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Water Resource Issues in the 114th Congress

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Summary

The 114th Congress faces many water resource development, management, and protection issues. Congressional actions shape reinvestment in aging federal infrastructure (e.g., dams, locks, and levees) and federal and nonfederal investment in new infrastructure, such as water supply augmentation, hydropower projects, navigation improvements, and efforts to restore aquatic ecosystems. These issues often arise at the regional or local levels, but often have a federal connection. Ongoing issues include competition over water, drought and flood responses and policies, competitiveness and efficiency of U.S. harbors and waterways, and innovative and alternative financing approaches. The 114th Congress also may continue oversight of operations of federal infrastructure during drought and low-flow conditions, past large-scale flooding issues (e.g., Hurricane Sandy, Hurricane Katrina, Missouri and Mississippi River floods), and balancing hydropower generation, recreational use, and protection of threatened and endangered species. In addition to oversight, each Congress also provides appropriations for major federal water resource agencies, such as the U.S. Army Corps of Engineers (Corps) and the Bureau of Reclamation (Reclamation).

The issues before the 114th Congress are in part shaped by what earlier Congresses chose to enact and consider. Measures considered but not enacted by the 113th Congress include California drought legislation, various drought policy and water efficiency and conservation measures, regional restoration legislation (e.g., Klamath Basin, Great Lakes, Chesapeake Bay), actions to expedite water storage projects and permits, settlement of Indian water rights claims, and a lifting of restrictions on firearms at Army Corps projects.

Because of recent water conditions, disasters, or legal or agency developments, certain river basin issues are particularly likely to receive congressional attention during the 114th Congress. The Columbia River, Missouri River, and Sacramento and San Joaquin River (Central Valley Project) basins fall into this category. Other potential topics of congressional interest include emergency drought or flood legislation, private and public hydropower, water research and science investment and coordination, aging infrastructure, and environmental policy.

The 113th Congress enacted an omnibus Corps authorization bill, the Water Resources Reform and Development Act of 2014 (WRRDA 2014, P.L. 113-121). In addition to authorizing new programs (e.g., Water Infrastructure Finance and Innovation Act) and Corps construction projects, the legislation also established new processes that may shape how subsequent Corps project authorizations are identified. A Corps authorization bill is often considered by each Congress; enactment, however, has been less regular, with the most recent bills enacted in 2014, 2007, and 2000. The 113th Congress also enacted legislation to facilitate small conduit hydropower development (P.L. 113-23 and P.L. 113-24),

This report discusses recent congressional activity and possible topics for the 114th Congress. It provides an overview of the federal role in water resources development, management, and protection, with a focus on projects of the two major federal water resources agencies—Reclamation and the U.S. Army Corps—and related legislation. It also discusses overarching policy issues, such as drought and flood management and response, project funding and authorization priorities, and aquatic ecosystem restoration.

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Introduction

The 114th Congress is likely to face numerous water resource issues as it conducts oversight and deliberates on authorizations and appropriations related to federal water resource development, management, and protection. Such issues include how to make investment decisions in the face of fiscal constraints; how to maintain and reinvest in an aging portfolio of federal infrastructure (e.g., dams, locks, and levees); how to effectively respond to and prepare for flood and drought emergencies; and how to distribute investment between activities to meet new demands for water supplies, navigation, flood management, and aquatic ecosystem restoration and protection. These issues often arise at the regional level, but have a federal connection. For example, Congress may be faced with responding to various water related crises, such as extreme drought or flooding issues (e.g., California drought in 2014 and coastal flooding issues associated with Hurricane Sandy or other storms). More broadly, Congress may be faced with addressing navigation challenges due to drought-induced low river flows or floods, and addressing water supply needs of farm and urban communities while also protecting threatened and endangered species. The crux of many of these challenges is how to balance competing demands for water and river management, including how to cope with the growing budget limitations and the effect of federal project operations on the environment.

This report first discusses recent congressional activity and possible topics for the 114th Congress. Next it provides an overview of the federal role in water resources development, management, and protection, including a discussion of the two major federal water resources agencies—the U.S. Army Corps of Engineers (Corps) and the Bureau of Reclamation (Reclamation)—and related legislation. The report then provides an overview of overarching policy issues, including flood and drought preparedness and response, project funding and authorization priorities, and aquatic ecosystem restoration.

