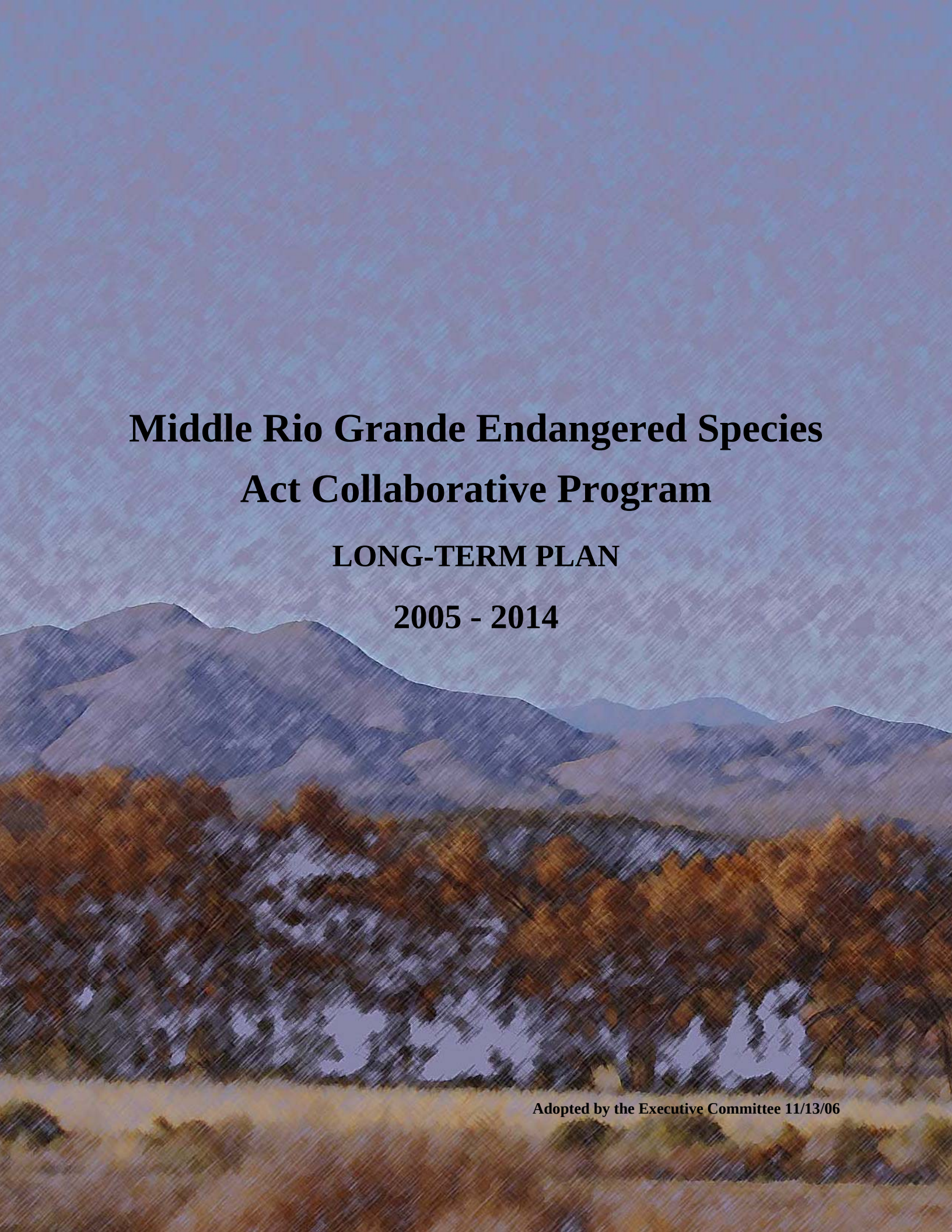

Middle Rio Grande Endangered Species Act Collaborative Program

LONG-TERM PLAN

2005 - 2014

Adopted by the Executive Committee 11/13/06

Middle Rio Grande Endangered Species Act Collaborative Program

LONG-TERM PLAN

2005 - 2014

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ABBREVIATIONS AND ACRONYMS

BiOp	Biological and Conference Opinions on the Effects of Actions Associated with the Programmatic Biological Assessment of Bureau of Reclamation's Water and River Maintenance Operations, Army Corps of Engineers' Flood Control Operation, and Related Non-Federal Actions on the Middle Rio Grande, Albuquerque, New Mexico, as amended
CR	Conservation Recommendations
Corps	U.S. Army Corps of Engineers
ESA	Endangered Species Act
Flycatcher	Southwestern willow flycatcher
FY	Fiscal year
ISC	NM Interstate Stream Commission
Listed Species	Federally listed species under the Endangered Species Act (ESA), with special emphasis on the Rio Grande silvery minnow (silvery minnow) and the southwestern willow flycatcher (flycatcher)
LTP	Long-Term Plan
MRG	Middle Rio Grande
MRGCD	Middle Rio Grande Conservancy District
NM	New Mexico
PMP	Program Monitoring Plan
Program	Middle Rio Grande Endangered Species Act Collaborative Program
Reclamation	Bureau of Reclamation
RPA	Reasonable and Prudent Alternative
RPM	Reasonable and Prudent Measures
Service	U.S. Fish and Wildlife Service
Silvery minnow	Rio Grande silvery minnow

Executive Summary

This Long Term Plan (LTP) was developed as an adaptive management tool to implement activities within the scope of the Middle Rio Grande Endangered Species Act Collaborative Program (Program). These activities contribute to alleviating jeopardy and recovering the Rio Grande silvery minnow (silvery minnow) and southwestern willow flycatcher (flycatcher) pursuant to the Endangered Species Act.

The LTP, approved as a living document by the Program's Executive Committee on November 13, 2006, describes the activities included within the scope of the Program and provides budget estimates for fiscal years 2007 - 2014. The LTP includes the activities needed to accomplish Program goals: water acquisition and management, silvery minnow propagation and rescue, habitat restoration, fish passage, endangered species monitoring and research, water quality studies, and Program management. All LTP activities must protect existing and future water uses and be carried out in compliance with federal and state laws.

The LTP provides accountability through measurable objectives and an annual Program assessment process. The LTP will help integrate federal and state agency budget processes by providing estimated funding requirements for future activities. The LTP will be reviewed and updated annually to reflect actual appropriations amounts and any changes in Program priorities and budget estimates. Annual updates of the LTP and the Program's annual report will provide affected parties with the information needed to understand the justification for changes in activities and funding priorities.

The Program is assisting Reclamation and the Corps to remain in compliance with the Biological Opinion (BiOp) requirements by implementing LTP activities. Most, but not all, of the activities required for BiOp compliance are included in the Program's LTP. Water acquisition and management to meet flow requirements are included in the LTP. The LTP also includes some, but not all, activities required to recover the listed species. There are a number of activities required under the BiOp that are not within the Program's scope. Federal and State agencies are seeking funding for these activities through their individual budgets and/or authorizations. Activities outside of the Program's scope that contribute to meeting BiOp requirements and improve the status of the listed species are described.

1. Introduction

1.1. Program Purposes

The purposes of the Middle Rio Grande Endangered Species Act Collaborative Program (Program) are to protect and improve the status of endangered listed species along the Middle Rio Grande (MRG) and to simultaneously protect existing and future regional water uses while complying with state and federal laws, including Rio Grande compact delivery obligations. "Listed species" means federally listed species under the Endangered Species Act (ESA), with special emphasis on the Rio Grande silvery minnow (silvery minnow) and the southwestern willow flycatcher (flycatcher).

The Service listed the flycatcher as endangered in March 1995 (USFWS 1995). Critical habitat was designated for the flycatcher in 2005 (USFWS 2005b), including portions of the Program area. The *Final Recovery Plan Southwestern Willow Flycatcher (Empidonax traillii extimus)* was published in August 2002 (USFWS 2002). This plan includes criteria for a minimum number of geographically distributed territories among Management Units and Recovery Units that must be maintained for a minimum number of years, and also specifies that the habitats supporting these flycatchers must be protected from threats and loss over time. Individual actions needed to recover the flycatcher are described in the final recovery plan.

The Service listed the silvery minnow as endangered in 1994 (USFWS 1994), issued a recovery plan in July 1999 (USFWS 1999), and released the revised critical habitat designation in February 2003 (USFWS 2003a). The *July 1999 Rio Grande Silvery Minnow Recovery Plan* includes two recovery objectives: 1) stabilize and enhance populations of silvery minnow and its habitat in the MRG valley and 2) reestablish the silvery minnow in at least three other areas of its historic range. The recovery plan also describes actions to be taken to reach these goals and criteria to determine when these objectives have been met. An updated draft recovery plan will soon be available for public review and is expected to contain similar goals. The updated recovery plan will also include measurable criteria by which downlisting to threatened status and delisting may be achieved.

The Program area (also referred to as the Middle Rio Grande) is defined as the headwaters of the Rio Chama watershed and the Rio Grande, including tributaries, from the New Mexico-Colorado state line downstream to an elevation 4,450 feet above mean sea level, the elevation of the spillway crest of the Elephant Butte Dam. Indian Pueblo and Tribal lands and resources within the Program area are not included in activities under the Program without the express written consent of the Pueblo(s) or Tribe(s).

The Program is a collaborative effort involving 21 signatories. For the year 2006, the Program signatories are:

- Bureau of Reclamation (Reclamation)
- U.S. Army Corps of Engineers (Corps)
- U.S. Fish and Wildlife Service Region 2 (Service)

- New Mexico (NM) Attorney General's Office
- NM Interstate Stream Commission (ISC)
- NM Department of Game and Fish
- NM Department of Agriculture
- NM Environment Department
- U.S. Forest Service – Rocky Mountain Research Station
- Alliance for the Rio Grande Heritage
- City of Albuquerque
- University of New Mexico
- Middle Rio Grande Conservancy District (MRGCD)
- National Association of Industrial and Office Properties/New Mexico Chapter
- Assessment Payers Association of the MRGCD
- Rio Grande Water Rights Association
- Bureau of Indian Affairs
- Pueblo of Sandia
- Albuquerque Bernalillo County Water Utility Authority
- Santo Domingo Tribe
- Pueblo of Santa Ana

Additional signatories may be added in the future in accordance with the Program's By-Laws.

1.2. Program Goals

Program Goals were established as a means to fulfill the Program purposes. All Program signatories believe that the Program is the best mechanism to carry out the following goals in accordance with state and federal laws and Rio Grande compact obligations. These goals will also promote the conservation and contribute to the recovery of the endangered species in the Program area, assist in attainment of Endangered Species Act (ESA) compliance for all

parties with the concurrence of the Service, and encourage water development and management activities.

The Program Goals may be stated broadly as:

1. Alleviate jeopardy to the listed species in the Program area
2. Conserve and contribute to the recovery of the listed species
    - Stabilize existing populations
    - Develop self-sustaining populations
3. Protect existing and future water uses

Alleviating jeopardy to the listed species can be met by complying with the requirements set forth in the March 17, 2003 "Biological and Conference Opinions on the Effects of Actions Associated with the Programmatic Biological Assessment of Bureau of Reclamation's Water and River Maintenance Operations, Army Corps of Engineers' Flood Control Operation, and Related Non-Federal Actions on the Middle Rio Grande, Albuquerque, New Mexico", as amended (BiOp) (USFWS 2003b, 2005a, 2006). BiOp requirements are discussed in Section 1.3. Program Goal 1 contains most of the activities in the BiOp's Reasonable and Prudent Alternative (RPA) elements and Reasonable and Prudent Measures (RPM).

Program signatories have expressed a desire to do more than satisfy the BiOp requirements. They also want to improve the MRG ecosystem generally and implement activities that conserve and contribute to recovery of the listed species within the Program Area. These proactive activities are listed within Program Goal 2.

To achieve Program Goal 3, the Program will develop and support creative and flexible options so that existing, ongoing, and future water supply and water resource management activities and projects can continue in compliance with federal law, tribal law, New Mexico state water law, interstate compacts, international treaties, and Indian trust responsibilities. These activities include, but are not limited to: developing agreements to manage the acquisition, storage and release of water in ways that benefit the listed species; improving the efficiency of water conveyance facilities; and hydrologic modeling and research that leads to improved management of available water supplies and development of future supplies. Reclamation retains the responsibility for acquiring and managing water to meet BiOp flow requirements and will use the products produced by the Program's water-related activities to assist in meeting these requirements. The activities that support Program Goal 3 are listed in two places in the LTP: 1. Required Water Operations Elements and 8. Proactive Water Operations and Management Activities.

The Program signatories recognize that finding lasting solutions that will work within the current socioeconomic, regulatory, and physical settings of the MRG will be challenging. Program signatories believe that these lasting solutions will most likely be found by working

together collaboratively, not through an adversarial process such as litigation. Achieving the Program goals will take time – there are no quick fixes.

1.3. March 17, 2003 Biological and Conference Opinions

In March 2003, the Service, in consultation with Reclamation and the Corps, developed a biological opinion (USFWS 2003b) on water operations and maintenance projects, and flood control operations in the MRG. The BiOp found that the activities, as proposed, were likely to jeopardize the continued existence of the listed species. The BiOp recommended a Reasonable and Prudent Alternative (RPA), including multiple elements, designed to avoid the likelihood of jeopardy to the silvery minnow and flycatcher and adverse modification to silvery minnow critical habitat. The BiOp was amended in August 2005 to revise the incidental take statement to consider increased minnow populations, and in June 2006 to consider the effects of the Service's designation of critical habitat for the flycatcher. As defined in the 2003 BiOp, take is to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Taking that is incidental to, and not intended as part of the agency action, is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of the incidental take statement issued by the Service. The RPA elements address some of the long-term recovery needs of the silvery minnow by incorporating four essential factors during the 10-year term of the BiOp: 1) water operations; 2) habitat improvement; 3) population management; and, 4) water quality. The Program is assisting Reclamation and the Corps to implement the RPA.

1.3.1 Covered Parties and Actions

Reclamation was the lead federal agency for the consultation and represents the Corps and non-federal agencies who were parties to the consultation. These non-federal agencies include the State of New Mexico and the MRGCD. Reclamation and the Corps are referred to as the "action agencies" in the BiOp. Indian Pueblos and Tribes are not considered "parties to the consultation" in the BiOp, although several are signatories to the Program.

The proposed action analyzed by the 2003 BiOp included contractual water deliveries and other operations of the river, including river maintenance and flood control. The proposed action considered the effects of both federal and non-federal activities by analyzing the total river depletions. The intent of the proposed action was to extend consultation coverage to ordinary operations on the MRG as long as those operations are valid under state and federal laws, consistent with historic operations, and do not create additional net depletions on the river or depletions at a new time or place. The BiOp analyzes the effects on listed species from existing depletions by both federal and non-federal parties to the consultation within the action area, and extends incidental take coverage for all those uses.

1.3.2 BiOp Requirements

The BiOp determined that the effects of the proposed actions were likely to jeopardize the continued existence of the silvery minnow and the flycatcher and adversely modify critical habitat for the silvery minnow. The Service developed an RPA designed to avoid the likelihood of jeopardizing the listed species or causing adverse modification of critical habitat. The RPA has 32 elements and includes in-stream flow targets and non-flow related requirements such as habitat restoration, the construction of refugia, and captive propagation.

The Service developed an incidental take statement based on the premise that the RPA would be implemented. To minimize the anticipated level of take, five Reasonable and Prudent Measures (RPMs) must be implemented pursuant to their terms and conditions. These terms and conditions include flow-related measures such as a ramp-down of flows during drying, surface water pumping, and egg and fish rescue.

1.4. Species Recovery Plans

The overall goal of a federal species recovery plan developed under the ESA is to achieve naturally self-sustaining populations of listed species and to protect the habitat upon which those populations depend. Recovery plans contain goals, objectives, and criteria that when met, allow the Service to determine that the listed species may be downlisted (reclassification of the species status from "endangered" to "threatened") or delisted (removal of the species from the list of "threatened" species).

The current distribution of the silvery minnow is limited to approximately seven percent of its historic range. Downlisting and/or delisting this species will require stabilizing the existing population within the MRG as well as reintroducing silvery minnows into historically occupied areas, such as the Big Bend area of the Rio Grande along the Texas–Mexico border. For the flycatcher, the Middle Rio Grande Recovery Unit (MRGRU) represents the easternmost extent of the population. The MRGRU is geographically contained within the Program Area. The minimum number of territories for reclassification in this unit is 100. That number of territories must be maintained over a five-year period.

Program activities listed in the LTP help meet species recovery goals. For example, Program actions help to stabilize and expand populations of both listed species within the MRG. Additionally, actions such as captive propagation of silvery minnows may eventually contribute to establishing experimental populations outside the Program area.

1.5. Long-Term Plan Purpose

The Program's LTP is intended to serve as a roadmap for implementing activities included in the scope of the Program. The LTP describes the types of activities to be performed each year and an estimated budget for each category of activity. The LTP will help coordinate federal and state agency budget processes as necessary. The LTP also describes how the Program's progress will be assessed.

The LTP includes the activities needed to accomplish Program goals. LTP activities to accomplish Program Goal 1 also meet BiOp requirements. Activities that meet Program Goal 2 are designed to conserve and contribute to recovery of the listed species. All LTP activities must meet Program Goal 3, protect existing and future water uses, and be carried out in compliance with federal and state laws.

Although the Program has been carrying out activities to benefit the listed species since 2000, this is the first multi-year planning document to be approved by the Executive Committee. This LTP replaces the original draft dated March 27, 2005, and is intended to be a living document and an adaptive management tool that can be changed as the Program progresses.

The activities listed in this LTP are the same as the activities that were listed in the March 2005 draft LTP. Specific and measurable goals and objectives have been added to this version of the LTP, and some cost estimates have been updated. Priorities and budget needs will be reviewed on an annual basis. Differences between projected and actual budget allocations will be addressed. Because science is still evolving on the listed species, adaptive management will be an important tool for Program success. Priorities and approaches may be updated as knowledge of the MRG ecosystem and the needs of the listed species increases. Annual updates of the LTP and the Program's annual report will provide affected parties with the information needed to understand the justification for changes in activities and funding priorities.

2. Program Scope

The scope of the Program is graphically represented in Figure 1. This figure shows the relationship between the efforts required to comply with the BiOp, the activities included in this LTP, and the total effort needed for recovery of the listed species. Most, but not all, of the activities required for BiOp compliance are included in the Program's LTP. Water acquisition and management to meet BiOp flow requirements is included in the LTP. The LTP also includes some, but not all, activities required to recover the listed species. More details about what activities are included in the scope of the Program, and which BiOp requirements are conducted outside the scope of the Program, are provided in Sections 2.1 to 2.3 below.

