




STATE OF HAWAII
DEPARTMENT OF EDUCATION
KA 'OIHANA HO'ONA'AUAO
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OFFICE OF FACILITIES AND OPERATIONS

February 14, 2024

TO: Mary Alice Evans,
Interim Director, Office of Planning and Sustainable Development

FROM: Audrey Hidano 
Interim Assistant Superintendent

SUBJECT: Chapter 343 Draft Environmental Assessment and Anticipated Finding
of No Significant Impact (DEA-AFONSI) for Kulanihakoi High School
Pedestrian Overpass
Kihei-Makena District on the Island of Maui
Piilani Highway, adjacent to and south of the roundabout
at Kulanihakoi Street and Kulanihakoi Road a portion of the adjacent
Kulanihakoi High School parcel
Tax Key Map: (2) 2-2-002:081

The Hawaii State Department of Education hereby transmits the Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the proposed Kulanihakoi High School Pedestrian Overpass located in the Kihei-Makena District on the island of Maui, for publication in the next available edition of *The Environmental Notice*.

We have uploaded an electronic copy of this letter, the Environmental Review Program Publication form in Microsoft Word, and a searchable Portable Document Format file of the DEA-AFONSI to your online submittal site.

Should you have any questions, please contact Mitch Tamayori, Project Coordinator of the Facilities Development Branch, at (808) 784-5116, or via email at mitch.tamayori@k12.hi.us or Kawika McKeague of Group 70 International, at (808) 523-5866 or via email at khsoverpass@g70.design.

AH:mt

c: Kawika McKeague, Group 70 International, Inc. dba G70
Facilities Development Branch

From: webmaster@hawaii.gov
To: [DBEDT OPSD Environmental Review Program](#)
Subject: New online submission for The Environmental Notice
Date: Thursday, February 15, 2024 1:38:01 PM

Action Name

Kūlanihāko‘i High School Pedestrian Overpass

Type of Document/Determination

Draft environmental assessment and anticipated finding of no significant impact (DEA-AFNSI)

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds

Judicial district

Wailuku, Maui

Tax Map Key(s) (TMK(s))

Pi‘ilani Highway, adjacent to and south of the roundabout at Kūlanihāko‘i Street and Kūlanihāko‘i Road a portion of (2) 2-2-002:081

Action type

Agency

Other required permits and approvals

Grading, Grubbing and Stockpiling Permit, Building Permits, Noise Permit (or Noise Variance) if construction activities will be outside of normal permitted hours), and HIDOT permits (Use of State Highways, Work on State Highways), Compliance with Hawai‘i Revised Statutes (HRS) 6E requirements

Proposing/determining agency

Hawai‘i State Department of Education

Agency contact name

Mitch Tamayori

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[Map It](#)

Was this submittal prepared by a consultant?

Yes

Consultant

G70

Consultant contact name

Kawika McKeague

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Consultant address

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Suite 170
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Action summary

The Hawai'i State Department of Education (HIDOE) in cooperation with the Hawai'i State Department of Transportation (HIDOT) proposes to construct a pedestrian overpass across Pi'ilani Highway for Kūlanihāko'i High School students and community usage. Completion of the overpass will fulfil one condition stipulated by the State Land Use Commission as part of the change in land use designation. The condition requires that HIDOE provide a grade-separated pedestrian crossing. The design includes stairs and ADA-compliant ramps on both sides of the highway. It will be constructed primarily of prefabricated concrete with an enclosure over the pedestrian bridge. The overpass project footprint is contained within the HIDOT Pi'ilani Highway right of way except for a portion in the adjacent Kūlanihāko'i High School parcel [TMK (2) 2-2-002:081]. The entire project area is approximately 30,000 square feet. The overpass will be owned and operated by the Hawai'i State Department of Transportation.

Reasons supporting determination

(1) Irrevocably commit a natural, cultural or historic resource.

As currently understood and discussed in previous sections, the project does not involve the loss or destruction of natural, cultural, or historic resource. The project area is within previously developed and built environments.

(2) Curtail the range of beneficial uses of the environment.

The project will not curtail the range of beneficial uses of the environment. The project will provide a pedestrian crossing for the Kīhei community to the new Kūlanihāko'i High School across Pi'ilani Highway.

(3) Conflict with the State's environmental policies or long-term environmental goals established by law.

The project does not conflict with state environmental policies in HRS §344, and any revisions thereof and amendments thereto, court decision, or executive orders.

(4) Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State.

The proposed action will generate short-term economic benefits from construction activity and the long-term socioeconomic benefits of providing a pedestrian crossing for the Kīhei community to the new Kūlanihāko'i High School. No negative impacts to social welfare or cultural practices are anticipated.

(5) Have a substantial adverse effect on public health.

The project will be consistent with existing land uses and is not expected to affect public health. Short-term construction related activity is not expected to generate significant air quality impacts and BMPs will be implemented during this project phase to minimize potential air quality impacts. There may also be a temporary increase in noise in the surrounding area due to construction activities. Mitigation measures, such as the use of quiet equipment, are recommended to reduce temporary noise impacts. The project will also follow HIDOH noise related rules and curfew periods for construction activities.

(6) Involve adverse secondary impacts, such as population changes or effects on public facilities.

The project is not expected to impact population change. The project will provide a pedestrian overpass to connect Kūlanihāko'i High School with the community of Kīhei across Pi'ilani Highway, which will improve pedestrian access to the high school.

(7) Involve a substantial degradation of environmental quality.

The project is not expected to involve a substantial degradation of environmental quality. While short-term construction activity may briefly affect the environmental quality of the immediate area, these effects will be temporary and will follow strict erosion control, noise reduction and air quality measures.

(8) Be individually limited but cumulatively have substantial adverse effect upon the environment or involved a commitment for larger actions.

As previously discussed, the project will have a positive effect on the surrounding environment and region.

Development of the overpass will not involve a commitment for larger actions or development.

(9) Have a substantial adverse effect on a rare, threatened or endangered species, or its habitat.

No rare, threatened, or endangered species or habitats are known to be present on-site. Should nighttime construction be required during the seabird fledgling season (September 15 to December 15), mitigation would include the presence of a qualified biologist to monitor and assess the risk of seabirds being attracted or grounded due to the lighting.

Further, lights will be fully shielded to minimize the attraction of seabirds. For more information, see Section 3.6.

(10) Have a substantial adverse effect on air or water quality or ambient noise levels.

General temporary impacts from construction activities are identified in Chapter 3 of this EA. Mitigation measures associated with these construction activities have been previously discussed. No adverse long-term impacts to air, water, or acoustic quality are anticipated with the planned improvements.

(11) Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters.

The project is not located in a flood plain, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal water. A portion of the project is in the Extreme Tsunami Zone; however, the elevation of the overpass could be used to bring people to a safer elevation and to the high school which is in the Tsunami Safe Zone. The project is located in a previously developed and built environment and has no potential significant effect on an environmentally sensitive area.

(12) Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies.

The importance of the area's scenic views is noted in the Maui Countywide Policy Plan (2010), the 1998 Kihei-Mākena Community Plan, and the draft South Maui Community Plan. Overall, the project is not expected to significantly impact visual resources. With the topography and elevation, when viewed from mauka of the highway the overpass will not block views of the coastline. When viewed from Pi'ilani Highway or the adjacent sidewalks, the overpass may partially obstruct views mauka; however, these will be momentary when travelling. Additionally, when using the overpass, the elevation gain will provide new a new vantage point for viewing upcountry scenic open space.

For more information, see Section 3.10.

(13) Require substantial energy consumption or emit substantial greenhouse gases.

The project is not expected to substantially increase energy consumption or emit substantial greenhouse gases.

Attached documents (signed agency letter & EA/EIS)

- [Signed-Log-10979-MT-2-13-24-Evans-DEA-AFONSI-Pub-Letter-02.11.24_REV.pdf](#)
- [Kulanihako'i-High-School-DEA-2024-02-13.pdf](#)

Action location map

- [Kulanihakoi-HS-Project-Site.zip](#)

Authorized individual

Kawika McKeague

Authorization

- The above named authorized individual hereby certifies that he/she has the authority to make this submission.

KŪLANIHĀKO'I HIGH SCHOOL PEDESTRIAN OVERPASS

DRAFT ENVIRONMENTAL ASSESSMENT

Kīhei, Island of Maui, Hawai'i



PETITIONER/APPLICANT:



STATE OF HAWAII, DEPARTMENT OF EDUCATION

PREPARED BY:

G70

111 S. King Street, Suite 170
Honolulu, Hawai'i 96813

FEBRUARY 2024

KŪLANIHĀKO'I HIGH SCHOOL PEDESTRIAN OVERPASS

Kīhei, Island of Maui, Hawai'i

Draft Environmental Assessment

Proposing and Determining Agency:



State of Hawai'i, Department of Education
Office of Facilities and Operations
Facilities Development Branch
Project Management Section
3633 Wai'ālae Ave. Rm. B-201
Honolulu, Hawai'i 96816

Prepared By:



111 S. King Street, Suite 170
Honolulu, Hawai'i 96813

This environmental document is prepared pursuant to 343, Hawai'i Revised Statutes and Chapter 200.1 of Title 11, Administrative Rules, Department of Health, Environmental Impact Statement Rules.

FEBRUARY 2024

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Chapter 1

Introduction

Chapter 1

Introduction

This Environmental Assessment (EA) has been prepared in accordance with the requirements of Chapter 343, Hawai'i Revised Statutes (HRS) and Hawai'i Administrative Rules (HAR), Title 11, Chapter 200.1, Department of Health, which set requirements for the preparation of environmental assessments. The construction of the grade-separated pedestrian crossing will also support the fulfillment of the 2013 State of Hawai'i Land Use Commission Findings of Fact, Conclusions of Law and Decision and Order that reclassified the land for the construction of Kūlanihāko'i High School (previously referred to as Kīhei High School).from Agricultural to Urban.

1.1 Project Information Summary

Type of Document:	Draft Environmental Assessment
Project Name:	Kūlanihāko'i High School Pedestrian Overpass
Proposing and Determining Agency:	State of Hawai'i, Department of Education Office of Facilities and Operations Facilities Development Branch Project Management Section 3633 Wai'alaie Ave. Rm. B-201 Honolulu, Hawai'i 96816
Agent:	G70 111 S. King Street, Suite 170, Honolulu, HI 96813 Contact: Mark Kawika McKeague, AICP, Principal Telephone: (808) 523-5866 Email: KHSoverpass@g70.design
Ch. 343, HRS Triggers:	HRS §343-5(a)(1), use of State lands and funds
Project Location:	Pi'ilani Highway, adjacent to and south of roundabout At Kūlanihāko'i Street and Kūlanihāko'i Road A portion of the adjacent Kūlanihāko'i High School parcel [TMK (2) 2-2-002:081] will also be utilized. (<i>Figure 1.1 Project Location</i>)
Recorded Fee Owners:	State of Hawai'i, Department of Transportation State of Hawai'i, Department of Education
Tax Map Keys (TMK):	Pi'ilani Highway parcel and portion of TMK: (2) 2-2-002:081 (<i>Figure 1.2 Project Location and Tax Map Key</i>)

Project Area:	Approximately 30,000 square feet
State Land Use Districts:	Agricultural and Urban (<i>Figure 1.3</i>) Please note that the figure reflects the State Land Use designation change from Agricultural to Urban for the Kūlanihāko'i High School parcel that occurred in 2012. It has not yet been updated in the dataset provided on the Office of Planning's Statewide GIS Program Geospatial Data Portal.
Special Management Area:	Not Within SMA
County of Maui Zoning:	Highway: Road High School Parcel: P-1 Public / Quasi-Public (<i>Figure 1.4</i>)
Community Plan Land Use:	Highway: none High School Parcel: Public/Quasi-Public
Flood Zone:	Zone X (area outside floodplain) (<i>Figure 1.5</i>)
Anticipated Determination:	Finding of No Significant Impact (FONSI)

1.2 Overview and Background

The State of Hawai'i Department of Education (HIDOE) is building the new Kūlanihāko'i High School in Kīhei to serve up to 1,650 students in Grades 9 through 12. The new school is located on previously undeveloped land mauka of Pi'ilani Highway. There is no adjacent development or associated infrastructure such as sidewalks or bike paths for school access on the school side of the highway.

The purpose and need for the overpass and this environmental assessment stems from one of the conditions imposed by the State Land Use Commission (LUC) as part of the change in land use designation. That condition requires that HIDOE provide a grade-separated pedestrian crossing (GSPC) across Pi'ilani Highway connecting the makai residential neighborhoods with the high school mauka of the highway.

The Kūlanihāko'i High School Grade-Separated Pedestrian Crossing Alternatives Study commissioned by HIDOE analyzed GSPC options at Pi'ilani Highway, gathered Kīhei community members perspectives and identified temporary options for students to access the school until a GSPC can be constructed.

An overpass just south of Kūlanihāko'i Street was selected based on a suite of factors including usability, schedule, and cost.

The majority of the overpass project footprint is contained within the State of Hawai'i Department of Transportation (HIDOT) right of way with the remainder of the project area within a small portion of the adjacent Kūlanihāko'i High School parcel [TMK (2) 2-2-002:081]. The entire project area is approximately 30,000 square feet. The footprint includes two ADA-compliant ramps, each approximately 280 feet long by 10 feet wide and two 7 foot wide-stairs on the mauka and makai sides of the highway as well as the bridge area that spans the highway approximately 140 feet long by 10 feet wide. The overpass will be constructed primarily using prefabricated concrete and will have an enclosure over the pedestrian bridge portion.

1.3 Purpose of the Environmental Assessment

On behalf of the HIDOE, G70 is preparing a Draft EA, pursuant to HRS, Chapter 343 and HAR, Chapter 11-200.1 for the proposed Project. Under HRS, §343-5(a)(1), this Project triggers a need for an environmental review as it proposes the use of state lands and funds. This DEA includes a description of the proposed action, which is the construction of the pedestrian overpass, and alternatives considered; a description of the existing environment; identification and analysis of potential impacts of the Project; and proposed mitigation measures. The Draft EA also seeks agency and public comment on subject areas that should be addressed. The HIDOE is the approving agency.

1.4 Agencies, Organizations and Individuals Contacted

Agencies, legislators, and members of the community were consulted in the preparation of this Draft EA. As the recorded fee owner, HIDOT Highways Division was consulted with. Parties contacted during the early consultation period are listed below. Further information is detailed in *Chapter 7*.

Table 1.1: Agencies, Organizations and Individuals Contacted	
Federal	
U.S. Fish and Wildlife Service	
State	
Department of Education, Facilities Development Branch	DLNR, Division of Forestry and Wildlife
Department of Transportation - Highways Division	DLNR, Engineering Division
Department of Transportation - Maui District	DLNR, Historic Preservation Division
Department of Accounting and General Services	Department of Business, Economic Development and Tourism, Office of Planning and Sustainable Development
Department of Education, School Complex Superintendent's Office	Office of the Governor
Department of Health	HIDOE, Kūlanihāko'i High School Principal, Halle Maxwell
Department of Land and Natural Resources, Land Division	Office of Hawaiian Affairs
Maui County	
Department of Planning	Police Department
Department of Transportation	Department of Public Works
Department of Water Supply	Office of the Mayor
Department of Fire and Public Safety	Office of Climate Change, Resiliency, and Sustainability
Emergency Management Agency	Department of the Corporation Counsel
Environmental Management	

Table 1.1: Agencies, Organizations and Individuals Contacted

Community Organizations	
HE'E Coalition	Makena Homeowners Association
Kīhei Community Association	Maui Tomorrow
Kahului Lions Club	Rotary Club of Kīhei Wailea
Kīhei Youth Center	Wailea Community Association
Elected Officials	
State of Hawai'i Governor Josh Green	
State Representative Terez Amato – House District 11	
State Representative Justin Woodson – House Committee on Education (Chair)	
State Representative Kyle Yamashita – House Committee on Finance (Chair)	
State Senator Angus L.K. McKelvey – Senate District 6	
State Senator Michelle Kidani – Senate Committee on Education (Chair)	
State Senator Donovan Dela Cruz – Senate Committee on Ways and Means (Chair)	
Maui County Councilmember Thomas Cook	



Figure 1-1

Project Location



Figure 1-2

Project Area and Tax Map Key



Figure 1-3

State Land Use Classification

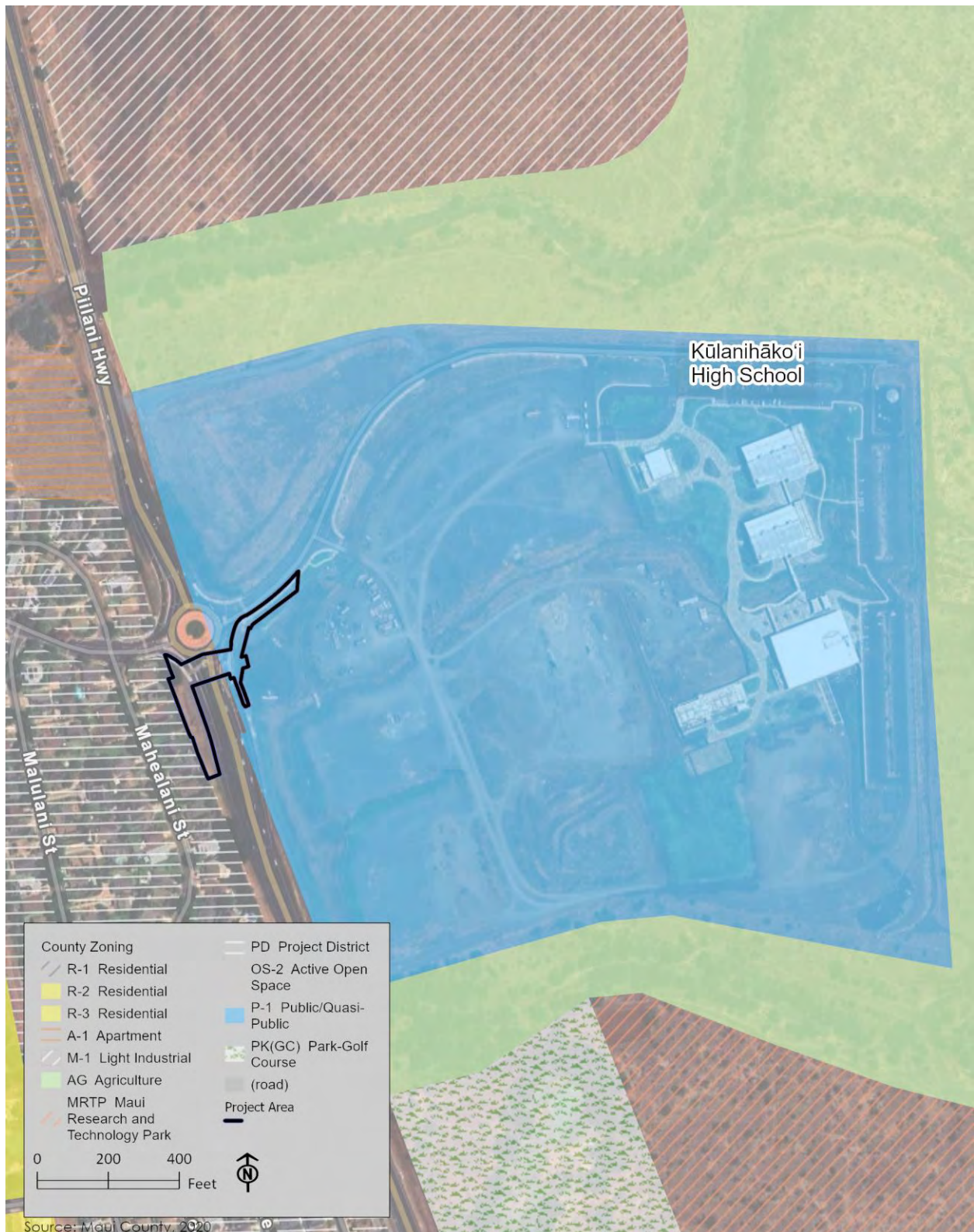


Figure 1-4

County of Maui Zoning

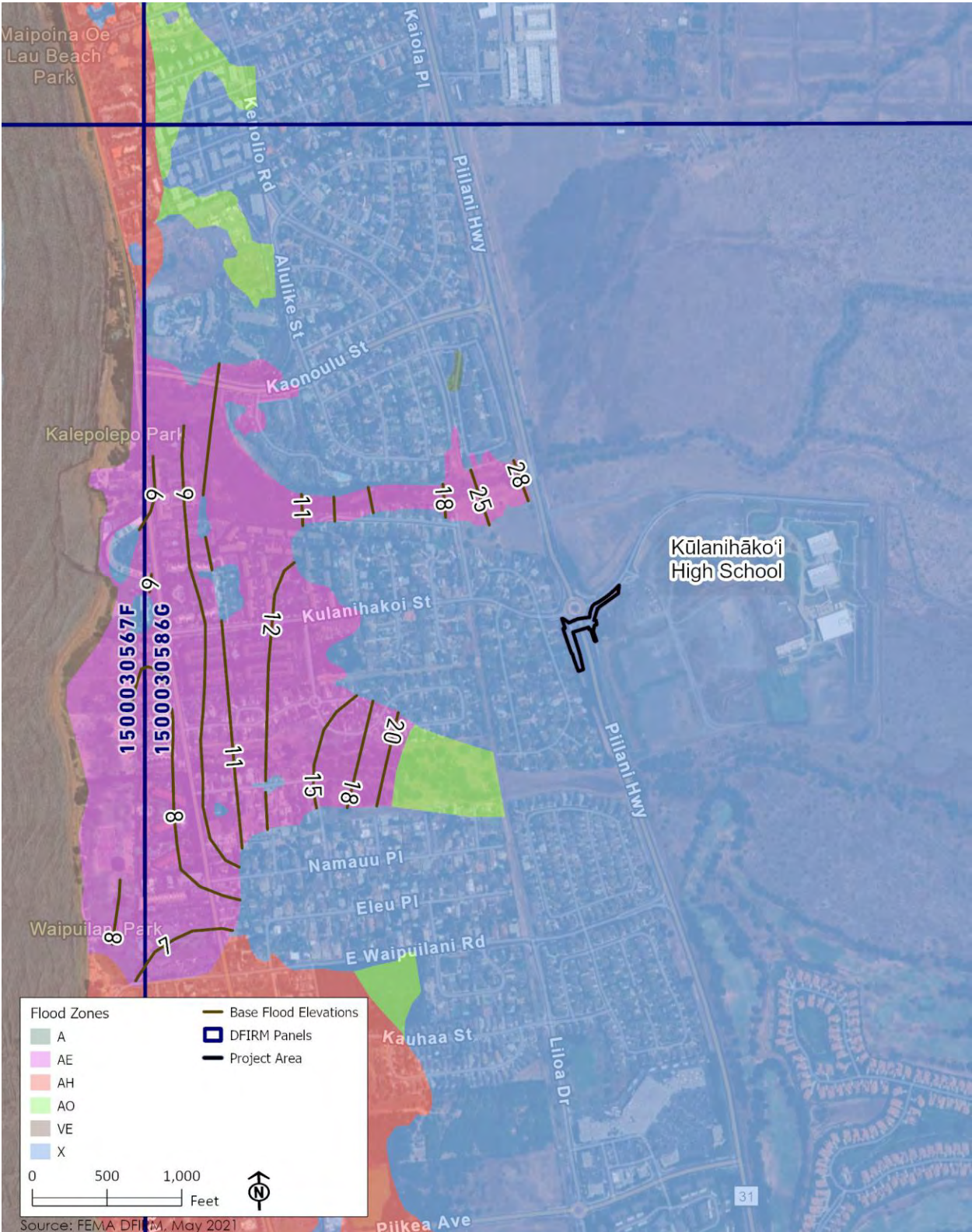


Figure 1-5

Flood Zone

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Project Description

Chapter 2

Project Description

This chapter provides the history and existing uses of the project site and surrounding areas. An overview of the planned project is provided in further detail.

2.1 Project Background

The Hawai'i State Department of Education (HIDOE) has completed the first phase of building construction of Kūlanihāko'i High School in Kīhei and the school is currently operational. Once fully built, the school will serve up to 1,650 students in Grades 9 through 12. The property chosen for the school was originally located in the State Land Use Agricultural District. The Hawai'i State Department of Education submitted a petition to the LUC in 2013 to reclassify the land into the State Land Use Urban District in order to build the school. As part of the State Land Use District Boundary Amendment petition, an Environmental Impact Statement (EIS) was completed and accepted by Governor Abercrombie in November 2012. Community comments on the EIS were received from the Kīhei Community Association, the Kīhei High School Action Team, and many others.

During the development of the EIS, an at-grade pedestrian and bicycle crossing was part of a proposed signalized intersection, justified by an operational study of vehicular and pedestrian volumes and movements. Hawai'i State Department of Transportation (HIDOT) accepted the operational studies of the at-grade signalized intersection with crosswalks during the EIS process and the HIDOE kept it as its preferred alternative. During the public review period of the EIS, the LUC and Kīhei community at large cited safety and congestion as issues facing an at-grade crossing, and system connectivity of sidewalks and multi-modal transportation as other key factors the community would like HIDOE to explore in consideration of other crossing alternatives.

The 2013 LUC Findings of Fact, Conclusions of Law and Decision and Order that reclassified the land use from Agricultural to Urban included several conditions. The Condition Number 1b pertaining to the pedestrian crossing is as follows (*please note that the references to phases are different from the school construction phases*):

- b. *The petitioner [HIDOE] shall complete a pedestrian route study for Phase I of the Project which includes ingress and egress of pedestrians through defined location(s) approved by HIDOT and shall analyze compliance with the proposed warrants in FHWA/RD-84/082 (July 1984) to the satisfaction of HIDOT. The pedestrian route study and analysis shall be completed and approved by the prior to the Petitioner executing a contract for the design of Phase I of the Project. **Petition shall cause to be constructed, or ensure that there is an available above or below ground pedestrian crossing and implement such mitigation or improvements as may be required or recommended by the study and analysis to the satisfaction of HIDOT prior to opening Phase I of the Project...** (emphasis added).*

In addition, the County of Maui in 2014 amended the Kīhei-Mākena Community Plan Land Use Map for the Kīhei High School parcel from Agriculture to Public/Quasi Public via ordinance 4134 and amended zoning from Agricultural District to P-1 Public/Quasi Public District via ordinance 4135. County of Maui Ordinance 4135 includes the following conditions of zoning:

1. *That the State Department of Education (HIDOE) shall submit to the Department of Public Works for review and comment any Traffic Impact Analysis Reports, pedestrian route studies, and/or any related reports or studies at the same time they are submitted to the State Department of Transportation.*
2. *That, within six months of the HIDOE's initiation of the design process for Phase 1 of the Kihei High School or the State's execution of a contract with a designer-builder for the school, whichever occurs earlier, the HIDOE and/or its designer-builder, as appropriate, shall begin to work with the County of Maui Department of Planning on the design of the following improvements to the Kihei High School campus, which shall subsequently be implemented to the satisfaction of the Department of Planning during the permitting process in accordance with Condition Number 1b of the Decision and Order by the State Land Use Commission granting the HIDOE's Petition for a Land Use District Boundary Amendment (Land Use Commission Docket No All-794):*
 - a. *Pedestrian and bicycle access to and from the school campus to connect to current and future pedestrian and bicycle networks in the vicinity of the campus;*
 - b. *Bicycle friendly improvements on the school campus and, if requested by the County of Maui Department of Transportation, an area for public transit access to the school campus;*
 - c. *Overflow parking and lighting to accommodate special events to be held on the school campus;*
 - d. *Consideration of best practices in Crime Prevention through Environmental Design (CPTED) elements in campus design; and*
 - e. *To the extent not inconsistent with the provision of a drainage detention basin, overflow parking and CPTED design elements, a landscaped buffer on the campus fronting Pi'ilani Highway.*
2. *That the HIDOE shall provide annual compliance reports to the Department of Planning and the Maui County Council on the status of the project and progress in complying with the conditions of zoning and the State Land Use Commission conditions, commencing within one year of the effective date of the ordinance This reporting requirement shall cease upon the completion of construction of Phases 1 and 2 of the project.*
3. *That all of the conditions imposed by the State Land Use Commission in its Decision and Order filed July 29, 2013, granting the Land Use District Boundary Amendment for the property (Land Use Commission Docket A11-94), except for Conditions 16, 19, 20, 23, 24, and 25 shall be incorporated by reference herein and made a part hereof as conditions of zoning.*

In February 2019, the Maui County Council asked the LUC for a declaratory ruling on the 2013 condition. At the April 2019 hearing, the LUC reaffirmed the condition to require the completion of an above or below ground pedestrian crossing prior to the opening of the school.

HIDOE unsuccessfully petitioned the LUC in August 2020 to amend the 2013 Land Use Commission Findings of Fact, Conclusions of Law and Decision and Order to *...allow for the construction of a roundabout and ground level raised crosswalks instead of a GSPC prior to the opening of Phase I of the Project and for the assessment and reevaluation of the necessity, appropriateness, and utility of a GSPC prior to the start of construction of Phase II of the Project.* As part of the petition process, over 300 community members commented in opposition of HIDOE's request and raised the question "Why hasn't HIDOE/HIDOT been working on the condition it has known about since 2013?" The LUC recommended that HIDOE convene conversations with the community and County of Maui to find consensus on solutions before returning to the LUC with any proposed modifications to the conditions.

Subsequently, in January 2021 HIDOE hosted a joint virtual meeting with HIDOT to provide an update to the Kīhei community on the high school construction. At this meeting, they introduced the traffic roundabout design which included at-grade pedestrian crosswalks and Rectangular Rapid Flashing Beacons (RRFB). HIDOT contracted for the roundabout design, and HIDOE contracted for the roundabout construction with an at-grade pedestrian crossing in Fall 2021.

In 2022, the HIDOE-prepared a Grade Separated Pedestrian Crossing (GSPC) Alternatives Study which lead to HIDOE selecting a pedestrian overpass at Kūlanihāko'i Street.

The high school was projected to open in August of 2023; however, the County of Maui was unwilling to issue a certificate of occupancy due to the lack of a grade-separated pedestrian crossing to fulfil the LUC condition. In March of 2023, the State of Hawai'i and County of Maui reached an agreement under which the State indemnified the County in order for it to provide a certificate of occupancy. The agreement had two key provisions. One was that the HIDOE continue to work towards the construction of a grade-separated pedestrian crossing and the second was that interim, that no students should be crossing Pi'ilani Highway on foot. The County of Maui issued the certificate of occupancy and Kūlanihāko'i High School opened as planned in August of 2023. The HIDOE is proceeding with the development of design for the overpass, and this required Environmental Assessment.

Since the completion of the GSPC Alternatives Study, further discussions between HIDOE and HIDOT resulted in several new decisions. While initially HIDOE was planning to own and operate the overpass that would have limited the hours of usage of the overpass, HIDOT agreed to build and own the overpass. The hours of operation will not be limited to the school day and allow for non-school.

2.2 Existing Conditions

The new high school is located on previously undeveloped land mauka of Pi'ilani Highway, and there is no adjacent development or associated infrastructure such as sidewalks or bike paths for school access on the school side of the highway. Students, staff, and visitors arriving by bicycle or on foot must cross the heavily used Pi'ilani Highway.

The proposed pedestrian overpass is located primarily within the Pi'ilani Highway right of way just south of Kūlanihāko'i Street intersection. This project site was previously disturbed for the construction of the highway and a roundabout. The roundabout was designed by HIDOT, and construction was completed by HIDOE at the end of 2022.

In the pedestrian overpass area, Pi'ilani Highway has four 12-foot-wide travel lanes, two merge lanes and a raised median. Immediately adjacent to the roundabout, the highway right-of-way includes 8-foot-wide sidewalks and 2-foot-wide curb and gutter. The sidewalks and gutters continue onto Kūlanihāko'i Street and the adjacent residential neighborhood.

A retaining wall was built as part of the roundabout development mauka (east) of the highway along the sidewalk to avoid impact to the school's existing stormwater detention basin. Approximately 20-feet of this retaining wall will be removed to allow for the construction of the overpass support structure and ramp. Other items recently constructed for the roundabout intersection improvements, such as pedestrian crosswalks, guardrail, fencing, posts, light poles, sidewalk, flashing pedestrian beacons, and other existing utilities may also require slight modification or relocation.

2.3 Description of the Proposed Action

The pedestrian overpass and associated ramps will consist of precast concrete box girders and planks supported by cast-in-place concrete columns and drilled-shaft pile foundations on each side of Pi'ilani Highway. Figure 2-1 provides site plan for the overpass across the highway.

The support structures on each side of the highway will include an American with Disabilities Act (ADA) compliant ramps as well as concrete stairways to shorten the walking distance to the bridge portion of the overpass. The makai side would have switchback ADA-compliant ramps, and the mauka (school) side would have an ADA-compliant ramp along the Kūlanihāko'i High School driveway without any switch backs that leads in the direction of the currently built school facilities. Each ramp would be approximately 280 feet long by 10 feet wide and each stairway would be approximately 55 feet long by 7 feet wide. The ramps and stairways would have an elevation gain of approximately 20 feet leading up to the top of the proposed bridge spanning the highway.

The proposed bridge would consist of a precast concrete girder approximately 4 feet deep, 10 feet wide and spanning 140 feet across the highway. The modular steel designed bridge enclosure approximately 12 feet high and 10 feet wide would be attached onto overpass as fall protection (Figure 2-2). The transparency of the design will break up the perceived massing and allow for some views through the structure and scenic views from the overpass. The enclosure would be provided across the entire span of the concrete girder and onto portions of the ramps where the ramp floor elevation is 10 feet or greater than the ground surface. For portions of the ramps where the ramp floor elevation is less than 10 feet above the ground surface, 42-inch high guardrail would be provided as fall protection.

While the bridge structure is based on structural engineering requirements, ease of constructability, overall costs and future maintenance and longevity, the overpass enclosure is designed to visually stitch the two sides the highway together connecting the school and community. The enclosure's articulated form and patterning is influenced by the weaving and folding of traditional lauhala. Framed by steel tubes and pipe with security fencing infill, the enclosure provides transparency and porosity desired for visibility, in and out, as well as maintaining natural ventilation.

The overpass would be supported by approximately nine cast-in-place columns each supported by a drilled shaft pile foundation. The cast-in-place columns would be approximately 4.5 wide and would vary between 5 feet to 20 feet in height. The drilled shaft pile foundations would be approximately 6 feet wide and is currently expected to be drilled approximately 30 feet deep into the ground surface.

Site improvements adjacent to the proposed overpass will consist of the relocation of water, electrical and stormwater utilities and removal of the pedestrian at-grade crosswalk after the overpass is completed. Operational signage and landscaping improvements will also be added. Operational signage may include low clearance signs and traffic safety signs upon approaching the overpass. Landscape improvements consist of planting native trees, shrubs, and groundcover within the disturbed project areas. Proposed outdoor lighting will be illuminating from the overpass handrails and

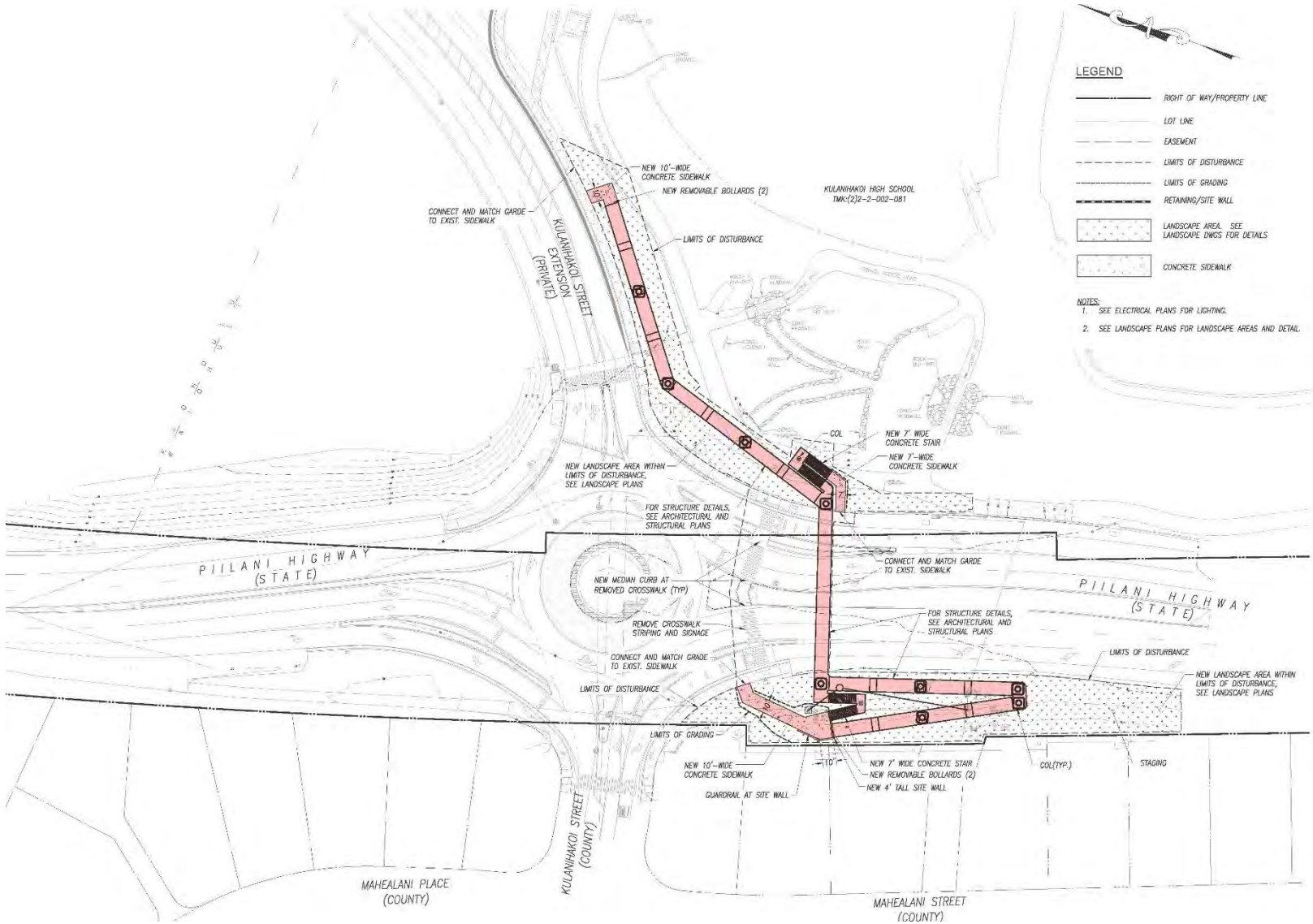


Figure 2-1

Project Site Plan



Figure 2-2

Proposed Pedestrian Overpass Bridge Design

will be fully shielded in compliance with Maui County Code, Chapter 20.35 to reduce light pollution and impacts on seabirds.

The estimated cost for and the construction of the pedestrian overpass is approximately \$16 million, not including design and predevelopment costs. The schedule for construction of the pedestrian overpass is dependent on funding. The earliest expected completion date would be the end of 2025.

2.4 Required Permits and Approvals

Final Environmental Assessment/Finding of No Significant Impact (FONSI), Chapter 343, HRS – Under HRS, §343-5(a)(1), this project triggers a need for an environmental review as it proposes the use of state lands and funds. An Environmental Assessment pursuant to HRS, Chapter 343 and HAR, Chapter 11-200.1 is being prepared for the proposed project.

Other Permits and Approvals - There are other permits and approvals that are categorized as “ministerial” because they do not require approval by a commission or department director. These approvals include a Grading, Grubbing and Stockpiling Permit, Building Permits, Noise Permit (or Noise Variance if construction activities will be outside of normal permitted hours), and HIDOT permits (Use of State Highways, Work on State Highways) which will be obtained in advance of construction. Compliance with Hawai'i Revised Statutes (HRS) 6E requirements is also needed. The project will ultimately disturb less than one acre of land area; therefore, a National Pollutant Discharge Elimination System permit for construction activities is not needed.

Environmental Setting, Potential Impacts and Mitigation Measures

Chapter 3

Environmental Setting, Potential Impacts, and Mitigation Measures

The environmental setting, potential impacts, and mitigation measures for the proposed Kūlanihākoʻi High School Pedestrian Overpass are discussed in the sections below.

3.1 Climate

Existing Conditions

Maui's climate is relatively uniform year-round with mild temperatures, moderate humidity, and fairly consistent northeasterly trade winds. Regional topography and climatic conditions contribute to the variety of seasonal and episodic weather patterns found across the island.

The Kūlanihākoʻi High School pedestrian overpass site is located in the semi-arid Kīhei-Mākena region. The Kīhei coast is known to be sunny, warm, and dry throughout the year. Annual average temperatures in 2020 for the Kīhei region range from 66.3°F to 83.9°F. During the summer months, average daily temperatures are from 69.2°F to 87.3°F (Maui County Data Book 2020).

Average rainfall distribution in the Kīhei-Mākena region over the last five years varied from less than 8 inches to just over 20 inches per year. Annual rainfall recorded in 2020 for the Kīhei region was 7.76 inches. Rainfall in the Kīhei-Mākena region is highly seasonal with most precipitation occurring between November and March.

Northeast trade winds prevail in the Hawaiian Islands during the spring and summer months; during the fall, trade winds tend to give way to light and variable winds throughout the winter. Trade winds out of the northeast average 10 to 15 miles per hour (mph) in the Kīhei-Mākena region during the afternoon. Typically, lighter winds are felt during the morning and evening.

Storms are infrequent and generally occur during the winter months in Hawaiʻi, although tropical storms and hurricanes occasionally approach the island between June and November.

Potential Impacts and Mitigation Measures

The Kūlanihākoʻi High School Overpass project would not involve significant impacts with respect to climate; therefore, no mitigation measures are required.

3.2 Topography

Existing Conditions

The topography of the project area is relatively flat along Pi'ilani Highway. The lowest elevation of the project area is approximately 36 feet above mean sea level makai of Pi'ilani Highway. The topography slopes upward mauka of Pi'ilani Highway to approximately 40 feet MSL. *Figure 3-1* provides a contour map showing the topographic conditions of the project area.

Potential Impacts and Proposed Mitigation

The proposed overpass will not have significant impacts on the overall topography of the project area. Modifications to site topography may be required during various construction phases. These are addressed in more detail in *Section 3.3 Soils and Grading*.



Figure 3-1

Topography

3.3 Soils and Grading

Existing Conditions

Soil at the project site has been classified by National Resources Conservation Service (NRCS) as Waiakoa extremely stony silty clay loam (Type WID2) (*Figure 3-2*). It has a typical soil profile of extremely stony silty clay loam at the surface with silty clay loam extending down to 33 inches and bedrock at 43 inches. This soil type is well drained with rare flooding and ponding. The soil is classified by NRCS as Hydrologic Soil Group C which has moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted. In most areas about 50 percent of the surface layer has been removed by erosion.

For the pedestrian overpass project geotechnical study, seven borings were drilled around the project area, extending 11.5 to 30 feet below the existing ground surface. Borings 1, 2, and 3 were drilled along the mauka side of Pi'ilani Highway at the perimeter of the Kūlanihāko'i High School campus. Borings 5, 6, and 7 were drilled along the makai side of Pi'ilani Highway adjacent to the residential subdivision. Boring 4 was drilled on the interior north bound lane of Pi'ilani Highway adjacent to the median dividing the north and southbound traffic lanes.

The borings generally encountered residual soil and saprolite consisting of various silt types, sandy clay, and gravel from 1 to 4.5 feet thick. The residual soil and saprolite were generally underlain by basalt rock extending to the maximum depth explored of 30 feet below the existing ground surface. The borings did not encounter groundwater. Appendix A of this document is the Preliminary Engineering Report (PER) which contains the boring logs and additional soil information.

Potential Impacts and Proposed Mitigation

Topography of the site is generally flat and will remain relatively unchanged as major grading work is not anticipated. However, minor grading work is planned for the mauka side of the project area. A portion of the retaining wall that was built as part of the roundabout development will undergo limited demolition to allow for the construction of the overpass support structure and ramp.

A Grading Permit from the County will be obtained before construction activity begins. Short-term construction related activity to construct the overpass will be mitigated by practicing strict erosion control and dust control measures, particularly those specified in the following:

- County of Maui, Code of Ordinances, Chapter 20.08 – Soil Erosion and Sedimentation Control
- State of Hawai'i, Department of Health (HIDOH), Water Quality Standards, Chapter 11-54
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Erosion and Sediment Control Guide for Hawai'i

Construction Best Management Practices (BMPs) will be implemented to mitigate potential adverse environmental impacts that may occur. During construction, contractors will utilize erosion control and land-based sources of pollution barrier measures, which may include sediment traps, silt fences, dust fences, stabilized construction entrances, and truck wash-down areas, as appropriate to manage sediment discharge.



Figure 3-2

Soil Classification

3.4 Drainage and Hydrology

Existing Conditions

Storm water runoff from the project site at Pi'ilani Highway flows via sheet flow to the Kūlanihāko'i and Waipu'ilani Gulches which lie to the north and south of the proposed overpass site. The gulches lead to storm drain culverts crossing Pi'ilani Highway and eventually discharging to Ma'alaea Bay shoreline. The elevation at the proposed overpass is approximately 30 feet above mean sea level (MSL) and overall surface gradient of the project area is west northwest. There are no wetlands at the project site (See PER in Appendix A).

Potential Impacts and Proposed Mitigation

The proposed overpass construction is not anticipated to have significant adverse impacts on ground or surface water resources. As previously discussed, a Grading Permit from the County will be obtained, and contractors will adhere to requirements under the permit to minimize potential construction related impacts. Construction, grading and drainage plans will be submitted to appropriate agencies for review and approval. The requirements of the approved NPDES permit will be adhered to during construction. Once constructed, portions of the proposed overpass will create new impervious surfaces which may nominally increase runoff. It is not expected that these newly constructed impervious surfaces will cause significant adverse impacts on ground or surface water resources.

Construction BMPs and land-based sources of pollution (LBSP) barrier measures will be utilized if there is the possibility for sediment discharge into nearby waters or drainageways (e.g. any site where there will be excavation, grading, or sediment/pollutant producing activities). Construction BMPs and LBSP may include sediment fences, silt screens, bags, environmental socks, and petroleum absorption diapers that limit the amount of sediment to the maximum extent practicable.

3.5 Natural and Manmade Hazards

Existing Conditions

Earthquakes

Each year, thousands of earthquakes occur within the State, however the majority are detectable only with highly sensitive instruments (USGS, 2019). Moderate earthquakes occasionally occur in the islands; however, most cause little or no damage. The majority of earthquakes in Hawai'i occur on and around the Island of Hawai'i, especially in the southern districts of the island where the most active volcanoes in the State are located.

The severity of an earthquake is classified by magnitude and intensity. Magnitude is a measure of the amount of energy released during an earthquake, while intensity is a measure of the severity of ground shaking (HI-EMA, 2018). Seismic hazard is typically characterized in terms of peak ground acceleration (PGA) measured as a percent of Earth's gravitational acceleration (%g) (USGS, 2017). For example, areas with a PGA at less than 17%g have a very small probability of experiencing damaging earthquake events, while areas with a PGA at over 100%g would make it difficult to stand and could topple structures. Seismic Design Categories (SDC) reflect the likelihood of experiencing earthquakes of various intensities. Building design and construction professionals use SDCs to determine the level of seismic resistance required for new buildings.

Due to the relatively short period of documented earthquake monitoring in the State of Hawai'i, information pertaining to earthquakes that were felt on the Island of Maui may not be complete. In general, over the last 150 years of recorded history, the last major earthquake that was felt on Maui was the great earthquake of 1938. This was a submarine earthquake about 12 miles northeast of Ke'anae Point with a magnitude of 6.8.

According to *Figure 3-3*, the project area is located within an area with a 90% or greater chance of slight or greater damaging earthquake shaking occurring within the next 100 years. *Figure 3-4* depicts the maximum PGA expected over the next 50 years in the State with at least a 2% chance of exceedance. Colors indicate shaking in PGA and the corresponding SDC. According to the United States Geologic Survey (USGS), expected ground acceleration on the Island of Maui is no greater than 33% with an SDC of "C", which indicates an earthquake hazard with strong shaking with slight to moderate damage negligible to buildings of good design. Seismic hazards in are no greater in the Project Area than other locations on the Island of Maui.

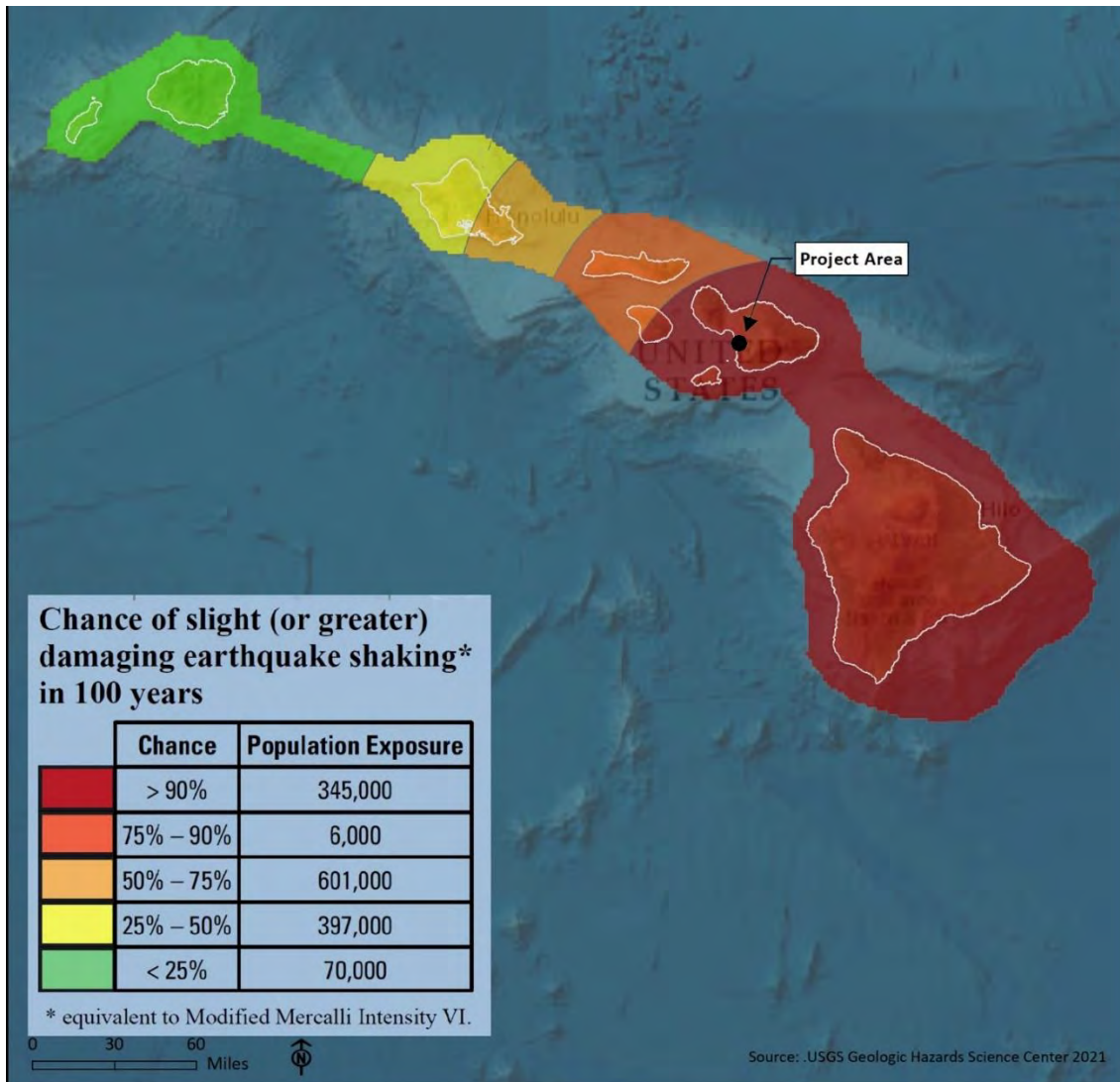


Figure 3-3

Probability of Seismic Hazards

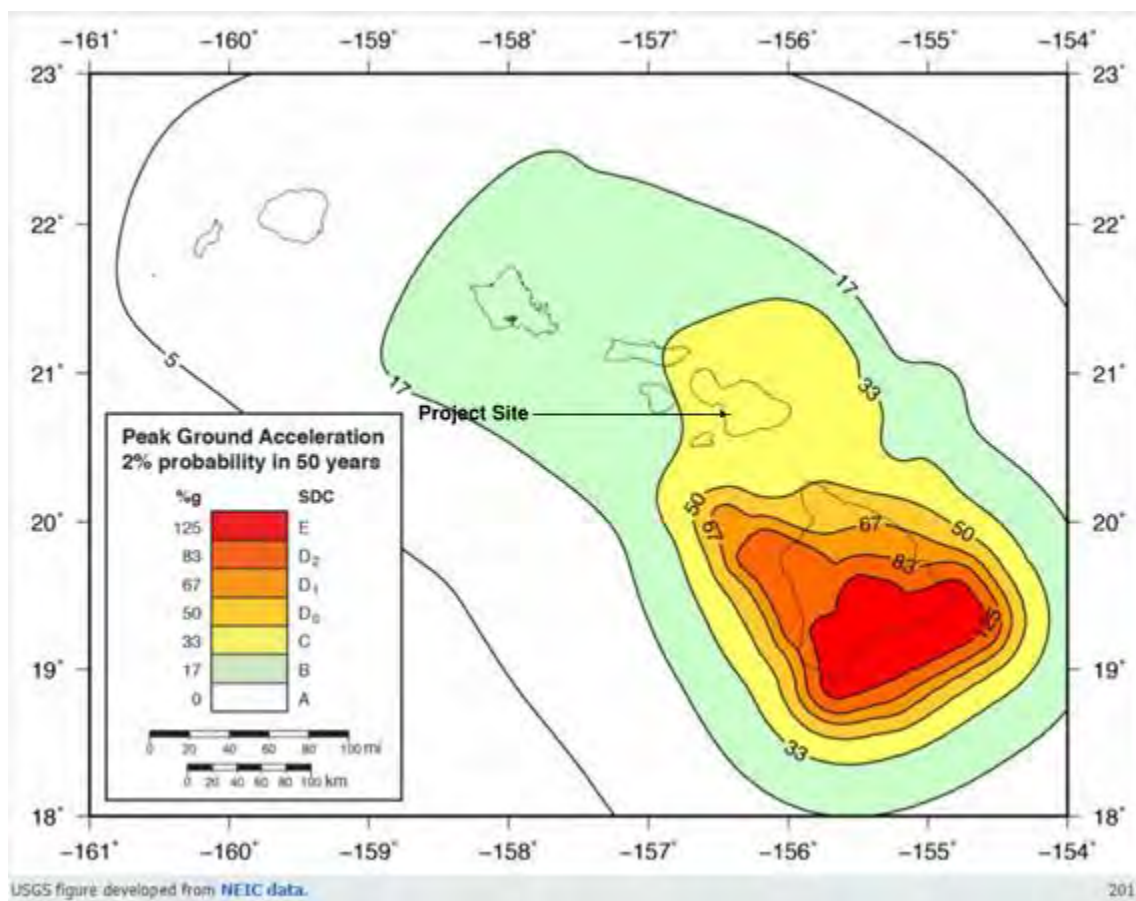


Figure 3-4

Seismic Hazards

Wildfires

The Hawaiian Islands are also vulnerable to wildland fires, especially during the summer months, from prolonged drought and/or high winds. The greatest danger of fire is where wildland (trees and brush) border urbanized areas, also known as the wildland-urban interface (WUI). Overgrown vegetation close to homes, pockets of open space within subdivisions, and an increase of non-native high fire-intensity plants around developed areas pose increasing threats to commercial, community, environmental, and residential resources. A great majority of wildfires are human caused (intentionally caused or by negligence) and often start along roadsides. Wildfires can and do occur naturally.