Recent Congressional Activity and Looking Forward

The water resource issues of the 114th Congress are in part shaped by the actions of past Congresses. Legislative activity often is specific to the federal water resource management agencies, such as the U.S. Army Corps of Engineers in the Department of Defense and the Department of the Interior's Bureau of Reclamation, or is specific to water use by particular sectors, such as energy, agriculture, navigation, recreation, and municipal and industrial use. Occasionally, Congress takes up broader water resource policy issues, such as coordination of federal water resource activities and programs. Legislation enacted for both the Corps and Reclamation during the 113th Congress was less than in prior Congresses, in large part due to congressional earmark policies; however, some broad legislation was enacted for both agencies.

Legislation Enacted in the 113th Congress

The 113th Congress enacted an omnibus Corps authorization bill, the Water Resources Reform and Development Act of 2014 (WRRDA 2014, P.L. 113-121).¹ Congress also included in separate legislation (P.L. 113-295) a provision increasing the fuel tax on commercial barges on federal

¹ For more information see CRS Report R43298, *Water Resources Reform and Development Act of 2014: Comparison of Select Provisions*, by Nicole T. Carter et al.

inland waterways.² The 113th Congress also provided regular and supplemental appropriations for the Corps to conduct its work and performed oversight on its flood and drought management and navigation actions, among other activities. The 113th Congress also provided appropriations for Reclamation to conduct its ongoing activities.³

Energy and environmental policy also affect water resources management and development. Two bills intending to facilitate the development of nonfederal hydropower were enacted in the 113th Congress: a small conduit hydropower development bill to facilitate nonfederal hydropower development at Reclamation facilities (P.L. 113-24) and a separate bill making alterations to the Federal Energy Regulatory Commission licensing process for certain projects (P.L. 113-23). Several provisions related to water management in California were included in enactment of the FY2014 Consolidated Appropriations Act (P.L. 113-76, H.R. 3547) in January 2014. Also included in P.L. 113-76 was a one-year extension of the CALFED authorization (Section 207), and reauthorization the Reclamation States Emergency Drought Relief Act of 1991 (extended through 2017; Sec. 206). The 113th Congress also reauthorized the National Integrated Drought Information System (NIDIS, P.L. 113-86), which, among other research, produces various Drought Monitor products.

The 113th Congress also enacted a farm bill (P.L. 113-79).⁴ In addition to providing support for farmers and crop production, farm bills provide support for agricultural water conservation and efficiency measures, conservation programs in priority watersheds, and groundwater protection and recharge, as well as water resource and infrastructure needs associated with soil and water conservation.⁵ The 2014 farm bill also amended and added to existing drought and flood disaster assistance for agricultural producers.⁶

Legislation Considered, but Not Enacted, During the 113th Congress

The 113th Congress also considered but did not enact legislation to augment developed water supplies (e.g., water storage, water reuse), settle Indian water rights claims, and provide direction for individual water projects and facilities. Several bills also would have authorized various regional aquatic ecosystem restoration efforts. These bills generally addressed issues related to the construction of projects for water quality and habitat restoration, as well as governance and reporting for ongoing federal restoration actions.

² The annual appropriations bill for the Corps and Reclamation is the Energy and Water Development Appropriations bill; however, both agencies occasionally receive funding in emergency or other supplemental appropriations acts, particularly in response to natural disasters, such as floods, droughts, and hurricanes. For more information, see CRS Report R41430, *Inland Waterways: Recent Proposals and Issues for Congress*, by Charles V. Stern.

³ In the 113th Congress, the Corps received \$5.3 billion in funding related to the landfall of Hurricane Sandy. For more information, CRS Report R42841, *Army Corps Supplemental Appropriations: Recent History, Trends, and Policy Issues*, by Charles V. Stern and Nicole T. Carter.

⁴ See CRS Report IF00014, *The 2014 Farm Bill (Agricultural Act of 2014, P.L. 113-79) (In Focus)*, by Renée Johnson and Jim Monke; and, CRS Report R43076, *The 2014 Farm Bill (P.L. 113-79): Summary and Side-by-Side*, coordinated by Ralph M. Chite.

⁵ For more information on agricultural soil and water conservation programs, see CRS Report R43504, *Conservation Provisions in the 2014 Farm Bill (P.L. 113-79)*, by Megan Stubbs.

⁶ For more information on agricultural disaster assistance programs, see CRS Report R43494, *Crop Insurance Provisions in the 2014 Farm Bill (P.L. 113-79)*, by Dennis A. Shields; CRS Report RS21212, *Agricultural Disaster Assistance*, by Dennis A. Shields; and CRS Report R42854, *Emergency Assistance for Agricultural Land Rehabilitation*, by Megan Stubbs.

