

**gabbard2 - Donna**

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**From:** mailinglist@capitol.hawaii.gov  
**Sent:** Monday, March 28, 2016 10:01 AM  
**To:** WLA Testimony  
**Cc:** ewabond@gmail.com  
**Subject:** Submitted testimony for SCR46 on Mar 28, 2016 15:00PM  
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**LATE**

**SCR46**

Submitted on: 3/28/2016

Testimony for WLA on Mar 28, 2016 15:00PM in Conference Room 224

Submitted By	Organization	Testifier Position	Present at Hearing
John Bond	Kanehili Cultural Hui	Comments Only	No

Comments: Aloha, The professional experts on flood zones issued very a strong and clear policy directive in 2011 against building Federally funded transit infrastructure in Flood Plains. (Flooding can be a result of rain, hurricane storm surge, tsunami or sea level rise. Since this policy paper was released- NEW FEMA flood maps were released, NEW Oahu Tsunami inundation maps were released, the President issued an even stronger Executive Order and signed into LAW the 2015 FAST Act. Clearly the ASFPM policy paper by professional experts had a great influence on 2015 Federal acts and Law.) [http://www.floods.org/ace-files/documentlibrary/Whitepapers/ASFPM\\_Critical\\_Facilities\\_and\\_Flood\\_Risk\\_Final\\_Feb\\_2011.pdf](http://www.floods.org/ace-files/documentlibrary/Whitepapers/ASFPM_Critical_Facilities_and_Flood_Risk_Final_Feb_2011.pdf)  
ASFPM Paper – Critical Facilities Page 1 of 12 Approved by the ASFPM Board 11-10-10 Approved with Revisions by the ASFPM Board 2-8-2011 Critical Facilities and Flood Risk This is a position paper prepared by the Association of State Floodplain Managers (ASFPM), a professional non-profit organization dedicated to reducing flood losses and protecting floodplain functions and resources in the United States, without causing adverse impacts to others. QUOTES FROM ASFPM PAPER: Federal agencies have contributed to the problem by directly building critical facilities or by funding states and localities (via grant programs) to build such facilities in flood hazard areas. This is true even though the guidance for Executive Order (11988, Floodplain Management, issued May 24, 1977) directed agencies of the federal government to give special consideration to, and avoid supporting critical facilities and critical actions in, flood-prone areas. Examination of the implementing guidelines to federal agencies published by the U.S. Water Resources Council (WRC) and codified into federal regulation February 10, 1978, includes specific reference to critical actions and critical facilities. The Order states that even a slight chance of flooding is too great for critical facilities and actions, so they should not be located in flood hazard areas if alternatives exist. The guidelines state that, “The minimum floodplain of concern for certain critical actions is the area subject to inundation from a flood having a 0.2 % chance of occurrence”, also known as the 500-year flood. The Order faces challenges in implementation as a result of local and political pressure to develop in flood risk areas for short-term economic gain. Flood maps do not reflect future flood conditions. NFIP flood mapping reflects only the flood that will occur based on existing, not future conditions. FEMA claims this is because the NFIP maps must reflect current risks for insurance rating purposes. The focus on existing watershed and floodplain conditions, rather than on future conditions, has resulted in critical facilities being located in what will be high flood risk areas after the watershed is developed, storms intensify, or sea level rises. Thus, critical facilities are placed in areas inappropriate to support community resiliency and sustainability. Extent of the Problem When critical facilities in the United

