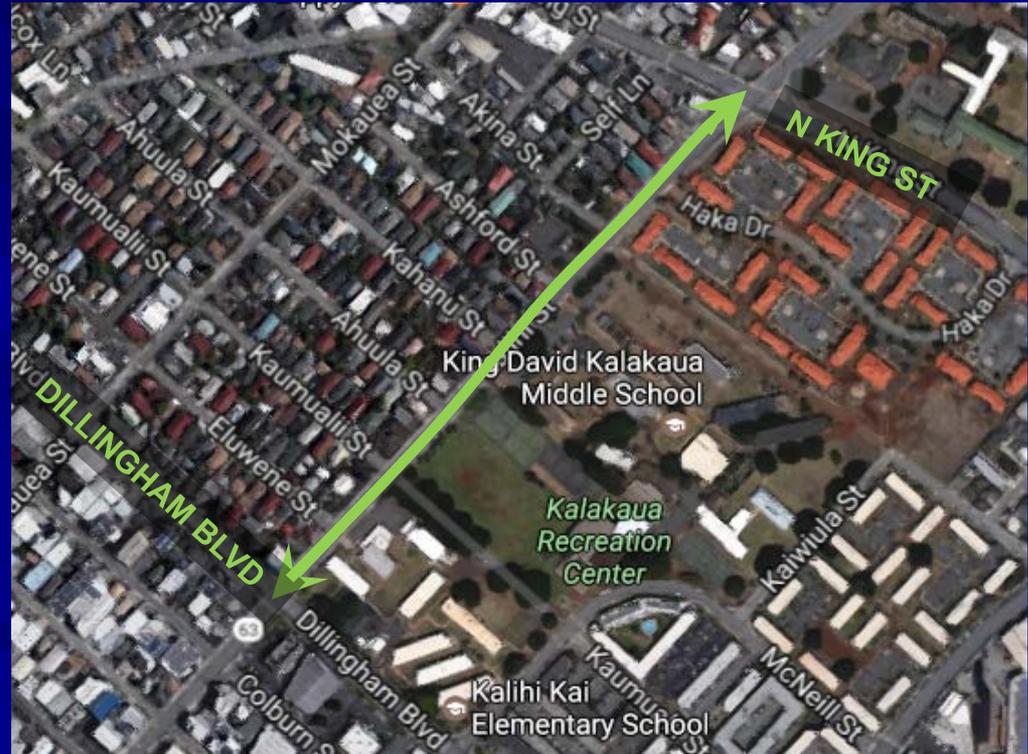


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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY ALTERNATIVES UNDER EVALUATION