Several bills related to aquatic ecosystem restoration throughout the country were considered in the 113th Congress and were pending at its conclusion. These bills generally addressed issues related to water quality and habitat restoration, as well as project construction for restoration and water supply allocation among users and the environment. Bills authorizing comprehensive ecosystem restoration initiatives were introduced for the Great Lakes (e.g., H.R. 2773 and S. 1232), Long Island Sound (H.R. 2174 and S. 1080), and Lake Tahoe (H.R. 3390 and S. 1451). These bills addressed governance of ecosystem restoration initiatives and the reauthorization of funding to continue restoration efforts, among other things. Other bills addressed specific aspects of ongoing restoration initiatives, such as expediting restoration project approval in the Everglades ecosystem. H.R. 5764 did pass the House, but was not voted on in the Senate. H.R. 5764 would have authorized the Great Lakes Restoration Initiative and \$300 million in appropriations annually from FY2015 to FY2019.

The 113th Congress also considered several different version of California drought legislation, as well as other legislation to augment water supplies or deal with low water supplies on a broader level. The House twice passed legislation aimed at addressing operation of the federal Central Valley Project (CVP) in California (H.R. 3964 and H.R. 5781) and the Senate also passed legislation to address CVP operations in times of drought emergencies (S. 2198). However, House and Senate negotiators did not come to agreement on bill language prior to the end of the 113th Congress.⁷

The 113th Congress also considered water research and development legislation targeted at specific programs or issues, such as research related to desalination (e.g., H.R. 745) and state water resources research institutes (S. 970). Similarly, the 113th Congress considered legislation (H.R. 5189 and S. 1971) to coordinate federal research and technologies to better understand and decrease the risks from the interdependencies of the energy (e.g., water use for oil and gas production and power plant cooling) and water sectors (e.g., energy for water transport and treatment).⁷

Unlike the 112th Congress (H.R. 5862), the 113th Congress did not consider legislation addressing the broad federal water science and research portfolio. Water science and research is spread across more than 20 federal agencies. No single water research strategy or formal coordination or prioritization mechanism exists. Some stakeholders are concerned that current research is insufficient to prepare the United States to confront domestic and international water challenges.

Water Resource Considerations for the 114th Congress

The 114th Congress may address some measures left pending at the end of the 113th Congress, and may consider other proposals as well. Because of recent water conditions (e.g., drought in portions of the West and Southwest), disasters, or legal or agency developments, certain basin issues are likely to receive congressional attention. These include the operation of federal reservoirs on the Sacramento and San Joaquin rivers (Central Valley Project in California) and on the Missouri River and its tributaries. Other river basins that may receive attention in the 114th Congress include the Colorado, Klamath, and Rio Grande river basins. Additionally, future

⁷ CRS Report R43199, *Energy-Water Nexus: The Energy Sector's Water Use*, by Nicole T. Carter; CRS Report R43200, *Energy-Water Nexus: The Water Sector's Energy Use*, by Claudia Copeland.

operation of Corps facilities on the Columbia River and its tributaries is central to discussions that are underway regarding modification of the Columbia River Treaty with Canada.⁸

Because of recent drought conditions in California and much of the West, Congress might again address drought assistance, planning, and preparedness through oversight hearings and/or legislation, including through Energy and Water Development Appropriations. (See Drought and Flood Preparedness and Response section below.)

The 114th Congress may conduct oversight of restoration activities, including those in the Chesapeake Bay, Everglades, Gulf Coast, Great Lakes, San Joaquin River, and Sacramento and San Joaquin Rivers Delta and its confluence with San Francisco Bay (Bay-Delta). Common themes in regional restoration efforts include demand for new project services (e.g., improved or new flood control, water supply, and navigation facilities), protection of threatened and endangered species, drought and flood management, and water quality concerns.

The 114th Congress also may react to efforts by the Administration to implement updated planning guidance for federal water resources projects and to guide federal investment in floodplains. Similarly, Congress may respond to Administration-wide efforts to incorporate climate change adaptation into agency plans and actions, including those being developed by the Corps and Reclamation. The 114th Congress also may engage in discussion of how threatened and endangered species designations and related critical habitat and environmental mitigation requirements affect water resource project construction and operations.

