FRM

Flood Risk Management Newsletter

Director of Civil Works Visits Ala Wai Canal FRM Project

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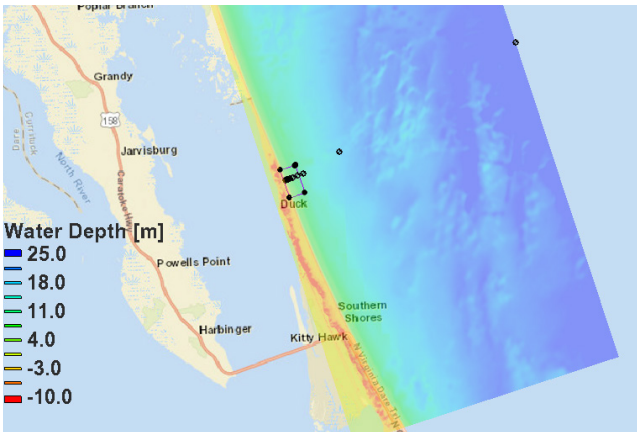

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Recovering from the Events of 2017: USACE Supplemental Appropriations

By Mark Roupas, Deputy Chief, Office of Homeland Security

Greetings and thank you for taking the time to look at this edition of the Flood Risk Management Newsletter. In this edition, I'll provide an update on the continuing efforts to recover from the natural disaster events of 2017. As you may have heard, on 9 February 2018, Public Law 115-123, the Bipartisan Budget Act of 2018, was signed into law. One of the things that this law did was provide emergency supplemental funding to USACE to be used toward recovery from the 2017 events.

Specifically, USACE was provided with $17.398B in funds, to be apportioned across our Investigations, Construction, Mississippi River and Tributaries, Operations and Maintenance, Flood Control and Coastal Emergencies, and Expenses appropriations. Of this amount, $135M will go to the Investigations account to be used for flood and coastal storm damage reduction studies. These studies will be carried out in eligible states and territories, and will focus on opportunities to reduce overall flood risk to the Nation.

A total of $15.055B is going to the Construction account, where $15B will be used to construct flood and coastal storm damage reduction projects. A total of $55M will be available for short-term repairs to USACE projects nation-wide that have been damaged by recent natural disasters to their pre-storm conditions. Any such repairs funded specifically in the US Virgin Islands or Puerto Rico will be undertaken at full federal expense. Additionally, up to $50M is available for smaller projects under the Continuing Authorities Program.

The Mississippi River and Tributaries account is designated to receive $770M to address emergency situations at USACE projects and to construct, rehabilitate, and repair damages to USACE projects caused by natural disasters. A total of $400M will be available for construction and $370M will be available for emergency situations for levee and channel improvements.

The Operations and Maintenance account will receive $608M to address the highest priority operations and maintenance needs. This funding will be used both for emergency dredging of federal navigation projects of shoaled material deposited by natural disaster and to repair other damages to USACE projects caused by natural disasters.

$810M is allocated to the Flood Control and Coastal Emergencies account, these funds will be used to repair damages to non-federally owned and maintained flood risk management projects. Finally, $20M will be provided to the Expense account for purposes of managing and overseeing the work previously described.

The Flood Control and Coastal Emergencies account is the funding source for Public Law 84-99, which was authorized by 33 U.S.C. 701n. This account provides necessary funding to address expenses to prepare for floods, hurricanes, and other natural disasters to support emergency operations, repairs, and other activities in response to natural disasters. This program is one of the three programs I oversee in my role as the Deputy for Homeland Security. I am very pleased to say that we have identified 81 locally owned flood risk management projects in 16 states and one territory eligible for rehabilitation assistance under PL 84-99 that are able to access this supplemental funding. This will account for approximately $645M of the funds that we have received in this account, and we are well on our way to determining additional needs for the remainder of the funds.

The interesting thing about funds provided through emergency supplemental appropriations such as the one received this year is that they sometimes include additional guidance outside the normal business processes for the use of the provided funds. For instance, the funds for repair and rehabilitation of coastal storm risk management projects under Flood Control and Coastal Emergencies through the emergency supplemental must be used to restore the projects to the full project profile at full federal expense, rather than to the design profile, as is the typical program policy. We have promulgated guidance that describes the full project profile as the authorized beach profile of the projects in a fully renourished state.

I hope this overview of how the funding provided to USACE through the emergency supplemental appropriation is useful in helping to understand our roles and capabilities within the broader recovery from the significant events we have experienced as a nation in the last several years. We look forward to making the best use possible of this funding to help the nation recover and be prepared to better withstand the next round of natural disasters.

Flood Plain Management Services: Ways the USACE Supports Flood Plain Management

By Beverly Hayes, US Army Corps of Engineers, Mobile District

Recent years have seen record climatological events throughout the nation. Massive storms damaged the Oroville Dam facility in the State of California. Snow runoff into the Boise River and peak flood in the Big Wood Basin in Idaho were among the highest on record. Hurricanes Harvey, Irma and Maria resulted in over $280 billion of damages, making it among the most costly storm seasons in the United States. The presence of families, homes and businesses in the floodplains exacerbate the danger and impacts of these events.

Oroville Dam spillway erosion, 2017.

As flood risk management professionals, we seek to broaden our knowledge base in support of innovative flood risk management strategies that minimize threats to life and property while allowing the floodplain to remain intact and perform its ecosystem functions. This is where the Floodplain Management Services program (FPMS) can help.

