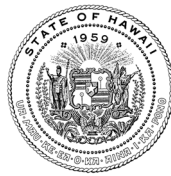


DAVID Y. IGE
GOVERNOR



RODERICK K. BECKER
DIRECTOR

ROBERT YU
DEPUTY DIRECTOR

EMPLOYEES' RETIREMENT SYSTEM
HAWAII EMPLOYER-UNION HEALTH BENEFITS TRUST FUND
OFFICE OF THE PUBLIC DEFENDER

STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE
P.O. BOX 150
HONOLULU, HAWAII 96810-0150

ADMINISTRATIVE AND RESEARCH OFFICE
BUDGET, PROGRAM PLANNING AND
MANAGEMENT DIVISION
FINANCIAL ADMINISTRATION DIVISION
OFFICE OF FEDERAL AWARDS MANAGEMENT (OFAM)

TESTIMONY BY RODERICK K. BECKER
DIRECTOR, DEPARTMENT OF BUDGET AND FINANCE
TO THE HOUSE COMMITTEES ON ENERGY AND ENVIRONMENTAL
PROTECTION AND WATER, LAND, AND HAWAIIAN AFFAIRS
ON
SENATE BILL NO. 77, S.D. 3

March 14, 2019
9:30 a.m.
Room 325

RELATING TO CAPITAL IMPROVEMENT PROJECTS

Senate Bill No. 77, S.D. 3, establishes two financing options for the State to select from to satisfy the federal requirement that thirty-five percent of the Ala Wai Flood Risk Management Project costs be funded by a local entity. The first is a financing agreement pursuant to Chapter 37D, HRS, and the second is the United States Army Corps of Engineers' cost payment plan. The bill appropriates an unspecified amount of general funds in FY 20 for the Ala Wai Flood Risk Management Project with the provision that the Department of Budget and Finance (B&F) not expend the funds if a Chapter 37D financing agreement is used.

B&F strongly supports the Ala Wai Flood Risk Management Project. Of the two financing options specified in the bill, B&F believes that the Chapter 37D financing agreement is preferable because the Corps' cost payment plan is subject to periodic unknown interest rate escalation, whereas, the Chapter 37D financing interest rates are fixed at the time of entering into the agreement.

Additionally, B&F recommends the following technical amendments:

- First, the following new section be added to the bill (at the top of page 3) to explicitly authorize B&F to enter into a financing agreement:

“SECTION 2. The Department of Budget and Finance is authorized to enter into a financing agreement pursuant to Chapter 37D, Hawaii Revised Statutes, in an amount not to exceed \$125,000,000 for the purpose of funding the local match for the Ala Wai Flood Risk Management Project.”

- Second, the current Section 3 (the appropriations section) be amended to authorize general fund appropriations to fund financing agreement payments for both FY 20 and FY 21.
- Third, the last provision of the current Section 3 (page 4, lines 9 through 12, “provided that the department of budget and finance shall not expend the funds if a financing agreement pursuant to section 2 of this Act is entered into by _____.”) be deleted.

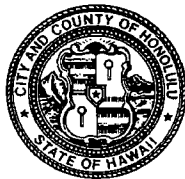
Regarding the third suggested amendment, B&F would like to point out that, irrespective of the financing option used to fund the Ala Wai Flood Risk Management Project, annual funding will need to be authorized to make payments for either the Chapter 37D financing agreement or the Corps’ cost payment plan.

Thank you for your consideration of our comments.

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 768-4567
Web site: www.honolulu.gov

KIRK CALDWELL
MAYOR



ROBERT J. KRONING, P.E.
DIRECTOR

MARK YONAMINE, P.E.
DEPUTY DIRECTOR

March 12, 2019

The Honorable Nicole E. Lowen, Chair
The Honorable Tina Wildberger, Vice Chair
and Members of the Committee on Energy & Environmental Protection

The Honorable Ryan I. Yamane, Chair
The Honorable Chris Todd, Vice Chair
and Members of the Committee on Water, Land, & Hawaiian Affairs

The House
State Capitol, Room 325
415 South Beretania Street
Honolulu, Hawaii 96813

Dear Chairs Lowen and Yamane, Vice Chairs Wildberger and Todd, and Members:

SUBJECT: Senate Bill No. 77 SD3, Relating to Capital Improvement Projects

The Department of Design and Construction (DDC) **supports** Senate Bill No. 77 SD3, the purpose of which is to establish a financing mechanism to satisfy the federal requirement that thirty-five percent of the Ala Wai flood risk management project costs be funded by a local entity.

However, DDC requests the following, technical, nonsubstantive amendments be made to this measure regarding what the Department considers as inaccuracies contained in the preamble:

- In the second paragraph of SECTION 1, the phrase "Although this project is under county jurisdiction," should be deleted as flood risk management is a joint State and City responsibility, and this project will involve both State and county lands. Furthermore, this project will not only protect major State economic activity and infrastructure in the Waikiki area, but also in the Manoa Valley area, including the University of Hawaii at Manoa.

The Honorable Nicole E. Lowen, Chair
and Members
The Honorable Ryan I. Yamane, Chair
and Members
March 12, 2019
Page 2

- In the last paragraph of SECTION 1, the enumerated purpose (1) should be revised to delete, "and requiring the city and county of Honolulu to enter into the project partnership agreement with the United States Army Corps of Engineers and to accept all the project features identified in the Ala Wai flood risk management project upon completion," as the measure's purpose is simply to establish a financing mechanism for the Ala Wai Flood Risk Management Project. The City and State are currently working cooperatively to draft terms and conditions whereby both the City and the State will be signatories to the project partnership agreement and do not want to condition the appropriation of project funding on any particular participation arrangement.

Thank you for the opportunity to testify on S.B. No. 77, S.D. 3.

Very truly yours,


Robert J. Kroning, P.E.
Director

SB-77-SD-3

Submitted on: 3/12/2019 10:20:21 AM

Testimony for EEP on 3/14/2019 9:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Brandon Keoni Bunag	Halau Ku Mana Public Charter School	Oppose	No

Comments:

SB-77-SD-3

Submitted on: 3/12/2019 11:31:58 AM

Testimony for EEP on 3/14/2019 9:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Erica Scott	Individual	Support	No

Comments:



DIAMOND HEAD/KAPAHULU/ST. LOUIS HEIGHTS NEIGHBORHOOD BOARD NO. 5

c/o NEIGHBORHOOD COMMISSION • 925 DILLINGHAM BOULEVARD #160 • HONOLULU, HAWAII, 96827
PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET: <http://www.honolulu.gov/nco>

Resolution Relating to the Proposed Ala Wai Canal Project

WHEREAS, in the past several decades approaching climate change, catastrophic flooding events have occurred more frequently in the United States and the rest of the world; and

WHEREAS, the United States Army Corps of Engineers (“USACE”) has developed plans for the Ala Wai Canal Project (the “Project”), also referred to as the Ala Wai Flood Mitigation Project, in response to a 1% potential of a 100-year storm catastrophic flooding event within the Ala Wai Watershed; and

WHEREAS, the Project includes among other proposals the construction of large detention basins within the Ala Wai Golf Course, Kanewai Park, Ala Wai Park, Hausten Ditch, Makiki, and Manoa and Palolo Valleys; a reinforced solid concrete wall extending as high as four and a half feet along the perimeter of the Ala Wai Canal and the Ala Wai Promenade, and 45-foot high pump stations within and around the Ala Wai Golf Course; and

WHEREAS, the Ala Wai Watershed contains within it such areas of Honolulu as Kapahulu, St. Louis Heights, Palolo Valley, Kaimuki, Moili’ili, McCully, Ala Wai, Waikiki, Kapiolani, Ala Moana, Makiki, Manoa Valley and Tantalus; and

WHEREAS, following the Project’s single area-wide public presentation by the USACE on November 5, 2015, the Diamond Head/Kapahulu/St. Louis Heights Neighborhood Board voted on November 12, 2015, to disagree with the USACE determination that the Project would have “no adverse effect”; and

WHEREAS, ‘Iolani School, located on the Ala Wai floodplain, stated in a letter to the USACE in 2015 that area stakeholders were not adequately engaged in evaluation of the Project, and urged that the Draft Report/EIS be reviewed and reissued for further public comment; and

WHEREAS, public concerns relating to the Project at area Neighborhood Board meetings have centered on the proposed detention basins consuming private properties; proper maintenance of the detention basins to protect the public health; industrial pump stations proposed to be 45 feet high in and around the Ala Wai preservation area; and concrete walls along the perimeter of the Ala Wai Canal, which is listed on the Hawaii State Register of Historic Places; and

WHEREAS, property owners and residents who live next to or within proximity to a proposed detention basin are now reported to have not received proper notice of the Project and were not given an opportunity to respond to the Project’s Draft Report/Environmental Impact Statement (“EIS”); and

WHEREAS, in the fall of 2018 Congress appropriated funding for the federal portion of the proposed cost of the Project, leaving only the State funding as the final hurdle before commencement of construction; now, therefore,

BE IT RESOLVED that the Diamond Head/Kapahulu/St. Louis Heights Neighborhood Board agrees that public input and full public awareness of the impacts of this Project have been insufficient to have the Project move forward; and

BE IT FURTHER RESOLVED that the Diamond Head/Kapahulu/St. Louis Heights Neighborhood Board agrees that the USACE should put a hold on any further advancement of the Project until the people directly impacted by the Project have had the opportunity to consider and respond to the proposed Project and all alternatives; and

BE IT FURTHER RESOLVED that the Diamond Head/Kapahulu/St, Louis Heights Neighborhood Board joins the Manoa Neighborhood Board in requesting that the Thirtieth Legislature of the State of Hawaii, Regular Session of 2019 defer appropriating any funds for the Project during this calendar year; and

BE IT FINALLY RESOLVED that copies of this Resolution be transmitted to the USACE, the Hawaii Congressional delegation, the Governor of Hawaii, all members of the Hawaii State Legislature, the Mayor of Honolulu, the Honolulu City Council, and all area Neighborhood Boards.

This resolution was ADOPTED by UNANIMOUS CONSENT by the Diamond Head/ Kapahulu/ St. Louis Heights Neighborhood Board No. 5 at its Thursday, February 14, 2019 regular meeting.

Richard Figliuzzi, Chair

LATE

LATE

SB-77-SD-3

Submitted on: 3/13/2019 4:41:07 PM
Testimony for EEP on 3/14/2019 9:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Kimberly	Individual	Oppose	No

Comments:

Aloha,

We OPPOSE SB77 Ala Wai Flood Control project.

The “publicity” that the USACE did, did not reach any of us who are directly affected living right downstream in the valleys until just recently. The right thing would have been for them to have gone door to door or gave us flyers in our mailboxes, in which case they would have quickly come to the conclusion that majority of us oppose the detention basin.

We the residents of Palolo valley welcome flood mitigation however, are OPPOSED to the detention basin which is set to be built on residential property up stream of our house.

For one, our stream has never came close to over flowing and I have lived right next to the stream of over a year and even during the heaviest rains I have never felt threatened. In fact usually within a day, it returns back to normal. During the summer the stream has almost dried out and a detention basin would make our stream completely disappear. We love our stream and don’t want that to happen!

Concrete also does not absorb water and instead repels it so if the detention basin were to get full, it would just over flow and without the path of the existing stream could run its own course and damage houses. During the last heavy rains, our river was safe, no one felt threatened, however I remember during those same rains, the Nuuanu detention basin was threatening to over flow and water needing to be manually pumped out so it wouldn’t overflow and destroy the surrounding houses?.This would cost more money and more manpower to maintain. We do not want that happening to Palolo or Manoa.

On top of that the ongoing maintenance of a detention basin would cost the city/state A LOT of money. Our river works perfect and needs no maintenance. In fact, residents living along the river maintain it on their own - removing any debris that comes down stream during heavy rains. I know because my husband participates in regularly removing any large branches that come down stream. Wouldn’t the money needed to maintain the detention basin be better spent on maintaining and clearing storm drains and waterways which are instrumental in

preventing floods? If the city/state has already had trouble maintaining these existing drains and waterways, how do we know that they will be diligent in maintaining a detention basin? An un-maintained detention basin would have wasted our money and be worse than our free running river.

Stagnant water in a detention basin during the dry months will also encourage more mosquitos which are actually at comfortable levels in the neighborhood right now.

We would like a new study to be done to incorporate more holistic and natural solutions.

Other options to huge dams in valleys ie. Bioswales or to create storage space under public fields. For example, digging up the MidPac field and making it a 'detention basin' so that it could still function as a field. They could do this in the Palolo Field and make it level at the same time. Let's not rush into destroying our natural and fully functional stream. I believe more natural options such as these should be better explored before rushing into building a detention basin.

We urge you to listen to the people and OPPOSE the SB77 Ala Wai Flood Control.

LATE

SB-77-SD-3

Submitted on: 3/14/2019 3:35:32 AM

Testimony for EEP on 3/14/2019 9:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Mary Mitsuda	Individual	Oppose	No

Comments:

VOTE NO: SB 77 - Ala Wai Flood Control Project

People are saying that this Ala Wai Flood Control Project is a done deal — that this bill SB77 has to pass right now so that it can get Federal funding, regardless of what the community asks, says, or wants.

People are saying that this project will just become part of the comedy routine about Hawaii being a dumb banana republic that works for years and spends millions on public works projects that are poorly designed, obsolete before the haphazard construction even starts, millions of dollars over budget, years past deadline, and when finally complete, manage to cough up disasters large and small due to design flaws and inadequate maintenance.

I ask you to look again at the map of the project and visualize each of the 10 huge debris/detention basins to be built in the Maikiki and the Ala Wai areas, and in Manoa and Palolo, especially far back in the upper reaches of these valleys:

<https://www.poh.usace.army.mil/Portals/10/1816-A-CE999-001.jpg?ver=2019-02-11-190249-633>

Vote NO to SB77. Besides the immediate destruction of stream and forest habitat in order to build these upper basins there must be a commitment from the State and/or City to vigilantly maintain all basins and structures because neglect will result in catastrophic failure — flooding and related damage to the surrounding areas.