In 2007, an early assessment of wildfire risk was completed by the DLNR Division of Forestry and Wildlife (DOFAW) in compliance with the guidelines developed by the National Association of State Foresters. It identified at-risk wildland-urban interface communities throughout Hawai'i and rated each community's risk from wildland fires. Per the DOFAW's risk rating of wildland fires, the project site is considered High Risk for wildfires.

Subsequently the Hawai'i Wildfire Management Organization, a 501(c)(3) nonprofit organization, with a mission "serve as a hub of wildfire prevention, mitigation, and planning activities in the Hawai'i-Pacific region through proactive, collaborative, and forward-thinking projects." It has been conducting assessment and planning efforts that include the project area which are described below in chronological order.

The 2013 *Central Maui Community Fire Hazard Assessments* analyze and provide ratings for the categories of subdivision, buildings, vegetation fire environment, and fire protection using 36 different criteria. All the categories are rated as high hazards except for fire protection which is low hazard and the overall community fire risk rating for Kīhei is high risk. The 2016 South Maui Community Wildfire Protection Plan built upon the 2013 analysis and looked at hazard reduction priorities. This report includes a 2015 map of wildfire incidents from 1998 to 2012 which is shown in *Figure 3-5*. (Note: a draft updated map is available on the *Hawai'i Wildfire Management Organization* website and shows the continued high number of wildfire incidents in the Kīhei area).

The 2016 plan's most applicable hazard reduction strategy related to the overpass is hazardous fuels reduction along roadsides and planting of "fire-resistant plants that require little to no maintenance and are less ignitable." The 2018-19 *Vegetation Management Rapid Mapping Assessment and Collaborative Action Planning Maui Report* was an effort to look at ways to reduce wildfire hazards on Maui. At a Collaborative Action Planning workshop in 2018, geographic areas were prioritized based on fuel loading, history of ignition sources and fire weather (*Figure 3-6*). Based on these factors, the Kīhei area is a medium level of concern relative to other areas of Maui. The South Maui quantities of fuel and sources of ignition (as seen in the numerous historical wildfires) mean that there continues to be a critical need to reduce both.

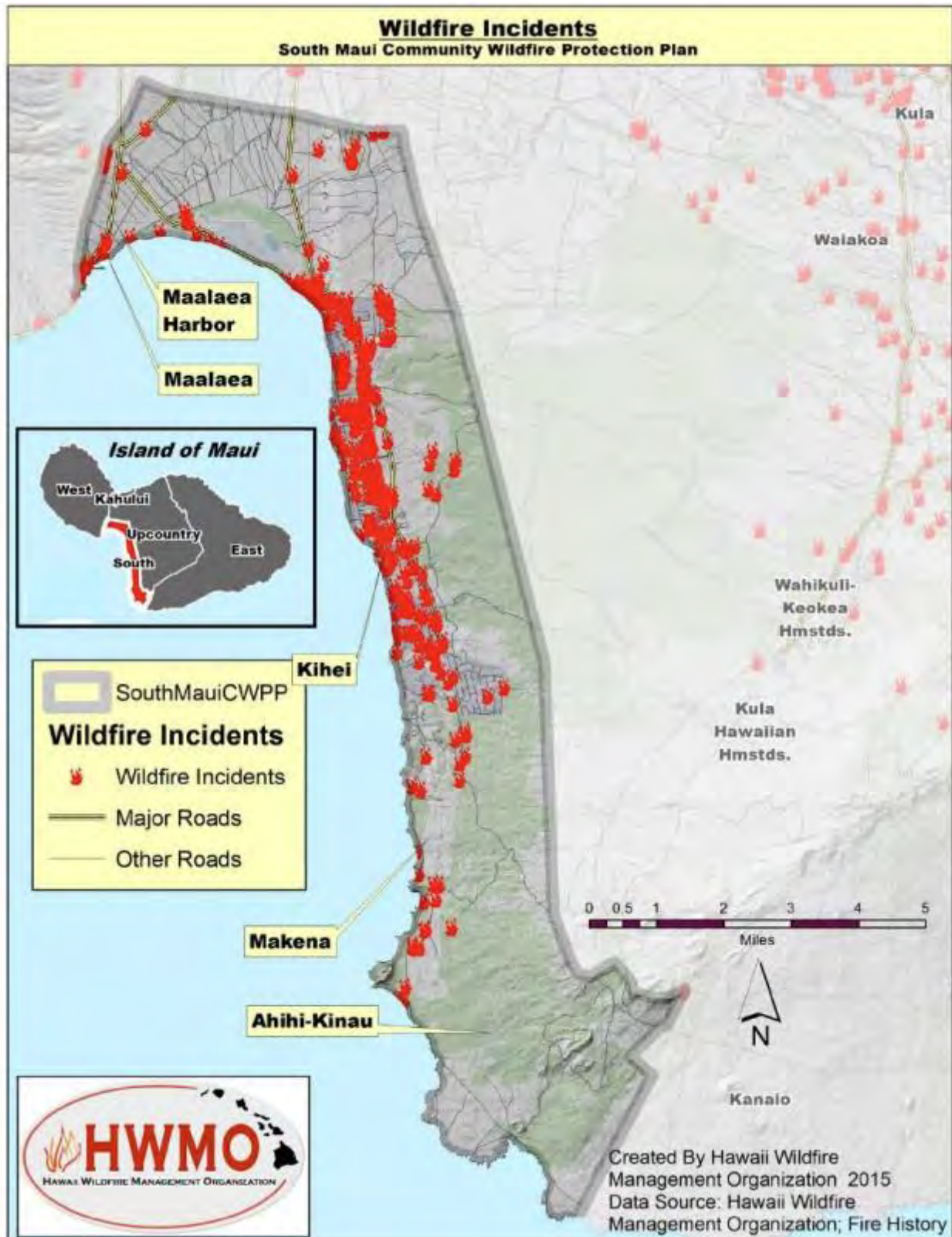


Figure 3-5

Wildfire Incidents, 1998-20

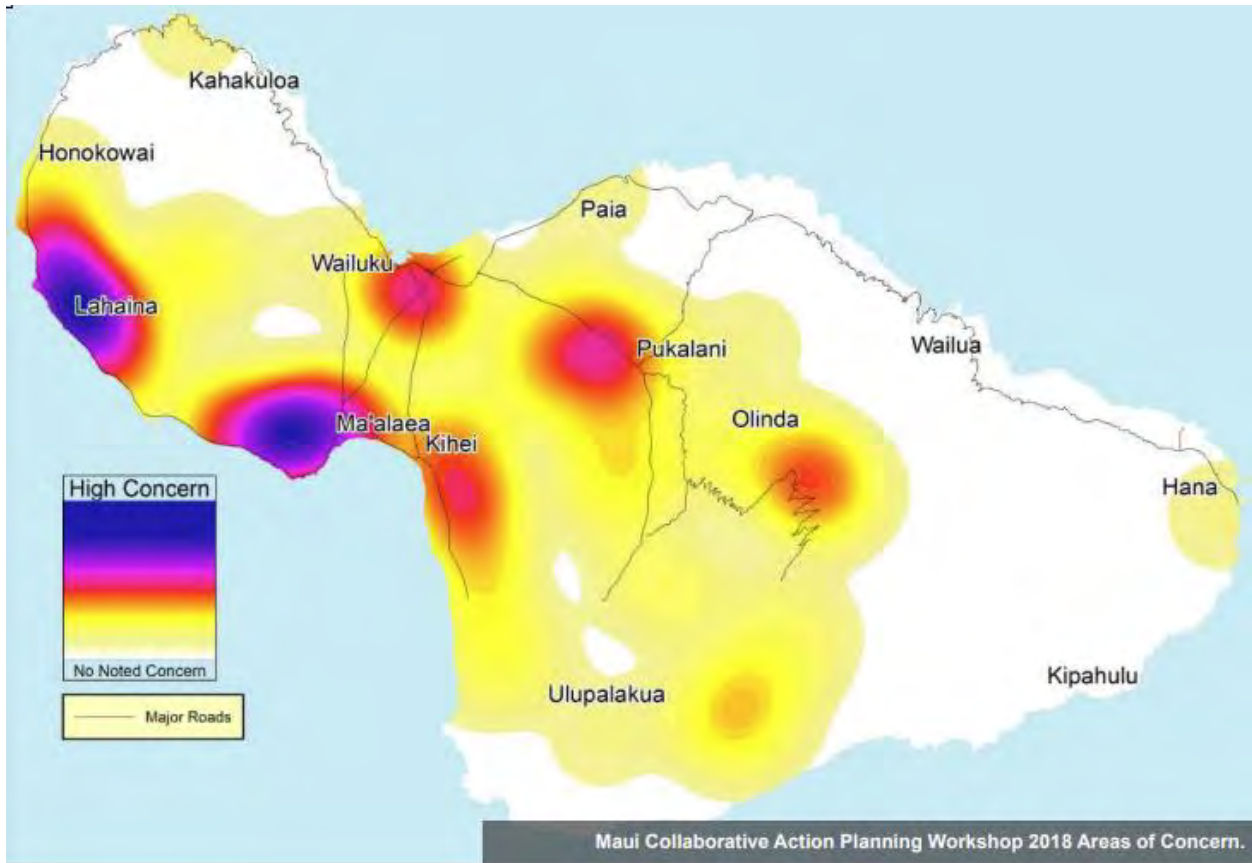


Figure 3-6 2018 Wildfire Areas of Concern from Maui Collaborative Action Planning Workshop

Hurricanes and Tropical Storms

Hurricanes and tropical storms are both categorized as tropical cyclones, which are warm-core storms that originate over tropical waters with well-defined centers of closed surface wind circulation. A hurricane is a tropical cyclone which sustains surface winds of 64 knots (74 mph) or more. Tropical storms are categorized as an organized system of strong thunderstorms with defined circulation and maximum sustained winds of 39 to 73 mph (National Oceanic and Atmospheric Administration [NOAA], 2015).

Hurricanes are considered to be relatively rare events in the Hawaiian Islands. Records show that strong wind storms have struck all major Hawaiian Islands. The first officially recognized hurricane in Hawaiian waters was Hurricane Hiki in August 1950. Since that time, five hurricanes have caused serious damage in Hawai'i: Nina (1957), Dot (1959), 'Iwa (1982), Estelle (1986), and 'Iniki (1992).

However, with rising global temperatures, Hawai'i is expected to experience a higher incidence of tropical storm events. In most recent history, Tropical Storm Olivia made landfall on Maui and Lāna'i in 2018, causing considerable flooding, power outages, and road and school closures.

Flooding and Tsunami Inundation

The Flood Hazard Assessment Map (*Figure 1-5*) published by the Federal Emergency Management Agency (FEMA) indicates the proposed pedestrian overpass is in Flood Zone “X” which is an “area of minimal flood hazard”.

However, flash flooding and overflows of streams and dry channels are an ongoing issue in the Kīhei where surface waters in low-lying areas cannot quickly drain during and after rainstorms. This type of flooding can occur outside of the Flood Insurance Rate Maps (FIRM) flood map zones. The combination of high rainfall from upper elevations and impervious surfaces in the urban area are contributing factors of inland flooding in Kīhei (County of Maui, 2020).

The sudden displacement of the ocean floor (earthquakes), landslides, or volcanism can generate tsunamis, which are a series of waves that can reach speeds of up to 600 mph. Upon reaching a coastline, a tsunami can become a wall of water reaching heights of 30 ft or more and capable of moving inland several hundred feet. Known major tsunami events in Hawai'i include the areas of East Hawai'i (1946, 1960, 1975) and North Shore O'ahu (1952, 1957).

The proposed overpass site is approximately 3,300 feet from Ma'alaea Bay shoreline. Hawai'i State Emergency Management Agency maps indicate that most of the site is within the Tsunami Safe Zone (*Figure 3-7*). A portion of the makai edge of the project area is within the Extreme Tsunami Inundation Zone.



Figure 3-7

Tsunami Zones

Climate Change and Sea Level Rise

Increased amounts of Green House Gases (GHG) are preventing heat radiated from the Earth's surface from escaping into space as easily as it has in the past. Most of the excess atmospheric heat is passed back to the ocean. The ocean is the largest solar energy collector on Earth. Water covers more than 70 percent of our planet's surface and absorbs large amounts of heat without large increases in temperature. The ability to store and release heat over long periods of time gives the ocean a central role in stabilizing the Earth's climate system.

However, the oceans have been experiencing significant increases in ocean temperatures over the past two decades. The warming of ocean water is raising global sea level due to the expansion of ocean water as it warms. In addition, land-based ice, such as glaciers and ice sheets, are also greatly affected by global warming. With the average year-round global temperatures rising, ice caps and glaciers are experiencing a disproportionate amount of melting at an accelerated rate. Sea Level Rise (SLR) is an inevitable outcome of global warming that will continue through many centuries even if human-generated GHG emissions were eliminated today. Rising ocean levels will increasingly threaten natural ecosystems and human structures near coastlines around the world.

The Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) provides projections of global mean SLR. The RCP8.5 scenario is regarded as the most likely scenario and is used as the basis for modeling coastal hazards in the 2017 *Hawai'i Sea Level Rise Vulnerability and Adaptation Report*. This report was published by the Hawai'i Climate Commission and provides the first state-wide assessment for documenting Hawai'i's vulnerability to SLR. The report recommends planning for up to 3.2 feet of SLR by the year 2100 with potential increased adjustments based on new data and improved modeling.

The Hawai'i Sea Level Rise Viewer Sea Level Rise Exposure Area (SLR-XA) model developed by the Pacific Islands Ocean Observing System (PacIOOS) at the UH of Ocean and Earth Science and Technology (SOEST) models the potential impacts of SLR on future passive flooding, annual high wave flooding, and coastal erosion. The overpass is located outside the 3.2-foot SLR-XA and not subject to these effects.

Rapid anthropogenic climate change is a well-established fact within the scientific community. A 2013 study by a University of Hawai'i (UH) team of researchers predicts that tropical regions will experience drastically warmer climates by the year 2047 (Mora et al., 2013). As a result of climate change, oceans are warming and acidifying, ice sheets and glaciers are melting, and sea levels are rising.

It is also practical to expect that a hurricane will make direct landfall in Hawai'i under conditions of higher sea levels and that tsunamis will continue to arrive at Hawaiian shores.

Potential Impacts and Proposed Mitigation

Earthquakes

The pedestrian overpass bridge will be designed based in accordance with the American Association of State Highway and Transportation Officials (AASHTO) Load and Resistance Factor Design (LRFD) Bridge Design Specification, 9th Edition, 2020. The seismic performance zone is 4 per AASHTO Section 3.10.6. The operational category of the new overpass, as defined in AASHTO Section 3.10.5, shall be classified as "other" which will guide the design.

Wildfire

The wildfire hazard risk ratings from multiple sources all indicate that the Kīhei area is high risk for wildfires. In order to mitigate this risk in the project area, the project landscaping will be designed to have low fuel loading and ignition, and after construction mitigation will include roadside maintenance by HIDOT to cut back dry vegetation that could easily ignite. The latter is part of HIDOT's routine maintenance of State roads. The overpass might also be used if the school needed to be evacuated due to wildfire mauka of the campus.

The overpass will be constructed of nonflammable materials including steel and concrete.

Hurricanes and Tropical Storms

Previous impacts from past storm events have caused minimal damage to Kīhei and the project site. The future threat of hurricanes at the site cannot be calculated, although the frequencies of hurricane threats may increase with climate change and warming ocean water. When a hurricane is approaching a coastal location, early evacuation is usually standard mitigation to address the possibility of accompanying storm surge with high winds. The National Weather Service provides guidance and issues a hurricane watch when a storm is expected to make landfall within 36 hours. A hurricane warning is issued when landfall is likely within 12 to 24 hours. DOE typically closes schools under hurricane warnings, meaning that usage of the overpass during a hurricane or tropical storm would be very unlikely. The high school cafeteria has been designed to serve as an emergency shelter and may be designated as such in the future.

Flooding and Tsunami Inundation

The flood zone designation for the site indicates there is minimal risk of flooding, and the Hawai'i Sea Level Rise Viewer (PacIOOS, 2023) indicates that the project area is not located within an area exposed to chronic flooding with 3.2 feet of sea level rise. While a portion of the site is in a tsunami inundation zone, the elevation of the overpass could be used to bring people to a safer elevation and to the school which is in the Tsunami Safe Zone. The overpass may also provide an alternate route to higher ground during flash flooding events.

Climate Change and Sea Level Rise

The overpass is not located within an area that is anticipated to be substantially impacted by 3.2 ft of sea level rise. The construction phase of the project is not anticipated to significantly contribute to additional greenhouse gas emissions associated with long-term climate change.

3.6 Flora and Fauna

Existing Conditions

Flora

A field study of the existing flora and fauna was conducted. The vegetation on the makai side of Pi'ilani Highway where the Pi'ilani Village housing development is located consisted primarily of popular introduced landscaping plant species. No grasses, shrubs or trees within the project area are known to be protected under Federal or State environmental laws as threatened, endangered or candidate species. Blue plumbago (*Plumbago auriculata*) accents the sign in front of Pi'ilani Village and large

hau trees (*Hibiscus tiliacea*) grow behind it, shielding the area from the street. A large monkeypod tree (*Samanea saman*) and hedge of coral creeper (*Baleria repens*) are planted along the length of fence leading from the sign to the south, transitioning to mock orange (*Murraya paniculata*) further down, followed by little bell (*Ipomoea triloba*) covering the chain link fence.

Groundcover along this same corridor is a mix of introduced grasses and herbaceous "weedy" plants typically found in disturbed areas. Grasses include bermuda grass (*Cynodon dactylon*), crabgrass (*Digitaria* spp.), swollen fingergrass (*Chloris barbata*), St. Augustine (*Stenotaphrum secundatum*), among others. The most common herbaceous plants include patches of creeping indigo (*Indigofera spicata*), common mallow (*Malva neglecta*), red spiderling (*Boerhavia coccinea*), coat buttons (*Tridax procumbens*), and hairy spurge (*Euphorbia hirta*). Occasional patches of moon flower (*Ipomoea alba*) were also observed in this stretch.

The mauka side of Pi'ilani Highway where the school entrance is located appeared to be in the process of being landscaped with a row of young, newly-planted kukui trees (*Aleurites moluccana*). In the surrounding areas that remain without landscaping, grasses and other plants which commonly populate previously disturbed areas have begun to crop up and these weedy species are all less than 12 inches in height. These low-level plants include nutgrass (*Cyperus rotundus*), castor bean (*Ricinus communis*), coat buttons (*Tridax procumbens*), hairy spurge (*Euphorbia hirta*), and tree tobacco (*Nicotiana glauca*).

Fauna

The overpass site in the existing Piilani Highway right of way and the corner of the Kūlanihāko'i High School parcel is not known to provide a habitat for any native animal species. Due to the developed nature and location of the project near an urbanized area, it is unlikely any threatened or endangered species are present on the site. There are no federally designated critical habitats within the immediate vicinity of the project area. Alien animal species such as mongoose may occasionally transverse the area.

Potential Impacts and Proposed Mitigation

Less than significant adverse impacts to flora and fauna may occur during the construction phase of the project. These impacts would likely result from ground disturbing activities during construction. However, since the project area is already highly developed and does not contain any known threatened or endangered species or critical habitat, adverse impacts are expected to be negligible. According to DLNR-DOFAW, the following species (listed in the paragraphs below) may occur at or in the vicinity of the project area.

The State listed 'Ōpe'ape'a or Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) could potentially occur at or in the vicinity of the project and may roost in nearby trees. Site cleaning will be timed to avoid disturbance to bats during their birthing and pup rearing season (June 1 through September 15). During this period woody plants greater than 15 feet (4.6 meters) tall will not be disturbed, removed, or trimmed, and barbed wire will be avoided to prevent ensnarement.

Seabirds may pass through the area at night. In the event that nighttime construction is required during the seabird fledgling season (September 15 to December 15), mitigation would include the presence of a qualified biologist to monitor and assess the risk of seabirds being attracted or grounded due to the lighting. Further, lights will be fully shielded to minimize the attraction of seabirds.

The outdoor lighting fixtures along the pedestrian overpass bridge, ramps and stairs will be shielded per Maui County Code, Chapter 20.35, to minimize impacts on light pollution which can affect seabirds and other species.

The State listed Nēnē or Hawaiian Goose (*Branta sandvicensis*) could potentially occur in the vicinity of the proposed project site. If any are present during construction, all activities within 100 feet (30 meters) will cease until the bird or birds leave the area of their own accord.

The project area is within the range of the State listed Blackburn's Sphinx Moth (*Manduca blackburni*) or BSM. Larvae of BSM feed on many nonnative hostplants, which includes tree tobacco (*Nicotiana glauca*), that grow in disturbed soil. DOFAW recommends removing plants less than one meter in height or during the dry season to avoid harm to BSM. If removed, these plants will be thoroughly inspected by a qualified entomologist for the presence of BSM eggs and larvae.

The transfer of plant and soil material between worksites will be kept to a minimum, to reduce the spread of detrimental fungal pathogens (e.g., Rapid 'Ōhi'a Death), vertebrate and invertebrate pests (e.g., Coqui Frogs, Little Fire Ants, etc.), or invasive plant parts (e.g., Miconia, Mullein, etc.) that could harm our native species and ecosystems.

3.7 Cultural Resources

Existing Conditions

A Cultural Impact Assessment (CIA) for the proposed construction of Kūlanihāko'i High School was completed by Scientific Consultant Services (SCS) in April 2010 for the Kīhei High School Final Environmental Impact Statement (September 2012) and included in that document as Appendix F. The Kūlanihāko'i High School Pedestrian Overpass project requires compliance with Act 50 Session Laws of Hawai'i 2000 and the State of Hawai'i environmental review process under Chapter 343, HRS, which requires consideration of the proposed project's effect on traditional cultural practices.

The purpose of a Cultural Impact Assessment is to identify the possibility of cultural activities and resources within a project area, or its vicinity, and then assess the potential for impacts on these cultural resources. The area of potential effect consists of the project area in the context of the Waiohuli Ahupua'a and other places on Maui that may be traditionally associated or connected with Kīhei, Ka'ono'ulu, Kōheo and/or the Kūlanihāko'i High School project area (Figure 3-8).

Potential Impacts and Proposed Mitigation

The information presented in the CIA for the Kīhei High School Final Environmental Impact Statement reveals no notable cultural activities took place at the specific project area. There is no record of Land Commission Awards within the project area. Therefore, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights, or any ethnic group, related to gathering, access or other customary activities will not be affected by the activities of the proposed overpass project. Adverse effects are not anticipated since no cultural activities were identified to occur at the project area.

3.8 Archaeological Resources

Existing Conditions

An Archaeological Inventory Survey (AIS) by Perzinski and Dega of Scientific Consultant Services (SCS) in December 2009 and was included as Appendix E in the Kīhei High School Final Environmental Impact Statement (2012). The AIS, *Archaeological Inventory Survey of 77-Acres for the Proposed Construction of Kīhei High School*, included the part of the proposed pedestrian overpass area in its survey mauka of Pi'ilani Highway. The AIS was accepted by SHPD on February 12, 2010 [Log No: 2010.1140; Doc No: 1002PC09]. The AIS documented one site (SIHP NO. 50-50-0-6393) within the 77-acre study parcel consisting of historic era rock piles and one alignment. This documented site is not within the proposed overpass project area.

The proposed project area makai of Pi'ilani Highway was not covered by the 2010 AIS. The makai project area was included in an addendum (Johnston-O'neill and Dega, 2017) to the 2015 (Dega) Archaeological Monitoring Plan (AMP) (accepted by SHPD on June 12, 2015 [Log No. 2015.02001, Doc. No. 1506MD16]) for utility work. The 2017 addendum was accepted by SHPD on May 3, 2017 (Log No. 2017.00055, Doc No. 1073MBF09).

The AIS (Perzinski and Dega, 2010), AMP (Dega, 2015) and AMP addendum (Johnston-O'neill and Dega, 2017) cite several archaeological surveys that have been conducted in the project's vicinity, including for the Pi'ilani Residential Community. The surrounding area in which the project area is located has been labeled the "barren zone" (Cordy 1977), a characterization that has been supported by numerous archaeological surveys in the area. Cox (1976) surveyed near the project area along the corridor of Pi'ilani Highway and did not document a single site or significant feature. Kirch (1985) examined similar geographic settings to the south (towards Mākena) and also did not find any evidence of traditional Native Hawaiian activities in the barren zone. Kennedy (1986) observed that the settlement pattern of avoiding the barren zone probably continued from ancient times through the early historic period. This barren zone is viewed as relatively marginal for permanent habitation because of its dryness, rocky soils, and dearth of natural resources. In general, archaeological surveys in the barren zone around Kīhei have confirmed these earlier suppositions about land use as there was very little evidence of pre-contact Native Hawaiian settlement.

Makai of the project area, within the two phases of the Pi'ilani Residential Community, four archaeological studies have been conducted. Cordy (1977) and Donham (1989 and 1990) documented a total of 23 sites including wall segments, small structures, cairns, historic structures, enclosures, and agricultural features. The surface features were interpreted as traditional Hawaiian (with the exception of concrete structure remnants) related to temporary habitation and agricultural pursuits (Dega, 2015).

Potential Impacts and Proposed Mitigation

The project area is within the developed footprint and built environment of Pi'ilani Highway, the newly constructed roundabout, Kūlanihāko'i Road, and Pi'ilani Villages. Given the scarce archaeological resources present in the area as documented in previous archaeological surveys and the existing development and built environment, it is unlikely that there are undiscovered archaeological resources in the project area. Coordination and consultation with the State DLNR SHPD on the proposed project will continue as the project moves forward. If it is determined during consultation that the conditions of the amended 2017 AMP can be extended to the project area, then those details can be determined prior to project construction.



Figure 3-8

Ahupua'a

3.9 Socioeconomic Characteristics

Existing Conditions

According to U.S. Census 2020 data (U.S. Census Bureau, 2020), the project area is located within Census Tract 307.05. Students traveling on foot and using the pedestrian overpass are likely to be from the 307.05 census tract and adjacent census tracts of 307.08 and 307.06. Students biking might come from these tracts and the nearby census tracts of 307.11, 307.12, 307.13, and 307.09 (Figure 3-9). These census tracts in total comprise the Kīhei Census Designated Place. Table 3.1 provides an overview of each census tract with information on population, number of households, the percent of households which speak a language other than English in the home, median household income, and the poverty rate.

Census Tract	Population (2020 Census)	Percent Population Maui County	Households	Percent Households Maui County	Percent Speak Language Other than English	Median Household Income	Poverty Rate
307.05	4,566	2.8%	1,151	2.1%	29%	\$100,335	5.7%
307.06	2,472	1.5%	966	1.8%	15.2%	\$78,520	13.5%
307.08	3,157	1.9%	1,057	2%	20%	\$108,359	7.6%
307.09	3,434	2.1%	1,705	3.2%	3.9%	\$73,441	12.3%
307.11	2,438	1.5%	989	1.8%	16%	\$74,602	6.4%
307.12	1,990	1.2%	860	1.6%	25.3%	\$75,000	5.2%
307.13	3,366	2.0%	1242	2.3%	21.3%	\$81,359	8.5%

In Census Tract 307.05, where the project is located, 41.2% of the population identified as Asian alone, 27% as White alone, 17.9% as two or more races, and 9.2% as Native Hawaiian and Other Pacific Islander. The proportion of people who identify as Asian alone in Census Tract 307.05, at 41.2%, is significantly higher than Maui County, at 26.9%. The employment rate of those 16 and older in Census Tract 307.05 is 70%.

Potential Impacts and Proposed Mitigation

The proposed project will provide a pedestrian overpass to connect Kūlanihāko'i High School with the community of Kīhei across Pi'ilani Highway. The project may result in several local jobs during the construction phase of the project; however, the project is not expected to significantly affect the local economy. The project is not anticipated to adversely affect the natural character of Kīhei or the socioeconomic characteristics of the surrounding community or Maui County. The project is also not anticipated to affect land and housing speculation, property values of area homes, or affordable housing in the area.

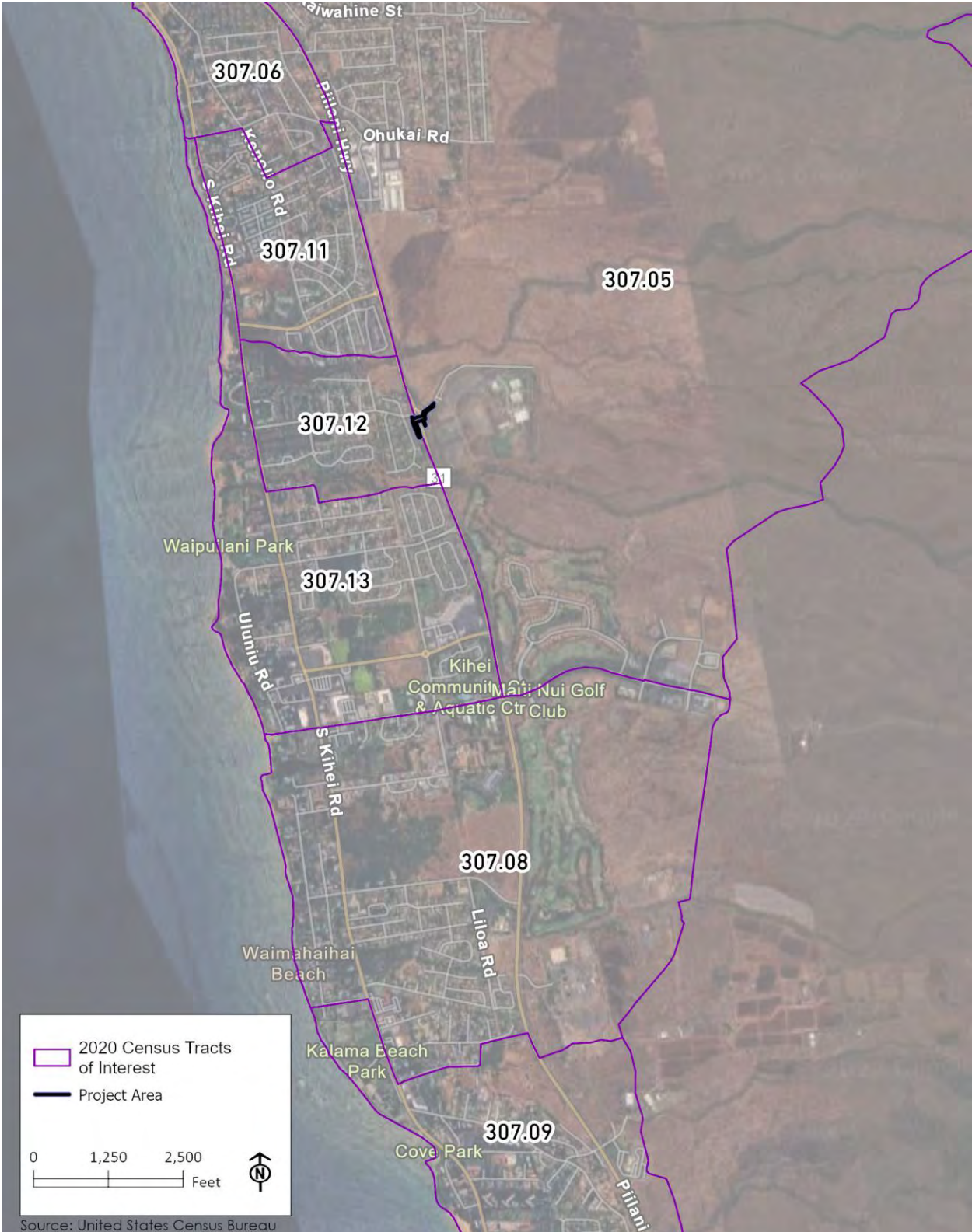


Figure 3-9

US Census Bureau 2020 Census Tracts

3.10 Visual Resources

Existing Conditions

The proposed project is located in the ahupua'a of Waiohuli, which begins on the upper slopes of Haleakalā. The project area is characterized as a relatively flat landscape with residential development makai of the project area and Kūlanihāko'i High School mauka of the project area. Apart from the high school, the mauka region is largely undeveloped open space. The rolling topography of the upcountry region is the dominant feature of the mauka, east-facing viewsheds. A residential neighborhood off Kūlanihāko'i Street is the dominant feature of the makai, west-facing viewshed. Pi'ilani Highway comprises the north-facing and south-facing viewsheds.

The importance of scenic views is noted in the Maui Countywide Policy Plan (2010) in the context of protecting the natural environment, and there is a policy to "Preserve and provide ongoing care for important scenic vistas, view planes, landscapes, and open-space resources." The 1998 Kihei-Mākena Community Plan acknowledges that the views from Kīhei to Upcountry are important assets and specifically calls out the mauka view from Pi'ilani Highway. The update to this plan, the draft South Maui Community Plan, also highlights the need to protect view corridors "including traditionally significant views and views to and from the shoreline." (See also Chapter 5 Plans and Policies).

Potential Impacts and Proposed Mitigation

Given that the area is largely developed between the adjacent residential neighborhood of Pi'ilani Village, Pi'ilani Highway, and the newly constructed Kūlanihāko'i High School and associated roundabout, the proposed overpass is expected to blend with the surrounding built environment. The proposed overpass is designed to maintain a safe and open viewshed for vehicles traveling along Pi'ilani Highway.

The proposed design of the overpass will have an approximate height of 33 feet. Due to its height, viewsheds may be minimally obstructed from various perspectives. The overpass is not expected to obstruct viewsheds of upcountry Maui from the adjacent residential neighborhood, Pi'ilani Villages.

Figure 3-10 provides a key to following figures that overlay a proposed overpass design onto existing view planes to show the potential visual impacts in *Figures 3-11 to 3-13*. *Figure 3-11* shows the view looking southwest from Point A (in *Figure 3-10*) a vantage point on the mauka side of the highway, where the overpass is seen below the horizon. The transparency of the design shows some of the vegetation below the horizon to show through the overpass. *Figure 3-12* provides a view from Point B (in *Figure 3-10*) looking southeast from the ground. In this view from the sidewalk on the makai side of Pi'ilani Highway, the views mauka are partially obscured by the overpass. The transparency of the overpass does provide some views. Once on the overpass, there are more expansive mauka views. *Figure 3-13* provides a view from Pi'ilani Highway from Point C (in *Figure 3.10*) looking north along the highway. As with the other views, the views are partially blocked from this perspective and the transparency still allows some views beyond the overpass.

Overall, the project is not expected to significantly impact visual resources. With the topography and elevation, when viewed from mauka of the highway the overpass will not block views of the coastline. When viewed from Pi'ilani Highway or the adjacent sidewalks, the overpass may partially obstruct views mauka; however, these will be momentary when travelling. Additionally, when using the overpass, the elevation gain will provide new a new vantage point for viewing upcountry scenic open space.



Figure 3-10

View Plane Key



Figure 3-11

Looking Southwest from Point A



Figure 3-12

Looking Southeast from Point B



Figure 3-13

Looking North from Point C

3.11 Utilities

The following section provides key highlights and assesses potential impacts of infrastructure and utility needs.

Existing Conditions

Utilities located within the project area include water, electric, sewer and stormwater. Utility work was conducted in the area for Kūlanihāko'i High School and the roundabout at the intersection of Pi'ilani Highway and Kūlanihāko'i Street. The proposed overpass will require electricity for lighting but will not require water or wastewater for its operations or maintenance. Due to the proximity of existing utilities in relation to the proposed overpass, the project will require relocations of water, electric and stormwater utilities.

Water

A 12-inch domestic water line serviced by the Maui County Department of Water Supply transects the roundabout and runs along the Kūlanihāko'i High School driveway. This 12-inch domestic water line provides Kūlanihāko'i High School with potable water and fire suppression water.

Electric

Underground utility lines run under Pi'ilani Highway from Kūlanihāko'i Street up to the Kūlanihāko'i High School campus. The underground utility lines consist of 12.47kV Maui Electric Company (MECO) circuits and Hawaiian Telcom and Spectrum telecommunications lines. A County owned underground fiber optic cable runs through the intersection on the makai side of Pi'ilani Highway. Underground street lighting circuits and pedestrian crossing signal circuits are also present in the area of the intersection.

Sewer

An 8-inch sewer main runs parallel to the existing water mains through the roundabout. This sewer main connects the campus' sewer system to the County of Maui sewer system in Pi'ilani Villages. This County of Maui sewer systems further runs to Maui County Wastewater Reclamation.

Stormwater

A 48-inch manhole is located within the project area on the makai/residential side of Pi'ilani Highway. A 24-inch reinforced concrete pipe connected to the manhole runs parallel to the highway on the makai side before crossing Pi'ilani Highway past the proposed overpass. The storm sewer outfalls into Waipuilani Gulch.

Potential Impacts and Proposed Mitigation

Water

Kūlanihāko'i High School will continue to be supplied with water from the Maui County Department of Water Supply 12-inch domestic water line currently under the project area off Pi'ilani Highway. The 12-inch domestic water line serviced by Maui County feeds an 8-inch domestic water line and a 12-inch fire suppression line that both service the school. The proposed overpass will require utility relocation of both the 8-inch and 12-inch service lines that provide the school with potable water and fire suppression water. The relocation of these service lines occurs on the mauka side of the highway within the school's property. The current alignment of each service line will be shifted slightly to run adjacent to the proposed mauka ramp, instead of underneath it. In operation, the proposed overpass will not impact water utilities.

Electric

The proposed project will require the removal of the existing pedestrian crossing signals and the relocation of an existing highway light pole on the makai/south side of the intersection. The existing highway light pole will be shifted a few feet to avoid conflicting with the proposed makai ramp. The new electrical work also includes a new MECO meter and service to the overpass, service equipment, and vandal-resistant pedestrian overpass lighting. The proposed project is not expected to cause adverse impacts to electrical utilities.

Sewer

The proposed project will not require the relocation or additional work to the existing sewer main. No adverse impacts to the sewer utility are expected.

Stormwater

The 24-inch reinforced concrete pipe connected to the 48-inch manhole on the makai side of the project area will need to be slightly reconfigured to avoid the proposed overpass' ramp support column. The existing storm pipe is currently located underneath the proposed makai ramp and would be inaccessible once the overpass is built. The pipe alignment will be rerouted to areas that provide adequate height clearance for future utility maintenance and repairs. No adverse impacts to the stormwater utility are expected.

3.12 Roadways, Access and Traffic Conditions

Existing Conditions

Pi'ilani Highway, also known as Hawai'i Route 31, is a 7.2-mile road that runs north to south from its junction with Maui Veterans Highway at north Kīhei to Wailea at the junction with Wailea Ike Drive. Pi'ilani Highway generally serves as the mauka boundary of Kīhei, with access to various connector roads which provide access to residential and commercial areas of Kīhei. The project is located at the roundabout junction of Pi'ilani Highway with Kūlanihāko'i Street (makai of the highway) and Kūlanihāko'i Road (mauka of the highway). Kūlanihāko'i Road provides access to Kūlanihāko'i High School. Pedestrian connectivity near the proposed project is currently limited to the sidewalks that were constructed with the roundabout. At this time, pedestrian traffic is minimal since Pi'ilani Highway is an arterial road, and all students are currently driven or bussed to Kūlanihāko'i High School.

Potential Impacts and Proposed Mitigation

Kīhei residents, particularly those in Pi'ilani Villages, and commuters along Pi'ilani Highway may be temporarily affected during the construction phase of the project, which may cause a slight increase in truck and machinery traffic during construction-related activities. These short-term impacts will be mitigated by restricting the delivery of construction materials and equipment to off-peak hours throughout the day. Additionally, some of the overpass construction, such as installing the bridge over Pi'ilani Highway, may be conducted during night hours to minimize impacts to day-time traffic.

Since pedestrian traffic in the area is already minimal, the construction phase of the proposed overpass is not expected to cause a significant adverse impact on pedestrians. Once the proposed overpass is completed, there will be a significant beneficial impact to pedestrian traffic and access by providing a multi-modal transportation corridor for the Kīhei community to Kūlanihāko'i High School.

3.13 Air Quality

The U.S. Environmental Protection Agency (EPA) established the National Ambient Air Quality Standards (NAAQS) per the requirements of the Clean Air Act (last amended in 1990) to protect public health and welfare and prevent the significant deterioration of air quality. These standards account for seven major air pollutants: carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O₃), particulate matter smaller than 10 microns (PM₁₀), particulate matter smaller than 2.5 microns (PM_{2.5}), sulfur oxides (SO_x), and lead. HDOH, Clean Air Branch (CAB) has also established State Ambient Air Quality Standards (SAAQS) for six of these air pollutants to regulate air quality statewide. The SAAQS for carbon monoxide and nitrogen dioxide are more stringent than NAAQS. Hawai'i also has a stringent standard for hydrogen sulfide, which is a common odorous pollutant associated with wastewater treatment facilities.

Existing Condition

Air quality at the project site is primarily affected by air pollutants from natural and/or vehicular sources. Natural sources of air pollution that may affect the air quality of the study area include aero-allergens from plants, and wind-blown dust from bare soil areas. Depending upon the prevailing wind direction, emissions from motor vehicles traveling on Pi'ilani Highway may be dispersed in the area. There are no adverse odor conditions emanating from the project site.

Tradewinds that regularly blow from a northeasterly direction moving air pollutants on land to the southwest positively influence air quality at the project site and throughout the State. In general, air quality in the State of Hawai'i continues to be one of the best in the Nation, and criteria pollutant levels remain well below NAAQS and SAAQS.

The HIDOH, CAB regularly samples ambient air quality at monitoring stations throughout the State and annually publishes this information. On Maui, there are six monitoring stations. The HIDOH Air Monitoring Station nearest the project area is in north Kīhei of Kaiwahine Street near Hale Pi'ilani Park. This Monitoring Station measures PM_{2.5}. The air quality index for this station is currently good.

According to the Annual Summary 2021 Hawai'i Air Quality Data, air quality monitoring data compiled by the HIDOH indicates that the established air quality standards for all monitored parameters are consistently met throughout the State and on the Island of Maui (excluding exceedances for fireworks and volcano emissions).

Potential Impacts and Proposed Mitigation

Short-term construction related activity is not expected to generate significant air quality impacts. There will be limited grading required and with little impact to the environment. Effective air pollution control measures will need to be provided to prevent or minimize any fugitive dust emissions caused by construction work from affecting the surrounding areas. BMPs will be implemented during construction of the project to minimize potential impacts and may include job site watering to minimize dust loss during construction, and proper maintenance of construction equipment and vehicles to minimize emissions. Operations at the project site will not generate significant adverse air quality impacts.

Once completed, the overpass will provide a pedestrian route of access to Kūlanihāko'i High School. This will reduce vehicle traffic to and from the campus and could reduce traffic related emissions that adversely impact air quality.

3.14 Noise

Noise is defined as unwanted sound. Sound may be classified as noise when it damages hearing ability, causes other bodily effects detrimental to health and safety, disturbs sleep or rest, interferes with conversations or other forms of communication, or is perceived as annoying or irritating.

The Day-Night Average Sound Level (DNL) method, developed by the Environmental Protection Agency, is the most widely used to describe environmental noise. The measurement is weighted so that late night noises are penalized, on the assumption that these noises are more objectionable because they disturb sleep.

In Hawai'i, the State of Hawai'i Department of Health (HIDOH) regulates noise from fixed mechanical equipment and construction activities. State HIDOH noise regulations are expressed in maximum allowable noise limits rather than DNL. Although they are not directly comparable to noise criteria expressed in DNL, HIDOH noise limits for various zoning districts are set for excessive noise sources during the day (7 A.M. to 10 P.M.) and night (10 P.M. to 7 A.M.) at the property line where the activity occurs, per Title 11, Chapter 46, of the Hawai'i Administrative Rules.

- Class A – Residential, conservation, preservation, public space, open space, or similar type zones – 55 decibel (dBA) (day) and 45 dBA (night)

- Class B – Multi-family dwellings, apartment, business, commercial, hotel, resort, or similar type zones – 60 dBa (day) and 50 dBa (night)
- Class C – Agriculture, country, industrial, or similar type zones – 70 dBa (day) and 70 dBA (night)

Construction activities, which are typically noisier than the HIDOH noise limits, are regulated through the issuance of permits for allowing excessive construction noise during limited time periods.

Existing Conditions

Y. Ebisu and Associates conducted an Acoustic Study for the *Kīhei High School Environmental Impact Statement* in September, 2011. According to federal noise standards, the existing traffic noise levels in the project environs along Pi'ilani Highway are in the "Significant Exposure, Normally Unacceptable" category, and at or greater than 65 DNL at the first row of existing homes on the makai side of the highway. It is assumed that the noise levels have remained the same or worsened as traffic volumes have increased since the study was issued.

Potential Impacts and Proposed Mitigation

Unavoidable, but temporary, noise impacts may occur during the construction activities within the project area. Because construction activities are predicted to be audible within the project area and at adjoining properties, the quality of the acoustic environment may exceed maximum permissible sound levels during periods of construction. Mitigation measures to reduce construction noise to inaudible levels will not be practical in all cases, but the use of quiet equipment is recommended as a standard mitigation measure. The implementation of HIDOH noise related permit procedures and curfew periods for construction activities is also expected for this project. Should a permit be required, construction activities that emit noise in excess of maximum permissible sound levels before 7 A.M. and after 6 P.M. of the same day Monday-Friday; before 9 A.M. and after 6 P.M. on Saturday; and on Sundays and holidays will not be allowed. If construction is planned to occur outside of normal permitted times, a HIDOH noise variance will be needed.

3.15 Public Services and Facilities

Existing Conditions and Potential Impacts

Medical Facilities

The closest medical facility is approximately 1.1 miles away from the project area at Kihei-Wailea Medical Center. The closest hospital is Maui Memorial Medical Center, approximately 11.9 miles from the project area. The project is not expected to affect or impact the service capacity of these medical facilities.

Educational Facilities

The closest educational facility to the project area is Kūlanihāko'i High School, which is approximately 0.5 miles away from the project site. The project's original intent and purpose is to provide safe pedestrian access to the campus from the community of Kīhei. The project is expected to have a beneficial impact on Kūlanihāko'i High School.

Other nearby educational facilities include Kīhei Elementary School and Lokelani Intermediate School (approximately 3.2 miles from the project area), and Kīhei Charter School (approximately 3.5 miles from the project area). The project is not expected to have an adverse impact on these educational facilities.

Recreational Facilities

Recreational facilities near the project area include Maui Nui Golf Club (approximately 1.1 miles from the project area) and Kīhei Regional Park (approximately 1.5 miles from the project area). The project is not expected to have an adverse impact on these recreational facilities.

Police and Fire Services

The project falls within Maui Police Department, Kīhei Division. The closest station is located approximately 2.6 miles from the project area. The Kīhei Fire Station is located 2.6 miles from the project area. The project is not expected to have an adverse impact on police and fire services.

Refuse

Construction waste generated from the construction of the overpass will be taken to the Central Maui landfill which is about 10 miles from the project site.

3.16 Potential Cumulative and Secondary Impacts

Cumulative impacts are the result of incremental effects of an activity when combined with other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions.

The cumulative impacts of the proposed overpass will be positive as the new route of pedestrian access to the Kūlanihāko'i High School campus will support students, families, faculty, staff, and administrators. The proposed overpass will benefit Kūlanihāko'i High School, which is a critical component of a healthy community.

Secondary effects are impacts that are associated with an activity but do not result directly from the activity. No secondary adverse impacts are anticipated from the proposed project. The proposed project will provide beneficial secondary effects for the community of Kīhei and the greater community on Maui. These beneficial secondary impacts of the proposed project include:

- Providing a safe route of pedestrian access to the Kūlanihāko'i High School from Kīhei,
- Reducing traffic impacts associated with Kūlanihāko'i High School when compared with an at-grade crossing, and
- Conformance with County of Maui and Kīhei planning and policies for more sustainable and resilient communities.

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Alternatives to the Proposed Project

Chapter 4

Alternatives to the Proposed Project

The following presents an analysis of the alternatives to the proposed project.

4.1 No-Action Alternative

The “No-Action” alternative is the baseline against which all other alternatives are measured. “No-Action” refers to the future site conditions that would result should the project not proceed. The No-Action Alternative means that the HIDEOE would not proceed with constructing the overpass.

Without the construction of a grade-separated pedestrian crossing, the HIDEOE cannot meet the 2013 Land Use Commissions Findings of Fact, Conclusions of Law and Decision and Order condition from the reclassification of the land from Agricultural to Urban District.

The condition pertaining to the pedestrian crossing is as follows (*please note that the references to phases are different from the school construction phases*):

- b. *The petitioner [HIDEOE] shall complete a pedestrian route study for Phase I of the Project which includes ingress and egress of pedestrians through defined location(s) approved by HIDOT and shall analyze compliance with the proposed warrants in FHWA/RD-84/082 (July 1984) to the satisfaction of HIDOT. The pedestrian route study and analysis shall be completed and approved by the prior to the Petitioner executing a contract for the design of Phase I of the Project. **Petition shall cause to be constructed, or ensure that there is an available above or below ground pedestrian crossing and implement such mitigation or improvements as may be required or recommended by the study and analysis to the satisfaction of HIDOT prior to opening Phase I of the Project...** (emphasis added).*

Currently interim measures are in place that allowed the school to open prior to the construction of a grade-separated crossing. Students are arriving via car or shuttle with no students biking or walking where they would need to cross Pi'ilani Highway. In the long-term, a grade-separated crossing is needed for the increasing student population, and the No-Action Alternative is not considered a viable alternative.

4.2 Alternative Crossing Locations and Types of Crossings

Five (5) possible alternatives for pedestrian crossings at three (3) locations along Pi'ilani Highway were identified for consideration and analysis in the Kūlanihāko'i High School Grade-Separated Pedestrian Crossing Alternatives Study (HIDEOE, 2022). *Figure 4-1* shows the locations and types of crossings including the Alternative A, an overpass at Kūlanihāko'i Street, which was selected as the proposed project for this EA. All of the grade-separated pedestrian crossing alternatives include ADA ramps and pre-cast and prefabricated construction where possible to decrease cost and construction time.



Figure 4-1 Alternatives from Kūlanihāko'i High School Grade-Separated Pedestrian Crossing Alternatives Study, December 2022

4.2.1 Alternative B – Underpass Near Kūlanihāko'i Street

Alternative B, an underpass at the intersection of Pi'ilani Highway and Kūlanihāko'i Street, was considered. The alternative would have used pre-constructed box culverts that could be “dropped” into an open trench dug across the highway.

Alternative B is more complex than designs for the overpass alternatives and therefore require the most design time. The underpass designs must account for significant earthwork and the potential issues that may arise with unforeseen and buried utilities. Electrical, lighting and security systems are also more complicated and require more time to address in design.

Construction of this alternative would have resulted in the most traffic disruptions of the alternatives analyzed because it would require large sections of Pi'ilani Highway to be closed for trenching, installation, and pavement repairs. The construction would also have greatly impacted local noise and air quality. This alternative was more costly and took more time for construction than the preferred alternative. This option also raised concerns by some community members and students regarding lack of visibility to the crossing and impacts that might have on safety.

4.2.2 Alternative C – Overpass Near Waipu'ilani Gulch

Alternative C is an overpass at the southwest corner of the high school property and just north of the Waipu'ilani Gulch. The preliminary design for purposes of the preliminary analysis was a prefabricated truss system bridge connected to two structures to the mauka and makai of Pi'ilani Highway.

Alternative C involves construction in Waipu'ilani Gulch which triggers federal regulatory requirements. Alternative C includes construction of an elevated walkway in the gulch makai of the existing HIDOT Pi'ilani Highway bridge that would connect pedestrians to the overpass. United States Army Corps of Engineers (USACE) Honolulu District has determined that Waipu'ilani Gulch is a Water of The United States (WOTUS) and therefore is under their jurisdiction. Under the Clean Water Act Section 404 and Section 401 (Water Quality Certification), projects affecting a WOTUS must obtain associated permits and certifications. Alternatives C would also need a Stream Channel Alteration Permit from the State Commission on Water Resource Management. These permit processes must be completed in sequential order.