Federal Role in Water Resources

The federal government has long been involved in efforts to facilitate navigation, expand irrigation, and reduce flood and drought losses. For example, nearly every large river basin in the country—from the Columbia, Sacramento, and Colorado rivers in the West to the Missouri, Mississippi, and Delaware rivers—contains one or more federal dam or navigation projects. These projects have largely been constructed by the Corps and Reclamation. More recently, federal involvement has expanded to include municipal water supply development and efforts to protect water-related resources such as fish and wildlife. Increasing pressures on the quality and quantity of available water supplies have resulted in heightened local and regional water use conflicts throughout the country, particularly in the West and Southeast. Pressures include population growth, environmental regulation, in-stream species and ecosystem needs, water source contamination, agricultural and energy water demands, climate change and variability, and changing public interests, such as heightened demand for in-stream recreation.

Congress historically has played a major role in water resources through authorization of and appropriations for regional and site-specific activities; however, numerous responsibilities are split or shared with state, local, and tribal governments, particularly related to water allocation and resource planning and management. Congress also establishes the policies that define the federal role in planning for federal water resource projects, and provides direction for construction, maintenance, inspection, and support of federal projects. Congress makes these decisions within the context of multiple and often conflicting objectives, competing legal decisions, long-established institutional mechanisms (e.g., century-old water rights, and

⁸ See CRS Report R43287, *Columbia River Treaty Review*, by Charles V. Stern.

contractual obligations), and in response to events such as floods, droughts, and structural failures.

Federal water resource construction activities shrank during the last decades of the 20th century, marking the end of earlier expansionist policies that had supported large federal investments in dams and hydropower facilities, navigation locks and channels, irrigation diversions, and flood control levees, as well as basin-wide planning and development efforts. Fiscal constraints, changes in national priorities and local needs, few remaining prime construction locations, and environmental and species impacts of construction and operation of federal projects all contributed to this shift. Although these forces are still active, there are proposals for renewed federal financial and technical assistance to address growing pressures on developed water supplies, to manage regional water resources to meet demands of multiple water uses, and to address the aging stock of water resources infrastructure.

Recent drought conditions in the West and Southwest on top of extended and widespread drought in 2012, coastal flooding due to Hurricane Sandy and Hurricane Katrina, and Midwest floods of 2011 have raised other questions about the federal role in water resources. In particular, disasters have brought attention to the trade-offs in approaches to distributing federal appropriations among competing water resources projects, to risk management in water resources, and to the trade-offs in benefits, costs, and risks of the current division of responsibilities among local, state, and federal entities.

Federal Water Resource Agencies

Most of the large dams and water diversion structures in the United States were built by, or with the assistance of, Reclamation or the Corps. Historically, Reclamation projects were designed principally to provide reliable supplies of water for irrigation and some municipal and industrial uses. Corps projects were planned principally to improve navigation and reduce flood damages, with power generation, water supply, and recreation being incidental benefits. Reclamation currently manages hundreds of dams and reservoirs in 17 western states,⁹ providing water to approximately 10 million acres of farmland and 31 million people, as well as 58 power plants capable of producing 40 billion kilowatt-hours of electricity annually (enough for approximately 3.5 million homes), and which generate more than \$1 billion in revenues annually.¹⁰ The Corps operates nationwide, and its activities are diverse. The Corps has constructed thousands of flood damage reduction and navigation projects throughout the country, including nearly 12,000 miles of commercially active waterways, nearly 1,000 harbors, and 600 dam and reservoir projects (with 75 hydroelectric plants generating 68 billion kilowatt-hours annually). Additionally, the Corps constructed, usually with nonfederal participation, roughly 9,000 miles of the estimated 100,000 miles of the nation's levees, but the agency only maintains 900 miles. The remaining levees are operated by nonfederal entities, often local governments or special districts.

The Natural Resources Conservation Service (NRCS) in the U.S. Department of Agriculture also facilitates water resources development, primarily for flood control in small watersheds and for

⁹ Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming.

¹⁰ U.S. Department of the Interior, *Budget Justifications and Performance Information Fiscal Year 2014*, Bureau of Reclamation, Washington, DC, 2013, p. General Statement-2, <http://www.usbr.gov/budget/>.

soil and water conservation purposes. For more information on USDA conservation programs and policies, see CRS Report R40763, *Agricultural Conservation: A Guide to Programs*, by Megan Stubbs.