Respectfully submitted,

Mary Mitsuda

LATE

SB-77-SD-3

Submitted on: 3/14/2019 7:41:25 AM

Testimony for EEP on 3/14/2019 9:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Trisha Kehaulani Watson, JD, PhD	Individual	Oppose	No

Comments:

I am STRONGLY OPPOSED to this bill.

I have lived in this ahupua'a my entire life. This project would do significantly more harm than good, and using a short form bill to bypass the public process that would have allowed for vetting of the public concerns is unacceptable.

The developers behind this effort have been insular and secretive. They have not been transparent with the community or stakeholders, even when we have implored them to be so.

Please defer this bill until the planning for this project is done properly and the project obtains community support from area stakeholders.

Mahalo!



EXECUTIVE CHAMBERS
HONOLULU



DAVID Y. IGE
GOVERNOR

Testimony of **Ford Fuchigami**
Administrative Director, Office of the Governor

Before the
House Committee on Energy & Environmental Protection
and
House Committee on Water, Land, & Hawaiian Affairs
March 14, 2019
9:30 a.m., Conference Room 325

In consideration of
Senate Bill No. 77, SD 3
RELATING TO CAPITAL IMPROVEMENT PROJECTS

Chairs Lowen and Yamane, Vice Chairs Wildberger and Todd, and committee members:

Thank you for the opportunity to provide testimony in support of Senate Bill 77 SD3.

Senate Bill 77 SD3 proposes to (1) appropriate an unspecified amount of general funds to the Department of Budget and Finance (Department) to satisfy the thirty-five percent required match of the local entity for the Ala Wai Flood Risk Management Project and (2) Require the City and County of Honolulu (City) to enter into the project partnership agreement with the United States Army Corps of Engineers and to accept all the project features identified in the Ala Wai Flood Risk Management Project upon completion.

Hawaii's tourism industry is the major driver of the State's economy, with Oahu attracting significantly more visitors than any of the other islands. We recognize the importance of the Ala Wai Flood Risk Management Project in ensuring the health, safety and general welfare of our residents and visitors. Although implementing flood control improvements is a county function, we believe this project will benefit the people and economy of the entire State of Hawaii. We are hopeful in moving this project forward and continuing to work with the City and the Legislature to provide the local matching funds for the project.

We appreciate the opportunity to testify and will be available to answer your questions should you have any at this time.

Dave Whitase
Testimony 3/14/19

Exhibit #1

LATE

**ALA WAI CANAL PROJECT, O'AHU, HAWAI'I
FEASIBILITY STUDY
WITH INTEGRATED
ENVIRONMENTAL IMPACT STATEMENT**

**PUBLIC REVIEW
DRAFT REPORT**

AUGUST 2015



**US Army Corps
of Engineers®**

THIS DRAFT DOCUMENT IS BASED ON THE INFORMATION AVAILABLE AT THE TIME OF PUBLICATION. THE U.S. ARMY CORPS OF ENGINEERS PLANNING PROCESS IS DYNAMIC AND RESPONSIVE TO PUBLIC AND STAKEHOLDER INPUT; IT IS POSSIBLE THAT THE CONTENT HEREIN MAY CHANGE AS A RESULT OF REVIEW COMMENTS RECEIVED. THIS DOCUMENT DOES NOT NECESSARILY REPRESENT THE PERSPECTIVE OF HIGHER REVIEW LEVELS WITHIN THE AGENCIES INVOLVED OR THE EXECUTIVE BRANCH OF THE FEDERAL GOVERNMENT.

Ala Wai Canal Project, O'ahu, Hawai'i

Document Type:	Draft Feasibility Study Report with Integrated Environmental Impact Statement (EIS)
Responsible Agencies (Project Sponsors):	State of Hawai'i, Department of Land and Natural Resources (DLNR) ^a U.S. Army Corps of Engineers ^b
Study Authority:	Section 209 of the Flood Control Act of 1962 (Public Law 87-874)
Location:	Ala Wai Watershed, City and County of Honolulu; O'ahu, Hawai'i
Tax Map Key(s):	(1)2-9-054:019, 029, 034, 004, 002; (1)2-9-055:009, 001; (1)2-5-020:005, 008, 001; (1)2-9-036:003; (1)2-9-029:053; (1)2-7-036:001; (1)2-9-043:002; (1)3-4-016:059; (1)3-4-034:001, 008, 009; (1)3-4-019:003 through 010, 052; (1)2-8-029:011, 004; (1)2-7-036:002; 2-9-067:008 through 012, 015 through 017
Actions Requiring HRS Chapter 343 Review	Use of State and County lands and funds; Use of Conservation District lands; Use within historic site as designated in the National Register and Hawai'i Register; Use within Waikiki Special District
Determination	The USACE and DLNR have determined that the proposed action requires the preparation of an EIS, based on the requirements of NEPA and HRS Chapter 343.

NOTES:

^a The State of Hawai'i is the proposing agency for purposes of complying with Hawai'i Revised Statutes (HRS) Chapter 343; the accepting authority would be the Governor.

^b The USACE is the lead agency for purposes of complying with the National Environmental Policy Act (NEPA).

ABSTRACT

This Draft Feasibility Study Report with integrated Environmental Impact Statement (Feasibility Report/EIS) has been prepared for the Ala Wai Canal Project, Oahu, Hawaii. The purpose of the Ala Wai Canal Project is to reduce riverine flood risks in the Ala Wai Watershed. The study is authorized by Section 209 of the Flood Control Act of 1962 (Public Law 87-874), which is a general study authority for surveys in harbors and rivers in Hawai'i "with a view to determining the advisability of improvements in the interest of navigation, flood control, hydroelectric power development, and other beneficial water uses, and related land resources." Section 209 does not authorize implementation of the proposed action.

Draft EIS Property Damage \$318 M

Flooding associated with a 1-percent annual chance exceedance rainfall event would affect approximately 1,358 acres within the Ala Wai Watershed, including over 3,000 properties with an estimated \$318 million in structural damages alone (at 2013 price levels). In response to identified flood-related problems and opportunities, a series of flood risk management measures were identified and formulated into five alternatives. The alternatives were evaluated through an iterative screening and reformulation process, resulting in tentative selection of a plan for implementation. The tentatively selected plan would reduce flood risks by improving the flood warning system, and constructing six in-stream debris and detention basins in the upper reaches of Makiki, Mānoa and Pālolo streams, one standalone debris catchment feature, three multi-purpose detention areas in open spaces through the developed watershed, and concrete floodwalls ranging up to 4 feet high along one or both sides of approximately 1.9 miles of the Ala Wai Canal (including three pump stations). Potential adverse impacts include those related to biological resources (aquatic habitat), cultural resources, recreation, and visual resources; however, measures to avoid, minimize, and mitigate these impacts have been incorporated to the extent practicable. Although some degree of impact would occur, project analyses have not identified significant, unavoidable adverse impacts that would remain after implementation of proposed mitigation measures. Unavoidable environmental impacts to aquatic habitat would be fully compensated for by eliminating

migratory passage barriers at two in-stream structures in Mānoa Stream to improve connectivity for native aquatic fauna. This mitigation would be monitored for up to 5 years to ensure its performance. The tentatively selected plan is the national economic development plan.

The State of Hawaii Department of Land and Natural Resources, Engineering Division is the non-Federal cost-sharing sponsor for all features. Based on October 2015 price levels, the estimated total project first cost of the tentatively selected plan is \$173,364,000. In accordance with the cost-sharing provisions of Section 103 of the Water Resources Development Act (WRDA) of 1986, as amended [33 U.S.C. 2213(c)], the Federal share of the project first cost would be about \$112,687,000 (65 percent) and the non-Federal share would be about \$60,677,000 (35 percent). The cost of lands, easements, rights-of-way, relocations, or disposal areas is estimated at approximately \$7,747,000. The non-Federal sponsor would be responsible for the operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) of the project after construction, a cost currently estimated at about \$982,000 per year.

Draft EIS 2015 Project Cost \$174M

Based on a 3.5 percent discount rate and a 50-year period of analysis, the expected annual costs are estimated to be \$8,504,000, including OMRR&R. The tentatively selected plan is estimated to be 99.8 percent reliable in protecting portions of Honolulu, Hawaii from a flood which has a 1 percent chance of occurrence in any year. The tentatively selected plan would reduce average annual flood risks and would leave average annual residual damages estimated at \$999,000. The expected annual benefits are estimated to be \$20,256,000 with net average annual benefits of \$11,752,000. The benefit-cost ratio is approximately 2.38 to 1.

PUBLIC REVIEW

Comments on the Draft Feasibility Report/EIS may be submitted during a 45-day public review period. Written comments should be submitted to USACE (pursuant to NEPA) and DLNR (pursuant to HRS Chapter 343); the applicable addresses are listed below. To be considered during preparation of the Final Feasibility Report/EIS, comments must be postmarked by October 7, 2015.

- Honolulu District, U.S. Army Corps of Engineers (ATTN: Ala Wai Canal Project); Building 230, CEPOH-PP-C; Fort Shafter, HI 96858 (email: AlaWaiCanalProject@usace.army.mil)
- State of Hawai'i, DLNR Engineering Division (ATTN: Gayson Ching); P.O. Box 373; Honolulu, HI 96809 (email: Gayson.Y.Ching@hawaii.gov)

For further information on the project, please contact Derek Chow at USACE at (808) 835-4026 or Derek.J.Chow@usace.army.mil, or Gayson Ching at DLNR Engineering Division at (808) 587-0232 or Gayson.Y.Ching@hawaii.gov.

Executive Summary

This Draft Feasibility Study Report with Integrated Environmental Impact Statement (EIS), hereafter referred to as the “Feasibility Report/EIS” has been prepared for the Ala Wai Canal Project, O’ahu, Hawai’i. It assesses the risk of flooding in the Ala Wai Watershed, and describes a range of potential alternative plans formulated to reduce flood risk, with identification of a tentatively selected plan for implementation. It constitutes both a draft Feasibility Study Report in accordance with the U.S. Army Corps of Engineers (USACE) planning process, and an Environmental Impact Statement (EIS) as required to comply with both the National Environmental Policy Act (NEPA) and Hawaii Revised Statutes (HRS) Chapter 343. Following public and governmental agency review, this Draft Feasibility Report/EIS will be finalized and submitted to Headquarters USACE, the Assistant Secretary of the Army for Civil Works, and the Office of Management and Budget for review and approval. If approved, a Chief of Engineers Report would be sent to Congress recommending authorization of the Ala Wai Canal Project.

ES-1 Purpose and Need

The purpose of the project is to reduce flood risk within the Ala Wai Watershed. Flooding has occurred within the watershed on multiple occasions, resulting in recorded property damages and health and safety risks. Analyses conducted in support of this project show that the 1-percent annual chance exceedance (ACE) floodplain extends over approximately 1,358 acres of the watershed. Modeling results indicate the 1-percent ACE flood would result in damages to more than 3,000 structures, with approximately \$318 million in structural damages alone (2013 price levels), not accounting for loss in business income or other similar economic losses. A rendering of the potential extent of inundation resulting from the 1-percent ACE flood is illustrated in Figure ES-1.

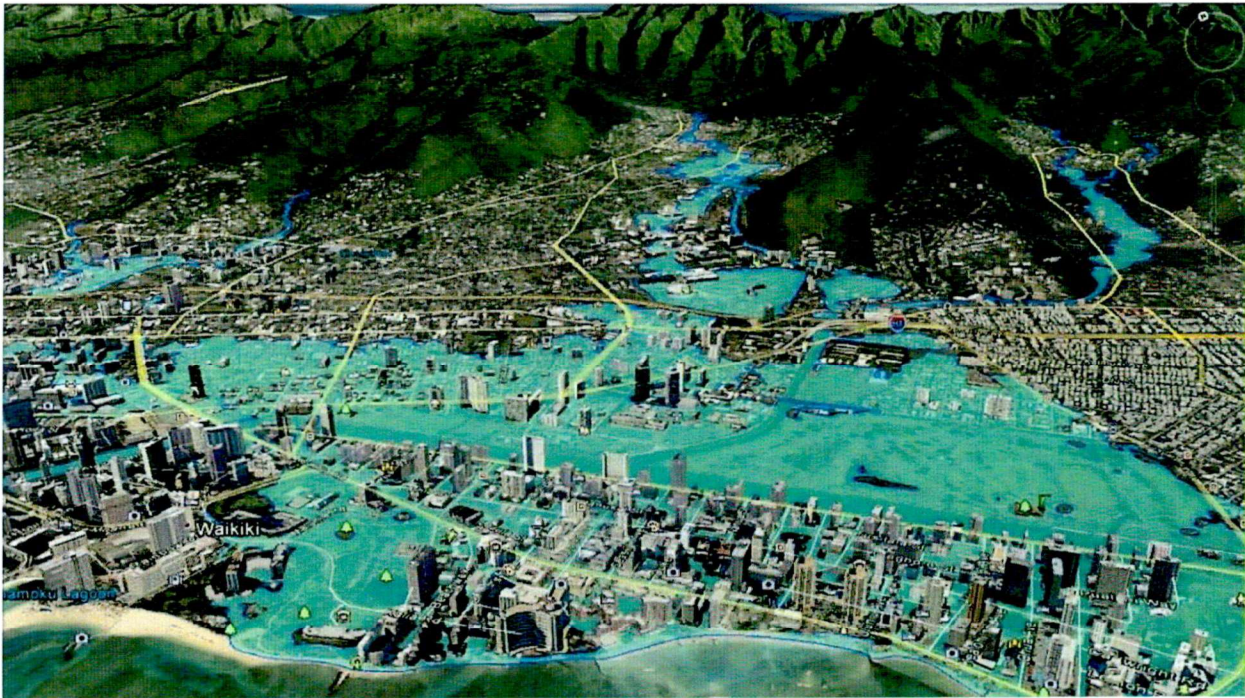


Figure ES-1. USACE Rendering of 1-Percent Annual Chance Exceedance Flood

USACE and DLNR admitted
flawed and unrealistic modeling

ES-2 Study Area and Need for Action

The Ala Wai Watershed is located on the southeastern side of the island of O’ahu, and includes Makiki, Mānoa, and Pālolo streams, all of which drain to the Ala Wai Canal. The Canal is a 2-mile-long waterway constructed

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Dave Watake
Testimony 3/14/19

Exhibit #2

This is the FINAL EIS
APPENDIX B
Pages 3-6

**ALA WAI CANAL PROJECT
OAHU, HAWAII**

**SECTION 209 OF FLOOD CONTROL ACT OF 1962
(PUBLIC LAW 87-874)**

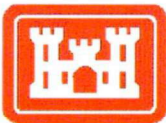
APPENDIX B

ECONOMIC ANALYSIS

NOTE: This should be a BIG RED FLAG in less than 2 years without public oversight and scrutiny:

1. The Project cost increased from Draft EIS \$173 million to Final EIS \$345 million (\$306M in 2016 dollars).
2. The Property Damage Figures used to justify the Project ballooned almost 400% from \$318 million to \$1.14 billion.
3. What do you call it when you clearly use false information and admittedly flawed and unrealistic modeling to justify securing Federal and State monies for a Project and are working hand in hand with the consultants who will benefit directly?