States are flooded, they not only sustain costly flood damage, but may also become inoperative and unable to fulfill their function in response and recovery. This can result in greater loss of life and human suffering, and means that it takes longer for the community to get back to pre-flood levels of functionality. EXAMPLE: New Orleans and Hurricane Katrina, 2005 Transportation infrastructure to provide access to the facility was inoperable during the flood. Critical facilities could have been located at the highest locations in the city, elevated or flood proofed, with accessibility, in order to achieve operability, maximum flood risk reduction and community resiliency. What are Critical Facilities and Critical Actions? Transportation Systems: Those systems, and the supporting infrastructure, necessary for transport of people and resources (including airports, highways, railways, and waterways) during major disasters, including flood events up to the 500-year flood. To further assist in determining if a facility is critical, the following questions should be asked: 1. If flooded, would the facility add another dimension to the disaster? 3. Would the facility be operable during an extreme flood event (e.g., 500-year flood)? 5. If the services provided by the facility were disrupted by flood would the flood disaster result in even more damages and loss of life? If the answer to any of these or similar questions is "yes," then the facility is considered critical, and the action to place the facility at risk of flooding would be a critical action. The impacts of the loss of function of critical facilities could include: The inability to provide essential services. Endangering large numbers of concentrated people, such as within emergency evacuation centers that cannot be accessed or serviced, or are otherwise at risk. Adding to the hazard of the flood water itself, such as by pollutants from flooded wastewater treatment plants or toxic materials. (or exploding electrical vaults, etc.) Minimum federal floodplain management standards for federal activities related to critical facilities come from Executive Order 11988, which guidance identifies the 500-year flood elevation as the minimum standard. The American Society of Civil Engineers (ASCE) Standard 24-05, and the International Building Code also provide minimum standards for some Category structures. Those standards, depending on the type of flood exposure, require protection to the 100-year flood elevation, plus up to three feet of freeboard or the "design flood elevation," which ever is higher. Therefore, the "design flood elevation" for critical facilities, as referred to in this paper, is the higher of the 500-year flood elevation, or the elevation required by applicable codes and standards. Action item: Grant funds should not be available from any federal agency to construct any critical facility that does not meet the flood risk process/standards of the Floodplain Management Executive Order 11988. This would connect community land use decisions to the flood risk cost and exposure of the federal taxpayers; meaning the facilities must be built in accordance with the Executive Order guidance or federal support is not available. John Bond Kanehili Cultural Hui

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

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March 11, 2016

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Honolulu, Hawaii 96813

Kirk Caldwell, Mayor  
City and County of Honolulu  
530 South King Street, Room 300  
Honolulu, Hawaii 96813

Honolulu City Council  
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Aloha,

Based upon a huge amount of scientific evidence, reports and studies, there really appears to be a need to revisit the HART Rail EIS in light of updated FEMA flood maps, recent White House Executive Orders and Federal infrastructure funding policy. HART is not complying. Reopening the EIS is an option according to the January 2015 HART Rail Consulting Parties meeting.

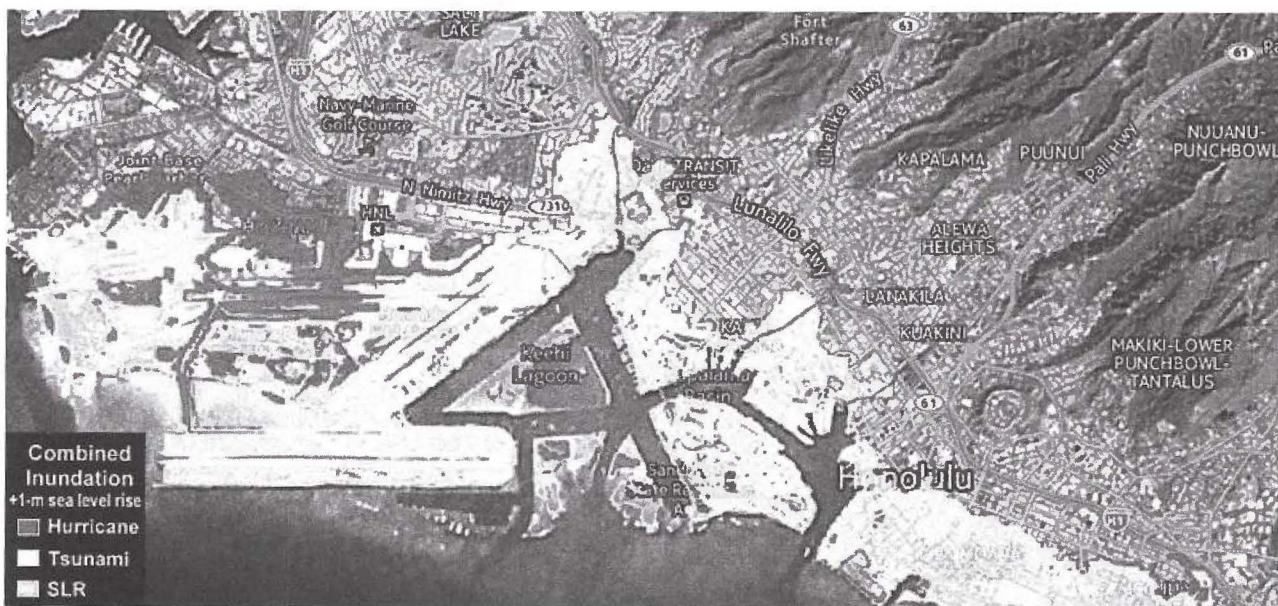
[https://www.fema.gov/pdf/floodplain/nfip\\_sg\\_unit\\_5.pdf](https://www.fema.gov/pdf/floodplain/nfip_sg_unit_5.pdf)