Many other federal agencies have water-related programs (e.g., the Environmental Protection Agency, the U.S. Geological Survey, the National Oceanographic and Atmospheric Administration, National Aeronautics and Space Administration, Federal Emergency Management Agency, and energy-related agencies such as the Federal Energy Regulatory Commission and Power Marketing Administrations). However, the remainder of this report focuses on the projects, programs, and policies of the Corps and Reclamation.

- For more information on federal water projects and programs—including types of financing and financial assistance—see CRS Report RL30478, *Federally Supported Water Supply and Wastewater Treatment Programs*, coordinated by Claudia Copeland.
- For more information on other federal water activities, see CRS Report R42653, *Selected Federal Water Activities: Agencies, Authorities, and Congressional Committees*, by Betsy A. Cody et al.

U.S. Army Corps of Engineers

During most years, the Corps responds to needs arising from flood and drought events, as well as performing its regular activities of constructing and operating and maintaining navigation, flood control, and ecosystem restoration projects and issuing permits for activities that may affect navigable waters and wetlands.¹¹ As previously noted, Congress authorizes Corps water resources activities and makes changes to the agency's policies generally in an omnibus authorization bill, often titled as a Water Resources Development Act. Although WRDA enactment is usually attempted on a biennial schedule, enactment is less regular in part because of multiple and conflicting stakeholder interests and tensions over potential changes in Corps policies. Also, the bill is not a reauthorization bill, *per se*—rather, it is largely an authorization bill, since few Corps authorities expire.¹² The most recent WRDAs were enacted in 2000, 2007, and 2014. Congress typically appropriates funds for these activities in annual Energy and Water Development Appropriations acts, and at times, it uses supplemental appropriations bills to fund Corps emergency activities.¹³

Hurricane Sandy in 2012 and Midwest flooding in 2011 raised many questions that the 114th Congress may pursue, including those related to national flood risk and federal actions to reduce that risk. In many cases, Corps facilities and their operations are central to debates over multi-purpose river management, especially during drought and flood conditions. For example, reservoir management by the Corps, such as in the Apalachicola-Chattahoochee-Flint basin

¹¹ A discussion of the Corps regulatory programs is beyond the scope of this report. The most notable of the Corps' regulatory activities is associated with wetland protection. For more on wetlands issues, see CRS Report RL33483, *Wetlands: An Overview of Issues*, by Claudia Copeland.

¹² While Corps authorizations generally do not expire or have established sunsets, an automatic de-authorization process begins if projects have not received funding for five years. A number of projects that were authorized in WRDA 2007 (P.L. 110-114) may soon undergo this process.

¹³ For more on these topics, see CRS Report R42841, *Army Corps Supplemental Appropriations: Recent History, Trends, and Policy Issues*, by Charles V. Stern and Nicole T. Carter.

(which provides much of the water supply for Atlanta, GA), is often controversial and has been challenged in the courts. Likewise, Corps operation of dams on the Missouri River and its effect on downstream navigation, flood control, species, and upstream water supplies remain controversial.

Bureau of Reclamation

Since the early 1900s, Reclamation has constructed and operated many large, multi-purpose water projects, such as Hoover Dam on the Colorado River and Grand Coulee Dam on the Columbia River. Water supplies from these projects have been primarily for irrigation; however, some municipalities also receive water from Reclamation projects. Many of the largest facilities also produce hydropower. Construction authorizations slowed during the 1970s and 1980s due to several factors. In 1987, Reclamation announced a new mission recognizing the agency's transition from a water resources development and construction organization to one primarily occupied with managing water resources, including managing water and related resources in an environmentally and economically sound manner.¹⁴ Since then, increased population, prolonged drought, fiscal constraints, and water demands for fish and wildlife, recreation, and scenic enjoyment have resulted in increased pressure to alter operation of many Reclamation projects. Such changes have been controversial, however, as water rights, contractual obligations, and the potential economic effects of altering project operations complicate any change in water allocation, delivery, or project operations.

In contrast to the Corps, there is no tradition of a regularly scheduled authorization vehicle (e.g., a WRDA) for Reclamation projects. Instead, Reclamation projects are generally considered individually; however, occasionally individual project authorizations are rolled into an omnibus bill, such as P.L. 111-11 enacted in the 111th Congress or P.L. 102-575 enacted in the 102nd Congress.¹⁵ Because project authorizations are typically enacted in stand-alone legislation, project authorizations and Reclamation bills in general have slowed considerably since the 112th Congress and the onset of congressional earmark moratoria.