**Honolulu District
March 2017**



THIS DRAFT DOCUMENT IS BASED ON THE INFORMATION AVAILABLE AT THE TIME OF PUBLICATION. The Corps of Engineers planning process is dynamic and responsive to public and stakeholder input; it is possible that the content herein may change as a result of review comments received. This document does not necessarily represent the perspective of higher review levels within the agencies involved or the Executive Branch of the federal government.

ALA WAI CANAL PROJECT FEASIBILITY STUDY, OAHU, HAWAII DRAFT ECONOMIC ANALYSIS

EXECUTIVE SUMMARY

The purpose of this economic analysis is to describe the economic analysis, methodologies, modeling and assumptions involved in evaluation of flood risk in the Ala Wai Canal watershed. The flood risk was initially analyzed in terms of a future without-project condition. Subsequently, the future without-project condition analysis served as a baseline condition for consideration and comparison of alternatives. This analysis resulted in the selection of a National Economic Development (NED) Plan, a Tentative Selected Plan (TSP), and ultimately a recommended plan.

Economic efficiency is not be the only decision point for selection of the preferred alternative, as many other criteria exist. However, it is critical to the success of any water resources project to ensure that recommended alternatives do not cause dramatic and possibly harmful changes to the nation's economy, regional and local economies or local social infrastructure. Recently released regulations and guidelines like Executive Order 11988 have instructed Federal agencies responsible for water resource development projects to give more weight to projects that potentially reduce the threat to human health and safety and/or valuable natural resources.

The Ala Wai Canal watershed is located in the heart of Honolulu, on the island of Oahu, Hawaii. The neighborhoods of Makiki, Manoa, Waikiki, McCully/Moiliili, Kaimuki/Palolo, and Ala Moana comprise the primary impact area for the proposed flood risk management alternatives described in this feasibility report. For the purposes of this study, the area designated as the Ala Wai Canal flood plain is generally defined by its 0.002 annual chance exceedance (ACE) flood plain. A total of about 200,000 people live in this inundation area, which also includes approximately 6,800 residences, 1,900 commercial buildings and 250 public buildings. The value of these properties, along with public infrastructure such as city streets, is an estimated \$9 billion in 2017 dollars. The majority of this value is located in the Waikiki vicinity. With numerous hotels and hundreds of stores and restaurants, it is easily the most important economic driver in the State of Hawaii. The majority of the public structures are found in the Manoa Valley, where the main campus of the University of Hawaii is located along with research buildings and other district public schools.

Given the current built-out status of the watershed, new development will be almost entirely restricted to replacing old structures with new ones. As this happens, the study area is expected to expand vertically with new high rises replacing single-family homes and outdated apartment buildings and multiple storied structures replacing older single-floor development. Commercial development is expected to follow suit, but it is impossible to say exactly which buildings will be replaced and by what types of occupancy. Therefore, this study does not assume any significant future changes to the structure inventories or other assets supporting damage estimation. Future conditions will be the same as present conditions for purposes of calculating damages or costs

except for the inclusion of sea-level rise parameters which will result in somewhat higher water surface profiles in some portions of the basin in the future condition. However, the number of people potentially placed in harm's way from a flood, whether they be residents, workers, shoppers, tourists or motorists traveling through the flood plain, will clearly be increasing over the 50-year planning horizon

The primary economic benefit associated with a flood risk management project is the reduction in inundation damages to structures, structure contents (furniture, equipment, inventory, etc.) and infrastructure. All categories of economic benefits considered in this study involve reduction of potential physical flood damages to structures and contents as well as infrastructure. These categories are unquestionably the most significant drivers of National Economic Development (NED) benefits. The economic evaluation of physical flood risk is accomplished through the use of two programs developed by the USACE Hydrologic Engineering Center: HEC-RAS, the River Analysis System which computes stream flows and stages along with the relative frequency of various magnitudes of flooding; and HEC-FDA, the Flood Damage Analysis program, which estimates expected annual economic damages and damages reduced (benefits) as well as project performance under conditions of risk and uncertainty. HEC-FDA uses Monte Carlo simulation techniques to account for uncertainty in key variables while evaluating the full range of possible flood events within the study area under existing, base year and future conditions.

The plan formulation for this project follows recently-issued USACE guidelines for implementing the SMART Planning paradigm. A detailed account of how the Project Delivery Team (PDT) screened various project alternatives and selected the recommended plan, along with the planning objectives and selection criteria followed, can be found in Chapters 3 and 4 of the main section of this feasibility report. This economic appendix picks up the SMART planning process in the later stages of plan comparison and describes and quantifies the economic results behind such decisions as:

- How alternative 5, a stand-alone nonstructural flood risk management plan, was developed and considered and why it ultimately was dropped from further consideration;
- Why alternative 3A was selected as superior to Alternative 2A in the final array stage;
- How the multiple measures comprising alternative 3A were economically justified;
- How alternative 3A was optimized, leading to its emergence as the NED Plan and the TSP;
- How alternative 3A was confirmed as the recommended plan in the final stages of completion of this feasibility study.

In summary, alternative 3A, a comprehensive, basin-wide plan consisting of floodwalls along the Ala Wai Canal along with an assortment of detention and debris basins and a flood warning system, is the recommended plan. The economic benefit-cost analysis of the recommended plan quantified the plan's economic outputs as shown in Table ES-01 below:

Table ES-01. Economics of the Recommended Plan
 Oct. 2016 prices (\$000s); 2.875% discount rate

Total First Cost	\$306,095,000
Total Investment Cost (with IDC)	\$319,697
Total Annual Cost	\$48,331,000
Expected Annual Benefits	\$13,117,000
Benefit-Cost Ratio	3.7
Net Annual Benefits	\$35,214,000

2019 Project Cost is estimated to be \$345 million and the State's Portion is estimated to be \$125 million.

Property Damage Figure not listed and got to compute:

B:C ratio 3.7 x cost \$306M = About \$1.14 B Property Damage

By implementing the recommended plan, equivalent annual damages (EAD) to structures and contents within the watershed are anticipated to fall from approximately \$53.7 million in without-project conditions to \$5.4 million, reducing the EAD to about 10 percent of without-project EAD. The reduction is even more impressive in the three Ala Wai Canal reaches, where Waikiki flooding is of utmost concern; there, residual damages to structures, contents and infrastructure would be reduced to well under 1 percent of their without-project levels. Non-physical costs of flooding not quantified for this analysis, including emergency costs, traffic interruption impacts and business interruption costs, would be expected to follow suit. In addition, with the recommended plan's floodwalls in place, there is a greater than 99% assurance that the project would successfully contain a 0.01 ACE event under both current and projected (2025 and 2075) conditions, and assuming either low, intermediate or high sea level rise scenarios.

Really need to question what successfully contain means because a whole bunch of Mauka areas will flood and Waikiki will experience flooding due to backwater from storm drainage capping and backflow from outlets smaller than 18" without mechanical caps. The question becomes under what circumstance will the containment fail, or any one the several dozen individual elements of this project fail to work. It should be noted that the Pumping Stations are not flood proofed behind the walls and levees.

What do they mean by greater than 99% assurance, the modeling already shows plenty of pukas!

I don't think it can protect with a high sea level rise, they used intermediate and did not run modeling for high sea level rise. I think this is false.

Testimony
Kari Watase
kawatase@hotmail.com
cel. 393-8405

LATE

March 14, 2014
EEP/WLH Hearing
House Conference Room 325
9:30 AM

Aloha,

My name is Kari Watase, I was born and raised in Hawaii, I am a graduate of the University of Hawaii, Manoa and of Iolani School. I ~~am~~ oppose SB77.

In November of 2015, my Alma Mater Iolani School which has 1,900 students, over 300 faculty and staff, and significant real property, assets, and resources is a key stakeholder wrote a letter (**submitted as Exhibit #1**) in opposition to the Project. Iolani School serves all aspects of the general community and has a large alumni ohana to which I am a part.

Iolani School believes that the Agencies did not adequately engage them or other stakeholders since the October 2012 re-scoping of the Project and did not ~~fulfill~~ fulfill the requirements under the National Environmental Policy Act (NEPA) and the Hawaii Environmental Policy Act (HEPA).

In addition, Iolani's Letter points out that the Agencies admitted that their modeling was flawed and unrealistic. This same modeling was used to qualify and justify the Project for Federal Funding. Iolani School concluded that since the Agencies did not follow the correct process, take a hard look at the environmental effects of the proposed action, analyze reasonable alternatives, and utilize proper scientific methods that the Draft EIS at that time had to be significantly revised and reissued in a separate draft for further public review and comment. This statement still remains true and

even more so because the impacts and changes made without public oversight as included in the Final EIS are even more damaging and evident. The Agencies determined that Iolani School does not stand to benefit from the Project **(submitted as Exhibit #2)** and that it was not economically feasible to extend protection Coverage.

I would like to further expand on the Agencies obligation and requirements under law to dutifully fulfill the protocols established under the NEPA and HEPA. In the beginning of the 2012 re-scoped Project, the Agencies produced a "Public Involvement Plan v.04 dated June 2013" **(submitted as Exhibit #3)** to be used as a guide of engagement with all affected stakeholders. It describes a very comprehensive and detailed engagement with all affected stakeholders including getting early feedback on specific flood reduction measures. Landowners, schools, Neighborhood Boards, affected residents downstream of detention basins were to have been invited and involved in the process. The discussions were to have been on the level of "deal-breakers" and acceptable conditions or mitigation measures required to satisfy the community concerns.

The fact is that none of this has happened even though the Agencies claim to have conducted 44 engagements between 2012 and 2017. The communities and residents who are going to be affected are only now finding out about the Project.

My name is Kari Watase, I oppose SB77, and I request that you vote against this Bill.

Mahalo



IOLANI SCHOOL

HEAD OF SCHOOL

Final EIS, Appendix G
Pages 369-378

This was Iolani's response for being sent the Draft EIS with only 45 days notice before the last Public Meeting on September 30, 2015

November 9, 2015

Honolulu District, USACE
ATTN: Ala Wai Canal Project
Building 230, CEPOH-PP-C
Fort Shafter, HI 96858

RE: Ala Wai Canal Project ("Project") - Draft Feasibility Study Report with Integrated Environmental Impact Statement dated August 2015 (the "Draft Report/EIS" or "Report")

Dear Sir or Madam:

Iolani School respectfully submits these comments in response to the U.S. Army Corps of Engineers ("USACE") and State of Hawaii Department of Land and Natural Resources' ("DLNR") (USACE and DLNR, collectively, are the "Agencies") request for public input regarding their Draft Report/EIS.¹ We request that these comments and attachments be included in the administrative record.²

As of the date of submission of this letter, the Project website (www.alawaicanalproject.com) requested that written comments regarding the Draft Report/EIS be submitted to the USACE pursuant to NEPA and DLNR pursuant to HEPA, with a postmark no later than November 9, 2015. Iolani School is submitting its comments within the deadline prescribed and advertised by the Agencies.³

¹ Iolani School requests that it be a consulting party and/or stakeholder under both NEPA and HEPA.

² We understand that comments may be submitted separately by government agencies, members of the public, community organizations, and the like. All of those comments are hereby incorporated by reference.

³ Note that the presentation distributed at the public meeting on September 30, 2015 also notes a public comment deadline of November 9, 2015 for both the USACE under NEPA and DLNR under HEPA. Accordingly, Iolani School believes that its comments are timely under both NEPA and HEPA and must be considered and responded to.

Executive Summary.

At the request of the DLNR Division of Engineering, the USACE has conducted a feasibility study for the proposed Ala Wai Canal Project, Oahu, Hawaii. The purpose of this Project in its current scope is to reduce riverine flood risks in the Ala Wai Watershed. After considering several alternatives, the USACE has identified **Plan 3A** in the Report as its preferred plan ("Tentatively Selected Plan" or "TSP"). The analyses produced as a result of this study show the 1-percent annual chance exceedance ("ACE") floodplain extending into approximately 1,358 acres of the watershed with modeling results indicating resultant damages to more than 3,000 structures and approximately **\$318 million in structural damages**, not including loss to business income or loss of life. Increased to \$1.14 billion for the Final EIS within 2 years time

`Iolani School, with 1,900 students, over 300 faculty and staff, and significant real property, assets and resources, is a critical stakeholder in this plan and stands to be dramatically and negatively impacted by the proposed plan specifically due to the potential for flooding and damage to `Iolani's campus. In addition, the campus serves many more members of the community through numerous academic, arts and sporting events that are open to educators and students from throughout the state and beyond. The school is also the frequent site for conferences, summits, and meetings. In the Tentatively Selected Plan, the potential for flooding `Iolani School has been identified as an acceptable risk. We strongly disagree.

