

Rio Grande Canalization Project Environmental Water Transactions Program Final Framework and Program Report

**Prepared for the
United States Section
International Boundary and Water Commission
in cooperation with the
United States Fish and Wildlife Service**

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Contents

1.	Forward.....	1
2.	Introduction and Background.....	2
3.	Overview and Summary of Project Activities and Outcomes.....	5
3.1	RGEWTP Alignment with Federal and State Law, Regulations and Water Operations.....	5
3.2	Identification of Water Needs at Restoration Sites, Development of Estimated Water Budget, and Inventory of Available Primary Groundwater Rights.....	7
3.3	Valuation of Water Rights Necessary to Support Federal Acquisition Pursuant to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.....	8
3.4	Assessment of Transaction Approaches, Development of a Transaction Approaches Framework, Implementation of Three Transaction Approaches, and Development of Five Individual Transactions.....	9
3.5	Transaction Process Checklist - An Annotated, Chronological Checklist of Activities, Steps and Contractual Documents for the Acquisition of Water Rights.....	10
3.6	Communications and Outreach.....	11
3.7	Summary.....	12
4.	Program Water Budget.....	13
4.1	Water Rights Acquisition Targets and Cost.....	13
4.2	Cost Impact of Revisions.....	14
4.3	Analysis.....	16
4.4	Relationship to River Management Plan.....	16
4.5	Periodic Restoration Pulse Flow.....	18
4.6	Water Transactions to Date.....	19
4.7	RGEWTP Water Acquisition Costs in Context.....	20
4.7.1	Regional Differences.....	20
4.7.2	Transaction Costs.....	21
5.	Water Transactions Process Checklist.....	22
5.1	Stage 1: Pre-transaction Background and Foundational Work.....	22
5.2	Stage 2: Initial Opportunity Scoping.....	23
5.3	Stage 3: Purchase Offer Development.....	24
5.4	Stage 4: Purchase and Sale Agreement Development.....	26
5.5	Stage 5: Contingency Period.....	27
5.6	Stage 6: Closing.....	29
5.7	Stage 7: Post Closing.....	29
5.8	Supporting Documents.....	29
6.	Transaction Approaches Analysis.....	31
6.1	Transaction Approaches Overview.....	31
6.2	Targeting Specific Water Right Sellers.....	34
7.	Lessons Learned.....	37

7.1	Transaction Development	37
7.1.1	Environmental Water Transactions work in the Lower Rio Grande.	37
7.1.2	Environmental Water Transactions are Unfamiliar	37
7.1.3	Transaction Costs are High.	37
7.1.4	Water Right Purchase is Needed.....	38
7.2	Program Requirements	38
7.2.1	Significant Groundwork is Required	38
7.2.2	Ambiguity is Prevalent in Water Management.....	38
7.2.3	Greater Integration of Restoration Priorities With the RGEWTP	39
7.3	Contract Structure	40
7.3.1	Contractor Was Reliant on the USIBWC for Key Support and Communications in Program Implementation.	40
7.3.2	Team Flexibility Is Important in Implementing an Innovative Program.	40
7.3.3	Federal Experience.....	40
7.3.4	The Contract Structure Governing Project Implementation Caused Delays	40
8.	Conditions and Current Issues.....	41
8.1	Physical Water Supply.....	41
8.2	Adjudication.....	41
8.3	Other Litigation.....	43
9.	Future Activity Analysis and Recommendations	45
9.1	Expanding EBID Surface-Only Water Transactions	45
9.2	Pursuing a Term-limited Transfer of Water Rights	47
9.3	Use of Groundwater in Restoration Sites	47
9.4	Texas Restoration Sites.....	48
9.5	Research and Monitoring Recommendations	48
10.	Institutional Analysis and Implementation Recommendations	50
10.1	Real Estate Firm.....	50
10.2	Agency Partnerships	51
10.2.1	U.S. Army Corps of Engineers.....	51
10.2.2	U.S. Fish and Wildlife Service, Refuge System.....	51
10.2.3	U.S. Bureau of Reclamation.....	51
10.3	Non-Profit Partnership	52
10.4	Project Team Skills	54
11.	Summary of Recommendations.....	56
11.1	Choose an Institutional Arrangement and Resourcing Level Appropriate for Effective Implementation of the RGEWTP.....	56
11.2	Implement Transaction Strategies to Acquire Water Rights at Scale to Meet ROD Commitments.....	57
11.3	Continue to Evaluate the Feasibility of a Periodic Restoration Pulse Flow	58
11.4	Integrate Water Acquisitions with Conservation Outcomes.....	58
12.	Citations	60

13.	Appendices and Exhibits	62
13.1	Complete Table of Appendices.....	62
13.2	Appendices by Topic	64
13.2.1	Policy Framework Documents	65
13.2.2	Water Rights Documents.....	65
13.2.3	Valuation Documents	66
13.2.4	Transaction Process and Approaches	66
13.2.5	Communications Documents	67
13.2.6	Legal References	68
13.3	Transaction Process Checklist Supporting Documents	69
13.4	Transaction Approach Evaluation Memo Supporting Documents	69
13.4.1	EBID Water Rights at Risk of Involuntary Suspension	70
13.4.2	Acquisition of EBID Water Rights through Annual Lease	70
13.4.3	Individual Transaction of EBID Water Rights through One-on-One Negotiation.....	71
13.4.4	Term-limited Transfer of EBID Water Rights	74
13.5	RGEWTP Transactions.....	74
13.6	Points of Contact.....	74

List of Figures

<i>Figure 1: RGEWTP Water Rights Acquisition Targets and Cost Estimates by Scenario.....</i>	<i>14</i>
<i>Figure 2: Refined cost estimates for the RGEWTP water budget.....</i>	<i>15</i>
<i>Figure 3: Budget impact of cost estimate revisions</i>	<i>15</i>
<i>Figure 4: RGEWTP water right acquisitions to date.....</i>	<i>19</i>
<i>Figure 5: Water Right Prices in Selected Regions.....</i>	<i>20</i>
<i>Figure 6a: Summary of Transaction Approaches 1</i>	<i>33</i>
<i>Figure 6b: Summary of Transaction Approaches 2</i>	<i>34</i>
<i>Figure 7a: Micro-Targeting of Selected EBID Water Rights 1</i>	<i>35</i>
<i>Figure 7b: Micro-Targeting of Selected EBID Water Rights 2</i>	<i>36</i>

Table of Acronyms

AF – Acre-feet

BPA- Bonneville Power Administration

CO – USIBWC Site Acquisition Contracting Officer

Commissioner – United States Commissioner of the International Boundary and Water Commission

Conceptual Restoration Plan – Conceptual Restoration Plan and Cumulative Effects Analysis, Rio Grande-Caballo Dam to American Dam, New Mexico and Texas (2009)

DOJ – United States Department of Justice

District Court – Third Judicial District Court of Doña Ana County

EBID – Elephant Butte Irrigation District

EPCWID#1 – El Paso County Water Improvement District #1

ESA – Endangered Species Act

FMV – Fair Market Value

NFWF – National Fish and Wildlife Foundation

OSE – New Mexico Office of the State Engineer

PSA – Purchase and Sale Agreement

Reclamation – United States Bureau of Reclamation

Restoration flow – Periodic restoration pulse flow

RGCP – Rio Grande Canalization Flood Control Project

RGEWTP – Rio Grande Canalization Project Environmental Water Transactions Program

ROD – Record of Decision on the River Management Alternatives for the Rio Grande Canalization Project

SWUA – Special Water Users’ Association

Uniform Act – Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970

USACE – United States Army Corps of Engineers

USFWS – United States Fish and Wildlife Service

USIBWC – United States Section of the International Boundary and Water Commission

USPAP – Uniform Standards of Professional Appraisal Practice

Yellow Book – Uniform Appraisal Standards for Federal Land Acquisitions

1. Forward

The Rio Grande Canalization Project Environmental Water Transaction Program was established pursuant to the 2009 Record of Decision on the River Management Alternatives for the Rio Grande Canalization Project under the authority of the United States International Boundary and Water Commission Rio Grande Canalization Project Act (USIBWC, 2009; Act of June 4, 1936). Funding was made possible through an interagency agreement between the United States International Boundary and Water Commission and the United States Fish and Wildlife Service (USIBWC-USFWS Interagency Agreement IBM11A0002, 2011, Work Order IBM11W0022) and a subsequent grant from the United States Fish and Wildlife Service to the National Fish and Wildlife Foundation (USFWS-NFWF Grant No. F11AP00645, 2011: Water rights for wildlife and habitat restoration).

Pursuant to the grant, the National Fish and Wildlife Foundation issued a Request for Proposals and, in January 2012, selected Audubon New Mexico, in partnership with Ecosystem Economics and other subcontractors, to develop the Rio Grande Canalization Environmental Water Transaction Program framework and then use the transaction framework to acquire water and water rights from willing sellers for wildlife and habitat restoration. The National Fish and Wildlife Foundation also entered into a contract with the Elephant Butte Irrigation District for their participation in the development of the transaction framework.

This *Final Framework and Program Report for the Rio Grande Canalization Project Environmental Water Transactions Program* documents all significant progress achieved by NFWF and its partners under the guidance of the United States International Boundary and Water Commission including the development of the transactional framework, pursuit of alternative transaction approaches, and ultimately completion of the program's first surface water acquisitions from individual willing sellers. This Final Framework and Program Report also includes the final Water Transactions Framework and recommendations for next steps for successful implementation of future water transactions. This document is submitted in fulfillment of the U.S. Fish and Wildlife Service Interagency Agreement No. IBM11W0022, Appendix A, work order tasks 2.6, 3.3, and 5.1 and pursuant to additional written guidance from the United States International Boundary and Water Commission.

2. Introduction and Background

The Rio Grande Canalization Project Environmental Water Transaction Program (“RGEWTP”) is a voluntary, market-based program to acquire primary groundwater, surface water and/or combined surface-ground water and water rights for environmental benefit within the United States Section of the International Boundary and Water Commission (“USIBWC”) Rio Grande Canalization Project (“RGCP”). The RGCP is located along a 105-mile reach of the Rio Grande from the Percha Diversion Dam, located downstream from Caballo Dam in Sierra County, New Mexico to the American Diversion Dam in El Paso County, Texas.

The USIBWC constructed the RGCP in the 1930s and early 1940s for purposes of regulating and controlling the water supply in the Rio Grande for use in Mexico and the United States (Act of June 4, 1936). Mexico is authorized to receive 60,000 acre-feet of Rio Grande water at the Acequia Madre above Ciudad Juarez, Chihuahua (Convention for Equitable Distribution of the Waters of the Rio Grande, 1906). Southern New Mexico and West Texas are authorized to receive Rio Grande surface water to irrigate about 178,000 acres of eligible irrigated lands under the Reclamation Rio Grande Project (Reclamation Act, 1902; Rio Grande Project Act, 1905). These overlapping federal water projects and treaty govern, to a large extent, surface water supply, allocation and management in the project reach. State law regulates issues of control, appropriation, use or distribution of water used in irrigation, and groundwater administration (Reclamation Act, 1902 at. Sec. 8 (codified at 43 U.S.C. §383); N.M. Stat. Ann. §§ 72-5-1 *et seq.*; N.M. Stat. Ann. §§ 72-12-1 *et seq.*)

Construction of the RGCP removed natural river meanders and built a uniform pilot channel, cleared and levelled about 3,400 acres of floodplain, and constructed flood control levees on nearly two-thirds of the project’s length (USIBWC, 2003, p. 1-7). After construction of the RGCP in 1943, the USIBWC retained responsibility for management of the river channel and flood control protection (*Id.* at p.1-8). While the primary purpose of the RGCP is to regulate and control available water supplies, USIBWC, like other federal agencies, must comply with more recent federal environmental laws including the Endangered Species Act and the National Environmental Policy Act. Further, as public support for environmental and river ecosystem health has grown, the USIBWC has strived to address environmental issues on boundary and water services along the United States and Mexico border region (*Id.* at 1-4).

In 1999, the USIBWC proposed changes in the operation and maintenance of the RGCP and issued a Notice of Intent for preparation of an Environmental Impact Statement (*Id.* at 1-9). On June 4, 2009, the USIBWC issued a Record of Decision on River Management Alternatives for the Rio Grande Canalization Project (“ROD”) selecting the Integrated USIBWC Land Management Alternative for long-term maintenance and operations in the RGCP (USIBWC, 2009). The Integrated USIBWC Land Management Alternative retains multiple operation and maintenance measures to achieve efficient water delivery and flood control, but also includes several environmental measures “to enhance or rehabilitate a mosaic of native riparian habitats, restore river and floodplain connectivity where feasible, and diversify the aquatic habitat” (*Id.* at p.2). The ROD incorporated the recommendations of the 2009 U.S. Army Corps of Engineers Conceptual Restoration Plan and Cumulative Effects Analysis (USACOE, 2009) (“Conceptual Restoration Plan”) which described up to 30 riparian habitat restoration sites including prescribed treatments and activities on more than 500 acres as well as a periodic restoration pulse flow

(“restoration flow”) to enhance river and floodplain hydrologic connectivity and inundate select restoration sites (*Id.* at 6-7).

In a fully appropriated basin, the ROD recognized that restoration measures would use water and require water transfers from existing water righted lands to offset an increase in net depletions, for supplemental irrigation of restoration sites and for a restoration flow. The terms of the ROD specified that the USIBWC would acquire or lease surface water and water rights from willing sellers under a cooperative framework with the Bureau of Reclamation (“Reclamation”) and the Rio Grande Project irrigation districts: the Elephant Butte Irrigation District (“EBID”) in New Mexico; and the El Paso County Water Improvement District No. 1 (“EPCWID #1”) in Texas (*Id.* at 6). The ROD assumes the cooperative framework will comply with federal and state law and irrigation district policy. As such, additional constraints to acquisition of Rio Grande Project surface water under the environmental water transaction program included, but were not limited to, the following:

- Rio Grande Project surface water could be used only for irrigation, the designated purpose of the project, unless authorized under Reclamation law (Sale of Water for Miscellaneous Purposes Act, 1920);
- Restoration sites had to be located within the irrigation district service boundaries, although service boundaries could be expanded through a board-approved boundary realignment process *provided* total project irrigated acreage did not exceed Reclamation contract limitations; and
- Rio Grande Project surface water rights had to be leased or purchased from willing sellers and transferred through the cooperating irrigation district’s lease, suspension and/or transfer approval process (USIBWC, 2009, p.6).

Cooperation from the irrigation districts was also predicated on establishing parity between farmers and listed species with regard to water management, operations and allocation under the federal Endangered Species Act (“ESA”). The endangered Southwestern Willow Flycatcher (*Empidonax traillii extimus*) (“flycatcher”) breeds in dense riparian shrub along the RGCP. Flycatchers occupy several of the designated restoration sites and may breed in currently unoccupied restoration sites once habitat is restored. Districts were concerned about the possibility of ESA liability for degradation of water righted flycatcher habitat during periods of reduced water availability. As a condition of cooperation, EBID required the USIBWC to obtain a commitment from the U.S. Fish and Wildlife Service (“USFWS”) that water righted restoration sites, like water righted crop land, receive a pro rata allocation of Rio Grande Project water in times of water shortage. Further, EBID also required that the USIBWC seek exclusion of the RGCP from designation as critical habitat for the flycatcher. EPCWID #1 declined to participate in program development efforts throughout the period of performance of the RGEWTP.

Pursuant to the agreements and grants enumerated in the Forward above, the National Fish and Wildlife Foundation (“NFWF”) contracted with Audubon New Mexico, who in turn subcontracted with Ecosystem Economics and other parties (“Contractors”), to assist USIBWC, USFWS, and NFWF with development and implementation of the RGEWTP. Contractors were tasked with assisting NFWF in developing a voluntary, market-based water transaction framework in concert with cooperating irrigation districts, implementing two or more trial transaction approaches and developing five transactions among a myriad of other program deliverables.

This *Final Framework and Program Report for the Rio Grande Canalization Project Environmental Water Transactions Program* (“*Final Framework and Program Report*”) is a summary of the RGEWTP activities and outcomes, key processes, lessons learned and recommendations for successful implementation of transactions to support the acquisition of water and water rights for wildlife and habitat restoration as specified in the USIBWC’s ROD.

3. Overview and Summary of Project Activities and Outcomes

This section provides an overview and summary of project activities, outcomes and deliverables under USFWS-NFWF Grant Agreement No. F11AP00645 entitled “Water Rights for Wildlife and Habitat Restoration.” The purpose of the grant was to develop and pilot a water transaction program for the eventual conservation and enhancement of riparian habitat and a restoration flow benefiting up to 30 restoration sites totaling over 500 acres throughout the USIBWC RGCP.

Working closely with the USIBWC, NFWF and Contractors succeeded in developing the RGEWTP in cooperation with the Elephant Butte Irrigation District to acquire water and water rights from willing sellers to support both supplemental irrigation and offset of net depletions at riparian restoration sites. The overarching themes of NFWF’s and Contractors’ efforts, summarized below, include:

- Alignment of the RGEWTP within the existing framework of federal and state water and environmental laws, irrigation district policies and water management and procedures;
- Identification of the volume and cost of water needed to restore and sustain river restoration and an inventory of available primary groundwater rights;
- Estimation of the fair market value of EBID surface-only and combined surface and groundwater rights;
- Assessment of the different transaction approaches and implementation of at least three transaction approaches and five transactions;
- Development of a step-by-step checklist for acquisition; and
- Communications and outreach to irrigators and other owners of water rights about the RGEWTP.

3.1 RGEWTP Alignment with Federal and State Law, Regulations and Water Operations

The RGEWTP is operating within two federal water projects, two states and two irrigation districts. The two federal water projects are the USIBWC’s RGCP and the Reclamation’s Rio Grande Project. The boundaries of both federal projects span the states of New Mexico and Texas. Rio Grande Project irrigation deliveries are administered by EBID in New Mexico and by EPCWID#1 in Texas. See Section 2 above. As such, the RGEWTP is subject to federal water project authorizing statutes and environmental laws, state water law and irrigation district policies, and water operation procedures. Prior to acquisition of water rights, Contractors had to resolve existing legal, policy and water management barriers and impediments to use of water for river restoration. At project outset, NFWF and Contractors identified several barriers to successful implementation of the RGEWTP:

- The full-appropriation of New Mexico surface water within the Rio Grande Project and New Mexico groundwater within the Lower Rio Grande Basin for agricultural, municipal and industrial purposes and the lack of water availability for new appropriations;
- The Reclamation’s Rio Grande Project single-purpose authorization for agriculture, which constrained use of Rio Grande Project surface water for riparian habitat restoration efforts and a restoration flow;
- The absence of a standard accounting methodology for net depletions from river restoration projects; and

- Endangered Species Act protection of the flycatcher and its breeding habitat, which included the proposed designation of a portion of the RGCP as critical habitat and threatened to constrain pro rata allocation of water during low water years between farmers and the flycatcher.