Figure 1. The relationship between the BiOp, the Program, and listed species recovery.

2.1. Activities included in the Program's Long-Term Plan

The activities of the LTP are intended to meet the goals of the Program: 1) alleviate jeopardy; 2) conserve and contribute to the recovery of the listed species and 3) protect existing and future water uses. The list of activities within the LTP was the result of long discussions over what the scope of the Program should be given the projected resources over the next 10 years.

The Program signatories held a workshop in Taos, New Mexico, in September 2004 to determine the scope of the Program and establish priorities, with budget and time frames for specific activities. An outcome of the workshop was a draft Long-Term Plan, dated March 27, 2005. Workshop participants ranked activities using the following three criteria (The "Taos Workshop Criteria"):

1. Activities needed to prevent extinction;
2. Activities that provide a significant short-term benefit to the listed species; and
3. Activities contributing in the long-term to the stability and recovery of the listed species.

Significant short-term benefits were defined to be projects that could be accomplished within the first five years of the Program that would offer long-term benefits to the listed species. In setting priorities for Program activities, the BiOp requirements were identified as the highest concern, while activities that contribute to the long-term stability and recovery of the listed species were also recognized as important. In other words, the Program will strive to go beyond activities that focus on a single species and look to support ecosystem improvements. At the Taos workshop, the Program signatories established activities to be included within the Program and a corresponding 10-year budget estimate with a time table for specific activities.

Program activities that provide compliance with the BiOp requirements are included in Program Goal 1. These activities also meet the Taos Workshop Criteria 1 and 2. Program activities that conserve and contribute to the recovery of the listed species and ecosystem improvement are included in Program Goal 2. These activities meet Taos Workshop Criteria 3. In addition, all Program activities must meet Program Goal 3, protect existing and future water uses, and be carried out in compliance with state and federal laws.

Program activities that were agreed upon during the Taos workshop included projects and actions that can be funded through the federal procurement process as well as those that could be funded and implemented through other processes, such as through State of New Mexico's Water Trust Board grants or through other State Legislative appropriations. Additionally, Program signatories could choose to fund and/or implement activities within the Program's scope as part of their cost share without receiving federal funding. The LTP does not identify which entity is responsible for activities unless otherwise identified within the 2003 BiOp.

The list of Program activities included in the LTP was prepared with full acknowledgement that Program participants do not know everything that is needed to meet the goals of the Program. The Program must remain flexible as new knowledge is gained. Therefore, the Program will use an adaptive management process to monitor and evaluate our activities and serve as the vehicle to make changes in activities as the life of the Program progresses.

A recent example of the Program continuing to explore new options for better managing limited water resources was the facilitated discussion held at a workshop titled *Middle Rio Grande Endangered Species Collaborative Program Workshop on Water Operations and Management* from August 16 through 17, 2006 (Program Executive Subcommittee 2006b). The Program's Executive Committee sponsored this effort to develop sustainable long-term water management strategies for the MRG. The ideas brought forth in the August discussion will be further analyzed for feasibility by hydrological and biological technical teams.

2.2. Activities Beyond the Program Scope

There are a number of activities that are required under the 2003 BiOp that are not within the Program's scope. Federal and State agencies are seeking funding for these activities through their individual budgets and/or authorizations. Table 1 lists these activities and the lead agencies associated with each effort. Where available, the estimated costs for these activities have been included in Table 1. The Program partners recognize the importance of these contributions to meeting the BiOp requirements and improving the status of the listed species.

2.3. Other Related Activities in the MRG Contributing to Listed Species Recovery

Numerous agencies carry out activities that are not funded by the Program that contribute to the recovery of the listed species. Many of these activities have been on-going for years. Coordination and integration of these activities is imperative; the cumulative benefits will be greater than the individual initiatives.

Table 1 provides information on those activities not included in the Program's scope but supportive of the Program's goals. Table 1 is not an exhaustive list of all activities that are occurring in the MRG. The table lists which organization is sponsoring the activity and provides budget information for accomplishing the activities, if that information has been made available. This table will make it easier to coordinate budget processes among the signatories as they plan how to share the funding of activities.

3. Program Goals, Objectives, Measures, and Activities

To achieve its goals and objectives, Program signatories have been funding activities since Federal Fiscal Year (FY) 2001, October 1, 2000 to September 30, 2001. Examples of these activities include leasing of supplemental water to meet BiOp flow requirements, endangered species population monitoring and management, silvery minnow captive breeding and augmentation, research on recovery requirements, and habitat restoration planning and construction.

Table 1. Related Federal and Non-Federal Activities Contributing to the 2003 BiOp and Recovery of the Listed Species, but Outside the Program

	Project Duration	Approximate Yearly Cost (In 2006 $)	Approximate Total Project Cost (in 2006 $)	BiOp Element
United States Department of Interior				
Bureau of Reclamation				
ESA compliance activities associated with river maintenance	Ongoing	$1,750,000		RPA T
Minnow Sanctuary	2005-Ongoing	$350,000	$4 M to design/construct	RPA AA
Water 2025	2004-	$1,000,000		RPA Q, CR 8, 15
Upper Rio Grande Water Operations Model	Ongoing	$100,000	$100K/yr to maintain	RPA A-O
Biological Opinion Compliance Reporting	2001-2014	$10,000		RPA FF
Fish & Wildlife Service				
Management of Exotics for the Recovery of Endangered Species	Ongoing	$995,000		RPA S
MRG Bosque Initiative (includes Bosque Hydrology Group)	Ongoing	$542,000		
Partners for Wildlife	Ongoing	$38,000		
Tribal Partnership Program	Ongoing	$397,759		
Bosque del Apache National Wildlife Refuge	1986-	$439,000	$1,200,000	RPA S
Sevilleta National Wildlife Refuge	Ongoing	$75,000		
Subtotal		**$5,696,759**	**$5,200,000**	
United States Army Corps of Engineers				
Flood Control				
Flood Control/Water Ops - Abiquiu, Cochiti, Galisteo, Jemez	Ongoing	$436,500		RPA A-N,V
Cochiti Baseline Study	2006-2008	$1,500,000	$4,500,000	RPA W
Jemez canyon resevoir sediment management study	2006-2007	$1,000,000	$1,500,000	RPA W
Galisteo reservior sediment management study	2007-2009	$200,000	$600,000	RPA W
Upper Rio Grande Water Operations Model and Studies	Ongoing	$1,300,000		RPA A-O
Southwest Valley, Alb NM - General Investigation / Consruction	1999-2007	$49,500	$26,170,600	
RG Floodway - San Acacia to Bosque del Apache (includes San Marcial RR bridge)	1987-		$71,200,000	RPA U
MRG Bernalillo to Belen (levee project)	1984-		$62,400,000	
Rio Grande Basin, NM, CO, TX - Gen Investigation	2001-		$4,100,000	
Biological Opinion Compliance Reporting	2001-2014	$10,000		RPA FF
Environmental Restoration				
Route 66 - Ecosystem Revitalization	2001-		$6,542,000	RPA S
Pueblo of Santa Ana, NM - Aquatic Habitat Restoration	2001-		$6,230,000	RPA S
MRG Bosque	2004-		$15,637,000	RPA S
Subtotal		**$4,496,000**	**$198,879,600**	
United States Department of Agriculture				
Natural Resources and Conservation Service				
Salt Cedar Eradication (State $)	Ongoing	$2,800,000		
Restoration (Federal $)	Ongoing	$500,000		
Forest Service				
Rocky Mountain Research Station				
Ecological Affects of Full Reduction	2000-	$100,000		
Ecological Affects of Bosque Wildfire	2002-	$40,000	$250,000	
Silvery Minnow Food and Habitat Study	Ongoing	$50,000	$200,000	
Subtotal		**$3,490,000**	**$450,000**	
New Mexico Department of Agriculture				
Salt Cedar Control Project	Ongoing	$300,000		
Subtotal		**$300,000**	**$0**	
New Mexico Environmental Department				
Surface Water Quality Monitoring	Ongoing			RPA EE
Subtotal		**$0**	**$0**	
New Mexico Game and Fish				
Support for RGSM survival and management-- (Rock Lake refugium, salvage assistance)	2001-Ongoing	$30,000	$180,000	RPM 1.2
Survival of fishes during RG summer flow recession	2001-2004	$8,000	$24,000	
Conservation genetics of RGSM	2002-2003	$72,000	$72,000	
Fish surveys and habitat assessment above Cochiti	2004	$19,300	$19,300	RPA CC
Support of BioPark refuguim operation and maintenance	2005-2008	$61,000	$366,000	
Staff participation in program	2001-Ongoing	$36,000	$216,000	
Salt Cedar Control Project (Bernardo/La Joya WMA)	2006	$340,000	$340,000	
Bernardo Waterfowl Area (Langaman gate system)	2006	$60,000	$60,000	
Subtotal		**$626,300**	**$1,277,300**	
New Mexico Interstate Stream Commission				
Rio Grande Bureau Office				
Pilot Channel Work	2002-Ongoing	$1,600,000	$6,878,912	
River Maintenance	1950s-Ongoing	$200,000	$10,000,000	
San Acacia Surface Water & Ground Water Study	2001-Ongoing	$72,000	$1,344,000	CR 14
San Marcial Railroad Bridge	2006-2010	$1,000,000	$4,000,000	RPA U
Subtotal		**$2,872,000**	**$22,222,912**	
Middle Rio Grande Conservancy District				
Water 2025	2005 -	$1,000,000		RPA Q, CR 8, 15
Habitat Restoration		Numbers unavailable at this time		RPA S
Subtotal		**$1,000,000**	**$0**	
City of Albuquerque				
Native vegetation planting/Non-native species removal	2004-Ongoing	$600,000		
Operations & Maintenance of BioPark Silvery Minnow Refugium	2002-	Numbers unavailable at this time		
Operations & Maintenance of Silvery Minnow Sanctuary	2007-Ongoing	$25,000		
Subtotal		**$600,000**		
Albuquerque Bernalillo County Water Utility Authority				
Monitoring Waste Water Treatment Plant Discharges		Numbers unavailable at this time		RPA DD
Subtotal			**$0**	
Albuquerque Metropolitan Arroyo Flood Control Authority				
Albuquerque Metropolitan Arroyo Flood Control	Ongoing	$10,000		
Subtotal		**$10,000**	**$0**	
Pueblos				
Ohkay Owingeh		Numbers unavailable at this time		
Cochiti		Numbers unavailable at this time		
Santo Domingo		Numbers unavailable at this time		
San Felipe		Numbers unavailable at this time		
Santa Ana		Numbers unavailable at this time		
Sandia		Numbers unavailable at this time		
Isleta		Numbers unavailable at this time		
Subtotal		**$0**	**$0**	
Non-Governmental Organization				
Rio Grande Restoration	Ongoing	$5,000		
Subtotal		**$5,000**	**$0**	
University of New Mexico				
Surface Water Quality Study & Continuous Water Quality Monitoring Network	2005-2007	$43,880	$87,760	
Museum-based Approaches to Ecology & Evolution of Aquatic Sys	2002-2007	$100,000	$500,000	
Subtotal		**$143,880**	**$587,760**	
Volunteer Organizations				
Hawks Aloft, Inc.		Funded thru Corp programs		
Bosque Ecosystem Monitoring Program (BEMP)	Ongoing	Funded thru Corp, Sevice, and Reclamation programs		
Socorro Save our Bosque Task Force	1993-Ongoing	Funded thru Corp, Sevice, and Reclamation programs	$433,000	RPA S
Friends of the Rio Grande Nature Center State Park		Numbers unavailable at this time		
Tree New Mexico, Inc.		Numbers unavailable at this time		
Subtotal		**$0**	**$433,000**	
Total		**$19,239,939**	**$229,050,572**	

The Program activities have been grouped by the two major Program Goals. Each group of activities includes categories of activities with different objectives. The first group includes the Program activities that meet Program Goal 1, alleviate jeopardy to the listed species in the Program area. This group includes activities that meet BiOp requirements. The second group of activities meet Program Goal 2, conserve and contribute to recovery of the listed species. This group contains proactive Program activities that contribute to the recovery of the listed species and improve the MRG ecosystem. Proactive activities include conservation recommendations (CR) listed in the BiOp as well as activities described in the endangered species recovery plans. All Program activities (in both groups) must also meet Program Goal 3, protect existing and future water uses, and be carried out in compliance with federal and state laws.

All activities that are included in Program Goal 1 will also contribute to the recovery of the listed species. Proactive actions that contribute to the recovery of the listed species may take place outside the Program area. An example of this type of activity would be using captive-bred silvery minnows from the Dexter National Fish Hatchery and Technology Center to establish a new population in the Big Bend area of the Rio Grande in Texas.

Table 2 contains a summary of Program activities, by category, with 10-year budget estimates, and the associated BiOp RPA, RPM, or CR for each category. The categories in Table 2 are listed in general order of priority, from highest to lowest, as determined by the BiOp. Figure 2 graphically shows the cost estimates for each activity over the life of the BiOp. Each year the Program, in consultation with the Service, recommends to Reclamation which activities should be funded. Some activities are funded through a competitive process, which requests proposals to fulfill specific priorities. The proposals that are received are evaluated both on their technical merits as well as their cost effectiveness. Other activities are funded through multi-year interagency agreements, contracts, and grants. If a limited amount of funding is available, the highest priority activities will be funded first. All costs are estimated and inclusive of inflation and required monitoring, operation and maintenance.

Table 3 lists the objectives and metrics associated with each activity category. Each activity category has specific objectives that come out of the BiOp and/or species recovery plans. Metrics describe what data will be measured and tracked to determine if the objective has been met. For example, one objective for "Required Habitat Improvement Elements" is restoring 1,600 acres of habitat by 2013. In this example, the metric is "acres of habitat restored."

3.1. Required BiOp Activities for Program Goal 1

Following are the required BiOp activities that meet Program Goal 1, alleviate jeopardy to the listed species in the Program area:

1. Required Water Operations Elements (RPA A-O, RPM 1.1, 2.1, 3.1, 3.2, 4.1)

These activities include acquiring water from willing sources to meet BiOp flow requirements, coordinating water operations, monitoring river flows to ensure BiOp flow requirements are met, and pumping from the Low Flow Conveyance Channel into the Rio Grande to enhance river flows to benefit listed species. More information about these

activities can be found in Appendix B and in Reclamation's *DRAFT Long-Term Water Acquisition and Management Plan, Prepared by the Albuquerque Area Office, Upper Colorado Region, in Cooperation with the Middle Rio Grande Endangered Species Act Collaborative Program,* in preparation (Reclamation 2006b). These activities also include assessing irrigation canal entrainment impacts on silvery minnow recruitment and individual life stages and monitoring flows to meet BiOp flow requirements, and to minimize the loss of flycatcher territories caused by river drying.

2. Required Captive Propagation Elements (RPA Y- BB)

Activities for silvery minnow captive population management include constructing propagation and naturalized refugia facilities, propagation of wild-captured eggs, breeding of captive adults, monitoring the genetic status of captive propagation stocks, rearing and then augmenting silvery minnows in the Rio Grande to increase the population, while ensuring genetic stability and preventing the loss of potentially valuable genes or alleles. Additional information regarding population management for the silvery minnow can be found in the *Science Plan* and *Controlled Propagation Plan* (in preparation) developed by the Program's Science Subcommittee (2003 and 2006, respectively).

3. Required Habitat Improvement Elements (RPA Q-S, X)

Proposed actions include physical manipulations of the Rio Grande channel (riverine restoration), and adjacent bosque area (riparian restoration) to benefit the listed species.

In addition, the required habitat improvement activities include the planning efforts required to implement successful restoration projects, annual monitoring of the constructed projects, and implementing fish passage at San Acacia, Isleta and Angostura diversion dams. More information about recommended habitat restoration techniques can be found in the *Habitat Restoration Plan for the Middle Rio Grande* (Tetra Tech EM Inc. 2004).

4. Required Salvage Elements (RPM 1.2, 2.2)

The Service monitors the river, rescues silvery minnow from drying reaches of the river, and determines incidental take. This activity category also includes monitoring entrainment and rescuing minnow eggs from irrigation structures. More information about salvage activities can be found in the *Science Plan* developed by the Program's Science Subcommittee (2003).

5. Required Water Quality Elements (RPA DD – EE)

The purpose of this element is to ensure that water quality is maintained at appropriate levels for the silvery minnow and flycatcher. It includes development and execution of a comprehensive water quality assessment and monitoring program and testing to determine safe levels of various constituents for the listed species. More information can be found in the *Program Monitoring Plan* (PMP) (Program Science and Habitat Restoration Subcommittees 2006a).