The Report states:

The risk of flooding `Iolani School could be further reduced by extending the floodwalls to protect the school, but it would induce higher water surface elevations on the Waikiki side of the Ala Wai Canal, as well as limit the effectiveness of the Ala Wai Golf Course detention improvement. The modeling results indicate that this would be an unacceptable trade-off, as the additional induced damages in Waikiki would greatly exceed any benefit associated with `Iolani School. Nonstructural solutions were evaluated as a means of providing additional protection in lieu of extending the floodwalls, but none were found to be economically feasible.

See Report at 8-6. Additionally, Appendix B to the Report notes: "One area of significance that does not stand to benefit from a reduction in flood damages and risk of loss of life, as the project is now formulated (under the Tentatively Selected Plan), is the `Iolani School buildings and campus grounds."

While two other plans that were considered included floodwalls to protect `Iolani School, those plans were not selected and the floodwalls are not included in the Tentatively Selected Plan being proposed by the USACE. The Report further explains that while other schools and properties will be protected, `Iolani School will remain in the 1% annual chance exceedance (ACE) floodplain:

In addition to reducing health and safety risks to the affected population, critical infrastructure and other public facilities would be removed from the

1-percent ACE floodplain, thus contributing to health and safety through increased resiliency in response to flood events (IMP SAF-2). Specifically, the project would provide protection for 2 of the 4 fire stations, the police station, both medical clinics, and 6 of the 9 emergency shelters that are currently in the 1- percent ACE floodplain. Critical infrastructure that would remain in the floodplain includes 2 fire stations (the Makaloa station in Ala Moana and the Wilder station in Makiki), and 2 emergency shelters (Lunalilo Elementary and Washington Intermediate in McCully/Mō'ili'ili). In addition to the three schools that serve as emergency shelters, the only other school that would remain in the 1-percent ACE floodplain would be a portion of `Iolani School; the other 7 schools that are currently in the floodplain would be protected by the project.

See Report at 5-80.

`Iolani School has reached out to the USACE and the State sponsor, DLNR, in hopes of working towards a collaborative solution that permits the Project to move forward while still adequately protecting the `Iolani community and area residents. While `Iolani School supports the overall intent of this flood mitigation project, we do not support the Project in its current scope with Plan 3A as the TSP as the TSP is based upon engineering that lacks scientific integrity. The TSP erroneously excludes significant economic impacts not considered by the Agencies, as well as includes unacceptable risk to the life and safety of the students and surrounding community.

`Iolani School also believes that the Agencies did not adequately engage `Iolani School or other stakeholders since the October 2012 re-scoping of the Project. For these reasons and others discussed in further detail below, we believe that the Draft Report/EIS must be significantly revised and reissued in a separate draft for further public review and comment.

NEPA.

The National Environmental Policy Act (“NEPA”) requires all federal agencies to prepare an environmental impact statement (“EIS”) for all “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. § 4332. “The primary purpose of an EIS is to serve as an action-forcing device to insure that the policies and goals defined in the Act NEPA are infused into the ongoing programs and actions of the Federal Government.” 40 C.F.R. § 1502.1. An EIS must “provide full and fair discussion of significant environmental impacts and inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.” *Id.* Among other things, an EIS must discuss the environmental impact of the proposed federal action, any adverse and avoidable environmental effects, any alternatives to the proposed action, and any irreversible and irretrievable commitment of resources involved in the proposed action. 42 U.S.C. § 4332(2)(C) and (2)(E).

Exploring alternatives is at the heart of the EIS. Federal agencies must, among other things, (1) rigorously explore and objectively evaluate all reasonable alternatives, and

for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated, (2) devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits, and (3) include appropriate mitigation measures not already included in the proposed action or alternatives. 40 C.F.R. § 1502.14.

Under NEPA, federal agencies must, to the fullest extent possible, encourage and facilitate public involvement in decisions which affect the quality of the human environment, and use all practicable means, consistent with the requirements of NEPA and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment. 40 C.F.R. § 1500.2(d) and (f).

HEPA.

The Hawaii Environmental Policy Act ("HEPA"), Hawaii Revised Statutes Chapter 343, is intended to ensure that environmental concerns are given appropriate consideration in decision making along with economic and technical considerations. Hawaii Administrative Rules ("HAR") § 11-200-1. Specifically,

Chapter 343, HRS, directs that in both agency and applicant actions where statements are required, the preparing party shall prepare the EIS, submit it for review and comments, and revise it, taking into account all critiques and responses. Consequently, the EIS process involves more than the preparation of a document; it involves the entire process of research, discussion, preparation of a statement, and review. The EIS process shall involve at a minimum: identifying environmental concerns, obtaining various relevant data, conducting necessary studies, receiving public and agency input, evaluating alternatives, and proposing measures for avoiding, minimizing, rectifying or reducing adverse impacts. An EIS is meaningless without the conscientious application of the EIS process as a whole, and shall not be merely a self-serving recitation of benefits and a rationalization of the proposed action. Agencies shall ensure that statements are prepared at the earliest opportunity in the planning and decision-making process. This shall assure an early open forum for discussion of adverse effects and available alternatives, and that the decision-makers will be enlightened to any environmental consequences of the proposed action.

HAR § 11-200-14.

Consultation is critical to the HEPA process. Accordingly, agencies are required to endeavor to develop a fully acceptable EIS prior to the time the EIS is filed with the appropriate office, "through a full and complete consultation process." HEPA requires that proposing agencies not rely solely upon the review process to expose environmental concerns. HAR § 11-200-15.

The Agencies did not take a "hard look" under Either NEPA or HEPA.

A federal agency must take a "hard look" at the environmental consequences of the proposed action before the decision to proceed is made. Earth Island Inst. V. U.S. Forest Serv., 351 F.3d 1291, 1300 (9th Cir. 2003); see 40 C.F.R. § 1500.1(b). Under state law, state agencies must ensure that environmental concerns are given appropriate consideration in decision making. HAR § 11-200-1. In this instance, the Agencies failed to meet these standards.

Modeling for the TSP 3A was based on erroneous topographical analysis which does not reflect the current elevation and building structures at `lolani School. This resulted in an improper projection of environmental consequences and economic damage.

The Tentatively Selected Plan lacks scientific integrity and should be rejected.

NEPA recognizes that sound methodology and scientific accuracy are paramount to the integrity of the NEPA process. Section 1502.24 specifically provides,

Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement.

40 C.F.R. § 1502.24 (emphasis added). Section 1500.1(b) further affirms that,

NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. "The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA".

40 C.F.R. § 1500.1(b) (emphasis added).

In this case, it is clear that the scientific analysis, modeling and methodology are flawed and cannot be relied upon. `lolani School requested and attended a meeting with USACE and DLNR on October 30, 2015. Upon being questioned at the meeting regarding the engineering analysis and validity of the inundation area modeling associated with the TSP, Mike Wong, P.E. USACE, admitted that the modeling was flawed, contained artifacts and represented flood boundaries as 1 ft. deep edges. Gayson Ching, P.E. DLNR, graphically illustrated how their model represented a completely unrealistic model of what would happen in a flood. Given the lack of scientific integrity and low quality of the information utilized in the Project analysis, the TSP cannot be accepted in its current form and the Report must be significantly revised and reissued after further public review and comment.

The Agencies should have involved `lolani School in the NEPA and HEPA process.

Federal agencies are required by NEPA to "make diligent efforts to involve the public in preparing and implementing their NEPA procedures." 40 C.F.R. § 1506.6. Further, for any proposed action, NEPA requires that there be an early and open process for

determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. This process is known as the scoping process. As part of the scoping process the lead agency must, among other things, invite the participation of affected agencies, any affected Indian tribe, the proponent of the action, and “other interested persons (including those who might not be in accord with the action on environmental grounds) . . .” 40 C.F.R. § 1501.7 (emphasis added).

Similarly, **HEPA requires the involvement of the public and concerned individuals.** HEPA provides that a proposing agency must “seek, at the earliest practicable time, the advice and input of the county agency responsible for implementing the county’s general plan for each county in which the proposed action is to occur, **and consult with other agencies having jurisdiction or expertise as well as those citizen groups and individuals which the proposing agency reasonably believes to be affected.**” HAR § 11-200-9(a)(1) (emphasis added). Pursuant to HAR Section 11-200-15, “[i]n the preparation of a draft EIS, proposing agencies . . . shall consult all appropriate agencies . . . and other citizen groups, and concerned individuals as noted in sections 11-200-9 and 11-200-9.1.” HAR § 11-200-15(a). Concerned individuals include those individuals which the proposing agency reasonably believes to be affected. See HAR § 11-200-9.

In this instance, the Agencies failed to properly reach out to `Iolani School and include it in the NEPA and HEPA process despite the fact that the Draft Report/EIS clearly indicates that `Iolani School will be affected. Project records show that `Iolani School was involved at a minimal level when the Project was focused on watershed restoration. However,

`Iolani School was neither involved in nor contacted regarding the re-scoping of the Project, despite the fact that the Project included negative impacts on the school and prominent mention in the Report. While two emails regarding the Project were sent to `Iolani School in 2014 and three emails in 2015, the USACE and DLNR failed to make any meaningful effort to communicate with `Iolani School beyond sending these emails between 2009 and 2015. USACE and DLNR did not respond to `Iolani School’s requests for an extension to the public comment period or requests for additional meetings with the `Iolani School community. It is clear the attempts to communicate and collaborate with `Iolani School were insufficient.

Specific questions regarding the Project and TSP.

`Iolani School has several questions and comments related to the Tentatively Selected Plan and is hereby requesting specific answers and/or responses to the following questions and/or comments:

1. Page ES-7 states that the Tentatively Selected Plan “allows for 2 feet of freeboard.”
 - a. Because the proposed floodwalls are four feet tall, a 2-foot freeboard would result in a backwater effect upstream in the Mānoa-Pālolo Drainage Canal and cause floodwaters to

overtop the drainage canal's west bank. Such flooding is not indicated in Figure 12b. Note that the elevations of the Ala Wai Golf Course and east bank of the Mānoa-Pālolo Drainage Canal are significantly higher than the elevations of the ʻIolani School, Ala Wai Elementary School, and east bank of the drainage canal.

2. Page ES-12 states that implementation of the Tentatively Selected Plan would substantially reduce the 1-percent ACE floodplain, with decreased water surface elevations of approximately 2.2 feet.
 - a. Is the 2.2 feet reduction an average value? What is the range in the reduction of the water surface elevation across the watershed? Stating a 2.2 feet reduction over the entire 1-percent ACE floodplain oversimplifies the true benefit of the Tentatively Selected Plan. Table 10 clearly shows a wide range of reduced flood depths so that some areas in the watershed clearly gain more benefits than other areas.
 - b. When the Report says a reduction in water surface elevation, does the Report mean a reduction in the base flood elevation? Will this Report or the data in the Report be used by DLNR, USACE or other government agencies to change the accepted FIRMs in the Ala Wai Canal Watershed? Does the hydrologic and hydraulic analysis, surveying data, and mapping comply with FEMA standards?
 - c. Are there any areas where the proposed measures of the Tentatively Selected Plan would actually increase flood elevations from current conditions?
3. Figure 12b Tentatively Selected Plan (Alternative 3A-2.2).
 - a. This figure shows flooding of the southern end of ʻIolani School's campus. In addition to ʻIolani School, Ala Wai Elementary School would also be at risk to flooding. The extent of the flooding shown on this figure does not correspond to existing topography at either the school campus or the immediately adjacent areas. The topography in this area is flat. However, this figure shows the floodwaters stopping arbitrarily along several buildings and an athletic field. If floodwaters overtopped the existing west bank of the Mānoa-Pālolo Drainage Canal, the topography at ʻIolani School and Ala Wai Elementary School is relatively flat such that the floodwaters would extend further than the area shown in this figure, perhaps even as far as Kamoku Street. No depressions, basins or other structures to detain floodwaters are in this area as indicated in the figure.

- b. This figure shows the Ala Wai Golf Course as a multi-purpose detention basin with an earthen berm only along the east and northeast perimeter of the golf course. The figure also shows the golf course being almost completely underwater. The elevations of the golf course and the east bank of the Mānoa-Pālolo Drainage Canal are significantly higher than the elevation at `Iolani School and Ala Wai Elementary School. Both schools would be flooded before the golf course could act as an effective detention basin. Floodwaters detained on the golf course would raise the floodwater elevations at both schools, further exacerbating the flooding beyond that shown in the figure.
4. Page 8-4 states that a limited level of protection for `Iolani School is “provided not by the Ala Wai Canal floodwalls, but through detention of floodwaters upstream and within the adjacent Ala Wai Golf Course.”
 - a. Did the hydraulic analysis assume all measures were constructed and operating under optimal conditions? Or did the analysis account for reduced capacity or effectiveness of the measures due to inadequate or infrequent maintenance?
 - b. Did the detention basin measures incorporate capacity to account for sediment accumulation so as not to reduce the flood attenuation capacity of the basins?
 - c. If a factor of safety was not incorporated into the hydraulic model to account for inadequate or infrequent maintenance of or sediment accumulation with the various detention basin measures, then the figures in the report do not accurately represent real world conditions and flooding would be more severe and extensive than that presented in Figure 12b. See previous comment on Figure 12b.
5. Page 3-4 provides a range of sea-level rise but doesn't state the specific value that was used in the hydraulic model.
 - a. What is the actual value of the sea-level rise assumed in the model?
 - b. What was the basis of the sea-level rise estimates?
 - c. Did the sea-level rise estimates match or correspond to values estimated by other organizations and scientists working on sea-level rise in Hawaii?
 - d. Did the hydraulic analysis incorporate storm surge effects in addition to sea-level rise?