The location showed potentially lower usage rates as the students walking or biking distances were longer for those living north of Kūlanihāko'i Street as they would need to travel beyond the campus entrance to cross the highway. This distance would affect the usage of the crossing. In addition, the construction in the gulch added considerable time for the preparation and submission of the related permit applications.

4.2.3 Alternative D – Underpass at Waipu'ilani Gulch Highway Bridge

Alternative D is an underpass at Waipu'ilani Gulch Pi'ilani Highway bridge. To keep the students out of the drainage way and to maintain the existing drainage flow, the existing diagonal concrete bank edges on the south side of the gulch would need to be cut so that vertical retaining walls could be built to widen and enclose the pedestrian path while maintaining the same hydraulic capacity of the channel under the bridge. Impacts to the existing bridge structure from the removal of the existing concrete bank edges would have to be evaluated and mitigated through design.

The underpass design of Alternative B (like Alternative D) is a more complex design than the other GSPC alternatives and therefore requires more design time and increased costs. The underpass designs must account for significant earthwork and the potential issues that may arise with unforeseen and buried utilities. Electrical, lighting and security systems are also more complicated and require more time to address in design. This alternative would also have required elevated pathways above the drain channel to keep students safe during flash flooding which was a HDOE and community concern.

This option also raised concerns by some community members and students regarding lack of visibility to the crossing and impacts that might have on safety.

Alternative D like Alternative C above is located with Waipu'ilani Gulch which triggers specific Federal and State permitting requirements. These design and permitting issues translate as higher costs and longer time to implement Alternative D than the other crossing alternatives.

4.2.4 Alternatives E – Overpass Near Waipu'ilani Road

Alternative E is an overpass at East Waipu'ilani Road. This location is not adjacent to the high school property and would therefore require the construction of additional infrastructure, including a sidewalk on the mauka side of the highway. The existing highway bridge is not wide enough to include a sidewalk, and a supplementary truss pedestrian bridge to cross Waipu'ilani Gulch was added to the design.

While this alternative is closer to south Kīhei communities, it is the furthest from the newly constructed high school and would not serve many of the north Kīhei students not served by bus service. The cost and timeline to construct are more than the preferred alternative.

4.2.5 Alternatives Not Analyzed in the Study

There was strong community interest in using the floodway and Waipu‘ilani Gulch channel for a boardwalk underpass crossing. The community’s preliminary design for the boardwalk located it within the drainage way. Due to the safety risks associated with students attempting to cross the highway with an underpass within a drainage area that is subject to periodic or potential flash flooding, HIDOE did not pursue analysis of this alternative in the study.

Creating enough space under the bridge for a boardwalk that is out of the floodway would necessitate a reconstruction of the gulch channel and/or the concrete bridge foundation. One method of separating pedestrian pathway from the floodway would be to lower the bottom of the channel. However, if this method were pursued, the channel would need to be lowered for a considerable distance downstream, upstream, and under the bridge to prevent the flood waters from overtopping the banks of the gulch or bridge. Another method would be to raise the bridge height to provide the needed distance. Both options would be extremely expensive, time-consuming, and involve major traffic disruptions.

4.3 Construction Materials/Design

During the Kūlanihāko‘i High School Grade-Separated Pedestrian Crossing Alternatives Study and subsequently, two main types of overpass bridge structural material have been investigated. The two different structural design alternatives considered were a concrete girder bridge and a steel truss bridge. The steel would be prefabricated. The concrete is precast. For both options, the ramps decks would be precast, but the stairs and foundations would all be cast-in-place concrete. There would be other various material used for elements such as railings, enclosures, etc.

Several factors were considered in the selection of the bridge material type including cost and maintenance. While the cost for a prefabricated steel truss system bridge was initially thought to be less expensive, further research revealed that precast concrete girder design is a less expensive option. The maintenance of steel is higher than concrete as steel requires regular inspection, repair and coating to prevent corrosion.

4.4 Preferred Alternative/Proposed Action – Overpass at Kūlanihako‘i

The preferred alternative is constructing the overpass at Kūlanihāko‘i Street (Alternative A from the Kūlanihāko‘i High School Grade-Separated Pedestrian Crossing Alternatives Study). This option is in a location that has the shortest travel distance for the greatest number of students living within the 1.5-mile radius of the school who would not be eligible for bus service to campus. Usability of a grade-separated crossing by students was one of the most important criteria during the HIDOE community outreach for their alternatives analysis study. This alternative received the most support from attendees at the Kūlanihāko‘i High School Grade-Separated Pedestrian Crossing Alternatives Study open house.

The overpass bridge would be constructed of precast concrete. The overpass can be constructed in the least amount of time of the five options that were analyzed and had the lowest cost.

Chapter 5

Plans and Policies

Chapter 5

Plans and Policies

The consistency of the Kūlanihāko‘i High School Pedestrian Overpass project with applicable Federal, State of Hawai‘i and County of Maui planning and land use objectives, policies, principles and guidelines are discussed below.

5.1 Americans with Disabilities Act

In 1991, the Federal government enacted the Americans with Disabilities Act (ADA) to provide equal accessibility for persons with disabilities. Part of this statute requires building designs to consider and incorporate the needs of persons with disabilities. HRS §103-50 states, “...all plans and specifications for the construction of public buildings, facilities, and sites shall be prepared so that the buildings, facilities, and sites are accessible to and usable to persons with disabilities. The buildings, facilities, and sites shall conform to the Americans with Disabilities Act Accessibility Guidelines...”

HRS Chapter 348F created the Disability and Communication Access Board (DCAB). DCAB adopts rules for the design of buildings, facilities, and site, by or on behalf of the State and Counties. HAR §11-216 provides these requirements for accessibility to public buildings, facilities, and sites.

Discussion

The proposed project will comply with ADA and DCAB accessibility requirements. The Kūlanihāko‘i High School Pedestrian Overpass will include accessible, uniform ramps at a 1:12 slope ratio as mandated by the ADA Accessibility Guidelines (ADAAG). The overpass design will also comply with other requirements and guidelines as specified in the ADAAG including width, landings, handrails, edge protection, surface and traction, cross slope, and clearances.

5.2 Hawai‘i State Plan

The Hawai‘i State Plan establishes a statewide planning system that provides goals, objectives, and policies that detail priority directions and concerns of the State of Hawai‘i; these will be discussed as they relate to the planned project.

It is the goal of the State, under the Hawai‘i State Planning Act (Chapter 226, HRS), to achieve the following:

- A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai‘i present and future generations.
- A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.
- Physical, social, and economic well-being, for individuals and families in Hawai‘i, that nourishes a sense of community responsibility, of caring, and of participation in community life.

Specific objectives and policies of the State Plan that pertain to the planned improvements are as follows:

Section 226-14 Objective and policies for facility systems—in general

- (a) *Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, sustainable development, climate change adaptation, sea level rise adaptation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives*
- (b) *To achieve the general facility systems objective, it shall be the policy of this State to:*
 - (1) *Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.*
 - (2) *Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.*
 - (3) *Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.*
 - (4) *Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.*
 - (5) *Identify existing and planned state facilities that are vulnerable to sea level rise, flooding impacts, and natural hazards.*
 - (6) *Assess a range of options to mitigate the impacts of sea level rise to existing and planned state facilities. [L 1978, c 100, pt of §2; am L 1986, c 276, §13; am L 2021, c 178, §4]*

Discussion

The project will meet the objective of accommodating the needs of Hawai'i's people through facility systems and capital improvements. The project is designed to meet individual and community needs while balancing costs and ensuring the safety of students, staff and community members crossing Pi'ilani Highway on foot or bicycle.

Section 226-17 Objectives and policies for facility systems – transportation

- (a) *Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:*
 - (1) *An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.*
 - (2) *A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.*
- (b) *To achieve the transportation objectives, it shall be the policy of this State to:*
 - (1) *Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter;*
 - (2) *Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;*
 - (3) *Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties;*

- (4) *Provide for improved accessibility to shipping, docking, and storage facilities;*
- (5) *Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs;*
- (6) *Encourage transportation systems that serve to accommodate present and future development needs of communities;*
- (7) *Encourage a variety of carriers to offer increased opportunities and advantages to interisland movement of people and goods;*
- (8) *Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs;*
- (9) *Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification;*
- (10) *Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii's natural environment;*
- (11) *Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation;*
- (12) *Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives; and*
- (13) *Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency. [L 1978, c 100, pt of §2; am L 1986, c 276, §16; am L 1993, c 149, §1; am L 1994, c 96, §3]*

Discussion

The project advances State objectives related to transportation systems. The project provides an additional mode of transportation for students to travel to school, thus supporting multi-modal systems in conformance with the growth and physical development of the community at present and into the future. The project is a coordinated effort between HIDOE and HIDOT. HIDOE funding the design of the overpass in accordance with HIDOT standards, and HIDOT overseeing the procurement and funding the construction. HIDOT will be the owner and operator of the completed overpass. The project has incorporated community input into design and development and encourages safe and convenient use of non-polluting means of transportation.

Section 226-21 Objectives and policies for socio-cultural advancement–education

- (a) *Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.*
- (b) *To achieve the education objective, it shall be the policy of this State to:*
 - (1) *Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.*
 - (2) *Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.*
 - (4) *Promote educational programs which enhance understanding of Hawai'i's cultural heritage.*

Discussion

The project will support State objectives and policies for socio-cultural advancement and education. The project supports the accessibility of educational services and facilities to meet individual and community needs by linking Kūlanihāko'i High School with the residential community and neighborhoods of Kīhei across Pi'ilani Highway.

Section 226-102 Overall Direction

The State shall strive to improve the quality of life for Hawai'i's present and future population through the pursuit of desirable courses of action in seven major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education, principles of sustainability, and climate change adaptation.

Discussion

The project improves the quality of life by providing an additional mode of transportation to connect Kūlanihāko'i High School and its educational facilities with the broader Kīhei community. The project supports the current development and population trends for the Kīhei community and encourages safe and convenient use of non-polluting means of transportation.

5.3 Hawai'i Coastal Zone Management Program

The Coastal Zone Management Act of 1972 (16 USC Section 1451), as amended through Public Law 104-150, created the coastal management program and the National Estuarine Research Reserve system. The coastal states are authorized to develop and implement a state coastal zone management program. Hawai'i Coastal Zone Management (CZM) Program received federal approval in the late 1970's. The objectives of the State's Hawai'i CZM Program, HRS §205A-2, are to protect valuable and vulnerable coastal resources such as coastal ecosystems, special scenic and cultural values and recreational opportunities. The objectives and policies of the program addresses measures to reduce coastal hazards and to improve the review process for activities proposed within the coastal zone.

The State's CZM Program charges each County with designating and administering Special Management Areas (SMA) within the State's coastal areas to implement guidelines for potential development impacts on the shoreline, near shore, and ocean area environments. Any development, as defined by the CZM Law, located within the SMA requires an SMA Use Permit.

County of Maui Department of Planning provided a determination that the project area is outside of the SMA in their letter of August 22, 2023.

Discussion

Although the project is located outside of the SMA as delineated by the County of Maui, HRS §205A requires all state and county agencies to enforce CZM objectives and policies as set forth in HRS §205A-2. The following table examines the project's conformance with the objectives of the Hawai'i CZM Law.

Table 5.1 CZM Objectives/Policy Applicable to the Project

Subject Area	Objective/Policy
Recreational resources	The project is not located along the shoreline and will not affect existing public access to coastal recreational resources.
Historic resources	Archaeological studies have been conducted for the high school Final Environmental Impact Statement (EIS), where area archaeological resources were identified and analyzed.
Scenic and open space resources	As discussed in <i>Section 3.10</i> , the project is not expected to adversely affect vistas or scenic resources. The overpass will be reflective of the natural environment and the area's existing visual qualities. The overpass is not anticipated to alter the existing characteristics of the area, nor will it further reduce the visual quality of the area.
Coastal ecosystems	The project is not located along the shoreline and will not impact coastal ecosystems.
Economic uses	Not applicable.
Coastal hazards	The project will not affect or impact coastal flooding or coastal hazards.
Managing development	The project will be conducted in compliance with State and County environmental rules and regulations. This EA is prepared in accordance with HRS, Chapter 343 and HAR, Chapter 11-200.1 and complies with the requirements for assessing and communicating the potential short and long-term impacts.
Public participation	Public notification of the proposed action will be provided with publication of the Draft EA. See <i>Chapter 1</i> of this EA for a list of agencies, organizations and individuals consulted in the preparation of this EA.
Beach protection	Not applicable.
Marine resources	The project is not anticipated to adversely affect marine resources. Although the park is located inland from the coastal area, appropriate BMPs, as discussed throughout this EA, will be used during construction to prevent the release of materials that have the potential to affect marine and coastal resources.

5.4 County of Maui Ordinances

Title 19, Article II of the Maui County Code establishes the Comprehensive Zoning Ordinance for the county. The zoning ordinance intends to regulate the utilization of land in a manner encouraging orderly development in accordance with the land use directives of the Hawai'i Revised Statutes, the revised charter of the County of Maui (1983), as amended, and the general plan and the community plans of the County.

Discussion

The project is located on land designated as Road on the County zoning maps. A small portion of the project area mauka of Pi'ilani Highway is designated as P-1 Public/Quasi-Public. The permitted uses for P-1 Public/Quasi-Public include public facilities and public uses, meaning a facility or structure that is owned or managed by the government and provides a governmental function or service for public benefit. The project therefore conforms with the P-1 Public/Quasi-Public land use designation.

5.5 Maui County General Plan 2030

The Maui County General Plan is a long-term, comprehensive blueprint for the physical, economic, and environmental development and cultural identity of the county.

5.5.1 The Countywide Policy Plan

The Countywide Policy Plan provides broad goals, objectives, policies, and implementing actions that portray the desired direction of the County's future. Furthermore, the Countywide Policy Plan provides the policy framework for the development of the Maui Island Plan, discussed in *Section 5.6.2*, and the nine community plans, discussed in *Section 5.6.3*.

One of the core themes of the Countywide Policy Plan is to "Diversify Transportation Options." This theme encompasses the objective of "reducing reliance on the automobile and fossil fuels by encouraging walking, bicycling, and other energy-efficient and safe alternative modes of transportation." The policies set forth in this objective include making walking and bicycling transportation safe and easy between and within communities, requiring that development be designed with the pedestrian in mind, providing adequate sidewalks, bicycle lanes, or separated multi-use transit corridors, and encouraging educational programs to increase safety for pedestrians and bicyclists.

Discussion

The project conforms with the goals, objectives, policies and actions of the Countywide Policy Plan. The project improves access to Kūlanihāko'i High School for students, faculty, and additionally to the community as a public facility. The project will also provide an additional route and transportation mode thereby reducing roadway traffic, congestion, and reliance on fossil fuels.

5.5.2 Maui Island Plan

The Maui Island Plan (MIP) establishes core values, goals, objectives, and policies specific to the island's vision. One of the Core Values is to "*establish a sustainable transportation system that includes multiple modes, including walking, biking, and mass transit, as well as automobile-based modes...*"

Discussion

Three goals from the MIP have been identified as applicable to this project:

- An interconnected, efficient, and well-maintained, multimodal transportation system;
- A diverse range of active and passive recreational parks, wilderness areas, and other natural-resource areas linked, where feasible, by a network of greenways, bikeways, pathways, and roads that are accessible to all; and
- School and library facilities that meet residents' needs and goals.

Stemming from the above goals, the objectives and policies provide more specific direction on the development of integrated transportation systems to encourage alternate forms of transportation such as walking and biking. This would be facilitated by the creation of a network of safe, interconnected bike and pedestrian paths to increase accessibility to open spaces, recreational areas, neighborhoods, and schools. The MIP also points to the implementation of the actions described in the Safe Routes to School initiative. Related to scenic resources, the MIP has an objective that relates to the reducing of development and public-utility improvements on scenic resources.

The MIP discusses the Kīhei Mauka planned growth area in North Kīhei consisting of approximately 583 acres mauka of Pi'ilani Highway, north of the Waipu'ilani Gulch, and adjacent to the Kūlanihāko'i High School property. The MIP specifies that this area will provide for mixed land uses and connect a "network of walkable communities" in a new town setting. Kīhei Mauka will connect existing residential communities to Kūlanihāko'i High School.

5.5.3 Community Plans

Kīhei-Mākena Community Plan (1998)

The Kīhei-Mākena Community Plan identifies reduced dependence on vehicular transportation within the community as a significant need due to the congestion of main roads. One of the primary solutions is to facilitate alternative transportation options such as walking and biking through the creation of paths that are physically separated from automobile traffic. The Community Plan specifies that an integrated system of pedestrian and bicycle paths should be provided in urban areas where development currently exists or is planned to exist. The pathways should be designed to establish access to and create a network of open spaces and should incorporate both the natural and physical features of the urban area (i.e., gulches, drainageways, parks, residences, neighborhood commercial areas, schools, and other public facilities.)

Draft South Maui Community Plan (October 2023)

As part of the process to replace the existing Kīhei-Mākena Community Plan with a new South Maui Community Plan, the South Maui Community Plan Transportation & Mobility Resource Paper was prepared by Belt Collins and Fehr & Peers to illustrate the current state of transportation in the region of South Maui and provide strategies for addressing key challenges. It also contains a discussion and map of traffic fatalities in the region, including the corridor of Pi'ilani Highway adjacent to Kūlanihāko'i High School. Key challenges for mobility identified for the region included the lack of safe connections for pedestrians and bicyclists (including a lack of protection from cars on the road shoulder), traffic congestion on South Kīhei Road and Pi'ilani Highway due to the limitations of North-South travel routes, and transportation equity. Suggestions for improving mobility center around the development of a multimodal transportation network that will offer benefits in all key challenge areas.

A series of Community Design Workshops were held from Sept. 17 - Oct. 27, 2021. Input from these workshops was gathered on a map of the region where community members marked areas of interest with ideas and comments. Comments pertaining to the Kūlanihāko'i High School area and the surrounding corridor of Pi'ilani Highway from just south of Ka'ono'ulu Street to just north of East Waipu'ilani Road were largely about traffic patterns (including the placement of roundabouts and the expansion of north-south connector roads) and desired pedestrian/bike access routes. At least eight commenters pointed to safety issues for students trying to cross the busy highway and the need for a grade-separated crossing (rather than relying on the roundabout alone).

The draft South Maui Community Plan also includes policies related to protecting mauka and makai public view corridors and scenic vistas.

Discussion

The project conforms with the Kīhei-Mākena Community Plan (1998) and its ongoing update, the South Maui Community Plan, particularly regarding the creation of walking and biking paths separated from automobile traffic. The project also fulfills public comments received on the South Maui Community Plan to include more safe connections for walking and biking access routes in the area.

5.6 Transportation Plans

Federal-Aid Highways 2035 Transportation Plan for the District of Maui (2014)

In July 2014, the State of Hawaii published its 2035 Transportation Plan for the District of Maui, which guides land transportation decisions for the federal-aid highway network on the Islands of Maui, Molokai, and Lanai through 2035. By defining goals and needs and recommending multimodal solutions specific to the region, it sets the direction for land transportation system improvements for which priorities and funding can be and have been developed. Relative to the Kūlanihāko'i High School study area, two potential long-range capacity solutions were identified in this document and included in Exhibit 4-4:

- *Kīhei to Upcountry Connector - Pi'ilani Highway to Haleakala Highway*: Construct a new 2-lane collector roadway between Pi'ilani Highway at Ka'ono'ulu Street to Haleakala Highway at Hali'imaile Road.
- *Kīhei Mauka Bypass - Mokulele Highway to Kanani Road*: Construct a new 4-lane bypass roadway between Mokulele Highway (north of N. Kīhei Road) and Kanani Road, realign N. Kīhei road to new intersection.

Both projects would affect traffic volumes on Pi'ilani Highway in the vicinity of Kūlanihāko'i High School. However, neither project is included in the current list of recommended projects in the Maui MPO's Hele Mai Maui plan (see below). Significant additional environmental and design work is still needed for both projects, neither project is funded, and each includes an estimated cost in excess of \$100 million. Given the State's current focus on projects with resiliency and operational benefits, neither project is expected to be developed in the near future.

Bike Plan Hawai'i (2003)

The overall goal of the State of Hawai'i Department of Transportation Bike Plan Hawai'i is to establish bicycling as a safe and convenient mode of transportation for residents and visitors throughout the state. It recommends actions to achieve the stated objectives of engineering and planning, education, enforcement, economics, and encouragement. Recommendations include improving each island's network of integrated bikeways for safety and convenience, encouraging counties to require new developments to accommodate bicycles, integrating bikes with other modes of transportation, and including pedestrians in future facilities plans given their shared issues and needs.

It also discusses the "Safe Routes to School" movement to get kids walking and biking to school. Under this initiative "parents, school administrators, local officials, neighborhood groups, and traffic engineers work together to identify hazards along heavily-traveled routes to school and recommend changes." A list of 18 proposed bikeway projects for the Kīhei-Mākena area is located in the Plan, five of which were Priority I Proposals for the island of Maui.

An update to the plan, titled the Bike Plan Hawai'i Refresh Priorities & Implementation Plan 2022 lists the Kīhei Pi'ilani Highway as both a county and public priority. The effort also updated planning level cost estimates, feasibility, and prioritization for projects initially proposed in the 2003 Plan. This information will be used to guide the implementation of projects on each island.

Hele Mai Maui: Maui MPO Long-Range Transportation Plan 2040 (2019)

The Hele Mai Maui Long-Range Transportation Plan provides context for how people move around the island of Maui, identifies key opportunities, and sets broad goals based on community values. It describes supportive transportation policies and programs and identifies projects and programs that are needed to further transportation improvements for Maui over the next 20 years. Several measures of success defined in this Plan relate to biking and walking. These include increasing the number of safe facilities for walkers and bikers and improving access to town centers, schools, and parks. This plan includes a project to improve the intersection of Pi'ilani Highway and the Kūlanihāko'i High School crossing at Kūlanihāko'i Street. This plan's publication date pre-dates the existing roundabout at the intersection and may need to be reviewed and/or revised.

Vision Zero Maui

The Vision Zero Maui Action Plan March 2021 is part of an initiative to have zero traffic fatalities and serious injuries by 2040 lead by the Maui Metropolitan Planning Organization. Applicable near-term actions include:

- Create Safe Speeds through speed management, setting of appropriate limits and designing roads to encourage safe speeds.
- Build Safe Streets for Everyone which calls for the implementation of the *Hele Mai Maui 2040 Transportation Plan* and applying of a systemic approach to safety by focusing safety improvement to address high-risk roadway features.

Maui MPO Transportation Improvement Program

The Maui Metropolitan Planning Organization's Transportation Improvement Program (TIP) Federal Fiscal Year (FFY) 2022-2025 lists a County of Maui Department of Public Works a fiscal year 2025 project for the Kīhei North-South Collector Road. Phase 1 of this project would extend an existing two-lane roadway (Līloa Drive) and separated multi-use path (greenway) and construct a bridge over Waipu'ilani Gulch. The project area is from Kūlanihāko'i Street to Waipu'ilani Place with an estimated cost of \$27 million. The project was carried forward from the 2019-2022 TIP. Permitting, public outreach, design and environmental studies are in progress.

Kīhei Community Association Position Papers

The Kīhei Community Association (KCA) has been an active participant in discussions of pedestrian and bicycle safety around the high school and has provided comments during the development of the high school site, position papers on road and transportation standards and bicycle transportation and sidewalks for Kīhei. These papers contain general guidance and, in some cases, specific recommendations and desired projects. In a Position Statement dated May 1, 2014, KCA describes the conditions in the community that they believe are not conducive to safe walking or biking and have led instead to increased automobile use, even for short trips. Conditions described included the lack of sidewalks and bike paths, narrow and unsafe bike lanes, infrequent bus service and inadequate bus stop facilities (i.e., shelters and paved turnouts). Following this, a list of eight statements lays out the specific actions KCA would like to see taken by the county and state to improve the community's options for safe multimodal transportation. This list includes items such as the request that all developments meet the mandate for Complete Streets, the use of specific road design standards applicable to bike lanes and bike/pedestrian paths, and bridge design parameters.

Discussion

The transportation plans above each share common goals of developing and connecting walk and bike paths to improve connectivity and reduce traffic congestion, fatalities, pollution and dependence on fossil-fuels. The overpass project conforms with the various state and county transportation plans relevant to Maui and the project area.

The pedestrian overpass project is a key component of bicycling and walking routes in the Kīhei area. The use of the overpass will be strengthened by the implementation of additional biking and walking infrastructure that links users to it.

Findings Supporting the Anticipated Determination

Chapter 6

Findings Supporting the Anticipated Determination

6.1 Anticipated Determination

Based on a review of the significance criteria outlined in HRS §343 and HAR §11-200.1-13, the construction of the Kūlanihāko‘i High School Pedestrian Overpass is not anticipated to result in significant adverse effects on the natural or human environment. A Finding of No Significant Impact (FONSI) is anticipated for the project.

6.2 Reasons Supporting the Anticipated Determination

The potential impacts of the Kūlanihāko‘i High School Pedestrian Overpass have been fully examined and discussed in this EA. As stated earlier, there are no significant environmental impacts expected to result from the planned improvements. This determination is based on the assessments as presented below for criterion (1) to (13).

(1) *Irrevocably commit a natural, cultural or historic resource.*

As currently understood and discussed in previous sections, the project does not involve the loss or destruction of natural, cultural, or historic resource. The project area is within previously developed and built environments.

(2) *Curtail the range of beneficial uses of the environment.*

The project will not curtail the range of beneficial uses of the environment. The project will provide a pedestrian crossing for the Kīhei community to the new Kūlanihāko‘i High School across Pi‘ilani Highway.

(3) *Conflict with the State’s environmental policies or long-term environmental goals established by law.*

The project does not conflict with state environmental policies in HRS §344, and any revisions thereof and amendments thereto, court decision, or executive orders.

(4) *Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State.*

The proposed action will generate short-term economic benefits from construction activity and the long-term socioeconomic benefits of providing a pedestrian crossing for the Kīhei community to the new Kūlanihāko‘i High School. No negative impacts to social welfare or cultural practices are anticipated.

(5) *Have a substantial adverse effect on public health.*

The project will be consistent with existing land uses and is not expected to affect public health. Short-term construction related activity is not expected to generate significant air quality impacts and BMPs will be implemented during this project phase to minimize potential air quality impacts. There may also be a temporary increase in noise in the surrounding area due to construction activities. Mitigation measures, such as the use of quiet equipment, are recommended to reduce temporary noise impacts. The project will also follow HDOH noise related rules and curfew periods for construction activities.

(6) *Involve adverse secondary impacts, such as population changes or effects on public facilities.*

The project is not expected to impact population change. The project will provide a pedestrian overpass to connect Kūlanihāko'i High School with the community of Kīhei across Pi'ilani Highway, which will improve pedestrian access to the high school.

(7) *Involve a substantial degradation of environmental quality.*

The project is not expected to involve a substantial degradation of environmental quality. While short-term construction activity may briefly affect the environmental quality of the immediate area, these effects will be temporary and will follow strict erosion control, noise reduction and air quality measures.

(8) *Be individually limited but cumulatively have substantial adverse effect upon the environment or involved a commitment for larger actions.*

As previously discussed, the project will have a positive effect on the surrounding environment and region. Development of the overpass will not involve a commitment for larger actions or development.

(9) *Have a substantial adverse effect on a rare, threatened or endangered species, or its habitat.*

No rare, threatened, or endangered species or habitats are known to be present on-site. Should nighttime construction be required during the seabird fledgling season (September 15 to December 15), mitigation would include the presence of a qualified biologist to monitor and assess the risk of seabirds being attracted or grounded due to the lighting. Further, lights will be fully shielded to minimize the attraction of seabirds. For more information, see *Section 3.6*.

(10) *Have a substantial adverse effect on air or water quality or ambient noise levels.*

General temporary impacts from construction activities are identified in *Chapter 3* of this EA. Mitigation measures associated with these construction activities have been previously discussed. No adverse long-term impacts to air, water, or acoustic quality are anticipated with the planned improvements.

(11) *Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters.*

The project is not located in a flood plain, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal water. A portion of the project is in the Extreme Tsunami Zone; however, the elevation of the overpass could be used to bring people to a safer elevation and to the high school which is in the Tsunami Safe Zone. The project is located in a previously developed and built environment and has no potential significant effect on an environmentally sensitive area.

(12) *Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies.*

The importance of the area's scenic views is noted in the Maui Countywide Policy Plan (2010), the 1998 Kihei-Mākena Community Plan, and the draft South Maui Community Plan. Overall, the project is not expected to significantly impact visual resources. With the topography and elevation, when viewed from mauka of the highway the overpass will not block views of the coastline. When viewed from Pi'ilani Highway or the adjacent sidewalks, the overpass may partially obstruct views mauka; however, these will be momentary when travelling. Additionally, when using the overpass, the elevation gain will provide new a new vantage point for viewing upcountry scenic open space. For more information, see *Section 3.10*.

(13) *Require substantial energy consumption or emit substantial greenhouse gases.*

The project is not expected to substantially increase energy consumption or emit substantial greenhouse gases.

6.3 Determination Pursuant to HRS Chapter 343

Based on the above reasons, further evaluation of the Proposed Action's impacts through the preparation of an Environmental Impact Statement is not warranted. The EA recommends mitigation measures to alleviate impacts where such impacts are identified. A FONSI is anticipated.

The Kūlanihāko'i High School Pedestrian Overpass will result in beneficial environmental impacts to the Kihei community by providing pedestrian access to Kūlanihāko'i High School across Pi'ilani Highway.

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**List of Agencies, Organizations, and
Individuals Receiving Copies of the EA**

Chapter 7

List of Agencies, Organizations, and Individuals Receiving Copies of the EA

7.1 Consultation List

Early consultation on the planned improvements has been carried out with various agencies and stakeholders as part of the scoping process for the Kūlanihāko'i High School Pedestrian Overpass. Parties contacted in preparation of the Draft Environmental Assessment (DEA) process, are listed in Table 7.1 as well as identification of those parties who will receive the Draft EA.

Table 7.1: Agencies, Organizations, and Individuals Receiving Copies of the EA				
Respondents and Distribution	Early Consultation	Receiving Draft EA	Draft EA Comments Received	Receiving Final EA/ FONSI
Federal Agencies				
U.S. Department of the Interior, Fish and Wildlife Service	X	X		
State of Hawai'i Agencies				
Department of Accounting and General Services		X		
Department of Education, Facilities Development Branch	X	X		
Department of Education, Kulanihako'i High School Principal	X	X		
Department of Education, School Complex Superintendent's Office (Baldwin-Kekaulike-Kulanihako'i-Maui Complex Area)	X	X		
Department of Hawaiian Home Lands		X		
Department of Health (DOH), Clean Air Branch	X	X		
DOH, Clean Water Branch		X		
DOH, Environmental Health Administration		X		
DOH, Maui District Health Office		X		
DOH, Wastewater Branch		X		
Department of Human Services		X		
DLNR, Division of Forestry and Wildlife	X	X		
DLNR, Engineering Division	X	X		

Table 7.1: Agencies, Organizations, and Individuals Receiving Copies of the EA				
Respondents and Distribution	Early Consultation	Receiving Draft EA	Draft EA Comments Received	Receiving Final EA/ FONSI
DLNR, Historic Preservation Division	X	X		
DLNR, Land Division – Main Office	X	X		
DLNR, Land Division – Maui District		X		
Department of Transportation, Highways Division	X	X		
Department of Transportation, Maui District	X	X		
Office of Hawaiian Affairs	X	X		
Office of Planning and Sustainable Development	X	X		
Maui County Agencies				
Department of the Corporation Counsel	X	X		
Department of Environmental Management	X	X		
Department of Fire and Public Safety	X	X		
Department of Housing and Human Concerns		X		
Department of Parks and Recreation		X		
Department of Planning	X	X		
Department of Public Works	X	X		
Department of Transportation	X	X		
Department of Water Supply	X	X		
Emergency Management Agency	X	X		
Maui Police Department	X	X		
Office of Climate Change, Resiliency, and Sustainability (CCRS)	X	X		
Office of the Mayor	X	X		
Elected Officials				
U.S. Senator Brian Schatz		X		
U.S. Senator Maize Hirono		X		
U.S. Representative Ed Case		X		
U.S. Representative Jill Tokuda		X		
State of Hawai'i Governor Josh Green	X	X		
State Representative Terez Amato – House District 11	X	X		

Table 7.1: Agencies, Organizations, and Individuals Receiving Copies of the EA

Respondents and Distribution	Early Consultation	Receiving Draft EA	Draft EA Comments Received	Receiving Final EA/ FONSI
State Representative Justin Woodson – House Committee on Education (Chair)	X	X		
State Representative Kyle Yamashita – House Committee on Finance (Chair)	X	X		
State Senator Angus L.K. McKelvey – Senate District 6	X	X		
State Senator Michelle Kidani – Senate Committee on Education (Chair)	X	X		
State Senator Donovan Dela Cruz – Senate Committee on Ways and Means (Chair)	X	X		
Maui County Councilmember Thomas Cook	X	X		
Associations, Community Groups, and Individuals				
HE'E Coalition	X	X		
Kihei Community Association	X	X		
Kahului Lions Club	X	X		
Kihei Youth Center	X	X		
Makena Homeowners Association	X	X		
Maui Tomorrow	X	X		
Rotary Club of Kihei-Wailea	X	X		
Wailea Community Association	X	X		
Libraries				
Hawai'i State Library		X		
Kihei Public Library		X		
Other				
Honolulu Star Advertiser		X		
The Maui News		X		

7.2 Summary of Early Consultation Comments

A summary of comments received during early consultation arranged by major topics and associated responses is provided in *Table 7.2* below. Refer to comment letters located in *Appendix C*.

Table 7.2: Early Consultation Comments and Responses

Comment	Commenter	Responses
Thank you for the opportunity to comment on the subject project. We have no comments to offer at this time as the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities	State of Hawai'i Department of Accounting and General Services	Mahalo nui for your comment.
Consistency with Plans and Policies		
<p>The Office of Planning and Sustainable Development (OPSD) has the following comments:</p> <ol style="list-style-type: none"> 1. OPSD looks forward to the overpass design elements that comply with state policy. We understand that the design components, e.g., lighting, are intended to meet Maui County regulations for environmental protection. 2. Many people in Maui County and the Kihei community have long expressed their desire for the overpass to be built. 3. The overpass is a condition of the State Land Use Commission's Decision and Order that reclassified the High School site from the State Agricultural District to the Urban District. OPSD supports the construction of the overpass. 	State of Hawai'i Office of Planning and Sustainable Development	Mahalo nui for your comments.
Elected Officials		
On behalf of Councilmember Cook, mahalo, for providing our Office with information. This email confirms receipt. Should the Councilmember have any follow-up questions, we will be sure to reach out.	Maui County Councilmember Thomas Cook	Mahalo nui for your comments.
Flora and Fauna		
<p>The State listed 'Ōpe'ape'a or Hawaiian Hoary Bat (<i>Lasiurus cinereus semotus</i>) could potentially occur at or in the vicinity of the project and may roost in nearby trees. Any required site clearing should be timed to avoid disturbance to bats during their birthing and pup rearing season (June 1 through September 15). During this period woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed. Barbed wire should also be avoided for any construction because bats can become ensnared and killed by such fencing material during flight.</p> <p>Artificial lighting can adversely impact seabirds that may pass through the area at night by causing them to become disoriented. This disorientation can result in their collision with manmade structures or the grounding of birds. For nighttime</p>	State of Hawaii DLNR, Division of Forestry and Wildlife	Mahalo nui for your comments.

work that might be required, DOFAW recommends that all lights used be fully shielded to minimize the attraction of seabirds. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season, from September 15 through December 15, when young seabirds make their maiden voyage to sea.

If nighttime construction is required during the seabird fledging season (September 15 to December 15), we recommend that a qualified biologist be present at the project site to monitor and assess the risk of seabirds being attracted or grounded due to the lighting. If seabirds are seen circling around the area, lights should then be turned off. If a downed seabird is detected, please follow DOFAW's recommended response protocol by visiting <https://dlnr.hawaii.gov/wildlife/seabird-fallout-season/#response>.

Permanent lighting also poses a risk of seabird attraction, and as such should be minimized or eliminated to protect seabird flyways and preserve the night sky. For illustrations and guidance related to seabird-friendly light styles that also protect seabirds and the dark starry skies of Hawai'i please visit <https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf>.

The State listed Nēnē or Hawaiian Goose (*Branta sandvicensis*) could potentially occur in the vicinity of the proposed project site. It is against State law to harm or harass these species. If any are present during construction, all activities within 100 feet (30 meters) should cease and the bird or birds should not be approached. Work may continue after the bird or birds leave the area of their own accord. If a nest is discovered at any point, please contact the Hawai'i Island Branch DOFAW Office at (808) 974-4221.

The project area is within the range of the State listed Blackburn's Sphinx Moth (*Manduca blackburni*) or BSM. Larvae of BSM feed on many nonnative hostplants, which includes tree tobacco (*Nicotiana glauca*), that grow in disturbed soil. We recommend contacting the Hawai'i Island Branch DOFAW office at (808) 974-4221 for further information about where BSM may be present and whether a vegetation survey should be conducted to determine the presence of plants preferred by BSM. DOFAW recommends removing plants less than one meter in height or during the dry season to avoid harm to BSM. If you intend to either remove tree tobacco over one meter in height or to disturb the ground around or within several meters of these plants, they must be thoroughly inspected by a qualified entomologist for the presence of BSM eggs and larvae.

DOFAW recommends using native plant species for landscaping that are appropriate for the area; i.e., plants for which climate conditions are suitable for them to thrive, plants that historically occurred there, etc. Please do not plant

<p>invasive species. DOFAW also recommends referring to www.plantpono.org for guidance on the selection and evaluation of landscaping plants and to determine the potential invasiveness of plants proposed for use in the project.</p> <p>DOFAW recommends minimizing the movement of plant or soil material between worksites. Soil and plant material may contain detrimental fungal pathogens (e.g., Rapid 'Ōhi'a Death), vertebrate and invertebrate pests (e.g., Coqui Frogs, Little Fire Ants, etc.), or invasive plant parts (e.g., Miconia, Mullein, etc.) that could harm our native species and ecosystems. We recommend consulting the Maui Invasive Species Committee (MISC) at (808) 573-6472 to help plan, design, and construct the project, learn of any high-risk invasive species in the area, and ways to mitigate their spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.</p> <p>Due to the arid climate and risks of wildfire to listed species, we recommend coordinating with the Hawai'i Wildfire Management Organization at (808) 850-900 or admin@hawaiiwildfire.org, on how wildfire prevention can be addressed in the project area.</p> <p>We appreciate your efforts to work with our office for the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsibility of the applicant to do their own due diligence to avoid any negative environmental impacts. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Myrna N. Giraldo Pérez, Protected Species Habitat Conservation Planning Coordinator at (808) 265-3276 or myrna.giraldo-perez@hawaii.gov.</p>		
<p>Thank you for the opportunity to review and comment on the subject matter. In addition to our previous comments dated June 9, 2023, enclosed are comments from the Division of Forestry & Wildlife on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.</p>	<p>State of Hawai'i DLNR, Land Division – Main Office</p>	<p>Mahalo nui for your comment. The letter from the Division of Forestry and Wildlife has been received and addressed.</p>
<p>The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high-risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Be advised that 44CFR, Chapter 1, Subchapter B, part 60 reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher</p>	<p>State of Hawaii DLNR, Engineering Division</p>	<p>Mahalo nui for your comment.</p>

<p>standards that can be more restrictive and would take precedence over the minimum NFIP standards.</p> <p>The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA's Flood Insurance Rate Maps (FIRM). The official FIRMs can be accessed through FEMA's Map Service Center (msc.fema.gov). Our Flood Hazard Assessment Tool (FHAT) (http://gis.hawaiiinfip.org/FHAT) could also be used to research flood hazard information.</p>		
<p>Traffic and Access</p>		
<p>Thank you for the opportunity to review your project. At this time Fire Prevention Bureau has no comments. Please provide notice to in district fire station for any access restrictions or road closures. Should you have any specific fire related public safety concerns please identify those to us on this or any future projects you would like us to review.</p>	<p>Department of Fire and Public Safety</p>	<p>Mahalo nui for your comment.</p>
<p>The KCA understands that the findings of the DEA will help direct the planning and design of the overpass. The KCA would like to offer our preliminary suggestions as listed below.</p> <p>FLAT BRIDGE DESIGN: The KCA assumes that the most common conceptual design for a pedestrian overpass would incorporate the use of a flat bridge. The KCA would like to see that the conceptual designs for any flat bridge would incorporate the facade appearance of an arch.</p> <p>Options:</p> <p>A. When designing a flat bridge, the KCA suggests incorporating designs that have the aesthetic appearance of an arch. This would be a nicer, softer look than a flat rectangular bridge and this aesthetic is quite common on contemporary overhead walkways seen throughout the mainland.</p> <p>B. Create a subtle arch to the walkway, instead of a flat bridge. By incorporating a mild arch that is within ADA compliance into the span of the bridge it will allow for less length required at the approach ramps. Consider the approach ramps to be on grade by berming the land beneath them.</p> <p>FOR ALL BRIDGE DESIGN OPTIONS: Consider stairs in addition to ramps for those who prefer short cuts.</p>	<p>Kihei Community Association</p>	<p>Flat Bridge Design</p> <ul style="list-style-type: none"> - The design team has worked to incorporate design elements that add interest and softness that are suitable for the local environment. - The bridge design will be ADA compliant and on the mauka side of the Pi'ilani Highway takes advantage of the difference in grade the ramp length is slightly shorter than on the makai side of the highway. <p>All Bridge Design Options</p> <ul style="list-style-type: none"> - Stairs are included on both sides of the overpass in the design. - Low maintenance landscaping is planned at the base of the overpass ramps. - The pedestrian route study was reviewed by HIDOT and determined to have satisfied LUC condition 1(b) per the HIDOT memo to HDOE dated July 18, 2017 and submitted with the 2017 HDOE report to the LUC.

<p>The KCA suggests that the grade approaching and going up and around the ramps be planted with shade trees and attractive, low maintenance native plants to soften the look.</p> <p>The KCA believes that north-south sidewalks are absolutely necessary to access the high school entrance. These sidewalks need to run parallel to, but separated from the mauka side of Pi'ilani Highway. These sidewalks would run from the high school entrance south to Lipoa Street, and north to the Ohukai neighborhood. Currently, the only pedestrian option to school from these neighborhoods is to walk on the unimproved shoulder of the highway. When implemented, these north-south sidewalks would further compliment the State Land Use Commission (LUC) condition 1d, <i>Petitioner shall install paved shoulders along Piilani Highway fronting the high school and provide accommodations for bicycles to the mutual agreement of Petitioner and DOT.</i></p> <p>The KCA would also like to see a plan for how pedestrians not living in the immediate area of Kūlanihāko'i St. will access the overpass on the makai side of the highway at the school entrance. Again, on this side of Pi'ilani Hwy, there is no pedestrian connection from North Kihei to Kūlanihāko'i St. or from Pi'ilani Villages on the south side of Kūlanihāko'i St. Students will be walking to school on the unfinished highway shoulder or, as has been presented to the community as an option, traversing from their neighborhood makai to S. Kihei Rd. (which does not have sidewalks) then to Kūlanihāko'i St. and then walk all the back way up (mauka) Kūlanihāko'i St. to reach the overpass. This is not a practical option. Kids will choose the easiest and closest route to school which in this case is walking on the highway.</p> <p>Previous consultation has failed to present a viable plan as to how pedestrians approaching from any area other than Kūlanihāko'i St. will practically and safely reach the pedestrian overpass. See LUC condition 1b. <i>Petitioner shall complete a pedestrian route study for Phase 1... approved by HDOT.</i></p> <p>We want to absolutely discourage any plan that puts students walking within feet of a high speed highway, pinned to the guard rail on the 3' highway shoulder, which is actually less than 3' wide at Kūlanihāko'i and Waipuilani bridges.</p> <p>Our primary concern is to provide "safe routes to school". Having children interacting with high volumes of traffic on Piilani Hwy and South Kihei Rd. is not an acceptable pedestrian plan.</p>		
Utilities		
<p>Prior to commencement of construction, submit construction plans (24"x36") stamped and signed by a licensed engineer for the Department's review and</p>	<p>County of Maui Department of Water Supply</p>	<p>Mahalo nui for your comments.</p>

<p>approval, indicating any water system improvements in accordance with the Department's Water System Standards 2002, as may be amended. Construction plans shall show location of existing waterlines, valves, fire hydrants, water meters, etc. in relation to the overpass.</p> <p>If water service from the Department of Water Supply is required, the project must meet the criteria outlined in the Administrative Rules (Title 16, Chapter 201).</p>		
<p>Due to Maui County's new planning and permitting software, to document and receive comments directly from the Wastewater Reclamation Division, could you please submit your request in MAPPs.</p>	<p>County of Maui Environmental Management Wastewater Reclamation Division</p>	<p>The overpass project is unable to use the MAPPs system as the HIDOT Pi'ilani Highway project parcel TMK is not in the MAPPs system. We will continue to provide future information on the project and associated EA via email.</p>

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Chapter 8

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Appendices

Appendix A

Preliminary Engineering Report

KŪLANIHĀKO‘I HIGH SCHOOL PEDESTRIAN OVERPASS

PRELIMINARY ENGINEERING REPORT

By **G7O**

1.0 INTRODUCTION AND SCOPE OF WORK

The Hawai‘i State Department of Education (HIDOE) completed construction of Phases 1 and 2 of the new Kūlanihāko‘i High School in Kīhei, Mau‘i in January 2023. The school was designed to accommodate approximately 1,650 students and associated staff for grades 9-12. Construction Phases 1 and 2 have been completed. Phase 3 has been approved and construction crews are mobilized onsite.

A condition imposed by the State Land Use Commission (LUC) that HIDOE must provide a grade-separated pedestrian crossing (GSPC) above or below the heavily used Pi‘ilani Highway remains unsatisfied. After planning and engineering technical analysis and intensive community outreach, HIDOE decided to construct a pedestrian overpass at Kūlanihāko‘i Street.

This preliminary engineering report reviews conditions at the proposed project location to assist the HIDOE in developing a pedestrian overpass at Pi‘ilani Highway.

1.1 Background

Kūlanihāko‘i High School resides on approximately 77.2 acres of previously undeveloped land mauka of Pi‘ilani Highway between Kūlanihāko‘i and Waipu‘ilani Gulches. Pi‘ilani Highway is a four-lane asphalt paved road under jurisdiction of the State of Hawai‘i, Department of Transportation (HIDOT) Highways Division. The school is located on Tax Map Key (2) 2-2-002:081. The parcel is owned by the State of Hawai‘i, Board of Land & Natural Resources with situs address 901 Pi‘ilani Highway, Kīhei, HI 96753.

There is an existing multi-lane roundabout that was recently constructed by HIDOE and designed by HIDOT at the intersection of Pi‘ilani Highway (HIDOT) and Kūlanihāko‘i Street (County). The pedestrian overpass will be constructed at the Wailea side of the roundabout predominately in the HIDOT right of way. The ramps will be in the HIDOT right of way on the makai side and will enter the HIDOE property on the mauka side. It is expected that the HIDOE land where the mauka ramps are located will be dedicated to HIDOT in the future.

2.0 PROPOSED GRADE-SEPARATED PEDESTRIAN CROSSING

2.1 2022 Grade-Separated Pedestrian Crossing Alternatives Study

The LUC recommended that HIDOE convene conversations with the community and County of Mau‘i to find consensus on solutions before returning to the LUC with any proposed

modifications to the GSPC condition. In July 2022, HIDOE commissioned the 2022 Grade-Separated Pedestrian Crossing Alternatives Study, understanding that ultimately a GSPC would be required. The study was a joint venture conducted by civil consultants, transportation engineers, and community engagement strategists. The main objective of the study was to present multiple GSPC alternatives and provide HIDOE with community input and technical analysis to inform their selection. The four-month study began in August 2022 and the final report was issued in December 2022. Five GSPC alternatives were presented to HIDOE for review and selection.

2.2 Preferred Alternative

From the 2022 GSPC Alternatives Study, HIDOE decided upon a pedestrian overpass at Kūlanihāko'i Street. This location was identified as the preferred location by a majority of those consulted, including the local population with families that may attend the school. HIDOE is currently moving toward implementation of the selected GSPC.

The pedestrian overpass may consist of precast concrete planks, supported by cast-in-place supports and foundations on each side of Pi'ilani Highway. The support structure west of the highway would include an American with Disabilities Act (ADA) compliant switchback ramp as well as a stairway to shorten the walking distance. The second support structure on the mauka school side of the highway would include an ADA-compliant ramp parallel to the at-grade sidewalk from the intersection to the campus, as well as a stairway. The overpass, stairs, ramps, and associated access would be located on the southern approach to the roundabout, connecting the new sidewalk along the school's driveway entrance to the existing sidewalk on the south side of County-owned Kūlanihāko'i Street.

3.0 SITE INVESTIGATION

3.1 Description of the Site and Surrounding Lands

The proposed location for the pedestrian overpass is at the intersection of Kūlanihāko'i Street and Pi'ilani Highway, just south of the newly constructed roundabout. The typical section of the right-of-way includes 8-foot-wide sidewalks, 2-foot-wide curb and gutter, four 12-foot-wide travel lanes, two merge lanes and a raised median. A retaining wall was built as part of the school development east of the highway along the sidewalk. A portion of this retaining wall will undergo limited demolition to allow for the construction of the overpass support structure and ramp. Other appurtenances recently constructed, such as guardrail, fencing, posts, light poles, sidewalk, and other existing utilities may also require slight modification or relocation.

3.2 Soils

Soil at the overpass site (**Figure 1**) consists of Type WID2. Type WID2 is described by the National Resources Conservation Service (NRCS) as consisting of Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes. This soil is derived from volcanic ash and residuum weathered from basalt and occurs in ash fields. It has a typical soil profile of extremely stony silty clay loam at the surface with silty clay loam extending down to 33 inches and bedrock at 43

inches. WID2 soil is well drained with rare flooding and ponding. The soil is classified in Hydrologic Soil Group C, whose members have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted and the erosion hazard is severe. In most areas about 50 percent of the surface layer has been removed by erosion. This soil is used for pasture and wildlife habitat.

There have been 7 borings done for this project, extending to depths of about 11.5 to 30 feet below the existing ground surface. The borings generally encountered surface fill consisting of medium dense to very dense gravel, silty gravel, and silty sands extending to depths of approximately 0.5 to 4.5 feet below the existing ground surface.

Ground water was not encountered in the borings at the time of the field exploration. However, it should be noted that groundwater levels are subject to change due to rainfall, time of year, seasonal precipitation and other factors. For a more detailed summary of what was found during the field exploration see the Preliminary Geotechnical Engineering Recommendations **(Appendix A)**.

3.3 Potential Flood Hazards

The Flood Hazard Assessment Map **(Figure 2)** published by the Federal Emergency Management Agency (FEMA) locates the proposed pedestrian overpass in Flood Zone “X”, described as “area of minimal flood hazard”.

The proposed overpass site is approximately 3,300 feet from Ma‘alaea Bay shoreline. Hawai‘i State Emergency Management Agency maps indicate the site is not within the “Extreme Tsunami Inundation Zone”.

4.0 CIVIL INFRASTRUCTURE CAPACITY ASSESSMENT

4.1 Drainage

Storm water runoff from the project site at Pi‘ilani Highway flows via sheet flow to the Kūlanihāko‘i and Waipu‘ilani Gulches which lie to the north and south of the proposed overpass site. The gulches lead to storm drain culverts crossing Pi‘ilani Highway and eventually discharging to Ma‘alaea Bay shoreline. The elevation at the proposed overpass is approximately 30 feet above mean sea level (MSL) and overall surface gradient of the subject area is west northwest.

A 48-inch manhole is located within the project area on the makai/residential side of Pi‘ilani Highway. A 24-inch reinforced concrete pipe connected to the manhole conveys stormwater southward parallel to the highway on the makai side before crossing Pi‘ilani Highway past the proposed overpass. Due to the proximity of the stormwater drain line and manhole to the proposed overpass location, it is anticipated that utility work may occur to reconfigure the drainage system to avoid conflicts with the overpass support foundations.

The pedestrian bridge will have drain inlets and drain lines embedded into the structure to capture and convey drainage to prevent runoff onto the highway. The drainage will be conveyed to drain lines on the mauka and makai sides of the highway.

There are no wetlands at the project site.

4.2 Domestic and Fire Protection Water Supply

School construction included a 12-inch water main at the roundabout intersection that crosses Pi'ilani Highway from Kūlanihāko'i Street into the school property. At the southeast corner of the roundabout intersection, the 12-inch main branches off to an 8" domestic water line and a 12" fire suppression line that both service the school. Due to the proximity of the water lines and appurtenances to the proposed overpass location, it is anticipated that utility work may occur to reconfigure the water system to avoid conflicts with the overpass support foundations.

The 12-inch main within the school's entrance driveway feeds a fire hydrant at the northeast corner of the roundabout intersection via a 6-inch diameter lateral. An 8-inch water main feeds existing fire hydrant #763 located at the southeast corner of the Kūlanihāko'i Street- Māhealani Street intersection via a 6-inch diameter lateral.

4.3 Electrical

Within the roundabout intersection, an underground electrical line runs under Pi'ilani Highway from Kūlanihāko'i Street up to the school campus and two other electrical lines serve the street lighting and pedestrian crossing signal circuits.

On the makai/residential side of the highway, a County owned underground fiber optic cable runs parallel to the highway and is located within the project area near to the proposed makai ramps. Due to the proximity of the cable lines to the proposed overpass location, it is anticipated that utility work may occur to reconfigure the lines to avoid conflicts with the overpass support foundations.