A community must adopt and enforce floodplain management regulations based on data provided by FEMA (44 CFR 60.2(h)). This includes the floodplain boundaries, base flood elevations, FIRM zones and floodway boundaries shown on your current Flood Insurance Rate Map, Flood Boundary Floodway Map and/or Flood Insurance Study.

[http://www.floods.org/ace-files/documentlibrary/FloodRiskMngmtStandard/EO and FFRMS for News Views.pdf](http://www.floods.org/ace-files/documentlibrary/FloodRiskMngmtStandard/EO_and_FFRMS_for_News_Views.pdf)

Hawai'i's Changing Climate

[http://www.soest.hawaii.edu/coasts/publications/ClimateBrief\\_low.pdf](http://www.soest.hawaii.edu/coasts/publications/ClimateBrief_low.pdf)



## Sea Level Rise Inundation Risk

The Pacific Islands Ocean Observing System (PacIOOS) believes that ocean data and information can help save lives and resources.

<http://oos.soest.hawaii.edu/pacioos/projects/slr/>

<http://static.pdc.org/tsunami/#oahu>



***City of Honolulu Tsunami and Extreme Tsunami Evacuation areas – this the entire downtown Honolulu HART planned rail route, stations and transit oriented developments***

[https://www.honolulu.gov/rep/site/dem/dem\\_docs/tsunami\\_evac/etez\\_final/Index.pdf](https://www.honolulu.gov/rep/site/dem/dem_docs/tsunami_evac/etez_final/Index.pdf)

***Sea Level Rise and Storm Waves are gradually destroying coastal roadways planned and built decades before there was any thought about future sea levels rising and climatic changes.***

### Agency Comments Received on the Final EIS and FTA Responses

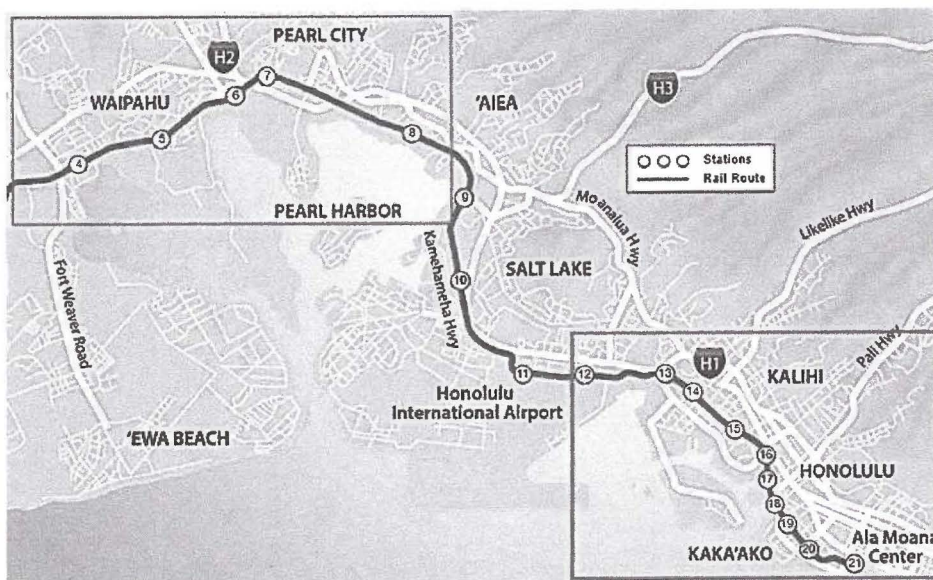
- U.S. Department of Homeland Security, Federal Emergency Management Agency (FEMA) – this agency reminded the City that it is a participant in the National Flood Insurance Program (NFIP) and, as such, must comply with NFIP floodplain management building requirements as described in 44 C.F.R. §§ 59 through 65. Compliance with Executive Order 11988, *Floodplain Management*, is addressed in Section 4.14 of the Final EIS. The City will comply with the NFIP requirements in final design.

