

**INTERNATIONAL BOUNDARY AND WATER  
COMMISSION - CONSTRUCTION**

## Proposed Appropriation Language

### CONSTRUCTION

For detailed plan preparation and construction of authorized projects, [\$43,250,000] \$43,250,000, to remain available until expended, as authorized. (*Department of State, Foreign Operations and Related Programs Appropriations Act, 2009.*)

# INTERNATIONAL BOUNDARY AND WATER COMMISSION CONSTRUCTION

## *Resource Summary*

(\$ in thousands)

Appropriations	FY 2008 Actual	FY 2009 Estimate	FY 2010 Request	Increase / Decrease
Positions	18	18	18	0
Funds	125,209	43,250	43,250	0

### *Overview*

The International Boundary and Water Commission (IBWC) is a treaty-based binational organization comprised of a United States Section (USIBWC) and a Mexican Section. The USIBWC is headquartered in El Paso, Texas, and the Mexican section is headquartered in Ciudad Juarez, Chihuahua. Both Sections have field offices strategically situated along the boundary, which enables the IBWC to carry out its mission objectives and meet its required obligations.

Pursuant to treaties between the U.S. and Mexico and U.S. law, the USIBWC carries out several construction projects. This appropriation provides funding for construction projects undertaken independent of, or with, Mexico to rehabilitate or improve water deliveries, flood control, boundary preservation, and sanitation.

Since the Convention of February 1, 1933, which provided for rectification of the Rio Grande through the El Paso–Juarez valley, the two governments have participated in several binational construction projects. The Treaty of 1944 provided for the two governments to construct diversion and storage dams on the Rio Grande and Colorado River. The dams provide the means for conservation and regulation of international river waters. In addition, the 1944 Treaty provides for flood control works on the Rio Grande, Colorado River, and Tijuana River. It also provided for both governments to give priority attention to border sanitation issues.

This appropriation provides funding for construction and major renovations along the U.S. – Mexico border that enables the storage, distribution, and delivery of international waters in the Rio Grande and Colorado River, affording protection of lives and property from floods in bordering communities. In addition, the appropriation provides for the preservation of the international boundary, and the improvement of the water quality on both sides of the border.

### **Border Sanitation**

Under the authority of the 1944 Water Treaty between the U.S. and Mexico, the IBWC is entrusted to give preferential attention to border sanitation issues. Presently, residents in IBWC’s jurisdiction are facing a number of sanitation problems in the western land boundary region. These problems are mostly a result of trash, debris, and sewage entering into the U.S. from Mexico through rivers and storm water runoff. The IBWC is currently working toward addressing bi-national sanitation issues at the following areas: Nogales AZ, Calexico, CA (New River), and in San Diego, CA (Tijuana River Valley, Estuary and coastal environment).

The inflow of trash, debris, and raw sewage from Mexico through the New River has for years created major health and sanitation concerns in Calexico, CA. The U.S. Environmental Protection Agency (EPA) is currently working on a project to address the sewage issues across the border in

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Mexicali, and the USIBWC is working on addressing the trash and debris problem that impacts U.S. residents in Calexico, California. The USIBWC is working with the City of Calexico to develop defensive measures to eliminate or reduce the amount of trash and debris conveyed into the U.S. through the New River.

In 1997, the USIBWC completed construction of the advanced primary treatment portion of the South Bay International Wastewater Treatment Plant (SBIWTP). The purpose of the SBIWTP is to capture and treat Tijuana wastewater, which would otherwise flow into the U.S. through the Tijuana River and canyons, to secondary standards for discharge into the Pacific Ocean. In the interest of addressing public health and environmental concerns as expeditiously as possible, the USIBWC and EPA decided to construct the SBIWTP in stages and operate the advanced primary plant and discharge the effluent into the ocean prior to the construction of the secondary treatment facilities. Secondary treatment facilities are now under construction and should be completed by November 2010, thereby bringing the South Bay International Wastewater Treatment Plant into compliance with the Clean Water Act and its discharge permit.

The City of Nogales and the USIBWC jointly own the Nogales International Wastewater Treatment Plant (NIWTP), located 8.8 miles from the border in Nogales, Arizona. The plant, which is operated by the USIBWC, provides treatment of wastewater from both Mexico and the United States, and discharges the effluent into the Santa Cruz River. In 2001, more stringent standards, which could not be attained by the NIWTP, were applied to the CWA discharge permit. As a result, the USIBWC is working with the City of Nogales, EPA, and the Border Environmental Cooperation Commission (BECC) to upgrade the NIWTP to meet current CWA discharge permit standards. BECC has certified a project, which will be primarily funded by EPA, to develop and incorporate upgrades at the NIWTP to ensure compliance with the new discharge standards. A design-build contract was awarded in November 2006. Construction of the NIWTP upgrades is expected to be completed by August 2009.

### **Flood Control**

The USIBWC operates and maintains flood control systems along the Tijuana River and the Rio Grande. These flood control systems protect the lives and property of over 3 million U.S. residents. Each country owns and is responsible for the maintenance of flood control works in its respective territory.

Currently, the USIBWC is in the process of rehabilitating deficiencies that have been identified in numerous portions of its Rio Grande flood control systems, addressing a large portion with funds appropriated in the American Recovery and Reinvestment Act of 2009. The Canalization segment starts in southern New Mexico and ends at American Dam where the international segment of the Rio Grande begins. The Rectification (in far west Texas), Presidio, and Lower Rio Grande (south Texas) segments are on the international portion of the Rio Grande River, which require coordination with Mexico; however, the work is limited to the U.S. portions of the flood control systems. The Canalization segment (130 miles of levees on both side of river), authorized by law in 1935 to facilitate water deliveries to Mexico under the Convention of 1906 and to protect against Rio Grande floods, extends 106 miles from Percha Dam in south central New Mexico to American Dam in El Paso, Texas. The Lower Rio Grande Flood Control Project (270 miles of levee) and the Rectification segment (91 miles of levee) were both authorized by legislation in the 1930's and the Presidio segment (15 miles of levee) authorized by law in 1970. The Lower Rio Grande Project was authorized solely for flood control, while the Presidio and Rectification segments serve the dual purpose of flood control and boundary preservation.

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## *Program Description*

The USIBWC's construction program is organized into four subprogram groups, which coincide with the agency's strategic goals: Boundary Preservation, Water Conveyance, Water Quality, and Resource and Asset Management.