Authorized by Section 206 of the Flood Control Act of 1960, the Flood Plain Management Services program informs the public about flooding and flood hazards, and supports wise floodplain management decisions. It helps address the needs of people who live and work in floodplains by providing information to local interests, state agencies and other federal agencies about actions they can take to reduce property damage and prevent the loss of life caused by flooding. FPMS provides a broad range of technical services and planning guidance that is needed to support effective floodplain management and is an avenue to the USACE's flood risk management expertise.

Under FPMS, the Corps can provide general technical services; general planning guidance; guides, pamphlets, and supporting studies; and National Flood Insurance Program support. Common FPMS activities include developing studies or guidance on floodplain delineation, flood hazard evaluation, hurricane evacuation, flood warning/preparedness, regulatory floodway analysis, comprehensive floodplain management, flood risk reduction, urbanization impacts, storm water management, flood proofing, and inventory of flood-prone structures.

- General Technical Services. Flood and floodplain data are obtained, developed, and interpreted using General Technical Services. The Corps uses data from all appropriate sources, including hydrologic and hydraulic information developed within the Corps, but also other federal, state, or local agencies. Outreach to communities, localities, and other public entities may be provided on request.

- General Planning Guidance. General Planning Guidance provides assistance and support through "Special Studies". A Special Study can be done on any aspect of floodplain management planning, including the possible impacts of off-floodplain use changes on the physical, socioeconomic, and environmental conditions of the floodplain.

- Guides, Pamphlets, and Supporting Studies. Flood and floodplain data/information are disseminated to states, local governments, federal agencies, and private citizens in guides, pamphlets, and supporting studies conveying the nature of flood hazards and fostering public understanding of options for dealing with flood hazards. Supporting studies are conducted to improve methods and procedures for flood risk management, or to illustrate alternative ways of achieving floodplain management goals.

The National Flood Insurance Program (NFIP) is administered by the Federal Emergency Management Agency. The Corps provides technical support to the NFIP. For example the USACE will develop or contribute to Flood Insurance Studies, on a cost reimbursable basis.

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FPMS also has four sub-programs that focus on more specific flood and floodplain topic areas. The National Nonstructural Committee, Interagency Nonstructural Special Studies, National Hurricane Program, and the Systems Approach to Geomorphic Engineering are FPMS sub-programs that explore novel approaches to different flood hazard circumstances.

- The National Nonstructural Committee provides support for nonstructural flood risk management by promoting development and use of nonstructural flood risk reduction measures; providing risk expertise on aspects of nonstructural flood risk reduction and associated opportunities; disseminating nonstructural flood reduction information; partnering with Planning Centers of Expertise in aspects of nonstructural flood risk reduction and associated opportunities; and providing leadership in floodplain management. The committee also provides technical assistance such as workshops and seminars on nonstructural floodplain management measures such as flood proofing and site assessments. The National Nonstructural Committee provides nonstructural support throughout the USACE. More information is available at https://www.usace.army.mil/Missions/Civil-Works/Project-Planning/nfpc/.

- Interagency Nonstructural Special Studies (also called Nonstructural Alternatives) promote cooperative, interagency work efforts undertaken with partners to achieve flood risk management benefits that could not be achieved by any one party alone. The program focuses on leveraging monetary or in-kind resources invested by project partners on projects that reduce human exposure or vulnerability to a flood hazard without altering the nature or extent of that hazard (e.g., reduce consequences); encourage natural and nature-based approaches; and include or enable flood risk management action. The FPMS program sources annual funding to the interagency nonstructural special studies, making those funds available to interagency project delivery teams developing unique, cooperative solutions for flood related concerns.

- The National Hurricane Program manages USACE hurricane related technical support as a partner in Federal Emergency Management Agency's (FEMA) National Hurricane Program. Within this program, the Corps and FEMA work with the National Oceanic and Atmospheric Administration (NOAA) to conduct hurricane evacuation studies to help local communities understand their evacuation timelines, including vulnerability, public evacuation behavior, and shelter demand.

- The Systems Approach to Geomorphic Engineering (SAGE) objective is to shape and support resilient coastal landscapes and communities, including riverine floodplains, using combinations of structural, 'hard' and nonstructural, 'green' engineering solutions. SAGE emphasizes a holistic view of shoreline change that focuses on innovative approaches to riverine-coastal landscape transformation and methodologies that slow, prevent, mitigate, and adapt to impacts and consequences of changing environmental conditions. SAGE stresses flood risk problem solving from the perspective of the entire riverine-coastal complex and proactive hybrid engineering solutions that assume changes to the natural environment and protect the coastal floodplain environments.

The FPMS program is a valuable, often overlooked asset in the flood risk management tool box. As a program with the flexibility to evaluate a wide range of flood, flood hazard and floodplain issues, FPMS is nimble and adaptable to needs at any scale. The Corps may provide general information, data, material, publications, brief explanations or advice on measures, standards and requirements free of charge, if the requests are limited in nature. Technical Services and General Planning Guidance are also available to state, regional or local governments, other non-Federal public agencies and Indian tribes without charge. These services are available to Federal agencies and the private sector on a cost recovery basis. A wise flood management risk professional keeps FPMS in mind when developing solutions. For more information on the FPMS program and sub-programs, please contact Beverly.A.Hayes@usace.army.mil.