Table 2. Summary of LTP Activities and Budget Estimates

Description of Activity	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Comment
ACTIVITIES NEEDED TO ALLEVIATE JEOPARDY (Program Goals 1 & 3)												
1. Required Water Operations Elements (RPA A-O, RM 1.1, 2.1, 3.1, 3.2, 4.1)												
TOTAL FOR REQUIRED WATER OPERATIONS ELEMENTS	$2,436,689	$4,050,000	$5,050,000	$12,045,000	$12,045,000	$12,050,000	$12,050,000	$12,050,000	$12,050,000	$12,050,000	$95,876,689	
Note: Reclamation's FY'08 - FY'14 annual cost estimates for acquisition of supplemental water and pumping from low flow conveyance channel range from $3.1 million to $20.7 million. For ease of calculation, the average amount, $11.9 million per year, has been used as the LTP budget estimate.												
2. Required Captive Propagation Elements (RPA Y - BB)												
TOTAL FOR REQUIRED CAPTIVE PROPAGATION ELEMENTS	$1,437,694	$1,216,765	$1,438,000	$1,150,000	$950,000	$1,050,000	$1,050,000	$950,000	$950,000	$950,000	$11,142,459	Includes ISC funding of $1 M
3. Required Habitat Improvement Elements (RPA Q - S, X)												
TOTAL FOR HYDROLOGIC MONITORING ELEMENTS	$54,600	$120,000	$1,050,000	$1,140,000	$1,140,000	$1,120,000	$1,120,000	$1,120,000	$1,120,000	$1,120,000	$9,104,600	
TOTAL FOR REQUIRED HABITAT RESTORATION ELEMENTS	$545,380	$2,726,030	$3,600,000	$5,075,000	$5,050,000	$3,910,000	$3,860,000	$3,860,000	$3,660,000	$3,660,000	$35,946,410	
TOTAL FOR REQUIRED FISH PASSAGE ELEMENTS	$286,574	$284,183	$450,000	$450,000	$6,020,000	$590,000	$520,000	$560,000	$600,000	$640,000	$10,400,757	
4. Required Salvage Elements (RPM 1.2, 2.2)												
TOTAL FOR REQUIRED SALVAGE ELEMENTS	$0	$777,339	$500,000	$550,000	$550,000	$600,000	$600,000	$600,000	$600,000	$600,000	$5,377,339	Reclamation funded FY05
5. Required Water Quality Elements (RPA DD-EE)												
TOTAL FOR REQUIRED WATER QUALITY ELEMENTS	$0	$209,361	$175,000	$250,000	$250,000	$150,000	$150,000	$150,000	$150,000	$150,000	$1,634,361	
6. Other Required Monitoring and Research (including population surveys, RPA CC, RPM 1.3, 5.1)												
TOTAL FOR REQUIRED MONITORING AND RESEARCH ELEMENTS	$576,429	$483,855	$563,930	$490,000	$495,000	$450,000	$400,000	$400,000	$400,000	$400,000	$4,659,214	
7. Required Program Management and Assessment												
TOTAL FOR PROGRAM MANAGEMENT AND ASSESSMENT ACTIVITIES	$2,868,757	$1,754,811	$2,115,000	$2,425,000	$2,185,000	$2,370,000	$2,250,000	$2,370,000	$2,250,000	$2,370,000	$22,958,568	
TOTAL FOR ACTIVITIES THAT ALLEVIATE JEOPARDY	$8,206,123	$11,622,343	$14,941,930	$23,575,000	$28,685,000	$22,290,000	$22,000,000	$22,060,000	$21,780,000	$21,940,000	$197,100,396	
ACTIVITIES THAT CONTRIBUTE TO THE RECOVERY OF THE LISTED SPECIES (Program Goals 2 & 3)												
8. Proactive Water Operations and Management Activities (CR 7-8, 14-17, 20, *)												
TOTAL FOR PROACTIVE WATER OPERATIONS AND MANAGEMENT ACTIVITIES	$535,922	$379,653	$835,000	$2,143,000	$1,785,000	$1,054,000	$1,254,000	$254,000	$154,000	$54,000	$8,448,575	
9. Proactive Captive Propagation Activities (*)												
TOTAL FOR PROACTIVE CAPTIVE PROPAGATION ACTIVITIES	$122,569	$75,000	$150,000	$156,000	$162,000	$168,000	$174,000	$180,000	$186,000	$192,000	$1,565,569	
10. Proactive Habitat Improvement Activities												
TOTAL FOR PROACTIVE HABITAT RESTORATION ELEMENTS	$438,534	$946,345	$900,000	$899,667	$899,667	$1,300,000	$1,200,000	$1,200,000	$1,200,000	$1,200,000	$10,184,213	
TOTAL FOR PROACTIVE FISH PASSAGE ACTIVITIES	$0	$0	$0	$0	$0	$0	$0	$125,000	$125,000	$0	$250,000	
11. Proactive Water Quality Activities (CR 4, 6, *)												
TOTAL PROACTIVE WATER QUALITY ELEMENTS	$0	$38,410	$0	$100,000	$100,000	$100,000	$0	$0	$0	$0	$300,000	
12. Other Proactive Monitoring and Research Activities (CR 1-3, 9-13,18,21,23-25,*)												
TOTAL PROACTIVE MONITORING AND RESEARCH ACTIVITIES	$63,413	$507,221	$650,000	$1,190,000	$725,000	$500,000	$350,000	$400,000	$250,000	$250,000	$4,885,634	
* Other activities included in the LTP that contribute to achieving the objectives listed in the flycatcher and/or silvery minnow recovery plans												
TOTAL FOR PROACTIVE ACTIVITIES	$1,160,438	$1,946,629	$2,535,000	$4,488,667	$3,671,667	$3,122,000	$2,978,000	$2,159,000	$1,915,000	$1,696,000	$25,633,991	
TOTAL FOR ALL PROGRAM ACTIVITIES	$9,366,561	$13,568,972	$17,476,930	$28,063,667	$32,356,667	$25,412,000	$24,978,000	$24,219,000	$23,695,000	$23,636,000	$222,734,387	
TOTAL SUBJECT TO COST SHARE	$3,761,115	$7,464,161	$9,961,930	$13,718,667	$18,251,667	$11,122,000	$10,808,000	$9,929,000	$9,525,000	$9,346,000	$103,849,130	Does not include ISC funding
Note: The categories in Table 2 are listed in general order of priority, from highest to lowest, as determined by the BiOp. Each year the Program, in consultation with the Service, determines which activities should be funded. If a limited amount of funding is available, the highest priority activities will be funded first. Water acquisition, administration costs related to water acquisition and water management, and the administration of the Collaborative Program shall be carried out at full federal expense.												

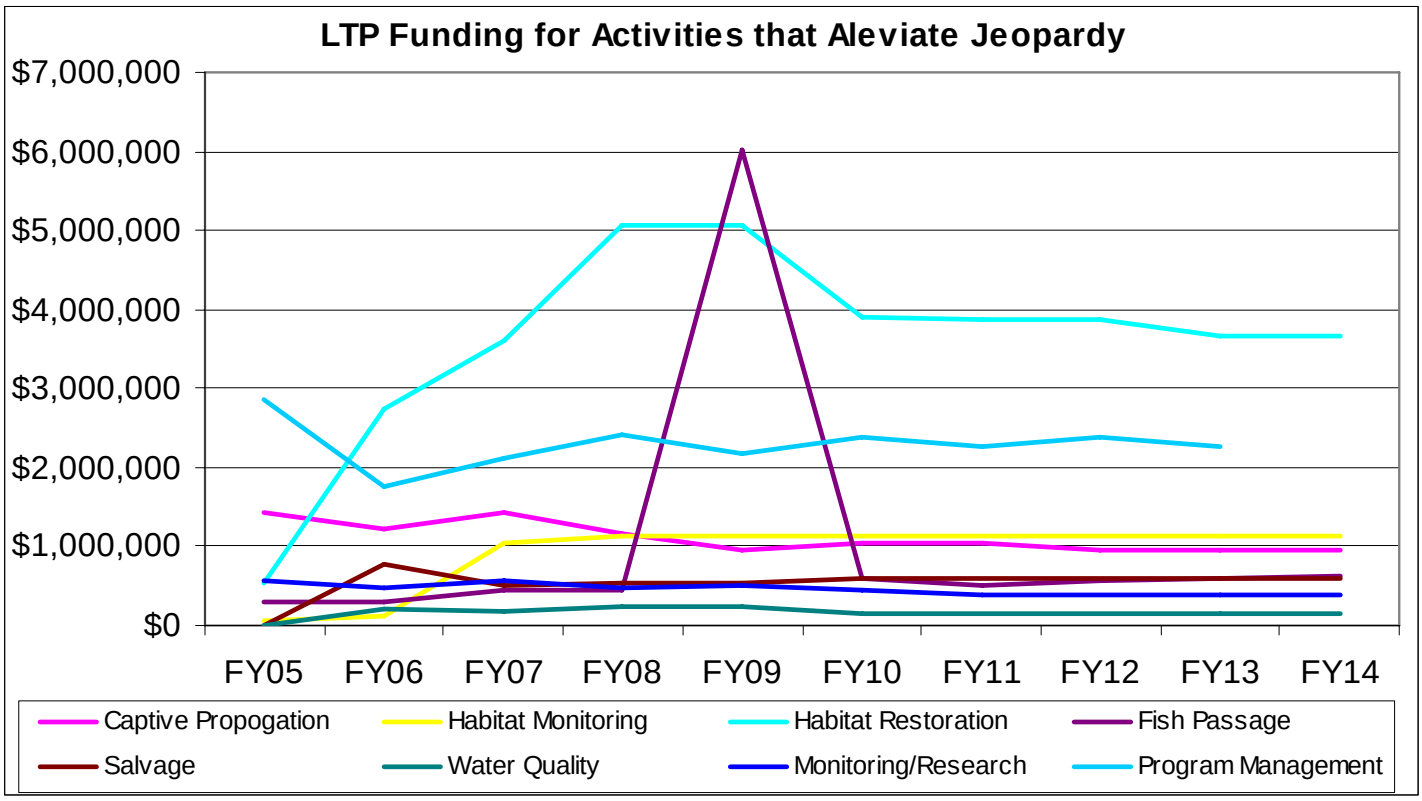

Figure 2. Program cost estimate for the duration of the BiOp. Cost estimates are inclusive of inflation and required monitoring, operation and maintenance.

6. Other Required Monitoring and Research (population surveys, RPA CC, RPM 1.3, 5.1)

The Program pursues scientifically-based solutions to address the needs of the listed species and the ecosystems upon which they depend. These activities continue monitoring of silvery minnow and flycatcher populations throughout the MRG. This category also includes studying the direct and indirect effects of salvage operations on the silvery minnow, monitoring cowbird parasitism, and removing cowbird eggs from parasitized flycatcher nests. Additional information regarding monitoring and research can be found in the *Science Plan* (Program's Science Subcommittee 2003) and the Program's Monitoring Plan (Program's Science and Habitat Restoration Subcommittees 2006a).

7. Required Program Management and Assessment

Essential program management activities performed by the Program include financial management functions; annual planning and reporting; budget administration; developing focused requests for proposals; contract administration; and programmatic environmental compliance activities.

These program management activities also include administrative support for Program committees and workgroups; managing Program data and providing archival support; maintenance of the Program's web site; tracking Program accomplishments, action items

and activities; and public outreach and involvement. Technical support activities include assessing the Program's progress towards achieving Program goals; assisting with the review and evaluation of proposed projects and project deliverables; and developing and implementing monitoring and adaptive management plans.

3.2 Proactive Activities for Program Goal 2

The following are the proactive activities that meet Program Goal 2, conserve and contribute to the recovery of the listed species:

8. Proactive Water Operations and Management Activities (CR 7-8, 14-17, 20)

Improved water management will allow the needs of the endangered species to be met while continuing existing and planned water uses. These activities apply best available hydrologic data to address hydrologic and water supply issues, including development of a long-term water acquisition and management plan, identification of short and long-term sources of water and development of alternative river management strategies to benefit listed species. More information can be found in the Program's *Water Acquisitions and Management Plan, Final Report* (Program Water Acquisitions and Management Subcommittee 2005a).

9. Proactive Habitat Improvement Activities (CR19, 22)

These activities include restoring habitat in the northern portion of the Program Area, above Cochiti Lake, and any habitat restoration that occurs from Cochiti Dam downstream to the headwaters of Elephant Butte Reservoir in excess of 1,600 acres.

10. Proactive Captive Propagation Activities

Genetics research evaluates the remaining genetic diversity of the silvery minnow in the Rio Grande and assists in the development of a genetics management plan. Understanding the level of genetic diversity is essential for long-term population management and recovery of the silvery minnow.

11. Proactive Water Quality Activities (CR 4, 6)

These activities include assessing the impacts of water quality on silvery minnow health and critical habitat.

12. Other Proactive Monitoring and Research Activities (CR 1-3, 9-13, 18, 21, 23-25)

Research efforts will focus on projects such as assessing key habitat requirements that help avoid jeopardy and promote recovery; monitoring the effects of turbidity, suspended sediment, sediment toxicity, diet, water quality and habitat restoration projects on silvery minnow and flycatcher populations; improving our understanding of groundwater/surface water relationships; and improving accuracy of net depletion analysis.

3.3 Program Goal 3

All Program activities must meet Program Goal 3, protect existing and future water uses, and be carried out in compliance with state and federal laws.

4. Long-Term Plan Budget Projections

The Program's LTP spans a 10-year period, FY 2005 to FY 2014. The LTP provides the activities in priority order so that higher priority activities can be easily identified and funded first. Other lower priority activities can be postponed if funding is not available. More than 10 years may be needed to meet the goals of the Program. Authorizing legislation may affect both the budget and schedule of the existing plan. Once the Program is authorized, the budget estimates will be adjusted to match the length of the Program.

The cost estimates provided in the LTP are based on the most detailed information currently available from Program technical subcommittees, signatories, and actual experience gained from implementing Program activities since FY 2001. Information obtained on the cost of implementing similar work was considered (Refer to the Spending Plan; Reclamation 2003, 2004, 2005, 2006a.)

The Budget tables are organized around the first two goals of the Program: 1) alleviate jeopardy to the listed species in the Program area (which includes meeting the requirements of the BiOp) and 2) conserve and contribute to recovery of the listed species. All Program activities must meet Program Goal 3, protect existing and future water uses, and be carried out in compliance with state and federal laws. Table 2 presents a summary of proposed Program activities and estimated costs for 2005 through 2014. Estimated costs for the major category headings are provided. The objective(s) and performance measures of each activity category are listed in Table 3. Appendix A provides a greater level of detail.

The Program depends on primarily federal funding provided through Reclamation's budget. The LTP is designed so it can be used by the federal and non-federal signatories to develop the budget information necessary for inclusion in the federal, state, and other budget processes. Execution of the Program's activities is contingent upon the federal and state appropriations process providing funds to the agencies.

Legislation authorizing the Program was introduced by Senators Bingaman and Domenici on July 28, 2005. It is still awaiting passage. Based on the draft language, there is an indication of what to expect in regards to cost share requirements for non-federal participants. It is anticipated that water acquisition and administrative costs will be fully funded at the federal level. The non-federal cost share for the activities listed in the LTP, with the exception of water acquisition and administrative costs are likely to be 25 percent, up to a maximum of $30 million. The cost share will likely be on a programmatic rather than project by project basis.

The cost share is expected to be provided as in-kind contributions or direct cash contributions. In-kind contributions will probably include staff, labor, equipment, land, management, monitoring, construction, operation and/or maintenance of Program activities, use of non-federal facilities for Program activities and projects such as for conveying water and for captive rearing and breeding of the silvery minnow, and permanent or temporary use of water or water storage facilities.

Table 3. LTP Activities, Objectives, and Goals

Activity Category	Objectives	Rationale	Metrics
Program Goal 1: Alleviate Jeopardy to the Listed Species in the Program Area Note: Objectives and metrics for Program Goal 1 come out of the BiOp requirements.			
1. Required Water Operations Elements (RPA A-O, RPM 1.1, 2.1, 3.1, 3.2, 4.1)	A. Meet Flow Requirements in the 2003 BiOp	This will provide the primary constituent elements needed to sustain the minnow. Will provide at least a minimal amount of habitat for adult and juvenile silvery minnows through the summer months. Will provide a sufficient amount of habitat for augmente	Daily readings of cubic feet per second (cfs) past Central Bridge gage, cfs past Isleta diversion dam, cfs past San Acacia diversion dam, cfs at San Marcial floodway gage, cfs at southern boundary of critical habitat
	B. Provide annual spawning spike between April 15 and June 15	Will provide sufficient water for peak flows necessary to induce silvery minnow spawning.	Number of contiguous days flows exceeded 3,000 Cfs at Central Bridge Gage between April 15 and June 15 each year (5 - 7 days are needed to provide for spawning and recruitment)
	C. Provide surface water or moist soils for active flycatcher territories from June 15 to Sept 1	The presence of surface water is considered one of the most important factors in determining suitable flyatcher breeding sites. Will minimize the loss of flycatcher territories caused by river drying.	Number of days active territories were dry (Number of territory-days)
2. Required Captive Propagation Elements (RPA Y- CC)	A. Provide $300,000 annually to NMESFO to continue captive propagation activities	Will increase captive populations and facilitate augmentation efforts in the MRG. Egg collection and captive propagation are of increased importance for maintaining the numbers and genetic diversity of minnows when adequate habitat is not available in th	Date and amount of funding transferred to NMESFO for captive propagation [1]
	B. Provide $200,000 annually, for 3 years, for expansion of propagation facilities	The capacity of current captive propagation facilities must be expanded to accommodate an increased number of silvery minnows for augmentation activities.	Date and amount of funding provided [1]
	C. Complete first new breeding and rearing facility by May 31, 2005 and second new facility by May, 31, 2006. One facility should be in the Cochiti or Angostura Reach, the other in the Isleta or San Acacia Reach.	Successful breeding and rearing of silvery minnows will be essential for providing captive stock that can be used for augmentation efforts within the MRG as well as for reintroduction efforts in currently unoccupied areas within the minnow's historic rang	Location and date new breeding and rearing facility completed .
	D. Provide NMESFO $100,000 annually, for five years, beginning in 2008, for monitoring and augmentation of experimental populations of silvery minnow	Needed to meet the goals of the recovery plan to establish populations outside the MRG. Will reduce the likelihoood that a catastrophic event could result in the extinction of the species.	Date and amount of funding transferred to NMESFO for experimental silvery minnow populations [1]

Table 3. LTP Activities, Objectives, and Goals Continued

Activity Category	Objectives	Rationale	Metrics
3. Required Habitat Improvement Elements (RPA P- X)	A. Install gages near Los Lunas, Hwy 380, and at all diversions, drains, returns and main ditches	Will allow reliable monitoring of flows to help monitor river recessions. Will allow for accurate accounting of water use.	Date and location of installed gage
	B. Complete fish passage at San Acacia diversion dam by 2008	Providing fish passage will restore river connectivity above and below the dam, allowing silvery minnows to move upstream and aid in a more even distribution of the population.	Date fish passage completed
	C. Complete fish passage at Isleta diversion dam by 2013	Providing fish passage will restore river connectivity above and below the dam, allowing silvery minnows to move upstream and aid in a more even distribution of the population.	Date fish passage completed
	D. Annually monitor fish passage effectiveness	Determine when, and how many, silvery minnows are using the fish passage.	Number of fish passing upstream of diversion dam, by species
	E. Restore 1600 acres of habitat thoughout the action area ((Cochiti Dam or NM/CO border?) downstream to EB headwaters) by 2013	Creation of riparian habitat will provide the low velocity, backwater habitats needed by the silvery minow and flycatcher. Overbank flooding is necessary to sustain the native riparian vegetation and wetlands that the flycatcher requires for shelter, fee	Date project completed, project location, and acres of suitable habitat restored or developed
	F. Conduct monitoring annually, for 10 years, for each HR project	Ensure that projects achieve the desired results.	Date report was submitted to the Collaborative Program by HR project, dates monitoring was conducted, locations monitored
	G. Prevent encroachment of salt cedar on existing channel and destablize islands, point bars, banks, or sand bars from Angostura to EB headwaters	Will help alleviate adverse modification to silvery minnow critical habitat by providing for the necessary habitat components of primary constituent elements 1 and 2.	Date project completed, project location, and Number of acres of islands, banks and bars that have been cleared of salt cedar and destablized
4. Required Salvage Elements (RPM 1.2, 2.2)	A. Rescue minnows from isolated pools as the river dries	Minimize the take of silvery minnows within the MRG.	Total Number of minnows longer than 30 mm salvaged, by reach, by year
	B. Rescue silvery minnow eggs at all diversion dams, daily from May 1 - May 31	Minimize the take of silvery minnows due to river diversions.	Total Number of minnow eggs rescued, by location, by year
5. Required Water Quality Elements (RPA DD – EE)	A. Provide funding for a comprehensive water quality assessment and monitoring program in the MRG to assess water quality impacts on the silvery minnow (How many years does this study need to be done?)	Need to determine the lethal levels and chronic effects of toxic substances for the minnow. Need to identify and quantify effects of discharges such as storm runoff, irrigation and riverside drain returns. Will allow better evaluation of important water	Date and amount of funding provided, whom the funding was provided to, date monitoring report(s) completed