With the support of USIBWC, NFWF and Contractors overcame each of these barriers to lay the foundation for successful acquisition of water and water rights from willing sellers for the restoration of native riparian habitat on the USIBWC lands within EBID service boundaries. RGEWTP adopted a voluntary, market-based water transaction framework requiring EBID Board approval of the suspension and transfer of existing water rights from water righted acreage to the USIBWC restoration sites. Both the Reclamation and EBID now characterize water for habitat restoration as an agricultural use consistent with the Rio Grande Project's single purpose authorization for irrigation. EBID adopted an explicit policy (2013-ENG14) setting forth guidelines and criteria for classification of native vegetation riparian habitat as water righted acres within EBID service boundaries. The EBID policy institutionalizes parity between RGEWTP and other users with equal access to brokered water (annual water leases of conserved water), equivalent fees and assessments, shared shortages during low water years, and deliveries during the official irrigation season.

Under the program, the USIBWC and EBID have agreed to standardized rules to offset net depletions at restoration sites through acquisition of water and water rights from willing sellers. The agreed-upon method is simple and promotes parity across users whether farmers or the USIBWC. An increase in net depletions is determined at the individual restoration site level, not project wide. Water rights must be suspended and transferred from existing district water righted acreage to individual restoration sites if restoration sites are irrigated or increase net depletions from pre-restoration plant communities. The USIBWC is only obligated to acquire and transfer one acre of Rio Grande Project surface water rights per acre of restoration even if actual depletions exceed the annual Rio Grande Project allotment per water righted acre. This approach eliminates a requirement for ongoing accounting or dynamic estimation of actual depletions as plant communities change over time.

The USFWS has also exempted "incidental take" of the endangered flycatcher associated with the RGEWTP under a Biological and Conference Opinion. Water righted acreage, whether supporting breeding habitat for threatened and endangered species or crops, is allowed to share shortages receiving a pro-rata allocation of Rio Grande Project water in less than full supply years. Changes in habitat quality arising from variability in water allocations are exempt from the Incidental Take Statement provided a floor of 53.5 acres of all types of flycatcher habitat is available. USFWS also excluded any portion of the RGCP as critical habitat for flycatcher due to both progress and promise under the program's cooperative framework.

Contractor deliverables and supporting documentation are summarized below and included in Appendices to this report.

- 11-9-11 Ltr. M. Hamman, Area Manager, Albuquerque Area Office, Bureau of Reclamation. Reclamation characterizes use of Rio Grande Project water for riparian and wetland habitat as an agricultural use subject to the same rights and obligations as other water righted acreage including a pro-rata diminishment of the allocation in water-short years. See document FFR-1.

- 06-30-12 Memo and 01-28-13 Memo Summary and Conclusions. Contractors in collaboration with EBID specify water accounting rules and guidelines. See documents FFR-2 and FFR-3.
- 08-30-12 Biological and Conference Opinion. USFWS's Incidental Take Statement in the Biological and Conference Opinion provides that impact to dense riparian shrub habitat from water shortages is exempt provided the USIBWC maintains 53.5 acres of all types of flycatcher habitat (emphasis added). See documents FFR-4 to FFR-7.
- 1-3-13 Designation of Critical Habitat for Southwestern Willow Flycatcher; Final Rule (Designation of Critical Habitat, 2013). The USFWS Final Rule excludes the Lower Rio Grande Management Unit from designation as critical habitat to encourage continued cooperation and development of a water transaction program and allow the USIBWC to provide water to restoration sites that provide or could provide riparian breeding habitat for the flycatcher. See document FFR-8.
- 12-14-12 Memorandum of Understanding. The USIBWC and EBID enter into a Memorandum of Understanding, IBM13A0007, regarding Habitat Restoration Projects. See document FFR-9.
- 6-12-13 2013-ENG14. EBID passes precedent setting policy 2013-ENG14 recognizing use of Rio Grande Project water for habitat restoration as a permitted agricultural use and authorizing EBID Board approval of voluntary sales and transfer of Rio Grande Project water rights to support native plant survival and growth. See document FFR-10.

3.2 Identification of Water Needs at Restoration Sites, Development of Estimated Water Budget, and Inventory of Available Primary Groundwater Rights

Referencing the restoration objectives for each site under the March 2009 Conceptual Restoration Plan and other guiding documents, Contractors, in consultation with the USIBWC, prepared a water budget comprised of a matrix of water sources, volumes and transaction approaches by restoration site for a range of hydrologic scenarios. Cost estimates were prepared for five scenarios ranging between a high to low volume acquisition strategy. The highest volume water budget scenario required 612 acres of surface water rights supplemented with 68 acres of groundwater and annual lease of 219 acres of surface water rights. The lowest volume scenario required 475 acres of surface water rights, and represented the minimum volume of water required to meet ROD offset requirements at restoration sites (which have total aggregate area of 622 acres). The acquisition Budget ranged from \$1.2 to \$1.7 million, not including annual recurring costs of \$38,000 to \$71,000 for assessments and leases. Note that these figures are updated in this final report to incorporate the programmatic appraisal estimates for the cost of EBID surface water rights. For further discussion on the Program Water Budget, see Section 4 below.

Contractors also prepared an inventory of primary groundwater rights in the Lower Rio Grande Valley, New Mexico that might be appropriate for acquisition from willing sellers by the USIBWC in support of the RGEWTP. The inventory includes some 566 groundwater rights serving almost 9,000 acres; however, rights senior to 1961 that are currently recognized by the State of New Mexico via a Stipulated Subfile Order are rare and comprise only 10-15% of the

total. Contractor deliverables and supporting documentation are summarized below and included in the Appendices to this report.

- 01-09-15 Water Budget Matrices and 4-2-13 PowerPoint presentation. These figures are updated for the final report to incorporate the programmatic appraisal cost estimates of generic water rights. See documents FFR-11 to FFR-15.
- 10-30-14 Inventory of Primary Groundwater Rights Memo, Spreadsheet and Summary Tables by Subregion. Inventory of primary groundwater rights in the RGCP identifies and evaluates the sources, volume, and legal/administrative status of rights best suited for potential acquisition by the USIBWC in support of riparian habitat restoration through the RGEWTP. See documents FFR-16 to FFR-20.

3.3 Valuation of Water Rights Necessary to Support Federal Acquisition Pursuant to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970

NFWF and Contractors provided the USIBWC with market research and an estimate of fair market value of water rights required for federal purchase of real property. Fair market value estimates of initial pilot acquisitions were developed using both 1) a “waiver valuation” and 2) individual appraisals performed under the Uniform Appraisal Standards for Federal Land Acquisitions (Uniform Appraisal Standards, 2000) (“Yellow Book”).

NFWF and Contractors first developed a waiver valuation to support the program’s initial trial transactions. A waiver valuation is authorized under 49 CFR § 24.102 (c)(2), the implementing regulations for the Uniform Relocation Assistance and Real Property Acquisition Policy Act (Uniform Act, 1970) (“Uniform Act”) in lieu of a Yellow-Book appraisal for acquisitions valued under \$10,000, and up to \$25,000 if the offer of an appraisal is declined by the seller. Because the initial waiver valuation estimated the fair market value of EBID surface-only water rights between \$1,000 and \$3,000 per water-righted acre, the waiver valuation was limited to acquisition of water rights from small tracts of EBID water righted lands (i.e., parcels of 10 acres or less). The waiver valuation is updated for the final report to incorporate the programmatic appraisal cost estimates of a generic EBID surface water-only right. The revised waiver valuation estimates the fair market value of an EBID surface-only water right between \$1,500 and \$2,500 per water righted acre.

NFWF and Contractors then commissioned a programmatic Yellow Book appraisal which is the current basis for potential acquisition of EBID surface-only water rights or combined EBID surface and groundwater rights. The programmatic appraisal is dated September 18, 2014 and is valid for six to twelve months depending on market fluctuations. Based on a sales-comparison approach, the appraisal estimates the fair market value of surface-only water right at \$2,500 per water-righted acre and a combined surface and groundwater right at \$5,000 per water-righted acre.

Contractor deliverables and supporting documentation related to valuation are summarized below and included in the Appendices of this report.

- 04-25-12 D. Miller individual appraisal report of the fair market value of the RGEWTP Transaction No. 1 (pre-Project surface-only water rights and primary groundwater rights). See document FFR-21.

- 06-12 Report: Water Right Market and Initial Pricing Assessment. Contractors provide an overview of the local water market identifying the sources and associated costs of water rights that can meet restoration objectives at the least aggregate cost, and with a minimum practical exposure to risk. See document FFR-22.
- 10-31-14 Waiver Valuation. Contractors provide documentation justifying price range of EBID surface-only water rights from \$1,500 to \$2,500 market value range for transactions valued at less than \$10,000. See document FFR-23.
- 09-18-14 J. Cannon Programmatic Appraisal and D. Miller Review Appraisal. Using a sales-comparison approach, a programmatic appraisal of a generic water right estimated the fair market value of surface-only water rights at \$2,500 per water righted acre and combined water rights at \$5,000 per water righted acre. The review appraisal required under 49 CFR § 24.104, accepted the programmatic appraisal and certified that the programmatic appraisal met the minimum requirements of the Yellow Book, the Uniform Standards of Professional Appraisal Practice (Uniform Standards, 2014) (“USPAP”) and applicable State and Federal laws and regulations. See documents FFR-24 and FFR-25.

3.4 Assessment of Transaction Approaches, Development of a Transaction Approaches Framework, Implementation of Three Transaction Approaches, and Development of Five Individual Transactions.

While determination of a cost basis for federal acquisitions was underway, Contractors catalogued and evaluated different transaction approaches to identify willing sellers of water rights. For further discussion on the analysis of transaction approaches and targeting of sources and/or sellers of water rights, see Section 6 below. Drawing from this matrix of approaches and with the significant support of the USIBWC team, NFWF and Contractors implemented three trial transaction approaches and developed a total of five individual transactions.

The three trial transaction approaches included:

- (i) bilateral negotiations (also called “one-on-one negotiations”) with owners of Rio Grande Project surface-only water rights,
- (ii) bilateral negotiations with owners of primary groundwater rights, and
- (iii) a general solicitation to acquire water rights at risk of reclassification for non-payment of district assessment fees.

Contractors also offered to undertake two additional transaction approaches:

- (iv) a Posted Offer/Reverse Auction designed to acquire EBID surface-only water rights from a significant number of flat rate parcels (i.e. parcels under 2 acres in size) at least possible cost; and
- (v) a term-limited transfer of a significant volume of EBID surface-only water rights.

The five individual transactions developed under the program included:

- (i) a recommendation to purchase 88.42 acres of pre-Rio Grande Project surface water rights and/or primary groundwater rights (“RGEWTP Transaction No. 1”),

- (ii) purchase of 4.0 acres of EBID surface-only water rights for \$7,808 (“RGEWTP Transaction No. 2”),
- (iii) an annual lease of 1.6 acres of EBID surface-only water rights for \$258.50 (the EBID annual assessment) (“RGEWTP Transaction No. 3”),
- (iv) an annual lease of EBID brokered water of 5.87 acres of EBID surface-only water rights for \$450.95 (the EBID annual assessment) (“RGEWTP Transaction No. 4”), and
- (v) purchase of 1.6 acres of EBID surface-only water rights for \$2,552.46 (purchase price adjusted for prior lease) (“RGEWTP Transaction No. 5”).

Transactions (ii) and (v) were executed under the new EBID Policy 2013-ENG14 authorizing voluntary suspension and transfer of water rights to the USIBWC riparian habitat restoration sites. Successful completion of these two pilot purchases was a significant accomplishment because it established the use of Rio Grande Project water for riparian habitat, it verified the fair market value of EBID surface-only water rights, it affirmed the feasibility of a voluntary, market-based transaction approach to reallocating water for wildlife and habitat restoration in the RGCP, and it tested the methods and procedures to be used for water right transactions at a larger scale.

Contractor deliverables and supporting documentation are summarized below and included in the Appendices of this report.

- 10-31-13 Memo on Considerations in Second Transaction Offering including Recommendation and Discussion of a Posted-Offer/Reverse Auction. See document FFR-26.
- 11-11-13 Evaluation Report of Trial Implementation of Acquisition of EBID Water Rights at Risk of Involuntary Suspension. See document FFR-27 and exhibit.
- 11-24-14 Evaluation Report on Trial Implementation of Acquisition of EBID Water Rights through Annual Lease. See document FFR-28 and exhibits.
- 11-25-14 Evaluation Report of Trial Implementation of Individual Transactions through One-on-One Negotiations with Owners of EBID Surface Water Rights (aka “Individual Bilateral Negotiations”). See document FFR-29 and exhibits.
- 12-15-14 Evaluation Report of a Term-Limited Transfer. See document FFR-30 and exhibits.

3.5 Transaction Process Checklist - An Annotated, Chronological Checklist of Activities, Steps and Contractual Documents for the Acquisition of Water Rights

Drawing from these transaction experiences, NFWF and Contractors crafted an annotated, chronological checklist of activities and steps to meet federal acquisition requirements and provide for successful acquisition of water rights. NFWF and Contractors also drafted documents and agreements needed to initiate, contract for, and close on the purchase and sale of water rights including all necessary due diligence. Documents and agreements prepared for the USIBWC include but are not limited to a Letter of Seller Interest, EBID and Office of State Engineer Information Release Forms, a Purchase Offer Letter, a Purchase and Sale Agreement, and a Warranty Deed. Contractor deliverables and supporting documentation are summarized below

and included in the Appendices of this report. For further discussion on the Water Transactions Process Checklist, see Section 5 below.

- 11-20-14 Transaction Process Checklist. NFWF and Contractors prepared an annotated, chronological checklist of activities with accompanying forms, templates and examples of final documents required for acquisition of water rights. See document FFR-31 and supporting documents.

3.6 Communications and Outreach

The final suite of activities focused on communications and outreach to strengthen attainment of goals. Contractors worked with the USIBWC to develop press releases and to generate news articles and journal publications about the innovative program and accomplishment of program milestones including enactment of EBID's precedent setting "water for habitat restoration" policy and irrigation of the Leasburg restoration site with the USIBWC's first acquisition of water rights. Contractors also designed and printed communication materials including a glossy, colored bi-fold and glossy, colored rack card for use by the USIBWC in its outreach and solicitation to owners of water rights. Contractors conducted additional outreach with key stakeholders in Texas regarding enabling conditions and processes for water righting the four restoration sites located within the Texas portion of the RGCP and EPCWID#1 service boundary. Contractor deliverables and supporting documentation are summarized below and included in the Appendices of this report.

- 03-2013 Irrigation Leader (a Trade Journal of Irrigation Districts and Federal Water Projects), Vol. 4 Issue 3, *Collaboration not Litigation: A Water Transfer Partnership on the Rio Grande*. See document FFR-32.
- 11-2013 Audubon (National Audubon Society magazine), *The New Deal--In The West, The Saying Goes, Whiskey Is for Drinking And Water Is for Fighting. So Why on Earth Did Farmers in New Mexico--During a Severe Drought, No Less--Decide to Share Their Precious Drops With Endangered Birds?* See document FFR-33.
- 07-15-13 Press release on EBID policy on use of Project Water for Habitat Restoration. News stories "*Water pact aims to help grow riverside vegetation*" ran in the Santa Fe New Mexican, Albuquerque Journal, and Las Cruces Sun News. See document FFR-34.
- 01-09-14 Powerpoint Presentation to the 20th Annual Statewide Meeting of the New Mexico Water Dialogue, *Shortage Sharing between Farmers and Birds*. Media coverage on 01-15-14 in the New Mexico Mercury, *Talking Water Through, Not Past, Each Other*. See document FFR-35.
- 06-30-14 Press release, map, and fact sheets on first-ever irrigation of Leasburg Extension Lateral WW#8 restoration site with newly acquired water rights for habitat. News stories ran in KRQE Channel 13 TV segment, Las Cruces Sun News, KRWG Fronteras, All Things Considered, Albuquerque Journal, and Science Recorder. See documents FFR-36 to FFR-39.

- 07-10-14 KRWG News Fronteras interview of Beth Bardwell of Audubon New Mexico and Sally Spener of USIBWC, *River Restoration of the Rio Grande*. <http://krwg.org/post/river-restoration-rio-grande>
- 07-16-14 Powerpoint Presentation to Rio Bosque Partners Meeting at the UTEP Centennial Museum titled *Rio Grande Environmental Water Transaction Partnership*. See document FFR-40.
- July-2014 Irrigation Leader (a Trade Journal of Irrigation Districts and Federal Water Projects), Vol. 5 Issue 7, *Irrigating Cottonwoods: Water Transactions for Rio Grande Habitat Restoration*. See document FFR-41.
- 10-16-14 Glossy, color, 8.5 x 11 bi-fold brochure on the *Rio Grande Canalization Project Environmental Water Transaction Program: Restoring Riparian Habitat Along the Lower Rio Grande*. 1,000 copies. See document FFR-42.
- 12-3-14 Glossy, color, 4 x 9, rack card on the *Rio Grande Canalization Project Environmental Water Transaction Program: Restoring Riparian Habitat Along the Lower Rio Grande*. 1,000 copies. See document FFR-43.

3.7 Summary

In conclusion, the Project Team, including the USIBWC, USFWS, NFWF, and Contractors, have laid the foundational elements for the USIBWC or another entity to acquire water rights at scale while optimizing ecological outcomes and costs. The institutional framework, policies, cost basis, water volumes, water budgets, and transactional approaches are in place and two small but precedent-setting transactions have been completed. The goodwill with partnering federal, state and local agencies and working landowners is intact. The RGEWTP has all of the requisite relationships, tools, data and policies needed to scale up. Lessons learned, suggested next steps and recommendations for future project implementation are detailed later in the report.

4. Program Water Budget

This section addresses the estimated quantity of water rights that RGEWTP will need to acquire to meet ROD requirements, as well as the expected cost to acquire those rights. The figures presented are updated from earlier work on site prioritization and water budget development undertaken for task 2.1, modified to incorporate recent experience and information.