6. What was the model used to conduct the hydraulic analysis? Was it a one-dimensional model like HEC-RAS? Was a 2-dimensional model used to conduct a hydraulic analysis or even considered for the analysis? Two-dimensional hydraulic models tend to give better, more accurate representation of actual flooding conditions.
7. How was the hydraulic model quality controlled? **The results presented in the Report and by USACE's own admission appear to be flawed.** Was a third-party evaluation of the hydraulic model conducted? Because the selected alternative will affect such a large number of businesses, residents, and visitors, should not that the hydraulic model undergo a more rigorous quality control procedure than USACE may normally conduct?
8. The executive summary (page ES-5) states that life safety considerations were taken into consideration. However, the Tentatively Selected Plan still leaves schools with children within the 1% ACE. How do you reconcile this statement on page ES-5 with the Tentatively Selected Plan that fails to provide protection for some of the schools within the watershed?
9. Was the survey used for the hydraulic analysis ground-truthed and when? What was the method used for the ground-truthing? Ground-truthing of the `Iolani School and Ala Wai Elementary School campuses does not appear to have been conducted based on the results of the model.
10. Figure 21: Potential Areas of Shallow Flooding due to Overtopping of Floodwalls/Berms or Failure of Interior Drainage Systems.
 - a. This figure shows the inundation due to overtopping of the floodwalls along the north bank of the Ala Wai Canal. This figure contradicts the floodwater extent shown in Figure 12b, which limited flooding at `Iolani School to the southern portion of the campus. Furthermore, Page 8-9 states that "There is no bathtub effect in any overtopping area and ponding is expected to be in the 1-to 2-foot range. Damages would be related to those at the 2-foot depth for those overtopping areas illustrated." The flooding extent in Figure 12b does not reflect the existing topography at either `Iolani School or Ala Wai Elementary School.
 - b. Figure 21 illustrates a condition with zero freeboard at the floodwalls and shows that the flooding would be extensive north of the floodwall. A 1- to 2-foot depth would result in a large volume of water in the shaded area shown in Figure 21 and result in significant damage to school property. As the water surface elevation in the Ala Wai Canal would increase to the full height of the floodwall, floodwaters would overtop the west bank of the Mānoa-Pālolo Drainage Canal (even before the floodwalls are overtopped) on to `Iolani School

and Ala Wai Elementary School property. Because "there is no bathtub effect" in this area, floodwaters would flow relatively freely across the flat terrain of the two schools. Any sediment and debris carried with the floodwaters would remain on the school properties as floodwaters either infiltrated or receded. The cleanup of the properties would be expensive and reduce the usefulness of the inundated areas for an unknown period, potentially harming the educational missions of both schools to our island's keiki. In addition, the waters of the Ala Wai Canal and sediment and debris may attract nuisance vectors and pose potential health risks to schoolchildren, depending on the nature and quality of the water, sediment and debris.

Conclusion:

ʻIolani School understands the importance of flood risk management and appreciates the USACE and DLNR's efforts to mitigate flooding in the Project areas. However, in evaluating a plan to address flooding, NEPA and HEPA must be followed and the environmental impacts of the action must be appropriately and accurately considered. The Agencies must follow the correct process, take a hard look at the environmental effects of the proposed action, analyze reasonable alternatives, utilize proper scientific methods, and mitigate negative environmental impacts to the extent practicable. Because NEPA and HEPA were not adhered to in this case, the Draft Report/EIS must be significantly revised and reissued in a separate draft for further public review and comment.

Sincerely,

A handwritten signature in black ink, appearing to read "T.R. Cottrell", written over a horizontal line.

Timothy R. Cottrell
Head of School

flood events in the study area is not high. That is not, of course, to say that lives would not be endangered in the event of a major flood. About 21 percent of the residual flooding expected with the project in place would be residential. In addition, flooding can be flashy and come with little warning. However, these conditions exist primarily in the steeply sloped, less populated hillside communities with relatively narrow flood plains. In the lower flood plain, it is much flatter and floodwater would rise more slowly. The project will include a new, basin-wide flood warning system to ensure that periods of intense and long duration rainfalls are highly monitored and occupants are given as much warning as possible. People should generally have adequate warning and time to move to higher ground or upper floors and out of harm's way. But under without-project conditions, with no such warning system in place, there is always a risk of loss of life in large flood events, especially at night. Further, long-term development trends will lead to more population density in the flood plain as high-rise buildings replace older, lower profile ones.

7.6.3 Iolani School. One area of significance and concern that does not stand to benefit from the project, as it is currently formulated, is the Iolani School buildings and campus grounds. Iolani is a kindergarten through 12th grade private school located on the right bank of reach ALA2. With no project in place, the potential exists for flooding practically the entire 25-acre campus, inundating more than one dozen large school buildings and endangering the lives of many of the 1,800 students enrolled there and the 200 faculty and 160 administrators and staff who work there. In a 0.01 ACE event with the project in place, flood waters would rise almost to the floor levels of several classrooms and/or administration buildings and also flood as much as one-half of the campus, although this would be mostly athletic fields, courts and support facilities. This limited level of protection for the school is provided not by the Ala Wai floodwalls, but entirely by detaining flood water upstream and within the adjacent Ala Wai Golf Course. The risk of flooding Iolani School could be further reduced by extending the Ala Wai floodwalls to protect the school, but it would induce higher water surface elevations on the Waikiki side of the Ala Wai, as well as limit the effectiveness of the Ala Wai Golf Course detention improvement. Both hydrologic/hydraulic and economic modeling confirm that this would be an unacceptable trade-off as the additional induced damages caused to Waikiki would greatly exceed any benefit Iolani School would receive.

Nonstructural solutions specifically for the Iolani School site also were evaluated as a means of providing additional protection in lieu of extending the Ala Wai floodwalls, but none were found to be economically feasible. A flood warning system, however, is included in the recommended plan for the benefit of all residual risk areas within the study area.

7.6.4. Ala Wai Golf Course. Similarly, initial evaluation of adding a nonstructural solution to the project to lower the risk of flooding at the Ala Wai Golf Course clubhouse indicates that flood proofing the structure would not be necessary. Its floor elevation appears to be above the with-project water surface elevations, and the impact of large flood events to the clubhouse and its contents should be relatively minor under both with and without-project conditions. Again, this will need to be confirmed during the PED phase with actual surveyed elevation data.

7.6.5. Resiliency and Superiority. Under the risk based concept, the system is expected to protect the project area up to the top of containment - in this case, the top of floodwall along the

This was to be performed for the Rescoped Plan in 2012 to meet NEPA and HEPA

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1 Project Management Meetings

Project management meetings will be held to coordinate actions within the project and among related projects in the watershed. While these efforts are primarily for coordination purposes, there are elements of public outreach and involvement and are therefore mentioned briefly below.

1.1 Project Delivery Team (PDT) Meetings

Purpose: To discuss project status and resolve issues and/or reach decisions on project development and execution.

Participants:

- USACE (lead)
- CH2M Hill
- Project sub-consultants, as necessary
- DLNR (project sponsor)
- City and County of Honolulu ENV and DFM (project sponsor)

Process: The PDT will meet monthly and will be convened by the USACE project manager.

1.2 Stakeholder Meetings

Purpose: To inform stakeholders on project development progress and to coordinate with other organizations, studies, and efforts that are occurring within the watershed.

Participants:

- USACE (lead)
- CH2M Hill
- Project sub-consultants, as necessary
- DLNR (project sponsor)
- City and County of Honolulu ENV and DFM (project sponsor)
- Representatives from community and private organizations
- Public agencies (non-project sponsor)
- Elected officials (or their representatives)
- Representatives from related projects

Neighborhood Boards not invited

Missing Schools - not invited

Missing Landowner stakeholders - not invited

Missing affected Residents surrounding and downstream of detention basins - not invited

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Process: These meetings will be held at specific milestones (to be determined), possibly once or twice a year, to review the status of the Ala Wai Canal Project (AWCP) and other projects and programs in the Ala Wai Watershed. These meetings are primarily update briefings and opportunities to raise issues and to coordinate amongst related projects; they are not meant to be working meetings where issues are resolved.

1.3 Technical Advisory Team (TAT) Meetings

Purpose: To provide a forum for key PDT members and key stakeholders to work through specific technical issues for expeditious decision-making.

Participants:

- CH2M Hill (lead)
- USACE
- Federal, State and Local agencies as applicable
- Project sub-consultants, as necessary

Landowners and schools should be key stakeholders

Process: TATs will be formed around specific issues and will be made up of working level technical experts. Meetings will be held as needed until the issue is resolved.

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2 Public Involvement

Several public participation techniques will be used to reach out to various stakeholder groups at different points in the process. Different techniques should be used depending on the group targeted and the purpose of the involvement. The following is a list of proposed techniques that may be employed during this phase of the project.

2.1 Individual Interviews and Small Group Meetings

Purpose: To get early feedback on specific flood reduction measures. This input will inform the alternatives analyses that result in the tentatively selected plan (TSP).

Participants:

- Townscape (lead)
- USACE (support)
- CH2M Hill (support)
- Landowner and community leaders
- Community and private organizations
- Public agencies
- Quasi-governmental organizations
- Elected officials (possibly)

Not invited or not done to get early feedback, schools not listed

Process: Two or three potentially controversial flood reduction measures will be identified. A Focus Group meeting will be held on each measure identified to get input on user concerns, potential "deal-breakers," and acceptable conditions or mitigation measures. Specific groups and individuals will be invited to participate.

Sounds good but who was invited and did it even happen?

2.2 Briefings to Stakeholder Groups

Purpose: To update key stakeholders on the project.

Participants:

- USACE (lead)
- Remaining PDT members (support)

Process: Briefings may be scheduled based on a formal request from an entity or individual representing a key constituency (e.g., elected official). Alternatively, a briefing might be proposed by the PDT. If a briefing is determined to be beneficial and/or necessary, USACE will coordinate and conduct the briefing with support from the rest of the PDT, as needed.

They conveniently forgot about the Landowners, impacted residents, schools, community associations, and Neighborhood Boards

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2.3 Open House Meetings

Purpose: To provide community members with opportunities to learn about the Ala Wai Canal Project and the Tentatively Selected Plan (TSP), and to build community support for project implementation.

Participants:

- Townscape (logistics and coordination)
- USACE (presentation)
- CH2M Hill (support)
- All stakeholders would be invited to attend

They did not invite all stakeholders or Neighborhood Boards or Schools

Process: Hold two public meetings in an "Open House" format to present preliminary project concepts to the public. The Open House would begin with a brief overview presentation and question and answer session. After the presentation and discussion, attendees may circulate and view maps and other graphics illustrating preliminary project concepts. Project staff would be on hand to answer questions and hear comments. Comment sheets would provide a way for participants to submit written questions and comments.

2.4 EIS Public Meeting

This seems like the September 30, 2015 Public Meeting, public comment was recorded, no Q&A

Purpose: To gain public feedback on the proposed alternatives and TSP and to satisfy the requirements of HRS Chapter 343 and NEPA.

Participants:

- Townscape (logistics and coordination)
- USACE (presentation)
- CH2M Hill (support)
- All stakeholders would be invited to attend

Process: One public meeting on the Draft EIS will be held at an accessible location within the watershed. The various alternatives will be presented and feedback from the public will be recorded for consideration when developing the Final EIS and preferred alternative.

2.5 Project Information Sheet/FAQs

Purpose: To introduce the project to stakeholders and provide them with basic information.

Process: A Project Information Sheet will be developed as a concise handout to use in stakeholder meetings that includes information such as the project purpose, goals, process, map of the project area, and contact information.

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2.6 Project Website

was shutdown within weeks after the September 30, 2015 Meeting

Purpose: To provide the larger public with background information and materials to keep them apprised of project progress, next steps, and how they can provide input.

Participants:

- CH2M Hill (lead)
- Remaining PDT members (support)

Process: A project website will be developed and regularly updated to provide information on the project, including project background, purpose, upcoming meetings and events, contact information, and review materials. Materials for download from the website could include the project information sheet, notes from the public meeting, the Notice of Intent and EIS Preparation Notice, and the Draft and Final Feasibility/EIS Report.

2.7 Email Updates

Purpose: To alert key stakeholders and interested parties of project milestones and to direct them to the project website for materials and information.

Participants:

- CH2M Hill (lead)
- Remaining PDT members (support)

Immediately signed up upon being notified about the Project in September of 2015 and never received one email from them.

Process: Periodic updates will be sent to interested parties using project email list that will be compiled and maintained. Email topics may include milestone highlights, announcements of meetings and comment deadlines, and notifications of new materials on the project website. Townscape will provide a spreadsheet of previous project contacts.

2.8 News Media

Purpose: To notify the general public of highlights and progress of the project.

Participants:

- USACE (lead)
- Remaining PDT members (support)

Process: All media requests will be referred back to the USACE for comment. If press releases are determined to be necessary or beneficial, the appropriate team member(s) will draft the content of the piece and review it with the PDT before forwarding it to USACE and DLNR for final approval and release.

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3 National Flood Risk Management Program Public Involvement Pilot Project

The AWCP was selected as one of five flood risk management projects nation-wide to be the recipient public involvement services to complement public involvement efforts already planned as a part of the project. The scope of these services are yet to be determined.

Purpose: To work with the tourism industry, and Waikīkī interests in particular, to raise their awareness about flood risks in the Ala Wai Watershed and to improve their understanding of their role in mitigating those risks.