Table 3. LTP Activities, Objectives, and Goals Continued

Activity Category	Objectives	Rationale	Metrics
6. Other Required Monitoring and Research (include population surveys, RPM 1.3, 5.1)	A. Develop a report describing the status of the silvery minnow annually	Will allow assessment of progress made toward recovery of the species and determining priority activities for the near term.	Date report was submitted to the Collaborative Program
	B. Develop a report describing the status of the flycatcher annually	Will allow assessment of progress made toward recovery of the species and determining priority activities for the near term.	Date report was submitted to the Collaborative Program
	C. Determine the direct and indirect effects of salvage operations on the silvery minnow.	Will allow an evaluation of the success of salvage operations and may lead to improved methods for salvage and augmentation.	Date report was submitted to the Collaborative Program
	D. Monitor cowbird parasitism and remove cowbird eggs from parasitized nests (how many years is this activity needed?)	Will increase the recruitment rate for flycatchers in areas subject to cowbird parasitism.	Annual parasitism levels, by reach
7. Required Program Management and Assessment	A. Develop a list of activities to be funded with estimated budget amounts annually	Ensure that the highest priority activities are funded and provide accountability.	Date activity list accepted by Collaborative Program
	B. Develop a financial management report listing obligations, expenditures and non-federal cost share amounts annually (quarterly?)	Demonstrate effective use of funds provided for Program activities.	Date report was submitted to the Collaborative Program
	C. Complete programmatic NEPA compliance process and ESA consultation(s)	Comply with federal regulations and streamline the compliance process for individual Program activities.	Date ROD signed, (Date Programmatic BiOp issued?), Date Programmatic BiOp completed for HR work in specific reach
	D. Make annual progress toward goal of awarding contracts and financial assistance agreements within 45 days of receiving annual appropriations	Increase expenditure rate of funds in year appropriated. Ensure funds are available when needed for time-sensitive (seasonal) activities.	Date SOWs provided to CO, date proposals due, date TPECs complete proposal evaluations, date Program makes funding recommendations to CO, first and last days that contracts and agreements are awarded (each fiscal year)
	E. Conduct annual Program planning including setting priorities, revising budget estimates, determining adaptive management actions to be taken	Ensure that the highest priority activities are funded at appropriate levels. Ensure that project activities are achieving their objectives.	Date next year's Program priorities are established, date LTP budget estimates are revised, date decision made and list of adaptive management actions to be taken
	F. Develop detailed annual Program Progress Report as described in the LTP and Program Monitoring Plan	Document progress made towards achieving Program goals and the effective use of funds provided for Program activities in a way that can be shared with all interested parties.	Date report posted on Program web site, Date report provided to ExecComm, Congress, and State Legislators
	G. Complete activities listed in Public Information and Outreach Approach document	Inform State and Federal legislators, and other interested parties, about Program activities and accomplishments.	Activity description (press release submitted to whom, number of newsletters mailed, presentation given to whom, etc) and date completed
	H. Develop and maintain a web-accessible technical library of all Program documents and linked GIS database with project descriptions, locations, photographs, etc.	Inform all interested parties about Program activities and accomplishments. Ensure that planned activities do not duplicate or adversely affect other activities. Share knowledge gained.	Date pilot database completed, date fully functioning system is available for public use

Table 3. LTP Activities, Objectives, and Goals Continued

Activity Category	Objectives	Rationale	Metrics
	I. Sponsor annual forum/workshop to share new information	Share knowledge gained so it can be incorporated into future activities and be used to set near-term Program priorities. Discuss the status of the listed species.	Dates annual forum/workshop held, number of attendees, number of presenters
	J. Conduct peer and advisory panel reviews of Program-funded reports	Obtain independent evaluation of the effectiveness of Program activities and assistance with setting near-term Program priorities.	Number and type of peer-reviewed reports, by year
	K. Implement program-wide monitoring and adative management strategy	Ensure consistent data is collected throughout the Program area to determine effectiveness of Program activities. Ensure implementation of actions needed to achieve Program objectives.	Date monitoring plan finalized, date adaptive management strategy finalized, date annual program assessment was completed
Program Goal 2: Contribute to the Recovery of the Listed Species Note: Objectives and metrics for Program Goal 2 come out of the recovery plans for the silvery minnow and flycatcher, the conservation recommendations listed in the BiOp, and the Program's Monitoring Plan.			
8. Proactive Water Operations and Management Activities (CR 7-8, 14-17, 20, *)	A. Conduct studies, modeling and research activities listed in the LTP.	Improve understanding of the hydrologic system, effects of different operational alternatives, and depletions. Develop options that may lead to increased availability of water to benefit the species.	Date and title of study report submitted to Program
	B. River management that provides flows in each of the populated reaches of the MRG sufficient to maintain the silvery minnow population for 10 years.	Provide habitat sufficient to support silvery minnow populations.	Daily readings of cubic feet per second (cfs) past Central Bridge gage, cfs past Isleta diversion dam, cfs past San Acacia diversion dam, cfs at San Marcial floodway gage, cfs at southern boundary of critical habitat
9. Proactive Habitat Improvement Activities (CR19, 22, *)	A. Fund flycatcher habitat restoration projects in areas that have been cleared of salt cedar through the NM Saltcedar Control Project	Will improve and increase the amount of habitat available for flycatchers.	Number of acres of restored habitat
	B. Create refugia in the river for silvery minnow utilizing drains and other works	Will improve and increase the amount of habitat available for silvery minnows.	Number of refugia created; Number of days refugia remained wet after river dried, by refugia
	C. Restore silvery minnow and flycatcher habitat from NM/CO border downstream to EB headwaters with an emphasis on flycatcher habitat improvement in river reaches identified in the flycatcher recovery plan, Table 10.	Will improve and increase the amount of habitat available for silvery minnows and flycatchers.	Number of acres restored above Cochiti Reservoir, Number of acres restored below Cochiti Dam that exceed 1600 acre mandatory requirement

Table 3. LTP Activities, Objectives, and Goals Continued

Activity Category	Objectives	Rationale	Metrics
10. Proactive Captive Propagation Activities (*)	A. Utilize hatchery reared minnow to establish 3 experimental populations in historically occupied habitat	Part of the requirement to recover the silvery minnow to an extent sufficient to change its status from endangered to threatened (downlisting).	Date, location and number of minnows stocked to create an experimental population. Date and number of unmarked fish in each experimental population, annually.
	B.		
11. Proactive Water Quality Activities (CR 4, 6, *)	A. Conduct studies to determine how effluents from the WWTPs mix with water from the Rio Grande at various discharges (CR 4).	Will provide information to detemine if additional protective measures are necessary.	Date and title of study report submitted to Program
	B. Adherence to standards defined by the Federal Water Polution Control Act (CWA) and state water quality statues, in currently occupied and potential habitat, for 10 consecutive years.	Ensure water quality sufficient to support silvery minnow populations in occupied and potential habitat.	Water quality data collected, date and location collected, Federal and State water quality standards.
12. Other Proactive Monitoring and Research Activities (CR 1-3, 9 – 13, 18, 21, 23-25, *)	A. Conduct studies listed in BiOp Conservation Recommendations section	Develop information to allow minimizing or avoidance of adverse effects of proposed actions on listed species and their critical habitat and to help implement recovery plans.	Date and title of study report submitted to Program
	B. Maintain 75 flycatcher territories in the Upper Rio Grande management unit and 100 flycatcher territories in the Middle Rio Grande management unit for a minimum of five years.	Meets the minimum number of territories for reclassification from Endangered to Threatened in the Management Unit.	Date and location of flycatcher territory surveyed.
* Other activities included in the LTP that contribute to achieving the objectives listed in the flycatcher and/or silvery minnow recovery plans			

Notes: 1. Reclamation will work with the Service to ensure that funds provided are utilized effectively and efficiently.

5. Assessing Program Performance

By performing regular Program-wide reviews of Program activities, decision makers, such as the members of the Executive Committee, Congressional and State representatives, and others, can be assured that Program actions are benefiting the listed species and accomplishing the goals of the Program. The Service has the responsibility and authority to determine when recovery of endangered species has occurred to the point that reclassification of listed species from "endangered" to "threatened" is warranted.

The Program will consult with the Service to determine the sufficiency of program activities towards achieving BiOp requirements and alleviating jeopardy. On an annual basis the Service, action agencies, and Program will work together to evaluate progress towards recovery. All actions taking place in the MRG should be reviewed for potential effects on recovery goals in accordance with the Program's monitoring plan. The LTP budget estimates will be modified and extended as appropriate.

Program-wide assessment of Program activities can provide evidence that federal and non-federal Program expenditures are producing tangible benefits for the listed species and their habitats. This assessment will be performed through 1) an annual review of program activities, recovery plan goals, and listed species population surveys and 2) a review by an independent panel of experts every 2 years. Detailed information about this independent review of Program activities can be found in the PMP. The PMP also describes the programmatic monitoring that will be implemented to evaluate the cumulative effects of multiple projects implemented in the MRG.

An Annual Report will be developed and will include the following information:

1. Summary description of Program Activities that contributed to meeting Program Goals and objectives listed in Table 2.

2. Financial information including federal and non-federal funds obligated and expended on Program activities. This report will also include the value of in-kind services provided.

This report will be submitted to Congress, to the NM State Legislature, Program signatories, and other interested parties.

Information about Program accomplishments from 2001 through 2005 can be found in detailed spending plans (Refer to the Spending Plan; Reclamation 2003, 2004, 2005, 2006a.) and annual reports (MRG ESA Workgroup 2003, Program 2005b, Program 2006c)

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APPENDIX A

Detailed Spreadsheet Including Estimated Schedule and Costs for Planned Activities

(14 Pages)

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Description of Activity	BO Element Covered	Actual FY'01 - FY'04	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Description of RPA/RPM/CR Element	Comments
2	**ACTIVITIES NEEDED TO ALLEVIATE JEOPARDY (Program Goals 1 & 3)**															
3	**1. Required Water Operations Elements (RPA A-O, RM 1.1, 2.1, 3.1, 3.2, 4.1)**															
4	**Acquisition of Supplemental Water**		**$18,254,938**	**$2,436,689**	**$2,610,627**	**$5,000,000**	**$11,920,000**	**$11,920,000**	**$11,920,000**	**$11,920,000**	**$11,920,000**	**$11,920,000**	**$11,920,000**	**$93,487,316**		
5	Acquire water for minnow release through short term leases and other means (includes San Juan Chama Water and other water leases)	RPA A - 0, RPM 3.1	$1,600,000	$1,236,689	$2,610,627	$5,000,000	$11,900,000	$11,900,000	$11,900,000	$11,900,000	$11,900,000	$11,900,000	$11,900,000	$92,147,316	Meet BIOp flow targets	
6	Note: Reclamation's FY'08 - FY'14 annual cost estimates for acquisition of supplemental water and pumping from low flow conveyance channel range from $3.1 million to $20.7 million.															
7	For ease of calculation, the average amount, $11.9 million per year, has been used as the LTP budget estimate.															
8	RG Supplemental Water Programatic EA	RPA A - 0, RPM 3.1	$120,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
9	Conservation water agreement	RPA A - 0, RPM 3.1	$650,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
10	Acquisition of water	RPA A - 0, RPM 3.1	$3,853,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Meet BIOp flow targets	
11	Supplemental water program and pumping (Reclamation Appropriations)	RPA A - 0, RPM 3.1	$12,031,938	$1,200,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,200,000		
12	Long-term acquisition of water (water rights and long-term contracts)	RPM 3.1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Continue to seek and release supplemental water from all available sources.	
13	Identify willing leasors or sellers from whom the Program can acquire water	RPM 3.2	$0	$0	$0	$0	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$140,000	Plan to acquire water (lease /purchase). Plan completed in 18 months (by October 23, 2004).	
14	**LFCC Pumping**	RPA D, G, K, O, RPM 4.1	**$2,555,000**	**$0**	**$1,439,373**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,439,373**		
15	Pumping from Low Flow Conveyance Channel for flycatcher nest maintenance and silvery minnow flow requirements	RPA D, G, K, O	$1,100,000	$0	$1,439,373	$0	$0	$0	$0	$0	$0	$0	$0	$1,439,373		Cost estimates are included in water acquisition estimates for FY07 - FY14
16	Temporary pumping	RPA D, G, K, O	$1,455,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		Not a duplicate of line 14
17	Purchase small capacity pumps for flycatcher.	RPM 4.1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Purchase small capacity pumps for flycatcher.	
18	**Water Management**	RPA A - O, RPM 1.1, 2.1	**$251,000**	**$0**	**$0**	**$50,000**	**$125,000**	**$125,000**	**$130,000**	**$130,000**	**$130,000**	**$130,000**	**$130,000**	**$950,000**		
19	Monitor flows to meet BiOp flow targets, and to minimize the loss of flycatcher territories caused by river drying	RPA A - O	$0	$0	$0	$0	$75,000	$75,000	$80,000	$80,000	$80,000	$80,000	$80,000	$550,000	Spike Release (April 15 - June 15) , Flow targets for wet, dry and average years	
20	Quantification of flows in MRG gages	RPA B	$251,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
21	Ramp down flows to minimize intermittency	RPM 1.1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Ramp down - no more than 4 miles per day per reach. Total of 8 miles per day. Allow month for larvae to grow.	
22	Assess irrigation canal entrainment impacts on silvery minnow recruitment and individual life stages	RPM 2.1	$0	$0	$0	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$400,000	Operate irrigation diversion structures in a manner that will minimize the entrainment of eggs and larvae into the irrigation system and create instream conditions conducive for in-river egg colleciton. Study entrainment of eggs in irrigation system.	
23	**TOTAL FOR REQUIRED WATER OPERATIONS ELEMENTS**		**$21,060,938**	**$2,436,689**	**$4,050,000**	**$5,050,000**	**$12,045,000**	**$12,045,000**	**$12,050,000**	**$12,050,000**	**$12,050,000**	**$12,050,000**	**$12,050,000**	**$95,876,689**		

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
24	Description of Activity	BO Element Covered	Actual FY'01 - FY'04	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Description of RPA/RPM/CR Element	Comments
25	**2. Required Captive Propagation Elements (RPA Y - BB)**															
26	**Breeding and Rearing Facilities Construction**	RPA Z, AA	**$884,770**	**$1,148,700**	**$500,000**	**$600,000**	**$200,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,448,700**		
27	Expansion of City of Albuquerque Naturalized Refugium	RPA Z	$884,770	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
28	Expansion of Propagation Facilities ($200,000/yr for first 3 years required in BiOp) including Dexter ($175,000) and A-Mountain ($135,000)	RPA Z	$0	$200,000	$200,000	$200,000	$200,000	$0	$0	$0	$0	$0	$0	$800,000	Provide $200,000/yr for first 3 years to expand propagation facilities	
29	1st Additional Silvery Minnow Refugium: 1st May 31, 2005 Cochiti or Angostura reach (BOR funded Minnow Sanctuary)	RPA AA	$0	$648,700	$0	$0	$0	$0	$0	$0	$0	$0	$0	$648,700	Construct two new naturalized refugia (1st May 31, 2005; 2nd May 31 2006). One in Cochiti or Angostura reach; the other in Isleta or San Acacia reach.	Minnow Sanctuary, south of Bridge Blvd
30	2nd Additional Silvery Minnow Refugium: May 31 2006 Isleta or San Acacia reach (ISC funded Los Lunas Facility)	RPA AA	$0	$300,000	$300,000	$400,000	$0	$0	$0	$0	$0	$0	$0	$1,000,000	Construct two new naturalized refugia (1st May 31, 2005; 2nd May 31 2006). One in Cochiti or Angostura reach; the other in Isleta or San Acacia reach.	ISC-funded naturalized refugia, Los Lunas (funding for this facility not part of Program write-in)
31	**Operate/Manage Breeding and Rearing Facilities**	RPA Y	**$3,564,000**	**$281,347**	**$513,858**	**$618,000**	**$850,000**	**$850,000**	**$950,000**	**$950,000**	**$950,000**	**$950,000**	**$950,000**	**$7,863,205**		
32	Conservation genetics - UNM		$344,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
33	Propagation facilities - Dexter (FWS) and A-Mountain (USGS NM Cooperative Fish and Wildlife Research Unit) O&M	RPA Y	$1,000,000	$168,897	$431,103	$400,000	$400,000	$400,000	$500,000	$500,000	$500,000	$500,000	$500,000	$4,300,000	Provide $300,000/yr to NMESFO for distribution to propagation facilities	
34	City of Albuquerque Naturalized Refugium O&M	RPA Y	$912,000	$112,450	$82,755	$168,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$2,113,205		
35	Additional silvery minnow Refugia O&M	RPA Y	$0	$0	$0	$50,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$1,450,000		
36	Propagation of silvery minnow	RPA Y	$1,308,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
37	**Augmentation from Captive Populations**	RPA BB	**$573,200**	**$7,647**	**$202,907**	**$220,000**	**$100,000**	**$100,000**	**$100,000**	**$100,000**	**$0**	**$0**	**$0**	**$830,554**		
38	Reintroduction of silvery minnow into MRG	RPA BB	$200,000	$0	$202,907	$120,000	$0	$0	$0	$0	$0	$0	$0	$322,907		
39	FRO Experimental Augmentation and Monitoring Plan for silvery minnow (separate Reclamation funding in FY05)	RPA BB	$373,200	$7,647	$0	$0	$0	$0	$0	$0	$0	$0	$0	$7,647		
40	Assess the persistence of experimental silvery minnow populations to evaluate success (BiOp requirement of $100,000/yr for 5 yrs (2008 - 2013)	RPA BB	$0	$0	$0	$100,000	$100,000	$100,000	$100,000	$100,000	$0	$0	$0	$500,000	Provide $100,000/yr for five years Beginning 2008 to monitor experimental populations	
41	**TOTAL FOR REQUIRED CAPTIVE PROPAGATION ELEMENTS**		**$5,021,970**	**$1,437,694**	**$1,216,765**	**$1,438,000**	**$1,150,000**	**$950,000**	**$1,050,000**	**$1,050,000**	**$950,000**	**$950,000**	**$950,000**	**$11,142,459**		
42	**3. Required Habitat Improvement Elements (RPA Q - S, X)**															
43	**Hydrologic and Habitat Monitoring**	RPA P,Q	**$700,000**	**$54,600**	**$120,000**	**$1,050,000**	**$1,140,000**	**$1,140,000**	**$1,120,000**	**$1,120,000**	**$1,120,000**	**$1,120,000**	**$1,120,000**	**$9,104,600**		
44	Prevent/minimize destruction of potential/existing flycatcher habitat (regarding pump placement)	RPA P	$0	$0	$0	$0	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$7,000,000	'Prevent/minimize destruction of potential/existing flycatcher habitat (regarding pump placement)	cost included in water ops
45	Instrumentation and data collection to enhance quantification of Rio Grande flows	RPA Q	$100,000	$54,600	$20,000	$1,050,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$1,404,600	Improve water gaging (including diversions, drains, returns and main ditches)	
46	Water gaging improvements the MRG irrigation system (including diversions, main ditches, drains, and return flows)	RPA Q	$600,000	$0	$100,000		$100,000	$100,000	$80,000	$80,000	$80,000	$80,000	$80,000	$700,000	Improve water gaging (including diversions, drains, returns and main ditches)	