4.1 Water Rights Acquisition Targets and Cost

Contractors developed target quantities of water rights needed to meet RGEWTP objectives under different approaches to complying with the ROD. Rather than estimating a firm target quantity of water rights to be acquired by RGEWTP, a series of scenarios were prepared designed to represent the quantities of water rights, by type, that would be needed under different program tactics with respect to i) water right coverage/risk of adequate irrigation supply across different hydrological conditions and ii) preference for permanent acquisition of water rights vs. annual water allotment leases (where permissible). The analysis was performed separately for priority and non-priority sites as designated by the USIBWC. Importantly, it also assumed that no restoration flow release would be made until drought conditions subside. As a result, the water budgets include water rights for supplemental irrigation of several restoration sites originally designed for inundation from a restoration flow. The goal of this analysis was to support the USIBWC in developing a cost-effective water rights acquisitions strategy that maximized likelihood of restoration site success at each given expenditure level. Complete water acquisition budgets are presented in the following documents:

- Document FFR-12: Description of water rights acquired for each type of restoration site by scenario
- Document FFR-13: Summary level RGEWTP water right and cost budget
- Document FFR-14: Detailed water budget for RGEWTP water right acquisition
- Document FFR-15: Detailed cost estimate for RGEWTP water right acquisition

Water rights acquisition targets and associated estimated costs are presented below by scenario in Figure 1. Scenarios represented different strategies that the USIBWC might take in securing water rights for restoration sites; the high volume scenario acquires more rights in order to maximize water available for supplemental irrigation of restoration plantings, while the low volume scenario budgets only for the minimum number of rights needed to meet the ROD requirements to offset net depletions from restoration. For a complete description of scenarios, see document FFR-12.

Figure 1: RGEWTP Water Rights Acquisition Targets and Cost Estimates by Scenario

	High Volume Scenario	High Volume Lease Scenario	Mid Volume Scenario	Mid Volume Lease Scenario	Low Volume Scenario
	Stacked Rights and Supplemental Groundwater Maximize Volume Available for Irrigation	Leases and Supplemental Groundwater Maximize Volume Available for Irrigation	Stacked Rights Increase Volume Available for Irrigation	Leases Increase Volume Available for Irrigation	Base Rights to Offset ET Only
Water Rights (Acres)					
EBID Surface Water (Base Rights)	543.8	543.8	543.8	543.8	475.1
EBID Surface Water (Stacked Rights)	68.2	-	68.2	-	-
EBID Surface Water (Annual Leases)	219.4	287.6	-	68.2	-
Supplemental Groundwater	68.2	68.2	-	-	-
Estimated Costs					
Water Right Acquisition (Capital Costs)	\$ 1,700,500	\$ 1,530,000	\$ 1,530,000	\$ 1,359,500	\$ 1,187,750
Water Right Leases and Assessments (Annual Costs)	\$ 70,900	\$ 72,264	\$ 48,960	\$ 50,324	\$ 38,008

The table shows that the USIBWC will need to acquire a minimum of 475 total acres of water rights to meet ROD offset requirements at restoration sites – sites have total aggregate area of 622 acres, but not all acres increase net system depletions incurring the need for offsets. This estimate is for nearly \$1.2 million in acquisition costs for rights in this low volume scenario, exclusive of transaction costs. The high volume scenario is 43% more expensive at \$1.7 million, though it would provide more water to support restoration planting survival and achievement of habitat restoration objectives. Depending on depth to the groundwater table at restoration sites and the annual irrigation allotment in future years, the low volume scenario could result in a lower survival rate of plants at some restoration sites for lack of supplemental irrigation. Importantly, there are three other implementation strategies between these two scenarios, which are designed to provide planning “bookends” around the set of potential the USIBWC approaches.

4.2 Cost Impact of Revisions

This water budget is notably lower than the original analysis dated July 2013, which estimated water right acquisition budgets of between \$1.66 and \$2.18 million. The RGEWTP water right acquisition target has not changed since originally developed, however refined estimates of the

cost of water rights generates a lower total RGEWTP program cost. Specifically, the recently completed programmatic appraisal provides a stronger basis for planning water right purchase costs going forward and its value estimates have been incorporated in this analysis to develop more accurate budget forecasts. Figure 2 below summarizes the changes to cost input assumptions incorporated in the current analysis.

Figure 2: Refined cost estimates for the RGEWTP water budget

Cost Input	Original Planning Estimate	New Planning Estimate	Notes
EBID Surface Water Only Rights	\$ 3,500	\$ 2,500	Based on Programmatic Appraisal. Also applies to rights purchased for stacking
EBID Surface Water Rights with Supplemental Groundwater ("Combined Rights")	\$ 4,000	\$ 5,000	Based on Programmatic Appraisal.
Annual Water Right Leases	\$ 200	\$ 100	Ample supply available below \$100 confirmed through RGEWTP outreach
EBID Assessments	\$ 80	\$ 80	Reflects farm rate assessment of \$70 per acre plus \$10 per parcel

The programmatic appraisal provided a new estimate of the fair market value of EBID water rights based on recent transactions. The appraisal estimated the value of EBID surface-only water rights at \$2,500, a full \$1,000 below the original planning estimate of \$3,500. However, it also established a value of \$5,000 for combined surface and groundwater right, a result that represents a \$1,000 increase over the original estimate. The estimated cost of an annual lease was also revised downward in the updated budget analysis; the original estimate of \$200 per acre was overly conservative as recent research suggests ample supply is available for as little as \$80, the per-acre cost of EBID assessments. The new estimate is a compromise at \$100, which may still be conservative.

Figure 3: Budget impact of cost estimate revisions

Item	Change in Unit Cost Estimate	Estimated Total Cost Impact by Scenario					
		High Volume Scenario		Mid Volume Scenario		Low Volume Scenario	
		Units	Total Impact	Units	Total Impact	Units	Total Impact
EBID Surface Water Only Rights	\$ (1,000)	612.0	\$ (612,000)	612	\$ (612,000)	475.1	\$ (475,100)
EBID Surface Water Rights with Supplemental Groundwater ("Combined Rights") - Incremental cost to SW only	\$ 2,000	68.2	\$ 136,400	0	\$ -	0	\$ -
Annual Water Right Leases	\$ (100)	219.4	\$ (21,940)	0	\$ -	0	\$ -
Total Budget Impact			\$ (497,540)		\$ (612,000)		\$ (475,100)

As Figure 3 illustrates, the revised water right cost estimates result in overall reductions to the RGEWTP budget across planning scenarios. Estimated impacts range from a reduction of \$475,100 in the low volume scenario to a decrease of over \$600,000 in the mid volume case. The

mid volume scenario does not use combined water rights, and unlike the high volume scenario is not impacted by the increased cost projected for supplemental groundwater. In any scenario, the bulk of forecast RGEWTP water right acquisitions will be for surface water right purchases to meet core ROD obligations to offset net water depletions from restoration site development. These surface water right purchases drive the program cost, and therefore the reduction in estimated cost of these rights pulls overall RGEWTP budget estimates down despite the increase foreseen in the cost of combined rights. Complete detail of the program budget by restoration site is presented document FFR-14.

4.3 Analysis

A major lesson of the water budgeting exercise is that because most restoration sites require acquisition of a water right to offset net depletions under the ROD and pursuant to the program's MOU with EBID, the difference in terms of cost and number of rights acquired is relatively modest between scenarios. The high volume scenario only costs 43% more than the base requirement of the low volume case but provides significant reduction in risk related to drought and associated low water allotments to EBID surface water rights. The low volume scenario requires acquisition through purchase of 475 acres of water rights for offset purposes. The high volume scenario would permanently acquire 28% more rights (612 total acres), a portion of which may be leased to reduce up front capital cost. The water right acquisition targets have not changed since the original analysis and are available in full in document FFR-15. The water right acquisition budget ranges from \$1.7 million under the high volume scenario to \$1.2 million in the low volume case.

Incorporation of the revised water right cost estimates make stacking water rights more attractive relative to using supplemental groundwater, when compared to previous planning estimates. Under the initial set of assumptions, purchasing a stacked second water right was estimated to cost \$3,000 more per acre than using supplemental groundwater (because the cost of a second right was the same as that of the base right - \$3,500 – whereas the analysis assumed that a combined right could have been purchased instead for only an additional \$500 per acre). The Cannon appraisal estimates the costs as equal – the \$2,500 price difference between surface water only (at \$2,500 per acre) and combined rights (at \$5,000 per acre) could alternatively be used to purchase a second surface-only water right that could be stacked and double the annual allotment available for irrigation. In combination with the risk to groundwater rights in the Texas v. NM litigation (discussed in 8.3) and the infrastructure cost of installing wells, lower costs make a stacking strategy increasingly attractive to the program - that is, the mid volume scenario or a similar approach focused on stacked surface water may deliver more cost effective restoration relative to alternatives based on updated cost estimates.

4.4 Relationship to River Management Plan

The USIBWC's recently updated RGCP River Management Plan (USIBWC, 2014) includes an update on restoration site prioritization and current status that bears mention as pertains to the water right acquisition target and cost budget. While the overall plan aligns with the minimum estimated water right acquisition target of 475 acres, several minor differences related to specific sites may warrant adjustment of the water right acquisition targets. Three sites may not move forward (*Id.*, p. 2-19):

- Bailey Point Bar: Site restoration is contingent on the successful acquisition of the property by the USIBWC.

- Lack Property: Site was eliminated from the conceptual plan due to the property not being for sale. This site was not included in the water right acquisition target and cost budget estimate, so no reconciliation is needed.
- Nemexas Siphon: An ownership dispute must be resolved prior to site acquisition for restoration, leaving this site uncertain.

Several other sites have been classified differently in terms of water right and irrigation needs between the river management plan and the water right acquisition targets and cost budget (*Id.*, p. 2-22):

- Yeso East: The River Management Plan recommends irrigation in lieu of a peak release, while the program water budget categorized the site as requiring supplemental irrigation in all cases. An offset for net depletions is required for this site.
- Crow Canyon A: The River Management Plan recommends supplemental irrigation, while the program water budget does not. An offset for net depletions is required for this site.
- Rincon C: The River Management Plan classifies this site as requiring an offset of net depletions while the program water budget does not. Supplemental irrigation in lieu of a peak release is recommended for this site in both documents.
- Sunland Park: The River Management Plan classifies this site as requiring an offset of net depletions and having supplemental irrigation recommended in lieu of peak release. The program water budget does not include the supplemental irrigation recommendation.
- Anapra Bridge: The River Management Plan recommends supplemental irrigation in lieu of peak release for this site, while the program water budget does not include an irrigation recommendation. An offset for net depletions is required for this site.

In addition, the River Management Plan identifies four priority sites for surface water irrigation (*Id.*, table 3-9 p. 3-25) totaling 62 acres. These sites have priority level 1 or 2 in the USFWS Biological Opinion and include the following:

- Crow Canyon B
- Trujillo
- Leasburg Extension Lateral Wasteway 8 (and expanded site)
- Mesilla East (and expanded site)

These sites are classified as high priority in the water rights acquisition target and cost budget (along with other sites per previous guidance from the USIBWC).

Finally, per the River Management Plan, the USIBWC is also working to transfer agency-owned groundwater rights to the Rincon Siphon and Selden Point Bar sites (*Id.*, p. 3-25). If the transfers are successful, this may reduce the need for surface water rights to support restoration at these locations, impacting the overall water right acquisition targets. It warrants note that Selden Point

Bar is outside EBID service boundaries and, therefore, is not currently eligible for use of Rio Grande Project water.

To summarize, the development of restoration sites is an ongoing process where site-level plans are being updated adaptively to meet conservation objectives. The River Management Plan stipulates that “restoration sites may be changed, added, or dropped as appropriate”, and in this context the contractor-developed program water budget is best viewed as an estimate based on current plans (*Id.*, p. 2-20). Water right requirements and costs are presented at the site level in documents FFR-14 and FFR-15 so that the impact changes to site-level plans can be integrated into the overall target and budget as needed.

4.5 Periodic Restoration Pulse Flow

The ROD and the Conceptual Restoration Plan originally contemplated a periodic restoration pulse flow (“restoration flow”) of 9,500 acre-feet of water to achieve an instream flow of 3,500 cfs over the course of several days in late May or early June to mimic the sediment transport, overbanking, and related hydrological processes of the Rio Grande’s pre-impoundment spring runoff. Such a simulated flood would be implemented every 3-10 years and would complement site-specific restoration activities and supplemental irrigation of riparian habitat. Several of the restoration sites identified in the Conceptual Restoration Plan were designed to operate in conjunction with a restoration flow. Absent these restoration flows, these sites may need supplemental irrigation in order to succeed in providing habitat. For that reason, the high volume scenarios of the water right acquisition target and cost budget include acquisition of water rights for supplemental irrigation that would be needed in the expected near term absence of a restoration flow.

The ongoing drought, lack of stored water in Elephant Butte and Caballo Reservoirs, meager surface water allocations to EBID irrigators, and contentious political environment related to the Texas v. NM litigation in the U.S. Supreme Court combine to make a restoration flow a distant prospect at present. As a result, RGEWTP water budgets are designed around supplemental irrigation of riparian vegetation in the near term pending increased water availability. That said, if a restoration flow also served to optimize water deliveries for agricultural users by increasing efficiency, transporting sediment, scouring vegetation from channel islands, and maintaining channel form and could be captured and reregulated for municipal, agricultural or environmental benefit in Texas (and perhaps Mexico), further investigation and evaluation is warranted. In any event, from a planning perspective, the water needs for a restoration flow merit attention.

Water used in a restoration flow would most efficiently be obtained through annual allotment leases rather than permanent acquisition of water rights. The 9,500 acre-feet needed for the release corresponds to the full three-foot water allotment from approximately 3,200 acres of water righted land. Such a release should be planned for a year in which a full allotment of water is planned – this both reduces the number of acres of water rights that must be leased (containing costs) and allows the restoration flow to coincide with peak irrigation deliveries to Texas and Mexico, maximizing impact. In addition to minimizing the cost of the water acquisition, relative water abundance would minimize the controversy surrounding an intentional channel release absent the optimization benefits suggested above. Assuming a lease cost of \$100 per acre, the cost of acquiring water for a periodic spring peak release would be roughly \$320,000, not including transaction costs. If a release were scheduled every three years, total cost would approach \$1 million per decade.

Legal barriers or impediments to a restoration flow require further identification and evaluation. Characterization of a Rio Grande Project restoration flow as a non-agricultural use must comply with the Sale of Water for Miscellaneous Purposes Act of 1920. Restrictions on use of EBID Rio Grande Project water outside the state of New Mexico is another potential limitation. Relatively little water is consumptively used in a restoration flow. As a result, the bulk of water comprising a restoration flow (close to 9,500 acre-feet) is likely to cross the New Mexico-Texas state line above El Paso. Public waters of New Mexico that are used outside the state require a permit from the Office of the State Engineer. The application for a permit is subject to scrutiny under six criteria (N.M. Stat. Ann. § 72-12 B-1). It warrants note that the New Mexico Interstate Stream Commission could be an important partner in implementation of a restoration flow. A Special Water Users' Association (SWUA) under New Mexico state law can lease an annual allotment of Rio Grande Project water outside the boundaries of EBID for the purpose of meeting interstate compact deliveries to Texas (N.M. Stat. Ann §73-10-48F(2)). The New Mexico Interstate Stream Commission may establish a SWUA with the approval of EBID (*Id.* at C).

Depending on the benefits to Rio Grande Project water users, the USIBWC could resolve these legal barriers. If resolution is forthcoming, NFWF and Contractors recommend working with large EBID water right holders such as the City of Las Cruces or New Mexico State University to efficiently acquire large blocks of annual water leases. Alternatively, the USIBWC could work with large EPCWID#1 water right holders such as the El Paso Water Utilities or the EPCWID#1 Board to efficiently acquire large blocks of annual water leases. This latter option may have greater chance of success if EPCWID#1 is carrying over an unused allocation of Rio Grande Project water for use in subsequent years and reregulating storage capacity is available in El Paso County downstream of the New Mexico-Texas state line.

4.6 Water Transactions to Date

To avoid confusion and provide a comprehensive picture of overall program scale, the updated water rights acquisition target and cost budget has not been adjusted to take into account transactions completed to date. RGEWTP has so far purchased 5.61 acres of water rights through two transactions. Figure 3 below details the cost of those purchases.

Figure 4: RGEWTP water right acquisitions to date

Transaction	Acres	Price per Acre	Total Cost
RGEWTP Transaction No. 2	4.00	\$ 1,952	\$ 7,808.00
RGEWTP Transaction No. 5	1.61	\$ 1,746	\$ 2,811.06
Total/Average:	5.61	\$ 1,893	\$ 10,619.06
Budgeted Cost:		\$ 2,500.00	\$ 14,025.00
Variance/Savings:		\$ 607.12	\$ 3,405.94

As the figure illustrates, RGEWTP Transaction No. 2 and No. 5 were negotiated at prices below the \$2,500 estimate included in the updated program budget. As a result, the program is \$3,400 ahead of the revised budget for these initial modest transactions. While the 5.61 acres purchased and \$10,619 spent are not material to the overall budget at this point, they do show that deals can be completed at prices below those forecast. It is not known whether RGEWTP will be able to acquire rights sufficient to meet its acquisition targets at comparable prices.

4.7 RGEWTP Water Acquisition Costs in Context

This section provides context around the RGEWTP’s estimated cost budget of \$1.2 - \$1.7 million for water rights acquisition. Representative prices in other regions are briefly cited, and the importance of transaction costs is highlighted.

4.7.1 Regional Differences

The cost of acquiring water rights for RGEWTP is estimated at between \$1.2 and \$1.7 million based on a cost estimate of \$2,500 per acre for surface water rights and \$5,000 per acre for combined surface and groundwater rights. While this is a significant program cost, two points bear emphasis: First, the cost is not out of alignment with costs seen by similar programs in other regions. Second, because water rights cannot generally be transferred out of their immediate geography, the existence of lower cost markets in other areas is not relevant to RGEWTP implementation (and is certainly not evidence that RGEWTP should be able to acquire water at lower prices).

Figure 5 below presents the cost of water rights in the Lower Rio Grande in New Mexico in regional context, highlighting that while prices for EBID surface-only rights are greater than those in the Colorado River Delta in Mexico, they are low relative to costs in the Middle Rio Grande of New Mexico.

Figure 5: Water Right Prices in Selected Regions

Market	Water Right Type	Cost		
		Per Acre (permanent water right acquisition)	Per Acre-Foot (permanent water right acquisition)	Per Acre-Foot (annual allotment lease)
New Mexico Lower Rio Grande (RGEWTP)	EBID Surface Water	\$ 2,500	\$ 833	\$ 100
New Mexico Middle Rio Grande	Pre-1907 Surface Water	\$ 26,250	\$ 12,500	\$ 100
Colorado River Delta, Mexico	Colorado River Irrigation Water	\$ 1,500	\$ 463	\$ 67

Myriad factors drive the variation in prices for water rights. Economic determinants of value include how the water is used, what alternative uses exist, and how supply balances demand. Importantly, trade in water rights is highly regulation driven. Water law determines where water can and cannot be sold, and also can include local regulatory requirements that may impact demand or constrain supply. For example, requirements that municipalities acquire water rights to offset groundwater pumping drives demand, and high prices, for Pre-1907 Surface Water in the Middle Rio Grande. Regulation similarly prohibits the upstream sale of EBID water rights into the high-priced Middle Rio Grande Market, and therefore locks in an ostensibly untenable price discrepancy. Similarly, water rights in the Colorado River Delta are low cost, but cannot be purchased for use in the United States.