4.4 Sanitary Sewer Service

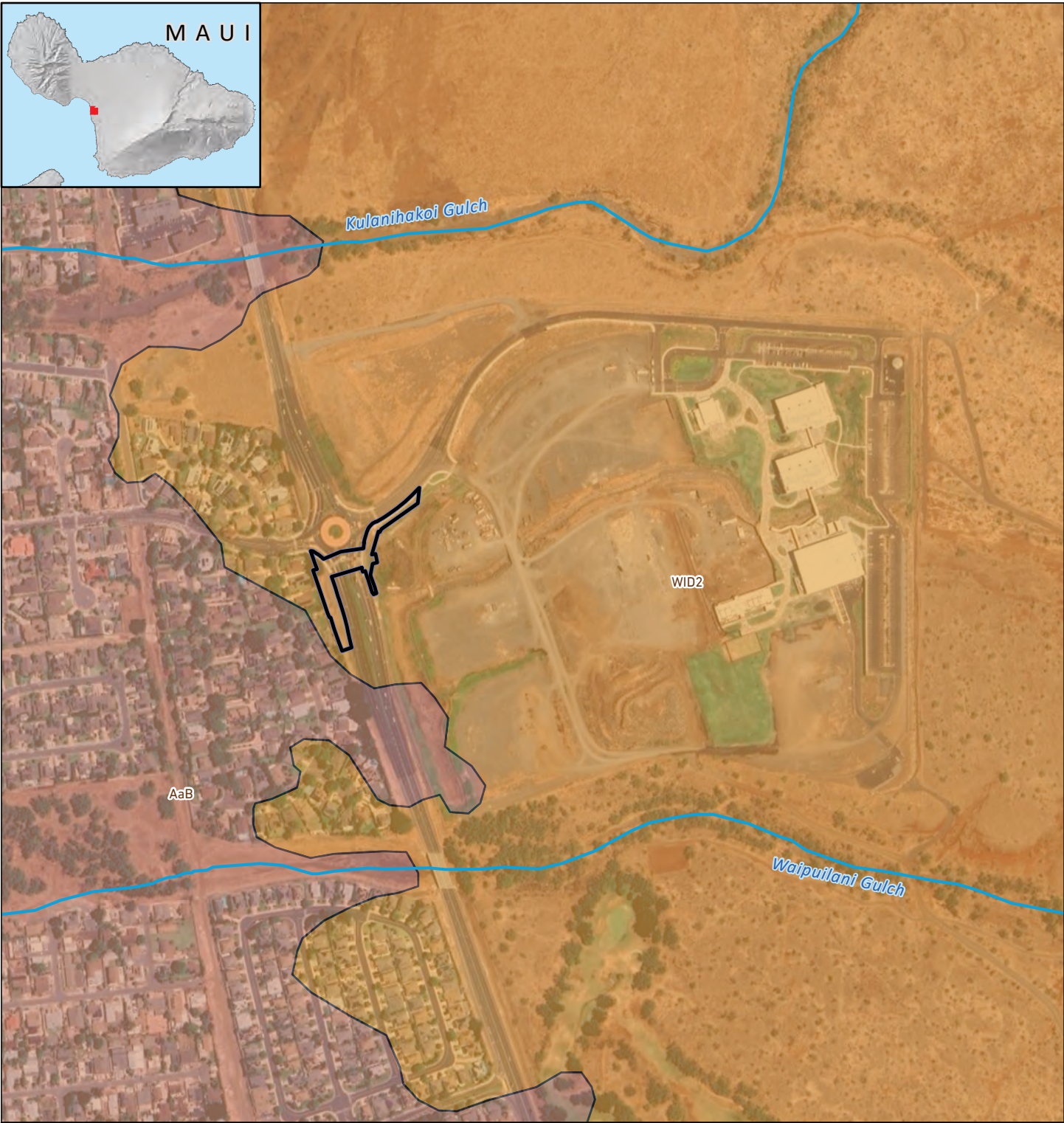
There are no sanitary sewer lines located within the overpass site.

ATTACHMENTS

Figure 1 Soils Map

Figure 2 Flood Hazard Assessment Map

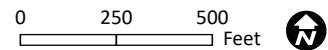
Appendix A – Preliminary Geotechnical Engineering Recommendations



Legend

- AaB: Alae sandy loam, 3-7% slopes
- WID2: Waiakoa extremely stony silty clay loam, 3-25% slopes, eroded
- Project Site

Source: Soils, 2021 - USDA NRCS SSURGO



Kūlanihāko'i High School Pedestrian Overpass

Figure 1 - Soils Map

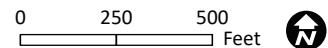




Legend

- AE: BFE at Select Intervals
- AO: Flood Depths of 1-3 ft. (usually sheet flow on sloping terrain); Average Depths Determined
- X: Areas Outside of the 0.2% Annual Chance Floodplain
- Project Site

Source: Flood Zones, 2021 - FEMA DFIRM



Kūlanihāko'i High School Pedestrian Overpass

Figure 2 - Flood Zone Map



Preliminary Engineering Report
Appendix A
Preliminary Geotechnical
Engineering Recommendations



DATE:	October 4, 2023	FROM:	Gerald Seki / Jason Seidman
TO:	G70	W.O. No.:	7480-60
ATTN:	Ms. Kahealani Winchester	NO. OF PAGES:	12
SUBJECT:	Preliminary Geotechnical Engineering Recommendations Kulanihakoi High School Pedestrian Overpass Kihei, Maui, Hawaii		
COPY TO:	File / Original		

The following technical memorandum contains our preliminary geotechnical recommendations in support of the foundation design of the pedestrian overpass structure for the proposed *Kulanihakoi High School Pedestrian Overpass* project in the Kihei area on the Island of Maui, Hawaii. Our recommendations are based on the results of our field exploration performed for the project. A detailed summary of our findings and recommendations will be contained in our geotechnical report.

PROJECT CONSIDERATIONS

The project site is located east of the existing Piilani Highway, between the Kulanihakoi and Waipuulani Gulches, in Kihei on the Island of Maui, Hawaii. Based on the information provided, we understand that it is planned to design and construct a pedestrian overpass across Piilani Highway. The pedestrian overpass would provide a safe mode of transit for pedestrians over Piilani Highway, connecting Kulanihakoi High School to the Piilani Village Subdivision. Based on the conceptual plans provided, the bridge will span over Piilani Highway approximately 112 feet in length. Stairs and switchback ramps will provide pedestrian access to the bridge overpass.

Two concepts were proposed for the pedestrian overpass project. The initial concept consisted of the pedestrian overpass spanning Piilani Highway with a center pier within the existing median dividing the north and southbound traffic lanes. The three piers are designated as the Mauka Pier, Center Pier, and Makai Pier. The updated proposed concept consisted of a single-span bridge spanning Piilani Highway, supported by the Mauka and Makai piers only.

SUBSURFACE CONDITIONS

Our field exploration consisted of drilling and sampling seven borings, designated as Boring Nos. 1 through 7, extending to depths of about 11.5 to 30 feet below the existing ground surface. Boring Nos. 1 through 3 were drilled along the mauka side of Piilani Highway at the perimeter of the Kulanihakoi High School campus. Boring Nos. 5 through 7 were drilled along the makai side of Piilani Highway adjacent to the Piilani Village Subdivision. Boring No. B-4 was drilled on the interior north bound land of Piilani Highway adjacent to the median dividing the north and southbound traffic lanes.

The borings generally encountered surface fill consisting of medium dense to very dense, gravel, silty gravel, and silty sands extending to depths of approximately 0.5 to 4.5 feet below the existing ground surface.

The surface fills were generally underlain by residual soil and saprolite about 1 to 4.5 feet thick consisting of stiff to hard sandy silts and sandy clays, and loose to very dense silty sands silty gravel, and clayey gravel. The residual soil and saprolite were generally underlain by basalt rock formation with interbedded layers of clinker and residual soil extending to the maximum depth explored of about 30 feet below the existing ground surface. The basalt rock formations at the project site are generally hard and slightly to moderately weathered. The interbedded residual soils generally consisted of medium dense to very dense silty sands, and stiff to hard sandy silts and sandy clay. The clinker materials generally consisted of very dense silty sand.

We did not encounter groundwater in the borings at the time of our field exploration. However, it should be noted that groundwater levels are subject to change due to rainfall, time of year, seasonal precipitation, surface water runoff, and other factors.

SEISMIC DESIGN CONSIDERATIONS

Based on the AASHTO 2020 LRFD Bridge Design Specifications, 9th Edition, the project site may be subject to seismic activity and the potential for soil liquefaction at the project site will need to be evaluated.

Soil liquefaction is a condition where saturated cohesionless soils near the ground surface undergo a substantial loss of strength due to the build-up of excess pore water pressures resulting from cyclic stress applications induced by earthquakes. Soils most susceptible to liquefaction are loose, uniformly graded, fine-grained sands and loose silts with little cohesion.

Based on the subsurface conditions encountered in our field exploration, the geology in the area, and our engineering analyses, the potential for soil liquefaction at the project site is non-existent due to the presence of basalt formation and the absence of ground water table within the upper 30 feet of the soil profile. Therefore, the potential for liquefaction is not a design consideration at this project site.

Based on the subsurface materials encountered and available data, it is our opinion that the project site may be classified from a seismic analysis standpoint as being a “Very Dense Soil and Soft Rock” site corresponding to a Site Class C soil profile type based on AASHTO 2020 LRFD Bridge Design Specifications, 9th Edition.

Based on the AASHTO 2020 LRFD Bridge Design Specifications, the seismic retrofitted bridge structure will need to be designed based on an earthquake return period of 1,000 years. Based on a 1,000-year return period and the anticipated Site Class, the

following seismic design parameters were estimated and may be used for the seismic analysis of the bridge structure planned for the project.

SEISMIC DESIGN PARAMETERS AASHTO 2020 LRFD BRIDGE DESIGN SPECIFICATIONS 1,000-YEAR RETURN PERIOD (~7% PROBABILITY OF EXCEEDANCE IN 75 YEARS)	
Parameter	Value
MCE Peak Bedrock Acceleration, PBA (Site Class B)	0.250g
Spectral Response Acceleration (Site Class B), S_s	0.568g
Spectral Response Acceleration (Site Class B), S_1	0.166g
Site Class	"C"
Site Coefficient, F_{pga}	1.20
Site Coefficient, F_a	1.20
Site Coefficient, F_v	1.70
MCE Peak Ground Acceleration, PGA (Site Class C) or A_s	0.300g
Design Spectral Response Acceleration, S_{DS}	0.682g
Design Spectral Response Acceleration, S_{D1}	0.282g

DISCUSSIONS AND RECOMMENDATIONS

Our field exploration generally encountered fills and residual soils overlying basalt formation with interbedded layers of clinker and residual soil extending to the maximum depth explored of about 30 feet below the existing ground surface. We did not encounter groundwater in the drilled borings at the time of our field exploration. It should be noted that groundwater levels are subject to change due to rainfall, time of year, seasonal precipitation, surface water runoff, and other factors.

Based on the subsurface conditions encountered at the project site, and the relatively heavy structural load demands, we recommend supporting the new pedestrian bridge on a deep foundation system consisting of cast-in-place concrete drilled shafts. The drilled shaft foundations would extend below the surface fills and residual soils and derive support principally from adhesion between the drilled shaft and the hard basalt formation.

A detailed discussion of these items and our geotechnical recommendations for the seismic retrofit design of the existing bridge structure and other geotechnical aspects of the project are presented in the following sections.

Pedestrian Overpass Structure Foundations

Based on the subsurface conditions encountered, the provided structural loads, and the information provided, we recommend supporting the new pedestrian overpass on a deep foundation system consisting of cast-in-place concrete drilled shafts.

The cast-in-place concrete drilled shafts would derive vertical support primarily from friction between the concrete shaft and the surrounding soils. In general, the end-bearing component of the drilled shafts has been discounted in our analysis due to the difficulties associated with obtaining a clean bottom during construction in the relatively deep drilled shafts.

Based on the conceptual plans and structural loads provided, we understand that the design of the pedestrian overpass has not been finalized and that two design concepts are currently being evaluated. Therefore, the structural loads for both design concepts were evaluated. The following tables present the structural loading provided by the structural engineer for each column and the identification of the column to a column number.

SUMMARY OF COLUMN IDENTIFICATION	
Column No.	Column Identification
1	10-foot Mauka Column
2	15-foot Mauka Column
3	Bridge Mauka Column
4	Bridge Center Column
5	Bridge Makai Column
6	15-foot Makai Column
7	10-foot Makai Column

SUMMARY OF STRUCTURAL LOADS – INITIAL DESIGN CONCEPT					
Drilled Shaft Capacity (Resistance)	Bridge Center	Bridge Makai	Bridge Mauka	15-foot Column	10-foot Column
Strength (kips)	316	428	451	298	286
Service (kips)	229	311	327	221	211
Extreme Shear (kips)	219	196	200	112	138
Extreme Moment (kip-foot)	3,804	2,011	3,676	749	1,774

SUMMARY OF STRUCTURAL LOADS – UPDATED DESIGN CONCEPT						
Limit State Case	Column No.	V _x (kips)	V _y (kips)	P (kips)	M _x (kip-foot)	M _y (kip-foot)
Strength Limit State	1	-57	-64	93	586	-530
	2	-33	-11	181	158	-431
	3	431	-9	620	150	2,187
	5	-437	11	615	194	-2,220
	6	-54	-18	174	275	-741
	7	-23	-62	101	587	-259
Service Limit State	1	-11	-12	211	98	-98
	2	-9	-1	265	-38	-118
	3	304	19	454	315	1,487
	5	-334	-3	452	369	-1,827
	6	-14	-6	259	96	-185
	7	-6	-22	211	211	-65
Extreme Event Limit State	1	105	141	86	-1,248	901
	2	102	74	148	-859	1,187
	3	464	-165	348	2,783	4,173
	5	-474	72	326	1,222	-4,242
	6	115	-23	141	267	1,329
	7	-60	-57	80	511	452

It should be noted that for the updated concept, detailed load diagrams were provided to accurately identify the loads applied in the longitudinal and transverse direction for various load cases. The most critical conditions in which the column exerts the greater loads and moments were analyzed in the service, strength, and extreme limit case. At the time of our analyses and preparation of this memorandum, detailed load diagrams were not provided for the initial design concept. Analyses were performed based on the provided structural loads as shown above.

In order to develop the required bearing and lateral load resistances, we recommend using drilled shaft foundations to support the pedestrian overpass structure. The drilled shaft foundations would derive support principally from adhesion between the sides of the drilled shaft and the medium dense to dense clinker, stiff to hard saprolitic deposits, and hard basalt formations encountered in our borings. In general, the end-bearing component of the drilled shafts has been discounted in our analysis due to difficulties associated with obtaining a clean bottom during construction in the relatively deep drilled shafts.

Based on the information provided, we understand that the bridge columns will be 48 inches in diameter. We anticipate that the top of the drilled shaft would be 4 feet below the existing ground surface to accommodate a pile cap. Alternatively, the structural engineer may evaluate integrating the column directly into the drilled shaft foundation to eliminate the

need for a pile cap. Based on the Load and Resistance Factor Design (LRFD) methods for design of highway bridges, a resistance factor of 0.55 has been applied for the strength limit state capacities for the design of the drilled shaft foundations. The following tables present the recommended drilled shaft foundation diameter, length, and number of piers at each column location for the initial and updated design concepts.

SUMMARY OF DRILLED SHAFT FOUNDATION – INITIAL DESIGN CONCEPT			
Column No.	No. of Piers	<u>Drilled Shaft Diameter</u> (in)	<u>Drilled Shaft Length</u> (feet)
1	1	72	22
2	1	72	22
3	1	72	28
4	1	72	28
5	1	72	25
6	1	72	22
7	1	72	22

Note:
 1. Top of drilled shaft is assumed to be 4 feet below the existing ground surface.
 2. Drilled shaft length is based on the top of drilled shaft (4 feet below the existing ground surface) and not the existing grade.

SUMMARY OF DRILLED SHAFT FOUNDATION – UPDATED DESIGN CONCEPT			
Column No.	No. of Piers	<u>Drilled Shaft Diameter</u> (in)	<u>Drilled Shaft Length</u> (feet)
1	1	72	25
2	1	72	25
3	1	72	30
5	1	72	28
6	1	72	25
7	1	72	25

Note:
 1. Top of drilled shaft is assumed to be 4 feet below the existing ground surface.
 2. Drilled shaft length is based on the top of drilled shaft (4 feet below the existing ground surface) and not the existing grade.

Based on our evaluation of the subsurface conditions, we anticipate the drilled shaft installation will require an experienced drilled shaft subcontractor to install the drilled shaft foundations. Therefore, consideration should be given to requiring pre-qualification of the drilled shaft subcontractor. The succeeding subsections address the design and construction of the drilled shaft foundations:

1. Lateral Load Resistance
2. Foundation Settlements
3. Drilled Shaft Construction Considerations
4. Method Shaft Program

5. Bi-Directional Load Test

Lateral Load Resistance

Lateral loads imposed on the structures may be resisted by the lateral load capacity of the drilled shaft. The lateral load resistance of the drilled shaft is a function of the stiffness of the surrounding soil, the stiffness of the shaft, allowable deflection at the top of the shaft, and the induced moment in the shaft. Lateral load analyses were performed using the LPILE-plus for Windows, which is a microcomputer adaptation of a finite difference, laterally loaded pile program originally developed at the University of Texas at Austin.

The cast-in-place concrete drilled shafts were modeled using a 28-day concrete strength of 5,000 psi. Vertical reinforcement was assumed to be 2 percent of the total cross-sectional area. The lateral deflection at the top of the shaft, the maximum induced moment, the depth at which the maximum moment occurs, and the maximum induced shear of the drilled shafts are presented in the tables below for the two design concepts.

LATERAL LOAD ANALYSIS SUMMARY – INITIAL CONCEPT						
Column No.	Drilled Shaft Diameter (inches)	Drilled Shaft Length (feet)	Estimated Maximum Deflection (inches)	Maximum Induced Moment (kip-feet)	Depth to Maximum Moment (feet)	Maximum Induced Shear (kips)
1	72	22	0.170	2,830	9.25	309
2	72	22	0.049	1,648	9.75	187
3	72	28	0.340	5,233	9.25	572
4	72	28	0.484	5,496	9.25	650
5	72	25	0.217	3,616	9.25	378
6	72	22	0.050	1,694	9.75	183
7	72	22	0.173	2,870	9.25	314

DRILLED SHAFT FOUNDATION LATERAL LOAD ANALYSIS SUMMARY – UPDATED CONCEPT (LONGITUDINAL DIRECTION OF LOADING)						
Extreme Event Limit State						
Column No.	Drilled Shaft Diameter (inches)	Drilled Shaft Length (feet)	Estimated Maximum Deflection (inches)	Maximum Induced Moment (kip-feet)	Depth to Maximum Moment (feet)	Maximum Induced Shear (kips)
1	72	25	0.004	1,248	0	109
2	72	25	0.003	859	0	102
3	72	30	0.500	6,773	10	786
5	72	28	0.174	3,096	10.25	474
6	72	25	0.038	1,262	10	128
7	72	25	0.002	511	0	60

DRILLED SHAFT FOUNDATION LATERAL LOAD ANALYSIS SUMMARY – UPDATED CONCEPT (TRANSVERSE DIRECTION OF LOADING)						
Extreme Event Limit State						
Column No.	Drilled Shaft Diameter (inches)	Drilled Shaft Length (feet)	Estimated Maximum Deflection (inches)	Maximum Induced Moment (kip-feet)	Depth to Maximum Moment (feet)	Maximum Induced Shear (kips)
1	72	25	0.103	2,024	9.5	202
2	72	25	0.049	1,729	9.25	171
3	72	30	0.138	4,173	0	274
5	72	25	0.210	4,242	0	368
6	72	25	0.028	1,329	0	100
7	72	25	0.003	452	0	57

Foundation Settlements

Settlement of the drilled shaft foundation will result from elastic compression of the shaft and subgrade response of the foundation embedded in the residual soil and basalt rock formations. Total settlements of the drilled shafts are estimated to be on the order of about 0.5 inches. Therefore, differential settlements between the drilled shafts may be on the order of about 0.25 inches. We believe a significant portion of the settlement is elastic and should occur as the loads are applied.

Drilled Shaft Construction

The performance of the drilled shafts will depend significantly upon the contractor's method of construction and construction procedures. As a result, a Geolabs representative should be present to observe the installation of the drilled shafts

during construction. The following conditions would have a significant effect on the effectiveness of and cost of the drilled shaft foundations.

The load-bearing capacities of drilled shafts depend, to a significant extent, on the friction between the shaft and the surrounding soils and/or formation. Therefore, proper construction techniques, especially during drilling operations, are important. The contractor should exercise care in drilling the shaft holes and placing concrete into the drilled holes.

Based on the anticipated subsurface conditions described above, some of the geotechnical considerations associated with drilled shaft foundations are discussed below.

Installation in Granular Material

Drilled shaft foundations are highly effective in soil and/or rock formations that will stay open after drilling until concrete placement. Unfortunately, materials such as the granular fill encountered during our field exploration may collapse following the drilling if it remains unsupported. Therefore, a partial-depth temporary steel casing will likely be necessary to maintain the integrity of the drilled hole during the drilled shaft installation. This condition would increase the construction difficulty and costs of the foundations. However, this condition is common in Hawaii and has been addressed by local drilled shaft subcontractors for structures such as high-rise buildings and bridges.

Care should be exercised during the removal of the temporary casing to reduce the potential for "necking" of the drilled shaft. Therefore, a minimum 5-foot head of concrete above the bottom of the casing or adequate concrete head should be maintained during the removal of the casing.

Obstructions, Boulders, and Basalt Formation

Where obstructions, boulders, and/or hard basalt rock formations are anticipated, some difficult drilling conditions likely will be encountered and should be expected. The drilled shaft subcontractor will need to have the appropriate equipment and tools to drill through these types of natural or man-made obstructions where encountered. The drilled shaft subcontractor will need to demonstrate that the proposed drilling equipment (and coring tools, where appropriate) will be capable of installing the drilled shafts to the recommended depths and dimensions.

Concrete Placement

Due to the depth of the planned drilled shafts, concrete placement by tremie methods will be required during drilled shaft construction. A low-shrink concrete mix with a high slump (7 to 9-inch slump range) should be used to

provide close contact between the drilled shafts and the surrounding soils. The concrete should be placed in a suitable manner to reduce the potential for segregation of the aggregates from the concrete mix.

In addition, the concrete should be placed promptly after drilling (within 24 hours after substantial completion of the holes) to reduce the potential for softening of the sides of the drilled holes. Furthermore, drilling adjacent to a recently constructed shaft (within three shaft diameters of the recently constructed drilled shaft) should not commence until the concrete for the recently constructed drilled shaft has cured for a minimum of 24 hours.

It is imperative for a Geolabs representative to be present during construction to observe the drilling and installation of drilled shafts. Although the drilled shaft designs are primarily based on skin friction, the bottom of the drilled hole should be relatively free of loose materials prior to the placement of concrete. Therefore, Geolabs' observation of the drilled shaft installation operations is necessary to confirm the assumed subsurface conditions.

Method Shaft Program

Considering the large diameter and high structural load capacities of the drilled shafts, we recommend undertaking a method shaft program as part of pre-construction activities at a selected location to fulfill the following objectives:

- To examine the adequacy of the methods and equipment proposed by the contractor to install the high-capacity drilled shafts into the existing subsurface materials.
- To assess the contractor's method of placing and extracting the temporary casing for the drilled shaft.
- To assess the contractor's method of concrete placement.

To achieve these objectives, we recommend the method shaft program consist of drilling a method shaft of the largest shaft diameter selected for use on the project, extending to the deepest estimated tip elevation of the drilled shafts for the project. We recommend a Geolabs Inc. representative observe the installation of the method shaft program to evaluate the contractor's method of drilled shaft installation and to evaluate the subsurface materials encountered in the drilled holes. Observation of the drilled shaft installation operations is a vital part of the foundation design to confirm the design assumptions. The method shaft may be used as a load test shaft.

Bi-Directional Load Test

As part of the pre-construction activities, we recommend conducting one static load test for the project. The load test should be conducted on a dedicated drilled shaft extending to the selected design depth. The trial shaft may be used as the load test shaft for the project. The results of the load tests will be used to confirm or modify the estimated tip elevations of the production drilled shafts. The load test shafts should be structurally reinforced and instrumented with embedment strain gauges for load testing purposes. As a minimum, two embedment strain gauges should be placed at each level, starting near the load cell location at an elevation of about 5 feet above and below the load cell and subsequently at about 10-foot intervals. Details of the bi-direction load cell placement will be provided by our office after the selection of the drilled shafts for the proposed bridge structure has been determined.

Due to the high capacities recommended for the drilled shafts, a conventional load test would not be practical and would be costly to conduct. Therefore, we recommend conducting bi-directional axial load test using an expandable load cell (Osterberg Load Cell). The bi-directional load test separately tests the shear resistance and end-bearing components of the drilled shaft by loading the shaft in two directions (upward for shear resistance, and downward for end-bearing and shear resistance).

The Osterberg Load Cell should be capable of applying a load of at least the ultimate drilled shaft design load in each direction for the load test shaft. The expandable load cell will need to be attached to the reinforcing steel cage prior to lowering the cage into the drilled hole.

The drilled shaft load test should be performed in general accordance with the Quick Load Test Method of ASTM D1143. The load test shaft should be loaded to failure to evaluate the ultimate side shear resistance and end-bearing components of the shaft. Installation of the expandable load cells, installation of the embedment strain gauges, performance of the bi-directional axial load tests, and presentation of the load test data should be performed by a professional experienced in these types of load testing procedures. The load test shaft should be loaded at increments of about 100 to 200 kips and should be held for a minimum of 4 hours (each hold) at the 100%, 150%, and 200% of the design load intervals for the selected test shaft to evaluate the potential for creep effects.

A Geolabs representative should observe the installation and performance of the instrumented load test on the drilled shaft. It should be noted that the drilled shaft design was developed from our analysis using the field exploration data. Therefore, Geolabs observation of the drilled shaft

installation operations is a vital part of the foundation design to confirm the design assumptions.

CLOSURE

If you have questions regarding the contents of this technical memorandum or need additional information, please contact our office.

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Appendix B

**Kūlanihāko‘i High School Grade-Separated Pedestrian Crossing Study,
December 2022**

KŪLANIHĀKO'Ī HIGH SCHOOL

Grade-Separated Pedestrian Crossing Alternatives Study

FINAL REPORT

December 2022



Prepared by



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Appendices

Appendix A: Community Outreach Results

Appendix B: Estimated Time to Completion

Appendix C: Cost Estimates

Appendix D: Community Open House Boards

Appendix E: Agency Consultation

Acronyms

ADA	Americans with Disabilities Act
AASHTO	American Association of State Highway and Transportation Officials
CATEX	Categorical Exclusion
CPTED	Crime Prevention through Environmental Design
CFS	cubic feet per second
CM	Construction Management
CUP	County Special Use Permit
DOE	Hawai'i State Department of Education
DOT	Hawai'i State Department of Transportation
EA	Environmental Assessment
EIS	Environmental Impact Statement
FFE	Furniture, Fixtures and Equipment
FHWA	Federal Highway Administration
GSPC	Grade-separated Pedestrian Crossing
HAWK	High-Intensity Activated crosswalk
HRS	Hawaii Revised Statutes
LUC	Hawai'i State Land Use Commission
NACTO	National Association of City Transportation Officials
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act (NHPA)
RRFB	Rectangular Rapid Flashing Beacons
SMA	Special Management Area
USACE	United States Army Corps of Engineers
WOTUS	Water of The United States
ZAED	Zoning Administration and Enforcement Division

Executive Summary

The Hawai'i State Department of Education (DOE) is building the new Kūlanihāko'i High School in Kīhei to serve up to 1,650 students in Grades 9 through 12. Students, staff, and visitors arriving by bicycle or on foot must cross the heavily used Pi'ilani Highway. A condition of the change in land use designation for construction of the school imposed by the State Land Use Commission (LUC) is that DOE must provide a grade-separated pedestrian crossing (GSPC) prior to opening the school. Department of Education has targeted January 2023 for opening the school.






This study was commissioned by DOE to analyze GSPC alternatives at Pi'ilani Highway which could serve the school, satisfy the LUC condition, and consider the perspectives and preferences of Kīhei community members. It includes a significant community outreach component and a technical analysis of usability, schedule, cost and other factors. This study does not determine a preferred alternative but rather provides DOE with community input and technical analysis to inform their selection.

The study was conducted over a four-month period. Outreach to the community began in August with several Listening Sessions, followed by a widely publicized Online Survey in September that collected initial feedback from the community on the focus of the study and prioritized evaluation criteria for use in the alternative assessments. Meetings were held with DOE, Hawai'i State Department of Transportation (DOT), and County of Maui Planning Department staff throughout the study process to inform them about the progress and findings and to obtain feedback.

The five alternatives analyzed in this study are illustrated in the map below.



The technical analysis evaluated each alternative using top-ranked evaluation criteria from community outreach: Usability/Travel Path, Estimated Time to Completion, Perceived Security Issues, Estimated Rough Costs, and Traffic Disruption on Pi'ilani Highway.

	Kūlanihāko'i Street		Waipu'ilani Gulch		East Waipu'ilani Road
Evaluation Criteria	 A Overpass	 B Underpass	 C Overpass	 D Underpass	 E Overpass
	Usability / Travel Path				
# of students estimated to walk/bike to school ¹	205 students	205 students	155 students	155 students	125 students
New sidewalks needed on school campus	0	0	0.23 miles	0.23 miles	0.20 miles
New offsite sidewalks needed to connect to the grade-separated pedestrian crossing	0	0	0.16 miles	0.15 miles	0.13 miles
Estimated Time to Completion²	3½ - 5 years	5½ - 7 years	5 - 6½ years	6 - 7½ years	6 - 7½ years
Design & Entitlements	1 - 1½ years	2 - 2½ years	2 - 2½ years	2 - 2½ years	1½ - 2 years
Construction Permitting, Bid & Procurement	1½ - 2 years	1½ - 2 years	1½ - 2 years	1½ - 2 years	1½ - 2 years
Fabrication & Construction	1 - 1½ years	2 - 2½ years	1½ - 2 years	2½ - 3 years	3 - 3½ years
Perceived Security Issues	Low	High	Low	High	Low
Estimated Rough Cost³	\$10.4-13.6 mil	\$18.3-23.8 mil	\$14.3-18.5 mil	\$24.6-32.0 mil ⁴	\$15.3-20 mil
Traffic Disruption on Pi'ilani Highway during construction	Med	High	Low	Low	Med

The initial results of the alternative analysis were shared at a Community Open House on September 22nd and feedback from attendees was gathered via a questionnaire. The results from the community Open House questionnaire, completed by 53 attendees after viewing the table above, showed a strong preference for the overpass near Kūlanihāko'i Street (Alternative A) because of the lower cost, greater usability and safety, and less disruption to traffic during construction. The second most preferred alternative was the overpass near the Waipu'ilani Gulch (Alternative C).

Regardless of which GSPC alternative is selected by DOE, the crossing will not be constructed and operational in time to meet DOE's target school opening date of January 2023. With this in mind, the study also investigated and obtained public feedback on potential short-term options for student access to the school prior to the GSPC completion. The two most viable options based on participant input were bussing students to campus and having a County of Maui police officer or crossing guard facilitate student crossings at the roundabout. Police assistance is currently provided at the Pi'ilani Highway/Lipoa Parkway intersection before and after school hours. While both were acceptable to most community members and students, bussing or shuttles was the preferred option.

This report also summarizes the input received during consultations with stakeholder agencies and was used to inform the study. It outlines the next steps and follow-up actions needed by DOE. These steps involve coordinating with other agencies to resolve outstanding issues and ensure that the process to install a GSPC moves forward to address the LUC condition and corresponding County of Maui ordinance related to the county zone change.

Introduction & Study Purpose

The Hawai'i State Department of Education (DOE) is building the new Kūlanihāko'i High School in Kīhei to serve up to 1,650 students in Grades 9 through 12. The new school is located on previously undeveloped land mauka of Pi'ilani Highway. There is no adjacent development or associated infrastructure such as sidewalks or bike paths for school access on the school side of the highway. Students, staff, and visitors arriving by bicycle or on foot must cross the heavily used Pi'ilani Highway.

One of the conditions imposed by the State Land Use Commission (LUC) as part of the change in land use designation was that DOE provide a grade-separated pedestrian crossing (GSPC) prior to opening the school.

Department of Education commissioned this study to analyze GSPC options at Pi'ilani Highway which could serve the school and satisfy the LUC condition, as well as to consider the perspectives and preferences of Kīhei community members. Another objective was to identify temporary options for students to access the school until a GSPC can be constructed.

This study includes a significant community outreach component, review of adopted county, state, and federal plans and policies, and a technical analysis of usability, schedule, cost, and other factors. It does not determine a preferred alternative but rather provides DOE with community input and technical analysis to inform their selection.

Background

A short synopsis of the long-standing history of the requirement for a GSPC for the new high school is provided for context as it relates to the Land Use Commission condition, County of Maui ordinance and related meetings in the past few years.

Land Use Commission Condition

The property chosen for the new Kūlanihāko'i High School in Kīhei was originally located in the State Land Use Agricultural District. Department of Education submitted a petition to the LUC to reclassify the land into the State Land Use Urban District in order to build the school. As part of the State Land Use District Boundary Amendment, an Environmental Impact Statement (EIS) was completed and accepted by Governor Abercrombie in November 2012. Community comments on the EIS were received from the Kīhei Community Association, the Kīhei High School Action Team, and several others.

During the development of the EIS, an at-grade pedestrian and bicycle crossing was proposed as part of a signalized intersection, justified by an operational study of vehicular and pedestrian volumes and movements. The LUC and Kīhei community at large cited safety and congestion as issues facing an at-grade crossing, and system connectivity of sidewalks and multi-modal transportation as other key factors the community would like DOE to explore in consideration of other crossing alternatives.

The 2013 LUC Findings of Fact, Conclusions of Law and Decision and Order that reclassified the land use from Agriculture to Urban included several conditions. The condition pertaining to the pedestrian crossing is as follows:

- b. *The petitioner [DOE] shall complete a pedestrian route study for Phase I of the Project which includes ingress and egress of pedestrians through defined location(s) approved by DOT and shall analyze compliance with the proposed warrants in FHWA/RD-84/082 (July 1984) to the satisfaction of DOT. The pedestrian route study and analysis shall be completed and approved by the prior to the Petitioner executing a contract for the design of Phase I of the Project. **Petition shall cause to be constructed, or ensure that there is an available above or below ground pedestrian crossing and implement such mitigation or improvements as may be required or recommended by the study and analysis to the satisfaction of DOT prior to opening Phase I of the Project...** (emphasis added).*

Several traffic reports and pedestrian studies were completed in consultation with Hawai'i State Department of Transportation (DOT) with the intent of meeting LUC conditions.

County of Maui Ordinance

In 2014 the County of Maui amended the Kihei-Mākena Community Plan Land Use Map for the Kihei High School parcel from Agriculture to Public/Quasi Public via ordinance 4134 and amended zoning from Agricultural District to P-1 Public/Quasi Public District via ordinance 4135. County of Maui Ordinance 4135 includes the following conditions of zoning:

1. *That the State Department of Education (DOE) shall submit to the Department of Public Works for review and comment any Traffic Impact Analysis Reports, pedestrian route studies, and/or any related reports or studies at the same time they are submitted to the State Department of Transportation.*
2. *That, within six months of the DOE's initiation of the design process for Phase 1 of the Kihei High School or the State's execution of a contract with a designer-builder for the school, whichever occurs earlier, the DOE and/or its designer-builder, as appropriate, shall begin to work with the County of Maui Department of Planning on the design of the following improvements to the Kihei High School campus, which shall subsequently be implemented to the satisfaction of the Department of Planning during the permitting process in accordance with Condition Number 16 of the Decision and Order by the State Land Use Commission granting the DOE's Petition for a Land Use District Boundary Amendment (Land Use Commission Docket No All-794):*
 - a. *Pedestrian and bicycle access to and from the school campus to connect to current and future pedestrian and bicycle networks in the vicinity of the campus;*
 - b. *Bicycle friendly improvements on the school campus and, if requested by the County of Maui Department of Transportation, an area for public transit access to the school campus;*
 - c. *Overflow parking and lighting to accommodate special events to be held on the school campus;*
 - d. *Consideration of best practices in Crime Prevention through Environmental Design (CPTED) elements in campus design; and*
 - e. *To the extent not inconsistent with the provision of a drainage detention basin, overflow parking and CPTED design elements, a landscaped buffer on the campus fronting Pi'ilani Highway.*

2. *That the DOE shall provide annual compliance reports to the Department of Planning and the Maui County Council on the status of the project and progress in complying with the conditions of zoning and the State Land Use Commission conditions, commencing within one year of the effective date of the ordinance This reporting requirement shall cease upon the completion of construction of Phases 1 and 2 of the project.*
3. *That all of the conditions imposed by the State Land Use Commission in its Decision and Order filed July 29, 2013, granting the Land Use District Boundary Amendment for the property (Land Use Commission Docket A11-94), except for Conditions 16, 19, 20, 23, 24, and 25 shall be incorporated by reference herein and made a part hereof as conditions of zoning.*

Recent Meetings

In February 2019, the Maui County Council asked the LUC for a declaratory ruling on their 2013 condition. A hearing was held in April 2019 and the LUC reaffirmed the condition to require the completion of an above or below ground pedestrian crossing prior to the opening of the school.

In August of 2020 DOE unsuccessfully petitioned the LUC to amend the 2013 Land Use Commission Findings of Fact, Conclusions of Law and Decision and Order to *...allow for the construction of a roundabout and ground level raised crosswalks instead of a GSPC prior to the opening of Phase I of the Project and for the assessment and reevaluation of the necessity, appropriateness, and utility of a GSPC prior to the start of construction of Phase II of the Project.* Over 300 community members commented in opposition of DOE's request and raised the question "Why hasn't DOE/DOT been working on the condition it has known about since 2013?" The LUC recommended that DOE convene conversations with the community and County of Maui to find consensus on solutions before returning to the LUC with any proposed modifications to the conditions.

In January 2021 DOE hosted a joint virtual meeting with DOT to provide an update to the Kīhei community on the high school construction. At this meeting, they introduced the traffic roundabout design which included at-grade pedestrian crosswalks and Rectangular Rapid Flashing Beacons (RRFB). DOT contracted for the roundabout design, and DOE contracted for the roundabout construction with an at-grade pedestrian crossing in Fall 2021.

DOE Commissions Study with Community Consultation

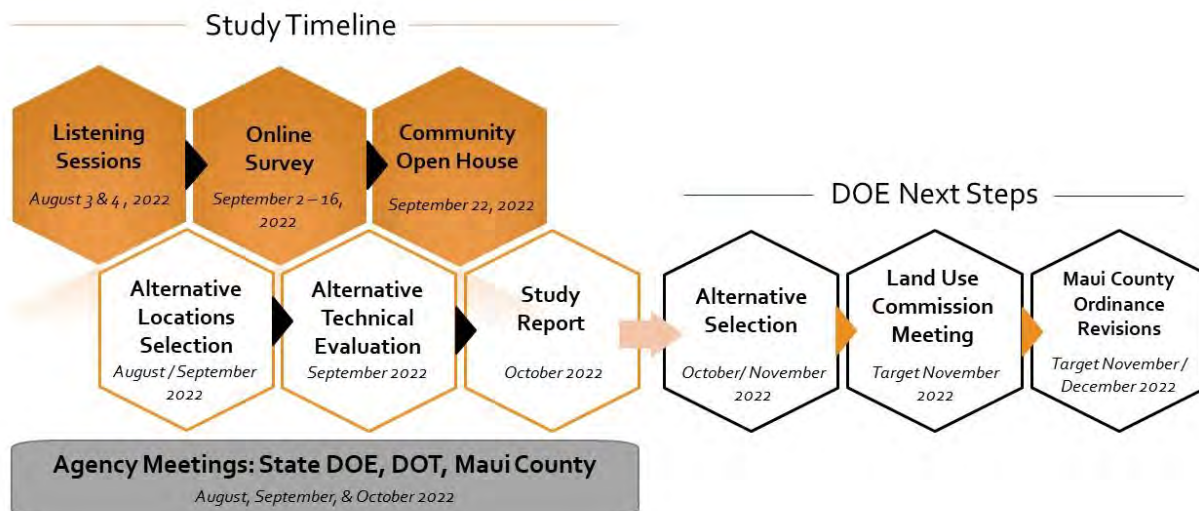
In July 2022 DOE kicked off this study to conduct more robust community outreach and to produce a technical analysis for potential GSPC alternatives with the goal of opening the school in 2023.

Study Process & Timeline

The study was conducted over a four-month period. The study process began in July 2022 with preparations for community Listening Sessions that took place in August. Following the Listening Sessions an online survey was launched to obtain more community member participation. The results of these two efforts informed the technical evaluation of the five GSPC alternatives in September. A Community Open House was held on Thursday, September 22, 2022 to share the results of the analysis with the Kihei community and collect additional feedback.

Throughout the study process, meetings were held with DOE, DOT, and County of Maui Planning Department to inform them of the progress and findings and obtain feedback.

The results of this study informed the recommended next steps that DOE must take to achieve its objective of opening the new high school (see *Next Steps*). Generally, these steps include selecting a GSPC alternative, filing a motion with the LUC to amend the GSPC condition and allow for school occupancy during the design, permitting, and construction phases for the selected alternative, and finally, requesting an ordinance revision with Maui County Council to align the ordinance language with the amended LUC condition.



This study report is organized to align with the process outlined above.

Alternatives

Five possible alternatives for GSPCs at three locations along Pi'ilani Highway were identified for consideration and analysis (see figure below).



Location Selection

Due to their proximity to the school's campus, the Kūlanihāko'i Street and Waipu'ilani Gulch locations were each analyzed for both an overpass and underpass alternative. The location at East Waipu'ilani Road was identified by both the community and DOE as only being appropriate for an overpass, therefore an underpass alternative at East Waipu'ilani Road is not included.

The **Kūlanihāko'i Street** intersection with the newly constructed roundabout was selected due to its proximity to the campus entry on Pi'ilani Highway. The campus master plan and current campus construction have prioritized this intersection as the campus' "front door". New sidewalks have been constructed from the intersection up to the academic and administrative buildings.

Alternatives A and B are at this location.

Waipu'ilani Gulch was selected due to its proximity to the southern corner of the campus. Pi'ilani Highway traffic traverses the gulch over a vehicular bridge. A pathway and crossing on the gulch's northern side would allow for connection into the campus with minimal off-site improvements needed in the Pi'ilani Highway right-of-way.

Alternatives C and D are at this location.

The intersection at **East Waipuʻilani Road** was considered due to its proximity to community facilities including commercial and retail spaces, and recreational and civic spaces such as parks, other schools, and the aquatic center. East Waipuʻilani Road is located approximately one mile south of the campus entrance.

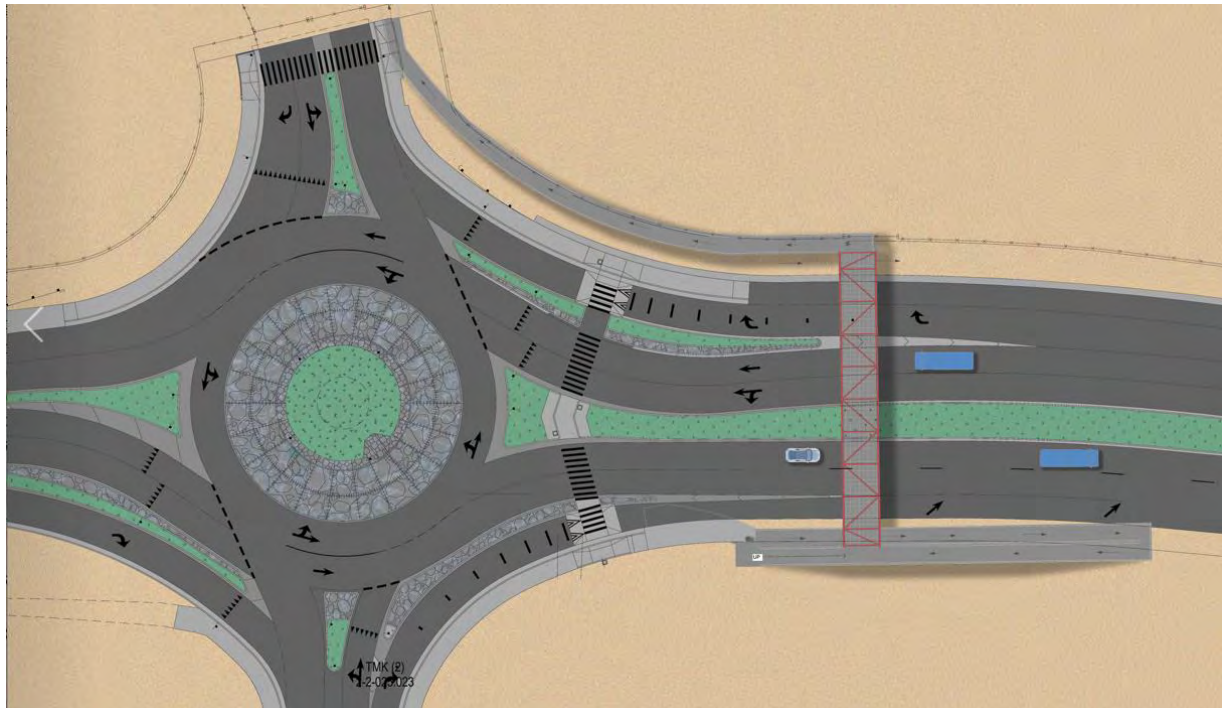
The overpass at East Waipuʻilani Road (Alternative E) is the only GSPC alternative that would not directly connect to the school property. Rather than specifically serving students living in the residential areas near the high school, this alternative would prioritize the connection between the high school campus and the community at large. New walkways along the mauka side of Piʻilani Highway would be required to connect this crossing to the campus.

Alternative Design Descriptions

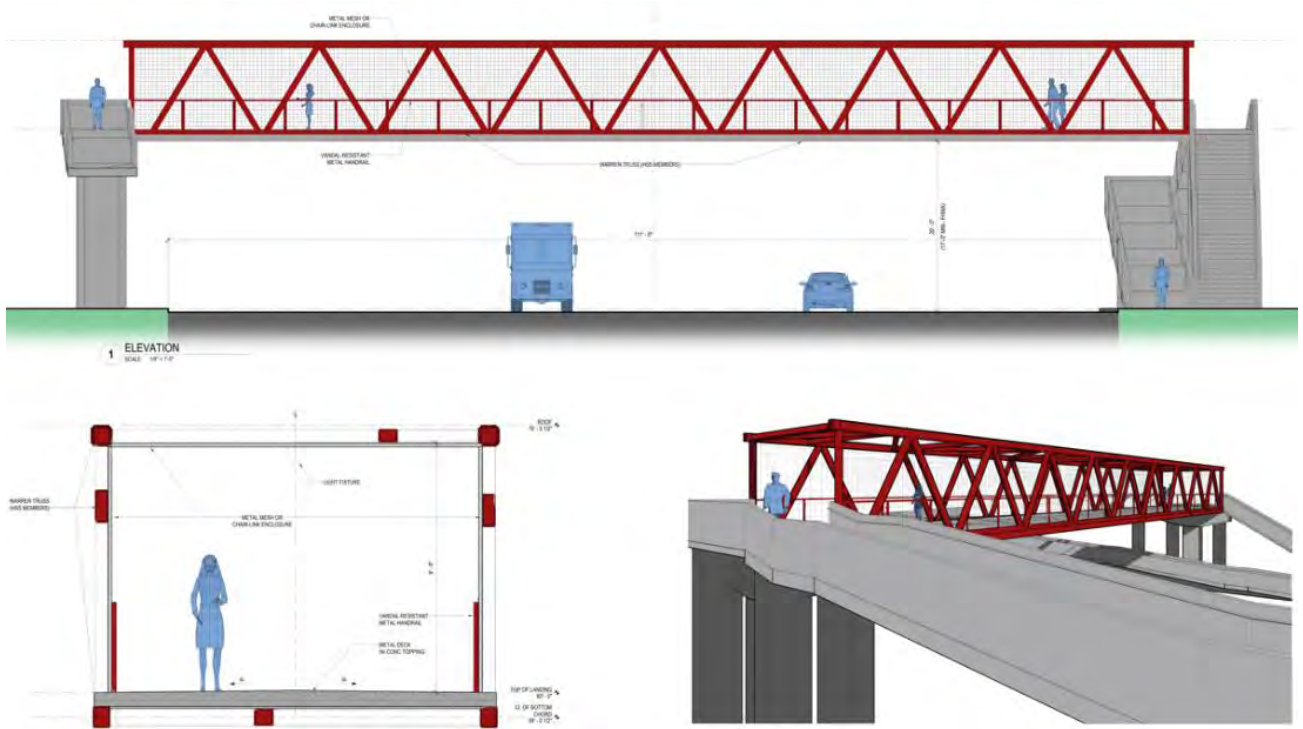
Each of the five GSPC alternative designs are described and illustrated below.

Alternative A: Overpass at Kūlanihākoʻi Street

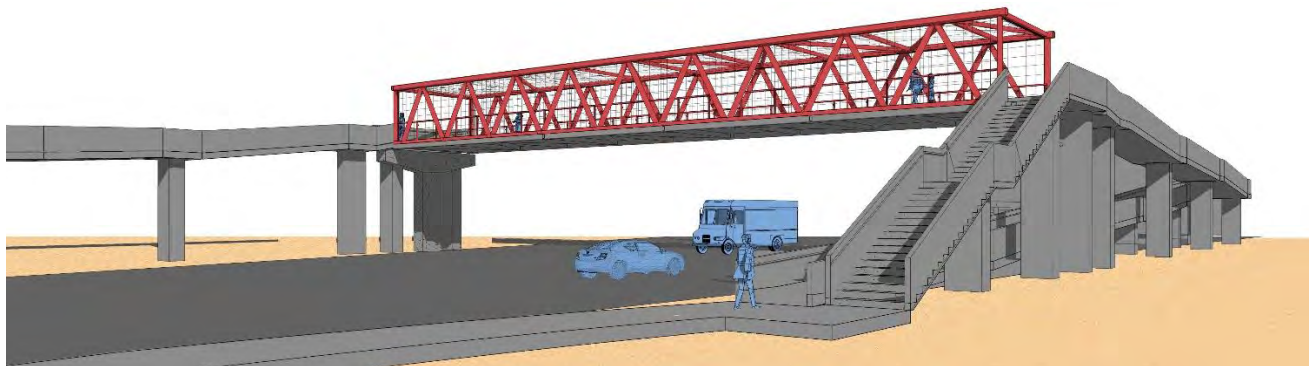
Alternative A at the intersection of Piʻilani Highway and Kūlanihākoʻi Street is an overpass. The design includes a prefabricated truss system bridge connected to two structures on each side of Piʻilani Highway. The makai structure would include an American with Disabilities Act (ADA) compliant switchback ramp as well as a stairway to shorten the walking distance. The mauka structure includes only a ramp that would parallel the at-grade sidewalk from the intersection to the campus.



Location for the Kūlanihākoʻi Street overpass



Elevation plans for the Kūlanihākoʻi Street overpass



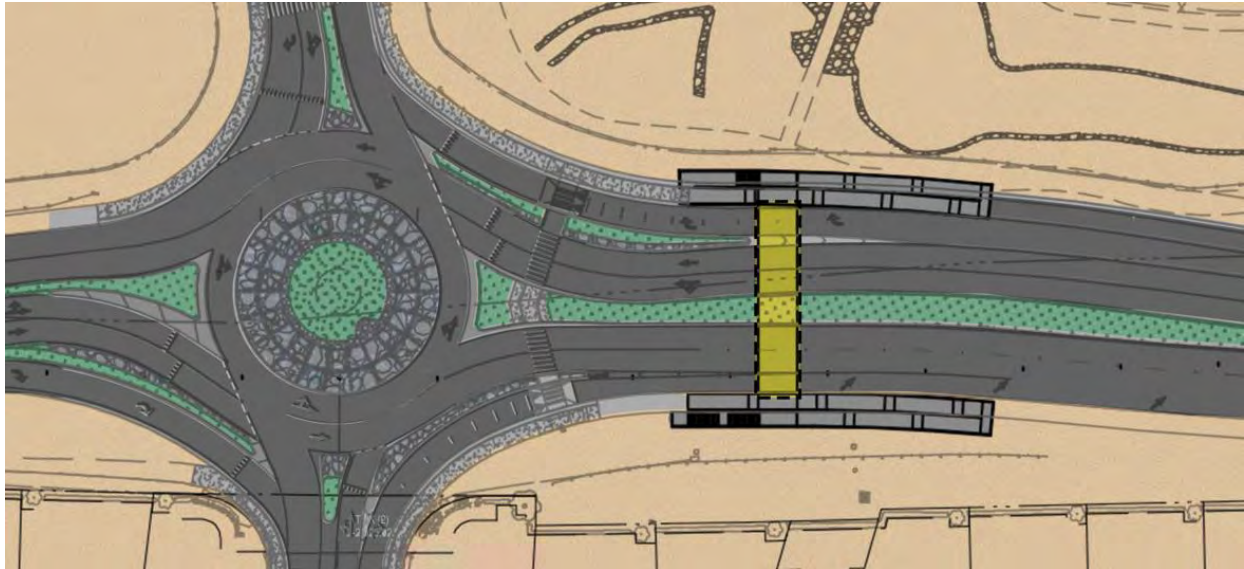
Makai side structure (stairs and ramp)



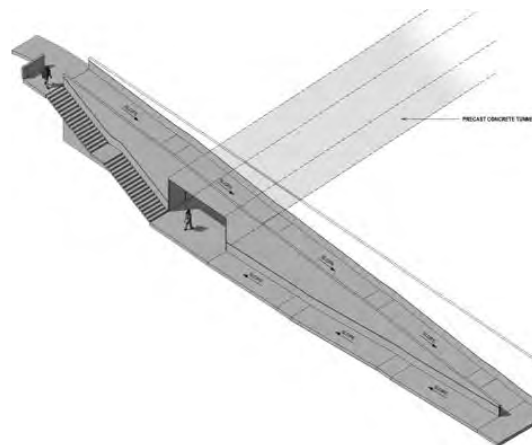
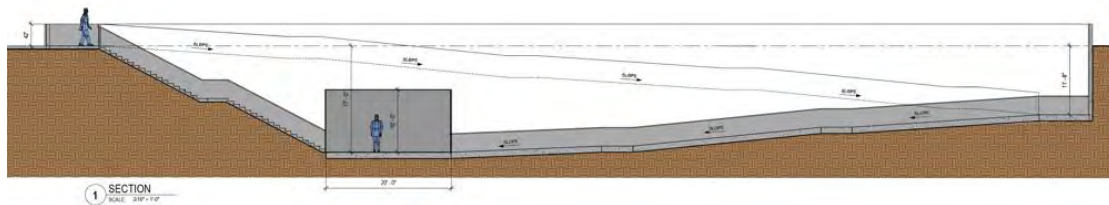
Mauka side structure (ramp)

Alternative B: Underpass at Kūlanihākoʻi Street

Alternative B at the intersection of Piʻilani Highway and Kūlanihākoʻi Street is an underpass. Alternative B would use using pre-constructed box culverts that can be “dropped in” during construction to decrease construction time. This design would require an ADA compliant switchback ramp and stairways on both sides of Piʻilani Highway. The open areas for the ramps and stairs would also have retaining walls on all sides creating an area where rainwater would collect and be removed via a sump pump.