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
47	Description of Activity	BO Element Covered	Actual FY'01 - FY'04	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Description of RPA/RPM/CR Element	Comments
48	**Habitat Restoration Construction/Monitoring**	RPA S	**$7,438,976**	**$545,380**	**$2,726,030**	**$3,600,000**	**$5,075,000**	**$5,050,000**	**$3,910,000**	**$3,860,000**	**$3,860,000**	**$3,660,000**	**$3,660,000**	**$35,946,410**	Habitat restoration (total 1600 acres by 2013; 10 yr monitor component). Environmental evaluation process for two	
49	**Compliance and Monitoring**	RPA S	**$0**	**$0**	**$0**	**$0**	**$325,000**	**$350,000**	**$350,000**	**$300,000**	**$300,000**	**$250,000**	**$250,000**	**$2,125,000**		
50	Support to projects for NEPA and other environmental compliance	RPA S	$0	$0	$0	$0	$50,000	$50,000	$100,000	$50,000	$50,000	$0	$0	$300,000		
51	Develop and implement habitat restoration project monitoring to assess project success and implement adaptive management.	RPA S	$0	$0	$0	$0	$275,000	$300,000	$250,000	$250,000	$250,000	$250,000	$250,000	$1,825,000		
52	**Cochiti Reach (Cochiti to Angostura)**	RPA S	**$674,550**	**$400,124**	**$358,776**	**$667,000**	**$900,000**	**$900,000**	**$600,000**	**$600,000**	**$600,000**	**$600,000**	**$600,000**	**$6,225,900**		
53	**Silvery minnow projects**	RPA S	**$0**	**$400,124**	**$358,776**	**$500,334**	**$733,333**	**$733,333**	**$400,000**	**$400,000**	**$400,000**	**$400,000**	**$400,000**	**$4,725,900**		
54	Santo Domingo Habitat Improvement Project	RPA S	$0	$400,124	$358,776	$0	$0	$0	$0	$0	$0	$0	$0	$758,900		
55	**Flycatcher projects**	RPA S	**$674,550**	**$0**	**$0**	**$166,666**	**$166,667**	**$166,667**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$1,500,000**		
56	Pueblo of Cochiti habitat restoration	RPA S	$500,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
57	Pueblo of San Felipe bosque restoration	RPA S	$174,550	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
58	**Albuquerque Reach (Angostura to Isleta)**	RPA S	**$4,007,726**	**$67,691**	**$2,276,236**	**$1,100,000**	**$1,600,000**	**$1,600,000**	**$300,000**	**$300,000**	**$300,000**	**$300,000**	**$300,000**	**$8,143,927**		
59	City of Abq habitat restoration	RPA S	$507,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
60	Pueblo of Sandia bosque restoration and WQ monitoring	RPA S	$529,800	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
61	Pueblo of Sandia habitat restoration and WQ monitoring	RPA S	$335,700	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
62	Pueblo of Sandia habitat restoration	RPA S	$500,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
63	Santa Ana habitat restoration	RPA S	$927,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
64	**Silvery minnow projects**	RPA S	**$1,102,726**	**$67,691**	**$2,276,236**	**$1,000,000**	**$1,500,000**	**$1,450,000**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$7,293,927**		
65	Bernalillo to Alameda Bridge river restoration	RPA S	$87,300	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
66	Low impact high yield in Albuquerque reach	RPA S	$357,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
67	Mesohabitats silvery minnow	RPA S	$232,600	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
68	Rio Grande Nature Center habitat restoration	RPA S	$135,100	$0	$99,736	$0	$0	$0	$0	$0	$0	$0	$0	$99,736		
69	Development of perennial pools	RPA S	$115,800	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
70	Prelim Evaluation of Island Destabilization	RPA S	$174,426	$67,691	$2,176,500	$0	$0	$0	$0	$0	$0	$0	$0	$2,244,191		
71	**Flycatcher projects**	RPA S	**$105,000**	**$0**	**$0**	**$100,000**	**$100,000**	**$150,000**	**$100,000**	**$100,000**	**$100,000**	**$100,000**	**$100,000**	**$850,000**		
72	Santa Ana flycatcher	RPA S	$105,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
73	Description of Activity	BO Element Covered	Actual FY'01 - FY'04	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Description of RPA/RPM/CR Element	Comments
74	**Isleta Reach (Isleta to San Acacia)**	RPA S	**$2,503,000**	**$77,565**	**$91,018**	**$900,000**	**$700,000**	**$700,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$7,468,583**		
75	**Silvery minnow projects**	RPA S	**$1,961,700**	**$77,565**	**$91,018**	**$800,000**	**$600,000**	**$600,000**	**$800,000**	**$800,000**	**$800,000**	**$800,000**	**$800,000**	**$6,168,583**		
76	Alleviating silvery minnow entrapment	RPA S	$0	$0	$91,018	$300,000	$0	$0	$0	$0	$0	$0	$0	$391,018		
77	Island destabilization, maintenance, and woody debris introduction	RPA S	$0	$0	$0	$0	$200,000	$200,000	$400,000	$400,000	$400,000	$400,000	$400,000	$2,400,000		
78	Other silvery minnow habitat restoration projects					$500,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$3,300,000		
79	Los Lunas construction	RPA S	$1,853,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
80	Los Lunas revegetation and monitoring	RPA S	$108,200	$77,565	$0	$0	$0	$0	$0	$0	$0	$0	$0	$77,565		
81	**Flycatcher projects**	RPA S	**$541,300**	**$0**	**$0**	**$100,000**	**$100,000**	**$100,000**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$1,300,000**		
82	Prevent encroachment of nonnative plants	RPA S	$500,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
83	Assess flycatcher habitat at Isleta	RPA S	$8,300	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
84	Flycatcher nest #, habitat characteristics, etc at Isleta	RPA S	$33,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
85	**San Acacia Reach (San Acacia to EB headwaters)**	RPA S	**$253,700**	**$0**	**$0**	**$933,000**	**$1,050,000**	**$1,000,000**	**$1,400,000**	**$1,400,000**	**$1,400,000**	**$1,400,000**	**$1,400,000**	**$9,983,000**		
86	**Silvery Minnow projects**	RPA S	**$83,500**	**$0**	**$0**	**$683,000**	**$800,000**	**$750,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$7,233,000**		
87	Alleviating silvery minnow entrapment	RPA S	$0	$0	$0	$483,000	$0	$0	$0	$0	$0	$0	$0	$483,000		
88	Other silvery minnow habitat restoration projects	RPA S	$0	$0	$0	$200,000	$800,000	$750,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$6,750,000		
89	San Acacia to Escondido - Sub-reach 3 habitat restoration	RPA S	$83,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
90	**Flycatcher projects**	RPA S	**$170,200**	**$0**	**$0**	**$250,000**	**$250,000**	**$250,000**	**$400,000**	**$400,000**	**$400,000**	**$400,000**	**$400,000**	**$2,750,000**		
91	Tower Transition Project - effect on silvery minnow habitat as well	RPA S	$170,200	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
92	Prevent encroachment of saltcedar and destablize islands in Albuquerque Reach (Angostura to Isleta)	RPA X	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Prevent encroachment of saltcedar and destablize islands when channel is dry in Angostura, Isleta and San Acacia reaches.	
93	Prevent encroachment of saltcedar and destablize islands in Isleta Reach (Isleta to San Acacia)	RPA X	$0	$0	$0	$0	$200,000	$200,000	$150,000	$150,000	$150,000	$0	$0	$850,000	Prevent encroachment of saltcedar and destablize islands when channel is dry in Angostura, Isleta and San Acacia reaches.	
94	Prevent encroachment of saltcedar and destablize islands in San Acacia Reach (San Acacia to EB headwaters)	RPA X	$0	$0	$0	$0	$300,000	$300,000	$110,000	$110,000	$110,000	$110,000	$110,000	$1,150,000	Prevent encroachment of saltcedar and destablize islands when channel is dry in Angostura, Isleta and San Acacia reaches.	

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
95	Description of Activity	BO Element Covered	Actual FY'01 - FY'04	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Description of RPA/RPM/CR Element	Comments
96	**Fish Passage/River Connectivity**	RPA R	**$945,700**	**$286,574**	**$284,183**	**$450,000**	**$450,000**	**$6,020,000**	**$590,000**	**$520,000**	**$560,000**	**$600,000**	**$640,000**	**$10,400,757**		
97	**Studies on General Feasibility /Design**	RPA R	**$529,700**	**$0**	**$50,000**	**$0**	**$50,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$100,000**		
98	Evaluate fish passage methods e.g., (removal)(modification) of dams, semi-natural channels, structures into existing dams	RPA R	$200,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
99	Evaluation of physical barriers to fish movement	RPA R	$47,300	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
100	In-river longitudinal fish movement study	RPA R	$0	$0	$50,000	$0	$0	$0	$0	$0	$0	$0	$0	$50,000		
101	Study on operation & maintenance issues w/ fish passages	RPA R	$0	$0	$0	$0	$50,000	$0	$0	$0	$0	$0	$0	$50,000		
102	Assessment of behavior and swimming ability	RPA R	$95,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
103	Early life history studies	RPA R	$176,400	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
104	Assessment of longer distance swimming ability	RPA R	$11,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
105	**San Acacia Fish Passage**	RPA R	**$416,000**	**$115,000**	**$234,183**	**$200,000**	**$200,000**	**$5,800,000**	**$350,000**	**$260,000**	**$280,000**	**$300,000**	**$320,000**	**$8,059,183**	Complete fish passage; San Acacia (2008)	
106	Preliminary design studies	RPA R	$56,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
107	BiOp Planning/geomorphology, modeling, and design	RPA R	$360,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
108	Conceptual Design/Feasibility Study	RPA R	$0	$115,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$115,000		
109	Plan and Design/Environmental Compliance	RPA R	$0	$0	$234,183	$200,000	$200,000	$0	$0	$0	$0	$0	$0	$634,183		
110	Construction	RPA R	$0	$0	$0	$0	$0	$5,700,000	$0	$0	$0	$0	$0	$5,700,000		
111	Maintenance and Operation	RPA R	$0	$0	$0	$0	$0	$0	$50,000	$60,000	$70,000	$80,000	$90,000	$350,000		
112	Monitoring in relation to Fish Passage	RPA R	$0	$0	$0	$0	$0	$100,000	$300,000	$200,000	$210,000	$220,000	$230,000	$1,260,000		
113	**Isleta Fish Passage**	RPA R	**$0**	**$171,574**	**$0**	**$250,000**	**$200,000**	**$220,000**	**$240,000**	**$260,000**	**$280,000**	**$300,000**	**$320,000**	**$2,241,574**	Complete fish passage; Isleta (2013)	
114	Conceptual Design/Feasibility Study	RPA R	$0	$171,574	$0	$50,000	$0	$0	$0	$0	$0	$0	$0	$221,574		
115	Plan and Design	RPA R	$0	$0	$0	$200,000	$0	$0	$0	$0	$0	$0	$0	$200,000		
116	Construction	RPA R	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
117	Maintenance and Operation	RPA R	$0	$0	$0	$0	$100,000	$110,000	$120,000	$130,000	$140,000	$150,000	$160,000	$910,000		
118	Monitoring in Relation to Fish Passage	RPA R	$0	$0	$0	$0	$100,000	$110,000	$120,000	$130,000	$140,000	$150,000	$160,000	$910,000		

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
119	Description of Activity	BO Element Covered	Actual FY'01 - FY'04	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Description of RPA/RPM/CR Element	Comments
120	**4. Required Salvage Elements (RPM 1.2, 2.2)**															
121	**Survey river flows during irrigation season and conduct fish rescue and relocation throughout the irrigation season**	RPM 1.2	**$660,700**	**$0**	**$752,573**	**$500,000**	**$450,000**	**$450,000**	**$450,000**	**$450,000**	**$450,000**	**$450,000**	**$450,000**	**$4,402,573**	Seine isolated pools and rescue silvery minnows.	Reclamation appropriations (not Program write-in funds) were used to cover FY05 costs
122	Survey/Rescue at low flows - contract costs	RPM 1.2	$24,700	$0	$150,000	$0	$0	$0	$0	$0	$0	$0	$0	$150,000		
123	Rescue and salvage - FWS	RPM 1.2	$636,000	$0	$440,509	$0	$0	$0	$0	$0	$0	$0	$0	$440,509		
124	Rescue and salvage - (Reclamation funding)	RPM 1.2	$0	$0	$15,837	$0	$0	$0	$0	$0	$0	$0	$0	$15,837		Reclamation appropriations (not Program write-in funds)
125	River Eyes (Reclamation funding)	RPM 1.2	$0	$0	$146,227	$0	$0	$0	$0	$0	$0	$0	$0	$146,227		Reclamation appropriations (not Program write-in funds)
126	**Monitor Entrainment and Collect Silvery Minnow Eggs**	RPM 2.2	**$56,500**	**$0**	**$24,766**	**$0**	**$100,000**	**$100,000**	**$150,000**	**$150,000**	**$150,000**	**$150,000**	**$150,000**	**$974,766**	Operate irrigation diversion structures in a manner that will minimize the entrainment of eggs and larvae into the irrigation system and create instream conditions conducive for in-river egg collection. Study entrainment of eggs in irrigation system.	
127	Monitoring of silvery minnow eggs at Angostura, Isleta, and San Acacia Dams	RPM 2.2	$56,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
128	Monitor spawning and egg production to coordinate egg salvage for propagation needs	RPM 2.2	$0	$0	$24,766		$100,000	$100,000	$150,000	$150,000	$150,000	$150,000	$150,000	$974,766		
129	**TOTAL FOR REQUIRED SALVAGE ELEMENTS**		**$717,200**	**$0**	**$777,339**	**$500,000**	**$550,000**	**$550,000**	**$600,000**	**$600,000**	**$600,000**	**$600,000**	**$600,000**	**$5,377,339**		
130	**5. Required Water Quality Elements (RPA DD-EE)**															
131	**Establish and conduct a monitoring program to establish annual baseline conditions and trends for key WQ parameters for the MRG and major discharge streams**	RPA EE	**$770,000**	**$0**	**$209,361**	**$175,000**	**$250,000**	**$250,000**	**$150,000**	**$150,000**	**$150,000**	**$150,000**	**$150,000**	**$1,634,361**	Fund water quality assessment	
132	Water Quality Assessments	RPA EE	$437,000	$0	$0		$0	$0	$0	$0	$0	$0	$0	$0		
133	Water Quality Monitoring in the MRG - NMED	RPA EE	$0	$0	$170,951											
134	Toxicity of adverse WQ conditions (DO, temp, ammonia) - USGS	RPA EE	$88,000	$0	$38,410	$0	$0	$0	$0	$0	$0	$0	$0	$38,410		
135	Risk of adverse WQ impacts	RPA EE	$100,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
136	Monitor WQ and Habitat at Isleta	RPA EE	$90,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
137	Pueblo of Sandia bosque restoration and WQ monitoring	RPA EE	cost included in HR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
138	Pueblo of Sandia habitat restoration and WQ monitoring	RPA EE	cost included in HR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
139	Pueblo of Sandia WQ monitoring	RPA EE	$55,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
140	**TOTAL FOR REQUIRED WATER QUALITY ELEMENTS**		**$770,000**	**$0**	**$209,361**	**$175,000**	**$250,000**	**$250,000**	**$150,000**	**$150,000**	**$150,000**	**$150,000**	**$150,000**	**$1,634,361**		