- The Boundary Preservation Subprogram addresses all land and river boundary demarcation and delineation efforts, including mapping of the river boundaries.
- The Water Conveyance Subprogram consists of all mission activities related to the conveyance, distribution, diversion, storage, and accounting of boundary/transboundary river waters, including flood control and hydroelectric power generation.
- The Water Quality Subprogram involves the construction or rehabilitation of sewage treatment facilities or other infrastructure, which improves the quality of river waters.
- The Resource and Asset Management Subprogram provides capital assets that support mission operations, such as administration buildings, warehouses, heavy mobile equipment, and security enhancements at field office facilities.

The USIBWC will carry out projects under these subprograms, while exploring innovative and best practices in both the private and public sectors, to achieve its mission. The FY 2010 funding request for the construction activities are as follows:

### **Boundary Preservation Program (\$0)**

The USIBWC is not requesting funds for construction of boundary preservation projects in FY 2010.

### **Water Conveyance Program (\$29,800,000)**

#### Rio Grande Flood Control System Rehabilitation - \$21,400,000

This project, initially funded in 2001, is a multi-year effort that includes the evaluation of approximately 510 miles of existing Rio Grande levees, and rehabilitation or improvement of deficient levee segments and related flood control structures in the United States. These levees contain about 440 miles of river and interior floodway channel along three unique Rio Grande Flood Control Systems. These three flood control systems are identified as the Upper Rio Grande, Presidio Valley, and Lower Rio Grande Flood Control Systems. The Upper Rio Grande Flood Control System protects 1 million U.S. residents in the metropolitan statistical areas of Las Cruces, New Mexico and El Paso, Texas with its 225 miles of levees. The fifteen-mile long Presidio Valley Flood Control System provides flood protection to nearly 5,000 people in Presidio, Texas. The Lower Rio Grande Flood Control System, with its 270 miles of river and interior floodway levees, protects one million U.S. residents in the metropolitan statistical areas of Brownsville-Harlingen and McAllen-Edinburg-Mission in south Texas.

Deficient levee segments will be improved in order of priority by risk, population, and development. The USIBWC is currently working together with the Department of Homeland Security and other stakeholders to address the flood control deficiencies jointly with border fence initiative. In FY 2010, the USIBWC will continue to work with its stakeholders to monitor environmental compliance, develop design plans for improvements along the interior floodways, and construct improvements along the river levee in the Lower Rio Grande region. The agency will also work toward acquiring easements, preparing design plans, and constructing improvements in the Upper Rio Grande Flood

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Control System. The USIBWC plans to begin design work for levee improvement of the Presidio Flood Control Project after conclusion of geotechnical investigations results.

### Safety of Dams Rehabilitation - \$5,000,000

Originally funded in FY 2001, this project will continue a multi-year effort for the rehabilitation and proper operation of all IBWC dams, as recommended by the Joint Technical Advisors of the Federal Safety of Dams Program. The USIBWC is solely responsible for operation and maintenance of two diversion dams on the Rio Grande (American and International), and jointly responsible for four international dams (Amistad, Falcon, Anzalduas, and Retamal). These dams provide for distribution of the Rio Grande waters between the U.S. and Mexico as well as for the conservation, flood control, water storage, power generation, and regulation of the flow of the river, pursuant to the 1944 Water Treaty.

Amistad, Falcon, Anzalduas, and Retamal Dams were inspected by the Joint Technical Advisors, which includes the U.S. Army Corps of Engineers (USACE), in April 2007. These four dams were rated in accordance with the risk-based action classification system used by the USACE. The safety inspection yielded urgent and high priority deficiencies at three of the four dams. Amistad Dam received a category rating of Dam Safety Action Class (DSAC) II, "urgent, potentially unsafe." Falcon and Retamal Dams received a DSAC III rating, "high priority, conditionally unsafe," while Anzalduas Dam received a DSAC IV rating, "priority, marginally safe." Therefore, the USIBWC is developing strategies to address these deficiencies and is revising its work plan accordingly. The FY 2010 request will be used to conduct engineering studies on the foundations and embankments of Amistad and Falcon International Storage Dams, and to develop viable remediation options to resolve the seepage problem at both dams.

### Colorado River Boundary and Capacity Preservation - \$400,000

This project was initially funded in 1998 to reestablish the international river boundary and improve the conveyance capacity in the international segment of the Colorado River in Yuma, Arizona. However, due to unresolved issues concerning channel capacity and boundary-related obligations along the 24-mile segment, the USIBWC reduced the scope of the project.

The current project will focus on restoring the flow capacity of the Colorado River channel at Morelos Dam, which has been reduced by sedimentation and vegetation. The accumulated sediment and vegetation obstruct flows at the dam, and hinder its ability to divert and/or pass high flows downstream. The revised work plan will involve clearing 39 acres of vegetation, removing and disposing of approximately 270,000 cubic yards of sediment, and establishing 43 acres of native riparian habitat to mitigate for environmental impacts. This effort will restore the flood control capacity immediately upstream and downstream of the dam, and will decrease the risk of operational failure by ensuring that accumulated sediment at the dam does not restrict gate operations. The FY 2010 request will be used to reestablish approximately 43 acres of riparian habitat to mitigate for environmental impacts (restoration and mitigation activities) for the Morelos Dam sediment removal project. This will conclude the Colorado River Boundary and Capacity Preservation program.

### Reconstruction of the American Canal - \$3,000,000

The American Dam and Canal were built by the United States. In 1938 to divert and convey the U.S. Rio Grande waters for municipal and agricultural use. This canal, which is a vital source of water supply for the desert city of El Paso, Texas, is in very poor condition and at risk of failing. The canal

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lining contains many concrete panels with exposed and rusted rebar, and cracked, crushed, separated, or overlapping sections. Soil voids have also formed underneath the canal lining, since waters have carried away embankment materials over time through the breaks and deteriorated weep holes. As a result, the canal lining may collapse and prevent the deliveries of Rio Grande waters to U.S. agricultural and municipal stakeholders.

The American Canal runs adjacent to the American Smelting and Refining Company (ASARCO), a century-old iron-ore and copper refinery that filed for Chapter 11 reorganization under the federal bankruptcy code in 2005. Refinery operations have contaminated the adjacent canal embankment with dangerously high levels of lead and arsenic, and will require the environmental remediation of soil and groundwater during construction. The USIBWC has entered into negotiations with ASARCO asset holders in an effort to seek financial restitution for the environmental remediation.