4.7.2 Transaction Costs

The RGEWTP water right cost budget includes the cost of purchasing and leasing water rights and of annual EBID assessments, but does not account for the costs of identifying sellers, negotiating transaction terms, conducting due diligence, securing necessary transfer approvals, and closing transactions. These costs in the initial transactions were very high and may even exceed the capital cost of the purchases themselves. This is a key barrier to the success at scale of any water acquisition program. Finding ways to contain costs and improve the efficiency of purchases is a key concern moving forward. This issue is referenced here to emphasize its importance and highlight the need to include transaction cost estimates when building a RGEWTP program budget based on the water right acquisition cost budget.

5. Water Transactions Process Checklist

Through implementation of pilot purchases and leases of surface water rights, NFWF and Contractors assisted the USIBWC in identifying statutory and regulatory requirements and best management practices for acquisition of real property interests. Using a project management technique called a stage-gate model or creeping commitment, NFWF and Contractors organized these requirements and practices chronologically into a seven step or staged process for executing a water right transaction. Activities in the seven stage transaction process build on each other, with transaction development and due diligence activities phased to avoid unnecessary costs and efforts. The seven stages are:

1. Pre-Transaction Background and Foundational Work
2. Initial Opportunity Scoping
3. Purchase Offer Development
4. Purchase and Sale Agreement Development
5. Contingency Period
6. Closing
7. Post-Closing

Each of the seven stages is separated by a decision point which will allow the USIBWC the opportunity to decide whether to proceed or terminate the acquisition. The decision is influenced by availability of funding, risk or other consideration.

Stages typically involve multiple activities, each of which is denoted with a specific number and letter (e.g. activities 1.a. – 1.e. comprise phase 1). Much of the work in stages 1 and 2 is already complete and will not need to be duplicated in future transactions. For each activity, the Transaction Process Checklist, see document FFR-31 and supporting documents, provides three fields of additional information:

- Description – A basic description of the activity
- Documents – A list of documents related to the activity (see Section 5.8 below for more information)
- Notes – Notes and additional information on the activity as needed

5.1 Stage 1: Pre-transaction Background and Foundational Work

Stage 1, pre-transaction background and foundational work, consists of preliminary activities that will ensure that the USIBWC is acting within its statutory and contractual authority and has a plan for what to do with the water rights once acquired. The USIBWC has authority to acquire real property interests, including water rights, pursuant to its authority to construct, operate and maintain the RGCP (Act of June 4, 1936; International Boundary Commission, 1924 at §§ 277b(d), 277d-1).

Prior to exercising its authority, the USIBWC needs to review the RGEWTP water budget to determine there is a need for water rights, what the restoration objective is and which site the water rights will be transferred to. The restoration objective is likely to influence the type or

source of water, quantity, transferability, and other considerations important to the transaction process.

A programmatic appraisal is also included in Stage 1 as a foundational element of the program that will enable more efficient acquisition of water rights through multiple transactions. A programmatic appraisal is a generalized appraisal for a broad class of water rights which avoids the need to later execute individual appraisals for each transaction.¹ The programmatic appraisal is used to establish the fair market value (“just compensation”) of the generic or non-specific water right that the federal entity is interested in buying (Uniform Act, 1970; Basic Acquisition Policies, 2014). The USIBWC must be able to establish the fair market value of the property prior to initiation of any negotiations. (*Id.* at pt. 24.102(c)).

Next, the USIBWC needs to issue the appropriate warrant authority and level (maximum dollar signature authority) to an employee of the agency referred to as the Site Acquisition Contracting Officer (“CO”). The warrant authority authorizes the CO to enter into or terminate a contract such as the purchase and sale agreement. The USIBWC will determine if the warrant authority is exercised by staff within the Acquisition Division or the Boundary and Realty Office.

Finally, the USIBWC must determine whether agency funding levels are sufficient to acquire the volume of water rights it is interested in. Because transactions may span fiscal years, the USIBWC may need to take into consideration both current fiscal year funding levels, budget requests and forecasts (*See also* Antideficiency Act, 1982).

In summary, during Stage 1, USIBWC will determine:

- What quantity, and type/source of water rights they want to purchase;
- What the estimated fair market value of those water rights will be and likely total purchase price;
- Whether the USIBWC staff has the appropriate warrant authority; and
- How much funding the USIBWC has to purchase water rights.

Armed with this information, the USIBWC is ready to decide whether to proceed to Stage 2 of the transaction process and identify willing sellers.

5.2 Stage 2: Initial Opportunity Scoping

When the USIBWC decides it is ready to acquire water rights, it begins Stage 2 of the transaction process. Stage 2, Initial Opportunity Scoping, consists of activities that help the USIBWC identify specific water rights that are for sale and meet the USIBWC needs. An initial framing of these potential transactions allows the USIBWC to decide whether to pursue a given lead.

The first step is to identify willing sellers of water rights. In some cases this is straightforward – water rights may be advertised for sale or sellers may contact the USIBWC directly. In others such as annual leases, established markets exist obviating any need to search for sellers.

¹ The latter would be inefficient/duplicative given that all EBID surface-only water rights are effectively interchangeable. For purchases of other classes of water right, an individual appraisal may be required in Stage 4 (and is sequenced after initial due diligence to defer costs of the appraisal until there is a strong possibility of a transaction).

However, there are other circumstances where the USIBWC may want or need to conduct a more deliberate process, for example to i) seek a specific type or class of water right, ii) test the market to obtain the best sales price, or iii) safeguard equity of opportunity for different parties to sell rights to the agency.

If the USIBWC is actively soliciting willing sellers, the agency may employ standard marketing channels to convey its interest in buying water rights. There are, however, certain transaction mechanisms that serve both to identify potential sellers and specify certain transaction terms. Chief among these are auctions and posted offers, which can be very effective in both identifying willing sellers and also securing fair market pricing for any deals. These approaches are summarized in Section 6 below and described in greater detail in document FFR-26.

The USIBWC's choice of approach to identifying sellers will be informed by the restoration objective, site condition, the volume of water rights desired, and availability of funding. See Section 9 below for recommendations on how to accelerate transaction development while containing transaction costs.

After identification of willing sellers, the USIBWC or its agents will compile the results into an "offer slate" that provides a systematic presentation of information about the water rights for sale. The offer slate allows the USIBWC to compare relevant characteristics including type/source, quantity, priority date, location, purpose of use, or sale price in the event that there are more 'leads' than the agency has resources to pursue. Interested sellers may contact the USIBWC directly which communications, whether letters or verbal inquiries, serve the same purpose as an offer slate. If the water rights meet the needs of the restoration program and fall within an acceptable price range, the USIBWC will have to decide whether to proceed to Stage 3 of the transaction process and make an offer to buy the water rights. A decision to proceed to Stage 3 implies a preliminary commitment of funding by the USIBWC to buy the water rights.

5.3 Stage 3: Purchase Offer Development

When the USIBWC decides it is ready to make an offer, it begins Stage 3 of the transaction process. Stage 3, Purchase Offer Development, consists of activities that support the USIBWC's development of a written purchase offer letter to the seller to purchase the water rights.

Before the USIBWC makes an offer (and sends a formal purchase offer letter), the agency needs to confirm the seller's representation of the material facts or elements of the water rights through preliminary due diligence with respect to the state's water right records, irrigation district account information, and ownership of the lands to which the water rights are appurtenant..

The USIBWC first needs to validate the water rights status with the New Mexico Office of the State Engineer ("OSE") and EBID. The validity, nature, and extent of water rights located within the RGCP are subject to judicial confirmation in the ongoing Lower Rio Grande Adjudication. The current phase of the adjudication process is called the subfile phase where the state and claimants attempt to reach agreement between themselves regarding the elements of water right. The agreement is subject to review and approval by the state's Third Judicial District Court of Doña Ana County and if approved, a stipulated subfile order is entered into the record. EBID also maintains records regarding Rio Grande Project surface water rights including tax statements and EBID parcel information report and notes. The USIBWC may obtain copies of the adjudication and other relevant water rights records from OSE and EBID by securing a signed release from the seller. The USIBWC should review the records to confirm the accuracy of

seller's representations including the priority date, source of water, point of diversion, and place of use. Additional information to be gleaned from agency records include proof of payment of the irrigation assessment and fees, conformance of EBID records of place of use with the OSE hydrographic survey map, and status of the water right in the Lower Rio Grande adjudication. The signed release forms are informal indicia of seller's intent to sell.

Because the USIBWC's written offer to purchase is not a binding legal agreement to purchase the water rights but only an opening to negotiations, an offer may be made even if the status of the seller's water rights in the Lower Rio Grande adjudication is not final. Securing a final subfile order can be a contingency in the purchase and sale agreement as demonstrated in the pilot transactions to date.

The USIBWC also needs to confirm the seller is the owner of record of the land and the water rights appurtenant to the land. To confirm ownership of a parcel of land, the USIBWC can obtain a preliminary abstract of title from a qualified and authorized title company (Title Standards, 2001). The appropriate period of title search is determined by the value of the real property. (*Id.* at ch. 3.b.) Purchases valued at less than \$15,000 require a title search period of 25 years. (*Id.* at ch. 3.b.4.) The title abstract should also be reviewed to determine whether the water rights are encumbered and, if so, to resolve any court judgments, liens or other claims as a condition of sale after the purchase and sale agreement is signed.

Corporate owners of real property will be required to provide additional documentation to ensure the Corporation and officers have authority to transact business in the state, and convey real property. Documents required include a certificate of incorporation and good standing from the Secretary of the State, a list of current corporate officers, copies of the articles of incorporation and by-laws, and a corporate resolution authorizing conveyance of the real property.

The purchase offer letter includes an estimate of the fair market value ("FMV") of the water rights being offered for sale, and as such the USIBWC must develop an FMV estimate to include in the letter. Further, the implementing regulations of the Uniform Act provide that the USIBWC must establish the fair market value of the property prior to initiation of negotiations (in the next stage of the transaction process) (Basic Acquisition Policies, 2014 at pt. 24.102(d)). The fair market value can be ascertained through an individual or programmatic Yellow Book appraisal, or through a waiver valuation. See Section 4 above for additional valuation information. If available, a formal value estimate through appraisal or waiver valuation can be used to supply the purchase offer letter's FMV estimate. However, the USIBWC also has the option of using a less formal source for its initial estimate for the purchase offer letter, noting however that an appraisal or waiver valuation will need to be completed prior to formal negotiation of a purchase and sale agreement, the actual contract.

The USIBWC has both a Yellow Book programmatic appraisal effective September 18, 2014 and an updated waiver valuation which can serve as the basis for estimating the fair market value of either surface-only water rights or combined surface and groundwater rights. Both documents estimate the fair market value of surface-only water right at \$2,500 per water-righted acre and the appraisal values a combined surface and groundwater right at \$5,000 per water-righted acre.

Though point estimates of value are provided, actual market data suggests that a range of value may be appropriate.²

If the ownership and material facts of the water right are confirmed and the USIBWC can establish the fair market value of the water right, it is ready to draft a purchase offer letter to the seller. The contents of the purchase offer letter are governed by the Uniform Act. Federal regulations require the purchase offer letter to include the fair market value of the water rights, the basis for the offer and a description and location of the real property to be acquired (*Id.* at pt 24.102(b) and (e)). Because the RGEWTP program only acquires water rights from willing sellers, federal regulations also require the USIBWC to inform sellers in writing that the agency will not acquire water rights if negotiations fail to result in an amicable agreement (*Id.* at pt. 24.101(a)(2)).

The USIBWC purchase offer letter may also include additional terms of the offer such as administrative approval of the suspension and transfer of water rights or change in place of use, and satisfactory confirmation of title free and clear of any liens and encumbrances. If after receipt of the purchase offer, the seller contacts the USIBWC to discuss the offer further, the USIBWC is ready to proceed to Stage 4 of the transaction process and develop a purchase and sale agreement with the seller.

5.4 Stage 4: Purchase and Sale Agreement Development

Stage 4 is focused on developing the formal contract for purchase of water rights, known as a purchase and sale agreement (“PSA”). The USIBWC CO or other employee with delegated authority from the USIBWC Commissioner (“Commissioner”) initiates development of a PSA through one or more meetings with the seller. These meetings can be divided between informal discussions and formal negotiation. The purpose of the initial informal discussions is to confirm the seller’s interest in proceeding and identify and/or discuss issues pertaining to the water rights or other terms of sale.

Between informal discussions and formal negotiations, the USIBWC will need to consider any issues identified for negotiation and decide on its strategy. In trial transactions, negotiation preparation included development of technical negotiation notes to assist the agency in reaching agreement on terms like the purchase price, contingency clauses, earnest money and closing date. Internal strategic coordination prior to negotiation is important, notably because the agency CO, or other employee with delegated authority from the Commissioner, who holds formal authority to bind the USIBWC and sign a PSA, may lack knowledge of program strategy or material water right details.

Formal negotiation is then undertaken between the seller and a USIBWC staff member who holds authority to negotiate, such as the CO or other employee with delegated authority from the Commissioner. While other program and agency personnel will support the CO, or other employee with delegated authority from the Commissioner, the CO, or employee with delegated authority from the Commissioner, must be present and holds formal authority to negotiate.

² The waiver valuation provides a value range of \$1,500 to \$2,500 for EBID surface water rights. The programmatic appraisal also suggests that a range of approximately \$1,700 to \$3,000 per acre is the best representation of the value of EBID surface water-only rights.

Depending on the complexity of the deal, negotiation may require a single or multiple meetings to come to agreement on price and other terms. The basic terms which parties must reach agreement on include the description of the property and appurtenant water rights, the purchase price, clear title, grounds for termination, seller cooperation in administrative proceedings to transfer the place of use of the water rights, and the closing date. Importantly, a valid appraisal or waiver valuation is required prior to commencement of formal negotiations; if an appraisal has yet to be conducted, it must be completed at this stage.

In negotiating a PSA, the USIBWC has flexibility to deviate from paying the estimate of fair market value in the purchase offer letter and/or formal appraisal (International Boundary Commission, 1924 at § 277d-19(a)). Both the programmatic appraisal and waiver valuation recognize that water rights are selling across a broader range than the price point selected as the fair market value. A specific water right may warrant paying within the range, or even more than the upward bound of the range depending on the circumstances. By statute, the federal government may pay more than the fair market value offered “when reasonable efforts to negotiate an agreement at that amount have failed and an authorized Agency official approves such administrative settlement as being reasonable, prudent, and in the public interest. When federal funds pay for or participate in acquisition costs, a written justification shall be prepared, which states what available information, including trial risks, supports such a settlement.” (Basic Acquisition Policies, 2014 at pt. 24.102(i); see also (International Boundary Commission, 1924 at § 277d-19(a) (The total of such reimbursement shall in no event exceed 25 per centum of its fair value). The Uniform Act is geared toward condemnations, but applies to voluntary acquisitions as well. Written justification can include the ecological value of a particular asset, allowing the USIBWC to use its discretion in negotiating the purchase of water rights.

After agreement is negotiated on the principle terms of sale, the USIBWC will prepare a written draft purchase and sale agreement for consideration by the seller and his/her legal counsel. Additional negotiations on the finer points of the agreement may occur at this time.

Once agreement is reached on the purchase price and closing fees, the USIBWC should undertake the necessary internal steps to requisition and obligate funding necessary to pay the seller for the water rights and close the transaction. The internal USIBWC process for requisition and obligation of funds was utilized in RGEWTP Transaction No. 1. However, the remaining pilot transactions did not use the internal the USIBWC process because the RGEWTP contractor provided the funds through their contract with NFWF.

The CO or other employee with delegated authority from the Commissioner signs the final purchase and sale agreement on behalf of the USIBWC. Once both parties sign the purchase and sale agreement, the USIBWC will notify the closing agent and proceed to Stage 5 of the transaction process. Under New Mexico state law, a New Mexico title company is precluded from providing closing services unless the USIBWC is purchasing both the land and appurtenant water rights. In the pilot transactions to date which were limited to acquisition of water rights only, the USIBWC relied on the services of a New Mexico licensed real estate attorney for closing.

5.5 Stage 5: Contingency Period

Federal agencies are barred from acquiring real property unless there is satisfactory evidence that the title is sufficient for the purpose for which the real property is being acquired (Approval of Sufficiency of Title, 2002). During Stage 5 of the transaction process, the seller, closing agent

and the USIBWC coordinate to satisfy any contingency clauses in the purchase and sale agreement to ensure sufficiency of title.

The first requirement for sufficiency of title is proof that the water rights are vested with the seller. To prove this, the USIBWC must secure a certified abstract of title on the property from a licensed title company for the requisite period of search. The period of search is a function of the value of the water right with higher valued properties warranting a longer period of search (Title Standards, 2001 at ch. 3.b). The abstract must contain an entry of a recorded instrument which warrants current ownership of the land in the seller's name. If the title abstract reflects the property has or had a property mortgage or tax lien, title to the appurtenant water rights may be encumbered. In this case, the USIBWC must secure a recorded release, waiver or elimination of any existing encumbrance or lien unless the statute of limitations has run. Property mortgages are a common form of lien and often apply to appurtenances like water rights; in both of the trial transactions a release of mortgage lien was needed. Further evidence of ownership is supplied in the form of a signed and executed stipulated subfile order between the seller (defendant) and the state in the Lower Rio Grande adjudication.

A second requirement for sufficiency of title is proof of the extent, nature and validity of the water right. In the absence of a final decree in the Lower Rio Grande stream system adjudication, the best available evidence of the extent and nature of a water right is a stipulated subfile order entered by the Third Judicial District Court of Doña Ana County ("District Court"). A signed and executed stipulated subfile order constitutes a final adjudication of the defendant's (seller's) water rights as between the State and the defendant. The stipulated subfile order provides acceptable evidence of the priority date, source or nature of water, the purpose of use, the point of diversion, and the location of the water right. A signed and executed stipulated subfile order is also proof that the State recognizes that the water right is valid and has not been forfeited or abandoned. The USIBWC may need to work with OSE to secure a stipulated subfile order for the subject water rights if one has yet to be signed and executed; this was the case in both of the pilot transactions. Further evidence of validity can be supplied in the way of a legal opinion prepared by a New Mexico licensed water lawyer whose opinion is based on a review of the adjudication orders and other relevant documents.