Participants:

- USACE (lead)
- Waikīkī and Tourism Industry Interests:
 - Hawai'i Tourism Authority
 - Hawai'i Hotel and Lodging Association
 - Waikīkī Business Improvement District
 - Waikīkī Improvement Association
 - National Disaster Preparedness Training Center

Process: To be determined.

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4 Townscape Effort

The current phase of the AWCP has been broken down into four major tasks: (1) Project Management, (2) Draft Integrated Feasibility/EIS Report, (3) Public Involvement, and (4) Final Integrated Feasibility/EIS Report.

4.1 Task 1: Project Management

Townscape will participate in the various project management meetings (PDT, TAT, and Stakeholder), as needed, providing support to USACE and CH2M Hill.

4.2 Task 2: Draft Integrated Feasibility/EIS Report

Townscape currently has no activities associated with this task.

4.3 Task 3: Public Involvement

Townscape will solicit public involvement through small group meetings (focus groups) and open houses to better understand community concerns regarding specific proposed flood mitigation measures and a public meeting on the Draft Integrated Feasibility/EIS Report.

4.3.1 Focus Group Meetings

Focus group meetings will be held on up to three specific flood mitigation measures or groups of measures in order to identify public concerns about each measure or measure grouping that should be taken into account during measure design, alternatives analysis, and selection of TSP. The measures selected for discussion will be those that are potentially the most controversial for the public.

The PDT will agree upon up to three measures/measure groupings that are anticipated to be controversial. Measures preliminarily proposed for focus group meetings include the following:

1. Mānoa Detention
 - Wet/Dry Dam in Mānoa Valley
 - Detention Basins in Mānoa Valley
 - Multipurpose Detention at Mānoa District Park
2. Ala Wai Golf Course
 - Multipurpose Detention at Ala Wai Golf Course
 - Ala Wai Golf Course Sediment Basin (DLNR)
3. Ala Wai Canal modifications
 - Widen Mouth of Canal
 - Modify McCully Street Bridge
 - Levees around the Canal
 - Pump System

4' solid reinforced concrete wall as high as 4-1/2'

Three 45' high pumping stations

Flood gate and flood pumps missing from focus groups

Palolo Detention, Makiki Detention missing from focus groups

Impact to schools and school lands

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Townscape, with assistance from other members of the PDT as needed, will present the overall project purpose, goals, and objectives. After briefly outlining the list of proposed measures, Townscape will describe the specific measure that the focus group is convened to discuss. This description should include location, need, potential benefits, and tradeoffs. After this, the focus group will be asked the following questions:

- What concerns do you have about this proposed measure
- Is this measure a “deal-breaker” for you?” What about it makes it a “deal-breaker?”
- What conditions or mitigation measures would make the measure acceptable to you?

Discussion from the focus group meeting will then be taken back to the PDT for incorporation into the project. It is anticipated that the feedback will inform design of the measures to make them more acceptable to the community and alternatives analysis during selection of TSP.

4.3.2 Public Meeting

The public meeting will aid in understanding potential impacts and concerns associated with the project alternatives, and is also mandated by NEPA. One public meeting will be held within the watershed, possibly at the Hawai'i Convention Center, where the EIS Scoping Meeting was previously held, or at an area school.

Townscape, with the assistance of the PDT, will present the project purpose, goals, objectives, alternatives, potential impacts, proposed mitigation measures, and TSP. The public will then be provided an opportunity to ask questions and comment on the project, possibly through verbal comment, one-on-one discussions with project team members in an “open-house” format, and/or written feedback. Attendees should be informed of how they may provide further comment on the Draft Integrated Feasibility/EIS Report, and of the deadline for public comment. This information, as well as notes from the public meeting should be posted to the project website.

The PDT should use the feedback from the public meeting along with any other comments received on the Draft Integrated Feasibility/EIS Report to select a preferred plan.

4.3.3 Briefings to Stakeholder Groups

Townscape will coordinate a limited number of briefings to key stakeholder groups that the PDT identifies. Depending on the nature of the update, other members of the PDT may be needed to present project material and/or answer questions.

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Appendix A: Stakeholder Groups

The range of potential stakeholders is large and includes land owners, community members, environmental and community organizations, elected officials, and public agencies. The following is a listing of individuals and groups that the project team should consider contacting as part of the public involvement process, as well as a short description of who they are and why they should be included.

A.1. Community at Large

The community at-large includes anyone that may have an interest in the project; they do not represent anyone or anyone's interests other than their own.

A.2. Landowners and Community Leaders

Landowners and other individuals to be contacted as a part of the stakeholder involvement process have a particular interest in the project, but may not have a formal organization to represent them. Private landowners include those that either have been impacted by previous flooding or will be impacted by the implementation of one or more measures proposed by this project. This group may share maintenance responsibilities, or may need to be approached to negotiate easements through their property or for land acquisition. Community associations may be able to represent the interests of several individual landowners.

Because it will not be possible to meet individually with everyone who might be affected by the project, it would be beneficial to target those individuals that residents have been identified as being representative of their community, or have significant knowledge of certain aspects of the community. These may include long-time residents, or other individuals who have been active in the Ala Wai Watershed, but may not necessarily hold official leadership positions in organizations at this time.

A.3. Businesses

This group includes businesses whose operations either were previously impacted by flooding or will be affected by the implementation of one or more measures proposed by this project. This group may share best management practices and maintenance responsibilities, or they may need to be approached to negotiate easements through their property. Business associations may be able to represent the interests of several individual businesses.

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A.4. Community and Private Organizations

Community and private organizations are formally organized 501(c)(3) non-profit organizations as well as less formal groups with a membership and a focus of interest that may be related to or affected by the project, but are not necessarily landowners in the watershed. These organizations range in purpose and demographics and offer a way to sample various perspectives within the community. Examples of Community and Private Organizations include the Ala Wai Watershed Association (AWWA), Canoe and Rowing Clubs, Hawai'i Transportation Association, Kapi'olani Park Preservation Society, Makiki Stream Stewards, Mālama Mānoa, Pālolo Community Council, The Outdoor Circle, Waikīkī Yacht Club, and others.

A.5. Public Agencies

Public agencies are a part of the executive branch of government at the Federal, State, and local levels. Several public agencies are a part of the sponsoring team that is developing the project. In addition, some agencies currently have other projects or initiatives within the watershed that should be coordinated with the planning of this project, and some agencies will also be responsible for actions throughout this phase of the project, as well as during implementation and subsequent operations and maintenance.

City Agencies and Affiliated Entities

Because the City administers several permits that may be necessary to complete the project, they should be included in the process to ensure that final designs conform with permit restrictions and requirements, thus improving the likelihood of implementation. Portions of the streams and surrounding areas are owned by the City and some of the recommended project features may be sited on these lands. Some of these features may also require the City to operate and maintain them, thus making the City's participation critical to this process.

The City Department of Environmental Services is also a sponsor of the AWCP. Additionally, the City was also a local sponsor in the Mānoa Watershed Project (MWP) and may have special insight into what might be appropriate regarding the planning and design of the AWCP.

State Agencies

Like the City, the State also administers permits that may be required for implementation of the project, thus making it important that they participate in the planning and design phase. The State, through the DLNR, is also a local sponsor in this phase of the project and will provide input on planning and design. Project sponsors are expected to participate in planning and technical meetings, as appropriate, and offer guidance to ensure that the project is implementable, as well as to ensure that the project features address their needs and standards.

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The Ala Wai Canal and portions of its tributaries and surrounding areas are owned by the State and some of the recommended project features may be sited on these lands. If needed, the State may also be responsible for land acquisition costs, construction costs related to modifications to infrastructure such as roads and bridges, and operation and maintenance of features on their lands.

The University of Hawai'i is also considered a State Agency and can provide local expertise on several aspects of the project including watershed ecosystems, invasive species impacts, hydrology, etc. Additionally, the University of Hawai'i at Mānoa campus is located along Mānoa Stream, was previously impacted by flooding, and has implemented projects to protect themselves from future flood events.

Federal Agencies

Federal agencies will participate primarily in the environmental review process through various consultations and assessments. Early consultation with agencies regarding Federal permits and EIS requirements will benefit project implementation. Some agencies also have data records and expertise in developing an understanding of the area and past flood events, and designing for future occurrences. Other agencies have expertise on ecosystem restoration best practices. One federal agency, USACE, is a project co-sponsor and is responsible for funding, technical assistance, project management, and stakeholder consultation. Other federal agencies, i.e., the Natural Resources Conservation Service and the Federal Emergency Management Agency, were or are sponsors of other related projects in the watershed.

A.6. Quasi-Governmental Organizations

A quasi-governmental organization is one that is linked to or supported by a public agency, but acts as an independent entity. Some of these organizations have areas of focus that extend beyond the Ala Wai Canal Watershed. **Examples of Quasi-Governmental Organizations include the Neighborhood Boards, Ala Wai Marina Board, the Ko'olau Mountains Watershed Partnership, and others.**

A.7. Elected Officials

Elected officials are persons that are voted into public office to represent the community at the local (City Council), State (State House of Representatives and Senate), and Federal (U.S. Congress) levels. It is important to keep elected officials apprised of the project and to have their support because they will be critical in getting permit approvals, implementation funding, and maintenance agreements. Their interest in the project will ensure that it maintains a high priority for agencies. Also, as representatives of the community, they should be approached for an overall understanding of the major issues that need to be considered, as well as details that should be addressed.

3.14.19

Testimony

Sidney Lynch

2540 Makaulii Place

Palolo

841-8282

sjikenjoinc@hawaii.rr.com

LATE

1. My name is Sidney Lynch and I live in a small community directly belong one of the planned detention basins on Waiomao Stream in Palolo. We first learned of this project in Oct 2018 from an article in the StarAdvertiser. As our land is not being considered for eminent domain we were never directly notified. Apparently we were supposed to intuitively realize that the notices the USACE posted in the paper in 2014 about the Ala Wai Flood Control project were relevant to our living situation. Even though USACE is right now trying to 'prove' that they did adequate public notification that is not the case.
2. I want to ask each of you on these 2 committees if you are aware that this project to stop the 1% chance of a 100 year flood will ONLY protect Waikiki? That the neighbourhoods of Maikiki, McCully, Moilili and parts of Kapahulu will STILL flood. What kind of project is this? Are the people in these neighbourhoods aware of this?
3. The draft EIS is 2340 pages long, the final EIS over 2500. Trying to read thru such documents online is very difficult and the language is not for your average person. Again, I would like you to ask yourselves if you have looked at these documents or if you are just relying on your aides to look for you and are just listening to the USACE assurances that this is the magical fix?
4. Who will pay for the ongoing, at least 50 year maintenance of these basins? The city will be tasked with this and the city has no money. It already has way too much to do with its current infrastructure requirements. A case in point, one of the roads in Palolo Valley is collapsing. Last night at the Palolo Neighbourhood Board meeting Department of Facilities & Maintenance head Mr. Ross Sasamura said there is a request for 1.5 million for Kuahea St. Yet at that same meeting Department of Design & Construction Mr. Robert Kroning had just stated that the project needs 20 million. There is also another DFM proposal to dredge 95 stream mouths on Oahu alone. The Wailupe Stream in Alna Haina is the stream that flooded this past April. It already has a detention basin yet it still flooded as the city is unable to adequately maintain that stream. Same with the Woodlawn flood in Manoa – poor stream maintenance. I am not blaming the city, I am pointing out they are already over-extended financially and over-committed with existing projects.
5. This original Ala Wai Ecosystem project, now morphed into the Ala Wai Flood Control project is 30 years in its development. It totally ignores sea level rise which as we know today is the big water problem that Waikiki faces, not a 1% chance of a 100 year flood.
6. This plan has no provisions or attempts at mitigation of the water from the valley sides, no bio-swales, no green areas around houses for water absorption to the aquifer, not grasscrete for parking pad for water absorption, collection of water from roofs. The water during our sudden rainfalls in the valleys literally streams off the hillsides and into the storm drains. There is no modeling in the EIS about what volume of water goes into the streams from the valley sides yet

this additional volume of water below the planned basins is used to justify a need for upstream detention basins.

- see find EIS Appendix H for pump rejection*
7. With sea level rise, the likelihood is that the Ala Wai will have to be pumped. When I asked Mike Wyatt of USACE at the Feb. 22 WAM hearing, why this is not being considered, he replied that the largest pump in New Orleans can pump 19,000 cubic feet of water per minute and our sudden rainfalls are predicted to produce 20,000 cu ft per minute. Not much of a difference. And that's just with 1 pump at the open end of the Ala Wai. The Dec 2017 study by DLNR Hawaii Sea Level Rise and Adaption Report explores connecting the other end of the Ala Wai as it was originally designed. If you had two pumps that would be more than adequate. If you cleaned up the stream water you could use it to flush the Ala Wai
 8. The Legislature should make more effort to educate people along the streams not to pollute them so the water reaching the Ala Wai is clean. 808 beach cleanups is doing a fantastic job on the beaches. The City Adopt A Stream program is like a secret – hardly anyone knows about it.
 9. Finally, many legislators are telling us 'there is no project' yet as it is still going thru the process. Yet the BLNR on Jan 26 gave USACE permission to begin site explorations on public lands in Maikiki and Manoa. USACE sent letters to the private homeowners in Palolo requesting access. Why are they doing this if the project is not yet green-lighted? Employees of Tetrattech, which is a private company that works for the DLNR, went onto Jordan Wong's private property in Palolo to 'look around' when they were seen and questioned by Mr. Wong.
 10. I hope that this project will stop here, another study undertaken with input from leaders in the field asked to come in and develop a well rounded plan that incorporates water recapture from the valley sides & sea level rise as well as flood mitigation and this time with full public exposure. The public is not stupid. We do not want Waikiki to flood but we don't want our natural streams torn up & neighbourhoods sacrificed to do so.

Thank you for your consideration.