The American Canal is subdivided into three segments; each segment is separated by a highway culvert. Although reconstruction of each segment will be phased in over a three-year period, construction can only be performed during the non-irrigation season, which extends from mid-October to mid-February. The FY 2010 request will be used to address historical property requirements and prepare the design plans for two of the three reaches (the upper and the lower reaches).

### **Water Quality Program (\$6,750,000)**

#### Secondary Treatment of Tijuana Sewage - \$6,000,000

The project is providing new facilities in the United States to address secondary treatment of Tijuana sewage and to bring the existing South Bay International Wastewater Treatment Plant into compliance with the Clean Water Act and its discharge permit. The 2010 request will initiate construction of an administration and laboratory building with a Supervisory Control and Data Acquisition (SCADA) system for the treatment plant. Failure to complete the project as requested will impact the plant's treatment operations, thus compromising compliance with the NPDES permit requirements and a court order.

#### Nogales International Outfall Interceptor (IOI) - \$750,000

The USIBWC and the City of Nogales are co-owners of the Nogales International Wastewater Treatment Plant (NIWTP), which is located in Rio Rico, Arizona, and provides treatment of sewage for both Nogales, Arizona, and Nogales, Sonora. The Nogales International Outfall Interceptor (IOI) is the infrastructure that conveys wastewater from Nogales, Sonora, Mexico and Nogales, Arizona to the NIWTP. The treated effluent is discharged into the Santa Cruz River, where it provides a perennial surface water source to recharge groundwater levels and sustain riparian habitat. The IOI is approximately 46,600 feet (8.83 miles) in length and is comprised of 24- to 42-inch diameter unlined reinforced and unlined unreinforced concrete pipe. It was initially constructed during 1970 and 1971. However, increased demand due to population growth on both sides of the border has produced a hydraulic capacity problem in the Nogales International Wastewater Conveyance System. The pipe has also deteriorated over time, developing many cracks and structural problems in the system.

Consequently, excessive amounts of extraneous water enters the system as infiltration and inflow, and also results in wastewater outflows to the environment. Thus, the IOI must be replaced to avoid adverse environmental impacts and to ensure reliable operation of the international wastewater collection and treatment system. The USIBWC is currently working with its stakeholders, the City of

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Nogales and Mexico, to cost-share in this project. The FY 2010 request of \$750,000 will fund the USIBWC's share of the project design.

### **Resource and Asset Management Program (\$6,700,000)**

#### Facilities Renovation - \$3,400,000

Originally funded in FY 1992, this multi-year program renovates and modernizes deteriorated USIBWC facilities along the U.S.-Mexico border region to current industry standards. These facilities, most of which were constructed between 1930 and 1950, require major rehabilitation work to meet OSHA safety standards, current environmental laws, and to provide more efficient, effective and secure working environments. The project consists of structural, electrical and mechanical improvements; as well as renovations necessary for compliance with environmental, occupational safety and health, handicap, and other regulatory requirements. The USIBWC will use the FY 2010 request to replace the roadway lights at Falcon Dam, construct a new flammable materials storage building at Amistad Dam, construct new chlorine and sulfur dioxide chemical storage buildings at the NIWTP, and renovate the administration buildings at Fort Hancock and Mercedes, Texas.

#### Heavy Equipment Replacement - \$1,000,000

Originally funded in FY 2001, this multi-year program replaces deteriorated and obsolete heavy construction equipment. Funding will improve the agency's operational efficiency and productivity by significantly reducing the time spent repairing old equipment. Heavy construction equipment is essential for daily operations such as levee maintenance, floodway mowing, erosion control, arroyo clearing, roadway maintenance, riprap replacement, sludge and silt removal. Having the proper equipment available and in an operational status has proven also to be critical during flood events and other emergencies. The proper equipment greatly improves the agency's ability to control flooding and protect approximately 2 million U.S. residents and 1.5 million acres of property. FY 2010 funds will be used to purchase a backhoe loader, dozer, and dump truck for the Amistad Dam Field Office; and a tractor slope mower for the Mercedes Field Office. This equipment is needed for flood control maintenance activities.

#### Critical Infrastructure Protection - \$2,300,000

The USIBWC is requesting funds to continue a multi-year project to improve security at its facilities, which includes the critical infrastructure: Amistad and Falcon International Storage Dams and Power Plants, and the South Bay and Nogales International Wastewater Treatment Plants. This project will assist the agency in countering potential threats to its critical infrastructure and deter illegal activity away from these facilities. This project is consistent with the Department of Homeland Security initiatives (Homeland Security Presidential Directives 7 and 13), the Critical Infrastructure Protection (CIP) Framework Agreement between the U.S. and Mexico, and the USA PATRIOT (Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism) Act. The U.S./Mexico CIP Program specifically states that both nations will conduct bi-national vulnerability assessments of trans-border infrastructure, communications and transportation networks to identify and take required protective measures.

The project will allow the USIBWC to implement defensive measures to address security and vulnerability risks at critical transboundary infrastructure, and field office and headquarters facilities. It is incumbent upon the agency to take the steps necessary to protect its facilities and critical

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infrastructure. FY 2010 funds will be used to install closed-circuit television (CCTV) systems at Amistad and Falcon International Storage Dams and Power Plants.

### ***Justification of Request***

The FY 2010 budget request of \$43,250,000 supports high priority requirements for the agency to fulfill its mission requirements in flood control, river water allocation, sanitation, and advances on its obligations to stakeholders and employees by protecting its critical infrastructure and restoring its facilities and heavy equipment.

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## *Rio Grande Flood Control System Rehabilitation*

### **Requirement for Funds**

The FY 2010 request of \$21,400,000 and one position will continue the Rio Grande Flood Control System Rehabilitation Project (project) that was originally funded in 2001. The project is a multi-year effort that includes the evaluation and improvement of approximately 510 miles of existing U.S. levee, adjacent to 440 miles of river and interior floodway channel as part of three individual segments, or subsystems, of the Rio Grande Flood Control System in the United States. These three segments are identified as the Upper Rio Grande, Presidio Valley, and Lower Rio Grande Flood Control Systems. Mexico will not participate in this project because it only involves levees and structures in the United States.