**However the City is NOT complying with NFIP floodplain management and EO 11988**

Honolulu transit consultant Parsons Brinckerhoff wrote in the 2003 Final EIS:

*"...extreme disruption of existing underground utilities and constant dewatering made necessary by a high water table and poor soils would drive (rail) construction costs to unacceptable levels." -2003 FEIS*

**Approximately 14 HART Rail Stations and 70% of the Rail route are subject to extreme floods, tsunami, hurricane storm surge and sea level rise.**



***Boxed in RED show the HART rail route sections most affected by floods, tsunami, hurricane storm surge and sea level rise.***

There have been some significant changes and updates in 2015 that the HART Rail FEIS did not address. New FEMA Flood Plain maps have been released and President Obama issued EO 13690. Since HART Rail is being built in sections, HART has not adequately addressed the new maps, EO 11988 and EO 13690 in their route and station plans. Especially the DOT requirements Order 5650.2 and FEMA Code of Federal Regulations (CFR) for the National Flood Insurance Program: 44 CFR Parts 59, 60, 65, and 70.

<https://www.fema.gov/national-flood-insurance-program-laws-regulations>

[https://www.fema.gov/pdf/floodplain/nfip\\_sg\\_appendix\\_e.pdf](https://www.fema.gov/pdf/floodplain/nfip_sg_appendix_e.pdf)

The Floodplains Compliance Process according to all of the online Federal documents can

grandfather already built facilities BUT NOT those not yet built. HART Rail is being built in sections and the final construction design plans for most of the flood plain sections have not been issued. There is still time to correct the very badly planned and highly vulnerable rail route.

**Elevated Rail Guideway does NOT protect vulnerable station access, parking, utilities support**

***While the HART rail is on elevated pylons, planned sections 2, 3 and 4 station access are near sea level and in FEMA mapped flood zones. The measured subsurface groundwater level in many areas of downtown Honolulu is just 3-4 feet and steadily rising. Most of the entire HART rail construction geology is in very porous ancient coral limestone reef karst with known subsurface voids, caves and waterways.***

**Approximately 14 HART Rail Stations and 70% of the Rail route are subject to extreme *floods, tsunامي, hurricane storm surge and sea level rise.***



***HART Rail stations, access stairs, elevators and escalators and parking facilities will be flooded while sewer, water and power service vaults will be in corrosive salt water.***

The December 2015 HART rail Project Management report shows that contractors are having continuous problems with drilled column cement pours. A flood event by either heavy rains, hurricane storm surge or tsunami will create standing salty water far inland. Encroaching sea level rise is also driving the ground water level up further inland.

There **MUST** be an analysis showing **why** there is **NO OTHER ALTERNATIVE** than the low sea level flood plain route HART Rail is planning into downtown Honolulu. In fact there **ARE**

reasonable alternative routes but they have never been discussed in light of the 2015 FEMA Flood plain maps and the POTUS Executive Order.