The third requirement for sufficiency of title is proof that the water may be used for the purpose for which it is being acquired. Specifically, an administrative permit or resolution authorizing transfer of the water right to the USIBWC restoration site for the purpose of irrigation is required. If the water right is an EBID surface-only water right, the EBID Board of Directors is the appropriate quasi-municipal agency to approve transfer of the water right under its voluntary suspension and transfer policy. See document FFR-10 (EBID policy 2013-ENG 14). The EBID process is relatively straightforward and a Board resolution authorizing the transfer can be secured in about four to six weeks. See document FFR-29. If the water right is a primary or combined groundwater right, then the OSE is the appropriate state agency to approve an application for a change in the place of use, see document FFR-44; though it was not tested in trial transactions, the state transfer process is expected to require a significant period of time based on experience in other areas (*Id.* at p.2).

The USIBWC may impose additional requirements prior to a determination that title is sufficient. These may include (i) a written confirmation from the seller that there are no undisclosed claims, uses or interests that would impact title to the water rights and (ii) a search of federal court records in the division where the land is located to ensure there are no liens of judgment, or

pending cases, orders or decrees in federal court. The USIBWC may also impose certain actions immediately prior to closing such as a certified updated title search.

Upon review of all the evidence, the USIBWC or Department of Justice will prepare a Preliminary Opinion of Title. If the Preliminary Opinion of Title finds a title defect, seller may have an opportunity to cure the defect under the terms of the purchase and sale agreement. If the defect cannot be cured within an agreed upon time, the agreement can be terminated. If the Preliminary Opinion of Title determines that title is sufficient, the closing agent will finalize closing instructions and the USIBWC proceeds to Stage 6 of the transaction process.

5.6 Stage 6: Closing

At closing, the Closing Agent obtains signatures on the conveyance and other documents, obtains an updated certified title abstract, records the deed and disburses funds. The warranty deed must be notarized. After closing, the USIBWC proceeds to Stage 7, the final phase of the transaction process.

5.7 Stage 7: Post Closing

After closing, the Closing Agent files a Notice of Transfer of Interest with the District Court in the Lower Rio Grande Adjudication and forwards a copy of the notice to the Office of the State Engineer Litigation and Adjudication Program. The Closing Agent also prepares a settlement statement itemizing disbursement of funds, and costs of fees and services. The USIBWC receives the settlement statement along with the original recorded deed, an enrolled copy of the Notice of Transfer of Interest, the original release, the original Affidavit of Non-Foreign Status, and copies of any correspondence. The USIBWC completes its file notes on the transaction and informs the Department of Justice that any outstanding requirements needed to determine sufficiency of title have been met. The USIBWC then requests a Final Title Opinion from DOJ. In addition, the USIBWC must file an appearance as a defendant in the Lower Rio Grande adjudication.

5.8 Supporting Documents

To assist the USIBWC in developing transactions, Contractors reference over 30 supporting documents in the Transaction Process Checklist. These documents were developed throughout the RGEWTP and are assembled in a supporting documents “library.” For clarity, documents that are included in the “library” are referenced in the Transaction Process Checklist with colored and underlined text so that the user knows that they can refer to additional materials as needed. In addition, the supporting document file names follow consistent taxonomy. Supporting documents are sorted into three categories:

- [Transaction-Specific Document Templates](#) (written in red underlined text with ‘TEM-#’ file names) are provided for the key transaction agreement materials, notably including the Purchase Offer Letter and Purchase and Sale Agreement (which is the contract for the transaction). In most cases, a water transaction requires documents based on these templates.
- [Program Support Documents](#) (written in blue underlined text with PS-# file names) are materials that enable the water transactions to proceed but are not specific to an individual transaction. For example, the Programmatic Appraisal that provides the fair

market value estimated needed for federal acquisition of a water right is included as a support document. These documents pertain to more than a single transaction.

- Examples (written in green underlined text with EX-# file names) are referenced throughout to ensure the user has access to the breadth of other materials that may play a role in developing a transaction. The example materials may help USIBWC in resolving contingencies or other issues as it completes additional transactions.
- Legal References (written in orange underlined text) are also included. A complete list of legal references is also found in section 13.2.6 of this report.

Due to the number of supporting documents referenced, this report includes a separate list cataloging these materials by type, file name, and location (see document FFR-31 and section 13.3 of this report).

6. Transaction Approaches Analysis

6.1 Transaction Approaches Overview

This section summarizes transaction approaches potentially available to the RGEWTP in its efforts to acquire water rights in support of conservation objectives. Transaction approaches refer to the methods used in the market to identify willing sellers of water rights and develop transaction terms. Once sellers are identified and basic transaction terms are developed, a transaction is executed through the steps described in the Transactions Process Checklist in Section 5 above. The five transaction approaches identified are: 1) Individual Bilateral Transactions, 2) Auctions, 3) Posted-Offer, 4) Annual Water Lease, and 5) Term-limited Transfers, each summarized below. RGEWTP experience with each approach is described in greater detail in subsequent sections of this report.

Individual Bilateral Transactions (also called “one-on-one negotiations”) are perhaps the most flexible and straightforward option for developing water right sales. Individual transaction approaches are similar to land sales and generally acceptable to potential sellers. However, identifying sellers, coming to terms, and closing transactions can be a time-consuming and inefficient process under an individual transaction approach. In markets where acquisition costs are not well known, price negotiation can be tedious, and the risk of establishing a precedent out of line with market norms is material. This was a concern during RGETWP development of its initial transactions, but should be less of a concern now that the programmatic appraisal is complete. Finally, the transaction costs of this approach can be significant or even prohibitive, particularly for small deals involving few acres of water rights. Additional information on individual bilateral transactions is presented in document FFR-29 and supporting exhibits. Due to the number of supporting exhibits referenced, this report includes a separate list cataloging these materials by file name and description (see section 13.4.3 of this report).

Auctions and *Posted-Offer* programs have the potential to rapidly develop transactions with multiple sellers simultaneously, making them an efficient approach to bulk acquisition of water rights. Despite this potential, several implementation questions need to be resolved in order to understand their applicability in the RGEWTP – chief among them is whether the USIBWC purchasing protocols can accommodate approaches that involve pre-commitment to certain transaction terms, such as the offer price in a posted offer. These approaches also rely on public outreach for their market reach; in some circumstances, a more low profile strategy may be preferable, particularly for initial transactions. Contractors recommended a combined posted-offer/reverse auction approach in Fall 2013. This approach, which the USIBWC declined to implement as a trial transaction, is described in greater detail in document FFR-26.

Pursuing *Annual Water Leases* is another potential acquisition strategy, regardless of the specific approach to developing these temporary transactions. For acreage with base water rights, a lease-based approach can be more cost-effective than permanent transactions for the provision of additional water for supplemental irrigation. RGEWTP successfully leased water for supplemental irrigation in 2014; a full evaluation of this transaction is presented in document FFR-28 and supporting exhibits. This report includes a separate list cataloging these exhibits by file name and description (see section 13.4.2 of this report).

Research also identified the possibility of using *Term-limited Transfers* of water rights as a low cost source of water for restoration sites. Under this approach, the purchaser contracts with the seller for transfer of rights from its current location to a new place of use, with the understanding that the right will be transferred back at the end of the term. In this manner a multi-year term-limited transaction is effected. Given the significant quantities of agricultural water rights held by municipalities for eventual use by surface water treatment plants, supply dynamics point to these term-limited transfers as a potential low cost supply option for the RGWTP. Note that while the municipality and/or mutual domestic association currently hold title to large blocks of EBID surface-only water rights, the water rights are appurtenant to water righted lands within the EBID service boundary. The purpose of use of these water rights remains agricultural until such time as a surface water plant is constructed. Contractors explored this approach with the City of Las Cruces in Fall of 2014. A description of the work undertaken to date on this approach as well as potential legal considerations is presented in document FFR-30 and supporting exhibits. This report includes a separate list cataloging these exhibits by file name and description (see section 13.4.4 of this report).

All of these transaction approaches can play an important role in RGEWTP acquisitions. The choice of best approach will be situation specific depending on the quantity of water needed, number of sellers, planned water use, and institutional constraints. Specifically, in light of the significant transaction costs identified through the RGEWTP trial transaction, individual bilateral transactions appear more appropriate for larger transactions, leveraging the efficiency of auctions or posted-offer approaches to when acquiring water rights off small tracts. A matrix presented below summarizes each approach.

Figure 6a: Summary of Transaction Approaches 1

Transaction Approaches	Description		Recommendation
	General	Detail and Findings	
1 Individual Bilateral Transactions	Negotiation of water (or land) purchases independently with sellers.	A familiar transaction approach around which the transaction process checklist is developed. Can work in all situations with little controversy, and are flexible because the transaction terms are crafted on a case by case basis. The only viable approach for purchase of unique properties or rights, but can also be applied to district rights (as with the RGEWTP trial transactions). A risk is that individual transactions can be inefficient, with major investments upfront in working with a particular seller. For this reason, the approach is recommended this for larger purchases where higher transaction and deal development costs are acceptable. See document FFR-29.	Recommended, particularly for large parcels. Not recommended for small tracts due to transaction cost.
2 Auctions	Bid-based efforts to procure water for the best price. Participants bid the price at which they are willing to sell their water right, with the lowest bidder winning.	A transparent and efficient mechanism with which to identify willing water right sellers. USIBWC has expressed some concern about fairness of outcomes if different sellers receive different prices for their water. Alternative auction designs can avoid this concern. The agency would also need to be able to pre-commit to a purchase in order to conduct an auction- this may be a policy hurdle. Auctions require promotion/advertising and explanation to attract participants and therefore have a high profile. See document FFR-26.	Recommended
3 Posted-Offer Programs	A standard offer to purchase water rights at a fixed price that is widely disseminated to potential sellers	Under this approach, the purchaser sets (or posts) a price at which they are willing to purchase water rights and sellers respond if interested. With the completion of the programmatic appraisal, RGEWTP is has a justifiable price at which to proceed with a posted offer solicitation for EBID surface water rights. Posted offers are a transparent and equitable acquisition mechanism that avoids the need for individual negotiation for water rights. The approach can also be combined with auction approaches. For more information see document FFR-26.	Highly Recommended

Figure 6b: Summary of Transaction Approaches 2

Transaction Approaches	Description		
	General	Detail and Findings	Recommendation
4 Annual Water Leases	Lease of an allotment of water from another water right	A straightforward approach to acquiring additional water supplies for water righted acres, but it is not viable for acquisition of initial or "base" water rights for a parcel. Leases can be pursued through the EBID broker water process as well as independently (or from large sellers of leases like the City of Las Cruces). Eventually RGEWTP could also be a seller of leases depending on the water conditions. Program purchases of large amounts of leased water from the City of Las Cruces or others may be unpopular due to competition with farmers, though in recent years small allotments have meant that there was little lease demand from irrigators. See document FFR-28.	Recommended for supplemental irrigation. N/A as an approach to acquiring base rights.
5 Term-Limited Transfer In-Lieu of Purchase	"Rent" water rights for temporary transfer to restoration sites as a base right	A "rental" of the water rights (as opposed to of the annual water allotment) to effect a term-limited transfer of rights on a temporary basis to a restoration site. Under this approach, the program would pay the water right holder for the use of their water for a multi-year period. This financial transaction would be a rental (or lease, as commonly understood, but not as used in the EBID allotment lease context). Part of the rental would be an agreement for transfer of the water right to the restoration site for the term of the rental, and then back to the original location at the end of the term. EBID would approve the transfers under its volitional suspension and transfer policy. From EBID's perspective, this is a series of two permanent transfers, one to the site, the other back. This could be a low cost source of water rights for restoration sites in the near term. See document FFR-31.	Exploration recommended

6.2 Targeting Specific Water Right Sellers

In addition to the choice of transaction approach to use in developing a water transaction, the USIBWC may also choose to target specific groups of water right holders who may be willing to sell their rights to the program. All EBID surface water rights are interchangeable in terms of their ability to support program restoration objectives, implying that there is no hydrological or legal need to pursue purchase from one seller as opposed to another. However, water right holders may differ in terms of their willingness to sell to the program, the price at which they are likely to sell, and the political controversy related to their selling rights. For example, holders of water rights on small "flat rate" parcels in urbanized areas are unlikely to be engaged in commercial farming and derive little value from their rights, particularly in times of drought when their water allocations are severely limited. These rightholders may be particularly willing to consider a sale to the program.

In other water transactions programs, such "submarkets" of water right holders have been targeted to (i) focus limited outreach capacity to areas where it is most likely to generate sales and (ii) avoid highly contentious water right purchases in instances where water transactions are politically controversial. There may also be marketing messages or transaction terms that are more likely to resonate with some water right holders than others. In this sense, micro-targeting specific sellers may be important.

The table below describes some potential micro-targeting approaches that RGEWTP might use to acquire EBID water rights from certain seller groups going forward. While some promising

strategies are identified, none are necessarily recommended in the near term. Rather, following the successful acquisition and transfer of water rights to restoration sites and the completion of the programmatic appraisal, the stage appears set for RGEWTP to pursue additional purchases from any willing sellers. That is, micro-targeting would narrow the scope of the market in a way that seems unnecessary and unlikely to confer benefits at this point. Nonetheless, some of the strategies may prove fruitful in the future.

Figure 7a: Micro-Targeting of Selected EBID Water Rights 1

Potential Sellers/Sources of Water Rights	Description	
	General	Detail and Findings
1 Reclassified Water Rights - Flat Rate Parcels [1]	Purchase of flat rate water rights being reclassified by the district after foreclosure for non-payment of assessments	EBID periodically obtains water rights for reclassification through foreclosure due to non-payment of assessments by constituents. Under district policy, EBID maintains a "reclassification list" of entities who are interested in acquiring these reclassified rights, allocating available water with priority to those who have been on the list longest. At the current rate of 50 water righted acres reclassified per year, it would take eight years to satisfy all of the parties currently on the list. Given IBWC's schedule for acquiring rights, joining the list is not likely to help the program acquire rights in the relevant timeframe.
2 Reclassified Water Rights - Farm Rate Parcels [2]	Purchase of farm rate water rights being reclassified by the district after foreclosure for non-payment of assessments	Policy regarding reclassification of farm tract water rights is under development. In the medium-term, it is likely that the district will place liens on farm tracts that are in arrears on assessment payments, though exact timing is uncertain. Once the lien is published, IBWC may wish to contact the rightholder to explore a water right sale. A bid process is prescribed for the sale of water rights if they revert to the district and the district chooses to sell the rights (the district retains discretion to use the rights for other purposes). The volume of water rights that would eventually be available for purchase through this process is unclear, but they could be a source of rights for the RGEWTP.
3 Water Rights at Risk of Reclassification - Flat Rate Parcels [1]	Purchase of water rights from flat rate constituents in arrears on their assessments prior to any reclassification process	This approach would work proactively to acquire rights from constituents who are in arrears on assessments in advance of a formal district process. Transactions would involve resolution of debts and sale of rights directly from right holder. RGEWTP attempted to acquire such rights in Summer 2013 but was unsuccessful - see document FFR-27 for an evaluation. A second effort to acquire these rights could be successful, however transaction cost are high when acquiring such small tracts.
4 Water Rights at Risk of Reclassification - Farm Rate Parcels [2]	Purchase of water rights from farm rate constituents in arrears on their assessments prior to any reclassification process	This approach would work proactively to acquire rights from constituents who are in arrears on assessments in advance of a formal district process. Transactions would involve resolution of debts and sale of rights directly from right holder. Because these are larger parcels of water rights, this could be a promising source of water for the program, however the timing in which such rights might become available is unknown.

Note:

[1] Parcels are the accounting unit of land used by EBID, and an account is kept for each parcel. Flat rate parcels are smaller than two acres in size. Flat rate parcels have less flexibility in requesting water deliveries and pay assessments that are more costly, on a per acre basis, than those for larger farm rate tracts. EBID also has more latitude to pursue involuntary reclassification of flat rate parcels when assessments are unpaid. Many flat rate parcels are in urbanized areas not generally involved in commercial agriculture. When flat rate water rights are transferred to other lands and assembled into tracts of two or more acres, they become subject to farm rate policies.

[2] EBID classifies tracts of water righted land two acres or larger as farm rate parcels. Unlike flat rate parcels, farm rate irrigators can schedule individual water deliveries. Farm rate irrigators also face a different assessment schedule, and are subject to different policies related to reclassification of rights in the event of delinquent assessments. Large scale agricultural producers generally have water rights in farm rate parcels.

Figure 7b: Micro-Targeting of Selected EBID Water Rights 2

Potential Sellers/Sources of Water Rights	Description	
	General	Detail and Findings
5 EBID Groundwater Purchase	Purchase a portion of the EBID LRG-1776 groundwater right	The district received a 9,500 acre-foot groundwater right with a 1973 priority date in the adjudication. EBID is in the process of determining what to do with the right as they develop a groundwater policy; there does not appear to be any firm direction yet. Sale of some portion of the right to the EWTP could be a possibility. However, in light of the Texas vs. New Mexico litigation, pursuit of this groundwater is not recommended at this time.
6 New Subdivisions, Specific Flat-Rate Laterals or Abandoned Laterals	Target acquisition from flat-rate laterals whose retirement would benefit EBID operations	Targeting specific laterals for acquisition could bring operational benefits for the district in addition to providing water rights for the program. EBID previously had policy designed to support acquisition of flat rate parcels (in lieu of farm-rate). For example, under the SWUA policy, the transfer process is streamlined for rights acquired from within the City of Las Cruces municipal water service territory through waiver of district board approval (approval is needed for transfer from other sources). The core of this approach is that the transaction program could reap goodwill by helping districts solve nettlesome delivery/operational problems.
7 Sympathetic Sellers	Market the program to water right holders with conservation sympathies	This approach is essentially a marketing strategy targeting those water right holders who are most sympathetic to its goals - presumably environmentalists. It is unclear how successful this would be, or whether such targeted marketing would differ from other efforts. The chief advantage of this strategy is that it could avoid political controversy related to water transactions. However, based on EWTP trial transactions, it does not appear that there is much controversy, calling the benefit of this approach into question.
8 Current Water Right Lessors	Target purchase of water rights currently offered for lease	Those currently offering their annual allotments for lease should be more willing to sell than those actively using their rights. The list of those leasing through the "broker water" pool is available from EBID.
9 City of Las Cruces/Dona Ana Mutual rights	"Rent" water for term-limited transfer to restoration sites from Las Cruces, Dona Ana, or others with rights not being used in the near term	Water rights held in anticipation of surface water treatment plant construction could be a low cost source of water in the near term. See document FFR-30.