The Upper Rio Grande Flood Control System consists of 225 miles of flood control levee alongside 197 miles of the Rio Grande from Caballo, New Mexico to Little Box Canyon, Texas; located about 10 miles downstream of Fort Quitman, Texas. The Rio Grande runs 106 miles from Caballo to the downstream end of American Dam in El Paso, Texas, where it becomes the international boundary about 16 miles south from the New Mexico–Texas state line. This 106-mile stretch of the Rio Grande is referred to as the Canalization segment and is bounded by 130 miles of levees; 57 miles on its west side and 73 miles on its east. The Upper Rio Grande Flood Control System continues downstream for another 91 miles from El Paso to Little Box Canyon. This stretch of the Rio Grande is referred to as the Rectification segment and is confined by 95 miles of river and spur levees on the U.S. floodplain. The Upper Rio Grande Flood Control System protects approximately 1 million U.S. residents in the following metropolitan statistical areas: Las Cruces, New Mexico and El Paso, Texas.

The Presidio Valley Flood Control System is located upstream of Big Bend National Park in Texas. This flood control system consists of 15 miles of levee on U.S. floodplain that parallels the Rio Grande. The Rio Conchos, the main Mexican tributary from the state of Chihuahua, enters the Rio Grande at Presidio, where it increases normal flow by 10 to 20 times. The design flood for the Rio Grande is 3600 cfs above the confluence with the Rio Conchos and 42,000 cfs below. The Presidio Valley Flood Control System provides flood protection to roughly 52 square miles of urban and agricultural land in Presidio; a Texas town of nearly 5,000 residents.

The Lower Rio Grande Flood Control System contains 270 miles of U.S. flood control levee along the Rio Grande, interior floodways, and the Arroyo Colorado in Texas. Flood control works along the Rio Grande include 102 miles of levees and floodplain from Peñitas, Texas to beyond Brownsville, Texas. The interior floodway, which starts 13 levee-miles downstream from Peñitas at Anzalduas Dam, is about 70 miles long and is bounded by 143 miles of levees; 68 miles on the right side and 75 miles on the left side. The Arroyo Colorado, a 53-mile natural channel that breaks-off the interior floodway, is confined by high ground and 25 miles of levee; 10.5 miles on the left side and 14.6 miles on the right side. The Lower Rio Grande Flood Control System provides protection to the following metropolitan statistical areas: Brownsville-Harlingen, Texas and McAllen-Edinburg-Mission, Texas. Approximately one million U.S. residents live in the Lower Rio Grande Valley. Due to its proximity to the Gulf of Mexico and related tropical weather systems, the Lower Rio Grande Valley is prone to hurricanes and annual flood events.

The American Recovery and Reinvestment Act of 2009 (ARRA) provided \$220 million for USIBWC projects, including levee rehabilitation in the Upper and Lower Rio Grande Flood Control Projects in Doña Ana County in New Mexico, and El Paso, Hudspeth, and Hidalgo Counties in Texas. The funding will allow rehabilitation of approximately 170 miles of levees, including Rio Grande levees

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and levees in the interior floodways in the Lower Rio Grande Flood Control Project. It has been estimated that the ARRA funding will be able to rehabilitate most of the deficient levees. Geotechnical studies are being conducted to determine remaining work to be performed for the duration of the Rio Grande Flood Control System Rehabilitation.

In FY 2010, the USIBWC will continue to work with its stakeholders to monitor environmental compliance, develop design plans for improvements along the interior floodways, and construct improvements along river levees in the Lower Rio Grande region. The agency will also work toward acquiring easements, preparing design plans, and constructing improvements in the Upper Rio Grande Flood Control System. The USIBWC plans to begin design work for levee improvement of the Presidio Flood Control Project after conclusion of geotechnical investigations.

The long-range capital improvements plans and cost estimates are based on the most current data available. As various flood control studies are concluded, the USIBWC will update its plans and estimates to reflect current information. Since 2001, funding has been used to conduct the reconnaissance economics analysis, and most preliminary engineering studies (hydraulic, geophysical), geotechnical explorations, environmental investigations, and development of design plans.

In FY 2009, a total of \$274 million was provided through the Disaster Relief and Recovery Supplemental Appropriations Act, 2008 (\$37.5 million), the American Recovery and Reinvestment Act of 2009 (\$220 million) and the FY 2009 Omnibus (\$16.7 million) for the Rio Grande Flood Control System.

### Benefits

This project will provide improved flood protection to U.S. residents. A reconnaissance-level economic study completed in August 2004 derived the following benefits based on potential flood damages and economic losses:

Segment of Rio Grande Flood Control System	Miles of Levee	Benefits in Millions *
Upper Rio Grande Flood Control System	225 miles	\$258.1
Presidio Flood Control System	15 miles	\$14.2
Lower Rio Grande Flood Control System	270 miles	\$298.5
<b>Total (Rio Grande Flood Control Rehab.)</b>	<b>510 miles</b>	<b>\$ 570.8</b>

\* Benefits are shown in FY 2008 dollars.

Texas is one of the highest flood risk states in the United State, as is evident by the October/November 1998 floods that killed 29 people and caused an estimated \$831 million dollars of property damage in South Texas. Most recently in September 2008 a Rio Grande flood event lead Texas Gov. Rick Perry to issue a disaster declaration for Presidio County and sent a letter to President Bush requesting a presidential disaster declaration that would free up federal funds. The purpose of this project is to prevent another flood control levee break catastrophe similar to those that have occurred as a result of Hurricane Katrina. A leading risk assessment firm states that flooding due to the levee break in most areas account for at least 50 percent of the economic loss, which could in most cases surpass a \$1 billion dollars.

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## *Safety of Dams Rehabilitation*

### **Requirement for Funds**

The FY 2010 request for \$5,000,000 will continue a multi-year effort to rehabilitate all USIBWC dams on the Rio Grande to properly meet the legislatively mandated requirements of the Federal Safety of Dams Program. Through this project, the USIBWC will resolve issues identified during safety inspections of dams, which are conducted every five years, by restoring dams or constructing corrective measures to improve safety and reduce the risk of operational failure. The USIBWC is responsible for six dams on the Rio Grande. One is situated upstream of the international boundary, while the other five dams are located on the international segment of the river. Although all dams are inspected in accordance with the federal guidelines for dam safety, the five dams on the international boundary are jointly inspected with Mexico.

