



SMART Reconnaissance Studies

U.S. ARMY CORPS OF ENGINEERS

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What is a Reconnaissance Study?

The U.S. Army Corps of Engineers' (USACE) process for developing water resources projects is characterized by a two-stage planning process. The first stage is the reconnaissance study, which is used to make a preliminary determination whether there is Federal interest in further studying the problem. If the reconnaissance stage ends with a determination of Federal interest, and non-Federal support for conducting a study, the study can proceed to the feasibility stage.

The planning activities undertaken during the reconnaissance phase lay the groundwork for the feasibility study phase. The reconnaissance phase is fully Federally funded, generally costs \$150,000 or less, and is completed in 12 to 18 months. The reconnaissance report produced during this phase documents the Federal interest based on a preliminary appraisal of the water resources problem and evaluation.

The feasibility study is a more detailed planning effort that may lead to a recommendation for Federal investment. The feasibility study is generally a 3 year, \$3 million effort, and is cost shared (50/50) between the USACE and a non-federal sponsor. Following a positive recommendation for federal investment in a water resources project, the study moves into the Preconstruction Engineering and Design phase, completing the detailed engineering and technical studies and design needed to construct the recommended project. Federal authorization of the project is necessary before construction can begin.

Reconnaissance Studies in 2014

USACE will be initiating nine new reconnaissance studies in Fiscal Year 2014, the first reconnaissance studies since FY2010. These new studies join the USACE active planning portfolio of risk-informed, SMART planning studies. From west to east, the nine new studies are:

- Seattle Harbor, WA
- Yuba River Ecosystem Restoration, CA
- Dry Creek (Warm Springs Dam) and Coyote Valley Dam Restoration, CA
- Port of Long Beach, CA
- Lower Santa Cruz River, AZ
- Coastal Texas Protection and Restoration, TX
- Houston Ship Channel, TX
- Satilla Watershed, GA
- Chesapeake Bay Comprehensive Plan

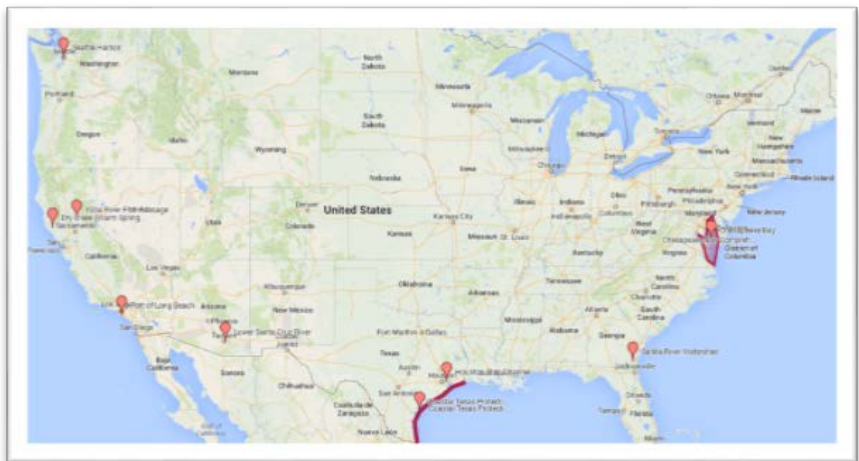


Figure 1: Reconnaissance Studies Initiated in FY14

Seattle Harbor, WA

Seattle Harbor provides access to existing container terminals and other marine industrial users that includes nearly 11,000 annual transits; the 5-year average for tonnage is over 25 million and is valued at over \$40 million annually.

The Harbor is located between the East, West, and Duwamish Waterways navigation channel in Puget Sound's Elliott Bay in Seattle, WA. The study will investigate deepening of these three waterways. The 34 foot authorized depth on the West Waterway and the 51 foot authorized depth on the East

Waterway frequently result in delays of up to several days at existing container terminals while ships wait for high enough tides to load and unload cargo.