1. RRFB
2. SPEED TABLE
3. TRAFFIC SIGNAL
4. LANE SIZING
5. LANE SIZING
with TRAFFIC SIGNAL

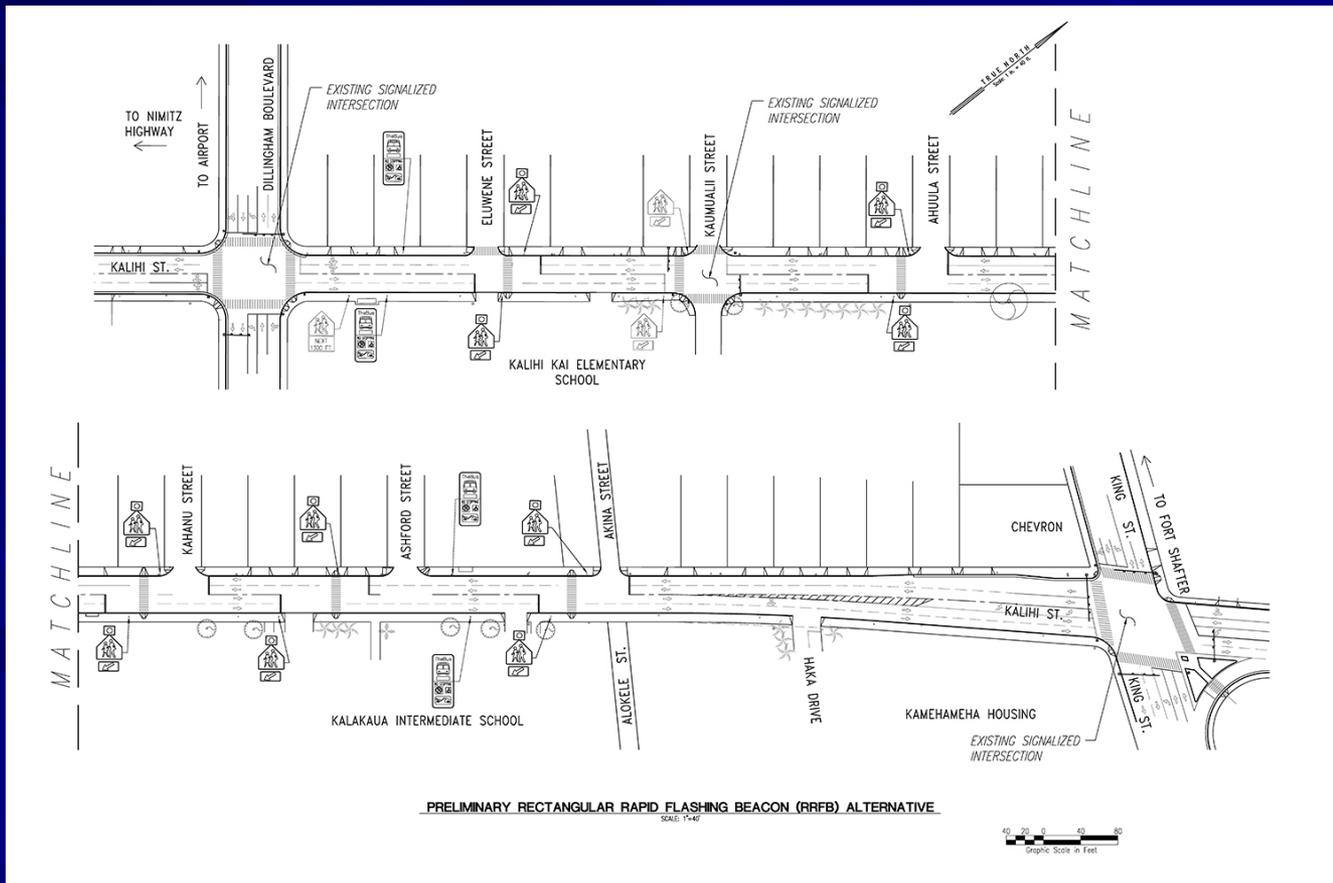




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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY RECTANGULAR RAPID FLASHING BEACON (RRFB) ALTERNATIVE





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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY RECTANGULAR RAPID FLASHING BEACON (RRFB) ALTERNATIVE



***Example of an RRFB in operation at alternate location**

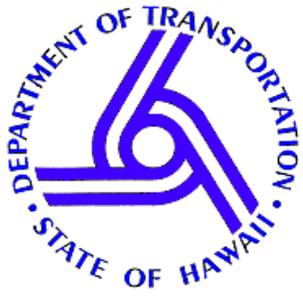


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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY RECTANGULAR RAPID FLASHING BEACON (RRFB) ALTERNATIVE

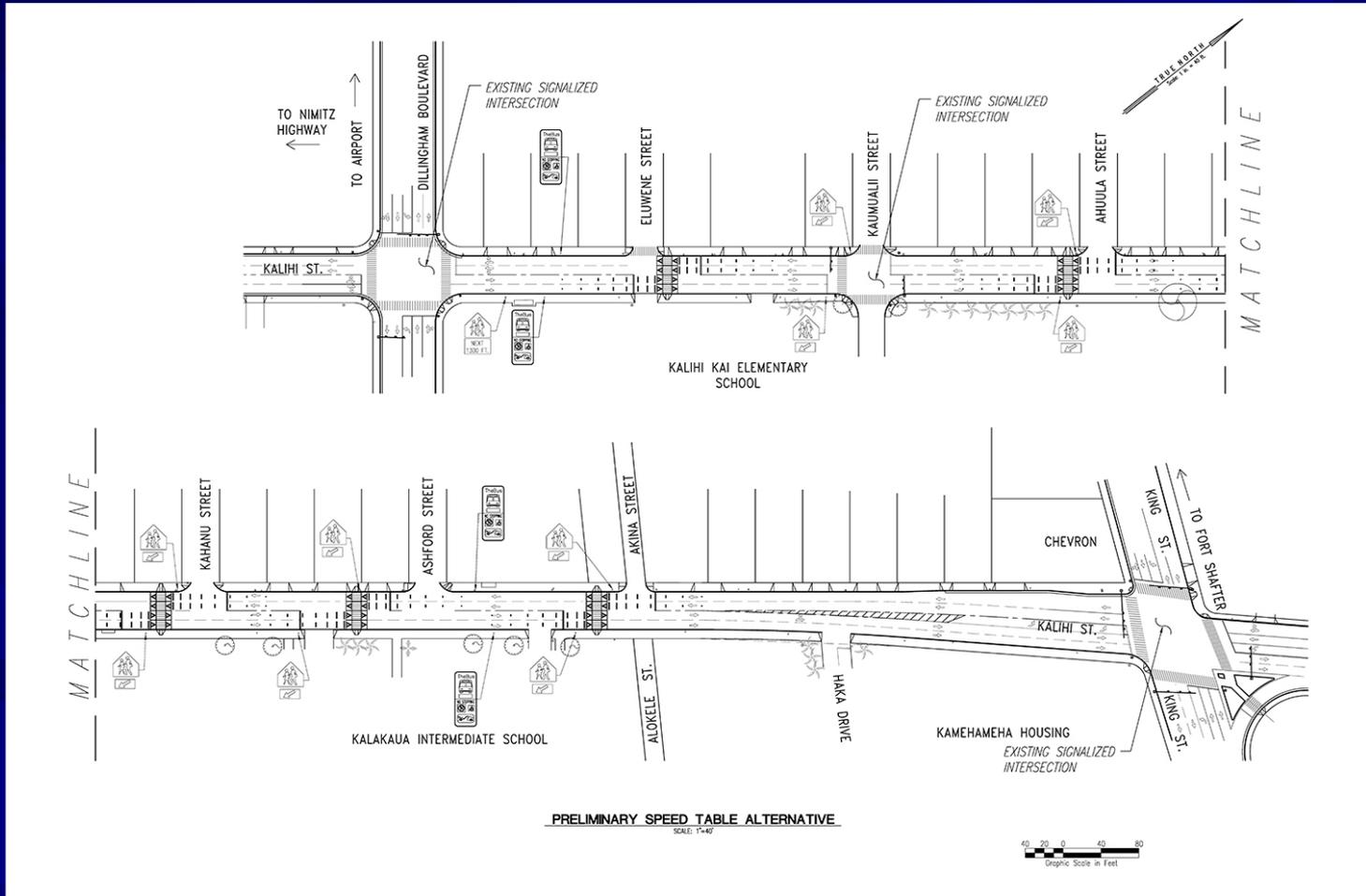
| Benefits | Concerns |
|---|---|
| <ul style="list-style-type: none">• Increases the acknowledgement of pedestrians• Potential for longer gap time for pedestrians to cross | <ul style="list-style-type: none">• Unfamiliar systems may confuse drivers• Slows vehicle flow and will contribute to vehicular queuing• Close proximity of crossings may create depth confusion• There is no countdown to know when beacons will stop flashing• Potential for pedestrians to be in travel lane when flashing beacon stops• Drivers may stop unnecessarily at stop bar when no pedestrians are present |