The USIBWC owns and operates two large storage dams and hydroelectric power plants with Mexico. These storage dams, Amistad and Falcon, are among the 25 largest man-made reservoirs in the U.S. Amistad and Falcon Storage Dams provide flood control, water resource conservation, hydroelectric power generation, and recreational benefits to one million U.S. residents.

The agency also owns and operates four diversion dams. Two of the four diversion dams, Anzalduas and Retamal, are jointly owned and operated by both countries. However, American and International Diversion Dams are solely owned and operated by the United States. These diversion dams are utilized to divert normal river flows for municipal and agricultural uses by both countries, and divert flood flows during flood events.

The following five USIBWC dams are jointly inspected with Mexico every five years: International, Amistad, Falcon, Anzalduas, and Retamal Dams. These dams are inspected by a panel of experts from both countries referred to as the Joint Technical Advisors. The Joint Technical Advisors identify the deficiencies at each dam and recommend corrective measures to address these deficiencies. The USIBWC conducts inspections of American Dam with experts from the U.S. Army Corps of Engineers (USACE). Likewise, the USACE experts note all deficiencies and recommend remedial actions to resolve deficiencies.

Amistad, Falcon, Anzalduas, and Retamal Dams were recently inspected by the Joint Technical Advisors, which includes the U.S. Army Corps of Engineers (USACE), in April 2007. These four dams were rated in accordance with the risk-based action classification system used by the USACE. The safety inspection yielded urgent and high priority deficiencies at three of the four dams. Amistad Dam received a category rating of Dam Safety Action Class (DSAC) II, "urgent, potentially unsafe." Falcon and Retamal Dams received a DSAC III rating, "high priority, conditionally unsafe," while Anzalduas Dam received a DSAC IV rating, "priority, marginally safe." Therefore, the USIBWC is developing strategies to address these deficiencies and is revising its work plan accordingly.

The USIBWC will utilize FY 2010 funding to perform foundation and embankment investigations at Amistad and Falcon Dams, and develop viable remediation options to resolve the seepage problem at both dams.

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The long-range capital improvements plans and cost estimates must be revised to reflect the most recent findings from the Safety of Dams Inspections in March 2006, April 2007, and February 2008. As a result of the April 2007 inspections, comprehensive engineering evaluations will be conducted on the foundations and embankments at Amistad and Falcon Storage Dams to determine the extent of the seepage problem and develop solutions. These engineering evaluations will be conducted jointly with Mexico in FY 2009 and FY 2010. Once concluded, the USIBWC will update its plan and cost schedule.

Since 2001 the USIBWC has received nearly \$5.9 million in direct funds and about \$560 thousand from reprogramming authority to address deficiencies at USIBWC dams identified during safety inspections. Major accomplishments through FY 2008 include:

- refurbishment of four 20-ft radial gates and the electrical system at International Dam;
- replacement of three 20-ft radial gates and installation of automatic gate controls at American Dam;
- restoration of eight 54-ft radial gates, acquisition of rock riprap for embankment re-armoring, and installation of peizometers to measure water pressures at Amistad Dam;
- rehabilitation of six 50-ft roller gates and replacement of spillway expansion joints at Falcon Dam;
- rehabilitation of six drum gates at Anzalduas Dam.

### Benefits

The USIBWC has not performed an economic analysis of its diversion dams; however, it completed an economic study of its storage dams in February 2001. The study derived the following benefits for Falcon and Amistad Storage Dams based on potential flood damages and economic losses:

<b>Storage Dam</b>	<b>Annual Benefits in Millions *</b>
Amistad Storage Dam	\$ 94.3
Falcon Storage Dam	\$ 161.9
<b>Total Benefits</b>	<b>\$ 256.2</b>

*\* Benefits are shown in FY 2008 dollars.*

In addition to the economic benefits, these dams are essential to ensure compliance with provisions of the 1906 Convention and 1944 Treaty. This project will ensure the safe operation of dams through proper rehabilitation, and reduce the risk of dam failures. Failure of a dam would have significant to devastating impacts on a community. Both diversion and storage dams provide flood control benefits, but the storage dams also provide water resource conservation, hydroelectric power generation, and recreational benefits to over one million U.S. residents.

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## *Colorado River Boundary and Capacity Preservation*

### **Requirement for Funds**

The USIBWC requests funds in the amount of \$400,000 in FY 2010 to conclude the Colorado River Boundary and Capacity Preservation project. This project was initially funded in 1998 to improve the conveyance capacity of the international segment of the Colorado River in accordance with IBWC Minute No. 291, to address/improve salinity to ensure compliance with IBWC Minute No. 242, and to reestablish the international river boundary in accordance with the 1970 Boundary Treaty between Mexico and the United States. The project initially consisted of boundary restoration, conveyance system improvements, and environmental mitigation efforts along the entire 24-mile international stretch of the Colorado River from the Northerly International Boundary to the Southerly International Boundary in Yuma, Arizona. However, due to unresolved issues concerning channel capacity and boundary-related obligations in the 24-mile segment, the USIBWC has decided to reduce the scope of the project.

The current project will focus on restoring the flow capacity of the Colorado River channel at Morelos Dam, which has been reduced by sedimentation and vegetation. The accumulated sediment and vegetation obstruct flows at the dam, and hinder its ability to divert and/or pass high flows downstream. The revised work plan will involve clearing 39 acres of vegetation, removing and depositing of approximately 270,000 cubic yards of sediment, and establishing 43 acres of native riparian habitat to mitigate for environmental impacts. This effort will restore the flood control capacity immediately upstream and downstream of the dam, and will decrease the risk of operational failure by ensuring that accumulated sediment at the dam does not restrict gate operations.

Since 1998, the USIBWC has received a net total of \$4.5 million, including direct funds and reprogramming authority, for this project. These funds have been used to accomplish preliminary engineering work (river surveys, hydraulic analyses, environmental studies, etc.), install twenty-two ground-water observation wells, construct a pipeline extension from a pumping plant to the Colorado River, and dredge a sediment basin upstream of Morelos Dam.

### **Benefits**

Restoring the capacity upstream and downstream of the Morelos Dam will reduce the risk of a river flood at Yuma, Arizona. This project will improve the dam's ability to divert and convey Colorado River waters, thus ensuring compliance with the 1944 Treaty and IBWC Minute No. 242.