**Manoa professor Fletcher studies coastal hazards and says 70 percent of beaches on Kauai, Maui, and Oahu are eroding.**

<http://khon2.com/2016/03/03/expert-urges-action-as-stronger-el-nino-years-further-coastal-erosion-predicted/>

University of Hawaii at Manoa professor Chip Fletcher predicts stronger El Nino years in the future, which means more beach erosion.

“We’re overdue,” he said. “We need to start making things happen now. We need to catch up.”



Low level water inundation by hurricane storm surge and tsunamis will cause massive electrical, sewer and water damage flooding underground vaults. Powerful sea water forces will knock down structures, slam cars and trucks into structures. *The useful capacity of HART rail to provide operational service in low land flooded areas will be reduced to ZERO.*

**The costs to repair and rebuilt will take many years and many billions of dollars. Honolulu cannot expect Federal bailouts as these environmental conditions will be happening all over the United States. Hurricane Sandy, a classic storm surge case, has greatly depleted available FEMA disaster recovery funds. Honolulu will have to expect FEMA recovery fund delays and relatively little funds to rebuilt transportation infrastructure.**



The State of Hawaii and the Federal Emergency Management Administration (FEMA) flood maps clearly show major sections of the rail route are in floodplains. The many additional Federal studies on Sea Level Rise, tsunamis and hurricane storm surge all show the same areas - and MUCH MORE - will inundate with rain and sea water the low level Honolulu ground infrastructure of planned HART Rail stations and Transit Oriented Developments. ***There will be Billions in damage and huge costs to rebuild away from the vulnerable low shoreline.***

***HART Rail stations, access stairs, elevators and escalators and parking facilities will be flooded while sewer, water and power service vaults will be in corrosive salt water. Power will be shut off, sewage will spill into the downtown areas and repair costs will be in the billions.***

<http://www.soest.hawaii.edu/coasts/sealevel/>

*The University of Hawaii SOEST program has provided very extensive details, 3D graphics and animations showing how vulnerable Honolulu low lands are to flooding from sea level rise, hurricane storm surge and tsunamis. Updated new City tsunami maps all show a much greater inland evacuation area than previous maps.*

<http://seagrant.soest.hawaii.edu/csp/benifits>

All City, State and Federal data ALL SHOW that building new Federally funded infrastructure in extremely low areas is a MAJOR RISK and alternatives need to be planned as soon as possible. [https://www.honolulu.gov/rep/site/dem/dem\\_docs/tsunami\\_evac/etez\\_final/Index.pdf](https://www.honolulu.gov/rep/site/dem/dem_docs/tsunami_evac/etez_final/Index.pdf)

**The Honolulu project study illustrates the effect of three feet of sea-level rise on the coastal inundation zones (hurricane and tsunami) and showed that 80 percent of the area's economy, nearly half of the population, and much of the infrastructure and land area at risk of coastal inundation.**

#### **US DOT Flood Zones**

Protection of floodplains and floodways is required by Presidential Executive Order 11988, US DOT Order 5650.2, the Federal Aid Highway Program Manual (FHWA 1992b); and 23 CFR 650 (CFR 1999). These regulations place special importance on floodplains and floodways and require Federal agencies to avoid conducting, allowing, or supporting actions on a floodplain or within a floodway. **If a project is located within a floodplain or floodway, results from sufficient analysis must be included in the project's Final EIS, as specified in USDOT Order 5650.2.**