Activities to mitigate flood risk and damage fall into two broad categories: **Structural** and **Nonstructural**. Structural measures focus on reducing the probability of flooding. Examples of structural flood risk measures include levees and floodwalls. Nonstructural flood risk measures are permanent or contingent measures applied to a structure and/or its contents that prevent or provide resistance to damage from flooding. Nonstructural methods for reducing flood risk and damages also include adapting to the natural characteristics of the floodplain. Nonstructural flood risk management can be subcategorized as physical or nonphysical measures to mitigate loss of life and flood damages. Physical nonstructural measures are applied to a structure and/or its contents to prevent or resist flood damage while having no adverse effect on the floodplain, environment or flood characteristics, such as raising a building. Nonphysical nonstructural measures are floodplain best management or regulatory measures that address flood risk. Flood warning systems are an example of non-physical nonstructural measures.

Coastal Model Test Bed (CMTB)

By Spicer Bak, US Army Corps of Engineers, Engineer Research & Development Center, Coastal & Hydraulics Laboratory, Field Research Facility, Duck, NC

Testing & Validating Coastal Numerical Models

The Coastal Model Test Bed (CMTB) is a project supported by the US Coastal Research Program (USCRP) designed to create an automated evaluation environment for coastal numerical models under constrained initial/boundary conditions utilizing the data collected at USACE Coastal & Hydraulics Laboratory's (CHL) Field Research Facility (FRF). The FRF in Duck, NC, is a coastal processes observation facility focused on high spatial and temporal resolution measurements to solve complex nearshore research questions. The CMTB positions the FRF to be the center of expertise for model evaluation because of the historic data (30+ years) as well as the operational real-time measurements (see Figure 1).

> "The use of this extensive coastal measurement database in a modeling framework will promote rapid enhancement of model capability."

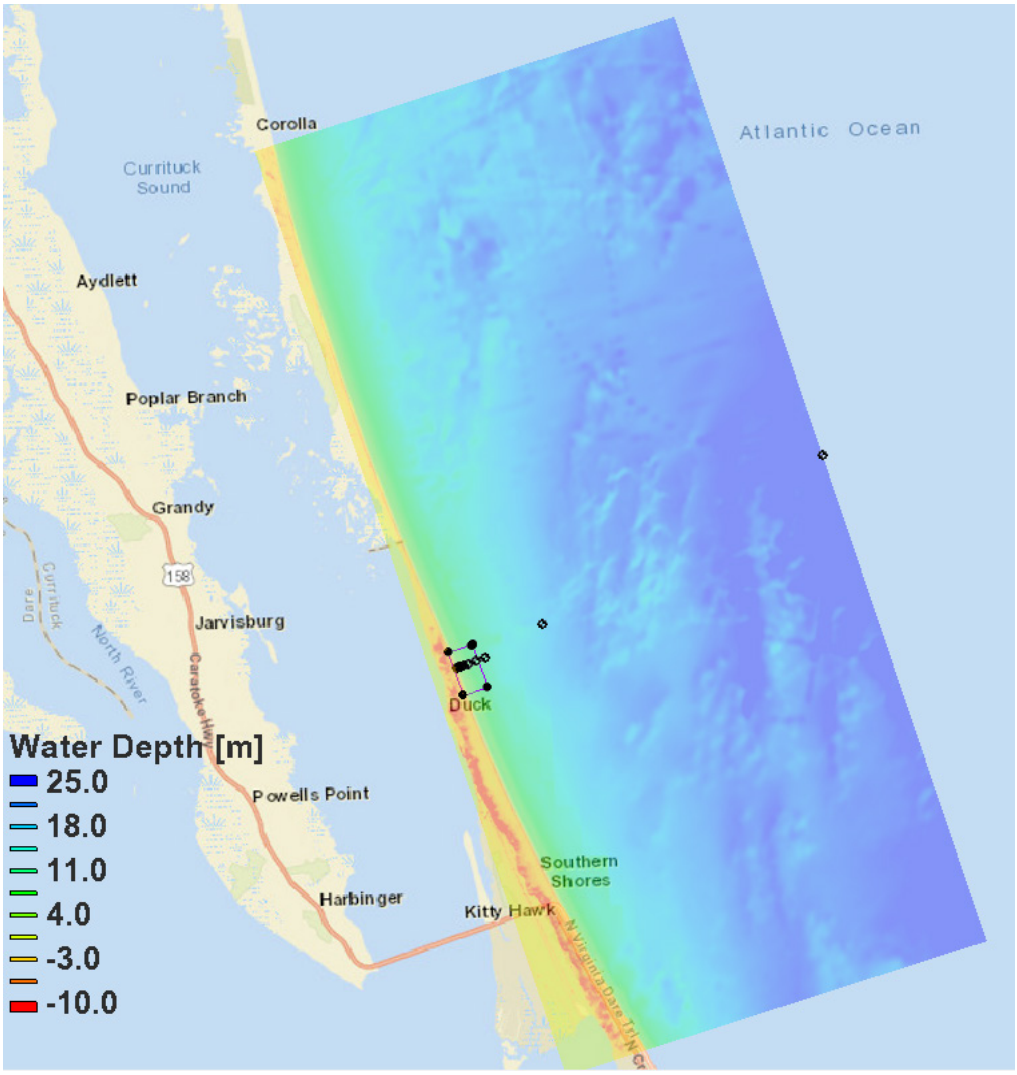

Figure 1. Location of the USACE's Field Research Facility, Duck, NC and domain of Coastal Model Test Bed

The remotely sensed data available at the FRF also offers unique model-data comparison opportunities, capitalizing on the high temporal and spatial resolution inherent to various types of remote sensing technology. The use of this extensive coastal measurement database in a modeling framework will promote rapid enhancement of model capability. Similarly, by running simultaneous simulations with multiple models using real-time data, model physics and parameterizations are assessed in a wide range of natural conditions and a better understanding of modeling best practices can be obtained, all the while keeping up with the large computational load. In addition to constraining forcing conditions, FRF data can be used to assess model fidelity such as identifying conditions or processes where physics are poorly resolved in the models while also quantifying uncertainty in model predictions.