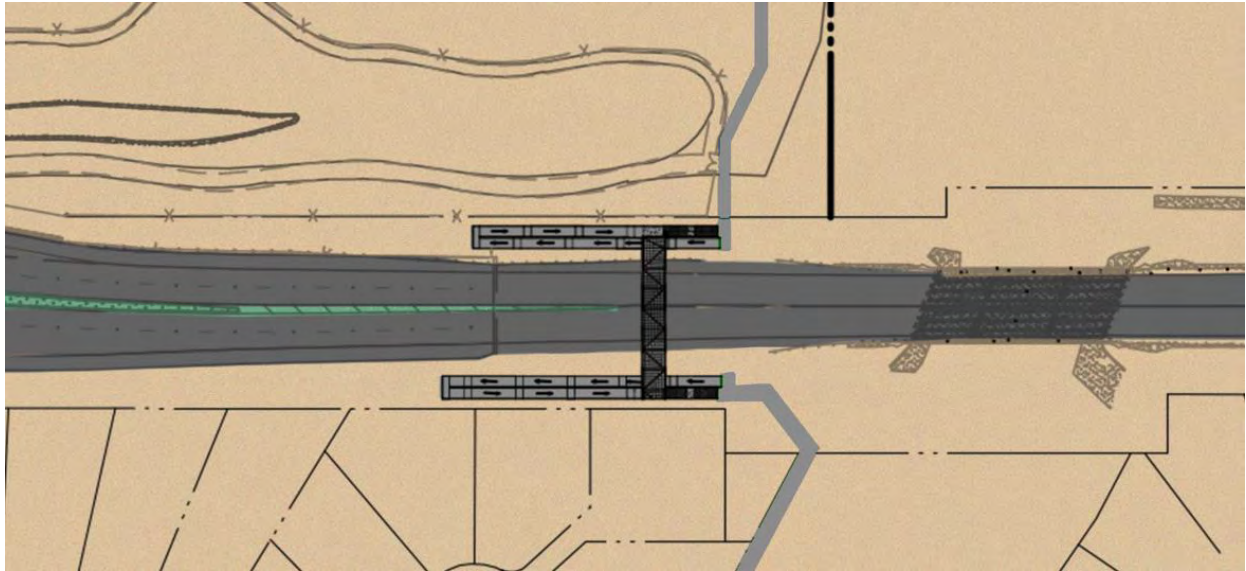
Location of the Kūlanihākoʻi Street underpass



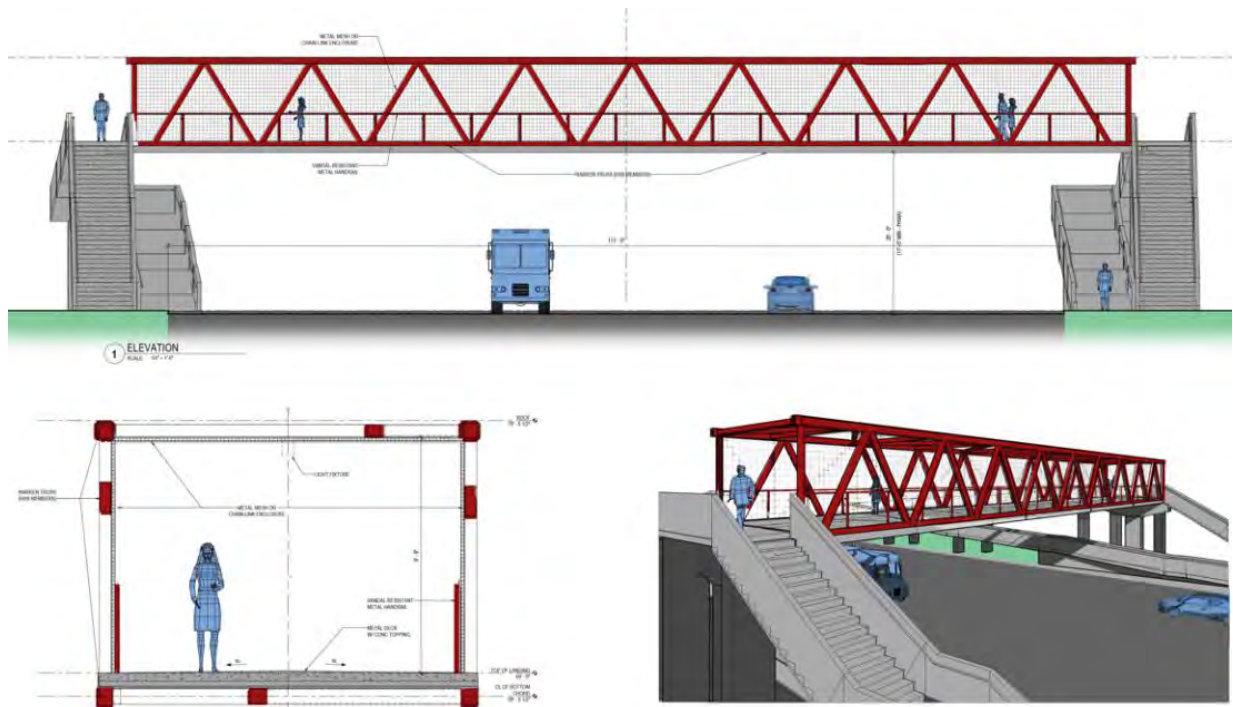
Elevation plans for the Kūlanihākoʻi Street underpass

Alternative C: Overpass at Waipu'ilani Gulch

Alternative C is an overpass at the southwest corner of the high school property and just north of the Waipu'ilani Gulch. The design includes a prefabricated truss system bridge connected to two structures to the mauka and makai of Pi'ilani Highway. Both sides would include an ADA-compliant ramp and a stairway.



Location of the Waipu'ilani Gulch overpass

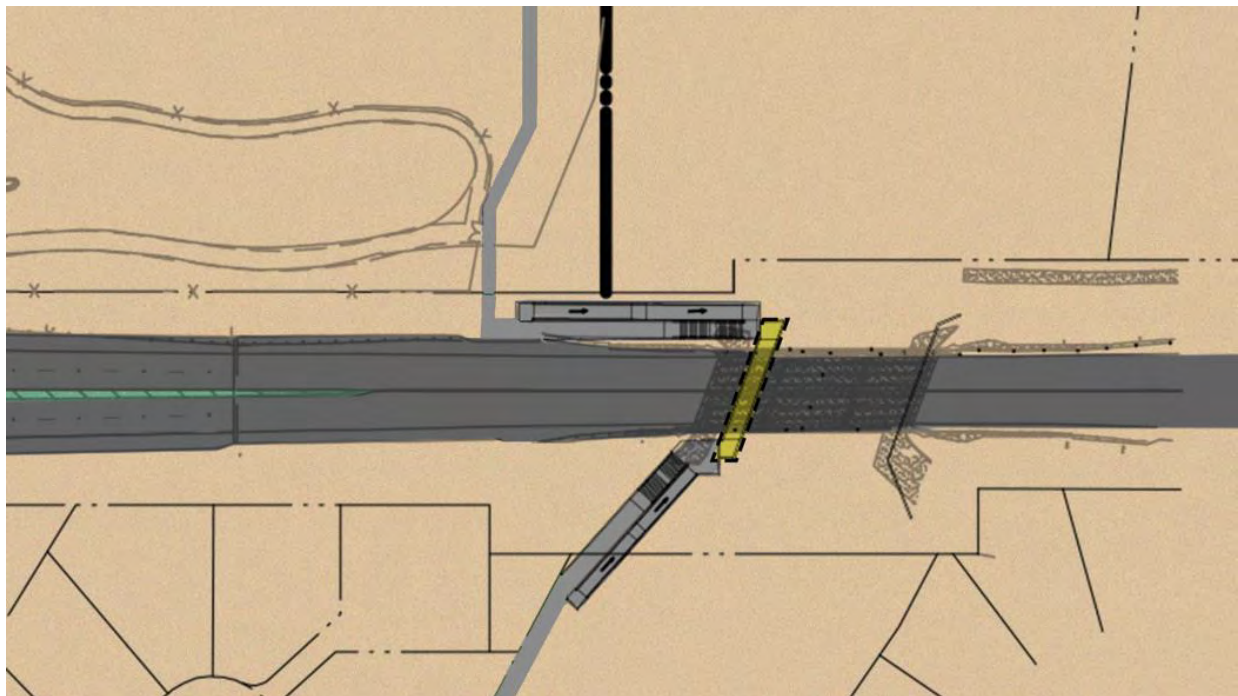


Elevation plans for the Waipu'ilani Gulch overpass

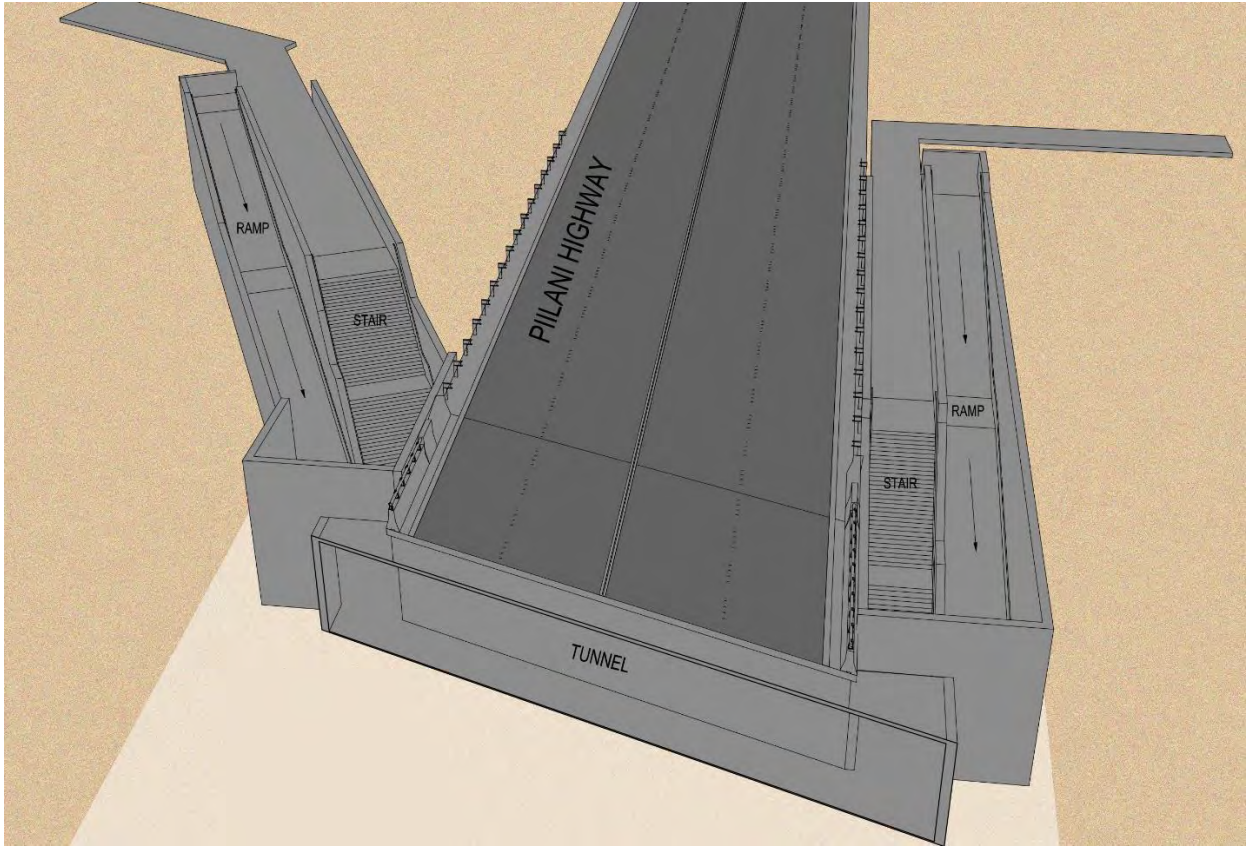
Alternative D: Underpass at Waipu'ilani Gulch

Alternative D is an underpass at Waipu'ilani Gulch. To keep the students out of the drainage way and to maintain the existing drainage flow, the existing diagonal concrete bank edges on the south side of the gulch would need to be cut so that vertical retaining walls could be built to widen and enclose the pedestrian path and maintain the same hydraulic opening. Impacts to the existing bridge structure from the removal of the existing concrete bank edges will have to be evaluated and mitigated through design.

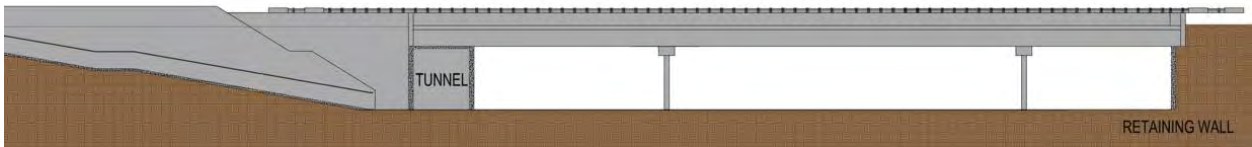
This design would mostly consist of cast-in-place structures. The sidewalks leading to the underpass would be located above the drainage way along the banks of Waipu'ilani Gulch, and ramps and stairways would be required to facilitate access to the crossing under Pi'ilani Highway.



Location of Waipu'ilani Gulch underpass



Rendering of the Waipu'ilani Gulch underpass



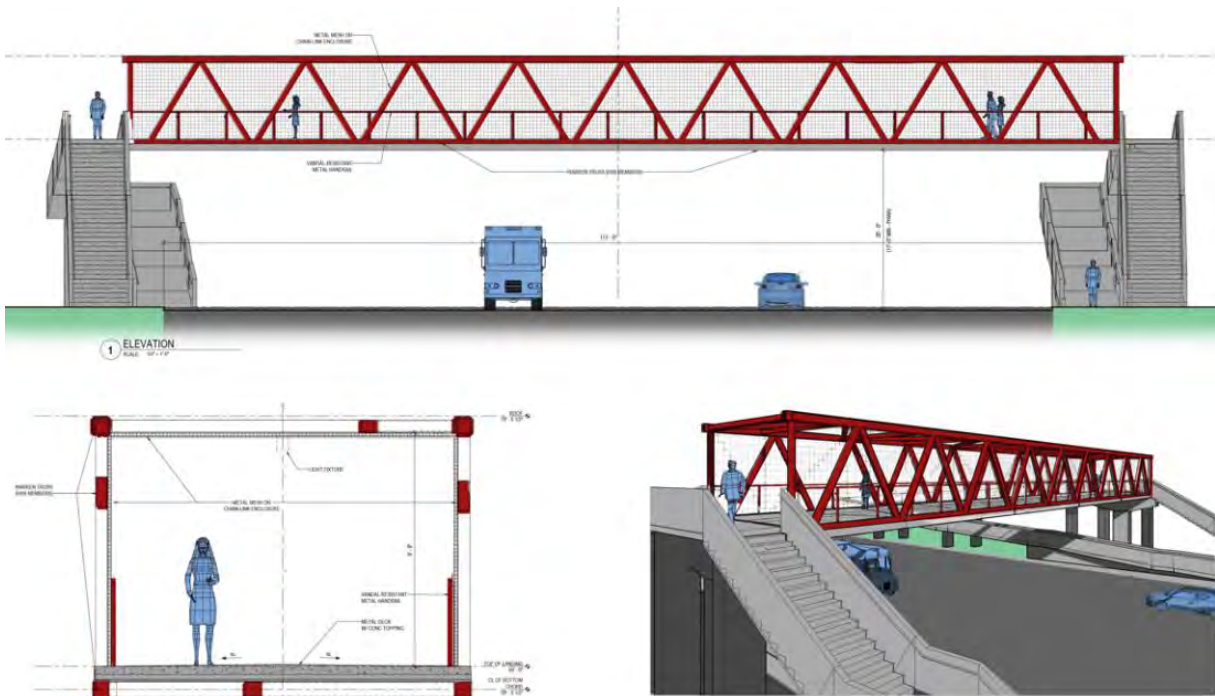
Waipu'ilani Gulch underpass stairs and ramps

Alternative E: Overpass at East Waipu'ilani Road

Alternative E is an overpass at East Waipu'ilani Road. This location is not adjacent to the high school property and would therefore require the construction of additional infrastructure, including a sidewalk on the mauka side of the highway. The existing highway bridge is not wide enough to include a sidewalk, and a supplementary truss pedestrian bridge to cross Waipu'ilani Gulch was added to the design.



Location of the East Waipu'ilani Road overpass and pedestrian bridge over Waipu'ilani Gulch



Elevation plans for the East Waipu'ilani Road overpass. The structure is the same as Alternative C, using stairs and ramps.

Alternatives Considered and Ruled Out

Several additional alternatives were considered during this study but were eliminated from the final analysis due to the factors discussed below.

Locations North of Kūlanihākoʻi Street

Locations to the north of Kūlanihākoʻi Street were not considered due to the narrowness of the Piʻilani Highway bridge over Kūlanihākoʻi Gulch, the steep hillside topography and berms along the northern portion of campus, and the lack of a close intersection that would provide connectivity away from the Highway.

Boardwalk Underpass at Waipuʻilani Gulch

There is strong community interest in using the floodway and gulch channel for a boardwalk underpass crossing that could serve the broader community. The community's preliminary design for the boardwalk located it within the drainage way. Due to the safety risks associated with placing a student crossing within a drainage area that is subject to periodic or potential flash flooding, this design was not pursued as a study alternative.

The Waipuʻilani Gulch vehicular bridge has been studied in multiple DOT reports. During significant rain events the gulch handles high volumes of runoff: as much as 8,000 cubic feet per second (CFS) in a 50-year event and 10,000 CFS in a 100-year event. The high volume of runoff produced during these flood events creates high water levels that reach within a few feet of the bottom of the bridge as water passes through the gulch channel. The height from the existing concrete lined channel to the bottom of the bridge is approximately 13 feet. Water levels under the bridge could reach a height of 9.9 feet (a ground surface elevation of approximately 37.9 feet) during a 50-year flood event and height of 10.6 feet (a ground surface elevation of 38.6 feet) during a 100-year flood event leaving a clearance of approximately 3.1 feet and 2.4 feet, respectively. Considering these factors, the placement of a boardwalk within the drainageway was determined to be unsuitable because of student safety concerns.

Creating enough space under the bridge for a boardwalk that is out of the floodway would necessitate a reconstruction of the gulch channel and/or the concrete bridge foundation. One method of separating pedestrian pathway from the floodway would be to lower the bottom of the channel. However, if this method were pursued, the channel would need to be lowered for a considerable distance downstream, upstream, and under the bridge to prevent the flood waters from overtopping the banks of the gulch or bridge. Another method would be to raise the bridge height to provide the needed distance. Both options would be extremely expensive, time-consuming, and involve major traffic disruptions.

At-Grade Alternative

Because the LUC condition requires the construction of an above or below ground pedestrian crossing, an at-grade crossing alternative was not included in the analysis. An at-grade pedestrian crossing will be the existing condition once the roundabout construction is complete in late 2022.

Community Consultation: Round 1

The first round of community outreach was designed to collect initial feedback from the community on the study's focus including the evaluation criteria to be used in assessing the alternatives.

Community Listening Sessions

On Wednesday, August 3rd and Thursday, August 4th, 2022, the consultant team hosted five community Listening Sessions at the Maui Research and Technology Park in Kihei. A total of 59 participants attended the sessions, including nine parents of school-age children and several candidates for local office, or their designee.

Each Listening Session began with a brief presentation on the study purpose, background information, and the evaluation criteria that were proposed for use in the analysis of each crossing alternative. Presenters and the consultant panel answered questions during a Q&A session before moving into the activities.

Participants engaged in three activities designed to collect feedback on each of the proposed study components. For the first activity, the current (at that time) list of evaluation criteria was presented to the participants after which they were asked whether any other criteria should be added. They were then asked to prioritize their top five criteria. In the second activity, participants were presented with a map of the five GSPC alternatives and asked to provide specific benefits and challenges related to each, and then to provide any additional GSPC alternatives for consideration. In the final activity, participants were asked two open-ended questions regarding the opening of the school ahead of the GSPC completion to solicit ideas and opinions on possible short-term options for getting students safely to the new campus. Feedback from each of these three activities was used to inform the Online Survey, and ultimately informed the technical analysis.

The list of benefits and challenges for each alternative that was produced in the second activity helped to identify further considerations for the technical analysis including the need for pathways and sidewalks for improved connectivity and the project's visual impacts. This activity also served to highlight significant community concerns such as student safety, trust in DOE, and the level of cooperation among agencies needed to achieve the construction of a GSPC.

A Listening Session with area principals and the Complex Area Superintendent was held to gain insights into their parents' issues and concerns around the crossing and good ways to obtain additional parent input.

Online Survey

A short online survey was developed to query the larger community regarding evaluation criteria priorities for the alternatives analysis and preferences for short-term solutions.

Demographic information collected in the survey included each participant's zip code, the neighborhood where they live, whether they are parents of school-aged children, and the grade level range of their children. Additional questions were asked of parents of students who will be eligible to attend the school in the next 3-6 years, particularly those who live within 1.5 miles of the school, as these students

are not eligible for bus service, since these parents will be making decisions about how their students get to school while a GSPC is being constructed.

The survey was offered in four languages: English, Spanish, Marshallese, and Chuukese. Translations were offered to make the survey accessible to parents of the students who would likely attend the new high school. These languages were chosen based on the advice from area principals. A total of 1,258 surveys were completed.

Listening Session and Online Survey Findings

Feedback from the Listening Sessions and the results of the Online Survey identified and confirmed the prioritization of the evaluation criteria for the alternative analysis. The top three evaluation criteria were:

1. Usability (incorporates both the likelihood that students would use the crossing and student travel distances)
2. Perceived security
3. How soon the GSPC can be built

The remaining evaluation criteria were:

- Flooding concerns
- Traffic disruptions during construction
- Impacts to existing properties and land acquisition needs
- Connection of crossing to existing sidewalks and trails
- Crossing appearance
- Cost of building
- Design usability (ADA, weather protection)

The Online Survey asked specifically about location criteria, and the most important criteria was GSPC proximity to areas with high concentrations of students.

Of the parents who took part in the Online Survey, about 25% planned to have their students walk or bike to school in the morning. That percentage increased to over 32% for students coming home in the afternoon.

See Appendix A for more results from the Online Survey.

Participants in the Listening Sessions and the Online Survey were asked to provide suggestions and opinions on acceptable potential short-term option for students to get to school until a permanent GSPC is constructed. These findings are presented in the Temporary Options section, below.

Alternatives Analysis

The process used to analyze the alternatives is described in this section including the identification of assumptions, the analysis performed for each of the evaluation criteria and contributing factors by alternative, and a comparative discussion of the findings.

Assumptions

Several assumptions based on known requirements and agency feedback were established as a foundation for the Alternatives Analysis.

1. The GSPC Will Be Designed, Constructed, Owned, Operated, and Maintained by the Hawai'i State Department of Education

In a typical transportation development scenario, the design, operation, use, and management of a GSPC will be guided by transportation engineering best practices and national standards. Construction of a GSPC is also usually justified by the anticipated volume and characteristics of pedestrian and bicycle traffic that may use the crossing, based on traffic engineering standards and regulations including those of the Federal Highway Administration (FHWA), American Association of State Highway and Transportation Officials (AASHTO), National Association of City Transportation Officials (NACTO), DOT Standards, and county traffic codes. In the State of Hawai'i, the majority of GSPCs are owned, operated, and maintained by a county or DOT.

In the case of the development of Kūlanihāko'i High School, the LUC condition was the impetus for the construction of a GSPC, and as the applicant for the LUC zone change, DOE is the agency required to build it. Due to this requirement, DOE will construct, own, operate, and maintain the GSPC. As the owner and operator, and because the overcrossing will only serve the school campus in the near-term, DOE has stated its intention to lock the crossing during non-school hours (with consideration for before and after-school events).

2. Designs Will Comply with Federal and State Regulations and Standards

The GSPC designs will be consistent with federal and state regulations. Designs for each alternative will comply with the ADA and include paths wide enough for pedestrians and bicyclists. The two alternatives located in and adjacent to Waipu'ilani Gulch, will need to address the specific requirements of the U.S. Army Corps of Engineers Clean Water Act Section 404 and 401.

3. Designs Will Include Standard Requirements for Ramps and Crossings, as well as Components to Enhance Safety and Reduce Construction Schedule and Costs

Ramps and (in most cases) stairs will be incorporated into the design of each GSPC. Walkways will be covered to discourage students from throwing items into traffic or into the gulch. Drainage (downspouts or sumps), fencing, gates, railings, lighting, potential security equipment, and ADA requirements including all-weather surfaces and finishes will be included in each design.

Pre-cast or prefabricated components will be used where feasible to reduce construction time and lower costs.

4. No Land Acquisition is Required to Construct a GSPC at Any Alternative Location

All alternatives fit within the DOT highway rights-of-way and do not require land acquisition.

5. Makai GSPC Connections will be Built

Sidewalk connections to each GSPC alternative on the makai side of the highway that are ADA compliant will be constructed if they do not exist or are not already part of current County of Maui improvement plans.






6. The Roundabout Will be in Use When the GSPC is Constructed

The roundabout will be in place for the design, construction, and operation of any of the GSPC alternatives. The roundabout is a DOT facility. No alternatives consider the removal of the roundabout.

Summary of Findings

The study's technical analysis focused on the evaluation criteria identified and prioritized by the community during the Listening Sessions and in the Online Survey. Each GSPC alternative was evaluated using the five criteria: Usability/Travel Path, Estimated Time to Completion, Perceived Security Issues, Estimated Rough Costs, and Traffic Disruption on Pi'ilani Highway.

The table below summarizes the findings for each alternative with the evaluation criteria organized in order of priority.

	Kūlanihāko'i Street		Waipu'ilani Gulch		East Waipu'ilani Road
Evaluation Criteria	 A Overpass	 B Underpass	 C Overpass	 D Underpass	 E Overpass
	Usability / Travel Path				
# of students estimated to walk/bike to school ¹	205 students	205 students	155 students	155 students	125 students
New sidewalks needed on school campus	0	0	0.23 miles	0.23 miles	0.20 miles
New offsite sidewalks needed to connect to the grade-separated pedestrian crossing	0	0	0.16 miles	0.15 miles	0.13 miles
Estimated Time to Completion²	3½ - 5 years	5½ - 7 years	5 - 6½ years	6 - 7½ years	6 - 7½ years
Design & Entitlements	1 - 1½ years	2 - 2½ years	2 - 2½ years	2 - 2½ years	1½ - 2 years
Construction Permitting, Bid & Procurement	1½ - 2 years	1½ - 2 years	1½ - 2 years	1½ - 2 years	1½ - 2 years
Fabrication & Construction	1 - 1½ years	2 - 2½ years	1½ - 2 years	2½ - 3 years	3 - 3½ years
Perceived Security Issues	Low	High	Low	High	Low
Estimated Rough Cost³	\$10.4-13.6 mil	\$18.3-23.8 mil	\$14.3-18.5 mil	\$24.6-32.0 mil ⁴	\$15.3-20 mil
Traffic Disruption on Pi'ilani Highway during construction	Med	High	Low	Low	Med

¹ Represents 25% of students who live within the 2-mile path of the school and are assumed to walk or bike, while the rest of the students would drive or be driven to school. Number of students for each alternative is based on existing distribution of home locations and factored using a buildout student capacity of approximately 1,600 students. Results rounded to nearest 5.

² Funding not secured at this time.

³ Includes entitlements, design, permitting and construction. Present day costs based off design assumptions and similar construction work in the Kihei-Wailea Area; does not include future escalation.

⁴ Requires structural improvements to concrete channel lining and bridge.

Evaluation Criteria & Findings

The methods used to analyze each of the five evaluation criteria and factors used in the analysis to compare the alternatives are described below. Significant differences among the alternatives are highlighted and discussed.

Usability / Travel Path

It is critically important to the community, as well as DOE, that the selected alternative be one that students will use. Two factors that contribute to usability are the number of students expected to be served and the pathway connectivity that would be available for the students to access the GSPC.

The number of students expected to be served by the GSPC depends both on the maximum distance that students are typically willing to walk or bike from their homes to school and on the proportion of students that usually walk or bike to school based on historic trends.






Studies of school commuters have shown that students are not inclined to walk or bike further than two miles to their intended destination. While some high school students may walk up to two miles, trips longer than approximately 1.5 miles are usually made by students who bike. That said, changes in transportation including recent increases in e-bike usage help to make longer trips more likely. Based on this information, a two-mile travel path was plotted on a map for each of the alternatives to establish a boundary within which students are expected to walk or bike. This boundary is plotted as a pink line on in the figures on the following pages, and the bounded areas vary in shape and size depending on the location of the GSPC (i.e., at Kūlanihākoʻi Street, Waipuʻilani Gulch, or East Waipuʻilani Road). It should be noted that the two-mile path assumes that existing unofficial off-street walking paths currently used by pedestrians would be available (e.g., walking paths along the future Kenolio Road-Līloa Road alignments across the Kūlanihākoʻi and Waipuʻilani Gulches).

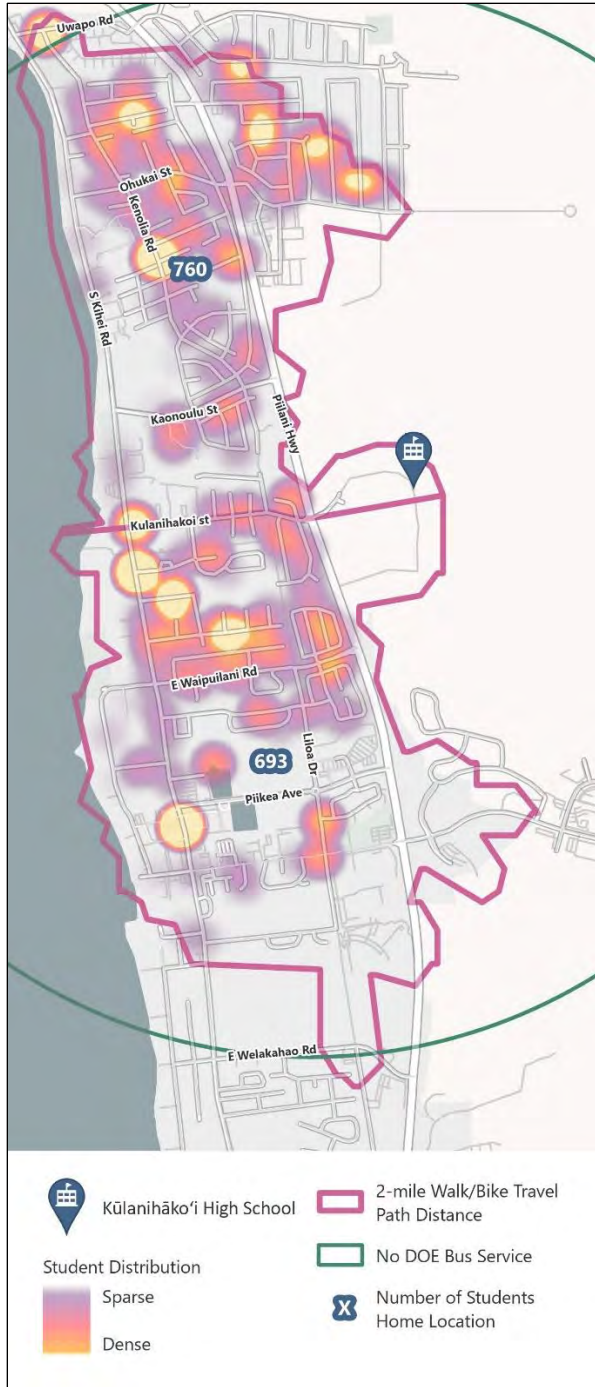
These maps also illustrate the 1.5-mile radius circle within which DOE does not provide school bus service. Students living within this area are expected to travel to school by walking, biking, driving, or other means.

The proportion of future students that may use the GSPC was determined by mapping existing residence data provided by DOE for all kindergarten through 12th grade students in the South Maui (Kīhei-Wailea-Mākena) area. The number of students located within the 2-mile travel boundary, to the north and south of each GSPC location, is shown in the figures on the following pages. The combined number of students for each alternative was then compared to the total number of students living in South Maui overall (2,843) to determine the total proportion of students that live within the walking and biking boundary. Finally, that proportion was applied to a future school buildout population of approximately 1,600 students to determine the number of future enrolled high school students that currently live within the 2-mile travel path. This last step assumes that the geographical distribution of students stays the same.

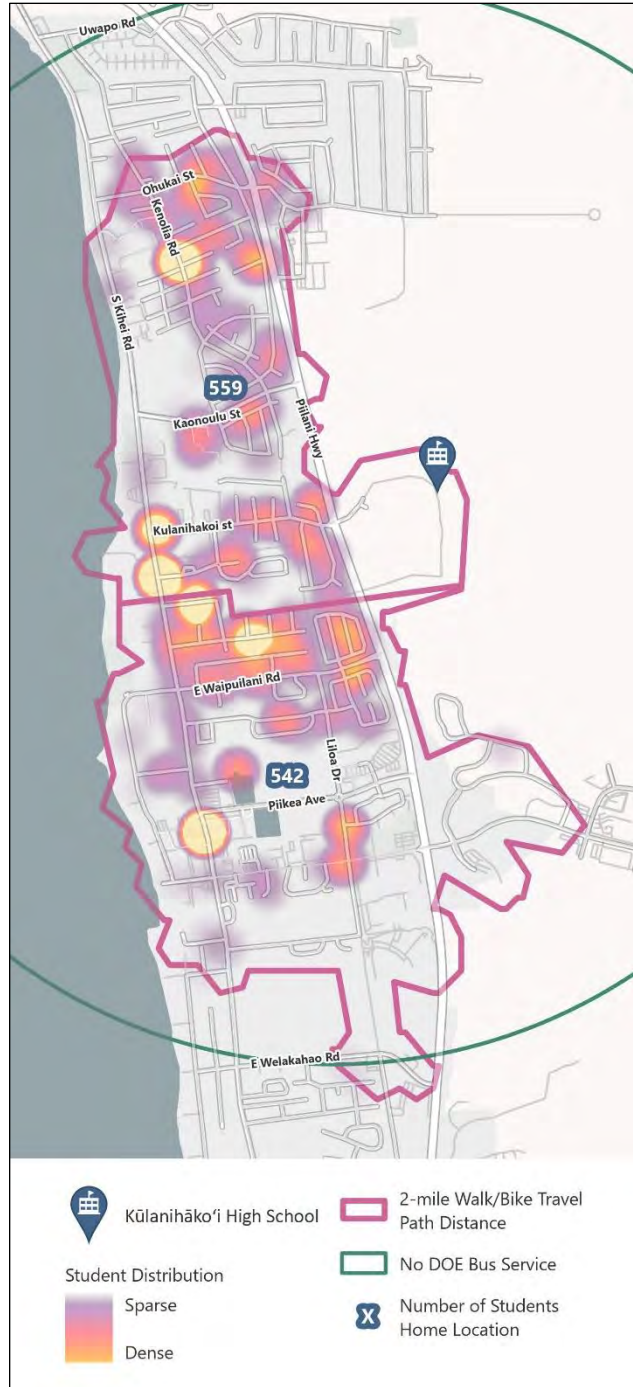
The result of this calculation represents the number of students who could potentially walk or bike to school within the two-mile travel buffer. However, many students who are within walking or biking distance will drive or be driven to school for a variety of reasons including convenience, perceived security, and reduced travel time. In the case of Kūlanihākoʻi High School, travel to the school involves a substantial grade change between the highway and the classroom buildings that may affect whether students walk, bike, or drive to campus. Studies have shown that the proportion of students that walk or bike to school in suburban locations with no bus service is typically no more than 25 percent. Based on this information, the number of students that are expected to be served by the

GSPC at school buildout is estimated to range from 125 to 205, depending on the alternative. The number of estimated students served per alternative is shown in the table below.

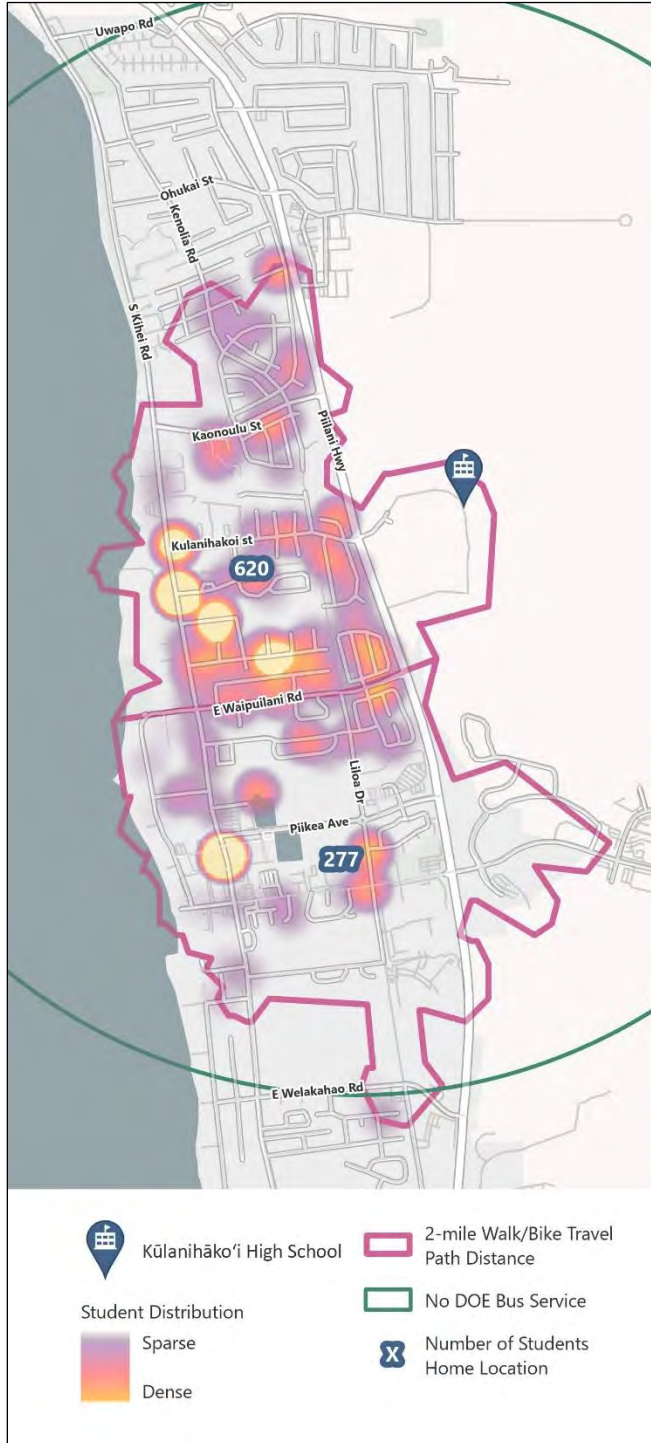
	Kūlanihākoʻi Street		Waipuʻilani Gulch		East Waipuʻilani Road
Evaluation Criteria	 A Overpass	 B Underpass	 C Overpass	 D Underpass	 E Overpass
Usability / Travel Path					
<i># of students estimated to walk/bike to school²</i>	205 students	205 students	155 students	155 students	125 students
<i>New sidewalks needed on school campus</i>	0	0	0.23 miles	0.23 miles	0.20 miles
<i>New offsite sidewalks needed to connect to the grade-separated pedestrian crossing</i>	0	0	0.16 miles	0.15 miles	0.13 miles



Student Distribution within a 2-Mile Travel Path Distance for Kūlanihākoʻi Street Alternatives A and B



Student Distribution within a 2-Mile Travel Path Distance for Waipuʻilani Gulch Alternatives C and D



Student Distribution within a 2-Mile Travel Path Distance for East Waipu'ilani Road Alternative E

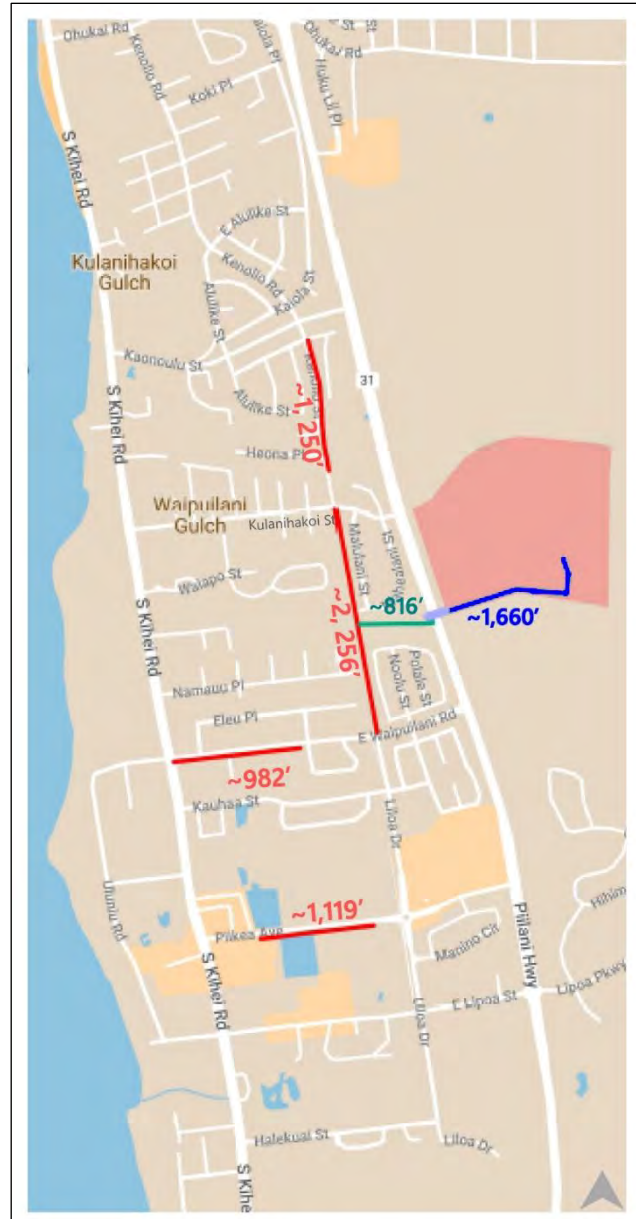
Given that the school classrooms are located close to the campus' primary access road (i.e., the Kulanihako'i Street extension), it is expected that the highest number of students would be served by the Kulanihako'i Street alternatives. At this location, the access route for students does not require any "backtracking" or circuitous travel by students north or south of the GSPC. For Alternatives C through E at the gulch and East Waipu'ilani Road, students living north of Kulanihako'i Street would need to walk an additional distance to use the GSPC.

As noted above, the travel path for some students includes streets or future street rights-of-way that do not currently include a formal path or sidewalk on at least one side of the street. This lack of regional connectivity will necessitate the County of Maui or the State of Hawai'i to provide pedestrian facilities to enhance safety and comply with requirements of the ADA. This is true for all of the alternatives. In addition, the alternatives at Waipu'ilani Gulch and East Waipu'ilani Road would require new sidewalks/paths on the campus and new sidewalks/paths connecting the GSPC to the campus property. The length of these new sidewalks/paths are illustrated on the figures on the following pages, and the total distance in miles is also included in the table above.



- Kūlanihāko'i High School
- New sidewalks to improve regional connectivity
- Crossings

**New Sidewalks and Path for Connectivity
Alternatives A & B**



- Kūlanihāko'i High School
- New sidewalks to improve regional connectivity
- New offsite sidewalks needed to connect the grade-separated pedestrian crossing
- New sidewalks needed on school campus
- Crossings

**New Sidewalks and Path for Connectivity
Alternatives C & D**



**New Sidewalks and Path for Connectivity
Alternative E**

Estimated Time to Completion

The estimated time for the completion of each alternative was calculated based on three phases: 1) Design and Entitlements, 2) Construction Permitting, Bid and Procurement, and 3) Fabrication and Construction. The alternatives anticipated to take the most time to complete all three phases are the underpass at Waipu'ilani Gulch (Alternative D) and the overpass at East Waipu'ilani Road (Alternative E). The alternative estimated to take the least amount of time is the overpass at Kūlanihāko'i Street (Alternative A). The discussion below highlights impacts to the timeline for completion of the GSPC, and Appendix B provides more detailed time estimates for each phase from design to construction.

The time needed to secure funding is not included in the estimated time need to complete the GSPC. Department of Education receives appropriated funds from the State of Hawai'i Legislature subject to priorities determined by legislators.

	Kūlanihāko'i Street		Waipu'ilani Gulch		East Waipu'ilani Road
Evaluation Criteria	 A	 B	 C	 D	 E
	Overpass	Underpass	Overpass	Underpass	Overpass
Estimated Time to Completion²	3½ - 5 years	5½ - 7 years	5 - 6½ years	6 - 7½ years	6 - 7½ years
<i>Design & Entitlements</i>	1 - 1½ years	2 - 2½ years	2 - 2½ years	2 - 2½ years	1½ - 2 years
<i>Construction Permitting, Bid & Procurement</i>	1½ - 2 years	1½ - 2 years	1½ - 2 years	1½ - 2 years	1½ - 2 years
<i>Fabrication & Construction</i>	1 - 1½ years	2 - 2½ years	1½ - 2 years	2½ - 3 years	3 - 3½ years

Design and Entitlements

In the initial Design and Entitlements phase, all federal, state, and county rules and regulations applicable to the project must be reviewed and addressed accordingly to obtain the necessary entitlements and permits.

The time to complete the engineering and architectural design of the GSPC and associated structures (sidewalks, pathways, ramps, and retaining walls) is anticipated to vary per alternative based on distance from the campus and complexity of design. Alternative A requires the least design time (shortest sidewalk pathways). Alternatives C and E, which are some distance from Kūlanihāko'i Street, require additional design time for the sidewalk and utilities to the overpass locations. Underpass Alternatives B and D are more complex than designs for the overpass alternatives and therefore require the most design time. The underpass designs must account for significant earthwork and the potential issues that may arise with unforeseen and buried utilities. Electrical, lighting and security systems are also more complicated and require more time to address in design.

For each of the alternatives DOE would be required to complete state and possibly federal level environmental assessments. State level Environmental Assessments (EA) and Environmental Impact Statements (EIS) present a comprehensive evaluation of a project's potential impacts on the environment based on studies done by independent expert consultants per Hawaii Revised Statutes (HRS) 343. To determine whether a state level EA or EIS is most appropriate for the selected alternative, DOE must complete an analysis using the 13 significance criteria per Hawaii Administrative Rules (HAR) 11-200.1-13b and -14a. An EA would take approximately 9-11 months to complete, while an EIS may take between 12-15 months. Any challenges to the EA or EIS process may extend this timeline.

The selected alternative would also need to address the State Historic Preservation review process per Chapter 6E-8 HRS as this would be a state project. During the preparation of the environmental assessment, State Historic Preservation compliance can be addressed.

Alternatives A and E would only need a state level EA or EIS (and likely only an EA). Alternative B may require an EIS due to project complexity. These alternatives would need to meet State Historic Preservation process requirements.

Alternatives C and D involve construction in Waipu'ilani Gulch which triggers federal regulatory requirements. Alternative C includes construction of an elevated walkway in the gulch to connect to the overpass, and Alternative D places an underpass in the gulch. United States Army Corps of Engineers (USACE) Honolulu District has determined that Waipu'ilani Gulch is a Water of The United States (WOTUS) and therefore is under their jurisdiction. Under the Clean Water Act Section 404 and Section 401 (Water Quality Certification), projects affecting a WOTUS must obtain associated permits and certifications. Alternatives C and D would also need a Stream Channel Alteration Permit from the State Commission on Water Resource Management. These permit processes must be completed in sequential order. The estimated timeframe for these gulch related permit applications to be prepared and reviewed is 18 months.

Alternatives C and D will need a state level EA or EIS and State Historic Preservation review process (Chapter 6E-8 HRS). The USACE will determine if a National Environmental Policy Act (NEPA) EA or EIS is needed or if the project qualifies for a Categorical Exclusion (CATEX). These alternatives may also need to comply with Section 106 of the National Historic Preservation Act (NHPA) and any other applicable federal approvals. This will take a minimum of 15 months.

Department of Education will be required to obtain County of Maui Special Management Area Use permits and Flood Development Permits. DOE will need to work with the County to see if there is a need for a Special Use Permit or zoning variance for the selected alternative. If either is needed, they can be obtained while procuring the Special Management Area and Flood Development permits. The preparation and review of these permit applications takes between 6-11 months.

These state and county processes will have some overlap in timing.

Easements may be needed for Alternatives C and D, and if so, should be pursued early in the Design and Entitlements phase.

Construction Permitting, Bid, and Procurement

The Construction Permitting, Bid, and Procurement phase begins with the design plan submission to county, state and federal agencies for review and approval. This phase could start near the end of the design and entitlements phase, but most likely after acceptance of the EA or EIS. The length of time for review and approval will vary depending on the technical aspects of the design. It should be noted that the County of Maui review process has faced delays in recent months due to a shortage of staff.

It is anticipated that each alternative would require similar state and county permits, such as county building and grading permits, Work to Perform on County Highways Permit, Permit to Perform Work Upon State Highways, and Permit for the Occupancy and Use of State Highway Right-of-Way.

When the construction plans are approved by all required agencies, the plans and specifications can be advertised for bid. A standard bid selection and procurement process takes approximately 4-6 months for full contract and award. If there are challenges to the bid process, significant additional time may be required as has occurred recently on select DOE projects.

Fabrication and Construction

Once the contract is awarded, the contractor can start the Fabrication and Construction phase for the selected GSPC. The timeframes for construction vary based on the overall scope of work, amount of preconstruction and prefabricated materials that are possible to use.

Construction of Alternatives A and B at the campus entrance on Kūlanihākoʻi Street would have more limited scopes of work as there are existing sidewalks for students to access the GSPC. Alternatives C, D, and E require additional scope of work to provide sidewalks to access the GSPC which adds time to construction, as well cost.

Prefabricated components can be used to shorten the construction time for Alternatives A, B, C, and E. The alternative would still use of cast-in-place construction for the ramp/stair structures holding up the bridge and the support infrastructure required to use and maintain the facilities.

While Alternative B, the underpass at Kūlanihākoʻi Street, would use prefabricated materials, it would require excavation and trenching in the highway. This would be done in phases to decrease traffic impacts and add the overall construction schedule. Utility relocations may also be required (e.g., existing communication and drainage infrastructure within the highway) and would extend the timeline.

Alternative D, the underpass at Waipuʻilani Gulch, would not be able to utilize prefabricated materials because it would need to fit below the existing bridge structure, with significant structural modification to the bridge supports and foundations. This alternative would require the most cast-in-place concrete construction which would lengthen the construction time, involve additional excavation and repair of the concrete channel lining, and require portions of the bridge supporting columns, sidewalls, foundations to be reconstructed. A new concrete wall would also be required to separate the pedestrian pathway from the gulch and floodway.

Perceived Security Issues

Perceived security issues are an important consideration in the evaluation of GSPC alternatives. In general, pedestrians and cyclists have greater personal security concerns regarding underpasses compared to overpasses. Overpasses are typically considered safer because there are more “eyes on the street.” Drivers on the roadway can more easily see people accessing and traveling on an overpass, where users of the facility are visible. In the case of an underpass, the access points are often screened by the adjacent grades of the roadway, and people within the underpass are only visible by others at either opening or within the facility itself.

Some Kīhei residents, including many parents, have expressed concerns regarding the potential use of underpasses by unhoused individuals, as well as the potential for personal conflicts to occur out of sight. It is possible to reduce the potential for undesirable activity in underpasses by using extremely bright lighting and security cameras, but monitoring is often considered infeasible and police resources are already limited according to County of Maui enforcement officers. According to Federal Highway Administration Pedestrian Safety Guide and Countermeasure Selection System, underpasses work best

when designed to feel open and accessible. Given the design requirements at the Waipu'ilani Gulch underpass (Alternative D) to separate users from potential flooding, the underpass would be more of a tunnel than an open and inviting path. The underpass in Alternative B would also have restricted lines of sight by passing drivers, and the tunnel design would prevent pedestrians or bicyclists in the tunnel from being seen by others at ground level.

	Kūlanihāko'i Street		Waipu'ilani Gulch		East Waipu'ilani Road
Evaluation Criteria	 Overpass	 Underpass	 Overpass	 Underpass	 Overpass
Perceived Security Issues	Low	High	Low	High	Low

Estimated Rough Cost

The estimated rough costs were calculated using the three phases for project delivery: 1) Design and Entitlements, 2) Construction Permitting, Bid and Procurement, and 3) Fabrication and Construction. Most of each alternative's total estimated cost is for the Fabrication and Construction phase.