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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY SPEED TABLE ALTERNATIVE





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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY SPEED TABLE ALTERNATIVE



***Example of a speed table in operation at alternate location**

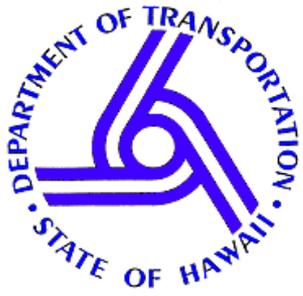


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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY SPEED TABLE ALTERNATIVE

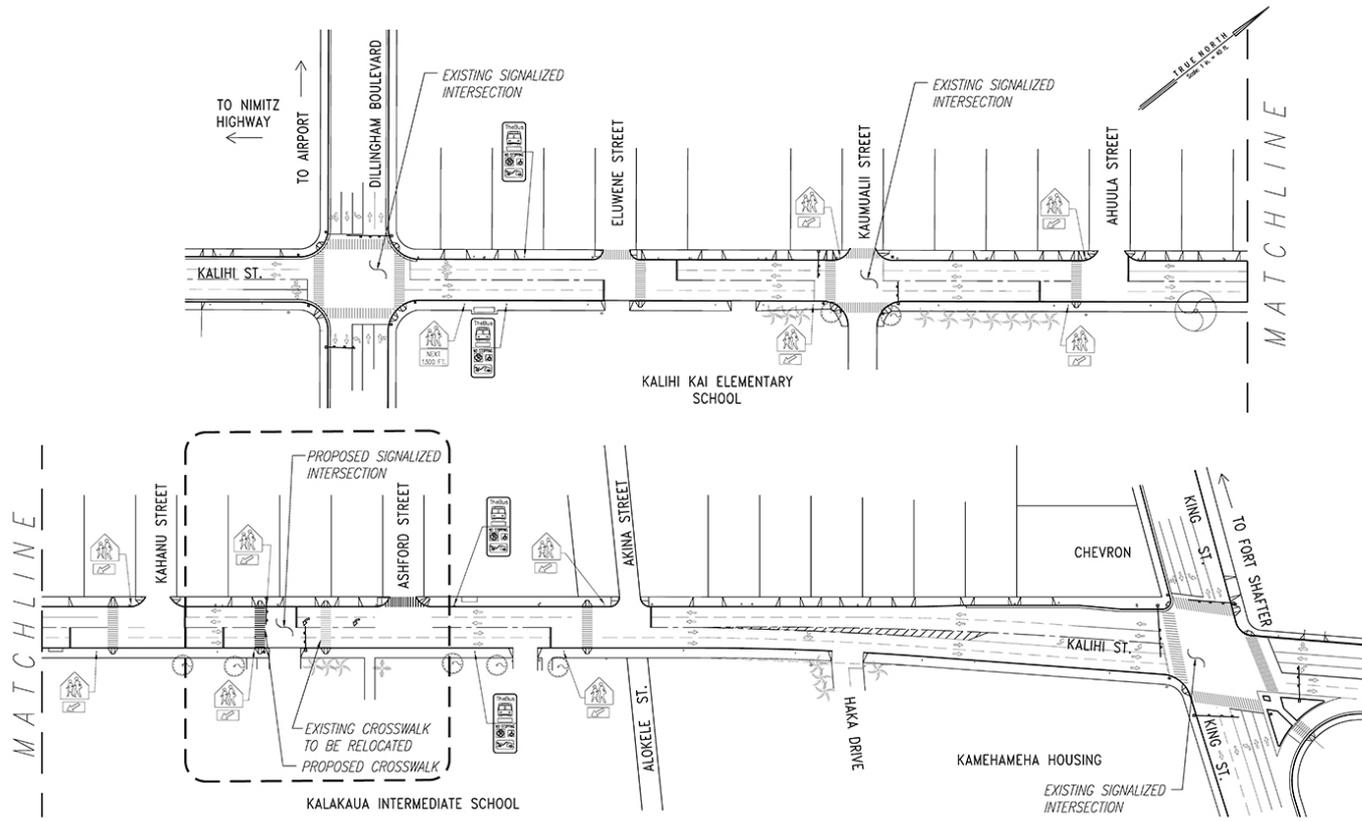
| Benefits | Concerns |
|---|--|
| <ul style="list-style-type: none">• Increase the acknowledgement of pedestrians• Reduces traffic speed | <ul style="list-style-type: none">• Slows vehicle flow and may contribute to vehicular queueing• Potential for noise in residential area• Difficult to remove once installed• Slows emergency response vehicles• Maintenance issue of having to repaint striping |



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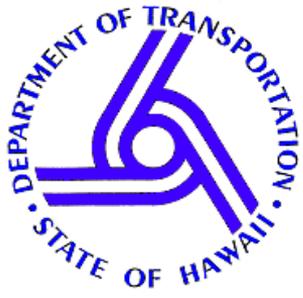
KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY TRAFFIC SIGNAL ALTERNATIVE



PRELIMINARY TRAFFIC SIGNAL ALTERNATIVE
SCALE: 1"=40'





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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY TRAFFIC SIGNAL ALTERNATIVE



**PRELIMINARY TRAFFIC
SIGNAL ALTERNATIVE**



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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY TRAFFIC SIGNAL ALTERNATIVE