The USACE has led the USCRP effort by building the framework for model implementation. USCRP collaborators from other academic institutions and government agencies including the US Naval Research Laboratory, US Geological Survey, University of Southern California, and Scripps Institution of Oceanography have initiated work on model setups at the FRF with plans to transition them to run operationally. Currently several numerical models (STWAVE, CMS-wave, and CSHORE) are run operationally. Development is underway and planned for several other models (Wave Watch 3, CMS-Flow, C2SHORE, Delft3D, Celeris, Xbeach, ADCIRC, FunWAVE, and others).

Problem

- The high resolution data collection ongoing at the FRF presents the unique opportunity to evaluate

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coastal models using real-time conditions. By running these models in near real-time with the most recently collected data available, the models can be evaluated more frequently and for longer durations. The longer durations allow for errors to be fully quantified, reducing uncertainties in model application.

- In numerical modeling, there are various parameters that can be adjusted to allow model output to fit observational data. Oftentimes these parameters are based on physical parameter assumptions that are difficult to monitor. Efforts will be made to measure these parameters accurately and apply relationships to these models, capitalizing on the expertise and infrastructure available at the FRF.

- Studies will be undertaken to better understand how the refined model parameterization can be best applied, allowing for best practices to be established. Sensitivity studies will be undertaken to evaluate how numerical model output responds to a range of input conditions.

Technology

- Model Integration to an established observational environment with high-resolution measurements and real-time numerical model capability.

- Models run on local High Performance Computing (HPC) cluster dedicated to the CMTB.

- CMTB is developed on open source software allowing for modular and flexible development without the added cost of licenses.

Benefit

Continual operation of the CMTB allows for near real-time modeling of various parameters over longer durations and helps:

- Quantify the error associated with different models, to allow for less uncertainty in application
- Create best use practices when employing these numerical models

- Understand sensitivity of models to different tunable parameters and how to remove uncertainty in application.

Status

Recent progress includes the implementation of a new phase-resolving Boussinesq wave model, Celeris, into the test bed with researchers from University of Southern California. Initial model setup is currently underway and early results are being shared and analyzed. To complement the data available at the FRF, researchers from Scripps Institution of Oceanography are working to create curated data sets from the U.S. west coast to share with test bed participants.

Silver Jackets Coordinator Recognized for Excellence by USACE Planning Program

By Pat O'Donnell, US Army Corps of Engineers, South Atlantic Division

The USACE Planning Program introduced awards in several new planning categories for FY2017. One of the new awards, the Planning Excellence (Programmatic) award, recognizes an individual's contributions to a Continuing Authorities study or similar programmatic effort, including but not limited to Planning Assistance to States, Flood Plain Management Services, and the Tribal Partnership Program. Mr. Jason Glazener, the Silver Jackets Coordinator for the state of North Carolina in the USACE Wilmington District, received this award in recognition of his contributions to the agency in FY2017.

In addition to his role as Silver Jackets Coordinator for his District, Mr. Glazener is a lead Community Planner in the Planning and Environment Branch. His work includes conducting congressionally authorized studies as well as studies under the Continuing Authority Program (CAP), Planning Assistance to States (PAS), and Flood Plain Management Services (FPMS) programs. In these various roles, he made significant contributions to nearly every Planning effort executed by Wilmington District in FY2017.

Mr. Glazener was also recognized for his ability to be innovative and creative in delivering products and services to his partners. In doing so, he focuses on engaging teams that cross all functional disciplines and he focuses on sharing best practices across disciplines. These are skills that make him a successful Silver Jackets Coordinator in addition to earning him this well-deserved recognition from the Planning Program. Congratulations to Jason!

Building River City Resiliency: Commonwealth of Kentucky/Louisville Metropolitan Catastrophic Urban Flood Plan

By J.P. Carsone, Louisville and Jefferson County Metropolitan Sewer District

In the world of Flood Risk Management, we are all familiar with the Silver Jacket's Motto of "Many Agencies, One Solution." That is precisely how Louisville and Jefferson County Metropolitan Sewer District (Louisville MSD/MSD) and the Louisville Metro Silver Jackets Team are developing the Commonwealth of Kentucky and Louisville Metro Catastrophic Urban Flood Plan (CUFP). The Louisville Metro Silver Jackets Team and the effort to create the CUFP are results of receiving $75,000 from USACE in 2013 to conduct an interagency effort through the Silver Jackets team to enhance the Emergency Preparedness Plan for the Louisville Metro Flood Protection System.

The funding provided resources for the modeling of two breaches in Louisville's flood system. The U.S. Army Corps of Engineers (USACE) modeled the breaches at 50 and 100 percent loading levels and produced inundation maps of the surface flooding in intervals from breach to full inundation. Additionally, they estimated impacts to the community.