Cost estimating has become more challenging recently due to the highly volatile nature of the construction industry, including supply chain and shipping issues. Cost estimates for all phases of the project are also highly time-dependent and market-driven, and changes to the schedule may impact the overall project cost. An estimated range of costs is provided for budgeting and comparison purposes. A more detailed cost estimate should be prepared for the selected alternative as part of a subsequent study.

Estimates do not account for future escalation in costs due to inflation or the volatility that the industry is currently experiencing in supply chain. However, they do account for recent inflation and the increased cost of goods and services that the industry estimates have increased by 25 to 30% since the start of 2022.

A summary comparison of the estimated rough costs is included in the table below. More detailed cost estimates are included in Appendix C.

	Kūlanihāko'i Street		Waipu'ilani Gulch		East Waipu'ilani Road
Evaluation Criteria	 Overpass	 Underpass	 Overpass	 Underpass	 Overpass
Estimated Rough Cost ³	\$10.4-13.6 mil	\$18.3-23.8 mil	\$14.3-18.5 mil	\$24.6-32.0 mil ⁴	\$15.3-20 mil

Design and Entitlements / Construction Permitting, Bid and Procurement

Design costs are affected by the alternative's scope of work and the complexity of the design. The design of Alternative A would be the least costly because of the limited scope of work as it utilizes existing sidewalks and other infrastructure. Alternatives C, D, and E have greater scopes of work due to their distance from the campus entrance and additional sidewalk needs. As described in the Estimated Time to Completion section, above, underpass Alternatives B and D must consider additional factors in their

design such as earthwork, utility lines, and electrical systems. These factors contribute to greater design complexity and increase the cost of design.

Entitlement costs for Alternatives C and D at Waipu'ilani Gulch are the highest because the gulch is a jurisdictional WOTUS and requires associated permits and certification under the Sections 401 and 404 of the Clean Water Act as well as federal and state level environment assessments. Overpass Alternatives A and E have the lowest entitlement costs since these will likely require only a state level environmental assessment. Underpass Alternative B involves significant earthwork which may trigger the need for a more costly EIS.

On average, entitlement costs were estimated to be approximately 5 to 10% of the overall project costs while design, construction permitting, and bid and procurement costs were approximately 10% of the overall project costs.

Fabrication and Construction

Construction costs are also based on the project complexity and scope of work and include estimated costs for the contractor's General Conditions and Construction Management (CM) services.

On average, construction costs made up approximately 80 to 85% of the total project costs, which is in line with projects of similar size and scope of work, particularly for a government agency.

The total cost for the fabrication and construction of each GSPC alternative includes factors specific to its location and design. Below are highlights of the key factors which contribute to the differences in cost.

- The two underpass alternatives, B and D, will require considerable cast-in-place structural concrete work. They may also require sumps for the disposal of accumulated water in the subterranean pathways.
- Alternative D requires demolition and reconstruction of portions of the existing Waipu'ilani Bridge structure. It also requires the most cast-in-place concrete work for the new underpass.
- Alternatives C, D and E, which need longer sidewalks, have somewhat higher costs associated with site preparation, grading and earthwork, concrete flatwork, utilities, fencing, railings, signage, and plantings.
- Alternatives A, B, and E will have the greatest amount of traffic disruptions associated with construction and the highest costs associated with traffic control measures.

Traffic Disruptions on Pi'ilani Highway

	Kūlanihāko'i Street		Waipu'ilani Gulch		East Waipu'ilani Road
Evaluation Criteria	 A Overpass	 B Underpass	 C Overpass	 D Underpass	 E Overpass
Traffic Disruption on Pi'ilani Highway during construction	Med	High	Low	Low	Med

Another important evaluation criterion is the anticipated traffic impact on Pi'ilani Highway during construction. Assessments on the degree of traffic disruption were based on a topographic survey (pre-

roundabout construction), construction plans for the new roundabout, and estimations of the footprint for each alternative structure. A rating of High, Medium, or Low was assigned to each alternative.

Alternative B would cause the most traffic disruption because it would require large sections of Pi'ilani Highway to be closed for trenching to construct the underpass. It was the only alternative to be rated as High in this criterion.

Alternatives A and E were rated Medium for this criterion. Alternative A would affect the area immediately adjacent to the roundabout on Kūlanihāko'i Street. This area has limited space for staging and construction which would cause lanes to be impacted and lead to traffic congestion. Alternative E on East Waipu'ilani Road has more room available for staging and construction, however the future addition of a sidewalk next to the highway may impact vehicle travel the mauka lane.

Alternative C was rated Low as it has sufficient room for staging and construction on both sides of Pi'ilani Highway. Alternative D was also rated Low since most of the work would be done under the bridge. The existing bridge would be braced, and construction would not affect traffic.

Community Consultation: Round 2

The second round of community outreach focused on sharing the study's technical analysis findings during the Open House and collecting feedback from parents and community members.

Community Open House: Sharing the Alternatives Analysis

A community Open House was held on Thursday, September 22, 2022, from 4-7 pm at Lokelani Intermediate School. Informational boards were posted around the cafeteria with study team members and agency staff available to explain alternative analysis findings and answer questions.

The open house format was chosen to create opportunities for attendees to interact with the study team and agency representatives and promote conversations and information exchange. The open house format also allowed participants to attend when it was most convenient for them and to take in the information at their own pace.



Attendees at the event were asked to sign in and their names and email addresses were added to a project database. After reviewing the alternative analysis boards, attendees were asked to provide their

feedback via a paper questionnaire. Attendees were also invited to place a dot on the potential short-term options board to indicate their preference. The boards displayed at the Open House are available in Appendix D.

Questionnaire Results

The Open House questionnaire was designed to collect feedback about attendees' preferences on the five alternatives displayed, as well as their feelings on a potential proposal to allow DOE to open the high school before the crossing is built. Information such as attendees zip code and the number of school-age children they have was also requested to better understand who had attended the open house, and especially to understand the perspectives of parents of school-age children. A total of 53 questionnaires were completed.



The first part of the questionnaire asked attendees which of the alternatives was their most preferred option and the reason(s) for that preference. Attendees were also given the option to indicate a second preferred alternative. The overall results showed a strong preference for the overpass near Kūlanihākoʻi Street. Reasons listed for this preference included the lower cost, greater usability and safety, and less disruption to traffic during construction. Though several respondents did not answer this question, results showed the second overall preference was the overpass near the Waipuʻilani Gulch.

The second portion of the questionnaire described a proposal to amend the condition that currently prevents DOE from opening the school by its target date and asked attendees to rate how acceptable they found the proposal. Majority of those who answered this question (56%) said they found it “Very” or “Somewhat” acceptable, however a significant portion (40%) answered that this was “Not Very” or “Not at All” acceptable. Only 4% of respondents remained neutral on this question.

A full summary of the questionnaire results is provided in Appendix A.

Student Focus Group

A focus group of 12 current Kūlanihākoʻi High School students who live within the 1.5 mile radius from the new school was held on September 27th to hear their input and perspectives. Students were eager to have the school open and have a safe crossing solution. Students were asked their preferences for the permanent and temporary crossing options. More than half the students preferred an overpass as the permanent crossing solution, and only one student was comfortable with the at-grade roundabout crossing option. For the temporary solution, the students overwhelmingly preferred the bus/shuttle option over a police officer/crossing guard at the roundabout crosswalk.

A summary of the student focus group is included in Appendix A.

Agency Consultations

Consultations were conducted with agencies throughout the study process to identify issues and concerns, determine viable alternatives and processes Consulted agencies include stakeholders in DOE,

DOT, and County of Maui Planning Department. A list of persons consulted from each agency is included in Appendix E.

Meetings to share the study purpose and scope of work were held with DOT and County of Maui Planning Department prior to the first round of community outreach. Feedback on the initial prioritization of evaluation criteria importance that resulted from Community Listening Sessions was summarized and shared with DOE and DOT. Prior to the Open House, DOE and DOT were updated on the initial findings from the technical analysis of the alternatives, as well as the results of the Online Survey. After the Open House and through the conclusion of the technical analysis, each stakeholder agency was provided with an update on the analysis findings and results of the Open House questionnaire and consulted for outstanding questions.

Below is a summary of the key input from each agency.

Hawai'i State Department of Transportation (DOT)

Early in the consultation process, DOT made clear that GSPC designs within a DOT right-of-way would be reviewed by DOT and need to be in conformance with FHWA requirements. DOT also stated that they would not take ownership of the GSPC in the short or long term.

DOT's position is that the at-grade crossing at the roundabout is safe for all users (pedestrians, bicyclists, and drivers) with the added controls (such as the RRFB). As DOT is not requesting the construction of the GSPC, the responsibilities of ownership, maintenance, and operation would rest solely with DOE.

Department of Transportation noted that because DOE will be closing the GSPC during non-school hours, the at-grade crossing at the roundabout would remain because eliminating the at-grade crossing would force the public to jaywalk across Pi'ilani Highway. DOT acknowledged that leaving the at-grade crossing in place reduces the likelihood that students would choose to use the GSPC. When asked if they would consider removing the at-grade crosswalk if the County were to take ownership of GSPC (allowing it to remain permanently open), DOT said they would consider it when the time came for the transfer of ownership. Based on their research, DOT maintains that GSPCs are underused because they add travel length and time when crossing the highway.

County of Maui Planning Department

The County of Maui Planning Department expressed their support for this study, and especially for the community outreach component. The Planning Department acknowledged that it does not have a say in DOE's decision and agreed that a GSPC of any type and location would meet the intent of the LUC condition.

The Planning Department stated that it will not sign off on a permanent Certificate of Occupancy as that would be in conflict with the GSPC condition in the LUC Decision and Order and County of Maui Ordinance 4135 which contains the conditions of the county zone change. The current County administration takes the view that issuing a Certificate of Occupancy would be in defiance of the LUC Decision and Order and the county ordinance and would subject DOE and County of Maui to legal challenges.

The Planning Department offered that a Temporary Certificate of Occupancy that would be valid for a one-year period could be a mechanism to allow the high school to open prior to GSPC construction.

The Planning Department identified ways in which it could be of assistance with the GSPC connectivity. The County is willing to provide right-of-way or easements on County land to accommodate the selected alternative, if needed. They indicated that any sidewalk DOE constructs in the County right-of-way can be dedicated to the County.

The County is pursuing pedestrian and bicycle connectivity in Kīhei separately from the school GSPC crossing. For example, the Department of Public Works is currently conducting an environmental assessment for Phase I of the Līloa Drive Extension Project that would provide an important multimodal connection near the GSPC alternatives.

Temporary Options

Regardless of which study alternative is selected, the GSPC will not be constructed and open in time to meet DOE's target school opening date of January 2023. This study investigated viable short-term options for student access to the school prior to the GSPC completion.

Ideas for these potential short-term options were first solicited during the Listening Sessions. The community suggested several ideas including bussing students to and from the school and establishing a crossing guard or County of Maui police officer at the at-grade roundabout crosswalk during heavy crossing times in the morning and afternoon. Another option that was raised in discussions was replacing the RRFB at the roundabout crossing with a HAWK (**H**igh-Intensity **A**ctivated cross**W**alk) beacon or Pedestrian Hybrid Beacon (PHB) to increase the likelihood that traffic will stop for pedestrians. A HAWK beacon or PHB includes red lights requiring vehicles to come to a complete stop until a flashing sequence allows drivers to proceed if safe to do so. An RRFB includes flashing yellow lights, but both devices require drivers to stop and give right of way to pedestrians in the crosswalk.

Multiple short-term options were presented to the community for evaluation in the Online Survey. The top two options selected by survey respondents were bussing students to campus and having a County of Maui police officer or crossing guard facilitate student crossing at the roundabout. Other temporary options included the installation of a HAWK beacon and mandatory student pick-up and drop-off, each of which received approximately a third of the responses of the top two preferences. Open-ended responses to this question indicated that approximately 4% of all survey respondents did not want the school to open until the GSPC was completed.

These options were raised in discussions with DOE and DOT to ascertain the feasibility of implementation. DOE felt the most viable options were shuttling/bussing students to campus and having a police officer present to assist with the roundabout crosswalk. Both options were again vetted through a hardcopy questionnaire offered at the Community Open House and with a student focus group. Participants at the Open House and in the student focus group expressed a strong preference for the bus/shuttle option. At the Open House, representatives from the County of Maui Police Department expressed concerns about their ability to provide consistent staffing for crossing assistance at the roundabout and officer safety during this duty.

Next Steps

This section identifies and outlines a series of suggested next steps for DOE following the selection of a GSPC alternative. These steps are prioritized to ensure that the most immediate needs are addressed first. Most steps involve coordination with other agencies to resolve outstanding issues and move the GSPC design and construction process forward as efficiently as possible in order to obtain the approvals needed to open the high school.

A plan should be devised detailing the temporary options. This will help to inform the drafting of the LUC conditions modifications.

The DOE will need to provide details complete with agreement from MPD (if chosen,) hours that crossing guards would be in place, how that will impact traffic during those morning and afternoon hours etc. Conversely, if bussing is chosen, the plan should address how a bussing program would work, which students will be served, where pick-ups and drop-offs would be, how it would be paid for, would there be a fee for parents, are there enough bus drivers etc. We just don't want to see the DOE going back to the LUC unprepared, and we view this as a necessary element of their proposal.

State LUC Condition Modification & County of Maui Ordinance Revision

The LUC condition reads that the GSPC must be constructed prior to the opening of the school. The County of Maui's corresponding ordinance for the zone change refers to the language of the condition. Therefore, both conditions of entitlements should be addressed in the same timeframe.

The County, not the LUC, has the primary power to enforce the LUC condition. Enforcement mechanisms include denying the issuance of building permits, Certificates of Occupancy, utility services, and other administrative services. Proposed modifications to the LUC condition language should be coordinated with the County of Maui Planning Department and Corporation Counsel.

The Kīhei community, the County of Maui, and the LUC are looking to DOE to demonstrate their commitment to building a GSPC before pursuing steps to open the school. With this in mind, DOE should consider incorporating benchmarks tied to substantial progress towards GSPC construction in the proposed modifications to the LUC condition and/or the County of Maui ordinance revision. The Planning Department requested that any benchmarks be clear, enforceable, and easy to understand. Progress on benchmarks could be linked to the issuances of annual Temporary Certificates of Occupancy that would allow the school to open. These are issued by the County of Maui Department of Public Works Development Services Administration with sign-off by various departments including the Planning Department.

The modified LUC and/or County ordinance language should reference the implementation of short-term measures for facilitating student access to the school before the permanent GSPC is installed. A plan for the temporary school access via bus/shuttle and/or police/crossing guard at the roundabout could be a benchmark. Additionally, DOE may choose to set other benchmarks to provide periodic progress reports to maintain public transparency throughout the process and to rebuild trust with the Kīhei community.

After agreement on the proposed LUC modification language is reached, DOE can submit a motion and the LUC will set a date for the motion to be heard. Selection of a date for this meeting will incorporate

review by the Office of Planning and Sustainable Development and the LUC staff which typically takes 2.5 months.

County of Maui Police Department Crossing Assistance

DOE needs to confirm with the County of Maui Police Department that police officers will be available to assist with students crossing as a short-term option until a GSPC is completed and operational.

DOT Plans for the At-Grade Crossing

Because the roundabout will already be in place when the school is opened, a HAWK beacon, rather than the currently planned RRFB, was suggested as an option to provide greater safety and visibility for users of the at-grade crossing. Department of Transportation will need to conduct a traffic analysis to assess the appropriateness of a HAWK system at this location.

Department of Transportation has stated that the roundabout's at-grade crossing will remain while the GPSC is under control of DOE because the hours of GSPC operation will be limited. Department of Education should work with DOT to understand whether the at-grade crossing could be removed if the County accepts operation of the GSPC and allows it to always remain open. This might occur during future development mauka of Pi'ilani Highway.

Approaches to Reducing Project Schedule

Traditional project delivery for a GSPC would consist of obtaining entitlements, preparing engineering and architectural design drawings, securing permits from state and county (and potentially federal) agencies, offering the project up for bid and procurement, and engaging a general contractor. Concurrently, DOE would internally identify the GSPC operational parameters, partner agencies, and identify funding sources for both construction and long-term maintenance. This project delivery method is referred to as "design-bid-build".

During the community open house, a community member asked about using a "design-build" project delivery approach as an alternative to shorten the project delivery schedule. In this approach, DOE would contract directly with the general contractor who would hire its own team of designers and engineers rather than DOE having the responsibility for contracting out for the design separately and then putting the construction out to bid. In this scenario entitlements are still typically handled by DOE (including HRS 343 and NEPA compliance).

One challenge with the "design-build" approach is that DOE has limited experience using this project delivery method, and it may not result in the expected schedule reductions. Keeping the design and entitlement processes separate from the construction bid process can be more expedient and provide greater expertise on the individual tasks, especially when obtaining agency approvals. Another challenge is that unless the full amount of funding for the design, entitlements and construction allocated up front, the design-build approach is not feasible.

Another possible method of accelerating project delivery is via pandemic Emergency Proclamation by the Governor. Recently, the Governor has used this power to approve infrastructure throughout the state using economic stimulus funding from the federal government. Funded projects include highway projects, emergency homeless shelter and housing projects, and other infrastructure work. The

Emergency Proclamation generally exempts projects from state entitlement approval requirements (e.g., HRS 343) as well as County discretionary and ministerial permits (Special Management Area (SMA), County Special Use Permit (CUP), building, grading, work in county highways, etc.). These approvals can be obtained at a later date, as is the case for most projects constructed under Emergency Proclamation.

Delivery of the project through the emergency proclamation is possible. However, it can only be accomplished with significant coordination and agreement between the County of Maui, DOE, DOT, and the Governor's office. The traditional project delivery method, where DOE is the only lead agency, is simpler. Any use of the Emergency Proclamation would require that funding be identified and allocated to DOE for use on this project early in the process.

Potential Future GSPC Dedication to County of Maui

Once a GSPC alternative is selected by DOE for implementation, discussion on future GSPC ownership could be conducted with County of Maui. County of Maui ownership would allow the crossing to be operated outside of school hours and contribute to community connectivity. The County of Maui's operation of the GSPC would be compatible with its overall responsibility for public roadways and rights-of-way. If dedication to the County occurs, DOT would also be able to consider removing the at-grade crossing at the roundabout.

The transfer of GSPC ownership could be paired with the dedication of the main campus driveway to the County as a public street. Because the existing ranch lands located mauka of the school are anticipated to be developed, the driveway may first be transferred to the developer (and DOE would maintain an access easement). Once it is improved to county standards, ownership of the driveway would likely transfer from the developer to the County of Maui. The County of Maui is not prepared to accept ownership at this time.

Investigate Mechanisms for North Kihei Mauka Connectivity

Community feedback identified poor connectivity between the densely populated Ohukai subdivision and the high school as a significant issue. There are high concentrations of students living in this area who will not be eligible for bussing due to DOE's 1.5-mile bussing radius policy (see Alternatives Analysis above). The existing infrastructure requires high school students residing in the subdivision to cross Pi'ilani Highway twice in order to reach the campus by walking or biking. Many community members expressed a desire for a sidewalk or other pathway on the mauka side of Pi'ilani Highway or through a future mauka development(s) between Ohukai Road and the campus.

This issue falls outside the purpose of this study; however, DOE should work with DOT and the County of Maui to add a mauka shared use path for pedestrians and bicyclists alongside but separate from the travel lanes on the highway between Ohukai Road and the high school entrance to provide a direct route that does not require students to cross the highway at all.

Appendix A

Community Outreach Results

PI'ILANI HIGHWAY GRADE-SEPARATED PEDESTRIAN CROSSING STUDY

COMMUNITY OUTREACH

Survey/Questionnaire Results

October 14, 2022



Table of Contents

- Online Survey
- Open House Questionnaire / Input
- Kūlanihāko‘i High School Student Focus Group



Online Survey

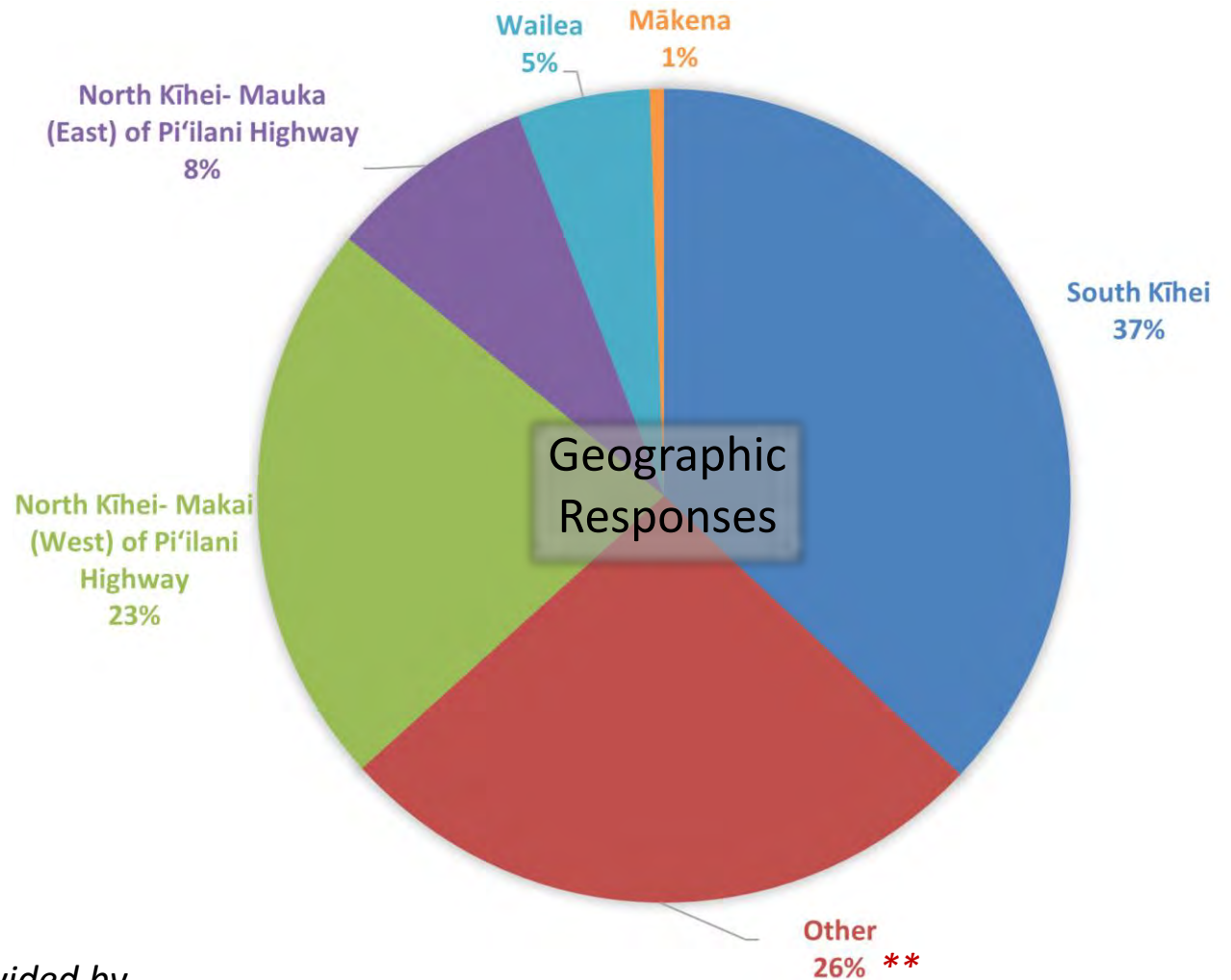
Online Survey Overview

- Open from September 2nd to 16th 2022 via SurveyMonkey
- Questions developed using feedback from August Listening Sessions
- Announcements via
 - Email to those who requested study updates
 - Email to parents/guardians of students attending DOE schools in Kīhei
 - Maui Now
 - Maui News
 - Study website (bit.ly/KiheiHSCrossing)

Survey Responses

1,258 responses

- English (1,254)
- Spanish (3)*
- Marshallese (1)*
- Chuukese (0)*

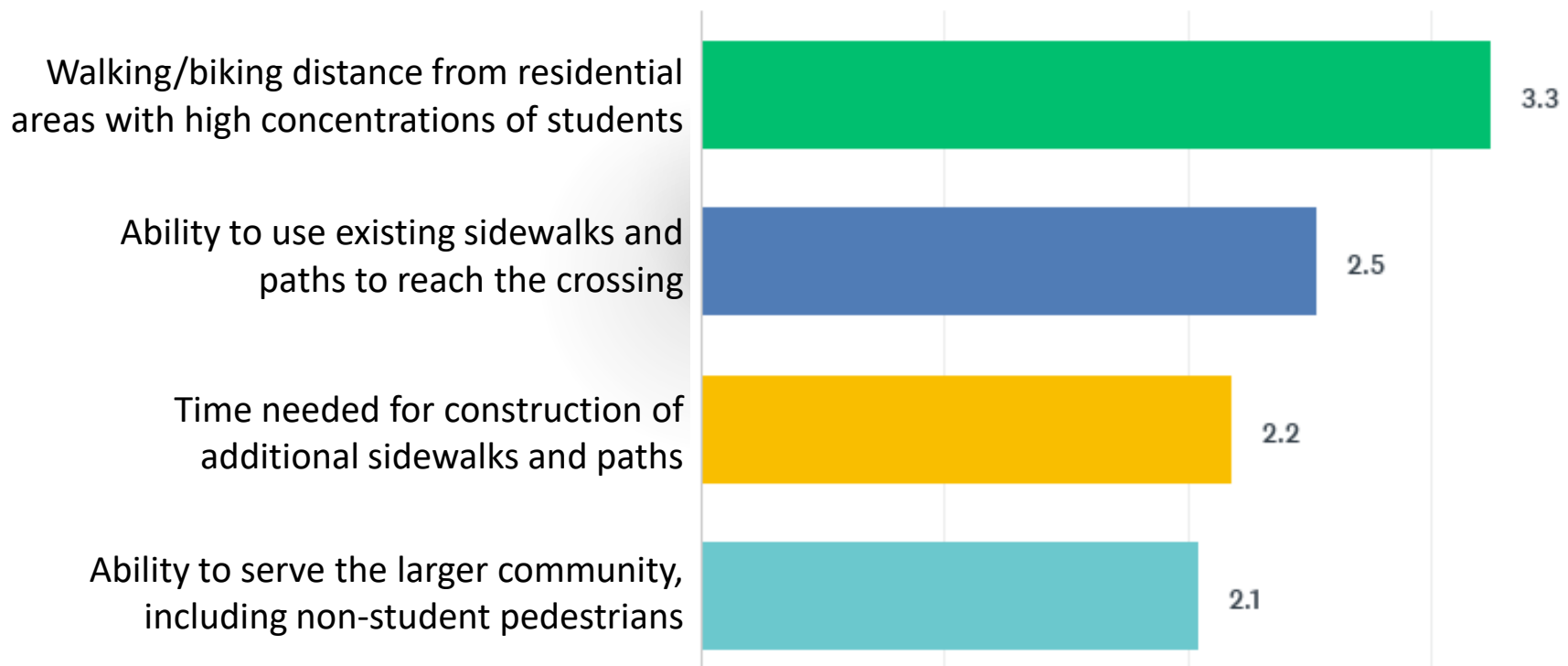


* Language recommendations provided by school administrators based on languages currently used to communicate with parents

**Includes residents of other areas of Maui as well as specifically identified locations in Kihei

Crossing Location Considerations

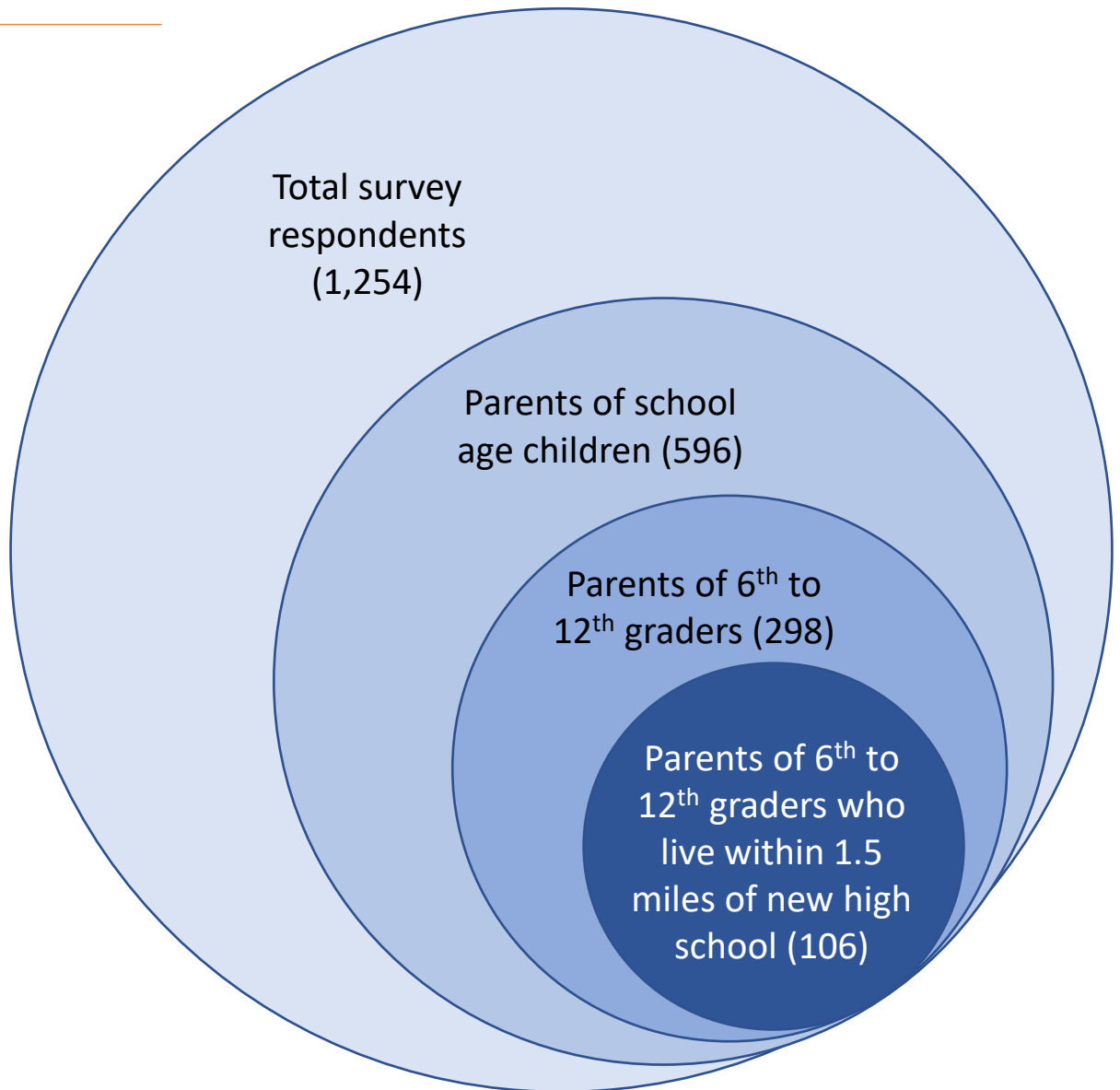
Survey respondents were asked to rank the following considerations for potential crossing locations that were raised during the August Listening Sessions.



Average rankings were calculated by weighting the ranking chosen by respondents.

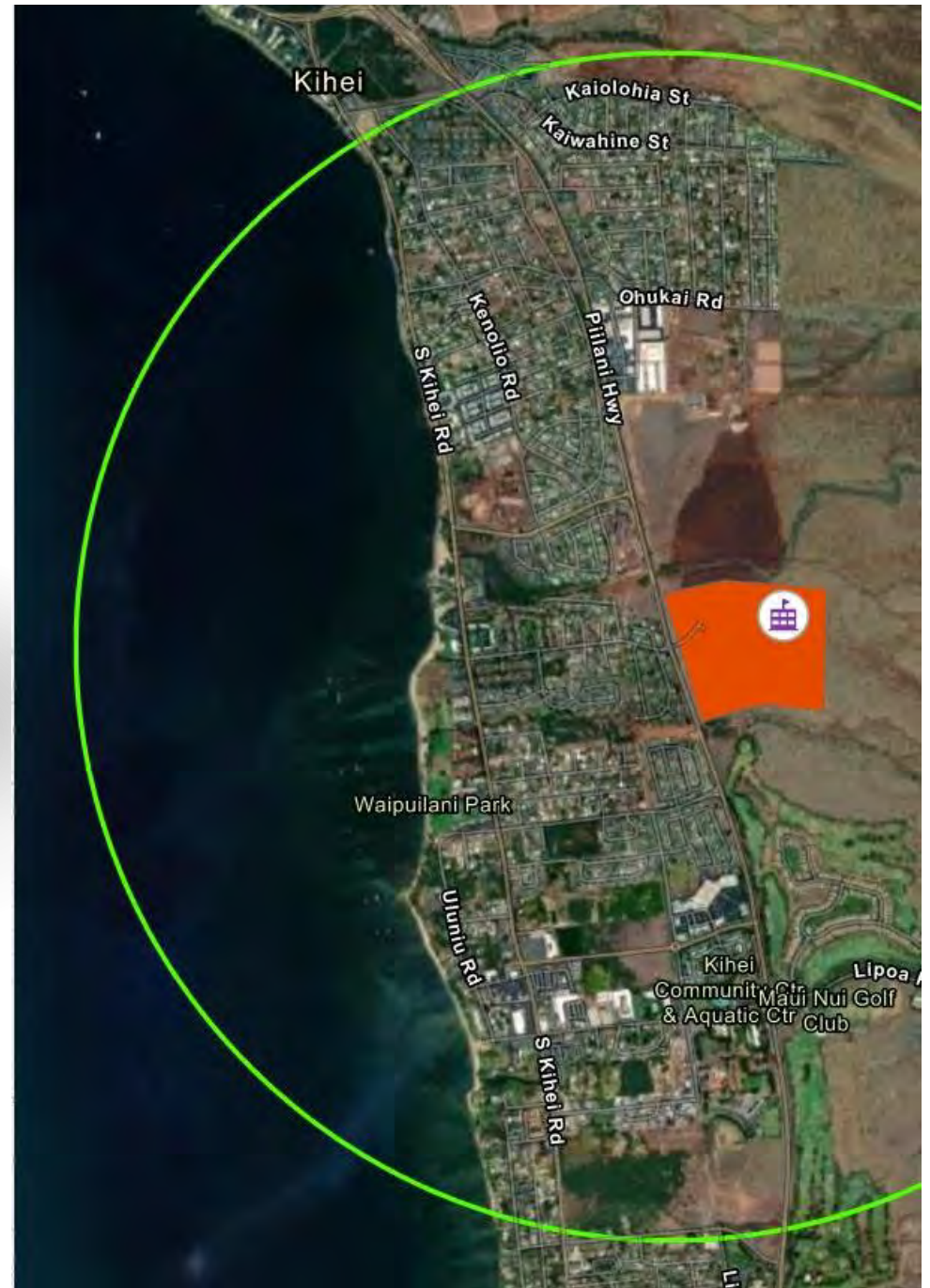
Parent Respondents

- 47% of respondents were parents of school age children
- Parents are primary decision-makers regarding how students will get to Kūlanihākoʻi High School in the next 3-6 years
- Focus on families within the 1.5 mile radius where no bussing option



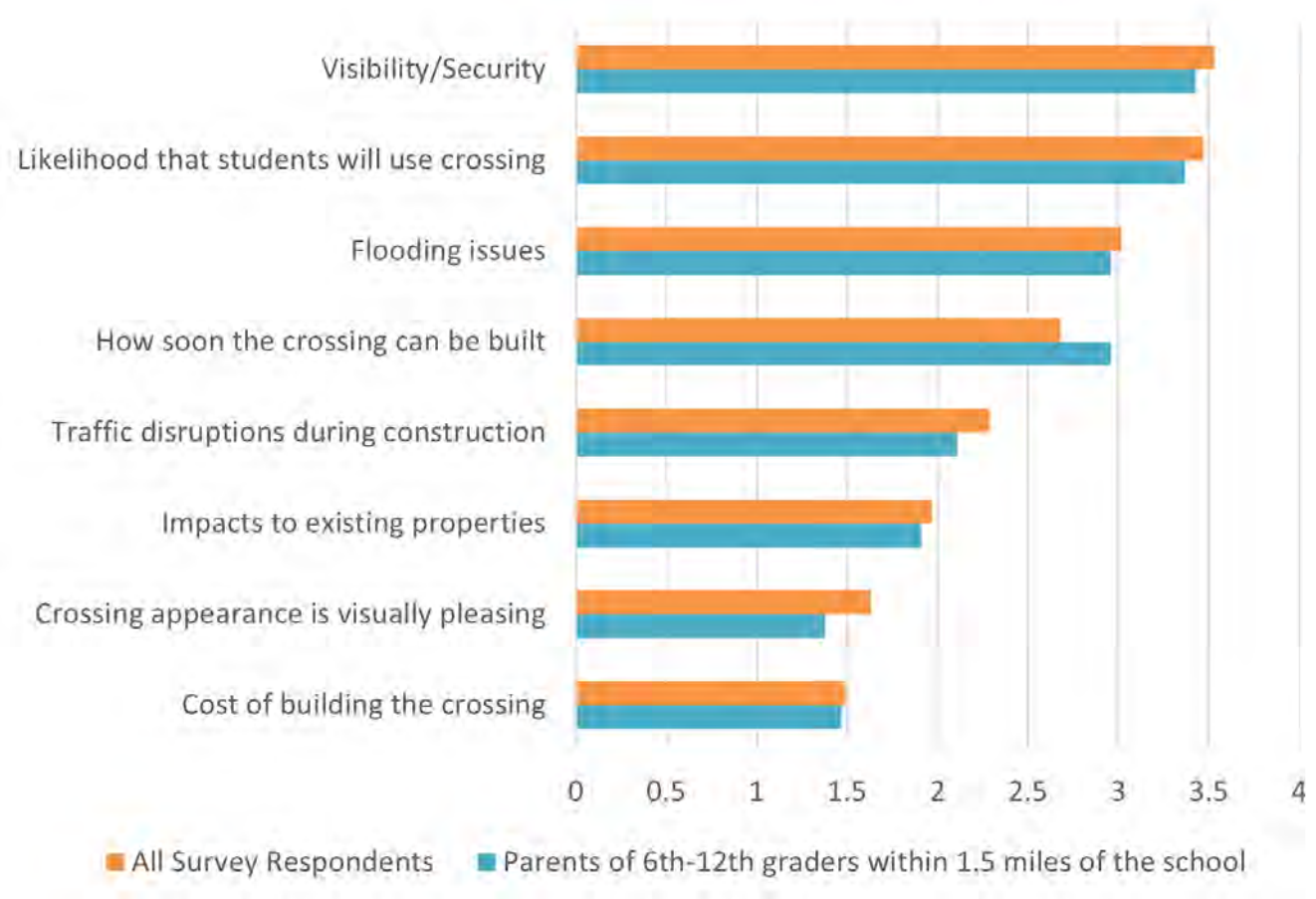
Area without DOE Bus Service

- Within the 1.5 mile radius around Kūlanihākoʻi High School, there is no DOE Bus Service
- Students residing within this area are more likely to be biking/walking to school



Priority Considerations for an Over/Underpass

- The survey asked respondents to rate each factor on its importance in the overall analysis.
- Visibility and security were most important considerations.
- Parents responses showed higher level of importance assigned to how soon the crossing can be completed.

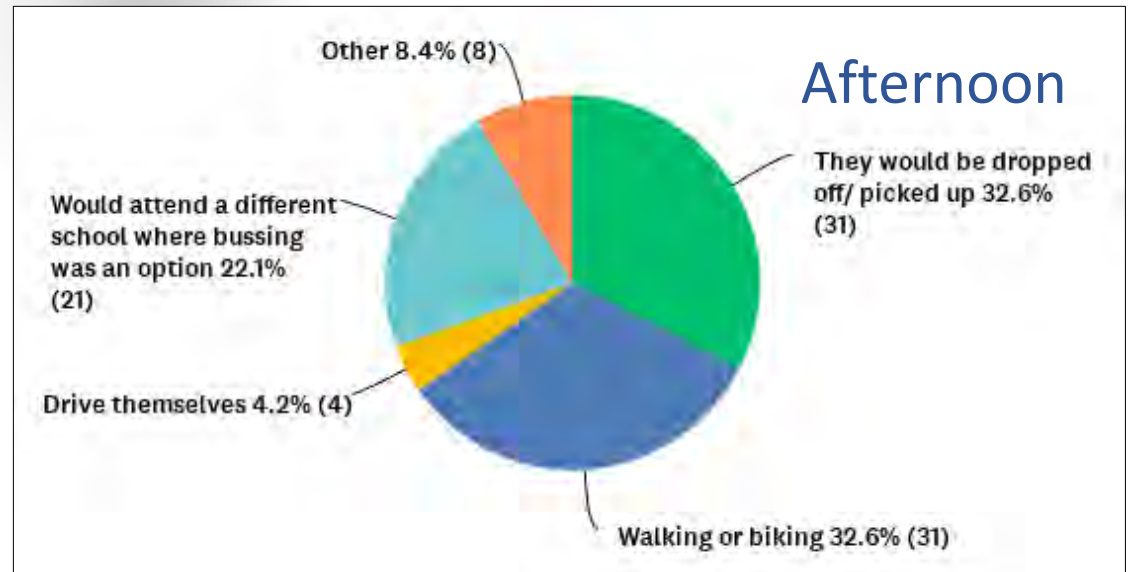
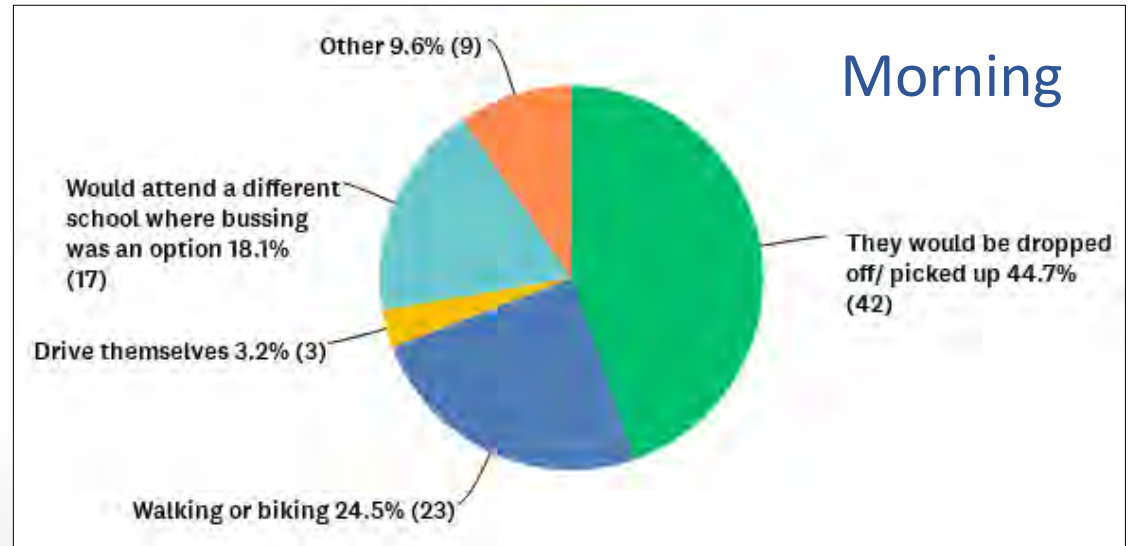


Average rankings are calculated by weighting the responses based on the importance level chosen by respondents

Parent Respondents: *How will kids get to/from school?*

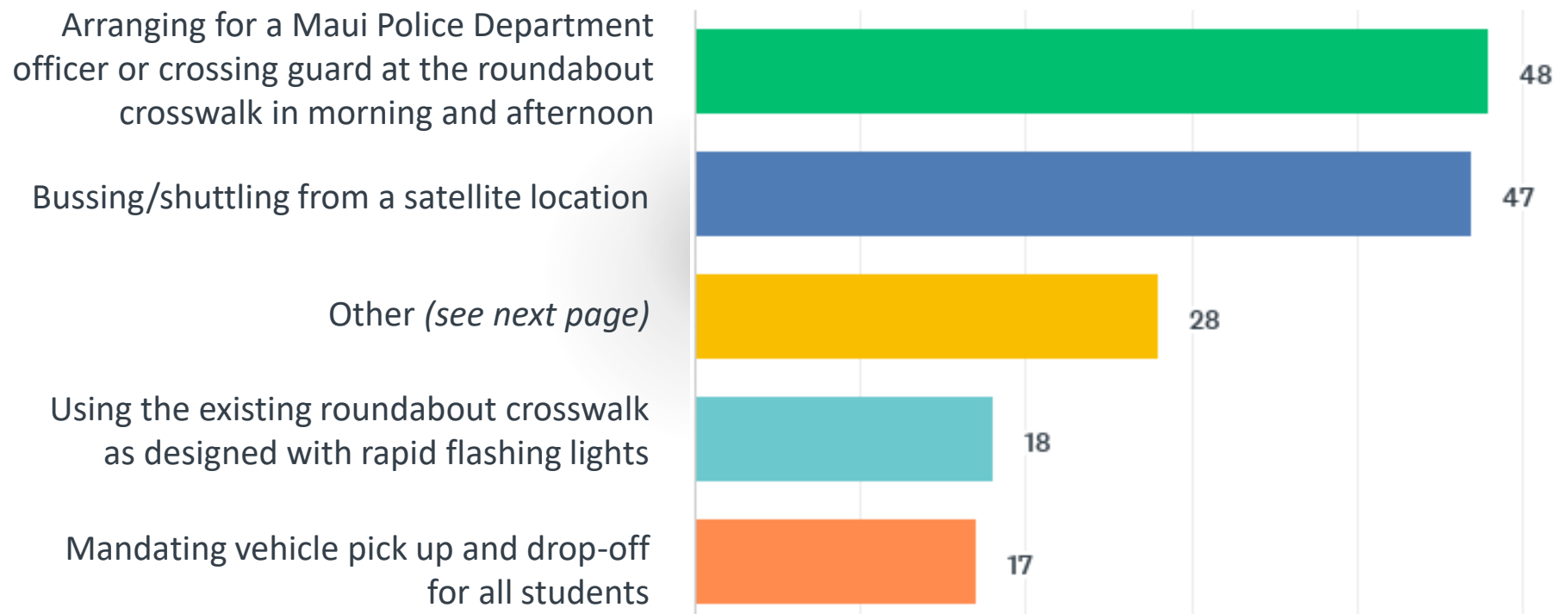
- In the morning, ~45% of families plan to drop off students
- In the afternoon, more students (~33%) will be walking or biking home

Responses from parents of 6th-12th graders living in the 1.5-mile radius



Parent Respondents: Short-Term Alternatives

Respondents selected acceptable alternatives for opening the school before the crossing is completed. Multiple alternatives could be selected. *Options were from August Listening Sessions.*



Responses from parents of 6th-12th graders living in the 1.5-mile radius

Open-ended Responses

SHORT-TERM ALTERNATIVES

“Do not open the school before GSPC”

- 55 respondents or ~4% of survey respondents
 - 17 of the responses were from parents of school-age children

“None of the above”

- 25 respondents or ~2% of survey respondents
 - 8 of the responses were from parents of school-age children

LONG-TERM ALTERNATIVES

Some community members used the comment section at end of the survey to express their frustrations with the roundabout and desire for a “stop light” or signalized crossing at the Kūlanihāko‘i Street intersection.



Open House Questionnaire / Input

Overview

- Hardcopy questionnaire distributed at the Thursday, September 22nd 2022 Open House
- 53 questionnaires completed
- Board for input on short-term / temporary options

Kūlanihāko'i High School Pedestrian Crossing Study
Open House Survey

1. Given the information presented at tonight's open house, which permanent grade-separated crossing alternative, designed, constructed, and operated by the Department of Educational (DOE) for the purpose of serving Kūlanihāko'i High School, do you favor? (*circle one*)

Alternative A: Overpass near Kūlanihāko'i Street

Alternative B: Underpass near Kūlanihāko'i Street

Alternative C: Overpass near Waipu'ilani Gulch

Alternative D: Underpass using Waipu'ilani Gulch existing highway bridge

Alternative E: Overpass near East Waipu'ilani Road

What do you like best about the alternative you circled?

Is there something you feel is missing from that alternative that the DOE should consider?

2. Do you have a second choice? What do you like best about this alternative?

3. The following conditions are being collectively proposed for opening the high school prior to construction of a grade-separated pedestrian crossing:
- A short-term solution(s) (bussing or police officer at roundabout crossing) are provided until the permanent grade-separated pedestrian crossing is completed,
 - DOE prepares annual progress reports towards the selected permanent solution, and
 - Maui County reviews progress reports to decide if an annual, temporary certificate of occupancy for the high school should be issued.

How acceptable do you find the above proposal? (circle one):

Very Somewhat Neutral Not Very Not at all

Other comments on this proposal:

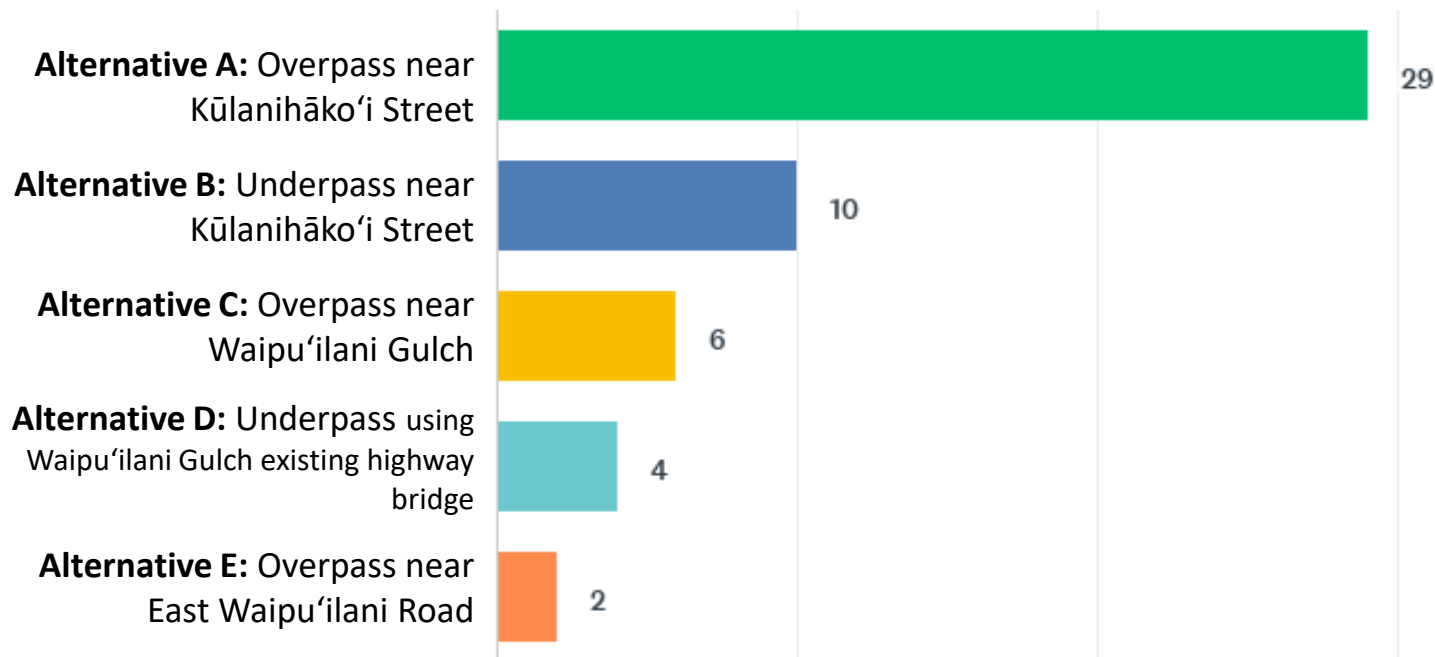
4. What is your zip code: _____

5. Do you have school aged children? (*circle one*) Yes No If yes, how many? _____

6. Other comments (*use back side*)

Preferred Alternative

Given the information presented at tonight's open house, which permanent grade-separated crossing alternative, designed, constructed, and operated by the Department of Educational (DOE) for the purpose of serving Kūlanihāko'i High School, do you favor?



Not all survey respondents answered this question.

Reasons for Alternative Selection	
A	Cost, Schedule, Usability, Safety, Less Traffic Disruption, Perceived Safety
B	Cost, Schedule, Usability
C	Cost, Schedule, Usability, Safety
D	Usability, Less Traffic Disruption, Uses existing Infrastructure
E	Safety, Less Traffic Disruption

ALTERNATIVES



Alternative A: Overpass near Kūlanihāko'i Street



Alternative B: Underpass near Kūlanihāko'i Street



Alternative C: Overpass near Waipu'ilani Gulch



Alternative D: Underpass using Waipu'ilani Gulch existing highway bridge



Alternative E: Overpass near East Waipu'ilani Road



Preferred Alternative: 2nd Choice

Alternative	Number of Selections for Second Choice*
Alternative C: Overpass near Waipu'ilani Gulch	9
Alternative E: Overpass near East Waipu'ilani Road	8
Alternative B: Underpass near Kūlanihāko'i Street	4
Alternative A: Overpass near Kūlanihāko'i Street	4
Alternative D: Underpass using Waipu'ilani Gulch existing highway bridge	2

Not all survey respondents answered this question.

Two respondents noted that a more open Waipu'ilani Gulch underpass design should have been considered in the alternatives.

Themes from Survey Comments

- Kids are the priority, keep them safe
- The school should be opened as soon as possible. The kids deserve to go to their new school
- 3-6 years to build an option seems too long
- DOE should have built the grade-separated pedestrian crossing a long time ago
- Lack of trust that DOE will follow through in the future
- Dissatisfaction with the roundabout / desire for traffic light

Pros and cons for the overpass versus underpass were included in some of the open-ended comments.

