



FEMA



### The City and County of Honolulu Flood Hazard Restudy Charter

The Department of Homeland Security's Federal Emergency Management Agency (FEMA) is starting a new study, the City and County of Honolulu Flood Hazard Restudy Project, which includes detailed hydrologic and hydraulic analyses of flood hazards along 22 stream reaches. This Charter summarizes the assistance FEMA will provide to help reduce future flood losses in the City and County of Honolulu (City). A related Project Plan documents the scope of the study, key project stakeholders and proposed schedule.

Key stakeholders include the City Office of Climate Change, Sustainability and Resiliency and Department of Planning and Permitting; FEMA Region IX and FEMA's contractor, the Compass PTS JV (Compass). Additional local stakeholders may be identified later. FEMA requests that the stakeholders provide data requested by FEMA, submit comments and insights on project results and on the proposed methodologies and techniques, and advocate for the interests of local constituents, which also means helping them mitigate flood risk.

FEMA's role in this restudy is as project sponsor. FEMA will consider requests, needs and goals of the project stakeholders regarding the analyses and methods of this restudy. FEMA is both guided and constrained by the Code of Federal Regulations, hazard mapping standards, and guidelines. Compass is to perform the flood hazard restudy. Compass will carry out this study in accordance with established FEMA practices and industry standards. Compass will coordinate with the local project stakeholders to obtain appropriate local data. This coordinated intergovernmental effort provides critical federal support for City climate resilience and flood risk reduction efforts and is valued at approximately \$1.4 million dollars.

We, the undersigned, agree to work together to implement the restudy for the City and County of Honolulu within our legal authorities, communicate flood risk to the public and identify options to reduce future flood losses.

\_\_\_\_\_  
City and County of Honolulu  
Date Signed: \_\_\_\_\_

\_\_\_\_\_  
FEMA Region IX Mitigation Division  
Date Signed: \_\_\_\_\_

APPROVED AS TO FORM AND LEGALITY

*Paul S. Aoki*  
\_\_\_\_\_  
*Paul S. Aoki*, Corporation Counsel Designate  
Department of the Corporation Counsel  
Date Signed: 9/22/20

\_\_\_\_\_  
The Compass PTS JV  
Date Signed: \_\_\_\_\_

## Project Plan

The Federal Emergency Management Agency (FEMA) is starting a new flood study, the City and County of Honolulu Flood Hazard Restudy, and has contracted with the Compass PTS JV (Compass) to accomplish the technical work. This study is part of FEMA's Risk Mapping, Assessment and Planning (Risk MAP) program ([www.fema.gov/flood-maps/tools-resources/risk-map](http://www.fema.gov/flood-maps/tools-resources/risk-map)) to reduce future flood losses. The study includes detailed hydrologic and hydraulic analyses of flood hazards along 22 stream reaches for a total of approximately 28 miles of new study. This project plan is intended to provide a general overview of the scope of the study and proposed schedule to all stakeholders.

### Base Map Data

Existing base map data for this flood risk study will be acquired. As applied to a mapping project, the base map is the planimetric features and raster mapping that show their locations and contain attribute information (i.e., names) about the items.

### Topographic Data

A digital elevation model (DEM) for the City and County of Honolulu topographic data acquired using Light Detection and Ranging (LiDAR) will be created for the restudy areas. This LiDAR data was acquired in 2013 by the National Oceanic and Atmospheric Administration and may be supplemented with additional topographic data in outlying areas.

### Field Survey

Compass will mobilize field investigation teams to collect field measurements and other information regarding hydraulic structures (e.g., bridges, culverts, etc.) in the studied watersheds. FEMA and/or Compass will solicit available as-built information from Honolulu to supplement field investigation data.

### Hydrologic and Hydraulic Analyses

Compass will develop rainfall-runoff models for the studied watershed using locally available gage data, and national datasets augmented with local flow data where available. The proposed hydrologic model is HEC-HMS. HEC-RAS is the proposed hydraulic modeling software. The hydraulic modeling in steep reaches will be one-dimensional and two dimensional in flat areas where flood flows bifurcate.

### Floodplain Mapping

Compass will take the results of the hydraulic modeling and map them against the LiDAR topographic data generating inundation polygons, depth grids, and water-surface elevation grids for the 1% and 0.2%-annual-chance-flood events. These mapping products will be used to determine flood hazard areas in the study footprint. At this time, it is anticipated that the resultant 1%-annual-chance-floodplain will be mapped Zone AE with base flood elevations.