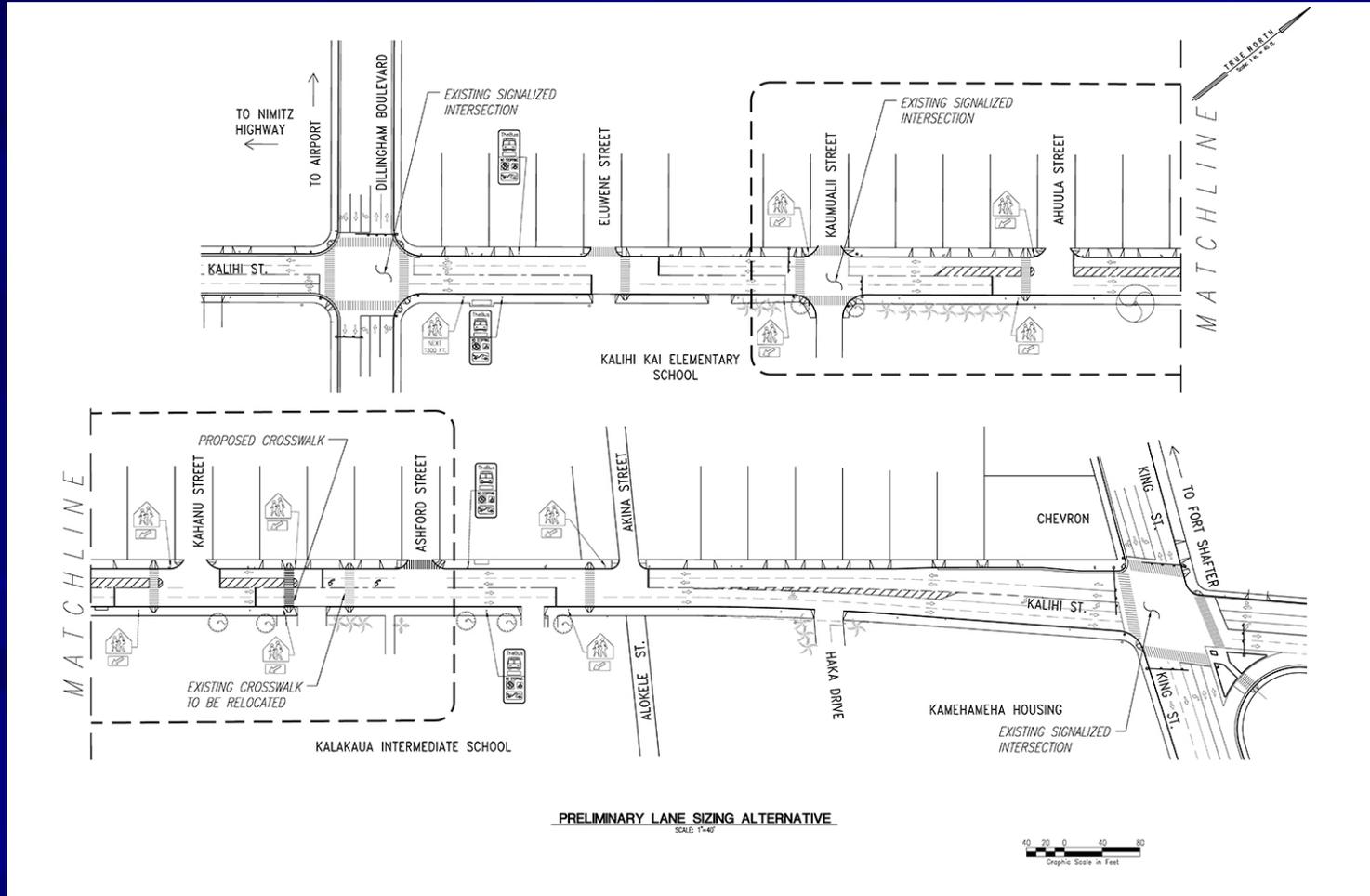
| Benefits | Concerns |
|--|---|
| <ul style="list-style-type: none">• Pedestrians protected from traffic• Regulation of left turns going into Kalakaua Middle School• Will be synchronized to create a reduced traffic break between Ashford Street and Kaumualii Street allowing for longer gap periods for pedestrian crossings | <ul style="list-style-type: none">• May slow vehicular flow and may contribute to vehicular queueing• Traffic signal is only provided at Kaumualii Street. Other crossings are still unprotected |

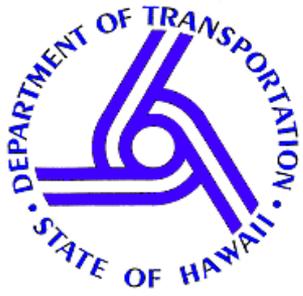


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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY LANE SIZING ALTERNATIVE





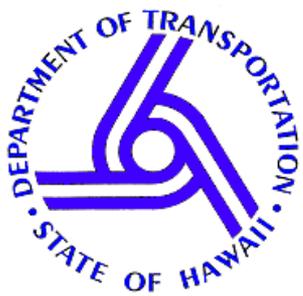
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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY LANE SIZING ALTERNATIVE



**PRELIMINARY LANE
SIZING ALTERNATIVE**

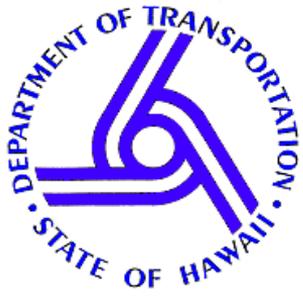


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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY LANE SIZING ALTERNATIVE