7. Lessons Learned

As would be expected given the scale of work undertaken in assisting the USIBWC develop and implement the RGEWTP, NFWF and Contractors have gained important experience and learned several lessons about successful implementation of environmental water transactions in the RGCP. This section summarizes these lessons by topic area, and sets the stage for analysis of how USIBWC can most effectively proceed going forward (in Section 10) as well as program recommendations (in Section 11).

7.1 Transaction Development

7.1.1 Environmental Water Transactions work in the Lower Rio Grande.

Purchase of water rights from willing sellers is an effective way to cooperatively secure water to support the restoration of riparian habitat under the ROD. With enabling conditions in place, the market value of water rights established, and the transaction process tested and verified, acquiring surface water rights in the Lower Rio Grande in New Mexico can now be “scaled up” to accomplish the USIBWC’s restoration objectives.

7.1.2 Environmental Water Transactions are Unfamiliar

Most water right holders have little familiarity with the concept of environmental water transactions, water markets, or the USIBWC. As with other basins in the western US, there is an established culture of water use among irrigators, who as a group tend to be wary of any change in approach. Experience in the Lower Rio Grande and elsewhere suggests that significant program explanation, education, marketing, and outreach will be needed to cultivate the full pool of potential sellers to the program. This will likely also require significant groundwork to explain the market value of rights to water, which is often regarded as simply too valuable to sell.

7.1.3 Transaction Costs are High.

As in other basins where similar programs have been initiated, transaction costs beyond the actual cost of purchasing water rights from willing sellers are very high under current RGEWTP processes. This is a significant cost of the program both in terms of the time and money required to complete purchases. It warrants attention and adaptive management (e.g., greater reliance on broad-based solicitations for smaller tract rights) consistent with federal real property acquisition law and regulations. As the program matures, it is expected that transactions costs will diminish.

The transactions process checklist presented in Section 5 above presents the full complexity of the federal real property acquisition process, which is the major driver behind the cost of completing deals. Importantly, no single element of that process is in itself unreasonable, however costs are substantial in the aggregate. Equally notable is the difference in the process and cost of the USIBWC acquisitions relative to those of other market actors (including both individuals and other governments like the City of Las Cruces). As a result, the USIBWC must consider not only the financial, time, and staff costs of the current approach, but also how to expedite transactions as much as possible, consistent with federal real property acquisition law and regulations, as demand and competition for water rights increases. Recommendations to contain transaction costs are discussed in Section 6.1 above and document FFR-26.

7.1.4 Water Right Purchase is Needed

Purchasing water rights appears to be the only viable option for meeting program objectives over the long-term. NFWF and Contractors explored the possibility of using water leases to meet RGEWTP needs. This approach has proven effective when implemented by other similar programs around the West, particularly in situations where outright purchase was difficult or impossible. However, unlike in those areas, RGEWTP is currently acquiring water for out-of-stream agricultural use on riparian restoration sites (rather than for instream flow restoration). Because restoration sites as a rule do not currently have water rights, New Mexico state law and EBID policy do not authorize leasing of annual water allotments to these lands. As a result, the program will need to permanently transfer water rights to the restoration sites, which normally is only possible when the rights have been purchased. (See Section 6.1 above and FFR-30 for discussion of a possible alternative approach, a “term-limited” transfer). Once these base rights are in place, leases of the annual water allotment from other rights holders can be used to secure supplemental water supplies when needed.

7.2 Program Requirements

7.2.1 Significant Groundwork is Required

The work required to lay the groundwork for water transactions was extensive and required more effort than originally anticipated. When the RGEWTP was conceived, there was some recognition that several key aspects of implementation would need to be resolved prior to the actual purchase of water rights. Work to establish these “enabling conditions” – such as efforts to establish program accounting protocols for the ROD commitment to offset net depletions to the hydrologic system due to restoration, negotiating the district policy framework for use of water for environmental habitat restoration, and developing an understanding between USFWS and EBID regarding how the program’s habitat restoration work would interplay with ongoing endangered species recovery plans - ultimately was one of the program’s major successes, leaving the USIBWC well prepared to acquire additional EBID surface water rights without the start-up delays noted above.

Going forward, it is important to recognize that the work on enabling conditions is not entirely complete. Significant areas for future focus that will require additional policy work include the water righting of Texas restoration sites, securing permits to change the place and, possibly, purpose of use of groundwater rights, securing permits for new surface water diversions, construction of irrigation infrastructure for water delivery, and the development of a restoration flow. External water management drivers - whether litigation, drought or endangered species - will mean that ongoing efforts will be needed to create and sustain the program’s foundation through policy development and modification.

7.2.2 Ambiguity is Prevalent in Water Management

As in other river basins in the western US, the water management system in the Lower Rio Grande is replete with uncertainty, regulatory ambiguity, and other types of risk. For example, ongoing litigation with the State of Texas (see Section 8.3 below) means there could eventually be a change in status quo management of water in the Rio Grande Project; rights are not fully adjudicated (see Section 8.2 below) and claims may be ambiguous; there is only limited information on the existing water rights market; and hydrologic variability makes water

management and irrigation planning difficult for farmers and the RGEWTP alike. Despite this uncertainty, a private water market exists and is growing, some local public agencies have been able to develop successful approaches to acquire significant quantities of rights (e.g., the City of Las Cruces and El Paso Public Water Utilities), and the USIBWC successfully completed two purchases and two lease transactions for riparian restoration under the program.

A program to restore the Lower Rio Grande riverine and riparian ecosystem in New Mexico through water transactions, even a voluntary and market based program, is breaking new ground and not without detractors. But, transfer of water to these ecosystems is critical to meeting the objectives of the USIBWC's 2009 Record of Decision. Water, especially in the arid Chihuahuan Desert and an over-appropriated river like the Rio Grande, is central to habitat restoration. Indefinite postponement of environmental water transactions until litigation is settled, the drought ends, or market prices stabilize is unrealistic. Uncertainty in water supply and rights--whether physical or manmade-- will always be present to some degree in a resource that is central to life and economic activity.

The challenge will be to balance agency risk tolerance and processes with market and supply realities. To succeed, the USIBWC will need to develop strategies to accept and manage some risk, to react to current market conditions, and to use discretion when authorized by law.

7.2.3 Greater Integration of Restoration Priorities With the RGEWTP

RGEWTP would benefit from greater integration of restoration priorities, activities and real time biotic and abiotic conditions of restoration sites. The responsibilities for acquisition of water and restoration of riparian habitat have been implemented by different entities. USFWS has been largely responsible for undertaking restoration efforts at key sites. NFWF and Contractors have been largely responsible for acquiring the water rights needed to support those efforts.

Greater integration of water acquisition and restoration efforts will ensure that riparian vegetation on restoration sites, both newly restored and existing, is sustained. The drought, extensive groundwater pumping, and changes in the duration and timing of irrigation releases are taking a heavy toll on the density and survivorship of floodplain riparian vegetation. Greater integration including development of water delivery infrastructure, active management of new and existing habitat areas through artificial flooding regimes, and monitoring of native vegetative response and habitat quality will support the program's conservation outcomes. The successful irrigation of the Leasburg Extension Lateral WW8 restoration site in June 2014 is an example of the high level of integration needed among the entities to deliver environmental water to a heavily re-vegetated restoration site that is periodically disconnected from the local groundwater table. See document FFR-36.

Recent developments and ROD activities will enable better integration of the RGEWTP and restoration work. RGEWTP has demonstrated "proof of concept" and the USIBWC is now in a position to acquire water rights at scale. USFWS is actively restoring nine restoration sites, and the USIBWC contractors (MWH and subcontractor SWCA Environmental Consultants) are restoring two more. The USIBWC also has plans to restore at least 16 additional sites. Real time data on depth to groundwater is available providing critical information about the best management practices for revegetation and which sites require supplemental irrigation to sustain native vegetation, especially with declining groundwater tables in New Mexico. The vegetative

and wildlife response to surface irrigation of the Leasburg Extension Lateral WW8 Restoration site in 2014 clearly demonstrates the benefits of applying supplemental water over and above what streamside vegetation is able to access from tapping into the groundwater.

7.3 Contract Structure

7.3.1 Contractor Was Reliant on the USIBWC for Key Support and Communications in Program Implementation.

As NFWF and Contractors developed and implemented the RGEWTP, the level of USIBWC involvement was substantial. The interdisciplinary nature of RGEWTP necessitated regular and sustained communication between Contractors and key USIBWC personnel across multiple divisions, including environmental managers and natural resource specialists, agency realty officers, contracting officers, and legal counsel. When circumstances precluded regular or coordinated communications and USIBWC direction, program performance declined. Successful acquisition of water rights required frequent, coordinated commitment of time and resources across multiple agency divisions.

7.3.2 Team Flexibility Is Important in Implementing an Innovative Program.

RGEWTP program implementation required significant flexibility to identify, develop, and implement solutions to several unanticipated barriers to water transactions. Work on enabling conditions, including EBID board policy regarding irrigation of restoration sites, agreements with USFWS regarding endangered species critical habitat exclusions, depletion offset accounting rules, and other issues required significant and sustained efforts and were difficult to plan for. The program benefited from a contractor team with multidisciplinary expertise that was able to navigate, and ultimately address, key obstacles to program implementation. Further, the program benefited from a process that afforded Contractors the flexibility, latitude and resources to work through these unanticipated barriers.

7.3.3 Federal Experience

The USIBWC consulted with GSA and the Department of Justice during the development of the RGEWTP to ensure that the USIBWC was complying with the appropriate federal requirements for real property acquisitions. Efficient implementation of water transactions required knowledge and experience with federal real property acquisitions.

7.3.4 The Contract Structure Governing Project Implementation Caused Delays

NFWF and Contractors provided substantial environmental water transaction, legal and situational expertise in development and implementation of the RGEWTP. Because USIBWC lacks grant-making authority, however, NFWF and Contractor services were only available through multi-tiered agreements and contracts between multiple parties. Modifications in scope of work and budget required approval from all parties up and down the contracting chain, and contributed to several extended delays in project implementation. Fewer “links” in the contracting chain would have enhanced project performance.

8. Conditions and Current Issues

The concept of a RGEWTP was conceived during the early 2000s at the onset of the drought. As the drought continues and impacts to water supply and allocation intensify, RGEWTP may need to adapt to changing conditions. Below is a snapshot of physical conditions and current legal issues within the Rio Grande Project and Lower Rio Grande Basin that may impact future transactions and associated conservation outcomes in the RGEWTP program.

8.1 Physical Water Supply

A decade long drought has resulted in a significant reduction in Rio Grande Project storage and streamflow. The duration of the irrigation season is 33% shorter than the historic average with Rio Grande Project releases limited to June, July and August. The Rio Grande Project surface water allocation for irrigated lands is 20% or less of the water available under a full project supply with farmers receiving only a 4 or 6 inch annual allotment (relative to a 36" allotment in a full-supply year). The 2013 irrigation season was the shortest on record with releases occurring in June and July for a period of 6 weeks. In response to reduced surface water supplies, New Mexico producers have doubled or tripled their reliance on groundwater pumping and the groundwater table in the Rincon and Mesilla Valley is declining (Bureau of Reclamation, 2013 at p.46). Significant portions of the 105-mile Rio Grande Canalization Project are dry during the non-irrigation season, in part, because of the lack of groundwater discharge to the river channel.

The decline in surface flows and the groundwater table reduce the availability of water in the natural system to sustain riparian vegetation. The ability to offset that loss of water in the natural system through restoration flows that restore connectivity between the river channel and active floodplain or irrigation of restoration sites is more difficult now because of the changes to magnitude and duration of releases and project allocation to irrigators.

Unfortunately, climate change models are predicting that drier conditions in the Upper Rio Grande Basin are likely to continue and worsen in the future with reduced snowpack, earlier runoff, reduced streamflow and higher evaporative demands for crops and native vegetation (Bureau of Reclamation, 2011). Supplemental irrigation of restoration sites and implementation of a restoration flow could help mitigate the effects of drought and climate change on riparian vegetation.

8.2 Adjudication

The State of New Mexico filed the Lower Rio Grande adjudication in the Third Judicial District Court of Doña Ana County ("District Court") in 1986 to resolve all claims to water use in the Lower Rio Grande. *New Mexico v. EBID, et al.*, 96-CV-888 (1996). The Office of the State Engineer completed a hydrographic survey in 2000, a history of water use with abstract and maps including ownership, boundaries and total irrigated acreage. The hydrographic survey is used to identify and join claimants as parties to the adjudication.

The second and current phase of the adjudication process is called the subfile phase where the state and claimants attempt to reach agreement between themselves regarding the quantity, priority, place of use, purpose of use, and point of diversion of claimant's water right. The

agreement is subject to review and approval by the District court and if approved, a stipulated subfile order is entered into the record.

Stream system issues that affect the system as a whole or large group of claimants are also being addressed during the subfile phase. Examples include the consumptive and farm delivery requirements for crops (Final Judgment entered August 22, 2011: Stream System 101), and the amount of water and priority date(s) for the United States' Rio Grande Project (Non-jury trial commences August 31, 2015: Stream System 104).

The final phase, the *inter se* phase, has yet to commence and is the phase of adjudication where issues between water right owners are resolved and entered into a final decree or partial decrees. Expedited *inter se* proceedings to resolve the claims of those who predate the Rio Grande Project, like the Estate of Nathan Boyd, have been dismissed but are currently on appeal.

The USIBWC legal counsel has expressed concerns about acquiring water rights when the priority date for Project water is a matter of pending litigation. The State's position is that any stipulated subfile order will indicate a priority date of 1906 and not the superior priority date of "no later than 1903" as now claimed by the United States in light of other recent OSE decisions. The USIBWC has several options:

One, the USIBWC could acquire water rights solely on the basis of the information in the State's Offer of Judgment. Once a Final Order regarding the Rio Grande Project priority date is entered, the USIBWC and the State can modify the offer as necessary and obtain a Stipulated Subfile Order with the final adjudicated priority date;

Two, the USIBWC could continue to require sellers to accept the State's Offer of Judgment and secure a Court stipulated subfile order with a priority date of 1906. If and when the District Court enters a final order adjudicating an earlier Project priority date (or dates) as part of Stream System 104, that order would likely supersede the priorities previously adjudicated in any subfile orders; or

Three, the USIBWC could delay further acquisitions until the Rio Grande Project priority date is adjudicated.

While the lack of final adjudication results in some uncertainty and risk regarding the extent of water rights acquired, many critical elements of EBID surface-only water rights are known with certainty or unlikely to be challenged in the *inter se* phase³ including the source, purpose of use,

³ "Although the Water Rights at issue are theoretically subject to *inter se* challenge, the probability of such challenge is very low for two reasons. First, the Water Rights are within the Rio Grande Project and thus subsumed under the stipulated order adjudicating EBID's right to divert, store, and distribute water for the Project. This stipulated order is binding on the United States, the State of New Mexico, and EBID, who would defend the order and the Project's water rights in the event of a challenge. Second, it is highly unlikely that an *inter se* challenge would be brought against an individual claimant within the EBID, because the individual amount is so small and there is nothing to be gained by mounting such a challenge. The total amount adjudicated to EBID by the stipulated order would remain the same, and it can be applied to any lands within the district so long as the land is appropriately classified and the assessment is paid." B. Frederick, *Legal Memorandum, Final opinion regarding surface water rights subject to Purchase and Sale Agreement between , [RGEWTP Transaction No. 5], and Buyer, International Boundary and Water Commission*. August 22, 2014.

point of diversion, location and amount of acreage, and duty of water. Water acquisitions are inherently different from purchases of other real property, with a tendency to be less certain. Placing environmental water transactions on hold until Stream System 104 is adjudicated, ten months from now at the earliest, may impede compliance with the ROD and other obligations of the USIBWC under the ESA.

8.3 Other Litigation

There are two existing lawsuits in addition to the adjudication that may affect water rights and water availability within EBID. First, the New Mexico Attorney General is suing the United States to invalidate the 2008 Rio Grande Operating Agreement. *New Mexico v. United States, et al.*, D.N.M. 11-CV-691 (2011). The 50-year Operating Agreement sets forth procedures for water delivery and accounting between the two irrigation districts (EBID and EPCWID#1).

The two key changes in the Operating Agreement from historic operations are (i) a carryover provision which allows each district to retain their unused allocation for use in subsequent years, and (ii) a change in the annual allocation between the two irrigation districts to mitigate the impact of New Mexico groundwater pumping on water deliveries to Texas (Bureau of Reclamation, 2013). The Plaintiff in the litigation, the State of New Mexico, alleges that both provisions contribute to a reduction in New Mexico's surface water allocation, and groundwater recharge and that continued groundwater pumping by both states is depleting the Mesilla Valley aquifer (Bushnell, 2014).

The impact of this litigation on the USIBWC water acquisition program is unclear. A motion to dismiss the lawsuit has been filed but any action has been stayed pending the outcome of *Texas v. New Mexico*, the second lawsuit discussed further below. Two possible impacts, however, are worth mentioning.

One, if the Operating Agreement stands, then New Mexico's annual surface water allocation will be smaller in low-water years than under historic operations (Bureau of Reclamation, 2013 at p. 45). Here, the recommendation could be to stack EBID surface-only water rights, lease water and/or acquire primary or combined groundwater rights to ensure a reliable supply of water for irrigation of key restoration sites in low-water years.

Two, if the Operating Agreement is invalidated and New Mexico groundwater pumping is curtailed, then groundwater rights with a priority date junior to 1951 may be of less value. Under this alternative scenario, the recommendation could be to continue to acquire groundwater rights but only those with a senior priority date. The Reclamation is currently preparing a more detailed analysis of the impacts of the Operating Agreement through 2050 through an Environmental Impact Statement.

Due in large part to New Mexico's lawsuit to overturn the 2008 Operating Agreement, Texas filed an original action against the State of New Mexico and the State of Colorado in the United States Supreme Court for alleged violations of the Rio Grande Compact. *Texas v. New Mexico and Colorado*, No. CV No. 220141 (U.S. Jan. 8, 2013). Texas is alleging that groundwater pumping interferes with delivery of water to Texas and is claiming that all groundwater pumping

after the Rio Grande Compact of 1938 must be accounted for. The U.S. Supreme Court accepted jurisdiction and New Mexico has filed a motion to dismiss. A. Gregory Grimsal, Esquire, of New Orleans, Louisiana, was appointed Special Master in the case in early November. The impact of this litigation on the USIBWC water acquisition program is similar to the *New Mexico v. United States* lawsuit. Depending on the outcome, some or all post-1938 groundwater pumping may be curtailed. Alternatively, the Special Master and parties to the litigation may end up negotiating a settlement that includes some or all of the same terms currently set out in the 2008 Operating Agreement.