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
141	Description of Activity	BO Element Covered	Actual FY'01 - FY'04	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Description of RPA/RPM/CR Element	Comments
142	**6. Other Required Monitoring and Research (including population surveys, RPA CC, RPM 1.3, 5.1)**															
143	Conduct surveys and habitat assessment studies above Cochiti Lake	RPA CC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Surveys and habitat assessment studies above Cochiti Lake (NMDGF). Complete by Dec 31, 2004.	
144	Determine direct and indirect effects of the salvage operations and relocation on the silvery minnow	RPM 1.3	$0	$26,995	$0	$35,000	$40,000	$45,000	$50,000	$0	$0	$0	$0	$196,995	Determine direct and indirect effects of the salvage operations and relocation on the minnow	
145	Conduct monthly monitoring (CPUE) for the silvery minnow in the MRG, including additional currently unmonitored sites within the Angostura Reach		$0	$252,034	$168,647	$185,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$2,005,681		
146	Population Estimation for silvery minnow		$0	$100,040	$89,458	$93,930	$0	$0	$0	$0	$0	$0	$0	$283,428		
147	**Flycatcher Research and Population Management**		**$433,800**	**$197,360**	**$225,750**	**$250,000**	**$250,000**	**$250,000**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$2,173,110**		
148	Monitor cowbird parasitism and remove cowbird eggs from parasitized eggs.	RPM 5.1	$0	$0	$38,039	$0	$0	$0	$0	$0	$0	$0	$0	$38,039	Monitor cowbird parasitism and remove cowbird eggs from parasitized eggs.	
149	**Conduct presence/absence surveys for flycatchers using FWS methods**	CR 11	**$433,800**	**$197,360**	**$187,711**	**$250,000**	**$250,000**	**$250,000**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$2,135,071**	Survey and monitor all suitable flycatcher habitat throughout the action area annually.	
150	Monitoring of flycatcher		$250,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
151	Monitoring flycatcher on the Sevilleta and La Jolla		$107,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
152	Flycatcher surveys		$76,300	$197,360	$187,711	$250,000	$250,000	$250,000	$200,000	$200,000	$200,000	$200,000	$200,000	$2,135,071		
153	**TOTAL FOR REQUIRED MONITORING AND RESEARCH ELEMENTS**		**$433,800**	**$576,429**	**$483,855**	**$563,930**	**$490,000**	**$495,000**	**$450,000**	**$400,000**	**$400,000**	**$400,000**	**$400,000**	**$4,659,214**		
154	**7. Required Program Management and Assessment**															
155	**Program Management (Technical and Administrative) (CR 5, March 27, 2005 LTP Table 7, H.3, I.1, I.2, I.3*)**		**$5,674,576**	**$2,868,757**	**$1,754,811**	**$1,920,000**	**$1,730,000**	**$1,690,000**	**$1,690,000**	**$1,690,000**	**$1,690,000**	**$1,690,000**	**$1,690,000**	**$18,413,568**		
156	Program Oversight and Management, financial management, budget development, AAO contract administration, environmental compliance assistance and oversight - Reclamation		$3,169,072	$1,806,629	$1,014,090	$1,200,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$11,020,719		
157	Expenses/Miscellaneous		$0	$0	$0	$0	$60,000	$60,000	$60,000	$60,000	$60,000	$60,000	$60,000	$420,000		
158	US Bureau Contract Administration		$524,874	$250,000	$243,306	$0	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$2,593,306		
159	Program Management - FWS		$416,418	$212,099	$4,780	$120,000	$0	$0	$0	$0	$0	$0	$0	$336,879		
160	Annual Forum		$0	$0	$0	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$80,000		
161	Program Manager - Corps		$440,721	$10,029	$241,120	$250,000	$120,000	$120,000	$120,000	$120,000	$120,000	$120,000	$120,000	$1,341,149		

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
162	Description of Activity	BO Element Covered	Actual FY'01 - FY'04	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Description of RPA/RPM/CR Element	Comments
163	Programmatic NEPA compliance		$400,000	$450,000	$176,515	$100,000	$0	$0	$0	$0	$0	$0	$0	$726,515		
164	Technical and Administrative Support		$723,491	$140,000	$75,000	$240,000	$240,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$1,895,000		
165	**Outreach, Information, and Education**		**$0**	**$0**	**$0**	**$195,000**	**$375,000**	**$295,000**	**$260,000**	**$260,000**	**$260,000**	**$260,000**	**$260,000**	**$2,165,000**		
166	Website maintenance and development		$0	$0	$0	$0	$40,000	$40,000	$20,000	$20,000	$20,000	$20,000	$20,000	$180,000		
167	Pueblo and Tribal communications		$0	$0	$0	$0	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$140,000		
168	Media and public outreach	CR 5	$0	$0	$0	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$160,000	Provide for citizen education and outreach regarding prevention of pollution to water resources and the effects that pollution has on river ecosystems.	
169	Program annual report and congressional/legislative communications		$0	$0	$0	$0	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$140,000		
170	Establish technical report library		$0	$0	$0	$0	$175,000	$175,000	$160,000	$160,000	$160,000	$160,000	$160,000	$1,150,000		
171	Develop web-accessible Program database linked to GIS maps and documents		$0	$0	$0	$175,000	$100,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$395,000		
172	**Program Assessment**		**$0**	**$0**	**$0**	**$0**	**$320,000**	**$200,000**	**$420,000**	**$300,000**	**$420,000**	**$300,000**	**$420,000**	**$2,380,000**		
173	Develop and implement a comprehensive and rigorous monitoring plan to assess Program benefits		$0	$0	$0	$0	$200,000	$200,000	$300,000	$300,000	$300,000	$300,000	$300,000	$1,900,000		
174	Develop and apply adaptive management plan		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
175	Peer review support		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
176	Advisory review panel		$0	$0	$0	$0	$120,000	$0	$120,000	$0	$120,000	$0	$120,000	$480,000		
177	**TOTAL FOR PROGRAM MANAGEMENT AND ASSESSMENT ACTIVITIES**		**$5,674,576**	**$2,868,757**	**$1,754,811**	**$2,115,000**	**$2,425,000**	**$2,185,000**	**$2,370,000**	**$2,250,000**	**$2,370,000**	**$2,250,000**	**$2,370,000**	**$22,958,568**		
178	**TOTAL FOR ACTIVITIES THAT ALLEVIATE JEOPARDY**		**$42,763,160**	**$8,206,123**	**$11,622,343**	**$14,941,930**	**$23,575,000**	**$28,685,000**	**$22,290,000**	**$22,000,000**	**$22,060,000**	**$21,780,000**	**$21,940,000**	**$197,100,396**		
179	**ACTIVITIES THAT CONTRIBUTE TO THE RECOVERY OF THE LISTED SPECIES (Program Goals 2 & 3)**															
180	**8. Proactive Water Operations and Management Activities (CR 7-8, 14-17, 20, *)**															
181	**Water Management**		**$1,109,405**	**$138,515**	**$260,158**	**$300,000**	**$1,435,000**	**$1,435,000**	**$1,004,000**	**$1,204,000**	**$204,000**	**$104,000**	**$4,000**	**$6,088,673**		
182	Permanent Pumping Plant - Feasibility Designs		$275,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
183	**Develop an agricultural forbearance program that could provide additional supplemental water for the conservation of the silvery minnow and flycatcher**	CR 7	**$74,700**	**$0**	**$250,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$250,000**	Develop an agricultural forbearance program that could provide additional supplemental water for the conservation of the silvery minnow and flycatcher	
184	If a voluntary forbearance program is feasible, conduct survey to assess irrigator's interests and requriments to participate in any potential voluntary irrigation forbearance program	CR 7	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
185	Evaluating water acquisition actions	CR 7	$74,700	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
186	Description of Activity	BO Element Covered	Actual FY'01 - FY'04	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Description of RPA/RPM/CR Element	Comments
187	Spatial Analysis of Forebearance	CR 7	$0	$0	$250,000	$0	$0	$0	$0	$0	$0	$0	$0	$250,000		
188	Evaluate possible reconfiguration of the San Acacia Reach		$0	$0	$0	$0	$150,000	$150,000	$0	$0	$0	$0	$0	$300,000		
189	**Implement a strategy to improve water management/efficiency related to the irrigation system (e.g., changing irrigation practices, etc.) in coordination with an interagency advisory group. Determine how water savings can be applied to conservation activit**	CR 15	**$759,705**	**$138,515**	**$10,158**	**$300,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$448,673**		
190	Operation improvements and water management decision support system for the MRG irrigation	CR 15	$470,405	$0	$0	$300,000	$0	$0	$0	$0	$0	$0	$0	$300,000	Implement a startegy to improve water managent/efficiency related to the irrigation system in coordination with an interagency advisory group.	
191	Efficiency evaluations (on-farm, off-farm infrastructure, system operations)	CR 15	$289,300	$138,515	$10,158	$0	$0	$0	$0	$0	$0	$0	$0	$148,673		
192	Municipal Water Conjunctive Use and Conservation	CR 16	$0	$0	$0	$0	$5,000	$5,000	$4,000	$4,000	$4,000	$4,000	$4,000	$30,000		
193	Secure storage space and acquire storage rights to create a permanent conservation pool to benefit endangered species	CR 17	$0	$0	$0	$0	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$0	$0	$0	$4,000,000	In accordance with State and Federal law, secure storage space and acquire water rights to create a permanent conservation pool to benefit endangered species.	
194	Develop viable storage alternatives for a permanent conservation pool for Program water, potentially including storage in Heron, El Vado, Abiquiu, Cochiti, and Jemez Canyon reservoirs (including NEPA compliance)	CR 17	$0	$0	$0	$0	$275,000	$275,000	$0	$0	$0	$0	$0	$550,000	In accordance with State and Federal law, secure storage space and acquire water rights to create a permanent conservation pool to benefit the species.	
195	Watershed Management: Water yield assessment		$0	$0	$0	$0	$5,000	$5,000	$0	$0	$0	$0	$0	$10,000		
196	Floodplain Lakes and Flood Flow Retention Basins		$0	$0	$0	$0	$0	$0	$0	$200,000	$200,000	$100,000	$0	$500,000		
197	**Hydrologic Monitoring**		**$103,500**	**$0**	**$0**	**$0**	**$100,000**	**$100,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$200,000**		
198	Evaluating MRG flow aleration at river network scale	CR 16	$103,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Encourage adaptive management of flows and conservation of water to benefit the listed species.	
199	Develop a system of monitoring and reporting to assure and account for Program water delivery	CR 20	$0	$0	$0	$0	$100,000	$100,000	$0	$0	$0	$0	$0	$200,000	Reclamation, the ISC, and MRGCD should take measures to prevent unauthorized use of water intended for silvery minnow conservation within the Rio Chama and Middle Rio Grande	
200	**Hydrologic Modeling and Research**		**$2,075,000**	**$397,407**	**$119,495**	**$535,000**	**$608,000**	**$250,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$2,159,902**		
201	**Modeling of Middle Rio Grande operations to meet Program flow requirements**		**$0**	**$0**	**$63,770**	**$150,000**	**$325,000**	**$125,000**	**$25,000**	**$25,000**	**$25,000**	**$25,000**	**$25,000**	**$788,770**		
202	Simulation using URGWOM of potential reservoir storage options to benefit Program		$0	$0	$63,770	$150,000	$0	$0	$0	$0	$0	$0	$0	$213,770		
203	Contribution to maintenance of URGWOM model		$0	$0	$0	$0	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$175,000		

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
204	Description of Activity	BO Element Covered	Actual FY'01 - FY'04	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Description of RPA/RPM/CR Element	Comments
205	Field investigations to support water management modeling		$0	$0	$0	$0	$200,000	$0	$0	$0	$0	$0	$0	$200,000		
206	Other water operations modeling efforts		$0	$0	$0	$0	$100,000	$100,000	$0	$0	$0	$0	$0	$200,000		
207	**Monitor fluctuations of groundwater in the shallow and deep aquifers to better understand the groundwater/surface water relationship.**	CR 14	**$583,400**	**$282,000**	**$55,725**	**$385,000**	**$133,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$855,725**		
208	A study of transient groundwater riparian conditions and sensitivity	CR 14	$510,300	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
209	Interaction of surface and groundwater - data collection	CR 14	$73,100	$282,000	$0	$135,000	$0	$0	$0	$0	$0	$0	$0	$417,000		
210	Modeling of groundwater/surface-water interaction, including interaction with irrigation system.	CR 14	$0	$0	$55,725	$250,000	$133,000	$0	$0	$0	$0	$0	$0	$438,725	Monitor fluctuations of groundwater in the shallow and deep aquifers to better understand the groundwater/surface water relationship.	
211	**Evapo-Transpiration Research**		**$1,491,600**	**$115,407**	**$0**	**$0**	**$150,000**	**$125,000**	**$25,000**	**$25,000**	**$25,000**	**$25,000**	**$25,000**	**$515,407**		
212	Scaling ET measurements		$102,000	$115,407	$0	$0	$0	$0	$0	$0	$0	$0	$0	$115,407		
213	Evaporation - Elephant Butte reservoir		$233,600	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
214	Develop precise and accurate methods to quantify evapotranspiration from different vegetation communities (including bare soil).		$0	$0	$0	$0	$25,000	$0	$0	$0	$0	$0	$0	$25,000		
215	ET Toolbox: Continue tool development, data synthesis and evaluation		$400,000	$0	$0	$0	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$175,000		
216	Riparian evapotranspiration		$509,600	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
217	Bosque soil evaporation monitoring and modeling		$246,400	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
218	Evaluate potential salvage from riparian ET management and removal of non-native riparian species.		$0	$0	$0	$0	$100,000	$100,000	$0	$0	$0	$0	$0	$200,000		
219	**TOTAL FOR PROACTIVE WATER OPERATIONS AND MANAGEMENT ACTIVITIES**		**$3,287,905**	**$535,922**	**$379,653**	**$835,000**	**$2,143,000**	**$1,785,000**	**$1,054,000**	**$1,254,000**	**$254,000**	**$154,000**	**$54,000**	**$8,448,575**		
220	**9. Proactive Captive Propagation Activities (*)**															
221	Develop and test improved protocols to quantify spawning time, egg production, and key triggers for silvery minnow		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
222	**Genetics**		**$0**	**$122,569**	**$75,000**	**$150,000**	**$156,000**	**$162,000**	**$168,000**	**$174,000**	**$180,000**	**$186,000**	**$192,000**	**$1,565,569**		
223	Monitoring Genetic Changes in the RGSM and genetic analysis of alternative captive breeding designs		$0	$122,569	$75,000	$150,000	$0	$0	$0	$0	$0	$0	$0	$347,569		
224	Assessment and monitoring of captive and wild silvery minnow genetics		$0	$0	$0	$0	$156,000	$162,000	$168,000	$174,000	$180,000	$186,000	$192,000	$1,218,000		
225	**TOTAL FOR PROACTIVE CAPTIVE PROPAGATION ACTIVITIES**		**$0**	**$122,569**	**$75,000**	**$150,000**	**$156,000**	**$162,000**	**$168,000**	**$174,000**	**$180,000**	**$186,000**	**$192,000**	**$1,565,569**		

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
226	Description of Activity	BO Element Covered	Actual FY'01 - FY'04	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Description of RPA/RPM/CR Element	Comments
227	**10. Proactive Habitat Improvement Activities**															
228	**Comprehensive and Reach Specific HR Planning**		**$1,821,300**	**$149,719**	**$854,843**	**$400,000**	**$300,000**	**$300,000**	**$100,000**	**$0**	**$0**	**$0**	**$0**	**$2,104,562**	Planning contributes to accomplishment of RPA element S	
229	Floodplain vegetation mapping		$116,600	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
230	Water conveyance habitat assessment for MRGCD		$35,600	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
231	Overbank flooding		$125,000	$149,719	$19,894	$0	$0	$0	$0	$0	$0	$0	$0	$169,613		
232	Habitat Restoration Plan - ISC		$300,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
233	River corridor planning at San Juan Pueblo		$172,700	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
234	Habitat improvement plan/reach specific plan Santo Domingo		$322,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
235	Santa Ana habitat restoration plan		$300,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
236	Rio Salado confluence HR plan - plan and design		$46,400	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
237	Isleta reach-specific plan		$73,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
238	Conceptual restoration plan, active floodplain San Acacia to San Marcial		$30,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
239	San Marcial flow capacity improvements		$300,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
240	Velarde Reach Specific Plan		$0	$0	$0	$100,000	$0	$0	$0	$0	$0	$0	$0	$100,000		
241	Cochiti Reach Specific Plan		$0	$0	$0	$200,000	$0	$0	$0	$0	$0	$0	$0	$200,000		
242	Albuquerque Reach Specific Plan (NonPueblo Area)		$0	$0	$0	$0	$50,000	$0	$0	$0	$0	$0	$0	$50,000		
243	Albuquerque Reach Specific Plans (Pueblo Area)		$0	$0	$239,152	$0	$50,000	$0	$0	$0	$0	$0	$0	$289,152		
244	Isleta Reach Specific Plan		$0	$0	$387,203	$0	$0	$0	$0	$0	$0	$0	$0	$387,203		
245	San Acacia to San Marcial Reach Specific Plan		$0	$0	$208,594	$0	$0	$0	$0	$0	$0	$0	$0	$208,594		
246	San Marcial to Elephant Butte Reservoir headwaters subreach specific plan		$0	$0	$0	$100,000	$0	$0	$0	$0	$0	$0	$0	$100,000		
247	Comprehensive Habitat Assessment		$0	$0	$0	$0	$200,000	$200,000	$0	$0	$0	$0	$0	$400,000		
248	Quantify effects of habitat restoration practices on the water budget		$0	$0	$0	$0	$0	$100,000	$100,000	$0	$0	$0	$0	$200,000		
249	**Habitat Restoration Construction/Monitoring**		**$691,400**	**$288,815**	**$91,502**	**$500,000**	**$599,667**	**$599,667**	**$1,200,000**	**$1,200,000**	**$1,200,000**	**$1,200,000**	**$1,200,000**	**$8,079,651**		
250	**Velarde Reach (Velarde to Rio Chama Confluence)**		**$691,400**	**$202,130**	**$0**	**$333,333**	**$333,000**	**$333,000**	**$600,000**	**$600,000**	**$600,000**	**$600,000**	**$600,000**	**$4,201,463**		
251	**Silvery minnow projects**		**$0**	**$0**	**$0**	**$0**	**$233,000**	**$233,000**	**$400,000**	**$400,000**	**$400,000**	**$400,000**	**$400,000**	**$2,466,000**		
252	**Flycatcher projects**		**$691,400**	**$202,130**	**$0**	**$333,333**	**$100,000**	**$100,000**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$1,735,463**		
253	Bosque restoration demonstration		$48,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
254	Description of Activity	BO Element Covered	Actual FY'01 - FY'04	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Description of RPA/RPM/CR Element	Comments
255	Flycatcher habitat San Juan Pueblo		$643,400	$202,130	$0	$0	$0	$0	$0	$0	$0	$0	$0	$202,130		
256	Other Flycatcher projects		$0	$0	$0	$333,333	$100,000	$100,000	$200,000	$200,000	$200,000	$200,000	$200,000	$1,533,333		
257	**Otowi (Rio Chama Confluence to Cochiti Reservoir)**		**$0**	**$0**	**$0**	**$166,667**	**$266,667**	**$266,667**	**$600,000**	**$600,000**	**$600,000**	**$600,000**	**$600,000**	**$3,700,001**		
258	**Silvery minnow projects**		**$0**	**$0**	**$0**	**$0**	**$100,000**	**$100,000**	**$400,000**	**$400,000**	**$400,000**	**$400,000**	**$400,000**	**$2,200,000**		
259	**Flycatcher projects**		**$0**	**$0**	**$0**	**$166,667**	**$166,667**	**$166,667**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$1,500,001**		
260	**Cochiti Reach (Cochiti to Angostura)**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		
261	**Silvery minnow projects**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		
262	**Flycatcher projects**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		
263	**Albuquerque Reach (Angostura to Isleta)**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		
264	**Silvery minnow projects**	CR 22	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	Reclamation should, when possible, cooperate with parties to the consulation, to use drains and other works in a manner likely to provide temporary or permanent refugia in the river for the silvery minnow.	
265	**Flycatcher projects**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		
266	**Isleta Reach (Isleta to San Acacia)**		**$0**	**$86,685**	**$91,502**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$178,187**		
267	**Silvery minnow projects**		**$0**	**$86,685**	**$91,502**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$178,187**		
268	Design, construct, and operate refugia using drains and other works	CR 22	$0	$86,685	$91,502	$0	$0	$0	$0	$0	$0	$0	$0	$178,187	Reclamation should, when possible, cooperate with parties to the consulation, to use drains and other works in a manner likely to provide temporary or permanent refugia in the river for the silvery minnow.	
269	**Flycatcher projects**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		
270	**San Acacia Reach (San Acacia to EB headwaters)**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		
271	**Silvery minnow projects**	CR 22	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	Reclamation should, when possible, cooperate with parties to the consulation, to use drains and other works in a manner likely to provide temporary or permanent refugia in the river for the silvery minnow.	
272	**Flycatcher projects**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		
273	**TOTAL FOR PROACTIVE HABITAT RESTORATION ELEMENTS**		**$2,512,700**	**$438,534**	**$946,345**	**$900,000**	**$899,667**	**$899,667**	**$1,300,000**	**$1,200,000**	**$1,200,000**	**$1,200,000**	**$1,200,000**	**$10,184,213**		
274	**Angostura Fish Passage**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$125,000**	**$125,000**	**$0**	**$250,000**		
275	Feasibility Study		$0	$0	$0	$0	$0	$0	$0	$0	$125,000	$125,000	$0	$250,000		
276	**TOTAL FOR PROACTIVE FISH PASSAGE ACTIVITIES**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$125,000**	**$125,000**	**$0**	**$250,000**		