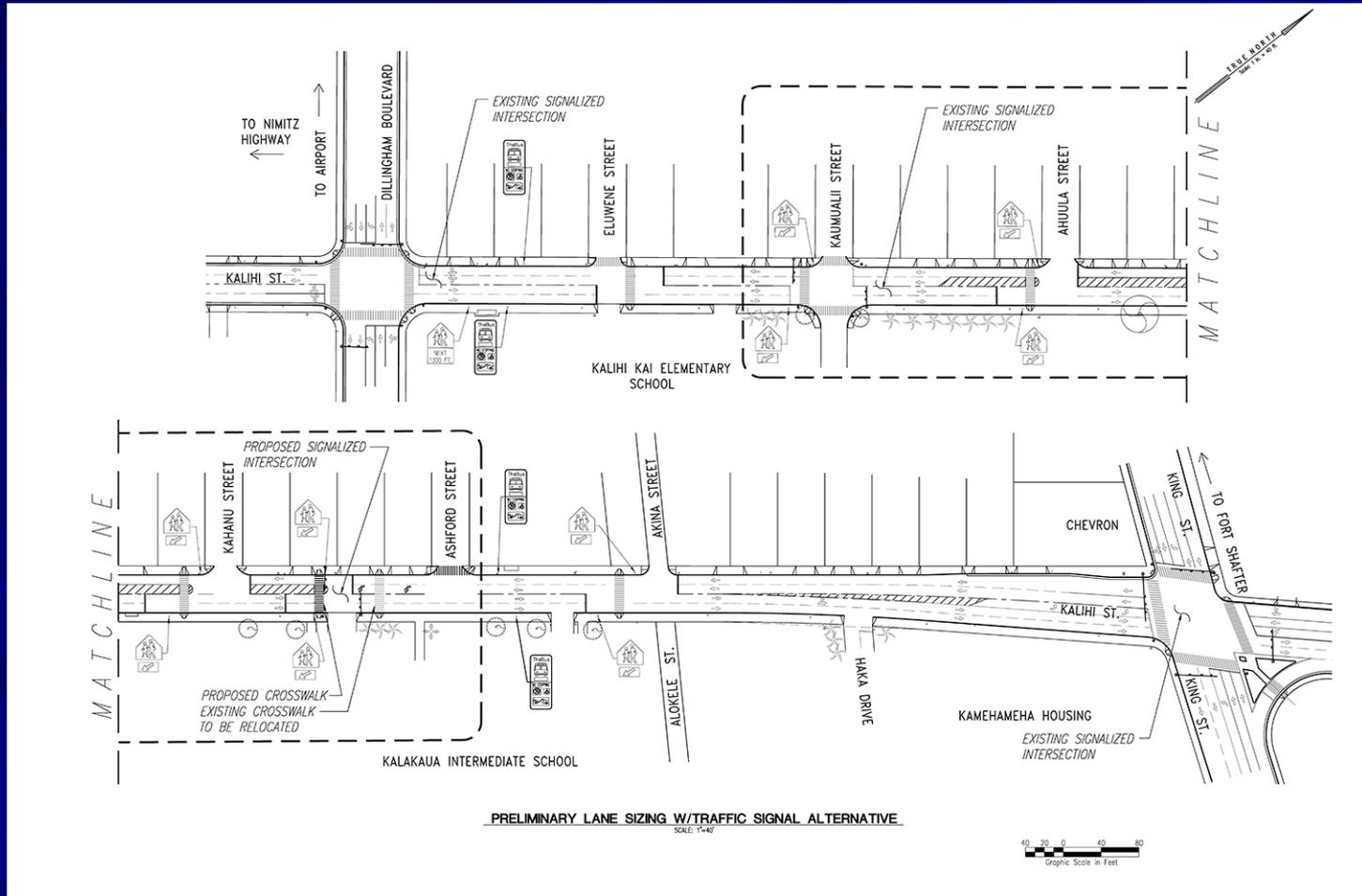
| Benefits | Concerns |
|---|--|
| <ul style="list-style-type: none">• Pedestrians cross three lanes instead of four lanes• Potential to reduce traffic speed• Provides refuge for pedestrians• Provides ability for pedestrians to cross in two stages | <ul style="list-style-type: none">• Reduces the capacity for southbound traffic• Need to coordinate with garbage pickup and mail delivery• Potential for queueing from right turns onto side streets• Potential for residents along Kalihi Street to encroach into striped median |

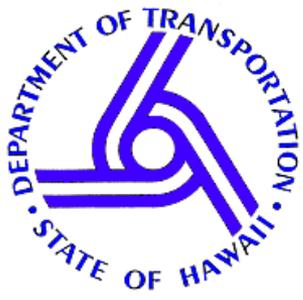


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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY LANE SIZING WITH TRAFFIC SIGNAL ALTERNATIVE