The FY 2010 request will be used to reestablish approximately 43 acres of riparian habitat to mitigate for environmental impacts (restoration and mitigation activities) for the Morelos Dam sediment removal project (clearing of 36.5 acres and remaining sediment removing of 200,000 cubic yards). This will conclude the Colorado River Boundary and Capacity Preservation program.

## *Reconstruction of the American Canal (new)*

### **Requirement for Funds**

The FY 2010 request for \$3,000,000 is included herein to initiate a four-year project for the reconstruction of the deteriorated American Canal. The American Dam and Canal were built by the U.S. in 1938 to divert and convey the U.S. Rio Grande waters for municipal and agricultural use. This canal is a vital source of water supply for the desert city of El Paso, Texas. This project will be

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subdivided into one design phase and three construction phases; each phase coinciding with a fiscal year.

The American Canal is in very poor condition and at risk of failing. The canal lining contains many concrete panels with exposed and rusted rebar, and cracked, crushed, separated, or overlapping sections. The canal lining included a system of weep holes to eliminate the hydrostatic pressures of the high groundwater table beneath it. Over time, water flows have removed the fine embankment material through weep holes and lining breaks, creating soil voids underneath the canal. These soil voids are further compromising the canal lining, which will lead to its collapse and prevent the delivery of Rio Grande waters to U.S. stakeholders.

The American Canal runs adjacently to the American Smelting and Refining Company (ASARCO), a century old iron-ore and copper refinery that filed for Chapter 11 reorganization under the federal bankruptcy code in 2005. Refinery operations have contaminated the adjacent canal embankment with dangerously high levels of lead and arsenic, and will require the environmental remediation of soil and groundwater during construction. The USIBWC has entered into negotiations with ASARCO asset holders in an effort to seek financial restitution for the environmental remediation.

Due to population increases since the 1930's, the need to conserve and ensure the deliveries of U.S. waters is more crucial than ever. To satisfy community needs, the USIBWC will reconstruct the American Canal to the same performance standards it applied to construct the American Canal Extension in the late 1990's. The FY 2010 request will be used to address historical property requirements and prepare the design plans for two of the three reaches (the upper and the lower reaches).

The American Canal is subdivided into three segments, each separated by a highway culvert. Consequently, construction of the project will be phased over a three-year period. However, each canal segment must be constructed during the non-irrigation season, which extends from mid-October to mid-February. Only work that does not impact on the system's ability to convey irrigation waters (i.e. construction and restoration of berms, fences, grounds, vegetation, etc.) will continue into the irrigation season. Mexico will not participate in this project, because it will be constructed entirely in the United States to benefit U.S. stakeholders.

### **Benefits**

The American Canal will ensure the uninterrupted delivery of Rio Grande waters to U.S. stakeholders for municipal and agricultural uses. The American Canal and its extension are expected to conserve about 20,000 acre-feet of water annually, which would otherwise be lost to seepage, evaporation, and transpiration. In addition to water conservation, the canal prevents U.S. waters from being illegally captured or diverted in the international segment of the Rio Grande.

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## *Secondary Treatment of Tijuana Sewage*

### **Requirement for Funds**

The FY 2010 request of \$6,000,000 will provide an administration and laboratory building to support new secondary treatment facilities in the United States, to address secondary treatment of Tijuana sewage and to bring the existing South Bay International Wastewater Treatment Plant into compliance with the Clean Water Act and its discharge permit. The border communities of San Diego and Imperial Beach, California are burdened with intermittent raw and partially untreated sewage flows from Tijuana, Baja California, Mexico. Raw wastewater flows enter the U.S. through the Tijuana River and its tributaries. This sewage adversely impacted the Tijuana River valley and estuary, and the coastal waters of the U.S., and posed a serious threat to the public health and economy of the region.

In 1988, the U.S. Congress authorized the construction of the SBIWTP, and Mexico formally agreed to the project in July 1990 (IBWC Minute No. 283). The authorized project required the treatment of 25 million gallon per day (mgd) of Tijuana generated wastewater to the secondary level in the United States with discharge into the Pacific Ocean. The advanced primary treatment facilities and related infrastructure were substantially completed in 1999, and placed into operation shortly thereafter. However, the secondary treatment facilities were not constructed due to funding limitations and litigation issues. The USIBWC is upgrading the existing South Bay International Wastewater Treatment Plant (SBIWTP), which is located along the international border by the Pacific Ocean in San Diego County, California, to treat an average flow of 25 mgd, and handle peak flows of 50 mgd. The upgraded SBIWTP will utilize an activated sludge process to treat Tijuana sewage to U.S. secondary standards.

The FY 2010 request will complete the construction of a secondary treatment facility and initiate construction of an administration and laboratory building with a Supervisory Control and Data Acquisition (SCADA) system for the treatment plant. Failure to complete the project as requested will impact the plant's treatment operations, thus compromising compliance with the NPDES permit requirements and State of California court order.

### **Benefits**

By constructing this project, the USIBWC will improve the quality of effluent being discharged into the Pacific Ocean, thus reducing the impact on the coastal marine environment. The risks of waterborne diseases and infections, which impact the environment, human health, and the local economy through the closure of southern California beaches, will be reduced. Therefore, this project will provide positive economic and recreational benefits for the residents of southern California. Failure to fund this project will result in the (1) Continued discharge of improperly treated effluent into the Pacific Ocean which is in violation of the CWA, (2) inability to meet NPDES secondary treatment, and (3) potential resumption of litigation against the U.S. Government will continue with associated losses and costs to the government.

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## *Nogales International Outfall Interceptor (new)*

### **Requirement for Funds**

The FY 2010 request of \$750,000 will initiate a new multi-year project to replace the deteriorated Nogales International Outfall Interceptor. The Nogales International Outfall Interceptor (IOI) is the infrastructure that conveys wastewater from Nogales, Sonora, Mexico and Nogales, Arizona to the Nogales International Wastewater Treatment Plant (NIWTP). The USIBWC and the City of Nogales are co-owners of the NIWTP, which is located in Rio Rico, Arizona, and provides treatment of sewage for both Nogales, Arizona, and Nogales, Sonora. The treated effluent is discharged into the Santa Cruz River, where it provides a perennial surface water source to recharge groundwater levels and sustain riparian habitat.