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
277	Description of Activity	BO Element Covered	Actual FY'01 - FY'04	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Description of RPA/RPM/CR Element	Comments
278	**11. Proactive Water Quality Activities (CR 4, 6, *)**															
279	Conduct modeling and verification studies to determine how effluents from the WWTPs mix with water from the Rio Grande at various discharges	CR 4	$0	$0	$0	$0	$100,000	$100,000	$100,000	$0	$0	$0	$0	$300,000	Conduct studies to determine how effluents from the WWTPs mix with water from the Rio Grande at varrious discharges	
280	Toxicity of adverse WQ conditions (DO, temp, ammonia) - USGS	CR 4	$88,000	$0	$38,410	$0	$0	$0	$0	$0	$0	$0	$0	$38,410		
281	Risk of adverse WQ impacts	CR 4	$100,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
282	Monitor WQ and Habitat at Isleta	CR 4	$90,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
283	Pueblo of Sandia bosque restoration and WQ monitoring	CR 4	cost included in HR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
284	Pueblo of Sandia habitat restoration and WQ monitoring	CR 4	cost included in HR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
285	Pueblo of Sandia WQ monitoring	CR 4	$55,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
286	**TOTAL PROACTIVE WATER QUALITY ELEMENTS**		**$333,000**	**$0**	**$38,410**	**$0**	**$100,000**	**$100,000**	**$100,000**	**$0**	**$0**	**$0**	**$0**	**$300,000**		
287	**12. Other Proactive Monitoring and Research Activities (CR 1-3, 9-13,18,21,23-25,*)**															
288	**Water Quality Research and Monitoring**		**$0**	**$0**	**$386,255**	**$400,000**	**$150,000**	**$0**	**$150,000**	**$0**	**$150,000**	**$0**	**$0**	**$1,236,255**		
289	Conduct laboratory studies on identified adverse water and sediment quality constituents potentially producing adverse toxic impacts (acute and/or chronic) to silvery minnow (silvery minnow health assessment)	CR 1, 2,3	$0	$0	$386,255	$400,000	$150,000	$0	$150,000	$0	$150,000	$0	$0	$1,236,255	Research the effects of turbidity and suspended sediment on minnow; Determine the effects of sediment toxicity on the minnow; Conduct studies of silvery minnow diet and sediment ingestion	
290	**Flycatcher Research and Population Management**		**$0**	**$0**	**$0**	**$50,000**	**$115,000**	**$45,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$210,000**		
291	Develop and implement survey methods to diagnose environmental stress to flycatchers		$0	$0	$0	$0	$75,000	$0	$0	$0	$0	$0	$0	$75,000		
292	Compile existing flycatcher data into a database to aid in analysis of research of micro- and macro-habitat characteristics	CR 12	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Provide funding ($125,000) for research to better understand micro- and macrohabitat characteristics of occupied flycatcher habitat and methods to most successfully restore it in the action area.	
293	Research to better understand micro- and macro-habitat characteristics of occupied flycatcher habitat and appropriate methods to most successfully restore it	CR 12	$0	$0	$0	$50,000	$40,000	$45,000	$0	$0	$0	$0	$0	$135,000	Provide funding ($125,000) for research to better understand micro- and macrohabitat characteristics of occupied flycatcher habitat and methods to most successfully restore it in the action area.	
294	**Geomorphology and Geomorphic Trends**		**$502,500**	**$63,413**	**$0**	**$100,000**	**$100,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$263,413**		
295	Characterize effects of sediment management on habitat use by silvery minnows	CR 1, 2, 3	$0	$0	$0	$0	$100,000	$0	$0	$0	$0	$0	$0	$100,000	Research the effects of turbidity and suspended sediment on minnow; Determine the effects of sediment toxicity on the minnow; Conduct studies of silvery minnow diet and sediment ingestion	
296	Habitat preference in relation to fluvial geomorphology, flow regime, nutrient availability, and pollution	CR 18	$314,500	$63,413	$0	$100,000	$0	$0	$0	$0	$0	$0	$0	$163,413		
297	Evaluation of bar morphology, distribution, dynamics		$188,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
298	**Silvery Minnow Population Biology and Habitat Relationships**		**$0**	**$0**	**$120,966**	**$100,000**	**$825,000**	**$680,000**	**$350,000**	**$350,000**	**$250,000**	**$250,000**	**$250,000**	**$3,175,966**		
299	Fish health monitoring and assessment		$0	$0	$0	$0	$400,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$1,900,000		
300	Characterize diet of juvenile and adult silvery minnow through gut content analysis and food preference studies, and compare to food availability	CR 3	$0	$0			$100,000	$100,000	$100,000	$100,000	$0	$0	$0	$400,000		

	B	C	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
301	Description of Activity	BO Element Covered	Actual FY'01 - FY'04	Actual FY '05	Actual FY '06	FY '07	FY '08	FY '09	FY '10	FY '11	FY '12	FY '13	FY '14	Cost 2005-2014	Description of RPA/RPM/CR Element	Comments
302	Characterize silvery minnow habitat use by life stage and quantify key factors defining habitat use	CR 18	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Provide funding to determine the habitat preference of the silvery minnow.	
303	Enhanced monitoring of perennial pools at drain outfalls		$0	$0	$120,966	$0	$125,000	$130,000	$0	$0	$0	$0	$0	$375,966		
304	Characterize silvery minnow longitudial movement relative to life cycle, fish passage, and water management relationships		$0	$0	$0	$100,000	$100,000	$100,000	$0	$0	$0	$0	$0	$300,000		
305	Community Structure / Ecological interactions of silvery minnow		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
306	Evaluate management options for addressing impacts from predation and/or competition	CR 25	$0	$0	$0	$0	$100,000	$100,000	$0	$0	$0	$0	$0	$200,000	Develop a study to investigate silvery minnow predation and competition relationships.	
307	**TOTAL PROACTIVE MONITORING AND RESEARCH ACTIVITIES**		**$502,500**	**$63,413**	**$507,221**	**$650,000**	**$1,190,000**	**$725,000**	**$500,000**	**$350,000**	**$400,000**	**$250,000**	**$250,000**	**$4,885,634**		
308	***** Other activities included in the LTP that contribute to achieving the objectives listed in the flycatcher and/or silvery minnow recovery plans															
309	**TOTAL FOR PROACTIVE ACTIVITIES**		**$6,636,105**	**$1,160,438**	**$1,946,629**	**$2,535,000**	**$4,488,667**	**$3,671,667**	**$3,122,000**	**$2,978,000**	**$2,159,000**	**$1,915,000**	**$1,696,000**	**$25,633,991**		
310	**TOTAL FOR ALL PROGRAM ACTIVITIES**		**$49,399,265**	**$9,366,561**	**$13,568,972**	**$17,476,930**	**$28,063,667**	**$32,356,667**	**$25,412,000**	**$24,978,000**	**$24,219,000**	**$23,695,000**	**$23,636,000**	**$222,734,387**		Includes some ISC and BOR funding that's not part of the write-in
311	**TOTAL SUBJECT TO COST SHARE**		**$22,914,751**	**$3,761,115**	**$7,464,161**	**$9,961,930**	**$13,718,667**	**$18,251,667**	**$11,122,000**	**$10,808,000**	**$9,929,000**	**$9,525,000**	**$9,346,000**	**$103,849,130**	Water acquisition, administration costs related to water acquisition and water management, and the administration of the Collaborative Program shall be carried out at full federal expense.	ISC funding not included

APPENDIX B

Supplemental Water Acquisition Information

(3 Pages)

Summary of DRAFT Long-Term Water Acquisition and Management Plan……B-1

Table B.1. Preliminary Analysis of Water Acquisition Costs……...B-3

Summary of the
DRAFT Long-Term Water Acquisition and Management Plan
Prepared by U.S. Bureau of Reclamation

In 2006, Congress clarified that "[t]he Bureau of Reclamation retains responsibility to meet the Reasonable and Prudent Alternative regarding water acquisition and management, including acquisition of water to meet the flow requirements articulated in the 2003 Biological Opinion and development of a long-term plan to meet these flow requirements." In order to successfully fulfill obligations under the 2003 Biological Opinion (BiOp), Reclamation is developing a comprehensive plan that not only addresses opportunities for improved management of supplemental water supplies for endangered species, but also identifies potential sources of supplemental water supplies. The plan is being developed with the assumption that current BiOp flow requirements will remain in place over the next 10 years.

Numerous federal and state agencies, including Reclamation, have been studying water management activities and available water supplies that impact the Middle Rio Grande. In 2005, the Middle Rio Grande Species Act Collaborative Program (Collaborative Program) Water Acquisition and Management Subcommittee (WAMS) drafted a water management and supply plan to aid in meeting the goals of the Collaborative Program. Recently, based on clarification of responsibilities for water acquisition and management to meet the BiOp, Reclamation began development of a plan which will build upon previous work and determine a reasonable, practical, and cost-effective course of action to meet BiOp flow requirements. Due to the scarcity of supplies and the complex nature of water management in the Middle Rio Grande, it is critical that such a plan includes stakeholder involvement and input. Reclamation will utilize the Collaborative Program as the forum for such involvement.

Since 1996, Reclamation has secured and managed supplemental water to meet endangered species needs, however, supplemental water supplies have become increasingly difficult to locate. The WAMS estimated average annual demand to meet BiOp flow requirements to be about 50,000 acre-feet. Water supplies to meet those demands will include a variety of sources such as leasing San Juan-Chama Project water and water salvaged from implementing conservation measures within the Middle Rio Grande Project. The attached Table B.1 shows the types of water supply/acquisition sources being considered and compares elements and estimated Collaborative Program 10-year costs for water acquisition from the 2005 WAMS plan with Reclamation's initial strategies for meeting BiOp flow requirements. Annual costs for water acquisition under Reclamation's supplemental water program from 2000 thru 2005 have ranged from $2.8 million to $6.7 million, including Low Flow Conveyance Channel (LFCC) pumping costs. With decreasing supplies and increasing costs Reclamation's preliminary annual estimated range of costs to meet the BiOp requirements is $3.1 million to $20.7 million dollars for a total estimated 10-year cost range of $31 million to $206.5 million. These initial cost estimates include possible implementation of mid-term and long-term strategies of leases from a State of New Mexico strategic water reserve and forbearance agreements with irrigators. They also include costs for LFCC pumping. Not included are permanent water right acquisitions or conjunctive surface water/groundwater management options, which are currently not considered to be practical or cost-effective.

The quantity and cost estimates described are preliminary and will be adjusted as the plan is further developed. Although both WAMS and Reclamation's preliminary cost estimates account for some amount of inflation of water costs, given the degree of uncertainty for the unit costs and availability of supplies from the various sources, cost ranges will likely change over time.

In order to ensure effective stakeholder involvement in development of the water management and acquisition plan, Reclamation would like to establish a clear procedure for input and coordination with the Collaborative Program. Reclamation proposes to make requests for collection of technical data and input on plan development through the Executive Committee of the Collaborative Program.

Table B.1. Preliminary Analysis of Water Acquisition Costs (July 2006)

Notes	Summary Costs Table / Water Need/Source	Program LTP - WAMS Plan WAMS Projections (WAMS, 2005) AFY	Cost per AF	Average Annual Cost	10-year Cost	Reclamation Supplemental Water Program (Reclamation, 2006a) & New Mid & Long-Term Strategies Preliminary Reclamation Projections AFY Low	AFY High	Cost per Acre-Foot Low	Cost per Acre-Foot High	Annual Cost Low	Annual Cost High	10-Year Cost Low	10-Year Cost High
A	Estimated Biological Opinion Compliance Need	50,000				21,000	97,000			Low - 34,100	High - 53,000	Low - 34,100	High - 53,000
Reclamation Supplemental Water Program (Reclamation, 2006a)													
1	Supplemental San Juan-Chama Project Water	9,800	$600	$5,880,000		5,000	15,000	$100	$200	$500,000	$3,000,000	$5,000,000	$30,000,000
2	Short-Term Emergency Drought Water Agreements	21,400	$138	$2,953,200		1,000	20,000	$100	$200	$100,000	$4,000,000	$1,000,000	$40,000,000
3	Conservation via Middle Rio Grande Project facilities improvements	Not Considered	Not Considered	Not Considered		10,000	15,000	$0	$0	*$0*	*$0*	$0	$0
4	LFCC Pumping	Not Considered	Not Considered	Not Considered		5,000	21,000	$100	$150	$500,000	$3,150,000	$5,000,000	$31,500,000
5	Heron Reservoir Waivers	Not Considered	Not Considered	Not Considered		0	2,500	$0	$0	$0	$0	$0	$0
	Projected Subtotal					21,000	73,500			$1,100,000	$10,150,000		
	Actual Five-Year (2000-2005) Results					***12,541***	***171,395***	***Confidential***	***Confidential***			***Not Applicable***	***Not Applicable***
WAMS Water Acquisition Program - Additional Proposed Elements (WAMS, 2005)													
6	Long-Term Water Acquisition *(One-Time Cost) or Lease Agreements*	5,200	*$9,600*	*$4,992,000*		*0*	*0*	*$15,000*	*$50,000*	*$0*	*$0*	$0	$0
7	Conservation & Forbearance Water	3,600	$1,875	$6,750,000		0	0	$0	$0	$0	$0	$0	$0
8	Water Management/Habitat Efficiencies	10,000	$0	$0		0	0	$0	$0	$0	$0	$0	$0
	Projected Subtotal	**50,000**		**$20,575,200**	**$253,695,036**								
	WAMS Suggested Water Acquisition Budget - Program LTP				**$125,200,000**								
Reclamation - Additional Mid & Long-Term Strategies													
9	Leases from ISC for Strategic Water Reserve	Not Considered	Not Considered	Not Considered		*10,000*	*30,000*	*$200*	*$200*	*$2,000,000*	*$6,000,000*	$20,000,000	$60,000,000
10	Forbearance agreements from MRGCD irrigators (to SWR or other storage	Included #7	Included #7	Included #7		0	15,000	$100	$300	*$0*	*$4,500,000*	$0	$45,000,000
11	Habitat Restoration/Invasives Management	Included #8	Included #8	Included #8		0	2,500	$0	$0	$0	$0	$0	$0
	Estimated Program Total					***31,000***	***121,000***			***3,100,000***	***20,650,000***	***$31,000,000***	***$206,500,000***
Other Long-Term Measures Not Feasible in 10-year Period													
12	Conjunctive Surface Water/Groundwater Management	Included #8	Included #8	Included #8		1,000	5,000	$500	$2,500	$500,000	$12,500,000	$5,000,000	$125,000,000

NOTES

A Biological Opinion needs estimated by WAMS ranged from 21,000 to 97,000 AFY depending on type of hydrologic year, flow targets, and water available in storage
BOR historic annual supplemental water use to comply with endangered species needs ranged from 12,541 (2005) to 171,395 (2000) AF

1 Supplemental SJC Project Water availability is decreasing as municipalities begin to construct diversion projects to take beneficial use of this water

2 Short-Term Emergency Water Agreements are uncertain and are contingent upon State compact credit/debit status

3 BOR is funding conservation improvements within the MRGCD through its Water 2025 and other initiatives. Water salvaged from these operations can remain in upstream storage

4 BOR is continuing with Low Flow Conveyance Channel pumping - under the 2003 BiOp LFCC pumping has ranged from 4,761 (2005) to 20,930 (2003) acre-feet.

5 At contractor request and federal government concurrence, waivers to extend SJC project water storage in Heron Reservoir offer opportunities for meeting flow targets

6 BOR does not anticipate the outright purchases of water rights

7 BOR further subdivided conservation and forbearance water to address unique issues associated with each type of water

8 Water management and habitat efficiences are being explored by the Program - anticipated savings may contribute to reductions in water use

9 BOR will seek to lease waters from the ISC and others using the Strategic Water Reserve for endangered species needs

10 Forbearance agreements with MRGCD irrigators are subject to individual negotiations and provisions for storage of salvaged water

11 BOR estimates that savings from habitat restoration and vegetation management are uncertain; costs would be borne by other Program initiatives and other parties conducting restoration activities

12 Opportunities for reducing evapotranspiration may require construction of new facilities to store surface water underground - reconaissance estimates only are provided; Not included in recommended Program water acquisition cost.