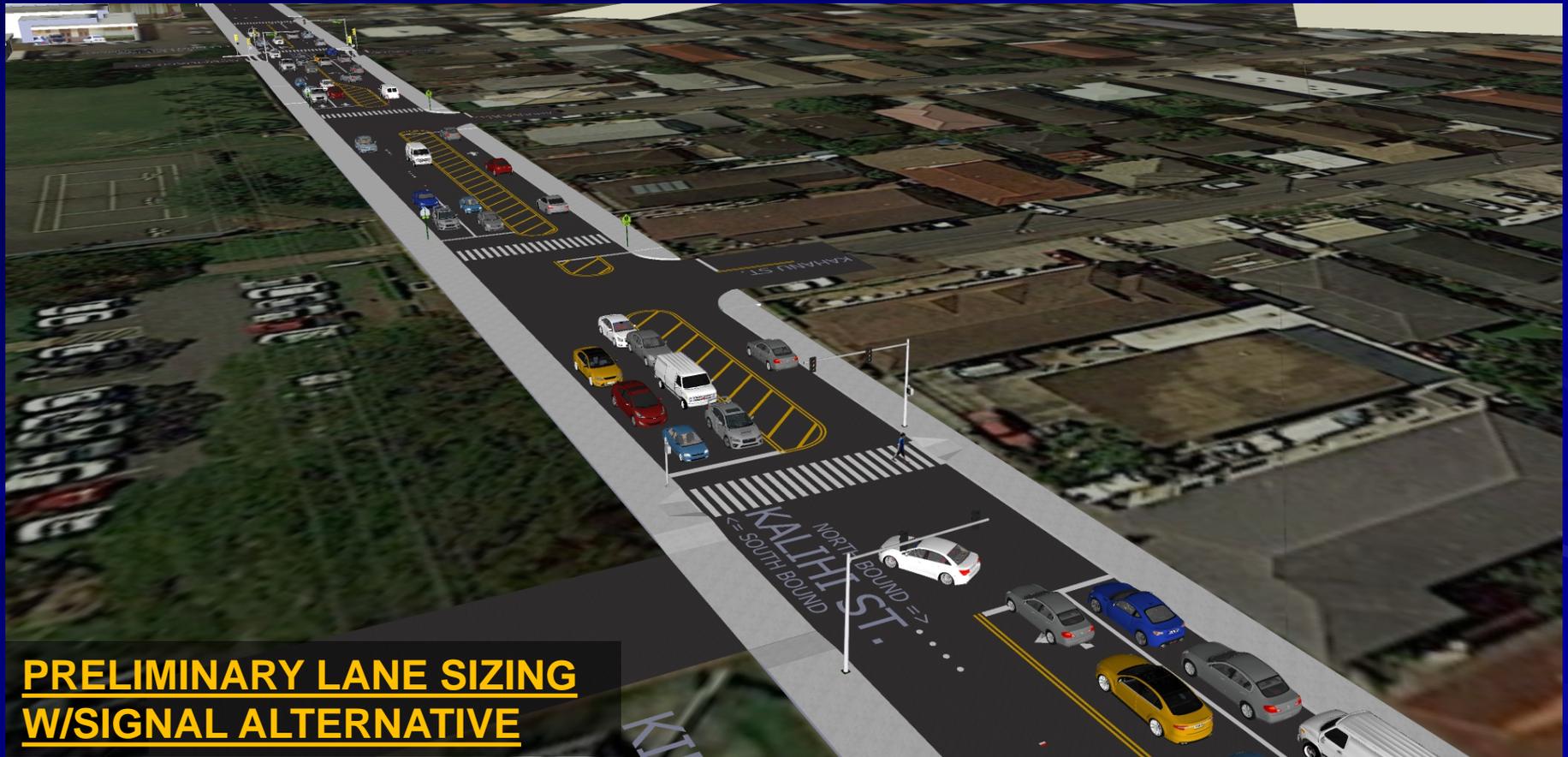




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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY LANE SIZING WITH TRAFFIC SIGNAL ALTERNATIVE



**PRELIMINARY LANE SIZING
W/SIGNAL ALTERNATIVE**



Highways Division

KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY LANE SIZING WITH TRAFFIC SIGNAL ALTERNATIVE

| Benefits | Concerns |
|---|--|
| <ul style="list-style-type: none">• Pedestrians protected from traffic• Regulation of left turns going into Kalakaua Middle School• Will be synchronized to create a reduced traffic break between Ashford Street and Kaumualii Street allowing for longer gap periods for pedestrian crossings• Pedestrians cross three lanes instead of four lanes• Potential to reduce traffic speed• Provides refuge for pedestrians• Provides ability for pedestrians to cross in two stages | <ul style="list-style-type: none">• May slow vehicular flow and may contribute to vehicular queueing• Traffic signal is only provided at Kaumualii Street. Other crossings are still unprotected• Reduces the capacity for southbound traffic• Need to coordinate with garbage pickup and mail delivery• Potential for queueing from right turns onto side streets• Potential for residents along Kalihi Street to encroach into striped median |



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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY

PRELIMINARY ALTERNATIVES UNDER FURTHER CONSIDERATION

- 1. TRAFFIC SIGNAL**
- 2. LANE SIZING**
- 3. LANE SIZING with TRAFFIC SIGNAL**



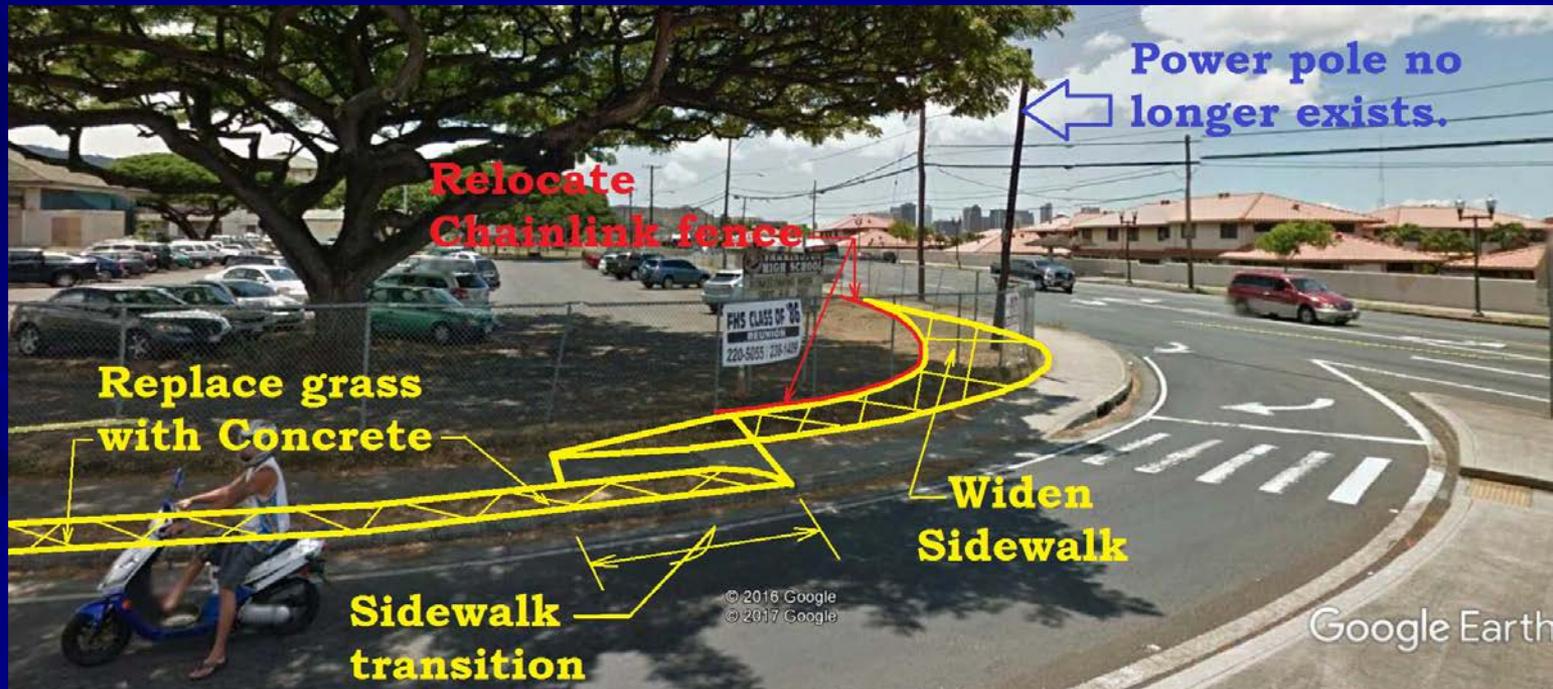
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KALIHI STREET IMPROVEMENTS