Louisville MSD Geographic Information System (GIS) Staff utilized that information to project inundation after MSD sanitary and stormwater systems had conveyed the floodwaters. In March of 2015, MSD and Louisville Emergency Management Agency (EMA) facilitated an emergency tabletop exercise of a breach in the levee during a .02 percent annual chance flood event using the inundation maps developed by USACE and MSD. Nineteen local, state and federal agencies took part in the exercise. Seeing the final inundation, participants realized that a catastrophic failure of the flood protection system in a flood of this magnitude would devastate Louisville Metro, and have severe impacts to the regional and national economies. Additionally, the environmental impact would take years to mitigate.

Kentucky Emergency Management (KyEM) approached MSD about developing a Catastrophic Urban Flood Plan as a result of this tabletop exercise. The need for such a plan was identified in the Federal Emergency Management Agency (FEMA) 2013 Threat and Hazard Identification and Risk Assessment (THIRA) for the Commonwealth. As a result, a Louisville Silver Jackets Team was formed with Louisville MSD as the lead organization. One of the goals of the Team, along with KyEM, is to develop a CUFP for Louisville Metro, but make the framework and tools of the plan available to other cities in Kentucky and throughout the nation. At the time we began, we did not realize that our intent to share this plan with other communities would be a wise decision.

As the team moved forward in the development of the CUFP, one of the team members from U.S. Department of Homeland Security (DHS) inquired if the plan could be a candidate for DHS's Regional Resiliency Assessment Program (RRAP). The goal of the RRAP is to generate greater understanding and action among public and private sector partners to improve the resilience of a region's critical infrastructure. The RRAP is a competition, in which only a few

Local, state, and federal representatives participate in an emergency tabletop exercise of a levee breach.

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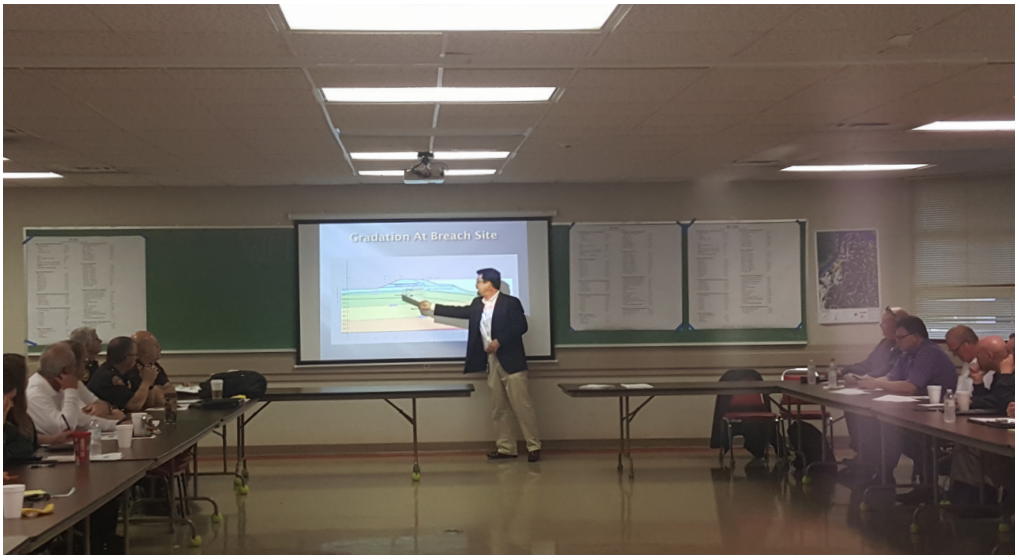
projects are selected each fiscal year. The CUFP was one of twelve projects chosen nationwide for the FY-17 RRAP, largely due to our willingness to share it with other cities.

This Regional Resiliency Assessment Program is a three-year assessment and implementation assistance program. The program is a deep-dive assessment of the dependencies and interdependencies of lifeline infrastructure (energy — electric, natural gas, petroleum; water and wastewater; transportation, and emergency communication) during a failure in the flood protection system in a .02 percent annual chance flood event. It also provides an assessment of the impacts from the loss of these critical infrastructures would have to Louisville's industrial area known as Rubbertown, which is a 23-company chemical-petroleum complex in Louisville, as well as area hospitals. Two deliverables expected from the RRAP: a synchronization matrix and a GIS tool that will identify the cascading failures of critical infrastructure as different components are taken out of service by floodwaters. Additionally, as part of the RRAP implementation process, we have requested DHS facilitate an emergency tabletop exercise to test this portion of the CUFP.

"The Commonwealth of Kentucky and Louisville Metro Catastrophic Urban Flood Plan is an excellent example of how different federal, state and local governmental agencies can come together along with the private sector for the betterment of not just a community but of many."



Local, state, and federal representatives participate in an emergency tabletop exercise of a levee breach.

The RRAP GIS tool will allow for an additional layer for a GIS tool developed by MSD GIS Staff that enables the user to look at flooding impacts on various elevation levels from MSD's action stage of 21-feet on the upper river gauge to the flood protection system's overtopping at 55-feet. This layer allows for an assessment of when infrastructure impacts would occur at various river gauge levels should the flood protection system fail.