The study will be led by USACE's [Seattle District](#), Northwestern Division.

Yuba River Ecosystem Restoration, CA

The Yuba River Ecosystem Restoration study will consider project modifications to Englebright Dam and Daguerre Point Dam to improve fish passage for native anadromous fish species, improve conditions for listed species and critical habitat, and contribute to overall population recovery of listed species while preserving the structures' benefits to the region.

The National Marine Fisheries Service issued a jeopardy Biological Opinion in 2012 on the impacts of the operations and maintenance of Englebright and Daguerre Point dams to threatened fish species in the Yuba River, concluding that the dams threaten the existence of the species. The opinion recommends fish passage at Englebright and the eventual removal of both dams - which would require Congressional authorization. USACE is implementing recommended measures within its authority to avoid jeopardizing these threatened species.

The 24-foot-high Daguerre Point Dam was built on the Yuba River in Yuba County in 1906 to prevent hydraulic mining debris from washing into the Feather and Sacramento Rivers. Daguerre Point Dam provides fish passage, however the Daguerre Point Dam fish ladders were constructed decades ago and are relatively small compared to today's standards for ladder design. The current ladders require frequent inspections and maintenance because they have historically become clogged with sediment and woody debris that can temporarily block passage or substantially reduce attraction flows. Recently installed grates over the fish ladder bays reduce the occurrence of blockages by woody debris. The dam was rebuilt in 1964 following damage from floods.

The 260-foot high, 1,142 foot span Englebright dam was originally constructed in 1941 for the storage of hydraulic gold mining debris. Englebright Dam is a complete barrier to fish passage. The dam provides stored water-right capacity, which is released each year through dam operations to benefit fish downstream, regional domestic and agricultural use, hydroelectric generation, and recreational benefits. The toxic mining debris behind both dams is of concern for both its impact on threatened species as well as potential downstream impacts to navigation and other facilities.

The study will be led by USACE's [Sacramento District](#), South Pacific Division.

Dry Creek (Warm Springs Dam) Restoration & Coyote Valley Dam Restoration, CA

The Russian River's Warm Springs Dam, about 75 miles northeast of San Francisco, California, is a USACE-constructed earthen dam 319 feet high and 3,000 feet long, completed in 1983. The Coyote Valley Dam is a USACE project that was completed in 1957, located on the east fork of the Russian River at Coyote Valley, about 115 miles northeast of San Francisco. It consists of an earth-filled dam 160 feet high and 3,560 feet long, with a reservoir storage capacity of 122,000 acre-feet.

A September 24, 2008 Biological Opinion, issued by the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA/NMFS), mandates that USACE perform various actions to save threatened salmonid species on the Russian River. This study will look at non-structural measures and studies, as required by the Biological Opinion, to keep the dams operating and to mitigate for associated impacts.

If the feasibility studies for the Warm Springs Dam restoration project and Coyote Valley Dam restoration project proceed, each will likely progress independently, but in parallel, since the two dams have individual separate authorizations and, technically, the dams' hydraulic operations are distinct and separate.

The study will be led by the USACE's [San Francisco District](#), South Pacific Division.

Port of Long Beach, CA

The Port of Long Beach, California is the second busiest seaport in the nation. Approximately 20 miles south of downtown Los Angeles, California, trade valued at more than \$140 billion moves through the Port each year. The study will consider a series of navigation improvements for improving vessel safety while maneuvering in the Port, and to better accommodate the current container vessel and liquid bulk fleets. Improvements under consideration include:

- Deepening the Federal approach channel to improve vessel safety and operating efficiency.
- Deepening the east approach channel and turning basin for the Pier J container terminal.
- Deepening the main channel and two Pier T Berths to accommodate latest liquid bulk vessels' draft and expansion of the turning basin to support the import of crude and refined petroleum products and the import/export of additional liquid bulk products.
- Site additional large anchorage locations for crude petroleum ocean-going vessels. The current number of deep draft anchorage sites is insufficient to accommodate the number of large deep draft vessels that currently call at the Port.