Nimitz Highway to School Street

Farrington High School corner

- Relocate portion of chain link fence and widen sidewalk
- Greater sight distance for vehicles turning right from King Street
- Wider sidewalk for pedestrians to use





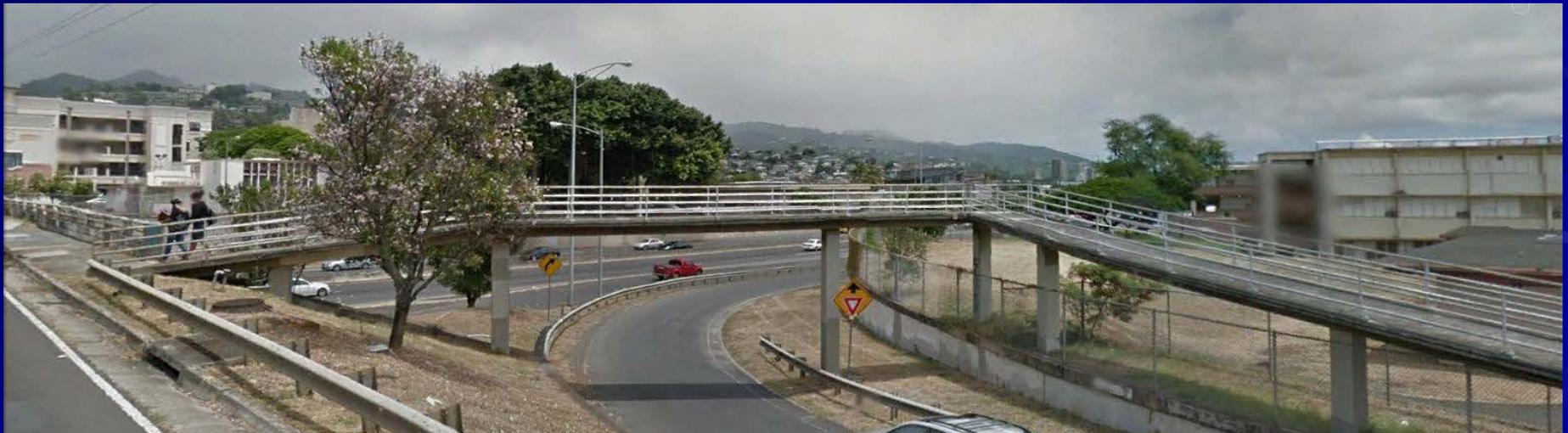
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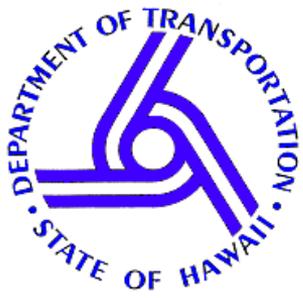
KALIHI STREET IMPROVEMENTS

Nimitz Highway to School Street

Pedestrian Bridge

- Railing is currently 36 inches high
- New railing will be 42 inches high to accommodate bicyclists
- Chain link mesh behind the railing will be added to prevent falls through the railing
- This work to be done under a separate procurement





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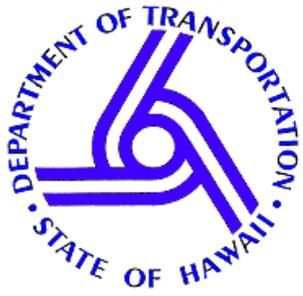
KALIHI STREET IMPROVEMENTS