VALUE ENGINEERING PROPOSAL

PROPOSAL NO: 4

PAGE NO: 1 OF 4

DESCRIPTION: Provide pump station at Ala Wai canal exit to ocean

ORIGINAL DESIGN: There is no previous design

Meaning not considered in this EIS?

PROPOSED DESIGN: In addition to a flood gate (proposal #3), a pump station will be constructed and used in combination with the gate to provide flood risk management. The flood or tidal gate design would consist of a miter gate to cover a 120 ft wide opening built across the canal mouth 300 ft upstream from the Ala Moana Blvd Bridge. The miter gate would consist of 2-65 ft wide by 15 ft tall steel gates with concrete footing at invert -10 ft and top of gate at +5 ft elevation. The side structure on the left bank would be built with not more than 5 ft protruding into the canal (canal is 160 ft wide) while the right bank side structure would be built as part of the pump house sump and stilling basin. Assume the side walls (monoliths) would be 5 foot thick and the foundation slab to be 8 foot thick reinforced concrete. Bottom foundation would be 140 ft by 80 ft in size. Side walls would be 80 ft by 15 ft. The pump house design would be a pump house 400 ft long by 100 ft wide (of which 40 ft extends over/into the canal) with a roof line about 40 ft tall. The pump house would contain 10 pumps each 96-inch axial flow 800hp pumps (MWI pumps model no. NC396P37) plus sump, stilling basin, and other operating equipment. The sump would be located on the upstream end of the pump house upstream of the gate and be built in the canal, about 300 ft long by 40 ft wide, form the footing of the pump house over the canal, and have an invert elevation of -20 ft. Assume the entire sump to be built of reinforced concrete 3 ft thick with steel grates spaced throughout the walls on the canal sides. The stilling basin would be located on the downstream end of the pump house downstream of the gate and be about 100 by 40 ft, invert of -10 ft, about 120 linear ft of reinforced concrete wall 3 ft thick, also with steel grates spaced throughout the walls on the canal sides. The purpose of the stilling basin would be to help reduce turbulence from the pump outtake lines and along with the about 300 ft distance upstream from the Ala Wai Yacht Harbor, have a minimal impact to wave action in the harbor caused by the pumping activity. Next to the pump house, would be a 60 ft by 100 ft back-up generator house (if needed; it may all fit into the pump house). Access road, 15 ft wide, would be from Ala Moana Blvd and from Kalakaua Ave using the existing canal promenade walkway. There is a 75 ft wide access along the right bank (the promenade walkway width between canal and property boundary with Yacht Harbor Towers) and 50 ft wide access on the left bank using the Ala Wai Blvd road. Staging area to use park land at Ala Moana Beach Park. Promenade pedestrian access can be blocked during construction but access along Ala Wai Blvd to Harbor View Plaza building must be maintained.

The operations and timing of the flood pumps and gate are not well explained for review and comment.

ADVANTAGES:

1. Gates to be closed prior to the storm and with pumping provides additional storage within the canal walls prior to the flood peak. In HEC-HMS model, pumping limited only to elevation -5 ft.
2. With optimization of pumping and gate openings during and after the flood peak, this alternative can provide 1% ACE event level of protection and replace all the measures currently part of the TSP (Alt 3a). Alternative would only consist of this one measure. Project impacts would only occur in this one location. No detention basins and floodwalls would be needed.

Hello! No upstream detention basins needed and no concrete floodwalls around the Ala Wai Canal needed. This one measure replaces all measures ... what does that tell you?

VALUE ENGINEERING TEAM STUDY

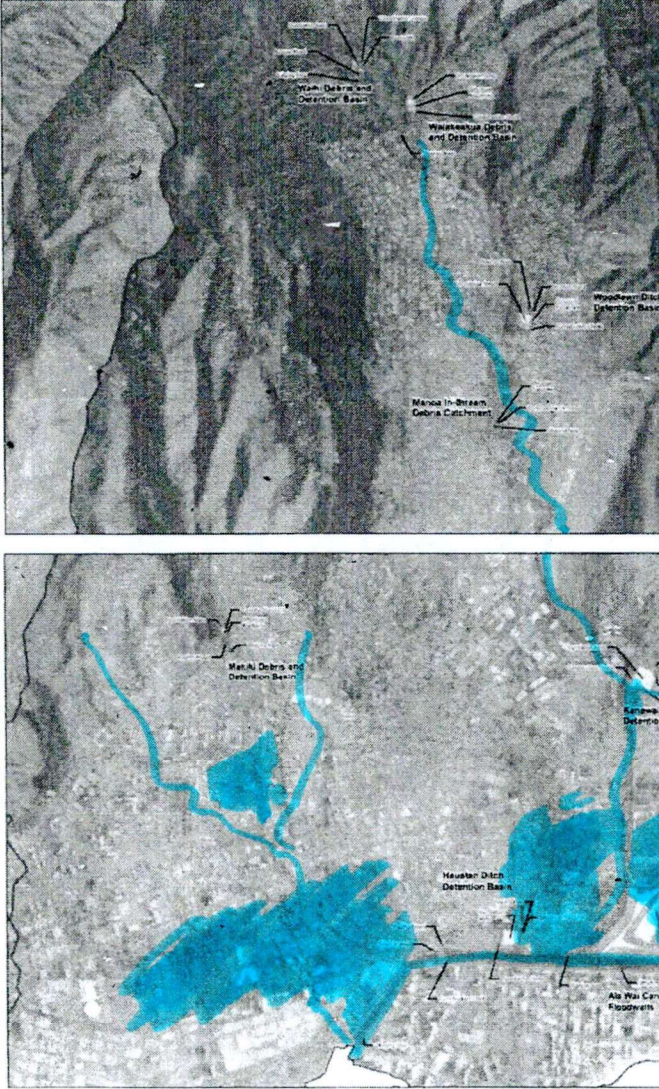
SUMMARY OF RECOMMENDATIONS/ACTIONS

No.	Proposals and Comments	Potential Savings	Accepted or Rejected
1	Provide street lighting for new access roads.	-\$113,400	Rejected
2	Provide concrete pad in the detention basin for cleaning operation and maintenance.	-\$255,114	Rejected
3	Provide a flood gate at the Ala Wai canal exit to the ocean.	Deleted	
4	Provide pump station at ocean side of canal located on a structure built above the canal.	-\$130,600,350	Rejected
5	Provide sheet pile walls for all vertical walls.	\$952,790	Rejected
6	Design detention basins so that fill material is not required to be hauled to site. Balance cut fill.	\$4,252,467	Accepted, but deferred to PED
7	Provide gravel access roads in lieu of concrete.	Deleted	
8	Provide single generator for multiple pump stations.	Deleted	
9	Provide pump station at Kapahulu side of canal and use existing storm drain to discharge to the ocean.	Deleted	
10	Revisit using Manoa Park as a multipurpose park to include function as a detention area.	-\$2,582,801	Rejected
11	Delete either pump station #1 or pump Station # 2 and use one pump station to handle both drainage areas and pump into canal.	\$4,667,625	Accepted, but deferred to PED
12	Provide a fence around the detention basins for safety.	Comment	Accepted where deemed appropriate

Model of 1% Chance Flood Without Army Corps Project



Model of 1% Chance Flood With Army Corps Project



VALUE ENGINEERING TEAM STUDY

SUMMARY OF RECOMMENDATIONS/ACTIONS

No.	Proposals and Comments	Potential Savings	Accepted or Rejected
1	Provide street lighting for new access roads.	-\$113,400	Rejected
2	Provide concrete pad in the detention basin for cleaning operation and maintenance.	-\$255,114	Rejected
3	Provide a flood gate at the Ala Wai canal exit to the ocean.	Deleted	
4	Provide pump station at ocean side of canal located on a structure built above the canal.	-\$130,600,350	Rejected
5	Provide sheet pile walls for all vertical walls.	\$952,790	Rejected
6	Design detention basins so that fill material is not required to be hauled to site. Balance cut fill.	\$4,252,467	Accepted, but deferred to PED
7	Provide gravel access roads in lieu of concrete.	Deleted	
8	Provide single generator for multiple pump stations.	Deleted	
9	Provide pump station at Kapahulu side of canal and use existing storm drain to discharge to the ocean.	Deleted	
10	Revisit using Manoa Park as a multipurpose park to include function as a detention area.	-\$2,582,801	Rejected
11	Delete either pump station #1 or pump Station # 2 and use one pump station to handle both drainage areas and pump into canal.	\$4,667,625	Accepted, but deferred to PED
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VALUE ENGINEERING PROPOSAL

PROPOSAL NO: 4

PAGE NO: 1 OF 4

DESCRIPTION: Provide pump station at Ala Wai canal exit to ocean

ORIGINAL DESIGN: There is no previous design

Meaning not considered in this EIS?

PROPOSED DESIGN: In addition to a flood gate (proposal #3), a pump station will be constructed and used in combination with the gate to provide flood risk management. The flood or tidal gate design would consist of a miter gate to cover a 120 ft wide opening built across the canal mouth 300 ft upstream from the Ala Moana Blvd Bridge. The miter gate would consist of 2-65 ft wide by 15 ft tall steel gates with concrete footing at invert -10 ft and top of gate at +5 ft elevation. The side structure on the left bank would be built with not more than 5 ft protruding into the canal (canal is 160 ft wide) while the right bank side structure would be built as part of the pump house sump and stilling basin. Assume the side walls (monoliths) would be 5 foot thick and the foundation slab to be 8 foot thick reinforced concrete. Bottom foundation would be 140 ft by 80 ft in size. Side walls would be 80 ft by 15 ft. The pump house design would be a pump house 400 ft long by 100 ft wide (of which 40 ft extends over/into the canal) with a roof line about 40 ft tall. The pump house would contain 10 pumps each 96-inch axial flow 800hp pumps (MWI pumps model no. NC396P37) plus sump, stilling basin, and other operating equipment. The sump would be located on the upstream end of the pump house upstream of the gate and be built in the canal, about 300 ft long by 40 ft wide, form the footing of the pump house over the canal, and have an invert elevation of -20 ft. Assume the entire sump to be built of reinforced concrete 3 ft thick with steel grates spaced throughout the walls on the canal sides. The stilling basin would be located on the downstream end of the pump house downstream of the gate and be about 100 by 40 ft, invert of -10 ft, about 120 linear ft of reinforced concrete wall 3 ft thick, also with steel grates spaced throughout the walls on the canal sides. The purpose of the stilling basin would be to help reduce turbulence from the pump outtake lines and along with the about 300 ft distance upstream form the Ala Wai Yacht Harbor, have a minimal impact to wave action in the harbor caused by the pumping activity. Next to the pump house, would be a 60 ft by 100 ft back-up generator house (if needed; it may all fit into the pump house). Access road, 15 ft wide, would be from Ala Moana Blvd and from Kalakaua Ave using the existing canal promenade walkway. There is a 75 ft wide access along the right bank (the promenade walkway width between canal and property boundary with Yacht Harbor Towers) and 50 ft wide access on the left bank using the Ala Wai Blvd road. Staging area to use park land at Ala Moana Beach Park. Promenade pedestrian access can be blocked during construction but access along Ala Wai Blvd to Harbor View Plaza building must be maintained.

The operations and timing of the flood pumps and gate are not well explained for review and comment.

ADVANTAGES:

1. Gates to be closed prior to the storm and with pumping provides additional storage within the canal walls prior to the flood peak. In HEC-HMS model, pumping limited only to elevation -5 ft.
2. With optimization of pumping and gate openings during and after the flood peak, this alternative can provide 1% ACE event level of protection and replace all the measures currently part of the TSP (Alt 3a). Alternative would only consist of this one measure. Project impacts would only occur in this one location. No detention basins and floodwalls would be needed.

Hello! No upstream detention basins needed and no concrete floodwalls around the Ala Wai Canal needed. This one measure replaces all measures ... what does that tell you?

Pumps run only before big storms, better locations are available.

VALUE ENGINEERING PROPOSAL

PROPOSAL NO: 4

PAGE NO: 2 OF 5

DESCRIPTION: Provide pump station at Ala Wai canal exit to ocean

DISADVANTAGES:

1. Changes the canal ecosystem during large storm events. By shutting out tidal influence and pumping out canal and then having canal fill with flood runoff (freshwater) before mixing again with ocean water when gates are opened would result in killing of fish species. Although most fish and other aquatic species in canal are mostly invasive species, the rapid mixing of ocean and freshwater would create ecosystem havoc. Some floating runoff debris and dead fish would be released into the small boat harbor even with floating trash boom in place. The rapid mixing would also result in density currents mobilizing bottom sediments into and out of the canal. These sediments could have an impact to the yacht harbor and near ocean environment.
2. Location of pump house near residential apartments (Yacht Harbor Towers) would result in noise issues to residents when pumps are running. Noise abatement in structure is needed.
3. Gate and pump house structures to impact view-plane along canal between Ala Moana Blvd and Kalakaua Ave. ← Better locations available, split locations, near intersect, pipe to mouth
4. Gate and pump house structures to impact recreational uses, canoes, kayaks, and small boats, when gates are closed and pumps are turned on. ← Minimal impact only closed on big storm
5. Gate opening during and after peak flow event may create turbulence or unwanted currents into yacht harbor. ← Minimal impact, controlled opening or wait for stream to refill canal slowly.

JUSTIFICATION:

This proposal meets the functional requirements of the project at a reduced first cost.