The study will be led by USACE's [Los Angeles District](#), South Pacific Division.

Lower Santa Cruz River, AZ

Flooding along Arizona's Santa Cruz River primarily impacts Pinal County, the City of Maricopa, and two Native American Tribes. Major flood events occurred on the River in 1983 and 1993, impacting residences, businesses, schools, agriculture, and transportation infrastructure. The damage from these floods has been widespread, forcing aerial evacuations, bridge closures, serious river and stream erosion, channel migration and significant sediment deposition.

The study will investigate watershed issues and opportunities to include flood risk management and ecosystem restoration.

The study will build on basic data collection and stakeholder coordination to characterize the relative flood risk in the Lower Santa Cruz River Watershed conducted via a USACE Flood Plain Management Services study. The Santa Cruz River Data Collection report found that 34 major flood events have occurred since the late 1800s, roughly one every 4 years. Six of the seven largest flood events have occurred since the 1960s. This area is now one of the fastest growing communities in Arizona.

The study will be led by USACE's [Los Angeles District](#), South Pacific Division.

Coastal Texas Protection and Restoration, TX

The study area for this flood risk management study consists of the entire 367 miles of the Texas Gulf Coast from the mouth of the Sabine River to the mouth of the Rio Grande, including Gulf and tidal waters, barrier islands, marshes, coastal wetlands, rivers and streams and adjacent areas that make up the interrelated coastal area of Texas.

Flooding from hurricanes and other rainfall events threaten 25 percent of the state population that live within the 18 coastal county area. Ten tropical storms and hurricanes that struck Texas in the last decade resulted in 176 fatalities and over \$36 billion in damages. The study area's critical coastal ecosystems includes 3.9 million acres of wetlands, 235,000 acres of sea grass, 367 miles of sea turtle nesting habitat, 380,000 acres of piping plover critical habitat, and 328 square miles of whooping crane critical habitat, as well as 21 state and Federal wildlife refuges. Of the 367 miles of shoreline, more than 60 percent has been identified by the Texas General Land Office (GLO) as subject to high rates of erosion.

The Coastal Texas Protection and Restoration study will develop a comprehensive coastal protection and restoration plan to reduce risk and damages to public safety, property, and environmental resources from storms and erosion. The goal of the study will be to identify critical data needs and recommend a comprehensive strategy for reducing flood risk through structural and nonstructural

measures that take advantage of natural features like barrier islands and storm surge storage in wetlands. The strategy will incorporate integrated plans for ecosystem restoration and flood damage reduction, coast-wide beach and dune ecosystem restoration, and comprehensive barrier island restoration. Alternatives to be considered will include improvements to existing systems (such as existing hurricane protection projects), and the creation of new structural protection plans for hurricane storm damage reduction.

The study will be led by USACE's [Galveston District](#), Southwestern Division.

Houston Ship Channel, TX

The Houston Ship Channel (HSC) extends 52 miles from its juncture with Texas City Channel at the entrance to Galveston Bay and terminates at its turning basin in the city of Houston. Each year, more than 200 million tons of cargo move through the Port of Houston, carried by more than 8,000 vessel and 200,000 barge calls.

The study will consider improvements to the Houston Ship Channel System to address a number of issues, including:

- The need for current vessel traffic having to “light load” to be able to transit the reach of HSC from Boggy Bayou to Turning Basin and along both the Bayport and Barbour Channels.
- Safety concerns making the turn into the Bayport Channel from the HSC at the Bayport flare.
- Reducing the risk of collisions and other incidents between vessels resulting from development along the channel and increased vessel traffic. This situation is expected to worsen with the increase in Panama vessels utilizing these channels after the Panama Canal Expansion Project opens in 2015.

The study will be led by USACE's [Galveston District](#), Southwestern Division.