Kentucky is one of the states participating in the New Madrid Seismic Zone Exercise. Working with and piggybacking on KyEM's efforts with FEMA to develop an evacuation plan for Western Kentucky for the exercise, we were able to secure the services of FEMA evacuation planners for the CUFP. The evacuation plan will include evacuations routes, lily pad operations, sheltering, assembly areas, evacuation centers and ground/air transportation coordination; it is a full-blown evacuation plan.

Although these are two of the more significant efforts taking place in the flood CUFP's development, other agencies are contributing as well. The National Weather Service (NWS) put together a realistic weather scenario leading up to a flood of the significant magnitude for the RRAP. This scenario is being used by all the stakeholders to develop the synchronization matrix. MSD has established the main GIS tool and has assessed when and how severely the impacts to government facilities, schools, and other critical or high-risk facilities would be. It has also taken on the lead role in both the development of the CUFP and the Louisville Metro Silver Jackets Team. Additionally, the CUFP would have never been able to move forward without all the time, effort and input we have received from both public and private sector stakeholders. We have also identified opportunities to leverage other agencies involved with the CUFP to complete and implement the plan successfully.

The Commonwealth of Kentucky and Louisville Metro Catastrophic Urban Flood Plan is an excellent example of how different federal, state and local governmental agencies can come together along with the private sector for the betterment of not just a community but of many. It is also an excellent example of how the Silver Jackets Model can succeed at a local level. And to think, the CUFP and the Louisville Metro Silver Jackets Team, all started from $75,000.00 in funding from USACE through the Silver Jackets program in 2013.

Director of Civil Works Visits Ala Wai Canal FRM Project

By Steve Yamamoto, US Army Corps of Engineers, Pacific Ocean Division**,** and **Jeff Herzog** and **Dino Buchanan,** US Army Corps of Engineers, Honolulu District

On August 8th, 2018, the Director of Civil Works, Mr. James Dalton visited the Ala Wai Canal Flood Risk Management project on the island of O'ahu, Hawaii. The project site visit was hosted by members of the Honolulu District and was in conjunction with his Civil Works Lines of Effort Overview presentation to Pacific Ocean Division. Mr. Michael Wyatt, Chief of Civil and Public Works Branch at the Honolulu District led the overall project briefing.

The Ala Wai Watershed encompasses a drainage area of 16.2 square miles and is located on the southeastern side of the island of O'ahu in urbanized Honolulu. The three major streams within the watershed includes the Makiki, Manoa, and Palolo streams, all of which drains into the Ala Wai Canal. The Canal is a 2-mile long waterway constructed during the 1920's to drain extensive coastal wetlands, thus allowing development of the Waikiki District.

Overtopping of the Canal has previously flooded Waikiki multiple times, including during the November 1965 and December 1967 storms and during the passage of Hurricane Iniki in 1992. Upstream areas are also at risk of flooding as demonstrated by several recent events, including the October 2004 storm that flooded parts of Manoa Valley and the March 2006 storm that flooded Makiki. The October 2004 event was estimated to have a 4-percent annual chance exceedance probability and caused more than $85 million in damages. More recently in September 2018, Hurricane Lane caused flooding on the island of Hawai'i with rainfall totals of 18.8 inches in 24-hrs and 52 inches over 4 days. Fortunately, the island of O'ahu was spared the intense rainfall from Hurricane Lane.

Mr. Michael Wyatt, Chief of Civil and Public Works Branch, briefing Mr. James Dalton, Director of Civil Works on the upper watershed conditions and project features of the Ala Wai Canal project.

Mr. Jeff Herzog, Project Manager briefing Mr. Dalton on the Ala Wai Canal proposed project features.

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The proposed Ala Wai Canal project will manage riverine flood risks and protect metropolitan Honolulu, the University of Hawaii, and Waikiki, Hawaii's economic center for tourism. The population at risk includes approximately 65,000 residents and an additional 200,000 transient visitors to the watershed daily (tourists, workers, students, etc.). The project sponsor is the Department of Land and Natural Resources, State of Hawaii and this project will provide an estimated 90 percent reduction in annual flood damages. This project is being funded under the FY18 Emergency Supplemental and allocated $345 million for PED and Construction. Project features include the following eleven individual structural elements and two non-structural components:

- Six debris/detention basins in upper stream reaches
- One in-stream debris catchment structure
- Three multi-purpose detention basins
- Floodwalls along Ala Wai Canal (including two pump stations for interior drainage)
- Flood warning system (non-structural)
- Fish and wildlife mitigation (non-structural)