Nimitz Highway to School Street

Bus Shelter near Ashford Street

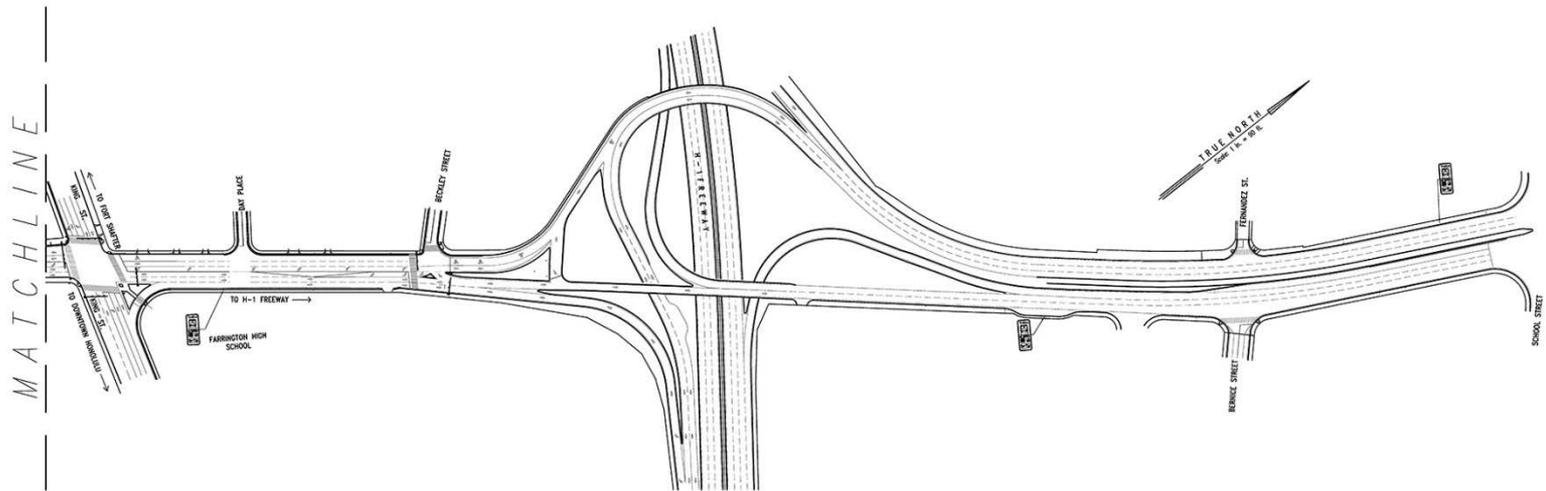
- The bus shelter would be relocated into HECO property
- The sidewalk would be free of this obstacle, leaving more room for pedestrians
- This work to be done under a separate procurement

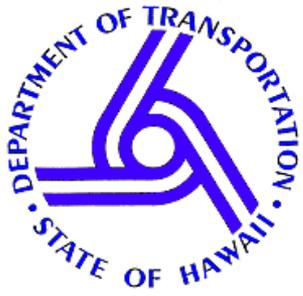




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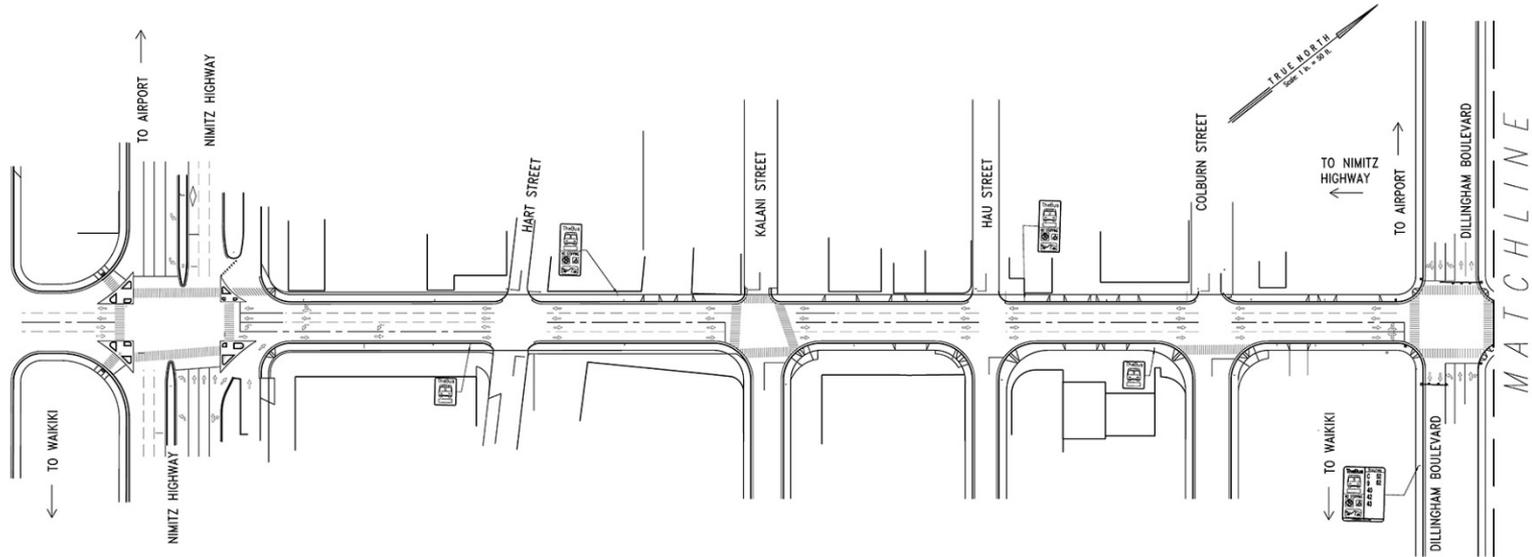
KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY





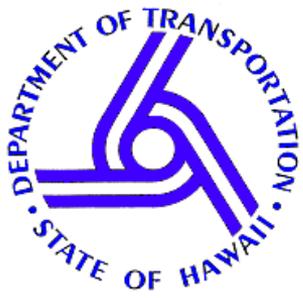
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KALIHI STREET IMPROVEMENTS PRELIMINARY PEDESTRIAN STUDY



STUDY AREA (NIMITZ HWY. TO DILLINGHAM BLVD.)
SCALE: 1"=50'





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KALIHI STREET IMPROVEMENTS

Nimitz Highway to School Street

Project Development Time Frame

- **Noise Variance Public Meeting – February 24, 6 pm Farrington HS Library**
- **Anticipated RTA – May 2017**
- **Anticipated NTP – October 2017**
- **Anticipated Construction Time – 1 year**

Anticipated Construction Impacts

- **Single lane closures in each direction**
- **Anticipated night work between 8:30 PM and 4:30 AM, Sunday night to Friday morning**