As with the Corps, Reclamation river and reservoir management in the face of drought conditions and climate change may also receive congressional attention. In many cases, Reclamation facilities and their operation are central to debates over multi-purpose river management, particularly during times of drought or years of lower than normal precipitation and runoff. For example, controversies associated with Reclamation water resources management in the Sacramento and San Joaquin river watersheds (CA), the Colorado River Basin, and Klamath River Basin (CA and OR) have often been exacerbated by low water flows and have also been the subject of extended litigation—sometimes even in normal water years. Likewise, ongoing issues associated with Reclamation's operation of pumps in the San Francisco Bay/San Joaquin and Sacramento Rivers Delta (Bay-Delta) and their effect on water users and threatened and endangered species also are quite controversial. This situation also has been exacerbated by low water conditions in some years, including 2014—the third-driest water year on record for

¹⁴ Reclamation's current mission statement can be found at <http://www.usbr.gov/main/about/mission.html>.

¹⁵ Congress occasionally passes omnibus bills addressing key Reclamation policy changes, as well as new or revised project and program authorizations. Congress enacted P.L. 111-11 in 2009, which included multiple water and land subtitles. The last time Congress enacted a Reclamation omnibus bill was in 1992, the Reclamation Projects Authorization and Adjustment Act (P.L. 102-575).

California and one of the most extreme drought years on record.¹⁶ Drought and resultant low water supplies are again projected for California and other western areas for the 2015 water year.

Examples of Reclamation-related water project and management issues that may be considered during the 114th Congress include the following:

- response to drought, and operations of federal reservoirs and water delivery;
- regulatory impediments to new water storage projects;
- status of Reclamation's Safety of Dams program;
- authorization, appropriations, and reporting to address aging infrastructure;
- Sacramento-San Joaquin Valley water reliability and species concerns (e.g., Bay-Delta Conservation Plan, CALFED reauthorization, and proposals to address Central Valley Project water supplies);
- miscellaneous project adjustments;
- Klamath River Basin restoration and Klamath project management;
- Colorado River water management;
- San Joaquin River restoration settlement funding and oversight.

A broader issue that could receive attention from Congress is oversight of Reclamation's mission and its future role in western water supply and water resource management generally. As public demands and concerns have changed, so has legislation affecting Reclamation. For example, some project sponsors are considering new partnerships in project development, with project construction largely to be undertaken by nonfederal sponsors. In part, this has developed due to project sponsor frustration in delays over new project studies. Some are pursuing independent nonfederal financing of water resources infrastructure (see section on "Changing Federal Partnerships," below). Further, many in Congress have questioned Reclamation's shift in focus from a water resources *development* agency to a water resources *management* agency and believe Reclamation is not doing enough to develop new water storage. Others argue for increased funds and attention to augment water supplies in the West through water reuse, recycling, aquifer storage and recovery, and desalination technologies. Some also have expressed frustration with regulatory hurdles facing project development and expansions. On the other hand, some groups contend Reclamation has not done enough to protect species and the environment generally.

Overarching Policy Issues

In addition to issues related to federal projects, the 114th Congress faces a number of overarching water resources issues, including flood and drought management and response; project funding and authorization priorities; and aquatic ecosystem restoration.

¹⁶ See <http://www.water.ca.gov/waterconditions/>.

Drought and Flood Preparedness and Response

Congress is often faced with reacting to natural disasters such as droughts and floods. Drought conditions in California and elsewhere in the West and Southwest, and widespread drought in 2012, have left many areas vulnerable to drought-induced impacts, such as water supply and use limitations, reduced agricultural and power production, and degraded fish and wildlife habitat. Responsibilities for drought planning and response are split among various levels of government and involve many different federal agencies. Although Congress has enacted legislation to coordinate drought information through the National Integrated Drought Information System (NIDIS), there is no overarching national drought policy.

In addition to NIDIS reauthorization (P.L. 113-86) and drought-related provisions of the 2014 farm bill, the 113th Congress enacted legislation (P.L. 113-121) that authorized the Corps to assess its reservoir operations during drought and expanded EPA loan and loan guarantee opportunities and eligibility for water supply systems, as discussed in CRS Report R43298, *Water Resources Reform and Development Act of 2014: Comparison of Select Provisions*. Multiple bills in the 113th Congress addressed drought operations of Reclamation facilities (e.g., H.R. 3964, H.R. 4239, and S. 2198). Others addressed water efficiency, conservation, and alternative supplies (e.g., H.R. 5363, S. 2771); several would have facilitated federal or nonfederal water storage projects (e.g., H.R. 3980, H.R. 5412). Additionally, some bills (e.g., S. 2016) proposed changes to the Stafford Act, an emergency assistance act. The majority of these bills consisted of authorizations, with many provisions' implementation contingent upon appropriations; a few bills proposed appropriations to address the western U.S. drought (e.g., H.R. 4039, S. 2016).