APPENDIX C

Additional Supporting Information
(10 Pages)

Table C.1. Summary of 2003 Biological Opinion Reasonable and Prudent Alternative……C-1

Table C.2. Summary of 2003 Biological Opinion Reasonable and Prudent Measures……..C-2
Terms and Conditions and Conservation Recommendations

Table C.3a. Middle Rio Grande Bosque Initiative Projects Funded during Federal……..C-3
Fiscal Year 2006

Table C.3b. Middle Rio Grande Bosque Initiative Projects Not Funded……C-7

TableC.1. Summary of 2003 Biological Opinion Reasonable and Prudent Alternative Long-Term Plan MRG ESA Collaborative Program

Category	Element	Detail
Water Operations		
	A	Spike Release (April 15 - June 15)
	B	Release supplemental water to greatest benefit of species
	C	Monitor flow (<=300cfs at San Acacia)
	D	Pump from LFCC for flycatcher (June 15 - Sept 1). Possible pursuit of other options, e.g., water from drains.
		Within 30 days (by May 23, 2003), develop procedures for monitoring deviation from flow requirements for reinitation purposes.
	E (Dry)	Continuous flow Cochiti to S. boundary RGSM Crit. Hab. (Nov 16 - June 15)
	F (Dry)	Continuous, year-round flow Cochiti to Isleta Dam w/ 100cfs minimum flow at Central Bridge
	G (Dry)	Pump from LFCC for flycatcher and manage river recession. Survey for breeding flycatchers and continue pumping if present.
	H (Avg)	Continuous flow Cochiti to S. boundary RGSM Crit. Hab. (Nov 16 - June 15)
	I (Avg)	Ramp down (June 16 - July 1) flow to 50 cfs over San Acacia Diversion then maintain through Nov 15
	J (Avg)	Continuous, year-round flow Cochiti Dam to Isleta Div. Dam w/ target of 100cfs over Isleta Dam. Survey for breeding flycatchers and continue pumping if present.
	K (Avg)	Pump LFCC for flycatcher and to manage river recession
	L (Wet)	Continuous flow Cochiti Dam to S. boundary RGSM Crit. Hab. W/ 100 cfs at San Marcial floodway gauge (Nov 16 - June 15)
	M (Wet)	Ramp down (June 16 - July 1) flow to 100 cfs over San Acacia Diversion then maintain through Nov 15
	N (Wet)	Continuous, year-round flow Cochiti Dam to Isleta Div. Dam w/ 150cfs over Isleta Dam
	O (Wet)	Pump from LFCC to manage river recession or maintain river connectivity
Habitat Improvement		
	P	Prevent/minimize destruction of potential/existing flycatcher habitat (regarding pump placement)
	Q	Improve water gauging (including diversions, drains, returns and main ditches)
	R	Complete fish passage; San Acacia (2008); Isleta (2013)
	S	Habitat restoration (total 1600 acres by 2013; 10 yr monitor component). Environmental evaluation process for two projects started within 30 days (by May 23, 2003).
	T	Without bioengineering - restoration plan
	U	Coordination - river realignment and railroad relocation. Construction to begin Sept 30, 2008.
	V	Overbank flooding (when April 1 streamflow forecast in at or above average at Otowi and when possible
	W	Sediment transport through Jemez Canyon Dam; investigate same for Galisteo Dam; baseline study for Cochiti by Dec 31, 2007
	X	Prevent encroachment of saltcedar and destablize islands when channel is dry in Angostura, Isleta and San Acacia reaches.
Captive Propagation		
	Y	Provide $300,000/yr to NMESFO for distribution to propagation facilities
	Z	Provide $200,000/yr for first 3 years to expand propagation facilities
	AA	Construct two new naturalized refugia (1st May 31, 2005; 2nd May 31 2006). One in Cochiti or Angostura reach; the other in Isleta or San Acacia reach.
Surveys and Habitat Assessment		
	BB	Provide $100,000/yr for five years beginning 2008 to monitor experimental populations
	CC	Surveys and habitat assessment studies above Cochiti Lake (NMDGF). Complete by Dec 31, 2004.
Water Quality		
	DD	Water quality (emphasis on waste water and chlorine and ammonia)
	EE	Fund water quality assessment
Reporting		
	FF	Annual consolidated report (due Dec 31 each year)

Table C.2. Summary of 2003 Biological Opinion Reasonable and Prudent Measures Terms and Conditions and and Conservation Recommendations
Long-Term Plan
MRG ESA Collaborative Program

Element	Detail
1.1	Ramp down - dry no more than 4 miles per day per reach. Total of 8 miles per day. Allow month for larvae to grow.
1.2	Seine isolated pools
1.3	Determine direct and indirect effects of salvage operations on RGSM. Time for completion of term and condition will be developed within 45 days of signature date of BO (by June 7, 2003). Direct effects (do adults survive the short and long term effects
2.1	Operate irrigation diversion structures in a manner that will minimize the entrainment of eggs and larvae into the irrigation system and create instream conditions conducive for in-river egg colleciton. Study entrainment of eggs in irrigation system.
2.2	Monitor and rescue silvery minnow eggs May 1 through May 31 at all diversion dams, as well as other locations within the river channel.
3.1	Continue to seek and release supplemental water from all available sources.
3.2	Plan to acquire water (lease /purchase). Plan completed in 18 months (by October 23, 2004)
4.1	Purchase small capacity pumps for flycatcher
5.1	Monitor cowbird parasitism and remove cowbird eggs from parsitized nests
CR 1	Research the effects of turbidity and suspended sediment on silvery minnow
CR 2	Determine the effects of sediment toxicity on silvery minnow
CR 3	Conduct studies of silvery minnow diet and sediment ingestion
CR 4	Conduct studies to determine how effluents from the WWTPs mix with water from the Rio Grande at various discharges
CR 5	Provide for citizen education and outreach regarding prevention of pollution to water resources and the effects that pollution has on river ecosystems
CR 6	Sponsor voluntary citizen water quality monitoring of the Rio Grande
CR 7	Develop an agricultural forbearance program that could provide additional supplemental water for the conservation of the silvery minnow and flycatcher
CR 8	Work with the Endangered Species Act Collaborative Program Interim Steering Committee, Natural Resource Conservation Service, and other parties to the consultation to develop a program for conversion of high water-use crops to lower water-use crops, and i
CR 9	Monitor/study silvery minnow spawning throughout the irrigation season in the Angostura, Isleta, and San Acacia Reaches.
CR 10	Continue to work collaboratively to develop and implement a long-term plan to benefit the recovery of the species
CR 11	Survey and monitor all suitable flycatcher habitat throughout the action area annually.
CR 12	Provide funding ($125,000) for research to better understand micro- and macrohabitat characteristics of occupied flycatcher habitat and methods to most successfully restore it in the action area.
CR 13	Develop a contingency plan in the event of wildfire in flycatcher habitat.
CR 14	Monitor fluctuations of groundwater in the shallow and deep aquifers to better understand the groundwater/surface water relationship.
CR 15	Implement a strategy to improve water management/efficiency related to the irrigation system in coordination with an interagency advisory group.
CR 16	Encourage adaptive management of flows and conservation of water to benefit the listed species.
CR 17	In accordance with State and Federal law, secure storage space and acquire water rights to create a permanent conservation pool to benefit the species.
CR 18	Provide funding to determine the habitat preference of the silvery minnow.
CR 19	The NMDA is currently administring the NM Salt Cedar Control Project through local soil & conservation districts along the Rio Grande and should continue to do so. They should ensure that no active flycatcher teritories are treated prior ot surveying the
CR 20	Reclamation, NMISC, and MRGCD should take measures to prevent unauthorized use of water intended for silvery minnow conservation.
CR 21	Within one year of the signature date of the BiOp, in consultation with the Service, Reclamation should address the flycatcher population within the high water mark of the Elephant Butte Reservoir.
CR 22	Reclamation should, when possible, cooperate with parties to the consulation, to use drains and other works in a manner likely to provide temporary or permanent refugia in the river for the silvery minnow.
CR 23	In addition to other monitoring efforts, the NMDGF should conduct monthly monitoring for the silvery minnow at additional, un-monitored sites within the Angostura Reach.
CR 24	Develop and implement a plan to limit encroachment of permanenet dwellings into the 10,000 cfs floodplain.
CR 25	Develop a study to investigate silvery minnow predation and competition relationships.

Table C3.a Middle Rio Grande Bosque Initiative Projects Funded During Federal Fiscal Year 2006

Project title	Project location	Organization	Project status	Project description	FY06 Funding
RESEARCH:					
Bird Populations, Nesting Success, and Habitats Before and After Fuel Removal and Exotic Plant Removal at 12 Riparian Sites along the Middle Rio Grande	Southern portion of The City of Albuquerque to Bosque del Apache National Wildlife Refuge	USDA Forest Service, Rocky Mountain Research Station	Ongoing	Monitor vegetation, bird populations, and avian nesting success at high-fire risk sites following fuel removal and compare this data with pre and post removal data. Project will provide information on how to implement fuel removal projects while protecting biological diversity.	$30,884
Middle Rio Grande River Bars and Long-duration Flooding: Effects on Distribution and Vegetation Composition of the Spring 2005 High Water	Bernalillo to Belen	University of New Mexico/Natural Heritage New Mexico	Ongoing	Use river bar vegetation maps from 2003/2004 post-flood aerial photography to evaluate effects of long-duration high flows of spring 2005 on river-bar biodiversity and structure.	$42,757
River Bar Biodiversity Studies: Aerial Insects, Vegetation Structure and Bird Habitat – Part IV	Albuquerque Overbank Project	University of New Mexico/Natural Heritage New Mexico	Ongoing	Broaden biodiversity studies of river bars and Bosque to include bird surveys, transient wetland island bars, variety of vegetation zones, and to include replicate sites.	$20,817
Bosque Hydrology Group, FLO-2D Workgroup	Middle Rio Grande	U.S. Fish and Wildlife Service/Water Resources Division	Continuous since 1996	Develop a symposium focusing on 2005 spring run-off, coordinate a 2-day symposium on all BIG funded projects over past 5 years, and update the BHG web page.	$ 6,000

Table C3.a Middle Rio Grande Bosque Initiative Projects Funded During Federal Fiscal Year 2006 Continued

Project title	Project location	Organization	Project status	Project description	FY06 Funding
MONITORING:					
Bosque Ecosystem Monitoring Program (BEMP): Science Section	Middle Rio Grande Bosque	University of New Mexico	Continuous since 1998	To manage, analyze, interpret and report data collected from BEMP sites that reflect long-term ecosystem change in the Middle Rio Grande.	$25,000
Bird and Vegetation Community Relationships in the Middle Rio Grande Bosque	Middle Rio Grande	Hawks Aloft, Inc.	Continuous since 2003	Provide a 20-plus year comparison of changes in avian abundance and species richness, community/ structure types and to compare avian data to land-use data.	$40,000
Monitoring the Effects of Wildfire on Avian, Arthropod, and Plant Communities along the Middle Rio Grande	Middle Rio Grande	USDA Forest Service, Rocky Mountain Research Station	Ongoing	Monitoring successional responses at multiple Bosque burn sites of several ecosystem components: exotic and native vegetation; species composition and growth; bird populations and species richness; nesting success; and arthropods.	$17,000
FY 2006 Continued Monitoring of Rio Grande Silvery Minnow downstream of Ft. Craig, New Mexico, including the Elephant Butte Temporary Channel, Elephant Butte Delta, and Elephant Butte Reservoir	Rio Grande at and upstream of Elephant Butte	U.S. Fish and Wildlife Service/Fishery Resources Office	Ongoing	Continue to document the presence/absence of Rio Grande silvery minnows downstream of current monitoring activities.	$11,750

Table C3.a Middle Rio Grande Bosque Initiative Projects Funded During Federal Fiscal Year 2006 Continued

Project title	Project location	Organization	Project status	Project description	FY06 Funding
HABITAT RESTORATION/ENHANCEMENT:					
Use of Structure to Create Channel Diversity and Enhance Habitat for Aquatic Fauna in the Middle Rio Grande on the Pueblo of Isleta	Isleta Pueblo Lands	Pueblo of Isleta	New	To establish still or slow-water aquatic habitat diversity in the Middle Rio Grande by placing large cottonwood snags at strategic locations	$22,700
Phase II – Santo Domingo Tribe – Replanting and Revegetation Project	Santo Domingo Tribal Lands	Santo Domingo Tribe	Ongoing	To enhance wildlife habitat by increasing habitat diversity, to replant and re-vegetate approx. 130 acres of Bosque, create two wetlands, and to engage community youth in replanting efforts.	$42,000
Mitchell Fire Restoration Project	Socorro County, north of Highway 380	Save our Bosque Task Force	New	Conduct exotic species control/fuels reduction work, recreation management, and natural cottonwood/willow re-establishment.	$40,000
Private Property Habitat Restoration Project	Socorro County, private land, 45 acres of active floodplain and bordering upland area	Save our Bosque Task Force	New	Remove and control non-native vegetation and encourage the generation of a mosaic of native vegetation to replace it.	$50,000
Effect of Exotic Fuelwood Removal on Groundwater Levels in the Middle Rio Grande Bosque	Middle Rio Grande	USDA Forest Service, Rocky Mountain Research Station	Ongoing	Measure changes in groundwater levels before and after the removal of exotic woody fuels and determine if removal of exotics has a significant effect on groundwater levels along the Rio Grande.	$ 9,000

Table C3.a Middle Rio Grande Bosque Initiative Projects Funded During Federal Fiscal Year 2006 Continued

Project title	Project location	Organization	Project status	Project description	FY06 Funding
OUTREACH:					
FY06 Bosque Ecosystem Monitoring Program (BEMP): Outreach Section	Middle Rio Grande	Bosque School	Ongoing	Provide citizens, primarily K-12 students and their teachers an opportunity to learn about the bosque ecosystem by participating in long-term monitoring of key ecological and hydrological variables.	$35,000
A Field Guide to the Flora and Fauna of the Middle Rio Grande Bosque	Middle Rio Grande	Drylands Institute	Ongoing	Provide a comprehensive source of information on local Bosque flora and fauna with photos and information on geographical distribution, habitat associations and ecological role.	$39,000
COORDINATION/ ADMINISTRATION:					$110,000
TOTAL					$541,908

Table C3.b Middle Rio Grande Bosque Initiative Projects Not Funded During Federal Fiscal Year 2006

Project title	Project location	Organization	Project status	Project description	Funding	Est. Schedule
Jemez Canyon Sediment Transport		Corps of Engineers	Ongoing			
Galisteo Dam Sediment Transport		Corps of Engineers	Ongoing			
Cochiti Reservoir Environmental Baseline Study		Corps of Engineers	Tentatively halted	An array of studies to characterize the interactions of Cochiti Dam and Lake with Tribal resources, including surface and sub-surface hydrology, water and sediment quality, wildlife bioaccumulation, biological, cultural and economic resource assessments. These studies will provide a baseline determining impacts of any future operational changes at the reservoir.	Congressional add money	Work has stopped pending the ability of using cooperative agreements with the Cochiti Pueblo.
Albuquerque Biopark Wetlands Restoration (Tingley Beach)	Albuquerque, south of Central Ave. between Tingley Dr. and the Rio Grande within the Rio Grande Waterway.	Corps of Engineers	Completed FY05	A series of ponds and aquatic habitat improvements consisting of approx. 15 acres of pond reconstruction, 9 acres of wetland restoration and 48 acres of riparian woodland restoration.	F $ 650 P&S 500 C 5503 $6663 Total	Completed

Table C3.b Middle Rio Grande Bosque Initiative Projects Not Funded During Federal Fiscal Year 2006 Continued

Project title	Project location	Organization	Project status	Project description	Funding	Est. Schedule
Ecosystem Revitalization at Route 66	On the Rio Grande in Albuquerque between I-25 and Bridge Street.	Corps of Engineers	Ongoing	To manage, analyze, interpret and report data collected from BEMP sites that reflect long-term ecosystem change in the Middle Rio Grande. This consists of removal of unnecessary jetty jacks and non-native plant species, re-vegetation with native plants, removal of down & dead trees and improvement of recreational opportunities that are compatible with eco-system recreation.	Project is not funded at this time. Costs are: PRP $ 10 F 787 PDA/P&S 450 C 5265 _____ $6542 Total	Plans will be completed in FY06
Rio Grande Bosque Revitalization		Corps of Engineers	Ongoing since FY05		Congressional Add	Contract should be awarded by the end of FY06. Construction due to begin in FY07.
Riparian and Wetland Restoration at Santa Ana Pueblo		Corps of Engineers	Completed in FY05	Project will rehabilitate and restore degraded riverine, riparian and wetland habitat along the Rio Grande. Grade controls will elevate the severely entrenched riverbed, increase bankful channel width and facilitate hydraulic stability.	Cost was: F $375 P 205 C 6041 _____ $ 6621 Total	Completed

Table C3.b Middle Rio Grande Bosque Initiative Projects Not Funded During Federal Fiscal Year 2006 Continued

Project title	Project location	Organization	Project status	Project description	Funding	Est. Schedule
Aquatic Restoration at Santa Ana Pueblo		Corps of Engineers	Ongoing	The Project will rehabilitate or restore degraded wetland and riparian habitat along the Middle Rio Grande. Bank lowering will promote over bank flooding and improved habitat for both Rio Grande Silvery Minnow and Southwestern Willow Flycatcher.	PRP $ 10 F 220 P&S 500 C 5500 _____ $ 6230 Total	Currently in feasibility studies. Plans and specs should be done in FY07. Construction should begin in FY08 for completion in FY08.
Middle Rio Grande Bosque Study		Corps of Engineers	Ongoing	Undertake measures that will restore areas that were burned during the summer of 2003, management measures to reduce fire potential in areas with a high fire risk. Measures include removal of unnecessary jetty jacks, dead & down wood and non-native plants, planting of native species and related restoration & public safety measures. These measures are done through Public Law 108-137.	Congressional Add Funds were provided from the "Extra-ordinary Maintenance" line item under the "misc" category in the O&M appropriation	Feasibility Study should be completed in FY08. Waiting for new authorization before going to the construction phase.

Table C3.b Middle Rio Grande Bosque Initiative Projects Not Funded During Federal Fiscal Year 2006 Continued

Project title	Project location	Organization	Project status	Project description	Funding	Est. Schedule
San Marcial Railroad Bridge Relocation Project	Along the Rio Grande and extends from the San Acacia Diversion Dan (N. of Socorro) downstream to the BN&SF railway bridge across the Rio Grande at San Marcial.	Corps of Engineers	Ongoing	1.Reconstruction of the existing levee along the west bank of the Rio Grande (45 miles) for flood protection. 2.Construction of a new BNSF railroad bridge at San Marcial to provide measurable sediment removal, transportation, environmental and flood control benefits. The bridge would result in measurable water delivery and reservoir operation benefits and will improve habitat conditions of the Rio Grand Silvery Minnow and the Southwestern Willow Flycatcher. 3. Acquisition of the 2,000+ acre Tiffany area as a sediment control basin to provide sediment removal, flood control and environmental restoration benefits.	Costs: C $71,200	This project is the top priority for the Corps of Engineers and is limited by a hydraulic restriction. Supplemental EIS to be completed 2/07. Draft LRR to be submitted 2/07 and completed 7/07. PED Agreement to be executed 8/07 and begin PED 9/07. PED for RR Bridge completed 3/08 and construction is scheduled to begin in 7/08 for completion in FY11.
Overbank Flooding Study		Corps of Engineers	Ongoing			