Satilla Watershed, GA

The Satilla River Watershed covers about 4,000 square miles of the southeastern portion of the state of Georgia. Stakeholder watershed concerns include flood risks, flow restrictions along the creeks and rivers, and water quality and quantity ecosystem degradation. The watershed experienced significant flooding and Presidential disaster declarations in March 1998 and April 2009.

The reconnaissance study will examine the entire watershed to determine the causes of flooding and aquatic ecosystem degradation and investigate whether there is a Federal interest in developing solutions to address those problems. Although the primary focus of this study is flood risk management, aquatic ecosystem restoration measures could be considered to both reduce the effects of flooding and benefit the environment.

The study will be led by USACE's [Savannah District](#), South Atlantic Division.

Chesapeake Bay Comprehensive Plan, MD, VA, PA

The Chesapeake Bay watershed and tidal tributaries is the single largest estuary in the United States with a surface area of approximately 4,400 square miles. The Chesapeake Bay's ecosystem includes thousands of miles of river and stream habitat that interconnect the land, water, living resources and human communities of the Bay watershed. The Bay's vital habitats, including open water, submerged aquatic grasses, tidal and non-tidal marshes, freshwater wetlands and vernal pools, streams and forests support species abundance and diversity.

The reconnaissance study will evaluate potential aquatic ecosystem restoration measures and possible implementable solutions to include: wetland creation and restoration, environmental dredging, shoreline stabilization, and the beneficial use of dredged material. The analysis will include existing Federal, State and local plans and will address the most recent Chesapeake Bay Agreement commitments and Executive Order 13508 Chesapeake Bay Protection and Restoration goals, such as the integration of living resource protection and restoration; vital habitat protection and restoration; water quality

restoration; sound land use stewardship and community engagement, to the extent that such goals fall within the USACE's mission.

The study will be led by USACE's [Baltimore District](#), North Atlantic Division.

Looking Ahead: FY2015 Recons in the President's Budget

Nine new reconnaissance studies were included in the President's FY2015 budget. Each of these studies has been authorized, but initiation will be subject to appropriations for next fiscal year. The nine studies proposed for funding are:

1. Salton Sea, CA. The Salton Sea ecosystem is rapidly degrading from effects of high salinity and diminishing inflows. Water sources from the Colorado River and other tributaries to the sea have been lost due to natural and human actions. Degrading aquatic habitat has caused massive periodic fish and bird kills. As the sea shrinks, exposed lakebed sediments release wind-blown contaminants increasing risks to human health. This high salinity lake is a critical stop for migrating birds along the Pacific Flyway, an important lake fishery in the arid southwest, and provides habitat for over 400 different species including Federally listed species such as the Yuma clapper rail and the desert pupfish. This effort will include working collaboratively with the State, Salton Sea Authority, Salton Sea Science Center, cities, resource and regulatory agencies, stakeholders and interested parties.