Because of ongoing drought conditions in much of the West, Congress might again address drought planning and preparedness through oversight hearings and/or specific legislation. For more information on drought impacts and congressional response, see:

- CRS Report R43407, *Drought in the United States: Causes and Current Understanding*, by Peter Folger and Betsy A. Cody;
- CRS Report IF00058, *Drought Policy, Response, and Preparedness (In Focus)*, by Nicole T. Carter and Betsy A. Cody;
- CRS Report RS21212, *Agricultural Disaster Assistance*, by Dennis A. Shields; and
- CRS Report R42854, *Emergency Assistance for Agricultural Land Rehabilitation*, by Megan Stubbs.

Periodic but intense flooding also garners attention from Congress. For example, Hurricane Sandy flooding in 2012 and Midwest floods in 2011 tested the nation's emergency response system and resulted in billions of dollars in damages. Although the Corps is the principal flood-fighting agency, other agencies also play a role in flood response and mitigation, such as FEMA's disaster assistance, flood insurance, and pre-disaster mitigation programs. Additionally, responsibilities for flood damage reduction are spread among federal, state, local, and tribal governments. States and local governments in many ways play a primary role in floodplain management because of their jurisdiction over land use decisions and local zoning ordinances—deciding where and how development may occur. The 113th Congress was engaged in some

aspects of flood policy: policies affecting FEMA's National Flood Insurance Program,¹⁷ flood damage reduction program and project authorizations in WRRDA 2014, and oversight recovery for areas recently affected by floods. Given the magnitude of the nation's flood risk (e.g., over \$10.6 trillion in insured properties in coastal counties on the East Coast and along the Gulf of Mexico)¹⁸ and how the nation's flood risk is increasing,¹⁹ the 114th Congress may consider additional ways to reduce flood risk, such as by improving infrastructure and protecting natural flood mitigation, removing disincentives to improved floodplain management, or promoting more pre-disaster recovery plans for highly vulnerable areas.

Funding and Authorization Priorities

Aging Infrastructure

U.S. water infrastructure is aging; the majority of the nation's dams, locks, and levees are more than 50 years old.²⁰ Failure of these structures could have significant effects on local communities as well as regional and national impacts. Major capital investments in these structures have been limited in recent years and repairing these facilities would cost billions of dollars.²¹ Congressional funding has largely been at the project level and has remained essentially flat, while funding needs have increased over time. To date, no comprehensive reporting or funding solutions to these issues has been enacted. Some propose funding mechanisms that might be more conducive to major capital investments in these projects, such as authorization of loan programs for some infrastructure types, or else including water resource infrastructure among the eligible recipients of funding from an infrastructure bank (such as that proposed in H.R. 2553 in the 113th Congress). Others have proposed utilizing revenues from project beneficiaries (e.g., hydropower revenues, increased user fees) to fund project repairs and upgrades, or even deauthorizing and/or transferring projects to nonfederal entities, such as state or local governments. Still others think that Congress requires more uniform information on the extent of this issue before it considers major funding solutions. In the 113th Congress, the Senate held a hearing on this topic and enacted legislation that would require increased reporting by Reclamation on its aging infrastructure backlog (S. 1800). (See also discussion below on "Changing Federal Partnerships.")

¹⁷ CRS Report R42850, *The National Flood Insurance Program: Status and Remaining Issues for Congress*, by Rawle O. King.

¹⁸ AIR Worldwide, *The Coastline at Risk: 2013 Update to the Estimated Insured Value of U.S. Coastal Properties*, Boston, MA, 2013.

¹⁹ A recent study concluded that the typical 100-year riverine and coastal flood hazard areas are expected to grow nationally by 40% to 45% by 2100. AECOM, *The Impact of Climate Change and Population Growth on the National Flood Insurance Program Through 2100*, Federal Insurance and Mitigation Administration, Federal Emergency Management Agency, June 2013.