The USIBWC has expressed concerns about water right purchases that may compromise or adversely impact the United States' position in the Supreme Court litigation including becoming water right owners in the EBID when EBID is a party to the Supreme Court litigation. Because the adjudication and other litigation is likely to continue for years, the USIBWC will need to address the concerns of the Department of Justice without putting water rights acquisitions on hold.

In summary, conservation outcomes, in this case restoration of native riparian vegetation, are highly dependent on availability of water in the natural system or through supplemental irrigation. The final and/or partial decrees in adjudication and the outcome of the litigation have the potential to influence priority administration of ground and surface water, and the availability of surface water flows and annual irrigation district allocations. The USIBWC will want to acquire a portfolio of water rights that optimize reliability, availability, delivery and cost across restoration sites. Different classes of restoration sites will necessitate different risk assessments and strategies.

9. Future Activity Analysis and Recommendations

This section identifies existing and new activities, research and outreach needed to support future water transactions. Under the current project, NFWF and Contractors organized activities in four areas: market research and establishment of enabling conditions; development of water acquisition targets and budget; implementation of pilot transaction approaches and transactions; and communications and outreach. By design, the focus moving forward is largely implementation of water transactions. Enabling conditions and appraisal work completed to date support EBID surface-only water transactions. These can satisfy most of the water acquisition targets for the New Mexico restoration sites, approximately 90 percent of the ROD total. Because establishment of the fair market value of water rights is a requirement of federal acquisition, the existing programmatic appraisal will need to be updated periodically. Also, keeping targeted communications and outreach efforts current will be central to identifying willing sellers.

Second to acquiring EBID surface-only water rights, the USIBWC may want to continue consideration of a term-limited transfer (see Section 6.1 above, Section 9.2 below and document FFR-30) and possibly acquisition or lease of groundwater as a source of water for a subset of restoration sites. Individual or programmatic appraisals of primary groundwater rights and further work on enabling conditions will likely be required to support either transaction approach.

In addition to water righting restoration sites in New Mexico, the USIBWC will need to pursue surface-water transactions with willing sellers in Texas to water right the four restoration sites there (assuming cooperation from EPCWID#1). Finally, the USIBWC will want to continue research and monitoring and other investigations in a number of areas to support ROD outcomes and goals (see Section 9.5 below).

9.1 Expanding EBID Surface-Only Water Transactions

As discussed in Section 6.2, the USIBWC should pursue additional purchases from any potential willing seller of EBID surface water rights, although transaction costs can be better contained by focusing on large blocks of water rights. Section 6.1 above recommended using a bilateral (one-on-one) transaction approach to acquire large volumes of water rights from individual large-volume sellers. Relatively recently, two willing sellers contacted the USIBWC to sell large tracts of water rights (i.e., 21 and 79 water righted acres respectively). The USIBWC may already be negotiating a purchase with one or both of these entities, but if not, should immediately follow up to see if these large blocks of water rights are still for sale. If sellers are interested, the USIBWC would follow the transaction process checklist described in Section 5 above to initiate these or other transactions. Alternatively, an auction or posted offer would have the potential to rapidly develop transactions with multiple sellers simultaneously, making them an efficient approach to bulk acquisition of water rights especially flat-rate parcels. If the USIBWC wants to supplement the annual allotment on its EBID water-righted acreage, the USIBWC can stack water rights. The USIBWC could also lease water under EBID's brokered water program, or from one or more of the municipal or mutual domestic water right holders that are looking to lease water every year. See Section 6.1 above for more information on these transaction approaches to acquiring additional EBID surface-only water rights.

Because establishment of the fair market value of water rights is a requirement of federal acquisition, a current Yellow Book appraisal or waiver valuation will be needed. The programmatic appraisal prepared for the RGEWTP certified the fair market value of EBID surface-only and EBID combined surface and groundwater rights on September 18, 2014. See document FFR-24. The programmatic appraisal has an expected “shelf life” of 6-12 months depending on the degree of market fluctuations. Communication with the appraiser should help in determining if prices are fluctuating to the point as to make an appraisal’s value conclusions unreliable after a certain time frame. At least once each year, however, the USIBWC should plan to update both the programmatic and review appraisals. To avoid unnecessary delays in implementation of transactions, the USIBWC should work with its Acquisition Division now to secure the contractual services to update the programmatic appraisal on a recurring basis.

To identify willing sellers, the USIBWC will probably have to use targeted communications and outreach, though interest in the program may grow somewhat organically as more deals are completed. As was discussed in Section 7.1.2 above, significant program explanation, education, marketing, and outreach is likely to be needed to cultivate the full pool of potential sellers to the program. NFWF and Contractors designed and printed communications material about the RGEWTP for use by the USIBWC. The communication materials are an 8.5 X 11 color bi-fold brochure and a color rack card that could be enclosed in a standard business letter envelope. See documents FFR-42 and FFR-43. Additional fact sheets on the RGCP, the ROD and the RGEWTP were prepared for the press conference on the irrigation of the Leasburg Extension Lateral WW8. See documents FFR-37 to FFR-39. These materials are available for use in any targeted communications and outreach.

One source of large tracts of EBID surface-only water rights is subdivision of water righted farmland for residential homes. Residential development has been suppressed since the recession, but there is some evidence that demand for new subdivisions is picking up. Historically, developers sold appurtenant surface water rights to the municipal utility or mutual domestic association for future use in a surface water treatment plant. Because the drought has indefinitely postponed plans to construct a surface water treatment plant for drinking water in the greater Las Cruces area, developers will be free to sell to other buyers. USIBWC can keep abreast of new residential subdivisions involving EBID water righted lands by contacting the City of Las Cruces, the City of Anthony, the Town of Mesilla and the Doña Ana County Community Development Departments, and the EBID Engineering Department. The USIBWC could also contact the area developers directly to discuss the RGEWTP.

The USIBWC should also consider coordinating with EBID to identify water right holders who may want to sell their EBID water rights. There are a number of regular communications EBID has with constituents that provide opportunities for outreach. EBID tax assessments are mailed to water rights holders on November 1st with payment due on January 31st. The mailing of the tax assessment can trigger sales by landowners who cannot or do not want to pay the assessment. If a water right holder calls EBID to let them know they want to sell their water rights, calls are directed to A. J. Carlson in EBID Engineering. The USIBWC could provide copies of communication materials to Ms. Carlson, so she can share them with potentially interested sellers of specific tract sizes. Immediately before or during the start of the annual irrigation season, EBID may issue a newsletter to water rights holders. The USIBWC could request EBID to insert either version of the communications material in the newsletter. Immediately before the water season commences, EBID may also host growers’ meetings. The USIBWC could request to make a presentation at the growers’ meeting and distribute communications materials to attendees. Finally, the USIBWC could request that EBID include a webpage on their website

about the RGEWTP with a downloadable PDF of the communications materials, or provide a link to the USIBWC website where the communications materials could be hosted.

Finally, the USIBWC could also run advertisements in media outlets like the local newspaper or *Thrifty Nickle* to reach interested sellers. Auctions and Posted-Offers also rely on public outreach for their market reach.

9.2 Pursuing a Term-limited Transfer of Water Rights

Next to acquiring fee title or annual lease of EBID surface-only water rights, USIBWC should consider a term-limited transfer. As discussed in Section 6.1 above and document FFR-30 and exhibits, a term-limited transfer is a voluntary suspension and transfer of water rights from existing water righted acreage to a USIBWC restoration site for the term of the agreement. At the conclusion of the term, the transaction would be reversed and the water right would be suspended and transferred back to the original transferor's lands. This transaction approach could expedite the USIBWC's water acquisition program by leasing all necessary base rights, stacked rights and even annual allotments in the near term at relatively low cost, e.g., the annual EBID tax assessment plus any administrative fees. Discussions to date with the City of Las Cruces indicate the City is very interested in exploring such transactions with the USIBWC. Next steps include discussions with EBID on the criteria and the degree of discretion exercised by the EBID Board in approval of volitional suspension and transfers, and whether EBID would support this transaction approach. The current rights holders will likely require some written assurance or guidance from EBID that guarantees the reverse voluntary suspension and transfer application will be granted when the transfer term ends. USIBWC legal will need to provide direction on whether a term-limited transfer must satisfy federal real property acquisition or leasehold acquisition law and regulations. If a term-limited transfer is considered a leasehold acquisition, the USIBWC will need to follow the appropriate leasehold acquisition procedures which may require market survey, competition and solicitation of offers.

9.3 Use of Groundwater in Restoration Sites

The USIBWC could also consider purchasing or leasing combined surface and ground or primary groundwater rights for a subset of restoration sites located in New Mexico. There are a small subset of restoration sites that can only be irrigated with groundwater rights because they currently fall outside of the EBID service boundary, are inaccessible to EBID surface water irrigation infrastructure, or require irrigation to ensure compliance with the USFWS' Biological and Conference Opinion. (See document FFR-5, USFWS 2009 at pp.65-66, Reasonable and Prudent Measure Number 1 and Terms and Conditions 1.1 through 1.7) For restoration sites that can be irrigated with surface water, it warrants note that the revised water right cost estimates (which are lower for surface water than previously estimated) combined with risk related to current litigation over impacts of groundwater pumping (see Section 10) and the costs of well installation make stacking EBID surface-only water rights more attractive (at least at present) than using supplemental groundwater rights in conjunction with surface water rights. See Section 4.3 above. The current programmatic appraisal determined a fair market value for combined EBID surface-groundwater rights, but additional individual and/or programmatic appraisals for acquisition of primary groundwater rights will be needed. For an overview of the New Mexico Office of the State Engineer regulatory application and licensing process for change in place of use of groundwater rights, see document FFR-44.

9.4 Texas Restoration Sites

The USIBWC has committed under the ROD to water righting four restoration sites in Texas. It is not known whether the voluntary transfer and suspension process developed in collaboration with EBID will be acceptable to the Texas irrigation district, EPCWID #1. However, there are viable alternative approaches to securing water rights for Texas. Specifically, the Rio Bosque Wetlands Park is in discussion with EPCWID #1 and the El Paso Water Utilities Public Service Board around how to secure a water supply for the park. Parties knowledgeable about the status of ongoing discussions include John Sproul at the University of Texas at El Paso, and John Balliew of the El Paso Water Utilities Public Service Board. The transaction approach would likely include reclassifying the acreage as irrigable land under Texas state law (Tex. Code Ann. §55.677), and paying 20 years in back taxes to EPCWID #1. Using this formula, estimated cost per acre for reclassification would be \$2,905.00, a figure similar to the fair market value of EBID surface-only water rights. (J. Sproul, personal communication, June 29, 2014). The USIBWC could partner with El Paso Water Utilities or directly contact EPCWID #1 to explore initiating such a transaction for Texas restoration sites.

9.5 Research and Monitoring Recommendations

There are several activities in the RGEWTP that will necessitate or benefit from additional research in support of conservation outcomes and goals under the ROD and the USFWS Biological and Conference Opinion (USIBWC 2009; USFWS 2012 of pp. 65-69).

Perhaps the most far reaching but still uncertain activity in the RGEWTP is acquiring water for a restoration flow. See Section 4.5 above for more detail. Research in this area could include the following topics:

- Exploration of U.S. and Mexico water resource agency and stakeholder attitudes to a restoration flow including alternative downstream uses for the non-consumed portion;
- Feasibility and identification of drains and ponding areas, including Rio Bosque Wetlands, for the capture and reregulation of a restoration flow or groundwater recharge with a restoration flow in New Mexico or Texas;
- Analysis of the benefits and impacts of a restoration flow on Rio Grande Compact deliveries to Texas, channel morphology, sediment transport, water quality, groundwater recharge, wetland rehydration, and the diversity, survivorship, density and vigor of riparian vegetation on hydrologically connected restoration sites within the RGCP;
- A legal and policy roadmap with different alternatives and contractual requirements for characterization of the restoration flow as (i) an irrigation use as currently authorized under the Rio Grande Project Act and (ii) a non-irrigation purpose (Sale of Water for Miscellaneous Purposes Act, 1920);
- Exploration of a partnership with the New Mexico Interstate Stream Commission to lease a restoration flow for the purpose of meeting interstate compact delivery requirements of project water to Texas (N.M. Stat. Ann. §73-10-48F(2)); and
- Discussions regarding annual water leases of large blocks of water with large EBID water right holders such as the City of Las Cruces or New Mexico State University and with large EPCWID #1 water right holders such as the El Paso Water Utilities or the EPCWID #1 Board when it is carrying over an unused allocation of Rio Grande Project water for use in subsequent years.

Other areas that could benefit from research and monitoring to secure or improve conservation outcomes and goals include:

- Continued coordination and integration of RGEWTP with restoration activities on restoration sites including monitoring of depth to groundwater, and cover and diversity of vegetation, and survivorship of pole and shrub plantings;
- Plans and/or design specifications for irrigation infrastructure to deliver artificial flooding regimes on restoration sites through supplemental irrigation water if not currently available in the Conceptual Restoration Plan or other USIBWC site implementation documents;
- Drawing on ongoing breeding surveys of the endangered flycatcher in the RGCP, update the restoration plan and provide recommendations on additional or alternative land and channel restoration, and land and water acquisitions for improving metapopulation stability and reproductive success of the flycatcher population in RGCP;
- Paralleling EBID policy 2013 ENG14, negotiate a policy with EBID setting forth guidelines and criteria for classification of wetlands as an irrigation use and eligible for Rio Grande Project water rights within EBID boundaries;
- Investigate opportunities to collaborate on restoration and water acquisition program with other state and federal water and wildlife management and regulatory agencies with jurisdiction and/or interest in the river ecosystem health within the RGCP including but not limited to the U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service Refuges, U.S. Army Corps of Engineers and the New Mexico Interstate Stream Commission. See Section 10 below.

10. Institutional Analysis and Implementation Recommendations

This section looks at how different institutional arrangements might serve the program in ongoing implementation.

10.1 Real Estate Firm

As one option, RGEWTP could rely on a firm with commercial real estate transactional experience to implement its program of water right acquisitions. This section provides an overview of how a commercial real estate firm might function as an agent/implementation partner for the USIBWC.

The main argument for using a commercial firm for program implementation is that because water rights are real estate under New Mexico law, RGEWTP is essentially a broad effort to purchase real estate that could be effectively implemented by a firm with traditional real estate experience. Indeed, many aspects of the acquisition process described in the transaction checklist document are common to real estate transactions – collaboration with a title company to effect due diligence, negotiation of transaction terms, contract development, appraisal, and closing through escrow all are similar to the processes used in more conventional real estate deals.

Such an option may lend itself well for a limited set of routine transactions, such as the tested process for EBID surface water rights in New Mexico, especially where the USIBWC directly oversees or implements most of the associated due diligence and closing activities. However, many elements of RGEWTP's water rights transaction process differ from the standard steps for closing purchases and more routine real estate transactions. For example, title insurance is generally not available for water rights and an alternative process involving multiple title reports and in house due diligence is used instead. The current practice calls for development and acceptance of a legal opinion on the title and water rights which requires knowledge of state water right adjudication processes. Similarly, escrow services for water right transactions are not available through title companies under New Mexico state law and instead have been implemented through "closing agent" services in partnership with a local law firm. Finally, rules unique to water transfers can make seemingly easy transactions difficult to complete. Water rights acquired must be transferred to restoration sites through irrigation district and state approval processes. Adjudication questions can introduce doubt into the validity of water rights. In some cases technical knowledge of water law and regulatory processes is needed to effect these transfers as well.

Current policy can impede new or different types of transfers and transactions. Further, market conditions may change due to drought or as a consequence of interstate litigation or other factors. When such changes occur, the program will need to make informed strategic adjustments to its activity, and this will require expertise in water rights, knowledge of federal and state water law and policy, and restoration program design.

For the reasons outlined above, program implementation may not be effectively outsourced to a real estate firm with "processing" only expertise. The program will need an implementer with experience in water markets, local knowledge and understanding of the river reach as well as trusted relationships with irrigation districts, and federal, state and local government agencies to adapt its approach to new circumstances, whether simply recalibrating its acquisition targets in

light of changing prices, developing a new approach to identify potential sellers, launching into a new class of water rights, water righting Texas irrigation sites, or changing the purpose of use of water rights to non-irrigation. In some cases, the implementer may be required to break new ground and craft new or modified policies with the support of water users. The areas of expertise that are desirable for successful program implementation are highlighted above and summarized in Section 10.4 below.

10.2 Agency Partnerships

10.2.1 U.S. Army Corps of Engineers

The Department of Justice (“DOJ”) strongly recommends that the USIBWC consider partnering with the U.S. Army Corps of Engineers (“USACE”) to implement real property transactions, including water rights. The DOJ maintains that the USACE conducts a multitude of real estate transactions for many different government agencies, and under the appropriate agreement, the USACE could facilitate the success of the RGEWTP. The DOJ referred the USIBWC to Scott Whiteford, Director of Real Estate at the USACE in Washington, D.C., for further discussion and evaluation of this option (E. Verdecchia, personal communication, January 29, 2015).

10.2.2 U.S. Fish and Wildlife Service, Refuge System

Alternatively, the USIBWC might consider partnering with the USFWS Refuge System for implementation of the RGEWTP. The USFWS has authority to acquire land and water for the “development, advancement, management, conservation, and protection of fish and wildlife resources” (Fish and Wildlife Act, 1956 at Section 7(a)). The USIBWC has contemplated in its RGCP River Management Plan the possibility of an agreement with USFWS Refuge System for long-term management of the restoration sites (USIBWC, 2014 at Section 3.1.10). Options include the establishment of a new National Wildlife Refuge along the RGCP, or incorporation of the USIBWC restoration sites within an existing National Wildlife Refuge. Building on the existing Interagency Agreement between the USFWS and USIBWC (Interagency Agreement IBM11A0002, 2011), the USFWS could accept fee title to the USIBWC restoration sites along with the obligation to acquire water rights under the terms and conditions of the ROD and allow the USIBWC access for water delivery and flood control mission-related activities (E. Verdecchia, personal communication, January 29, 2015).

10.2.3 U.S. Bureau of Reclamation

A third agency partnership option would be for the USIBWC to partner with Reclamation’s Albuquerque Area Office to address a number of shared concerns and opportunities related to the restoration of flycatcher habitat in the RGCP, with the potential to mitigate for some of Reclamation’s Rio Grande and Middle Rio Grande project activities (e.g., anticipated habitat loss due to discretionary storage and release operations at Elephant Butte reservoir).

Importantly, Reclamation already has several decades of experience with supplemental water transactions in the Middle Rio Grande, and that experience could prove extremely useful in helping to address the USIBWC’s needs to implement transactions under the RGEWTP. (From 1996-2003 Reclamation leased nearly 50,000 acre-feet (AF) per year of surplus San Juan Chama contract water to supplement Middle Rio Grande water flows. Since 2003 that average has dropped below 22,500 AF per year as drought conditions have intensified and as contract

surpluses have continued to decline, but that still leaves Reclamation with a substantial amount of transactional knowledge and experience.)