### Flood Risk Products and Flood Risk Review Meeting

The results of the hydraulic modeling and floodplain mapping will be used to develop Flood Risk Products. These Flood Risk Products will include changes since last FIRM mapping, depth grids, and water surface elevation grids. FEMA and Compass will provide the draft floodplain mapping database and products to Honolulu officials and discuss during a Flood Risk Review (FRR) Meeting. FEMA intends the draft data to be posted online on a map viewer like the [Base Level Engineering studies of 2019](#).

### Post-FRR Meeting

After delivery of draft products and the FRR meeting, a comment period will be provided by FEMA. During this time, guidance on uses of these products for floodplain management and mitigation planning can be provided. Production of preliminary FIRM panels, FIS report and FIRM database can begin after resolution of any FRR comments.

### Preliminary Issuance, Outreach and Local Map Adoption

After all appeals and comments on preliminary products are addressed by FEMA, updated flood zones can be mapped on revised (effective) FIRM panels. Locally led outreach is important for many citizens, and Honolulu may need to update its flood damage reduction ordinance before the revised product become effective for flood insurance purposes. The most important reason for producing new flood mapping is to provide the data necessary for risk mitigation and increased awareness of flood hazards.

### Stakeholders

A list of the key project stakeholder information is provided below. The stakeholders listed below are a result of initial contact efforts and is subject to change if additional interested agencies, communities, or groups are identified during the project.

Name	Title	Stakeholder	Phone	email
Chris Cunningham	Hazard Mitigation & Long-Term Disaster Recovery Program Manager	City Office of Climate Change, Sustainability and Resiliency	(808) 768-2284	<a href="mailto:c.cunningham@honolulu.gov">c.cunningham@honolulu.gov</a>
Lincoln Gayagas	Program Manager	USACE, Honolulu District	(808) 835-4142	<a href="mailto:lincoln.c.gayagas@usace.army.mil">lincoln.c.gayagas@usace.army.mil</a>
Matthew Conser	Coastal & Water Program Manager	City Office of Climate Change, Sustainability and Resiliency	(808) 768-2276	<a href="mailto:matthew.conser@honolulu.gov">matthew.conser@honolulu.gov</a>
Jamie Hikiji	Project Manager	Compass PTS JV	(808) 529-7229	<a href="mailto:jamie.hikiji@aecom.com">jamie.hikiji@aecom.com</a>
Cheryl Johnson	Program Manager	Compass PTS JV	(510) 768-9044	<a href="mailto:cheryl.a.johnson@aecom.com">cheryl.a.johnson@aecom.com</a>
Kate Kilduff	Risk Analyst	FEMA Region 9	(510) 627-7782	<a href="mailto:katherine.kilduff@fema.dhs.gov">katherine.kilduff@fema.dhs.gov</a>
Mario Stuli	Subdivision Branch Chief and Floodplain Manager	City Dept. of Planning and Permitting	(808) 768-8093	<a href="mailto:mstuli@honolulu.gov">mstuli@honolulu.gov</a>
Eric Simmons	Regional Engineer	FEMA Region 9	(510) 627-7029	<a href="mailto:eric.simmons@fema.dhs.gov">eric.simmons@fema.dhs.gov</a>

## Proposed Schedule

The initial project milestones are detailed below. The next formal meeting identified is the Flood Risk Review meeting in late Summer 2021. The proposed schedule does not preclude ad hoc meetings that may be scheduled or requested during the project, and FEMA plans to hold quarterly webinars/call with stakeholders to provide study updates.

Phase	Start	End
Project Kick Off Meeting	August 6, 2020	
Field Investigations	August 2020	January 2021
Base Map Data Preparation	August 2020	November 2020
Hydrologic Modeling	August 2020	April 2021
Hydraulic Modeling	October 2020	July 2021
Floodplain Mapping	March 2021	September 2021
Flood Risk Products	May 2021	September 2021
Flood Risk Review Meeting	Late Summer 2021 (tentative)	
Distribution of Preliminary Maps	To Be Determined	
Statutory Appeal Period	To Be Determined (90-day duration)	
Finalization of Revised Products	To Be Determined	
Effective Date of Revised Products	Six Months After Finalization	