The IOI is approximately 46,600 feet (8.83 miles) in length and is comprised of 24- to 42-inch diameter unlined reinforced and unlined unreinforced concrete pipe. It was initially constructed during 1970 and 1971. However, increased demand due to population growth on both sides of the border has produced a hydraulic capacity problem in the Nogales International Wastewater Conveyance System. The pipe has also deteriorated over time, developing many cracks and structural problems in the system. Consequently, excessive amounts of extraneous water enters the system as infiltration and inflow, and also results in wastewater outflows to the environment. Thus, the IOI must be replaced to avoid adverse environmental impacts and to ensure reliable operation of the international wastewater collection and treatment system. The FY 2010 request will be utilized to conduct the preliminary engineering work and develop the project design plans. The USIBWC will work with its stakeholders, the City of Nogales and Mexico, to seek their financial participation in the project.

### **Benefits**

The IOI conveys wastewater to the NIWTP for treatment, and then transports the treated effluent for discharge into the Santa Cruz River. The effluent provides a perennial surface water source to recharge groundwater levels and sustain riparian habitat. By replacing the IOI, the USIBWC will ensure the reliable conveyance, treatment, and discharge of wastewater in accordance with IBWC Minute No. 276. The new IOI will prevent extraneous groundwater from infiltrating into the system through the cracks, thus decreasing maintenance costs due to a reduced flow volume. In addition, it will prevent untreated wastewater to leach out of the pipe and impact the environment.

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## *Facilities Renovation*

### **Requirement for Funds**

The FY 2010 request for \$3,400,000 continues the Facilities Renovation Project, which began in 1992. The purpose of this project is to renovate, upgrade, and replace USIBWC facilities, which are vital to mission operations, for compliance with environmental and occupational requirements. This project supports the USIBWC headquarters and its twelve field office facilities located along the entire U.S. – Mexico border.

Most of the USIBWC facilities were constructed between 1930 and 1950. These facilities need major rehabilitation and improvements to meet current environmental laws and regulations, Americans with Disabilities Act (ADA) requirements, Occupational Safety and Health Administration (OSHA) standards, and to provide a more efficient, effective, and secure work environment. The rehabilitation work, among other things, includes electrical re-wiring of buildings, renovation or structural rehabilitation of buildings, demolition and construction of new buildings, replacement of underground fuel storage tanks with above ground storage tanks, security improvements, etc. If not corrected, the deterioration of facilities will accelerate and the possibility of major accidents, employee injuries and property damage will increase.

The USIBWC will use the FY 2010 request to replace the roadway lights at Falcon Dam, construct a new flammable materials storage building at Amistad Dam, construct new chlorine and sulfur dioxide chemical storage buildings at the NIWTP, and renovate the administration buildings at Fort Hancock and Mercedes, Texas.

Since this project inception in 1992, the agency has received \$11.1 million in direct funds and reprogramming authority to renovate and replace its deteriorated facilities through FY 2009. Major accomplishments to date include: construction of a new storage building, dam tenders' building, heavy equipment wash racks, and guard house, and replacement of the sewer system, potable water system, bathroom, showers, lunchroom, perimeter fence, and underground fuel tanks at American Dam; construction of new administration building, a heavy equipment parking garage, and a sheltered parking area for government vehicles at Presidio, upgrade of the potable water treatment plant and replacement of the water distribution system the Falcon; construction of a new maintenance shop facility at Anzalduas Dam; construction of a personnel and conference room building, and replacement of underground fuel tanks at Mercedes; and other renovations and upgrades at various field offices. Mexico will not participate in this project; only U.S. facilities will be renovated.

### **Benefits**

This project will provide a safer, more effective, and secure work environment for USIBWC personnel at its facilities. Other benefits include compliance with all environmental and occupational requirements, thus eliminating or minimizing potential environmental litigation costs, employee injury claims, fire hazards, and excessive repairs. Without this project, the USIBWC facilities will continue to deteriorate, thereby impacting daily operations.

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## *Heavy Equipment Replacement*

### **Requirement for Funds**

The FY 2010 request for \$1,000,000 will continue this project for the replacement of heavy mobile equipment at the USIBWC field office locations. This project, which began in FY 2001, provides for the replacement of bulldozers, front-end loaders, scrapers, motor graders, backhoes, cranes, tractors, and equipment essential to mission activities.

Heavy equipment needs to be replaced not only because of age, but also for use in flood control emergencies. However, due to the age of much of the heavy equipment, the USIBWC incurs excessive maintenance costs to maintain the equipment operational. Also, repair parts are more difficult to find since most of the major equipment is between 20 and 30 years old. Not having the appropriate heavy equipment available during a flood can be detrimental.

FY 2010 funds will be used to purchase a backhoe loader, dozer, and dump truck for the Amistad Dam Field Office; and a tractor slope mower for the Mercedes Field Office. This equipment is needed for flood control maintenance activities.

Since the project's inception in FY 2001, the agency has received \$3.5 million in direct funds and reprogramming authority to replace its heavy mobile equipment at various field offices.

### **Benefits**

By ensuring the availability of reliable heavy mobile equipment, the USIBWC will be well equipped to perform its mission operations including field office maintenance, routine flood control maintenance, and emergency defensive operations during floods. This equipment will help the agency protect approximately 2 million U.S. residents and 1.5 million acres of property along the Rio Grande against flood damage. Mexico will not participate nor benefit from this project.

## *Critical Infrastructure Protection*

### **Requirement for Funds**

The USIBWC is requesting funds of \$2,300,000 in FY 2010 to continue a multi-year project totaling \$8.9 million to improve security at its critical infrastructure and key resource facilities. This project will assist the agency in countering potential threats to its critical infrastructure and deter illegal activity away from these facilities. This project is consistent with the Department of Homeland Security initiatives (Homeland Security Presidential Directives 7 and 13), the Critical Infrastructure Protection (CIP) Framework Agreement between the U.S. and Mexico, and the USA PATRIOT (Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism) Act.