²⁰ For example, the majority of the Bureau of Reclamation's facilities are more than 50 years old, and Corps infrastructure averages more than 55 years old. See CRS Report RL34466, *The Bureau of Reclamation's Aging Infrastructure*, by Charles V. Stern.

²¹ For example, for the Corps alone, waterway users previously estimated that needed lock repairs and upgrades total \$8 billion-\$18 billion over the next 20 years, and the Corps has stated that it will require more than \$26 billion for dam safety repairs over the next 25 years. Needed repairs to Reclamation facilities totaled \$3.2 billion in 2008.

Changing Federal Partnerships

Some have expressed frustration with the pace of authorization for federal water resource projects and this has resulted in some local sponsors pursuing projects with limited federal partnership or support, or with expectations of future federal reimbursement or credit. An example is the potential construction of Sites Reservoir in California—an off-stream water storage project associated with the federal Central Valley Project (CA). Language authorizing nonfederal construction of proposed federal projects (as long as no federal funding is used), was included in H.R. 1837 and H.R. 6247 in the 112th Congress and H.R. 3964 in the 113th Congress. The FY2014 Consolidated Appropriations Act (P.L. 113-76, H.R. 3547) included a provision authorizing the Secretary of the Interior to partner with local joint power authorities to advance authorized planning and feasibility studies, among other things, including providing grants for such purpose (Section 208). The 113th Congress (e.g., P.L. 113-121) expanded the ability for nonfederal entities to advance funding for federal projects to spur project construction. Such proposals, however, raise the question of whether federal investment is needed if local sponsors can finance the projects on their own, whether the federal government will be able to meet the expectations for reimbursement, and whether the nonfederal sponsors with available financing will determine which projects get reimbursed from limited federal water resources infrastructure funds.

Another approach was initiated in the 113th Congress through its authorization of Title X of WRRDA 2014, the Water Infrastructure Finance and Innovation Act (WIFIA). The title authorized a pilot program, to be Administered by the Corps and the Environmental Protection Agency, for loans and loan guarantees for certain flood damage reduction, public water supply, and wastewater projects. WIFIA was modeled after a similar program that assists transportation projects, the Transportation Infrastructure Finance and Innovation Act, or TIFIA, program.²²

Earmarks and Project Funding & Authorizations

Water resource project funding is often a part of the debate on congressionally directed spending, or “earmarks.” Although water resource project development has historically been directed by Congress, the site-specific nature of the authorizations and appropriations process resulted in projects being subject to earmark disclosure rules and earmark moratoria beginning in the 112th Congress.²³ Earmark moratoria appear to be altering the makeup of Corps and Reclamation appropriations in particular by reducing the congressional additions of specific projects to the budget, and by Congress funding broad categories of activities rather than specific projects. As a result, some projects that have historically benefitted from congressional support have received less (or no) funding in recent enacted appropriations bills.²⁴ In addition to funding impacts, earmark moratoria have also influenced consideration of site-specific authorizations of water resource projects.

²² For more information, see CRS Report R43315, *Water Infrastructure Financing: The Water Infrastructure Finance and Innovation Act (WIFIA) Program*, by Claudia Copeland.

²³ In the 112th Congress, the House Republican Conference, Senate Republican Conference, and the Senate Appropriations Committee all adopted moratoria on earmark requests that are significant to how Congress directs these activities.

²⁴ See CRS Report R43567, *Energy and Water Development: FY2015 Appropriations*, coordinated by Mark Holt.

Aquatic Ecosystem Restoration

The 114th Congress may consider the status and priority of major federal efforts to restore aquatic ecosystems that have been altered or impaired by development, habitat loss, and federal water resource projects. Some of these restoration initiatives include those in the Everglades, California Bay-Delta, Great Lakes, Gulf Coast, Chesapeake Bay, Klamath Basin, and elsewhere. The 114th Congress may consider a number of issues pertaining to these ecosystems. For example, Congress may consider legislation to authorize a framework for governance and a comprehensive restoration plan for the Great Lakes and might conduct oversight over the implementation of restoration efforts in the Gulf Coast region. Further, lack of congressional authorization for new construction projects in the Everglades, such as the Central Everglades Planning Project (CEPP), has caused concern that the initiative could be delayed. Congress might consider policies that would streamline authorizations to allow for more projects to be implemented. Funding for existing and new restoration initiatives might generate controversy and could face challenges in the 114th Congress. Deliberations over FY2016 appropriations could also address ecosystem restoration initiatives in various appropriations bills.

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