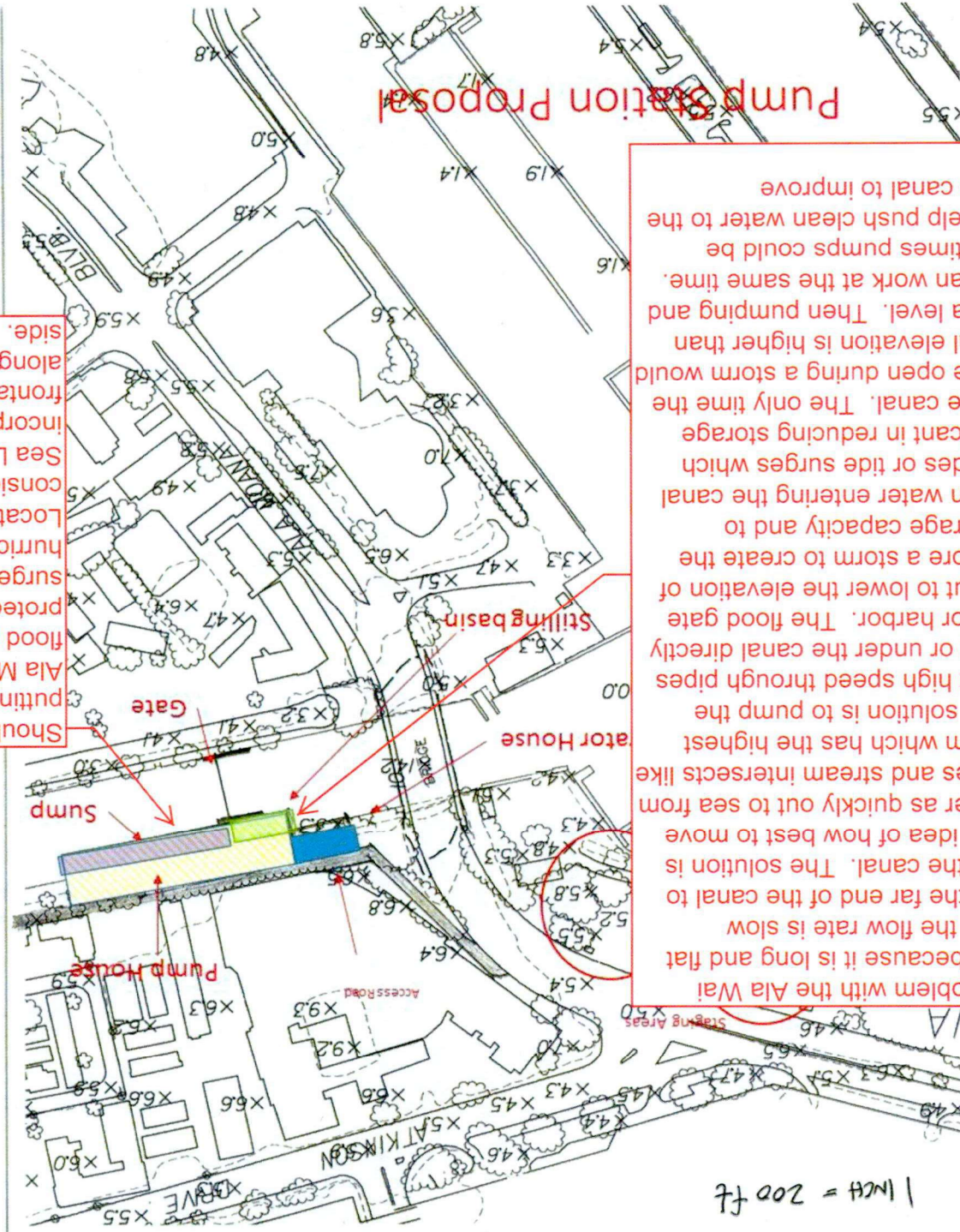
MUTUALLY EXCLUSIVE:

N/A

Gates don't have to be reopened until stream water refills the Ala Wai Canal back to sea level or controlled refilling with both stream and ocean waters.

Drawing No. 1

1 inch = 200 ft

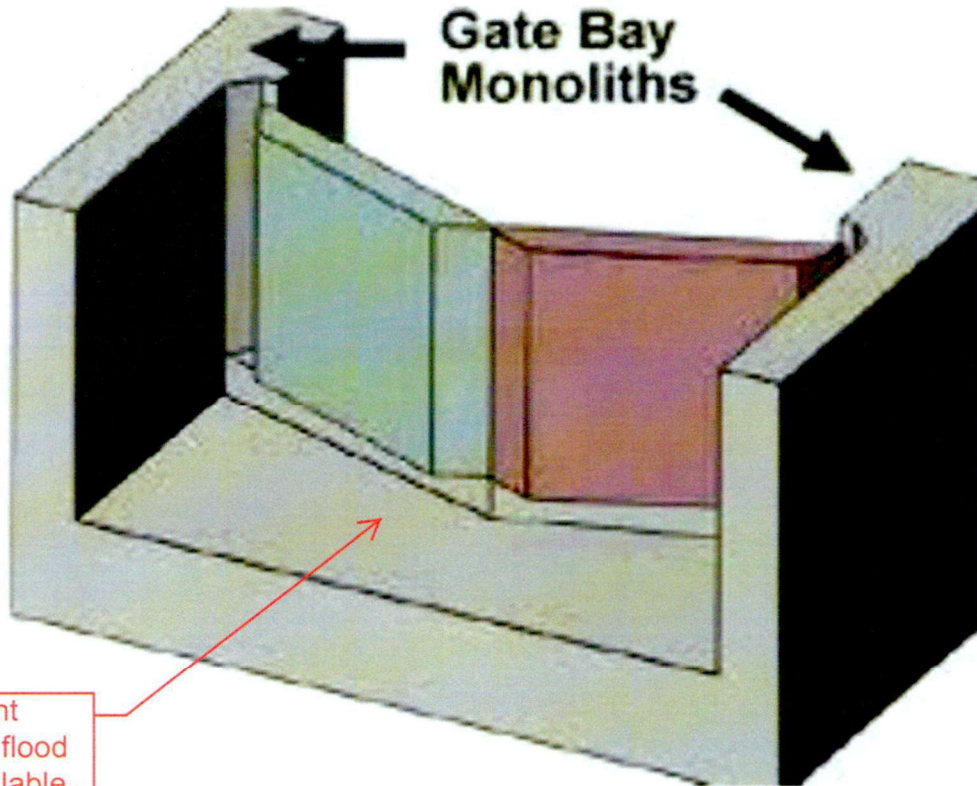


Should consider putting in front of Aia Moana Bridge, flood proofed, and protected from tide surges from hurricanes. Location consideration for Sea Level rise and incorporated into a frontal wall system along the ocean side.

Part of the problem with the Ala Wai Canal is that because it is long and flat with no slope the flow rate is slow moving from the far end of the canal to the mouth of the canal. The solution is based on the idea of how best to move the flood water as quickly out to sea from the far reaches and stream intersects like Manoa Stream which has the highest buildup. The solution is to pump the flood water at high speed through pipes or conduits in or under the canal directly to the ocean or harbor. The flood gate should be shut to lower the elevation of the canal before a storm to create the additional storage capacity and to prevent ocean water entering the canal during high tides or tide surges which can be significant in reducing storage capacity of the canal. The only time the gate would be open during a storm would be if the canal elevation is higher than the ocean sea level. Then pumping and gravity flow can work at the same time. In non storm times pumps could be reversed to help push clean water to the far end of the canal to improve circulation.

Pump Station Proposal

Drawing No. 2



Closed holding water

Miter Gate Drawing

Many different options for a flood gate are available, the because of the pumps, the width does not have to be as wide as the canal.

A variant to this design is to use sluice gates instead of miter gates. This would require at least one sluice gate to be 30 feet wide to allow for boat and dredging barge passage. Sluice gates would rise above canal when open and be very tall, sticking at least 16 feet high above the canal, creating a much bigger view-plane problem.

Drop gates, like the London Flood Barrier, could also be used. These gates would rise up from the bottom of the canal when closed.

Modeling results for this proposal.

To determine number of pumps, the HEC-HMS model for the Ala Wai canal project was changed to add the gate and pump features. The existing without project model treated the canal as a reservoir with discharge outlet to the ocean treated as a 14 ft by 152 ft culvert opening. The existing without project model results for the 1% ACE flood event had a peak stage of 6.4 feet which is based on the canal storage volume curve. The limitations of the HEC-HMS model allows for only a simple analysis of this proposal alternative. For example, gates cannot be opened during a simulation run, they are closed and remain closed or are open and remain open through the simulation. Pumps are controlled by the on and off stages. The maximum number of pumps is 10.

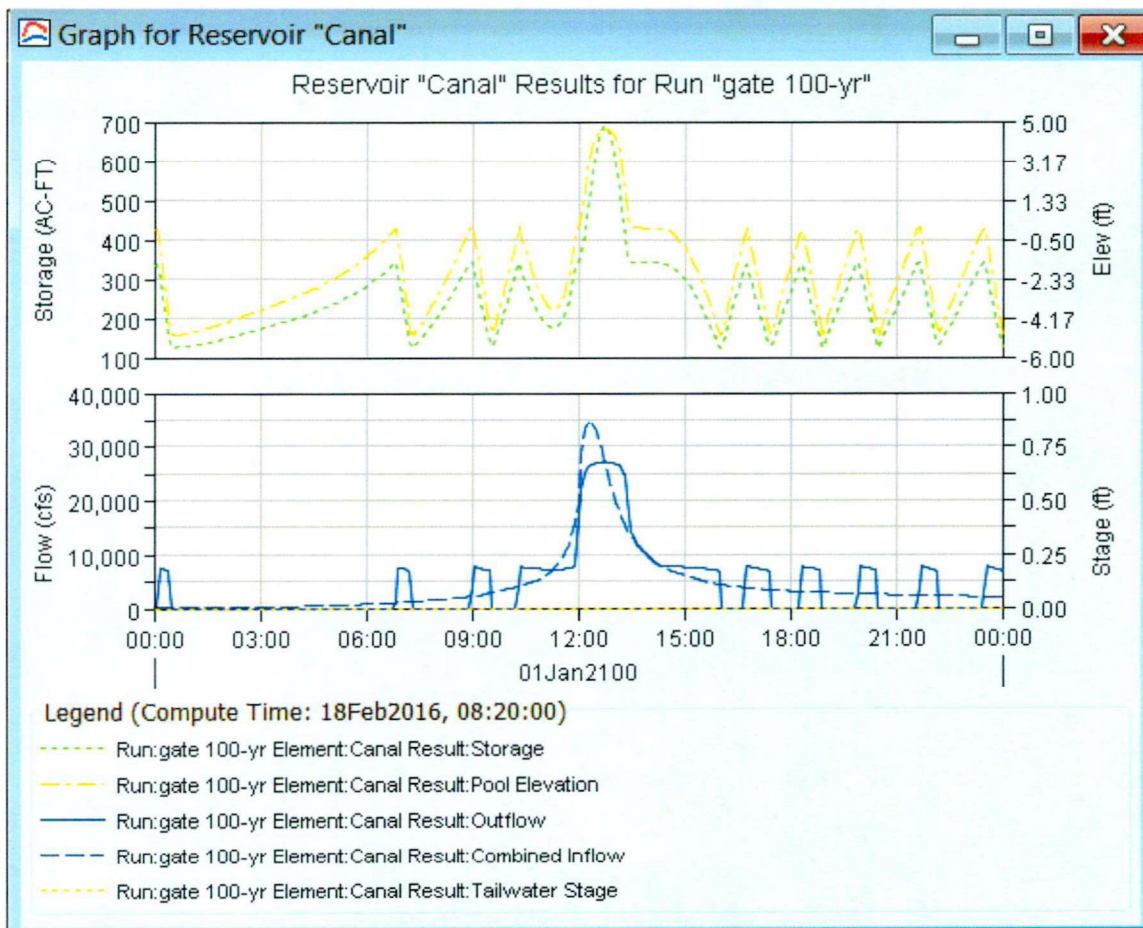
Results from pumping alone, with no gate opening during the 1% ACE flood event would result in a peak stage of 8.0 ft. Thus, pumping alone without gate control would result in the need for floodwalls along the canal to be 4 to 5 ft high on average. The same floodwall heights as in the current TSP. ← Not enough information provided to concur.

Pump set-up in HMS model

Basin Name: Gate
 Element Name: Canal
 Method: Head-Discharge Pump
 Direction: Main
 Number Units: 10
 *Intake Elevation (FT): -8
 *Line Elevation (FT): -7
 *On Elevation (FT): 0
 *Off Elevation (FT): -5
 Minimum Rest (MIN):
 Minimum Run (MIN):
 *Equipment Loss (FT): 0.5
 *Head-Discharge Curve: Pump MWI 96in P37

Results from pumping and with a gate opening of 7 ft resulted in a 1% ACE flood event peak stage of 4.6 ft. This would result in minimum residual damage along the canal. The existing right bank elevations vary from 3.5 ft along the Golf Course banks to 5 feet, while the left bank elevations vary from 4 to 5 ft. Thus, any peak stage below 5 feet is considered adequate for this proposal in showing that the propose solution would work. The 7 ft gate opening represents half the maximum opening size. The gate was modeled as sluice gates in HMS.

Results from simulation run with pumps (10 - 96-inch pumps) and 7 ft gate opening



VALUE ENGINEERING PROPOSAL

PROPOSAL NO: 4

PAGE NO: 7 OF 7

COST ESTIMATE WORKSHEET					
PROPOSAL NO.: 4					
DELETIONS					
	ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
	TSP Alt 3a	LS	1	\$91,059,000.00	\$91,059,000
					\$0
					\$0
					\$0
					\$0
					\$0
					\$0
					\$0
					\$0
					\$0
					\$0
Total Deletions					\$91,059,000
ADDITIONS					
	ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
	Pump House	CFS	5,500	\$30,000.00	\$165,000,000
	Miter Gate	LF	120	\$190,000.00	\$22,800,000
					\$0
					\$0
					\$0
					\$0
					\$0
					\$0
					\$0
					\$0
					\$0
Total Additions					\$187,800,000
Net Cost Decrease/Increase					-\$96,741,000
			Mark-ups	35.00%	-\$33,859,350
Total First Cost Decrease/Increase					-\$130,600,350