It is incumbent upon the agency to take the steps necessary to protect its critical infrastructure. Thus, the USIBWC will jointly implement with Mexico anti-terrorism security measures at critical international infrastructures. A major feature of the project includes implementation of the CIP Framework Agreement, which has been incorporated under the security agenda of the President's Security and Prosperity Partnership initiative, to guide cooperative bi-national efforts to protect our critical cross-border infrastructures and populations from a common threat. The

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CIP framework requires both nations to conduct bi-national vulnerability assessments of trans-border infrastructure, and communications and transportation networks to identify and take required protective measures. This project will allow the USIBWC to implement defensive measures to address security and vulnerability risks at critical transboundary infrastructure, field office facilities, and headquarters.

Due to the danger of terrorist actions against our country and the significant increased incidents of U.S. – Mexico border violence, it is essential that the IBWC improve security at its facilities to protect its capital assets. The IBWC has conducted joint vulnerability assessments with the Department of Homeland Security of its critical infrastructure – Falcon and Amistad Dams, which are classified by the Federal Emergency Management Agency as high hazard storage dams, with associated hydroelectric power plants. In addition, the IBWC has conducted security assessments to reveal existing security risks and vulnerabilities at all critical IBWC infrastructure and facilities, and to determine appropriate countermeasures to mitigate threats.

The USIBWC is solely or jointly responsible for securing four diversion dams, two international storage dams and power plants, two international wastewater treatment plants, twelve field office facilities, and its headquarters. The dams provide for the distribution of waters of the Rio Grande between the United States and Mexico and for the conservation, flood control, water storage, power generation, and regulation of the flow of the river. The international sewage treatment plants protect human health and the environment by treating over 60 million gallons of wastewater per day.

Amistad and Falcon International Storage Dams and Power Plants are classified as high hazard dams on the National Inventory of Dams, and have been identified as potential terrorist targets by the Texas Department of Public Safety. The hazard potential of both dams has increased substantially due to the growth of downstream development since their construction more than fifty and thirty years ago. Ninety-eight percent of the water used in the Lower Rio Grande Valley for irrigation and potable water by the United States and Mexico is supplied through releases from Falcon and Amistad reservoirs. In addition to water storage, Amistad and Falcon International Dams combined provide power generation and flood protection to approximately 1 million U.S. residents and one million acres of adjoining farmland. The project needs to be implemented and enforced in order to protect against the potentially devastating effects of a physical threat that may lead to dam failure. Additionally, commitment to public safety at the dams directly impacts the lives and property of citizens of the U.S. and Mexico. Failure or destruction of the USIBWC infrastructure and capital assets has the potential for catastrophic consequences in terms of loss of life and property, as well as economic impacts.

The USIBWC has completed security and vulnerability assessments at its critical infrastructure and key resource facilities and developed a capital improvement plan. Mexico is participating in this endeavor by providing security enhancements on the Mexican side of shared transboundary infrastructure.

FY 2010 funds will be used to install closed-circuit television (CCTV) systems at Amistad and Falcon International Storage Dams and Power Plants.

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## Benefits

If this project is not funded, the USIBWC personnel, facilities, and critical transboundary infrastructure will remain at risk against criminal activity and hazards to include terrorism. If the security posture for each facility is not upgraded to be in compliance with Homeland Security Policy Directive 7, the IBWC projects will remain an attractive target for terrorists. Due to each facility's geographical location, the destruction of the infrastructure would have international implications, especially along the Rio Grande valleys. A manmade act of terrorism would flood both river valleys in the United States and Mexico. Lastly, the Amistad and Falcon dams are rated Tier II facilities by Homeland Security. Damage to these facilities due to lack of a practical security posture would result in long-term effects for the regional economy, billions of dollars in lost agricultural revenue and structural damages, a disruption in power generation, a significant loss of life, and geopolitical instability. A release of water from the either respective reservoir may cause mass migration from Mexico into the United States as the water supply would be disrupted.

### *Staff by Program Activity*

(\$ in thousands)

International Boundary and Water Commission, El Paso, Texas	FY 2008 Actual	FY 2009 Estimate	FY 2010 Request	Increase / Decrease
<b>IBWC-Construction</b>	<b>0</b>	<b>18</b>	<b>18</b>	<b>0</b>
Water Quality Program	0	2	2	0
Secondary Treatment of Tijuana Sewage	0	2	2	0
Water Quantity Program	0	16	16	0
Rio Grande Flood Control System Rehabilitation	0	16	16	0
<b>Total</b>	<b>0</b>	<b>18</b>	<b>18</b>	<b>0</b>

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***Funds by Program Activity***

(\$ in thousands)

<b>Activities</b>	<b>FY 2008 Actual</b>	<b>FY 2009 Estimate</b>	<b>FY 2010 Request</b>	<b>Increase / Decrease</b>
<b>IBWC-Construction</b>	<b>125,209</b>	<b>43,250</b>	<b>43,250</b>	<b>0</b>
Boundary Preservation Program	99	0	0	0
Border Fence Encroachments	99	0	0	0
<b>Water Quality Program</b>	<b>65,862</b>	<b>22,000</b>	<b>6,750</b>	<b>8,400</b>
Nogales International Outfall Interceptor	397	0	750	750
Secondary Treatment of Tijuana Sewage	65,465	22,000	6,000	(16,000)
<b>Water Quantity Program</b>	<b>59,247</b>	<b>19,750</b>	<b>29,800</b>	<b>10,800</b>
Colorado River Boundary & Capacity Preservation	0	750	400	(350)
Reconstruction of the American Canal	0	0	3,000	3,000
Rio Grande Flood Control System Rehabilitation	59,025	16,750	21,400	4,650
Safety of Dams Rehabilitation	223	2,250	5,000	2,250
Resource & Asset Management Program		<b>1,500</b>	<b>6,700</b>	<b>5,200</b>
	<b>0</b>			
Facilities Renovation	0	1,000	3,400	2,400
Heavy Equipment Replacement	0	200	1000	800
Critical Infrastructure Protection	0	300	2,300	2,000
<b>Total</b>	<b>125,209</b>	<b>43,250</b>	<b>43,250</b>	<b>0</b>

***Funds by Object Class***

(\$ in thousands)

	<b>FY 2008 Actual</b>	<b>FY 2009 Estimate</b>	<b>FY 2010 Request</b>	<b>Increase / Decrease</b>
<b>2500 Other Services</b>	<b>125,209</b>	<b>43,250</b>	<b>43,250</b>	<b>0</b>
<b>Total</b>	<b>125,209</b>	<b>43,250</b>	<b>43,250</b>	<b>0</b>