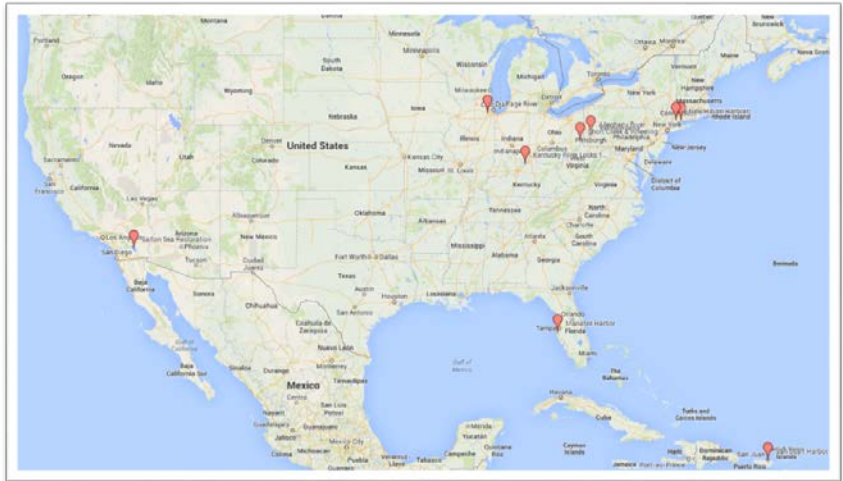


Figure 2: Reconnaissance Studies in the President's FY15 Budget

2. DuPage River, IL. Major storm events occurred in the DuPage River basin in 1996, 2008, 2009, and most recently in April 2013, resulting in overbank flooding along at least 20 communities and significant damage to residential and non-residential structures, critical infrastructure and the closure of two major interstate highways for several days. Average annual flood damages are currently estimated at \$30 million.
3. Short Creek and Wheeling Creek, OH. Flooding in the watershed has caused extensive property damage and a severe threat to public safety, including the loss of one life in the watershed in a 2003 flood.
4. Allegheny River Disposition Study, PA. This disposition study will examine locks and dams numbers 5 through 9 on the Allegheny River. There has been no commercial navigation through locks and dams 8 and 9 on the Allegheny River for years. Locks and dams 6-9 are operated for commercial barges by appointment only. This study will determine if there is a Federal interest in distributing or transferring operation and maintenance costs of the Upper Allegheny River locks and dams 5-9 to another interested entity.
5. Kentucky River Locks and Dams 1-4, Disposition Study, KY. Between 1830 and 1880, locks and dams 1 through 4 were built by private interests and the Commonwealth of Kentucky. USACE took responsibility for the facilities before 1900, rehabilitating the locks and dams, and operating and maintaining the facilities for commercial navigation purposes. The Disposition Study will identify actions needed to safely dispose of locks and dams 1, 2, 3, and 4; ensure compliance with laws

and regulations, including the National Environmental Policy Act; and confirm interest in future ownership of the properties.

6. Fairfield and New Haven Counties, CT. Numerous areas within the two counties have been identified by state and community officials as flood prone areas. During the 18 year period from 1992-2010, prior to hurricanes Irene and Sandy, four Presidential disasters had been declared in Fairfield and New Haven counties due to major storm events. The reconnaissance study will evaluate potential flood risk management and coastal storm damage reduction measures in both counties along the coastal tributaries and shoreline.
7. New Haven Navigation Improvements, CT. New Haven Harbor is Connecticut's largest deep water commercial industrial port. Tidal delays and light loading currently restrict deep draft vessel operations. WRDA 1986 authorized the deepening of the Harbor's main ship channels and maneuvering basins from their current depth of 35 feet to a depth of 40 feet. That project was never constructed and the authorization lapsed in 2002. The reconnaissance study will evaluate potential navigation improvement measures in the Harbor, including reconsideration of the deepening improvements to the main channel and associated maneuvering/turning areas to 40 feet or greater, as authorized in 1986, to enable more deeply loaded ships and larger ships to reach the terminals.
8. Manatee Harbor, FL. Manatee Harbor is located in Tampa Bay along the west coast of Florida. The port handles over 3.7 million short tons of cargo primarily associated with chemicals and related products, petroleum products, and crude construction materials destined for southwest Florida. The study will focus on deep draft navigation problems and opportunities primarily involving the problem of transportation cost inefficiency or the opportunity to reduce transportation costs. The navigation concerns will focus on two main problems: insufficient Federal channel depths and restrictive channel widths.
9. San Juan Harbor Channel Improvement, PR. San Juan Harbor is Puerto Rico's principal port, handling over 75 percent of the Commonwealth's non-petroleum waterborne commerce and is the only harbor on the north coast affording protection during inclement weather. The study will consider navigation improvements at San Juan Harbor to increase security, safety, and efficiency such as deepening, widening, and/or re-alignment of existing project features of the Harbor including channels, turning basins, and anchorages.

For more information on the USACE Planning Program, please visit planning.usace.army.mil or your [District's webpage](#).