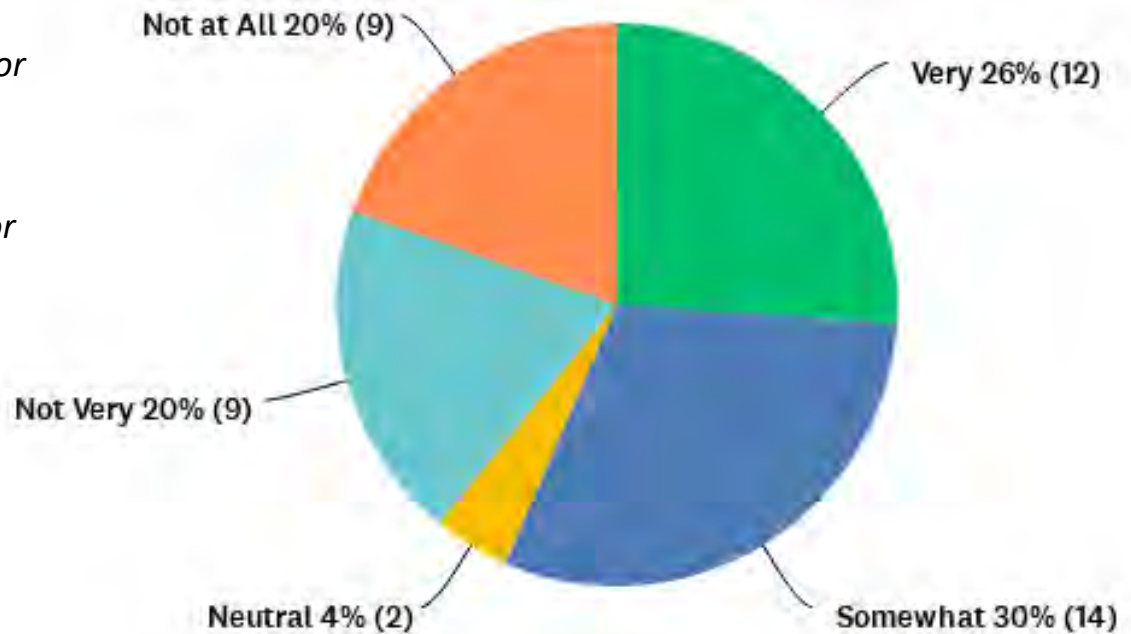
Acceptability of Possible Conditions

How acceptable do you find the following?

The three conditions being collectively proposed for opening the high school prior to construction of a grade-separated pedestrian crossing are:

- *A short-term solution(s) (bussing or police officer at roundabout crossing) are provided until the permanent grade-separated pedestrian crossing is completed,*
- *DOE prepares annual progress reports towards the selected permanent solution, and*
- *Maui County reviews progress reports to decide if an annual, temporary certificate of occupancy for the high school should be issued.*

Not all survey respondents answered this question.



Temporary Options

Two temporary/short-term options for getting students to school until a permanent over or underpass could be constructed were provided on a board.

Attendees were invited to place dots next to the option they preferred.

Potential Short-term Solutions

Until a permanent grade-separated pedestrian crossing is constructed

Maui Police Department Officer or crossing guard at the roundabout crosswalk

Bussing or shuttling students on campus from homes or satellite location

The most preferred alternative was bussing which received four (4) times as many dots as the roundabout crossing option.



Kūlanihāko'i High School Student Focus Group

Student Focus Group (9/27/22)

- 12 current Kūlanihāko‘i High School students attended
- All live within 1.5 mile radius from the new high school campus
- None of the students had been to or used the gulch to cross Pi‘ilani Highway
- Focus group format included polling and discussion with Q&A; no presentation

Students were asked to describe pros and cons of the crossing options

Option	Pros	Cons
Crosswalk	<ul style="list-style-type: none"> - Convenient - Already Built 	<ul style="list-style-type: none"> - Could take time to cross - Cars will hit you - Traffic back-ups
Overpass	<ul style="list-style-type: none"> - Safe - Doesn't back up traffic - Could have advertising on it 	<ul style="list-style-type: none"> - Kids throwing things (<i>needs to be enclosed</i>) - Longer time to cross than crosswalk
Underpass	<ul style="list-style-type: none"> - Cool/Shade - Place for “fun activities” (fight club) 	<ul style="list-style-type: none"> - Dark / Sketchy - Drug deals / Kidnapping / Fights - Homeless - Floods

Student Focus Group, Continued

Student Poll Question 1: *If you were going to cross the highway, what would you be more likely to use in the future?*

- Overpass (7 students)
- Underpass (4 students)
- Crosswalk at Roundabout (1 student)

Student Poll Question 2: *Which short term option would you prefer for getting to school?*

- Bussing (8 students)
- Roundabout crosswalk with police officer (4 students)

Appendix B

Estimated Time to Completion

Appendix C

Cost Estimates

Kihei High School Pedestrian Crossing Study
ALTERNATE A: OVERPASS NEAR KULANIHAKOI STREET

10/28/2022
 28011-14

Item	Description	QTY	Unit	Unit Cost	Total
DESIGN					
	Bridge, Truss Sections, Foundations, Support Structures	1	LS	\$400,000	\$400,000
	Two Sets of Stairs, Ramps and Strucutral Components	1	LS	\$400,000	\$400,000
	Structural Work at Detention Basin	1	LS	\$300,000	\$200,000
				Sub-total	\$1,000,000
ENTITLEMENTS					
	Environmental Assessment (HRS 343)	1	LS	\$200,000	\$200,000
	Chapter 6E-8 (HRS)	1	LS	\$80,000	\$80,000
	Special Management Area Use Permits (County)	1	LS	\$80,000	\$80,000
	ZAED Flood Development Permit (County)	1	LS	\$30,000	\$30,000
	Special Use Permit/Zoning Variance, if needed	1	LS	\$80,000	\$80,000
				Sub-total	\$470,000
CONSTRUCTION					
	Bridge, Truss Sections, Foundations, Support Structures, and Installation	1	LS	\$1,500,000	\$1,500,000
	Stairs, Ramps and Supporting Walls and Columns	1	LS	\$1,200,000	\$1,200,000
	Sitework, Electrical Conduit, Communications, Manholes, Boxes, Water, Sewer, Storm Drain, Sidewalks and pads	1	LS	\$800,000	\$800,000
	Fencing, Gates, Guardrails	1	LS	\$200,000	\$200,000
	Signage & Finishes	1	LS	\$100,000	\$100,000
	Railings	1	LS	\$100,000	\$100,000
	Lighting & Security	1	LS	\$200,000	\$200,000
	Structural Removal and Repair Work at Detention Basin	1	LS	\$500,000	\$500,000
	Misc. FFE	1	LS	\$100,000	\$100,000
				Sub-total	\$4,700,000
FABRICATION					
	Truss Bridge - Precast Structure and Materials Only	1	LS	\$1,000,000	\$1,000,000
				Sub-total	\$1,000,000
SHIPPING					
	Shipping	1	LS	\$300,000	\$300,000
				Sub-total	\$300,000
CONTRACTOR GC					
	25% of Construction, Fabrication and Shipping Costs				
	<i>General Conditions:</i>				
	1. <i>Overhead and Profit</i>				
	2. <i>Temporary Site Controls</i>				
	3. <i>Sediment and Erosion Control</i>				
	4. <i>Office Equipment and Trailer</i>	1	LS	\$1,500,000	\$1,500,000
	5. <i>Administrative Costs, Permit Fees, etc.</i>				
	6. <i>Overnight Work</i>				
	7. <i>Communications and Notifications</i>				
	8. <i>etc.</i>				
				Sub-total	\$1,500,000
CONSTRUCTION MANAGEMENT					
	20% of Construction, Fabrication and Shipping Costs and Contractor GC costs and Other Services During Construction:				
	1. <i>Archeological Monitoring</i>				
	2. <i>Geotechnical Monitoring</i>	1	LS	\$1,500,000	\$1,500,000
	3. <i>Strucutral Special Inspections</i>				
	4. <i>etc.</i>				
				Sub-total	\$1,500,000
				Total	\$10,470,000
Notes:					
For entitlements, the upper end of the estimated cost ranges are used in calculating the total cost.					
				Contingency (30%)	\$3,141,000
				Total with Contingency	\$13,611,000

Kihei High School Pedestrian Crossing Study
ALTERNATE B: UNDERPASS NEAR EAST KULANIHAKOI STREET

10/28/2022

28011-14

Item	Description	QTY	Unit	Unit Cost	Total
DESIGN					
	Tunnel	1	LS	\$600,000	\$600,000
	Two Sets of Stairs, Ramps and Supporting Walls and Columns	1	LS	\$500,000	\$500,000
	Two Sets of Stairs Retaining Walls	1	LS	\$300,000	\$300,000
				Sub-total	\$1,400,000
ENTITLEMENTS					
	Environmental Assessment or Environmental Impact Statement (HRS 343)	1	LS	\$1,200,000	\$1,200,000
	Chapter 6E-8 (HRS)	1	LS	\$120,000	\$120,000
	Special Management Area Use Permits (County)	1	LS	\$80,000	\$80,000
	ZAED Flood Development Permit (County)	1	LS	\$30,000	\$30,000
	Special Use Permit/Zoning Variance, if needed	1	LS	\$80,000	\$80,000
				Sub-total	\$1,510,000
CONSTRUCTION					
	Foundation	1	LS	\$2,000,000	\$2,000,000
	Demolition and Excavation	1	LS	\$500,000	\$500,000
	Arches (10 Sections), including Traffic Control	1	LS	\$1,500,000	\$1,500,000
	Arches (10 Sections), including Traffic Control	1	LS	\$1,500,000	\$1,500,000
	Stairs, Ramps and Supporting Walls and Columns, including Traffic Control	1	LS	\$1,200,000	\$1,200,000
	Sitework, Electrical Conduit, Communications, Manholes, Boxes, Water, Sewer, Storm Drain, Sidewalks and pads	1	LS	\$800,000	\$800,000
	Roadway Reconstruction, including Traffic Control	1	LS	\$500,000	\$500,000
	Fencing, Gates, Guardrails	1	LS	\$300,000	\$300,000
	Signage and Finishes	1	LS	\$200,000	\$200,000
	Railings	1	LS	\$150,000	\$150,000
	Lighting & Security	1	LS	\$300,000	\$300,000
	Misc. FFE	1	LS	\$100,000	\$100,000
				Sub-total	\$9,050,000
FABRICATION					
	Tunnel - Precast Structure and Materials Only	1	LS	\$800,000	\$800,000
				Sub-total	\$800,000
SHIPPING					
	Shipping	1	LS	\$400,000	\$400,000
				Sub-total	\$400,000
CONTRACTOR GC					
	25% of Construction, Fabrication and Shipping Costs				
	<i>General Conditions:</i>				
	1. <i>Overhead and Profit</i>				
	2. <i>Temporary Site Controls</i>				
	3. <i>Sediment and Erosion Control</i>				
	4. <i>Office Equipment and Trailer</i>	1	LS	\$2,562,500	\$2,562,500
	5. <i>Administrative Costs, Permit Fees, etc.</i>				
	6. <i>Overnight Work</i>				
	7. <i>Communications and Notifications</i>				
	8. <i>etc</i>				
				Sub-total	\$2,562,500
CONSTRUCTION MANAGEMENT					
	20% of Construction, Fabrication and Shipping Costs and Contractor GC costs and Other Services During Construction:				
	1. <i>Archeological Monitoring</i>	1	LS	\$2,562,500	\$2,562,500
	2. <i>Geotechnical Monitoring</i>				
	3. <i>Structural Special Inspections</i>				
	4. <i>etc.</i>				
				Sub-total	\$2,562,500
				Total	\$18,285,000
Notes:					
For entitlements, the upper end of the estimated cost ranges are used in calculating the total cost.					
				Contingency (30%)	\$5,485,500
				Total with Contingency	\$23,770,500

Kihei High School Pedestrian Crossing Study
ALTERNATE C: OVERPASS NEAR WAIPULANI GULCH

10/28/2022
28011-14

Item	Description	QTY	Unit	Unit Cost	Total
DESIGN					
	Bridge/Truss	1	LS	\$400,000	\$400,000
	Two Sets of Stairs, Ramps and Strucutral Components	1	LS	\$400,000	\$400,000
	Additional Sidewalks	1	LS	\$200,000	\$200,000
				Sub-total	\$1,000,000
ENTITLEMENTS					
	Environmental Assessment or Environmental Impact Statement (HRS 343)	1	LS	\$1,500,000	\$1,500,000
	Chapter 6E-8 (HRS)	1	LS	\$150,000	\$150,000
	Special Management Area Use Permits (County)	1	LS	\$80,000	\$80,000
	ZAED Flood Development Permit (County)	1	LS	\$30,000	\$30,000
	Special Use Permit/Zoning Variance, if needed	1	LS	\$80,000	\$80,000
	US Army Corps of Engineers Nationwide Permit - Clean Water Act Section 404 (and Section 401 Water Quality Certification)	1	LS	\$100,000	\$100,000
	Stream Channel Alteration Permit (State)	1	LS	\$60,000	\$60,000
				Sub-total	\$2,000,000
CONSTRUCTION					
	Bridge, Truss Sections, Foundations, Support Structures, and Installation	1	LS	\$1,500,000	\$1,500,000
	Stairs, Ramps and Supporting Walls and Columns	1	LS	\$1,200,000	\$1,200,000
	Sitework, Electrical Conduit, Communications, Manholes, Boxes, Water, Sewer, Storm Drain, Sidewalks and pads	1	LS	\$800,000	\$800,000
	Fencing, Gates, Guardrails	1	LS	\$200,000	\$200,000
	Signage & Finishes	1	LS	\$100,000	\$100,000
	Railings	1	LS	\$100,000	\$100,000
	Lighting & Security	1	LS	\$300,000	\$300,000
	Mauka Sidewalks/Utilities	1	LS	\$600,000	\$600,000
	Makai Sidewalks in Gulch	1	LS	\$1,200,000	\$1,200,000
	Signage and Finishes	1	LS	\$100,000	\$100,000
	Misc. FFE	1	LS	\$100,000	\$100,000
				Sub-total	\$6,200,000
FABRICATION					
	Truss Bridge - Precast Structure and Materials Only	1	LS	\$1,000,000	\$1,000,000
				Sub-total	\$1,000,000
SHIPPING					
	Shipping	1	LS	\$300,000	\$300,000
				Sub-total	\$300,000
CONTRACTOR GC					
	25% of Construction, Fabrication and Shipping Costs				
	<i>General Conditions:</i>				
	1. <i>Overhead and Profit</i>				
	2. <i>Temporary Site Controls</i>				
	3. <i>Sediment and Erosion Control</i>				
	4. <i>Office Equipment and Trailer</i>				
	5. <i>Administrative Costs, Permit Fees, etc.</i>				
	6. <i>Overnight Work</i>				
	7. <i>Communications and Notifications</i>				
	8. <i>etc</i>				
				Sub-total	\$1,875,000
CONSTRUCTION MANAGEMENT					
	20% of Construction, Fabrication and Shipping Costs and Contractor GC costs and Other Services During Construction:				
	1. <i>Archeological Monitoring</i>				
	2. <i>Geotechnical Monitoring</i>				
	3. <i>Strucutral Special Inspections</i>				
	4. <i>etc.</i>				
				Sub-total	\$1,875,000
				Total	\$14,250,000
Notes:					
For entitlements, the upper end of the estimated cost ranges are used in calculating the total cost.					
				Contingency (30%)	\$4,275,000
				Total with Contingency	\$18,525,000

Kihei High School Pedestrian Crossing Study
ALTERNATE D: UNDERPASS NEAR EAST KULANIHAKOI STREET

10/28/2022
28011-14

Item	Description	QTY	Unit	Unit Cost	Total	
DESIGN						
	Tunnel, Foundations, Support Structures, and Installation	1	LS	\$1,500,000	\$1,500,000	
	Stairs, Ramps and Supporting Walls and Columns	1	LS	\$500,000	\$500,000	
	Additional Sidewalks	1	LS	\$200,000	\$200,000	
				Sub-total	\$2,200,000	
ENTITLEMENTS						
	Environmental Assessments State EA or EIS (HRS 343) and if required by USACE: NEPA EA or EIS or CATEX	1	LS	\$1,500,000	\$1,500,000	
	Historic Preservation: Chapter 6E-8 (HRS) and Section 106 NHPA	1	LS	\$150,000	\$150,000	
	Special Management Area Use Permits (County)	1	LS	\$80,000	\$80,000	
	ZAED Flood Development Permit (County)	1	LS	\$30,000	\$30,000	
	Special Use Permit/ Zoning Variance, if needed	1	LS	\$80,000	\$80,000	
	US Army Corps of Engineers Nationwide Permit - Clean Water Act Section 404 (and Section 401 Water Quality Certification)	1	LS	\$100,000	\$100,000	
	Stream Channel Alteration Permit (State)	1	LS	\$60,000	\$60,000	
				Sub-total	\$2,000,000	
CONSTRUCTION						
	Excavation	1	LS	\$1,000,000	\$1,000,000	
	Tunnel	1	LS	\$2,000,000	\$2,000,000	
	Bridge Additional Structural Support	1	LS	\$2,500,000	\$2,500,000	
	Channel Lining Remove and Replace	1	LS	\$1,500,000	\$1,500,000	
	Stairs/Ramps	1	LS	\$1,200,000	\$1,200,000	
	Mauka Sidewalks/Utilities	1	LS	\$600,000	\$600,000	
	Makai Sidewalks in Gulch	1	LS	\$1,200,000	\$1,200,000	
	Sitework, Electrical Conduit, Communications, Manholes, Boxes, Water, Sewer, Storm Drain, Sidewalks and pads	1	LS	\$1,000,000	\$1,000,000	
	Fencing, Gates, Guardrails	1	LS	\$600,000	\$600,000	
	Signage and Finishes	1	LS	\$300,000	\$300,000	
	Railings	1	LS	\$300,000	\$300,000	
	Lighting & Security	1	LS	\$500,000	\$500,000	
	Misc. FFE	1	LS	\$100,000	\$100,000	
				Sub-total	\$12,800,000	
FABRICATION						
	Tunnel - Precast Structure and Materials Only	1	LS	\$800,000	\$800,000	
				Sub-total	\$800,000	
SHIPPING						
	Shipping	1	LS	\$400,000	\$400,000	
				Sub-total	\$400,000	
CONTRACTOR GC						
	25% of Construction, Fabrication and Shipping Costs					
	<i>General Conditions:</i>					
	1. <i>Overhead and Profit</i>					
	2. <i>Temporary Site Controls</i>					
	3. <i>Sediment and Erosion Control</i>					
	4. <i>Office Equipment and Trailer</i>	1	LS	\$3,200,000	\$3,200,000	
	5. <i>Administrative Costs, Permit Fees, etc.</i>					
	6. <i>Overnight Work</i>					
	7. <i>Communications and Notifications</i>					
	8. <i>etc</i>					
				Sub-total	\$3,200,000	
CONSTRUCTION MANAGEMENT						
	20% of Construction, Fabrication and Shipping Costs and Contractor GC costs and Other Services During Construction:					
	1. <i>Archeological Monitoring</i>					
	2. <i>Geotechnical Monitoring</i>	1	LS	\$3,200,000	\$3,200,000	
	3. <i>Structural Special Inspections</i>					
	4. <i>etc.</i>					
				Sub-total	\$3,200,000	
Notes:					Sub-total	\$24,600,000
For entitlements, the upper end of the estimated cost ranges are used in calculating the total cost.						
					Total	\$24,600,000
					Contingency (30%)	\$7,380,000
					Total with Contingency	\$31,980,000

Kihei High School Pedestrian Crossing Study
ALTERNATE E: OVERPASS NEAR EAST WAIPULANI ROAD

10/28/2022
28011-14

Item	Description	QTY	Unit	Unit Cost	Total
DESIGN					
	Bridge/Truss	1	LS	\$400,000	\$400,000
	Two Sides of Stairs, Ramps and Structural Components	1	LS	\$400,000	\$400,000
	Additional Sidewalks and Bridge	1	LS	\$500,000	\$500,000
				Sub-total	\$1,300,000
ENTITLEMENTS					
	Environmental Assessment (HRS 343)	1	LS	\$200,000	\$200,000
	Chapter 6E-8 (HRS)	1	LS	\$80,000	\$80,000
	Special Management Area Use Permits (County)	1	LS	\$80,000	\$80,000
	ZAED Flood Development Permit (County)	1	LS	\$30,000	\$30,000
	Special Use Permit/ Zoning Variance, if needed	1	LS	\$80,000	\$80,000
				Sub-total	\$470,000
CONSTRUCTION					
	Bridge, Truss Sections, Foundations, Support Structures, and Installation	1	LS	\$1,500,000	\$1,500,000
	Stairs, Ramps and Supporting Walls and Columns	1	LS	\$1,200,000	\$1,200,000
	Sitework, Electrical Conduit, Communications, Manholes, Boxes, Water, Sewer, Storm Drain, Sidewalks and pads	1	LS	\$800,000	\$800,000
	Fencing, Gates, Guardrails	1	LS	\$300,000	\$300,000
	Lighting & Security	1	LS	\$300,000	\$300,000
	Mauka Sidewalks/Utilities	1	LS	\$700,000	\$700,000
	New Pedestrian Bridge	1	LS	\$2,500,000	\$2,500,000
	Signage and Finishes	1	LS	\$150,000	\$150,000
	Railings	1	LS	\$150,000	\$150,000
	Misc. FFE	1	LS	\$100,000	\$100,000
				Sub-total	\$7,700,000
FABRICATION					
	Truss Bridge - Precast Structure and Materials Only	1	LS	\$1,000,000	\$1,000,000
				Sub-total	\$1,000,000
SHIPPING					
	Shipping	1	LS	\$300,000	\$300,000
				Sub-total	\$300,000
CONTRACTOR GC					
	25% of Construction, Fabrication and Shipping Costs				
	<i>General Conditions:</i>				
	1. <i>Overhead and Profit</i>				
	2. <i>Temporary Site Controls</i>				
	3. <i>Sediment and Erosion Control</i>				
	4. <i>Office Equipment and Trailer</i>				
	5. <i>Administrative Costs, Permit Fees, etc.</i>				
	6. <i>Overnight Work</i>				
	7. <i>Communications and Notifications</i>				
	8. <i>etc</i>				
				Sub-total	\$2,250,000
CONSTRUCTION MANAGEMENT					
	20% of Construction, Fabrication and Shipping Costs and Contractor GC costs and Other Services During Construction:				
	1. <i>Archeological Monitoring</i>				
	2. <i>Geotechnical Monitoring</i>				
	3. <i>Structural Special Inspections</i>				
	4. <i>etc.</i>				
				Sub-total	\$2,250,000
				Total	\$15,270,000
Notes:					
For entitlements, the upper end of the estimated cost ranges are used in calculating the total cost.					
				Contingency (30%)	\$4,581,000
				Total with Contingency	\$19,851,000

APPENDIX C COST ESTIMATES

Additional information on the Construction Cost Estimates is provide here with a detailed discussion of selected items included in the construction cost estimates and how the costs compare among alternatives. Information on operations and maintenance costs of the alternatives is also included for consideration.

Demolition: Alternatives A and B are located next to the existing facilities already built for Kūlanihākoʻi School and may require limited and selective demolition of improvements just constructed. Retaining walls, fencing, posts, light poles, sidewalks at the connection points, and other existing utilities may require slight modification or relocation but in general, the work should be limited. Alternatives C and E require minimal demolition (fencing). Alternative D will require significant demolition and reconstruction of the existing Waipuʻilani Bridge structure.

Site Preparation, Grading and Earthwork: Site preparation for all Alternatives consists of clearing and grubbing. However, Alternatives C, D, and E will require additional clearing and grubbing due to the location further away from the school. Alternatives C, D, and E will also require more significant amounts of earthwork for the raised sidewalk within Waipuʻilani Gulch or the sidewalks mauka of Piʻilani Highway going from the GSPC to the campus.

Structural Concrete: Structural concrete consists of cast-in-place concrete for structural elements such as bridges, stairs, retaining walls, and columns and foundations. Each Alternative will require structural concrete though Alternative D and E will require the most (bridge modifications and new pedestrian bridge, separate from the GSPC, respectively).

Pre-cast Concrete: Pre-cast concrete is structural concrete that can be formed and cast off-site and then transported directly to the site for placement and installation. It allows for construction disruptions to the existing highway and neighborhood to be minimized. Each alternative will utilize pre-cast concrete in some form, except for Alternative D which will require more custom structural elements to be built in place, adjusting to field conditions.

Concrete Flatwork and Sidewalks: Each alternative will require concrete flatwork and sidewalk costs, though Alternatives C, D, and E require additional costs due to the additional sidewalk lengths both makai and mauka of the GSPC.

Water / Storm Drain Utilities: Water and storm drain utilities are anticipated to be minimal for each alternative although underpass alternatives may require sumps for the disposal of accumulated water in the subterranean pathway. Water utilities may be desired in each alternative for maintenance personnel who may be tasked with cleaning the GSPC, though current GSPC's within the State do not have water systems currently.

Electrical / Communication Utilities: Each alternative will require lighting, including overpass elements as the pathway may need to be illuminated at night. Underpasses would need to be illuminated at all times leading to increased usage and number of light fixtures. The analysis also included potential provisions for communication infrastructure, including intercom systems, emergency telephones, or security cameras for each alternative. However, this is something that could be removed from the project if

desired, as current GSPC's within the State do not have communications infrastructure currently. Utility costs increase for alternatives further away from existing power and communication sources at Kūlanihāko'i Street and at campus.

Traffic Control: Traffic control measures, including temporary regulatory signage, flagpersons, police officers, and other means and methods are critical for the successful construction of each of the alternatives. Alternatives A, B, and E likely would have the most traffic control costs, with Alternative B potentially requiring a diversion of Pi'ilani Highway. Alternatives C and D may have reduced traffic disruptions unless structural modifications to the Waipu'ilani Bridge require the bridge to be closed during portions of construction. Alternatives C and D have adjacent areas that may be leased from the County or private landowners for construction staging, laydown, and operations areas that would minimize traffic impacts and controls costs.

Fencing / Gates: Overall, fencing and gates costs should be relatively small and comparable between each alternative, although additional fencing and gating may be required for the sidewalks mauka of Pi'ilani Highway into campus (for Alternatives C, D, and E). Since these sidewalks enter campus in an area not slated for buildout for several years, without fencing, students and pedestrians may have the opportunity to access areas of campus still "under construction" if additional fencing and gates are not provided (i.e., areas of gravel pads at the fields, the natural channel, gravel roadways, material stockpiles, etc.).

Railings: Increased length of pathways requires increased railing costs.

Roofing: Overpass structures will require roofing that add costs as compared to an underpass option that can be encompassed in a pre-cast "tunnel". Roofing is a cost that can also be a long-term maintenance issue as metalwork can rust and damage, as continuous exposure to the elements affects its useful life. Flashing, gutters, vents, sky lights, etc. can also be areas of water intrusion and metal fatigue.

Signage: Increased length of pathways requires increased signage costs.

Planting and Irrigation: Increased length of pathways can require increased planting and irrigation costs. Shade trees may be desired along any new pathway to campus (as identified in Alternatives C, D, and E) as trees are being planted along the existing main campus driveway and walkway. While planting and irrigation is not anticipated along the makai sidewalks to the Līpoa Street extension, the County of Maui may require some landscaping to be provided.

Furniture, Fixtures, and Equipment: Each alternative minimizes additional furniture, fixtures, and equipment (FFE) costs for each alternative. FFE such as trash cans, benches, water fountains, bike racks, etc.) could be provided although not required by any particular agency standard.

Operations and Maintenance

While not part of the cost estimates, the operations and maintenance of a GSPC are discussed here. The Department of Education faces continual challenges due to the its lack of maintenance staff and funding.

Overpasses are more exposed to the elements and will require periodic maintenance. This maintenance with the use of may require the use of special equipment such as cranes, lifts, and other devices.

Underpasses can pose difficulties in mitigating flooding and water within underpasses as any buildup of water must be pumped out. Other underpass operations and maintenance concerns include vandalism and buildup of trash and debris. While underpasses are more protected from the elements than overpasses, they are harder to repair if major issues need to be addressed due to access issues.

Appendix D

Community Open House Boards

School Construction



Photo Credit: Nordic PCL Construction



View of Cafeteria/Library

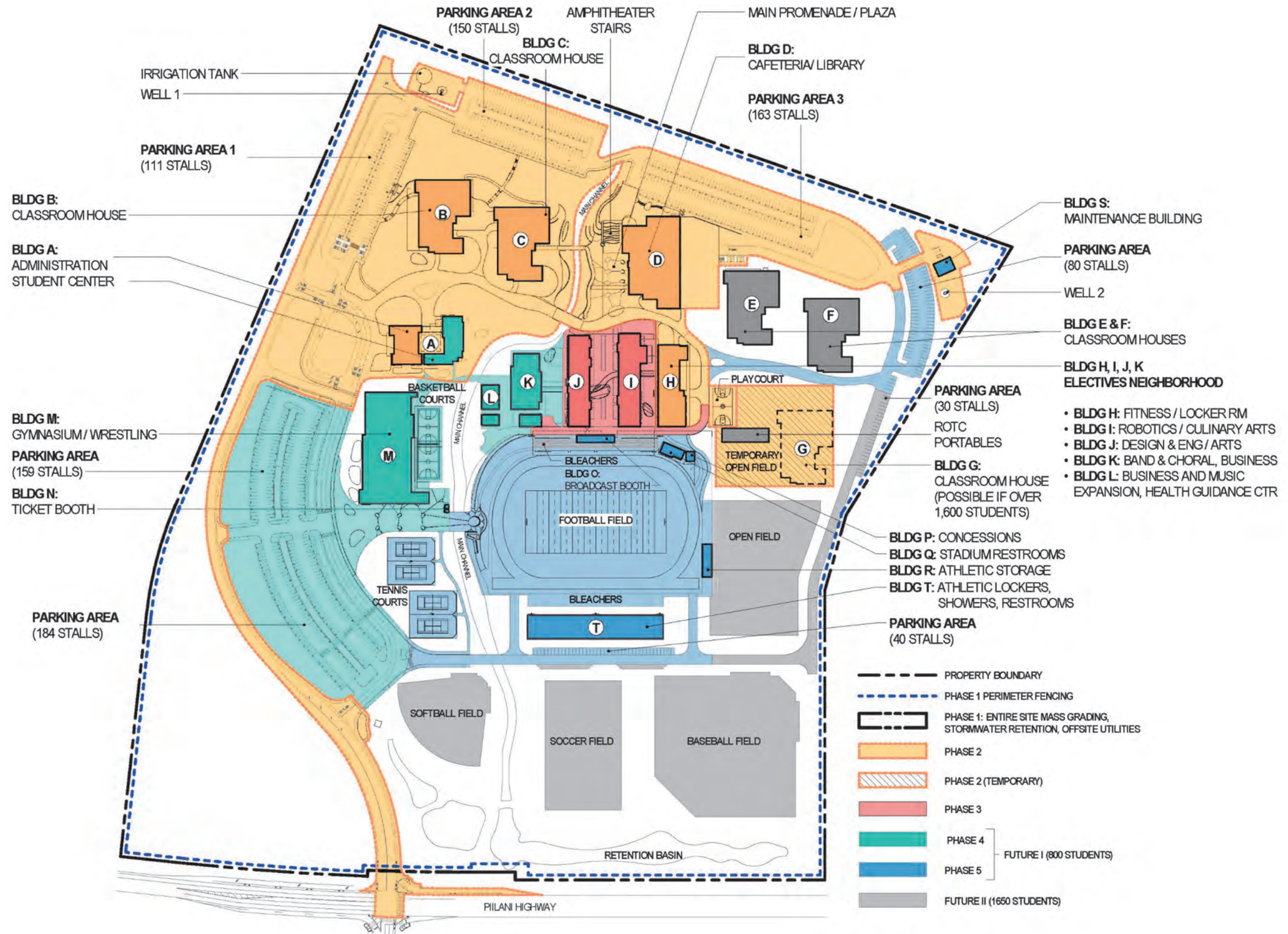


Photo Credit: Nordic PCL Construction



Cafeteria/Library

KŪLANIHĀKO'Ī HIGH SCHOOL PHASING PLAN



ALTERNATIVE LOCATIONS

- ALTERNATIVES**
-  Alternative A: Overpass near Kūlanihāko'i Street
 -  Alternative B: Underpass near Kūlanihāko'i Street
 -  Alternative C: Overpass near Waipu'ilani Gulch
 -  Alternative D: Underpass using Waipu'ilani Gulch existing highway bridge
 -  Alternative E: Overpass near East Waipu'ilani Road



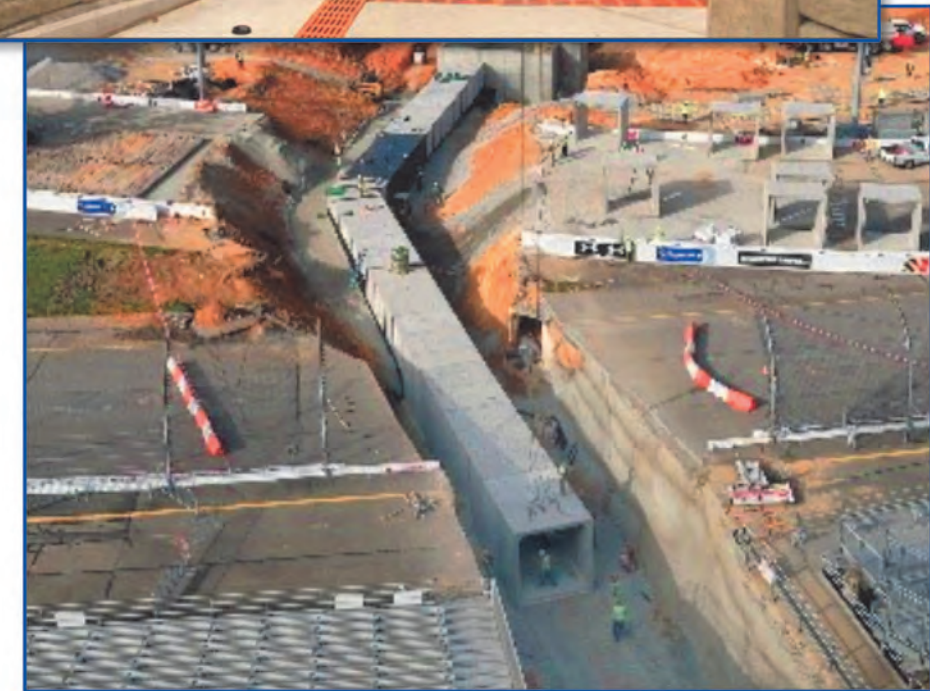
Examples of Alternatives



Pre-fab Overpass Example








Tunnel under Existing Bridge Example



**Tunnel Under Roadway: Entrance Example
and Construction Using Pre-Fab Sections**

ASSUMPTIONS FOR ALL ALTERNATIVES

- Hawai'i State Department of Education will operate grade-separated pedestrian crossing per LUC condition
 - It will be open during peak student walking/biking times and otherwise locked
 - It will end at school property (except for East Waipu'ilani Road Alternative)
- Designs consistent with State and Federal regulations
 - Americans with Disabilities Act (ADA) Compliant
 - Path wide enough for pedestrians and bicyclists
 - U.S. Army Corps of Engineers Clean Water Act Section 404 and 401
- Designs to include:
 - Ramps, and stairs (in most cases)
 - Pre-cast or pre-fabricated components, where feasible
 - Fencing, lighting, all-weather surfaces and finishes
- No land acquisition required
- Needed mauka connectivity from Ohukai area to school is not included

Alternatives Evaluation	Alternatives				
	Kūlanihāko'i Street		Waipu'ilani Gulch		East Waipu'ilani Road
Evaluation Criteria	Overpass	Underpass	Overpass	Underpass	Overpass
					
Usability / Travel Path					
<i># of students estimated to walk/bike to school¹</i>	205 students	205 students	155 students	155 students	125 students
<i>New sidewalks needed on school campus Shown in green on alternative boards</i>	0	0	0.23 miles	0.23 miles	0.20 miles
<i>New offsite sidewalks needed to connect to the grade-separated pedestrian crossing Shown in blue on alternative boards</i>	0	0	0.16 miles	0.15 miles	0.13 miles
<i>New sidewalks to improve regional connectivity Shown in red on alternative boards</i>	1.06 miles	1.06 miles	1.06 miles	1.06 miles	1.06 miles
Estimated Time to Completion²	3½ - 5 years	5½ - 7 years	5 – 6½ years	6 - 7½ years	6 – 7½ years
<i>Design & Entitlements</i>	1 – 1½ years	2 - 2½ years	2 – 2½ years	2 - 2½ years	1½ – 2 years
<i>Construction Permitting, Bid & Procurement</i>	1½ - 2 years	1½ - 2 years	1½ - 2 years	1½ - 2 years	1½ - 2 years
<i>Fabrication & Construction</i>	1 – 1½ years	2 – 2½ years	1½ – 2 years	2½ - 3 years	3 - 3½ years
Perceived Safety Issues	Low	High	Low	High	Low
Estimated Rough Cost³	\$10.8 – 14.1 mil	\$18-23.4 mil	\$13.8 – 18 mil	\$23.4-30.5 mil ⁴	\$15.6-20.2 mil
Traffic Disruption on Pi'ilani Highway	Med	High	Low	Low	Med

This table highlights the priority evaluation criteria identified during the community listening sessions and the online survey

¹ Represents 25% of students who live within 2-mile of path of school and are assumed to walk or bike, while rest of students would drive or be driven to school. Number of students for each alternative is based on existing distribution of home locations and factored using a buildout student capacity of 1,600 students. Results rounded to nearest 5.

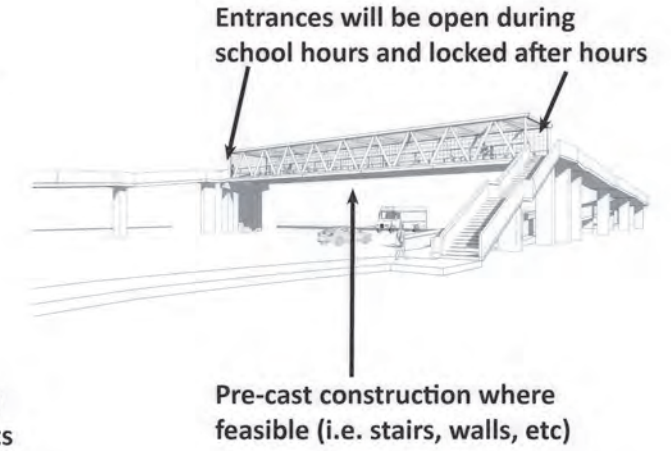
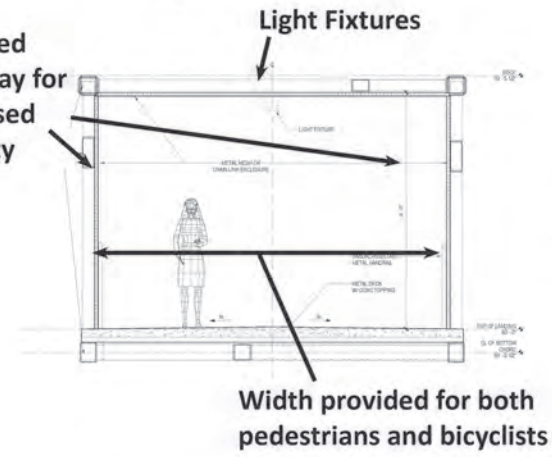
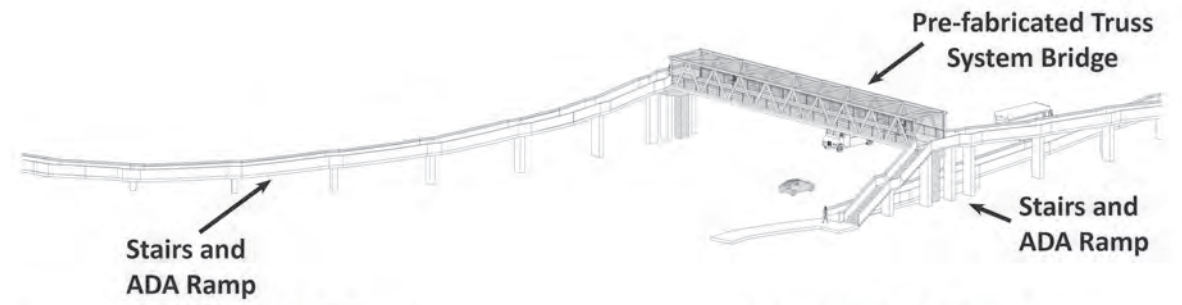
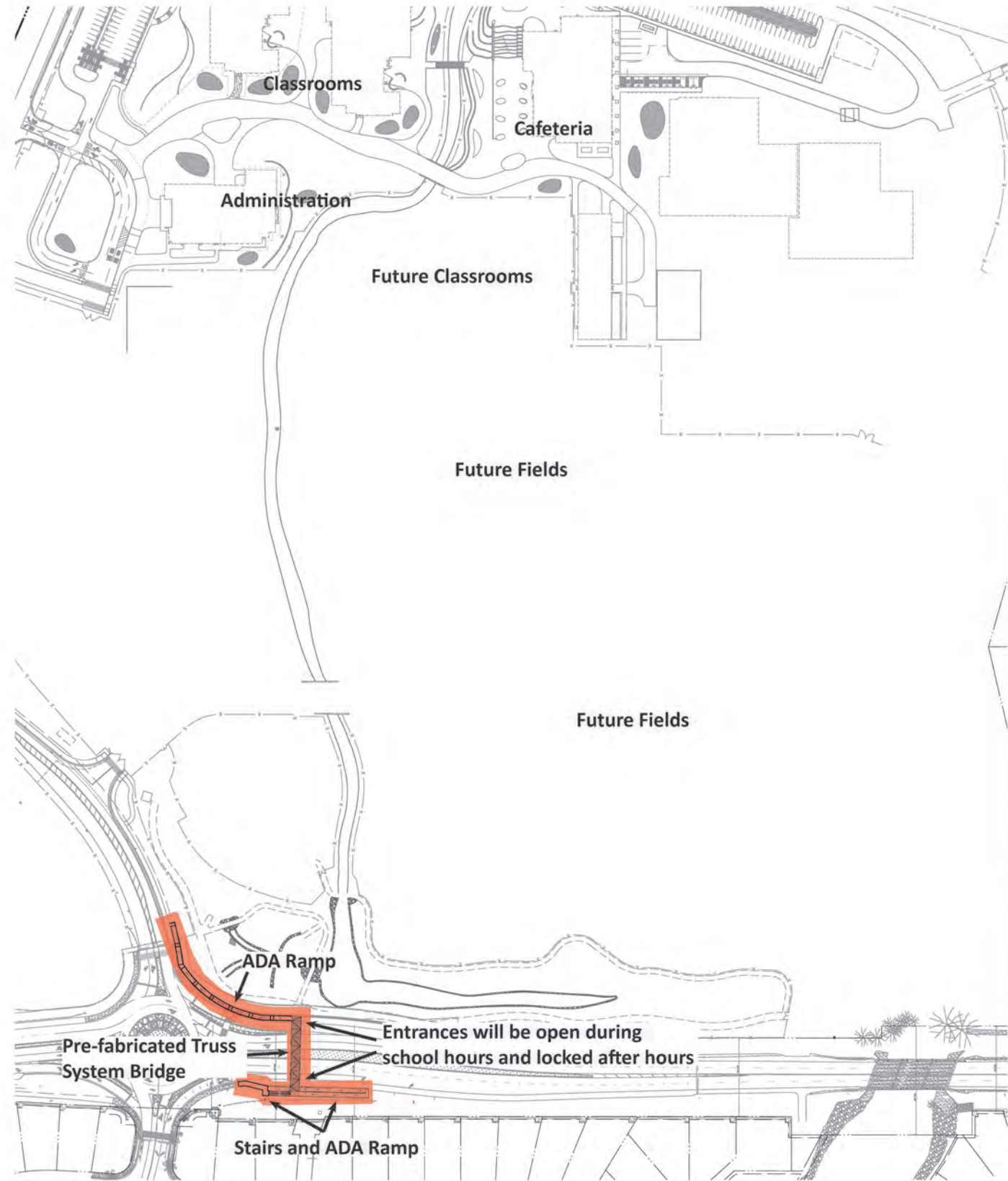
² Funding not secured at this time

³ Includes entitlements, design, permitting and construction. Present day costs based off design assumptions and similar construction work in the Kihei-Wailea Area; does not include future escalation

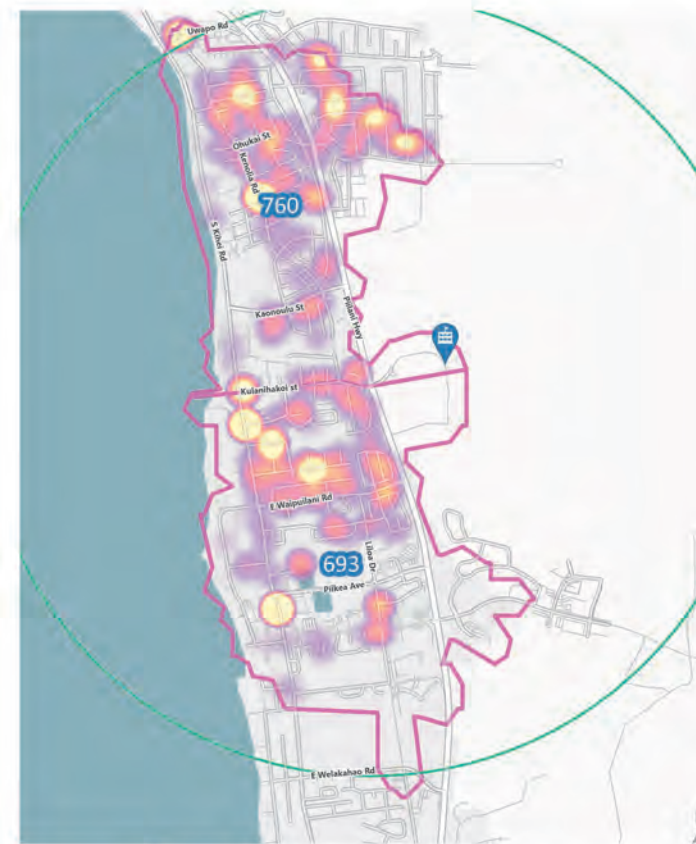
⁴ Requires structural improvements to concrete channel lining and bridge

ALTERNATIVE A

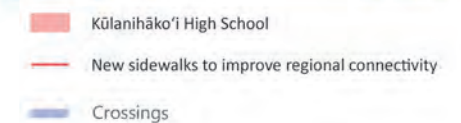
Overpass near Kūlanihāko‘i Street



STUDENT DISTRIBUTION WITHIN 2-MILE TRAVEL PATH DISTANCE

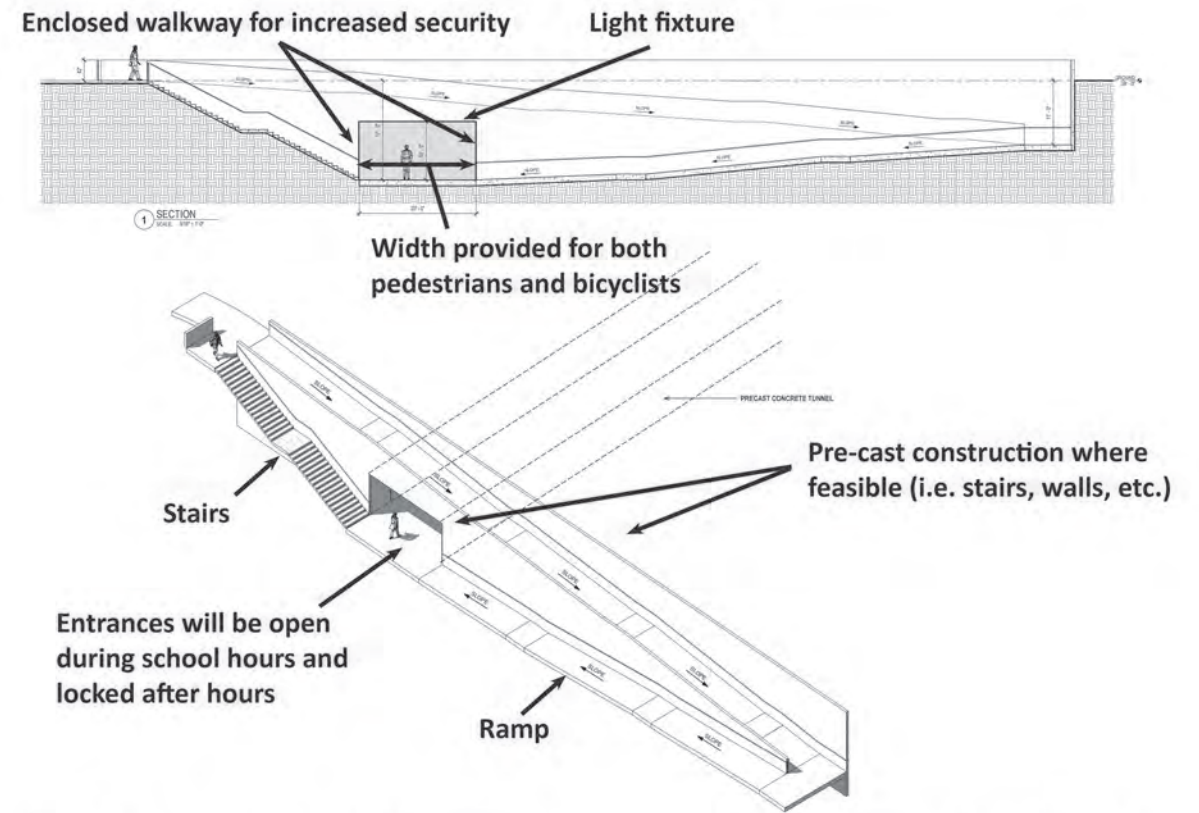
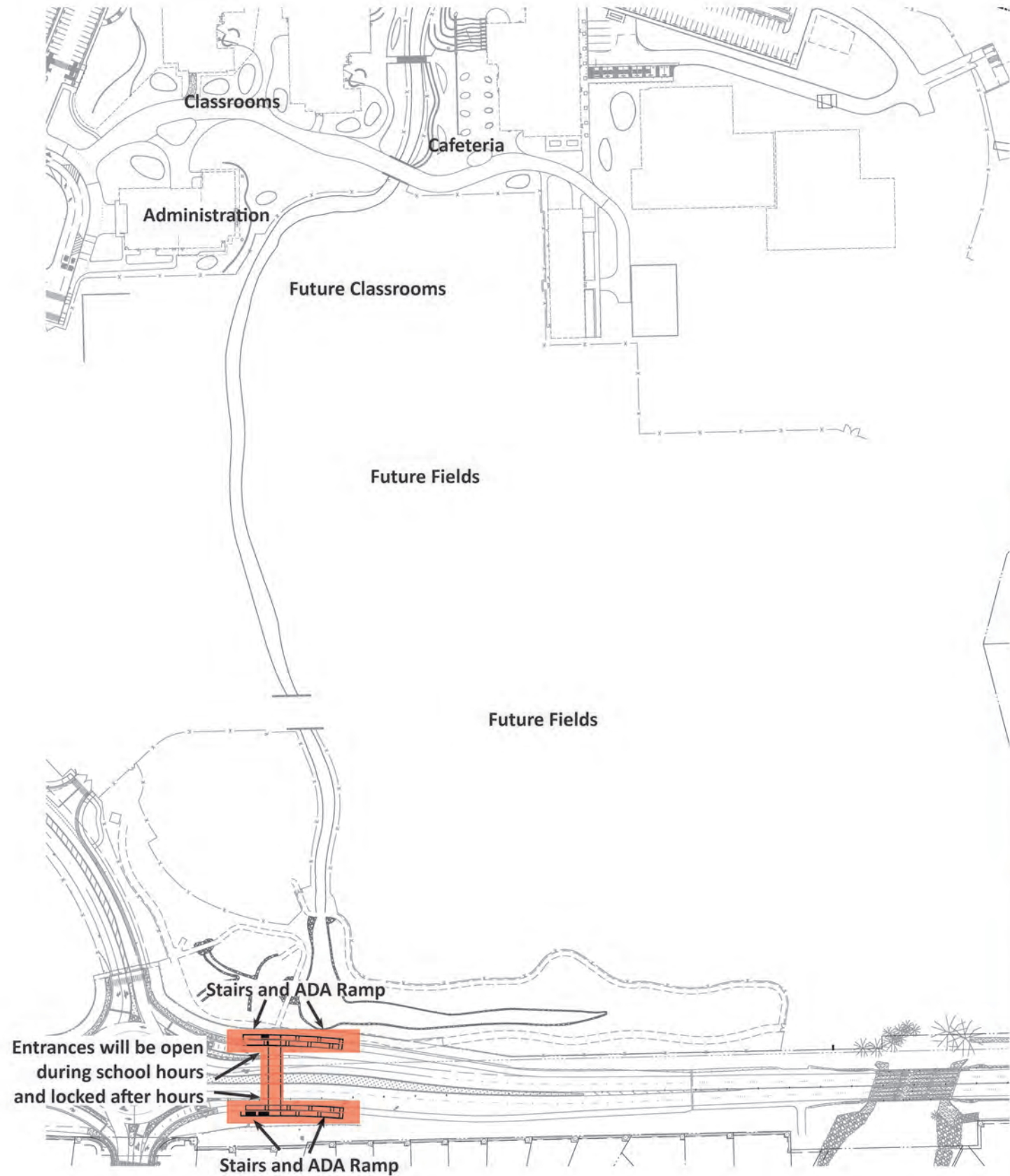