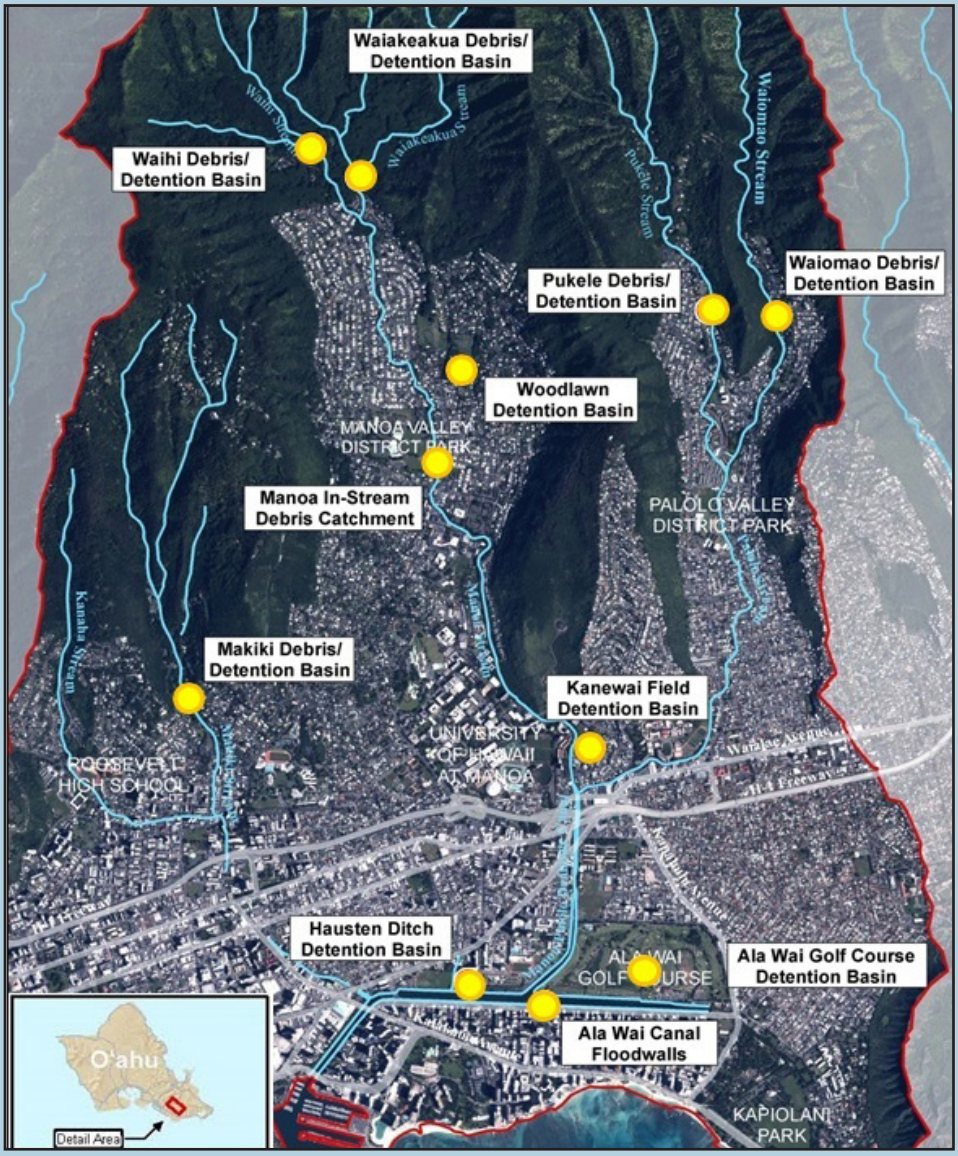
USACE rendering of 1% annual chance exceedance flood event without project.

Project Location and Features:

Not One Mega Project
BUT
ELEVEN MANAGEABLE
STRUCTURAL ELEMENTS

- Upper Watershed Detention
- Lower Watershed Detention
- Urban Flood Control

- 6 debris/detention basins in upper stream reaches
- 1 stand-alone debris catchment structure
- 3multi-purpose detention basins in open spaces of developed watershed
- Floodwalls along Ala Wai Canal (including two pump stations for interior drainage)



Ala Wai Canal project location and structural features

The Challenge to Execute Emergency Supplemental Flood Risk Management Studies and Projects in South Atlantic Division

By Patrick O'Donnell, PMP, Senior Plan Formulator, South Atlantic Division

After Hurricanes Harvey, Irma, and Maria caused extensive damage and suffering in 2017, Congress passed the Bipartisan Budget Act of 2018, also known as the Supplemental Appropriations Act, appropriating over $17 Billion in funding for the Army Corps of Engineers as emergency supplemental funding. The workload for the Corps nationwide is considerable, with extensive workload sharing by the districts with the greatest amount of work. In addition to the immediate work of emergency repairs, the South Atlantic Division (SAD) has a large portion of the long-term workload and is moving out on executing studies and construction in Alabama, Florida, South Carolina, Puerto Rico, and the U.S. Virgin Islands.

Emergency Supplemental Studies

The districts in the South Atlantic Division have 19 of the 38 Long Term Disaster Recovery Investment Plan (LDRIP) feasibility studies, eight of which are for Flood Risk Management. Over $50 Million in Investigations funds go to these 19 studies, which is roughly the total annual Federal feasibility study funding nationwide in recent years. With the tremendous workload this represents, six studies have been brokered to other districts, including three of the eight FRM feasibility studies that will be performed by Kansas City District, Pittsburgh District, and Chicago District. All studies using Investigations funds are 100% Federally funded. Districts in SAD have had just three FRM studies in the past five years, and now have five FRM studies to perform at the same time. The expectation is that all studies will be completed in three years.

Emergency Supplemental Construction

About $3 Billion, or 20%, of the LDRIP Construction funds are going to seven Flood Risk Management projects in the South Atlantic Division, including one major Dam Safety related project, Herbert Hoover Dike, which is around Lake Okeechobee, Florida. The remainder is in Puerto Rico as part of the long term response. The Rio Puerto Nuevo FRM project in San Juan, Puerto Rico, is receiving 10% of the LDRIP Construction funds alone. Other small FRM projects may be funded with Emergency Supplemental funds for Section 205, Small Flood Control Projects, of the Continuing Authorities Program. The expectation is that these long-term construction efforts will take about five years to execute.