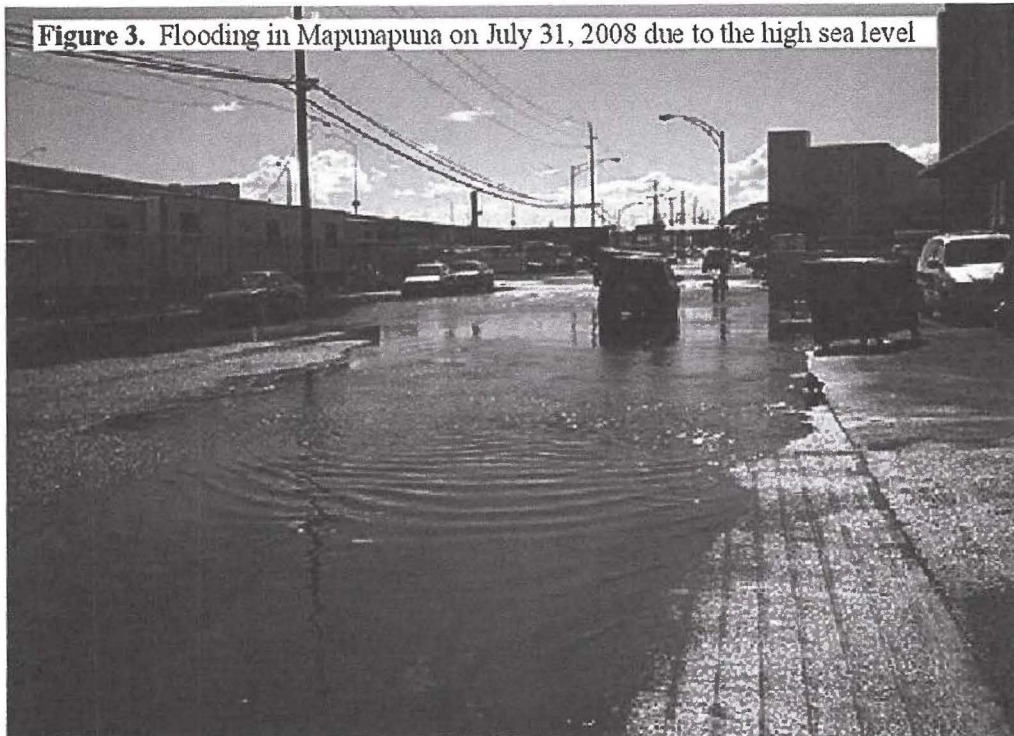
[http://www.fta.dot.gov/printer\\_friendly/12347\\_2237.html](http://www.fta.dot.gov/printer_friendly/12347_2237.html)

"Floodplain Management," places special importance on floodplains and directs federal agencies to avoid conducting, allowing or supporting actions on a floodplain. When contemplating a mass transportation project, maps of the Federal Insurance Administration should be consulted to determine if the proposed project site is located within the 100-year floodplain. [Executive Order 11988 \(PDF\)](#)

**FEMA Flood Insurance Rate Maps (FIRMs) are available for review here:**

<https://msc.fema.gov/portal/search> (Hawaii or Honolulu)

<http://gis.hawaiiinfip.org/FHAT/> (This Hawaii site is somewhat easier to use)



**In Mapunapuna small fish including baby Hammerhead sharks have been seen coming up through the storm drains which are directly connected to the ocean.**

***The Environmental Impact Statement (EIS) document must identify why the Proposed Action is the only practicable alternative, and provide supporting documentation reflecting the consideration of alternatives to avoid or reduce adverse impacts on the floodplain.***

THE WHITE HOUSE

January 30, 2015.

**On January 30th, President Obama issued Executive Order (EO) 13690 that revises Executive Order 11988 and proposes a new Federal Flood Risk Management Standard (FFRMS).**

<https://www.whitehouse.gov/the-press-office/2015/01/30/executive-order-establishing-federal-flood-risk-management-standard-and->

The Federal Government must take action, informed by the best-available and actionable science, to improve the Nation's preparedness and resilience against flooding. Executive Order 11988 of May 24, 1977 (Floodplain Management), *requires executive departments and agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative.*

As part of a national policy on resilience and risk reduction consistent with my Climate Action Plan, the **National Security Council staff coordinated an interagency effort to create a new flood risk reduction standard for federally funded projects.** The views of Governors, mayors, and other stakeholders were solicited and considered as efforts were made to establish a new flood risk reduction standard for federally funded projects.

Aloha,

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**From:** mailinglist@capitol.hawaii.gov  
**Sent:** Monday, March 28, 2016 6:38 AM  
**To:** WLA Testimony  
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**SCR46**

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Dylan Armstrong	Individual	Support	No

Comments:

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