NEW SIDEWALK AND PATHS FOR CONNECTIVITY



ALTERNATIVE B

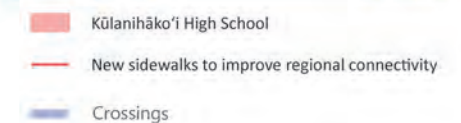
Underpass near Kūlanihāko'i Street



STUDENT DISTRIBUTION WITHIN 2-MILE TRAVEL PATH DISTANCE

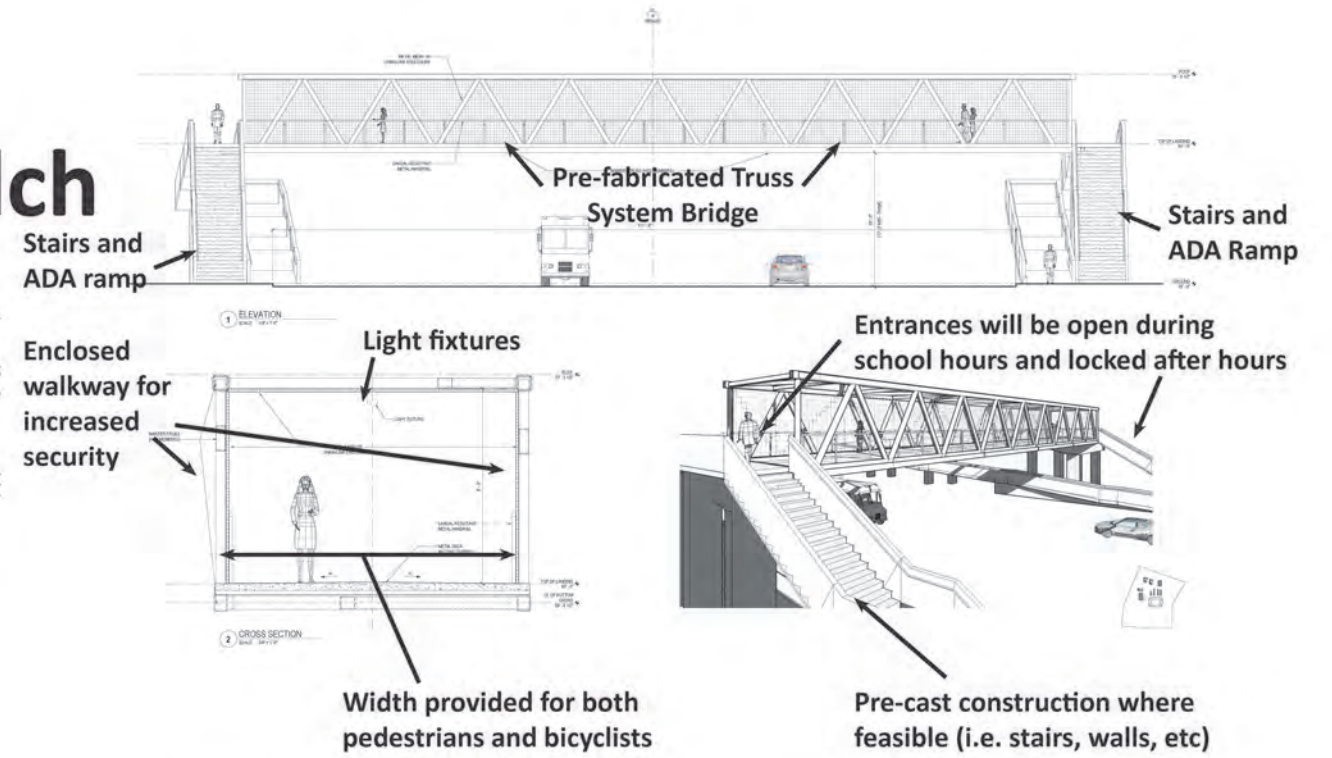
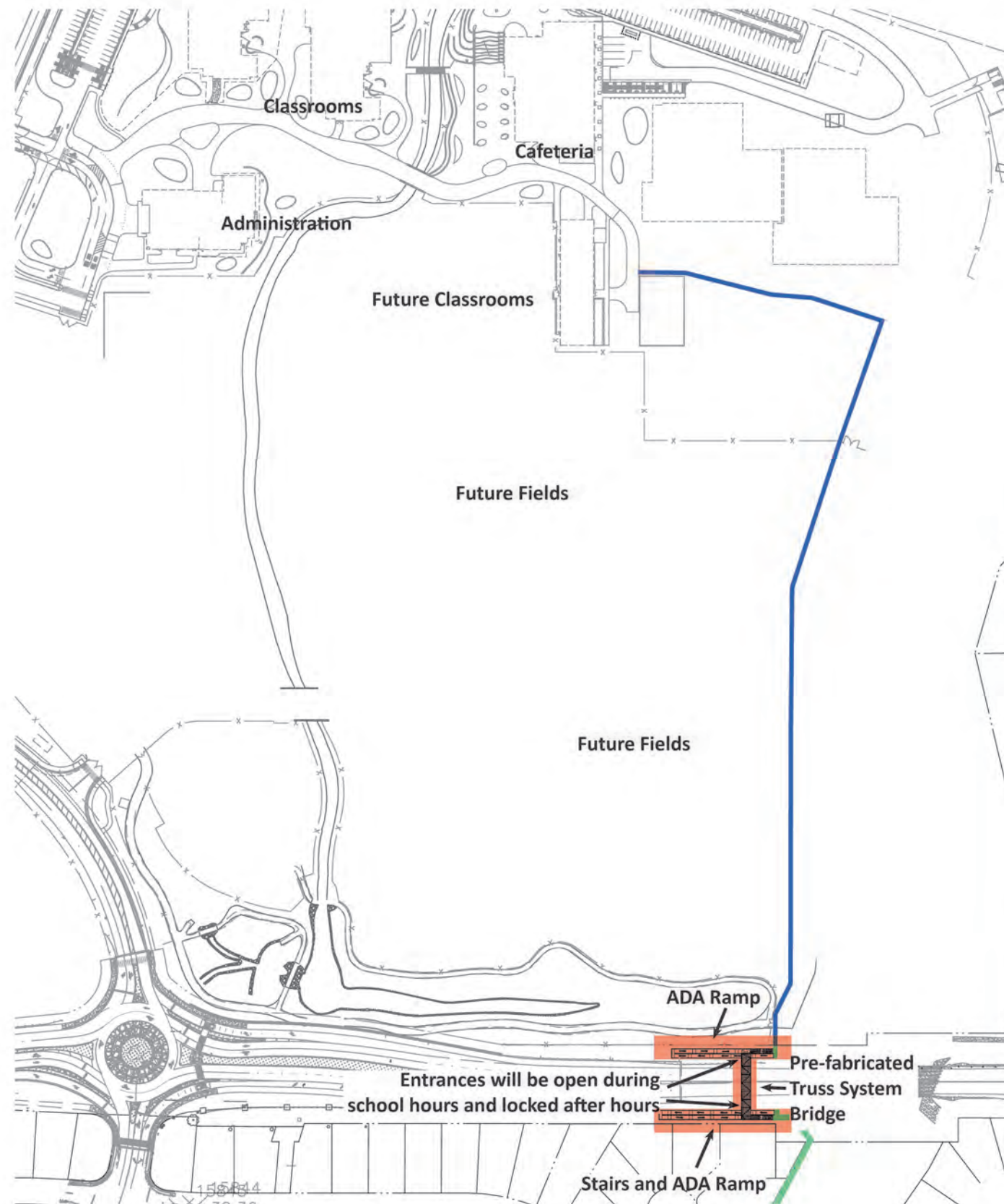


NEW SIDEWALK AND PATHS FOR CONNECTIVITY



ALTERNATIVE C

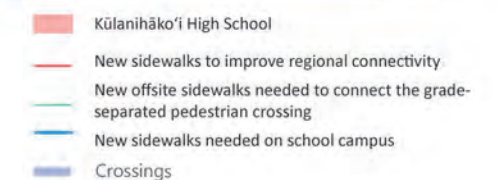
Overpass near the Waipu'ilani Gulch



STUDENT DISTRIBUTION WITHIN 2-MILE TRAVEL PATH DISTANCE

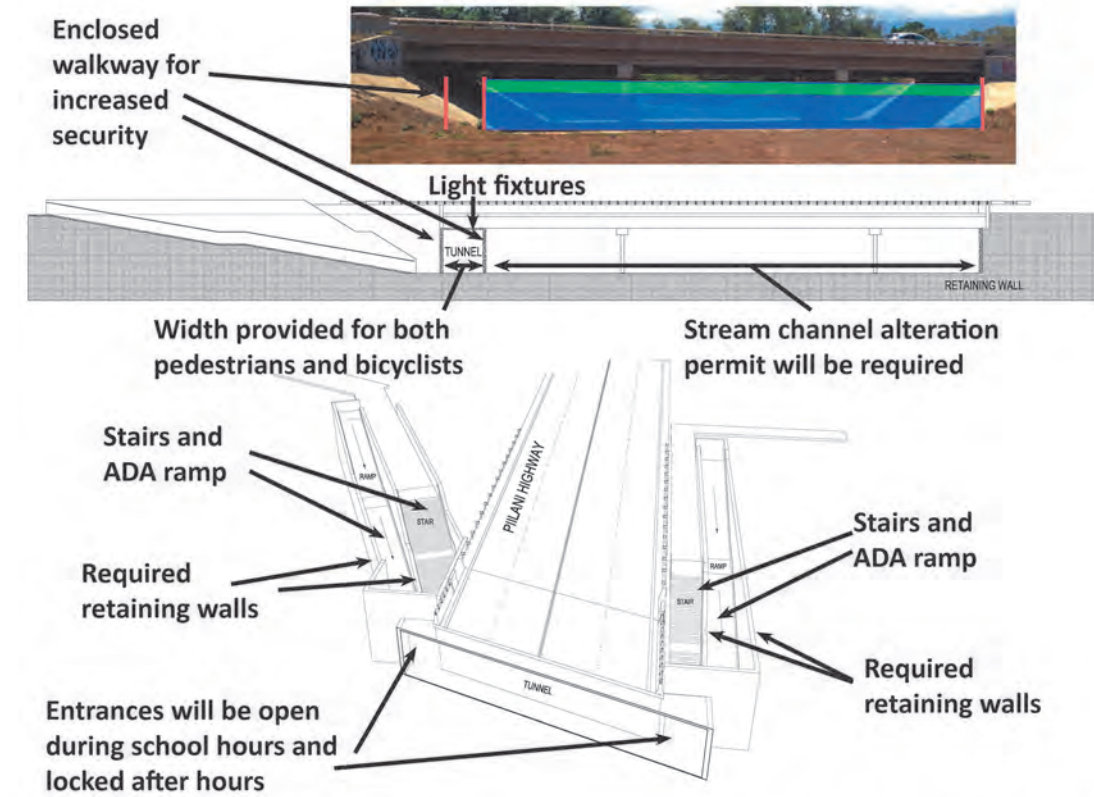
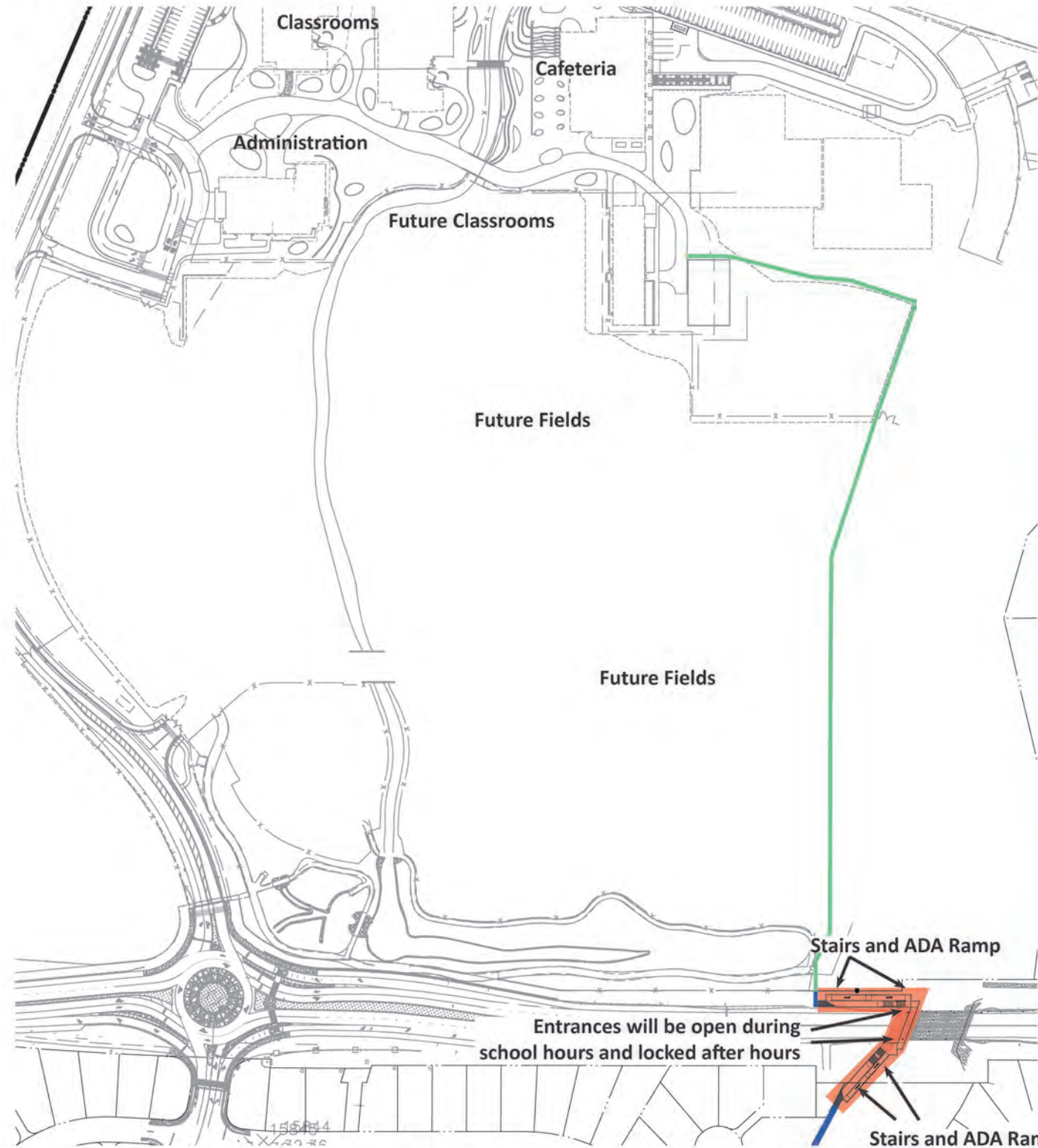


NEW SIDEWALK AND PATHS FOR CONNECTIVITY



ALTERNATIVE D

Underpass using Waipu'ilani Gulch existing highway bridge



STUDENT DISTRIBUTION WITHIN 2-MILE TRAVEL PATH DISTANCE

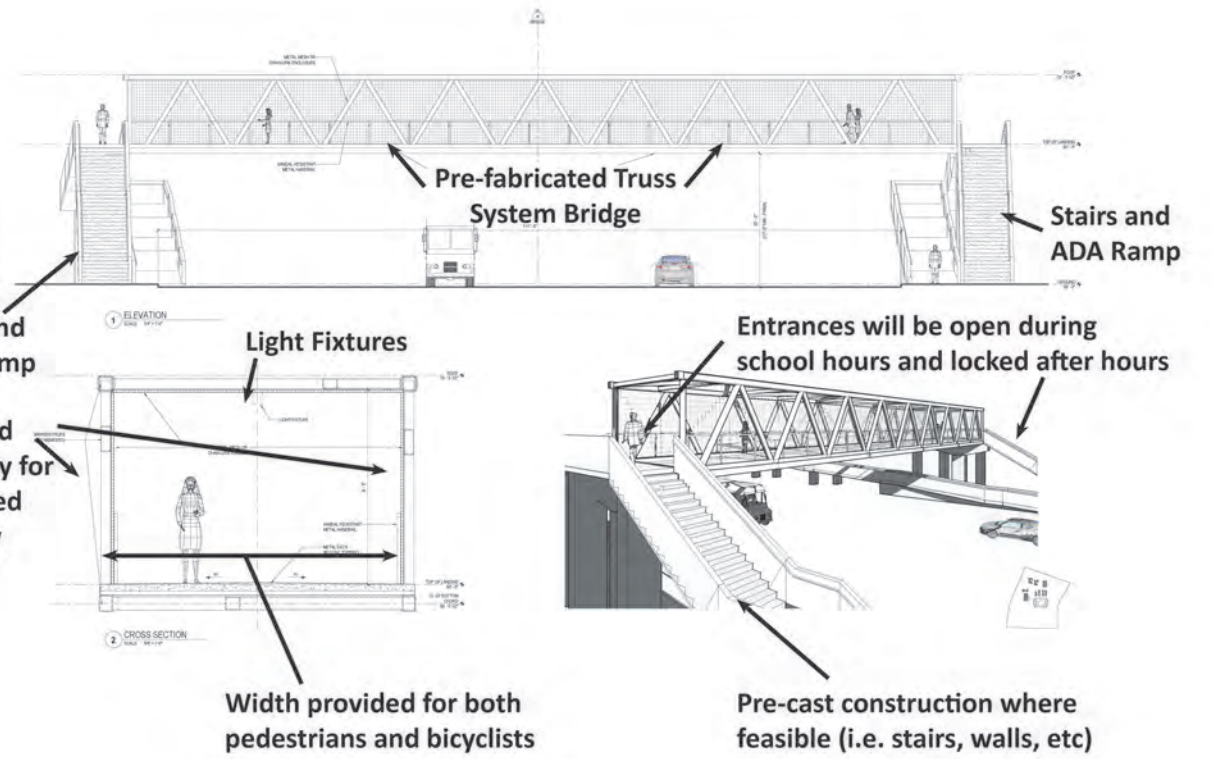
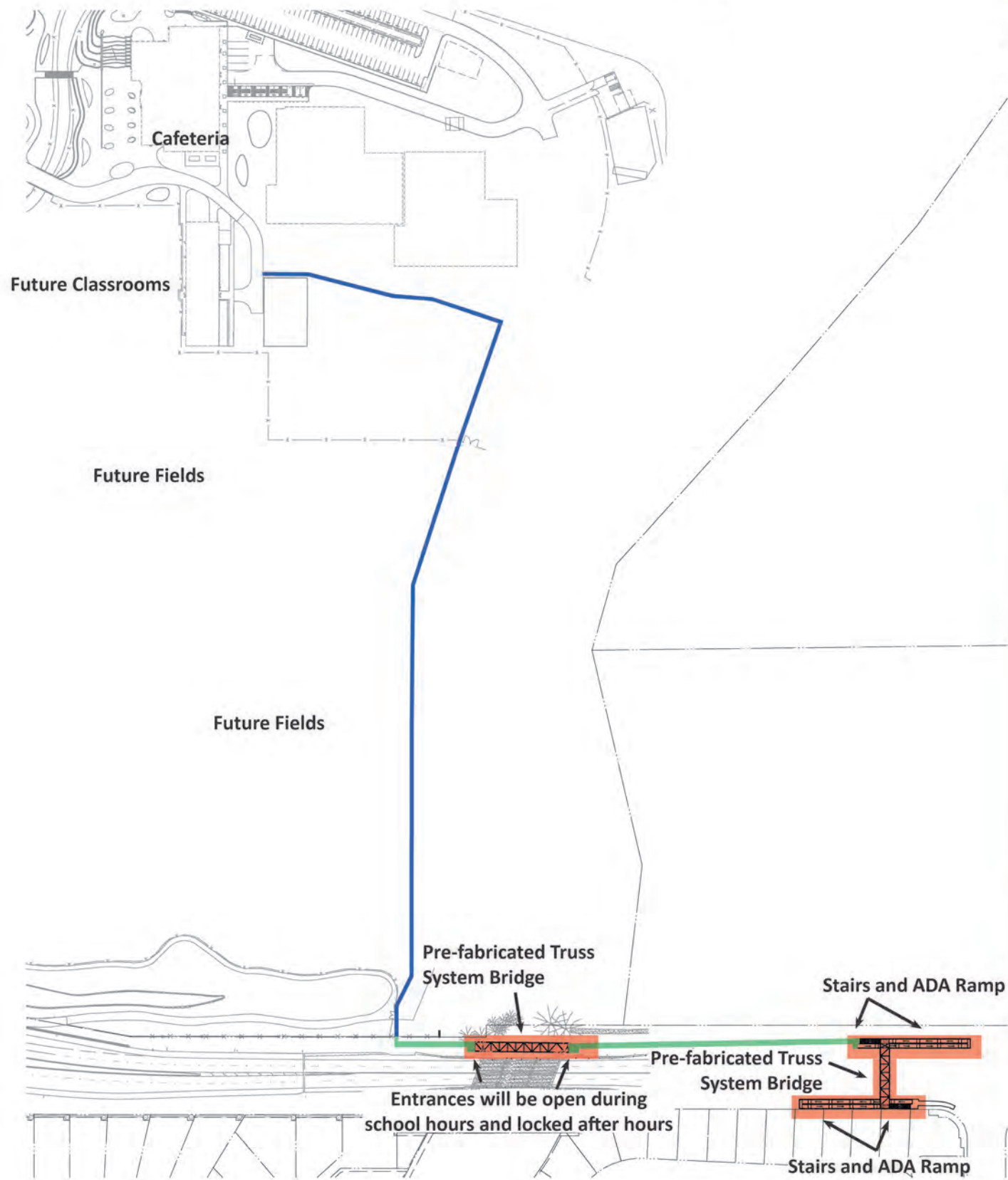


NEW SIDEWALK AND PATHS FOR CONNECTIVITY

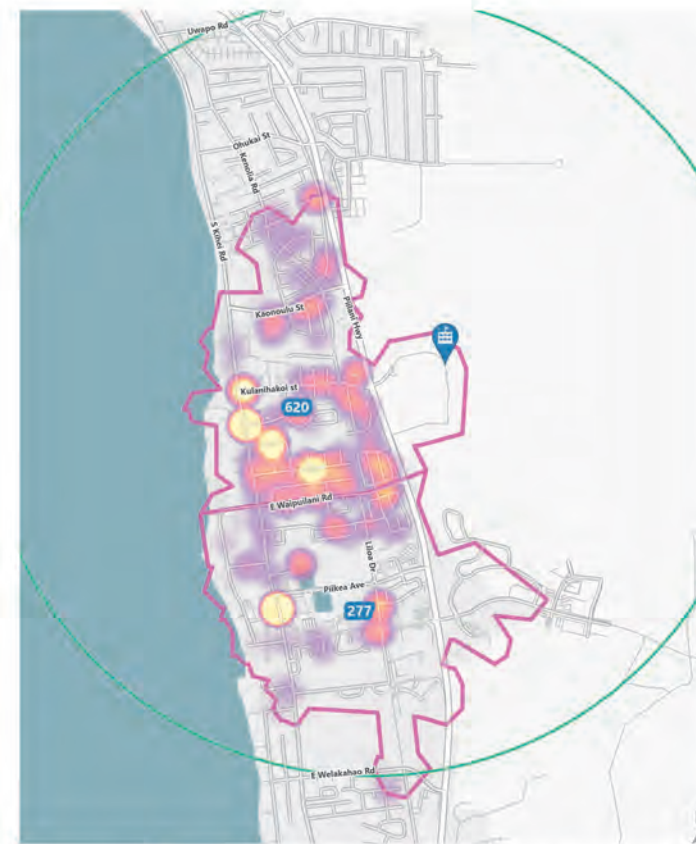


ALTERNATIVE E

Overpass near East Waipu'ilani Road



STUDENT DISTRIBUTION WITHIN 2-MILE TRAVEL PATH DISTANCE



NEW SIDEWALK AND PATHS FOR CONNECTIVITY



POTENTIAL SHORT-TERM SOLUTIONS

Until a permanent grade-separated pedestrian crossing is constructed

Maui Police Department Officer or crossing guard at the roundabout crosswalk

Bussing or shuttling students on campus from homes or satellite location



Roundabout

at Pi'ilani Highway and Kūlanihāko'i Street



Appendix E

Agency Consultation

APPENDIX E – AGENCY CONSULTATION

The following stakeholders listed by agency were part of the study's agency consultation process:

Hawai'i State Department of Education

- Randall Tanaka, Assistant Superintendent, Facilities & Operations
- Ed Ige, Facilities Director, Facilities & Operations
- Mitch Tamayori, Project Manager, Office of Facilities and Operations
- Gaylyn Nakatsuka, Architect, Office of Facilities and Operations
- Brenda Lowrey, Facilities Planner, Office of Facilities and Operations
- Roy Ikeda, Interim Public Works Administrator, Office of Facilities and Operations
- Desiree Sides, Complex Area Superintendent (Baldwin-Kekaulike- Kūlanihāko'i)
- Jaime Yap, Maui High School Principal, former Complex Area Superintendent (Baldwin-Kekaulike- Kūlanihāko'i)
- Halle Maxwell, Kūlanihāko'i High School Principal
- Tracy Lui, Kīhei Elementary School Principal
- Cyndi Rothdeutsch, Kamali'i Elementary School Principal
- Keith Hayashi, Superintendent
- Various Students, Lokelani Intermediate School and Kūlanihāko'i High School

Hawai'i State Department of the Attorney General

- Carter Siu, Deputy Attorney General, Education Division
- Ryan Roylo, Deputy Attorney General, Education Division

Hawai'i State Department of Transportation

- Ed Sniffen, Deputy Director for Highways
- George Abcede, Highways Administrator
- Ken Tatsuguchi, Head Planning Engineer, Highways Division Planning Branch
- Robin Shishido, District Engineer, Maui District
- Annette Matsuda, Maintenance Engineer, Maui District
- Ken Tatsuguchi, Head Planning Engineer, Highways Division Planning Branch

County of Maui:

- Michele McLean, Director, Planning Department
- Pam Eaton, Administrator, Long Range Planning

Appendix C

**Early Consultation Letter,
Handout, and Comments Received**

Early Consultation Letter



111 S. King Street
Suite 170

Honolulu, HI 96813

808.523.5866

www.g70.design

May 11, 2023

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Kūlanihāko'i High School Pedestrian Overpass
Kīhei, Island of Maui, Hawai'i

Dear Participant:

On behalf of the State of Hawai'i, Department of Education (DOE), G70 is preparing a DEA, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules (HAR), Chapter 11-200.1 for the proposed Kūlanihāko'i High School Pedestrian Overpass ("Project").

Pursuant to HAR, Chapter 11-200.1-18, the DOE (proposing agency) is conducting early consultation to seek input from agencies, citizen groups, and individuals who may have an area of expertise, which might guide the scope and preparation of the DEA and / or may be affected by the Project. Enclosed in this transmittal is an Early Consultation Handout with a Project description and location map for your review and comment. Please provide comments via U. S. mail or email to the contact indicated below, no later than June 12, 2023.

G70
111 S. King Street, Suite 170
Honolulu, HI 96813
Attn: Mark Kawika McKeague, AICP
Phone: (808) 523-5866
Email: KHSoverpass@g70.design

Thank you in advance for your participation in the early consultation for this Project.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Mark Kawika McKeague, AICP
Principal

Enclosure: Early Consultation Handout

Early Consultation Handout

Kūlanihāko‘i High School Pedestrian Overpass
Early Consultation for Draft Environmental Assessment

This Early Consultation Handout has been prepared in accordance with the requirements of Hawai‘i Revised Statutes (HRS), Chapter 343 (as amended), and Hawai‘i Administrative Rules (HAR), Chapter 11-200.1, which sets forth the requirements for the preparation of environmental assessments.

1.1 PROJECT INFORMATION SUMMARY

Type of Document:	Draft Environmental Assessment
Project Name:	Kūlanihāko‘i High School Pedestrian Overpass
Proposing and Determining Agency:	State of Hawai‘i, Department of Education Office of Facilities and Operations Facilities Development Branch Project Management Section 3633 Waialae Ave. Rm. B-201 Honolulu, Hawai‘i 96816
Agent:	G70 111 S. King Street, Suite 170 Honolulu, Hawai‘i 96813 Contact: Mark Kawika McKeague, AICP Phone: (808) 523-5866 Email: KHSoverpass@g70.design
HRS, Ch. 343 Trigger:	HRS §343-5(a)(1), use of State lands and funds
Project Location:	Pi‘ilani Highway adjacent to and south of roundabout At Kūlanihāko‘i Street A portion of the adjacent Kūlanihāko‘i High School parcel [TMK (2) 2-2-002:081] will also be utilized (<i>Figure 1: Project Location</i>)
Recorded Fee Owner(s):	State of Hawai‘i, Department of Transportation
State Land Use District:	Agricultural
County of Maui Zoning:	Highway: Road High School Parcel: P-1 Public / Quasi-Public
Community Plan Land Use:	Highway: none High School Parcel: Public/Quasi Public
Special Management Area (SMA):	Outside the SMA (final determination needed by County of Maui Department of Planning)
Flood Zone:	Zone X (area outside floodplain)
Anticipated Determination:	Finding of No Significant Impact (FONSI)

1.2 OVERVIEW OF PROPOSED PROJECT

The State of Hawai‘i Department of Education (DOE) is proposing to construct an overpass traversing Pi‘ilani Highway to provide a means for students, staff and visitors to cross above ground level where vehicular traffic is located and to meet the requirements of the Land Use Commission's Decision and Order related to the new Kūlanihāko‘i High School in Kīhei. At present, the school is designed and constructed to serve up to 800 students. When fully built out, the school is intended to serve up to 1,650 students in Grades 9 through 12.

The overpass will be designed with American with Disabilities Act (ADA) compliant ramps and will accommodate pedestrians and bicyclists. It will be constructed primarily of concrete, though structural elements may also include steel, and lighting for safety. Lighting will meet State of Hawai‘i, Department of Transportation (DOT) and County of Maui requirements for illumination as well as environmental protection. The Draft Environmental Assessment will contain additional information on the design.

The DOE and DOT will be coordinating on the design. The DOT will undertake and manage the construction, and overpass will be owned and operated by DOT.

1.3 PROJECT SITE

The overpass project site is at the intersection of Pi‘ilani Highway and Kūlanihāko‘i Street primarily within DOT Pi‘ilani Highway right-of-way on the south side of the roundabout. A small portion of the Kūlanihāko‘i High School parcel, TMK (2) 2-2-002:081, will be used as well. The project area is located in Kīhei, on the island of Maui (*Figure 1: Project Location*).

The new high school is located on previously undeveloped land mauka of Pi‘ilani Highway. There is no adjacent development or associated infrastructure such as sidewalks or bike paths for school access mauka of the highway. Primary access to the main entry of campus is from the Kūlanihāko‘i Street / Piilani Highway intersection, for both vehicles and pedestrians.

The highway is situated within the Agricultural State Land Use District. This public facility highway does not have County zoning and nor does it have a 1998 Kīhei-Makena Community Plan land use designation. The high school parcel has P-1 Public / Quasi-Public county zoning. The Kīhei-Mākena Community Plan Land Use Map for the high school parcel was changed to Public/Quasi Public via Maui County ordinance 4134.

1.4 PURPOSE OF ENVIRONMENTAL ASSESSMENT

On behalf of the DOE, G70 is preparing a Draft Environmental Assessment (DEA), pursuant to HRS, Chapter 343, and HAR, Chapter 11-200.1 for the proposed Project. Under HRS, §343-5(a)(1), this Project triggers a need for an environmental review as it proposes the use of state lands and funds. The DEA will include a description of the proposed action and alternatives considered; a description of the existing environment; identification and analysis of potential impacts of the Project; and proposed mitigation measures. This DEA is expected to result in a FONSI.

This environmental review is a distinct and independent review from the Final Kīhei High School Environmental Impact Statement (EIS) in 2012. However, relevant information and conclusions from it may be considered as a part of this current environmental review process.

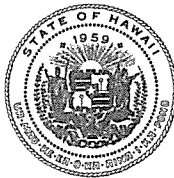
Kūlanihāko‘i High School Pedestrian Overpass
Early Consultation for Draft Environmental Assessment



Figure 1: Project Location

**Early Consultation
Comments Received**

JOSH GREEN, M.D.
GOVERNOR
KE KIA'ĀINA



KEITH A. REGAN
COMPTROLLER
KA LUNA HO'OMALU HANA LAULĀ

MEOH-LENG SILLIMAN
DEPUTY COMPTROLLER
KA HOPE LUNA HO'OMALU HANA LAULĀ

STATE OF HAWAII | KA MOKU'ĀINA O HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES | KA 'OIHANA LOIHELU A LAWELAWE LAULĀ
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)23.082

MAY 23 2023

RECEIVED

MAY 25 2023

G70

Mark Kawika McKeague, AICP
G70
111 S. King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. McKeague:

Subject: Early Consultation Request
Draft Environmental Assessment (DEA)
Kulanihakoi High School Pedestrian Overpass
Kihei, Maui, Hawaii
TMK: (2)2-2-002:081

Thank you for the opportunity to comment on the subject project. We have no comments to offer at this time as the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

If you have any questions, your staff may call Dora Choy of the Planning Branch at (808) 586-0488.

Sincerely,

CHRISTINE L. KINIMAKA
Public Works Administrator

DC:mo

c: Jeff Pearson, DAGS-MDO



STATE OF HAWAII OFFICE OF PLANNING & SUSTAINABLE DEVELOPMENT

JOSH GREEN, M.D.
GOVERNOR

MARY ALICE EVANS
ACTING DIRECTOR

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: <https://planning.hawaii.gov/>

DTS202305161235RE

Coastal Zone
Management
Program

May 22, 2023

Environmental
Review Program

Mark Kawika McKeague, AICP
G70

Land Use
Commission

111 S. King Street, Suite 170
Honolulu, HI 96813

Land Use Division

Dear Mr. McKeague:

Special Plans
Branch

Subject: Early Consultation for Draft Environmental Assessment (DEA)
Kulanihako'i High School Pedestrian Overpass
Kihei, Maui

State Transit-
Oriented
Development

Thank you for the opportunity to provide comments during the Early Consultation for the subject DEA.

Statewide
Geographic
Information System

The State Department of Education proposes to build an overpass across Piilani Highway at the main entry to the new Kulanihako'i High School. The site of the overpass is near the intersection of Piilani Highway, a state road, and Kulanihako'i Street, and mostly within the highway right-of-way although a small portion will be on the High School parcel. The overpass will be designed with American with Disabilities Act (ADA) compliant ramps and will accommodate pedestrians and bicyclists. The State Department of Transportation will initiate and manage the construction and own and maintain the overpass.

Statewide
Sustainability Branch

Kulanihako'i High School is currently designed for 800 students and at full buildout will serve a maximum of 1,600 students Grades 9-12. The new High School will meet an acute need for additional classroom space in the Kihei community. The primary access for vehicles and pedestrians to the High School is the main entry to the campus at the intersection of Kulanihako'i Street and Piilani Highway. The High School is on previously undeveloped land mauka of the Highway and there is no adjacent development or associated infrastructure such as sidewalks or bike paths for school access mauka of the Highway.

The Office of Planning and Sustainable Development (OPSD) has the following comments:

1. OPSD looks forward to the overpass design elements that comply with state policy. We understand that the design components, e.g., lighting, are intended to meet Maui County regulations for environmental protection.

Mr. Mark Kawika McKeague
May 22, 2023
Page 2

2. Many people in Maui County and the Kihei community have long expressed their desire for the overpass to be built.
3. The overpass is a condition of the State Land Use Commission's Decision and Order that reclassified the High School site from the State Agricultural District to the Urban District. OPSD supports the construction of the overpass.

If you have any questions regarding our comments, please contact Aaron Setogawa of our Land Use Division at (808) 587-2883 or aaron.h.setogawa@hawaii.gov.

Mahalo,

Mary Alice Evans

Mary Alice Evans
Acting Director

Cami Kloster

From: Jared P. Agtunong <Jared.Agtunong@mauicounty.us>
Sent: Friday, May 19, 2023 12:25 PM
To: Kulanihakoi HS Overpass
Cc: Stacy Takahashi; Bill Snipes; Thomas M. Cook; Dave Taylor
Subject: RE: Kūlanihākoʻi High School Pedestrian Overpass: Early Consultation Request for Draft Environmental Assessment

Good afternoon:

On behalf of Councilmember Cook, mahalo, for providing our Office with information.

This email confirms receipt.

Should the Councilmember have any follow-up questions, we will be sure to reach out.

Mahalo,
Jared



Jared Sam Agtunong, MPP (He/Him/His)

Executive Assistant / Legislative Aide
Office of Councilmember Tom Cook
Maui County Council

Email: jared.agtunong@mauicounty.us

Direct Line: 808-270-8018

Work Cell: 808-594-2051

Website: <https://linktr.ee/tomcook>

From: Kulanihakoi HS Overpass <khsoverpass@g70.design>
Sent: Friday, May 12, 2023 3:04 PM
Subject: Kūlanihākoʻi High School Pedestrian Overpass: Early Consultation Request for Draft Environmental Assessment

You don't often get email from khsoverpass@g70.design. [Learn why this is important](#)

Aloha,

On behalf of the State of Hawaiʻi Department of Education, please find the attached letter regarding Early Consultation Request for Draft Environmental Assessment for the Kūlanihākoʻi High School Pedestrian Overpass.

Thank you for your participation in the early consultation for this project.

The G70 Planning Team



111 S. King Street, Suite 170
Honolulu, Hawaii 96813
www.G70.design

JOSH GREEN, M.D.
GOVERNOR | KE KIA'AINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'AINA



DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

May 16, 2023

MEMORANDUM

FROM:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division (DLNR.ENGR@hawaii.gov)
- Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
- Div. of State Parks
- Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
- Office of Conservation & Coastal Lands
- Land Division – Maui District (daniel.i.ornellas@hawaii.gov)
- Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)

TO:

Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT:

Draft Environmental Assessment for the Proposed **Kulanihako'i High School Pedestrian Overpass**

LOCATION:

Intersection of Pi'ilani Highway and Kulanihako'i Street, and portion of the High School Parcel which is TMK: (2) 2-2-002:081

APPLICANT:

G70 on behalf of State of Hawaii, Department of Education

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit any comments by **June 9, 2023**.

If no response is received by the above date, we will assume your agency has no comments. Should you have any questions about this request, please contact Darlene Nakamura at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

- We have no objections.
- We have no comments.
- We have no additional comments.
- Comments are included/attached.

Signed:

Lainie Berry

Print Name:

LAINIE BERRY, Wildlife Program Mgr.

Division:

Division of Forestry and Wildlife

Date:

Jun 13, 2023

Attachments

cc: Central File

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

LAURA H.E. KAAKUA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE
MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES
ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA

DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

June 13, 2023

Log no. 4120

MEMORANDUM

TO: RUSSELL Y. TSUJI, Administrator
Land Division

FROM: LAINIE BERRY, Wildlife Program Manager
Division of Forestry and Wildlife

SUBJECT: Draft Environmental Assessment for the Proposed Kulanihako'i High School Pedestrian Overpass at the Intersection of Pi'ilani Highway and Kulanihako'i Street and a Portion of the High School Parcel in Kihei, Maui

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your request for comments for the Draft Environmental Assessment for the Proposed Kulanihako'i High School Pedestrian Overpass at the intersection of Pi'ilani Highway and Kulanihako'i Street, and a portion of the High School Parcel which is TMK: (2) 2-2-002:081, in Kihei on the island of Maui. The State of Hawai'i Department of Education (DOE) is proposing to construct an overpass traversing Pi'ilani Highway to provide a means for students, staff, and visitors to cross above ground level where vehicular traffic is located and to meet the requirements of the Land Use Commission's Decision and Order related to the new Kulanihako'i High School in Kihei. The overpass will be designed with America with Disabilities Act (ADA) compliant ramps and will accommodate pedestrians and bicyclists. It will be constructed primarily of concrete, though structural elements may also include steel, and lighting for safety. The highway is situated within the Agricultural State Land Use District. This public facility highway does not have County zoning and nor does it have a 1998 Kihei-Makena Community Plan land use designation.

The State listed 'Ōpe'ape'a or Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) could potentially occur at or in the vicinity of the project and may roost in nearby trees. Any required site clearing should be timed to avoid disturbance to bats during their birthing and pup rearing season (June 1 through September 15). During this period woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed. Barbed wire should also be avoided for any construction because bats can become ensnared and killed by such fencing material during flight.

Artificial lighting can adversely impact seabirds that may pass through the area at night by causing them to become disoriented. This disorientation can result in their collision with manmade structures or the grounding of birds. For nighttime work that might be required, DOFAW recommends that all lights used be fully shielded to minimize the attraction of seabirds. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season, from September 15 through December 15, when young seabirds make their maiden voyage to sea.

If nighttime construction is required during the seabird fledging season (September 15 to December 15), we recommend that a qualified biologist be present at the project site to monitor and assess the risk of seabirds being attracted or grounded due to the lighting. If seabirds are seen circling around the area, lights should then be turned off. If a downed seabird is detected, please follow DOFAW's recommended response protocol by visiting <https://dlnr.hawaii.gov/wildlife/seabird-fallout-season/#response>.

Permanent lighting also poses a risk of seabird attraction, and as such should be minimized or eliminated to protect seabird flyways and preserve the night sky. For illustrations and guidance related to seabird-friendly light styles that also protect seabirds and the dark starry skies of Hawai'i please visit <https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf>.

The State listed Nēnē or Hawaiian Goose (*Branta sandvicensis*) could potentially occur in the vicinity of the proposed project site. It is against State law to harm or harass these species. If any are present during construction, all activities within 100 feet (30 meters) should cease and the bird or birds should not be approached. Work may continue after the bird or birds leave the area of their own accord. If a nest is discovered at any point, please contact the Hawai'i Island Branch DOFAW Office at (808) 974-4221.

The project area is within the range of the State listed Blackburn's Sphinx Moth (*Manduca blackburni*) or BSM. Larvae of BSM feed on many nonnative hostplants, which includes tree tobacco (*Nicotiana glauca*), that grow in disturbed soil. We recommend contacting the Hawai'i Island Branch DOFAW office at (808) 974-4221 for further information about where BSM may be present and whether a vegetation survey should be conducted to determine the presence of plants preferred by BSM. DOFAW recommends removing plants less than one meter in height or during the dry season to avoid harm to BSM. If you intend to either remove tree tobacco over one meter in height or to disturb the ground around or within several meters of these plants, they must be thoroughly inspected by a qualified entomologist for the presence of BSM eggs and larvae.

DOFAW recommends using native plant species for landscaping that are appropriate for the area; i.e., plants for which climate conditions are suitable for them to thrive, plants that historically occurred there, etc. Please do not plant invasive species. DOFAW also recommends referring to www.plantpono.org for guidance on the selection and evaluation of landscaping plants and to determine the potential invasiveness of plants proposed for use in the project.

DOFAW recommends minimizing the movement of plant or soil material between worksites. Soil and plant material may contain detrimental fungal pathogens (e.g., Rapid 'Ōhi'a Death), vertebrate and invertebrate pests (e.g., Coqui Frogs, Little Fire Ants, etc.), or invasive plant parts (e.g., Miconia, Mullein, etc.) that could harm our native species and ecosystems. We recommend consulting the Maui Invasive Species Committee (MISC) at (808) 573-6472 to

help plan, design, and construct the project, learn of any high-risk invasive species in the area, and ways to mitigate their spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

Due to the arid climate and risks of wildfire to listed species, we recommend coordinating with the Hawai'i Wildfire Management Organization at (808) 850-900 or admin@hawaiiwildfire.org, on how wildfire prevention can be addressed in the project area.

We appreciate your efforts to work with our office for the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsibility of the applicant to do their own due diligence to avoid any negative environmental impacts. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Myrna N. Giraldo Pérez, Protected Species Habitat Conservation Planning Coordinator at (808) 265-3276 or myrna.giraldo-perez@hawaii.gov.

Sincerely,

Lainie Berry

LAINIE BERRY
Wildlife Program Manager

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

June 14, 2023

Group 70 International, Inc. dba G70
Attn: Mr. Kawika McKeague, AICP
111 S. King Street, Suite 170
Honolulu, Hawaii 96813-4307

via email: KHSoverpass@g70.design

Dear Mr. McKeague:

SUBJECT: Draft Environmental Assessment for the Proposed **Kulanihako'i High School Pedestrian Overpass** located at the Intersection of Pi'ilani Highway and Kulanihako'i Street, and portion of the High School Parcel which is TMK: (2) 2-2-002:081 on behalf of State of Hawaii, Department of Education

Thank you for the opportunity to review and comment on the subject matter. In addition to our previous comments dated June 9, 2023, enclosed are comments from the Division of Forestry & Wildlife on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Enclosure
cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

May 16, 2023

MEMORANDUM

FROM: ~~TO:~~

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division** (DLNR.ENGR@hawaii.gov)
- Div. of Forestry & Wildlife (rbyrosa.t.terrago@hawaii.gov)
- Div. of State Parks
- Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
- Office of Conservation & Coastal Lands
- Land Division – Maui District (daniel.i.ornellas@hawaii.gov)
- Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)


TO: **FROM:** Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Draft Environmental Assessment for the Proposed **Kulanihako'i High School Pedestrian Overpass**
LOCATION: Intersection of Pi'ilani Highway and Kulanihako'i Street, and portion of the High School Parcel which is TMK: (2) 2-2-002:081
APPLICANT: G70 on behalf of State of Hawaii, Department of Education

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit any comments by **June 9, 2023**.

If no response is received by the above date, we will assume your agency has no comments. Should you have any questions about this request, please contact Darlene Nakamura at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

- We have no objections.
- We have no comments.
- We have no additional comments.
- Comments are included/attached.

Signed: 
 Print Name: Carty S. Chang, Chief Engineer
 Division: Engineering Division
 Date: May 30, 2023

Attachments
cc: Central File

**DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION**

LD/Russell Y. Tsuji

**Ref: Draft Environmental Assessment for the Proposed Kulanihako'i High School
Pedestrian Overpass**

**Location: Intersection of Pi'ilani Highway and Kulanihako'i Street, and
portion of the High School Parcel (TMK (2) 2-2-002:081)**

Applicant: G70 on behalf of State of Hawaii, Department of Education

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high-risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Be advised that 44CFR, Chapter 1, Subchapter B, part 60 reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA's Flood Insurance Rate Maps (FIRM). The official FIRMs can be accessed through FEMA's Map Service Center (msc.fema.gov). Our Flood Hazard Assessment Tool (FHAT) (<http://gis.hawaiiinfip.org/FHAT>) could also be used to research flood hazard information.

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7139.
- Kauai: County of Kauai, Department of Public Works (808) 241-4896.

Signed: 
CARTY S. CHANG, CHIEF ENGINEER

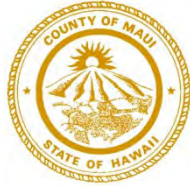
Date: May 30, 2023

RICHARD T. BISSEN, JR.
Mayor

KEKUHAUPIO R. AKANA
Acting Managing Director

BRADFORD K. VENTURA
Fire Chief

GAVIN L.M. FUJIOKA
Deputy Fire Chief



DEPARTMENT OF FIRE & PUBLIC SAFETY
COUNTY OF MAUI
200 DAIRY ROAD
KAHULUI, MAUI, HAWAII 96732
www.mauicounty.gov

May 25, 2023

VIA EMAIL: KHsoverpass@g70.design

G70
Attn: Mark Kawika McKeague, AICP
111 S. King Street, Suite 170
Honolulu, HI 96813

SUBJECT: EARLY CONSULTATION REQUEST FOR DRAFT ENVIRONMENTAL ASSESSMENT (DEA) KULANIHAKO'I HIGH SCHOOL PEDESTRIAN OVERPASS

Dear Mark,

Thank you for the opportunity to review your project. At this time Fire Prevention Bureau has no comments.

Please provide notice to in district fire station for any access restrictions or road closures. Should you have any specific fire related public safety concerns please identify those to us on this or any future projects you would like us to review.

For any questions or comments, please feel free to contact our office at (808) 876-4690 or by email at fire.prevention@mauicounty.gov.

Sincerely,

Plans Review - Fire Prevention Bureau

CG:jn



Kihei Community Association

"e mālama pono"...dedicated to protecting,
sustaining and enhancing our 'āina, kai and 'ohana

To: KHSoverpass@g70.design

cc: DOE: randell.tanaka@k12.hi.us

curt.otaguro@k12.hi.us

DOT: edwin.h.sniffer@hawaii.gov

robin.k.shishido@hawaii.gov

LUC: daniel.e.ordenker@hawaii.gov

From: Kihei Community Association

Date: June 12, 2023

Re: Kūlanihāko'i High School Pedestrian Overpass: Early Consultation Request for Draft Environmental Assessment

The Kihei Community Association (KCA) appreciates the opportunity to comment on the early consultation for the Draft Environmental Assessment for the Kūlanihāko'i High School Pedestrian Overpass.

The KCA understands that the findings of the DEA will help direct the planning and design of the overpass. The KCA would like to offer our preliminary suggestions as listed below.

FLAT BRIDGE DESIGN: The KCA assumes that the most common conceptual design for a pedestrian overpass would incorporate the use of a flat bridge. The KCA would like to see that the conceptual designs for any flat bridge would incorporate the facade appearance of an arch.

Options:

A. When designing a flat bridge, the KCA suggests incorporating designs that have the aesthetic appearance of an arch. This would be a nicer, softer look than a flat rectangular bridge and this aesthetic is quite common on contemporary overhead walkways seen throughout the mainland. See attached example 1.

B. Create a subtle arch to the walkway, instead of a flat bridge. By incorporating a mild arch that is within ADA compliance into the span of the bridge it will allow for less length required at the approach ramps. Consider the approach ramps to be on grade by berming the land beneath them. See attached example 2.

FOR ALL BRIDGE DESIGN OPTIONS: Consider stairs in addition to ramps for those who prefer short cuts. See attached example 3.

The KCA suggests that the grade approaching and going up and around the ramps be planted with shade trees and attractive, low maintenance native plants to soften the look.

The KCA believes that north-south sidewalks are absolutely necessary to access the high school entrance. These sidewalks need to run parallel to, but separated from the mauka side of Pi'ilani Highway. These sidewalks would run from the high school entrance south to Lipoa Street, and north to the Ohukai neighborhood. Currently, the only pedestrian option to school from these neighborhoods is to walk on the unimproved shoulder of the highway. When implemented, these north-south sidewalks would further compliment the State Land Use Commission (LUC) condition 1d, *Petitioner shall install paved shoulders along Piilani Highway fronting the high school and provide accommodations for bicycles to the mutual agreement of Petitioner and DOT.*

The KCA would also like to see a plan for how pedestrians not living in the immediate area of Kūlanihāko'i St. will access the overpass on the makai side of the highway at the school entrance. Again, on this side of Pi'ilani Hwy, there is no pedestrian connection from North Kihei to Kūlanihāko'i St. or from Pi'ilani Villages on the south side of Kūlanihāko'i St. Students will be walking to school on the unfinished highway shoulder or, as has been presented to the community as an option, traversing from their neighborhood makai to S. Kihei Rd. (which does not have sidewalks) then to Kūlanihāko'i St. and then walk all the back way up (mauka) Kūlanihāko'i St. to reach the overpass. This is not a practical option. Kids will choose the easiest and closest route to school which in this case is walking on the highway.

Previous consultation has failed to present a viable plan as to how pedestrians approaching from any area other than Kūlanihāko'i St. will practically and safely reach the pedestrian overpass. See LUC condition 1b. *Petitioner shall complete a pedestrian route study for Phase 1... approved by HDOT.*

We want to absolutely discourage any plan that puts students walking within feet of a high speed highway, pinned to the guard rail on the 3' highway shoulder, which is actually less than 3' wide at Kūlanihāko'i and Waipuilani bridges.

Our primary concern is to provide "safe routes to school". Having children interacting with high volumes of traffic on Piilani Hwy and South Kihei Rd. is not an acceptable pedestrian plan.

Respectfully submitted,

Michael Moran, President
Kihei Community Association



Example 1
Flat bridge with arched facade



Example 2
Arched bridge



Example 3
Stairs to access bridge

RICHARD T. BISSEN, JR.
Mayor

KEKUHAUPIO R. AKANA
Managing Director

JOHN STUFFLEBEAN, P.E.
Director

JAMES A. LANDGRAF
Deputy Director



DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793
<http://www.mauicounty.gov/water>

August 14, 2023

Mark Kawika McKeague, AICP
G70
via email: KHSoverpass@g70.design

SUBJECT: EARLY CONSULTATION REQUEST FOR DRAFT EA
Kulanihakoi High School Pedestrian Overpass
TMK: (2) 2-2-002:081, Kihei, Maui

Thank you for the opportunity to review and comment on the proposed Kulanihakoi High School Pedestrian Overpass.

Prior to commencement of construction, submit construction plans (24"x36") stamped and signed by a licensed engineer for the Department's review and approval, indicating any water system improvements in accordance with the Department's Water System Standards 2002, as may be amended. Construction plans shall show location of existing waterlines, valves, fire hydrants, water meters, etc. in relation to the overpass.

If water service from the Department of Water Supply is required, the project must meet the criteria outlined in the Administrative Rules (Title 16, Chapter 201).

If you have any questions, please contact me at (808) 270-7682 or at tammy.yeh@co.maui.hi.us. Engineering Division's main number is (808) 270-7835.

Sincerely,

A handwritten signature in cursive script, appearing to read "Tammy Yeh".

TAMMY YEH, P.E.
Civil Engineer VI

cc: DWS – Water Resource & Planning (WaterResources@mauicounty.gov)

"By Water All Things Find Life"

From: [Arnold Abe](#)
To: [Kulanihakoi HS Overpass](#)
Cc: [Dyan Ariyoshi](#)
Subject: Early Consultation Request for DEA - Kulanihakoi High School Pedestrian Overpass
Date: Thursday, June 29, 2023 4:45:56 PM

Aloha,

Due to Maui County's new planning and permitting software, to document and receive comments directly from the Wastewater Reclamation Division, could you please submit your request in MAPPS.

To get started, go to mauicounty.gov, click on the MAPPS page, follow the instructions to create an account (if you do not already have one). Once you have created your account and in the MAPPS website, select the "Apply" tab at the top, then in the search bar apply for "**WWRD - General Info Request**" and follow its step by step process. Once applied, email me the specific case number, so that I can look for it. Otherwise, it will be lost in our backlog of reviews.

Contact me if you have any questions via email or at 808-270-7428.

Arnold