SAD Footprint, Full USACE Effort

The North Atlantic Division (NAD) provided considerable assistance and guidance to SAD on their lessons learned with emergency supplemental work after Hurricane Sandy. Now the South Atlantic Division (SAD) has created the Hurricane Emergency Restoration Division (HERD) to oversee the overall execution of the Supplemental program. Brokering feasibility studies to other districts outside SAD is only part of the nationwide USACE involvement with FRM studies and projects. Peer review will include Agency Technical Review from experienced reviewers in several districts outside of SAD for decision documents. The Flood Risk Management Planning Center of Expertise (FRM-PCX) is now preparing to assemble technical review teams for the eight FRM feasibility studies, and will stay involved with the studies for the next three years. All levels of USACE will be involved in execution of the Emergency Supplemental work, and SAD appreciates the assistance of all in USACE to deliver the Emergency Supplemental program and "turn dirt"!

Hurricane Florence

As SAD, and USACE as a whole, continued to mobilize to implement the work required under the Emergency Supplemental, Hurricane Florence caused tremendous flooding and damage in September in North Carolina and South Carolina. Rainfall exceeded 20 inches in some areas, particularly near Wilmington, NC. Our Wilmington District and Charleston District employees must first take care of themselves and their families, and then prepare for disaster recovery efforts under P.L. 84-99 Flood Control and Coastal Emergencies. Soon the districts will have to focus on Project Information Reports and construction of emergency repairs to existing projects. This will place more burden on the districts to perform their regular work, and will challenge SAD and USACE to execute the Emergency Supplemental studies and projects.

TN Silver Jackets Meeting at the TN Association of Floodplain Managers Conference

By Lacey Thomason, US Army Corps of Engineers, Nashville District

Figure 1. Chattanooga Lookouts Baseball Game

Figure 2. Presentation on private vs federal flood insurance.

The TN Silver Jackets team held a meeting for the first time this year in conjunction with the TN Association of Floodplain Managers Annual Conference. Many TN Silver Jackets members already attend the conference yearly and we had the added benefit of reaching floodplain managers across the state who were not familiar with Silver Jackets. The conference was well attended and a great success with both relevant presentation topics and fun team building actives for our TN Silver Jackets group.

While portions of the conference were divided into multiple meeting rooms at a time the Silver Jackets meeting was the only meeting at the time for the entire conference and was very well attended. A brief overview of Silver Jackets was given along with updates on current projects. The TN fiscal year 2019 project, TN FRM Database, was presented and local floodplain managers were asked for input.

Floodplain managers were asked to give their name and title, describe local flooding issue, if they had identified any mitigation measures, and if they were in their county hazard mitigation plan. We went around the room by table to make sure everyone had a chance to contribute. We got some great feedback and discussion from getting everyone involved.

TN Silver Jackets has a sign in sheet for each meeting that already has the regular attendee's information where they can just check off that they are present and blanks for new attendees to fill out their contact information if they would like to be added to the distribution list. A significant number of new attendee's asked to be added to the TN Silver Jackets distribution list, more than previous meetings.

Another great benefit of hosting a Silver Jackets meeting in conjunction with the conference is that FEMA was already there in person. FEMA usually calls in to our meetings but it was great to have them in attendance.

Tennessee Silver Jackets plans to continue having a quarterly meeting each year in conjunction with the TN Association of Floodplain Managers Conference as we found it very beneficial for both groups.

Figure 3. Conference Presentation by Amy Miller TN NFIP Coordinator

Other Important Information

Events

This listing is for information only and is not a complete list of FRM-related meetings. These meetings are not endorsed by the Corps of Engineers unless specifically stated. If we have failed to list a conference/meeting/symposium that would be of interest to the Flood Risk Management community, please forward the conference details to us.

4-8 November 2018 – **2018 AWRA Annual Conference** – Baltimore, MD - http://awra.org/meetings/Baltimore2018/index.html

8-13 December 2018 – **9th National Summit on Coastal and Estuarine Restoration and Management** – Long Beach, CA - https://www.estuaries.org/2018-summit-general-info

6-10 January 2019 – **99th American Meteorological Society Annual Meeting** – Phoenix, AZ - https://annual.ametsoc.org/2019/

23-27 March 2019 – **2019 AWRA Spring Specialty Conference** – Omaha, NE - http://awra.org/

22-25 April 2019 – **National Hurricane Conference** – New Orleans, LA - http://hurricanemeeting.com/

19-24 May 2019 – **ASFPM Annual Conference** – Cleveland, OH - http://www.floods.org/index.asp?menuID=223&firstlevelmenuID=181&siteID=1

Be sure to check out floods.org for the dates of state conferences and training opportunities: http://www.floods.org/n-calendar/calendar.asp?date=3/12/2016

FRM Statements of Need: Submitting "Statement of Need" is the first step in the process of a concept becoming a requirement for research and development. If USACE District personnel have problems or situations they feel should be addressed by research, the Flood Risk Management Gateway, http://operations.usace.army.mil/flood.cfm, is the place to submit these research Statements of Need (SoNs).

Past issues of this newsletter, various links, news items, and presentations, are all available on the Flood Risk Management Gateway, https://operations.erdc.dren.mil Check it out!

If you would like to submit an article or an idea for an article for the next edition of the newsletter, or if you have any comments or questions about articles in this edition, please email ***Stephanie.N.Bray@usace.army.mil.***

FRM Flood Risk Management Newsletter

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