An effective agency partnership option would be guided by a well-structured interagency agreement under which both the USIBWC and Reclamation (and potentially USFWS) funds would be pooled and specific responsibilities delineated. For example, Reclamation could serve as the lead agency for transactions with appropriate third-party assistance (see next section); the USIBWC could hold title at closing to water rights purchased for transfer to the USIBWC-owned lands; Reclamation could hold title at closing to water rights purchased for transfer to non-USIBWC lands; and long-term restoration and stewardship responsibilities could be handled by USFWS, with support from USIBWC operations and maintenance staff and Reclamation engineers and biologists where needed.

Importantly, any such agency partnership would require Reclamation to compliment and expand on the existing USIBWC restoration commitments for the RGCP under the ROD and the ensuing USFWS Biological and Conference Opinion to share mitigation credit for restoration of flycatcher habitat in the Lower Rio Grande Management Unit (U.S. Fish and Wildlife Service, 2012). This could be accomplished in at least five ways: (1) by acquiring water for habitat restoration on non-USIBWC lands (i.e., lands not currently slated for restoration by USIBWC); (2) by acquiring additional water for habitat restoration on USIBWC restoration sites (i.e., improving habitat conditions on lands already slated for restoration over and above the ROD requirement); (3) by facilitating and acquiring water itself or in partnership with the New Mexico Interstate Stream Commission for a restoration flow; (4) by actively managing new Reclamation and/or existing USIBWC restoration sites through artificial flooding regimes similar to restoration activities on the Lower Colorado River Multi-Species Conservation Program⁴; and/or (5) by negotiating some other form of Habitat Mitigation Credit Sharing and Improvement Agreement with USFWS.

Ultimately, a shared river and watershed, overlapping jurisdictions, and common ecological challenges suggest that affirmative consideration be given to developing an even more comprehensive water restoration partnership for the entire Rio Grande in New Mexico. Building on the above, and ideally supported by the enactment of federal legislation similar to that proposed in 2014 (New Mexico Drought Relief Act, 2014), such an effort could include the USIBWC, Reclamation, and USFWS as well as EBID and EPCWID#1 and any other material and interested parties, stakeholders and non-profit organizations. As described further below in Section 10.3, experience in other western states suggests that a qualified independent third-party organization might be best able to coordinate and administer such a program on behalf of multiple federal, state, tribal and NGO partners.

10.3 Non-Profit Partnership

An outsourced implementation partnership with a non-profit organization offers a third institutional approach to efficient implementation of the environmental water transactions program in the RGCP. Characterized by a federal grant to a non-profit organization who

⁴ A description of the Lower Colorado River Multi-Species Conservation Program restoration accomplishments including the use of artificial disturbance and flooding regimes to mimic historic conditions at project sites like the [Palo Verde Ecological Reserve](#) and the [Cibola Valley Conservation Area](#) can be retrieved at http://www.lcrmscp.gov/restoration/rest_accomp.html

implements the water transactions program with a federal advisory technical team but otherwise minor governmental involvement, this approach has proven effective at scale in other regions. This arrangement differs from the current institutional arrangement discussed in Section 7.3 above in that the federal government, by virtue of transferring money through a grant, has minor involvement in the implementation of transactions and does not hold title to the acquired water rights. This, in turn, creates some flexibility in the details of the acquisition approach.

The Columbia Basin Water Transactions Program (CBWTP) merits attention as a possible template for an alternative approach to RGEWTP implementation. Through CBWTP, the Federal Bonneville Power Administration (BPA) seeks to meet its mitigation obligations for impacts to endangered species from the Federal Columbia River Power System. Over the past 12 years BPA has supported the acquisition of more than six million acre-feet of water for endangered species recovery through flow and habitat restoration. In 2013 alone, the program acquired 50,000 acre-feet or 225 cubic feet per second of flow through voluntary transactions with willing sellers in myriad watersheds in four states in the US Pacific Northwest. The institutional structure and set of mechanisms through which BPA supports some \$5-6 million in annual transaction activity may be instructive as the USIBWC seeks to balance oversight and compliance with Federal requirements with the efficiency and flexibility needed to execute water transactions in the private market sufficient to meet restoration objectives. A complete case study of CBWTP is included for further reference as FFR-45.

Unlike in the RGEWTP, the Federal lead agency (BPA) does not purchase the water rights and leases acquired through CBWTP. Instead, it provides grants to qualified local non-profit and public agency partners (known collectively as “Qualified Local Entities” or QLEs) who negotiate the terms of sale, determine sufficiency of title, and ultimately hold title to the acquired water rights. This is a key distinction that allows CBWTP to use a set of oversight and due diligence requirements different from (and generally more flexible than) those required under Federal real property acquisition guidelines.

One constraint to the adoption of this institutional approach is that EBID and state law currently require that the landowner own title to the water rights. See FFR-30 and supporting exhibits for discussion of the legal considerations in a term-limited transfer. One option for overcoming this constraint would be for the QLE to accept fee title to the restoration sites along with the obligation to acquire water rights under the terms and conditions of the ROD and to allow USIBWC access for water delivery and flood control-mission-related activities. Alternatively, the QLE and USIBWC could approach EBID to amend their district policies and, if necessary, state law to allow the QLE to acquire the water rights without appurtenance to land and for USIBWC to be the record owner on the irrigation district tax statement during the term of the lease without transfer of title. *See* NMSA §73-10-48 (D); EBID Policy 2003-GA8. If the constraint cannot be overcome, this institutional approach may still be advantageous when it comes to acquisition of water for a restoration flow where appurtenance to land is not an issue.

In the CBWTP, a multi-layered transaction review/due diligence process ensures effective expenditure of program funds. Steps include:

1. Legal review of core transaction terms by the CBWTP program attorney.
2. Technical review of each proposed transaction by an advisory committee that includes the BPA program lead and other subject matter experts. The technical review ensures the transactions meet the agency’s mitigation needs and are consistent with transaction guidelines set by the agency.

3. Additional due diligence is conducted by the QLEs. The extent of due diligence is determined on a case-by-case basis. QLEs, as the parties to the actual transactions, bear most if not all related risk (rather than BPA).
4. Transactions are usually closed through title-company escrows, but this is not a BPA/CBWTP process requirement.
5. Payments (in the form of transaction-specific grants to QLEs) are only made once administrative transfer approvals are complete⁵
6. A BPA-approved valuation policy ensures that transaction prices are consistent with market value. Formal appraisals are only required for the largest transactions (in excess of \$500,000), and since title is held by non-Federal entities these are not required to use Yellow Book standards.

The CBWTP structure has proven effective in completing many different types and volumes of cost-effective water transactions in a context that is significantly more complex than that of the Lower Rio Grande. While local conditions and program needs in the RGCP would require adaptation of the CBWTP approach, the tools and concept used in the Columbia Basin program illustrate the potential of different program structures. Though differences exist between the two programs, the core concept -- using a federally authorized grant to award funding to a non-profit partnership to acquire or lease water or water rights to continually improve and streamline the overall acquisition process - merits attention as a potentially effective implementation approach for RGEWTP. Because USIBWC does not have granting authority, this non-profit partnership model would only be available through a three-way partnership between USIBWC, a sister federal agency with granting authority, and a non-profit. See Section 11.1 below.

10.4 Project Team Skills

Future implementation of the RGEWTP whether by USIBWC, a sister federal agency or third party, will require a multidisciplinary set of skills and qualifications including knowledge of and experience in water and real estate law, economics, integrated water management, and river ecology. Direct experience in western environmental water transfer programs is strongly recommended. Also important is knowledge of the geographic area of interest including familiarity with the USIBWC and Reclamation water projects and water management, Rio Grande ecology, restoration plans and site conditions. Finally, strong relationships or credibility with key constituents such as producers, EBID and EPCWID#1 and federal and state water management agencies is desirable.

Project implementers must be well positioned to identify, develop and implement water transactions in the geographic area of interest and demonstrate expertise in the following areas:

- (i) knowledge of applicable laws, regulations, and water transaction processes and policies sufficient to implement transactions, including federal real property laws and regulations as well

⁵ RGEWTP to date has also made payment to sellers contingent on an administrative approval of the transfer. Contractors have found that an EBID administrative approval of a surface water transfer takes four to six weeks to obtain. If RGEWTP acquires groundwater rights, however, the New Mexico Office of the State Engineer may take anywhere from six to eighteen months to approve an administrative transfer. See FFR-44 at p.2. If this is the case, sellers may be unwilling to sell groundwater rights to USIBWC on the condition that administrative transfer approval is complete prior to payment.

as processes and policies of the USIBWC, EBID and EPCWID#1 and the NM Office of State Engineer;

(ii) understanding of water markets and prices;

(iii) knowledge of different acquisition mechanisms that can help to reduce/contain the transaction costs of individually negotiated deals while meeting the unique needs and interests of individual willing sellers and thus increasing the prospects for program success;

(iv) knowledge of irrigation practices and effective use of artificial disturbance and flooding regimes to mimic historic river processes;

(v) knowledge and understanding of restoration planning, design and construction as it relates to river restoration and ecology of the flycatcher and the ability to allocate limited water between competing restoration sites most effectively; and

(vi) experience in negotiating/developing innovative water policy such as the ability to secure appropriate changes to EBID's water for restoration policy to authorize use of Rio Grande Project water for wetlands and/or to develop and implement a collaborative wide-scale water leasing/banking initiative to "drive" an initial restoration flow release in cooperation with stakeholders.

The project implementers must also be able to subcontract with appropriate entities for legal opinions, appraisals, and other areas of expertise that will be needed to complete multiple individual transactions "at scale" during the next phase of the RGEWTP.

11. Summary of Recommendations

The USIBWC has less than five years remaining to fully implement the 2009 Record of Decision and achieve the requirements of the USFWS Biological and Conference Opinion (USFWS, 2012). The USIBWC in partnership USFWS, NFWF and Contractors has completed significant work in the first five years of the ROD including laying the foundation of enabling conditions, policies and processes for acquisition and transfer of EBID surface-only water rights to riparian restoration sites in New Mexico; successful pilot acquisition and transfer of 5.6 acres of EBID surface-only water rights; irrigation of 5.6 acres of newly water righted land at one restoration site in 2014; and initiation of restoration at eleven of the thirty restoration sites.

The above progress notwithstanding, significant work remains to be performed under the RGEWTP including:

- acquisition of the vast majority of the water acquisition target (greater than 90% remains to be acquired);
- development and implementation of transaction approaches that can acquire water at scale;
- building consensus in support of a restoration flow, developing or clarifying the enabling policy, and implementing the leases for water acquisition; and
- integration and coordination of the water acquisitions with on-the-ground restoration activities.

The end of this first phase of the RGEWTP is an excellent opportunity for the USIBWC to look anew at how to best to achieve these outcomes. NFWF and Contractors submit the following recommendations and strategies to satisfy ROD commitments and achieve maximum effectiveness.

11.1 Choose an Institutional Arrangement and Resourcing Level Appropriate for Effective Implementation of the RGEWTP

USIBWC should choose an institutional arrangement that is aligned with their goals and resources recognizing that effective implementation of RGEWTP will require a team that is innovative and interdisciplinary in skills and qualifications.

If the USIBWC decides to do most of this “in house” it will need to dedicate sufficient staff time and resources across multiple agency divisions including the Office of the Commissioner, Acquisitions, Boundary and Realty, Legal, Operations and Maintenance, Water Accounting, Engineering and Environmental Management. The objectives in agency teamwork are to (i) streamline and expedite transactional work including review of standard contractual documents and title evidence; (ii) develop standard agreements and master contracts for efficient and timely access to valuation and closing services; (iii) devote sufficient staff to implement and procure multiple, and sometimes, time-consuming and complicated transaction approaches and transactions, and (iv) be ready to produce adaptive and creative solutions to changing conditions of supply, management and operations, market, and regulations consistent with federal real property acquisition law and regulations.

Alternatively, a partnership between the USIBWC and another Federal Agency and/or a qualified non-profit are promising approaches for successful implementation of the RGEWTP. A partnership with Reclamation, USFWS and/or USACE would bring significant federal expertise in transactions and habitat restoration. An interagency partnership could quickly secure some of the critical expertise needed to implement this program without impacting the USIBWC's current staffing, operations and central mission of flood control, boundary alignment and water management.

Alternatively, a three-way partnership between federal agencies and a non-governmental entity would combine federal and non-profit expertise in transactions and habitat restoration with non-governmental flexibility and innovation. This model assumes the partnering federal agency has the authority to issue grants to a non-governmental entity to acquire and hold title to land and/or water rights for the benefit of fish and wildlife (e.g., Catalogue of Federal Domestic Assistance 15.517; Fish and Wildlife Coordination Act, 1934). A non-governmental entity is subject to lesser burden with respect to federal real property acquisition law and regulations and can adopt transaction practices that minimize risk but are cost-effective and maximize outcomes. This approach assumes that EBID and state law will allow a QLE to hold title to Rio Grande Project water rights that are not appurtenant to EBID land except through a lease to USIBWC. While governmental involvement in grants is minor relative to contracts or cooperative agreements, the USIBWC could continue to retain important oversight over program goals, objectives and outcomes and an advisory role over transactions like that in the CBWTP.

Finally, the USIBWC could directly contract with a third party for these services, e.g., a real estate firm. Much like performing these services "in house," the USIBWC will still need to dedicate sufficient staff time and resources across multiple agency divisions to support the third party in implementing a transaction program. The recommended qualifications and experience required to successfully implement the RGEWTP are discussed in detail in Section 10.4 above.

11.2 Implement Transaction Strategies to Acquire Water Rights at Scale to Meet ROD Commitments

Several strategies to acquire water rights at scale with minimal transaction costs are discussed in detail under Section 6 and again in Section 9. This report recommends the following three strategies for 2015 and 2016. By implementing all three strategies simultaneously, the USIBWC would reduce the risk that one or more strategy could fail or not provide the volume of water desired. The USIBWC would also gather important market information from deploying all three strategies that can help refine and adapt the RGEWTP to changing conditions.

Strategy 1: Prioritize acquisition of large tracts of water rights (>20 acres) at every opportunity. To accomplish this, the USIBWC will need to undertake public outreach whether through advertisement in newspapers or other venues to identify willing sellers, hopefully in collaboration with EBID to reduce the potential for adverse reaction from farmers. The USIBWC should also monitor subdivision developments, taking advantage of the suspension of municipal water acquisition programs to purchase large blocks of water rights from developers as irrigated lands are subdivided for residential development.

Strategy 2: Conduct a broad public solicitation, such as an auction or posted offer, to identify at one time a large number of willing sellers of all parcel sizes. The auction or posted offer can be tailored to target a specific volume of total water rights, tract sizes, price range and/or budget. A tailored, broad solicitation is an efficient strategy for aligning the RGEWTP program

requirements and resources with prospective sellers and expectations. The auction approach can also be designed to identify entities who would be willing to sell their water rights at less than the fair market value, as determined by an annual programmatic appraisal, thereby reducing program costs accordingly.

Strategy 3: Establish the policy framework or guidelines and acquire water rights using a term-limited transfer. This third strategy would expedite USIBWC's restoration efforts by leasing all necessary base rights, stacked rights, and even annual allotments in the near term at relatively low cost. The USIBWC could replace term-limited transfers with acquired rights at a more relaxed pace thereafter. It might also be possible to acquire these rights permanently if and when municipalities opt to pursue alternatives to river water for diversifying their long-term water supplies (and having a term-limited transfer agreement would only increase the likelihood of success in that event).

11.3 Continue to Evaluate the Feasibility of a Periodic Restoration Pulse Flow

The USIBWC should continue to pursue evaluation and implementation of a restoration flow. While a restoration flow appears implausible at present, recent experience in the Colorado Delta makes clear that conditions can change quickly, and that occasional managed high-volume releases of water from storage can be extremely beneficial to the health of downstream riparian habitat.

In all likelihood, there could be multiple benefits to water users in Texas, whether municipal, agricultural or even environmental, from such a restoration flow. New Mexico may benefit if a restoration flow could aid in Rio Grande Compact deliveries. The USIBWC channel maintenance and efficient water deliveries may benefit from secondary impacts to sediment transport, island scouring, and recharge of the shallow alluvial aquifer prior to large-scale irrigation releases. Reclamation may be able to satisfy a mitigation obligation for Rio Grande Project storage and inundation or other habitat degradation of flycatcher habitat in the delta of Elephant Butte Reservoir and Caballo Reservoir. Finally, EPCWID#1 and other larger water right owners might have a market for carryover water or other large blocks of water rights that they want to capitalize on. The point to emphasize is that the research and development of a transactional framework and execution of transactions necessary to accomplish this ROD commitment will take time and should commence as quickly as possible.

The USIBWC should engage in one-on-one conversations and then convene a small discussion group of interested parties to brainstorm potential benefits and utilization of a restoration flow. Once agreement is reached on the most fruitful areas of future analysis, the USIBWC could contract with the appropriate federal agency or environmental engineering firm to carry out additional analyses. Additional information about the restoration flow is found in Section 4.5, and a list of possible research topics is set out in Section 9.5 above. Finally, if there is consensus from Reclamation and Rio Grande Project irrigation districts that a restoration flow is desirable, the USIBWC should develop the legal and policy roadmap and negotiate the terms of a voluntary lease program sufficient to secure approximately 10,000 acre-feet of water for a one-time managed pulse release once hydrologic conditions have improved.

11.4 Integrate Water Acquisitions with Conservation Outcomes

The RGEWTP is a means to securing and sustaining improved conservation outcomes in riparian habitat diversity, vigor and maintenance within the RGCP for the benefit of wildlife, including

the endangered flycatcher. The USIBWC has ESA obligations to satisfy under the USFWS Biological and Conference Opinion (USFWS, 2012). Annual and inter-annual variability in water supply, hydrology and restoration site specific conditions call for a dynamic and adaptive program to optimize benefits from acquisition of water rights and artificial flooding regimes on restoration sites to mimic historic conditions. The USIBWC should develop a robust monitoring and adaptive management program, as discussed in Section 9.5, to benefit the endangered flycatcher and other wildlife including monitoring of depth to groundwater, and cover and diversity of vegetation, and survivorship of pole and shrub plantings and adapt its annual and long-term restoration activities accordingly.

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13. Appendices and Exhibits

The following tables list the supporting documents referenced in this report by topic area and contract deliverable number.

13.1 Complete Table of Appendices

The complete list of appendices to this report is presented below in three parts.

Document Reference Number	Topic	Document Description	Deliverable Number (where applicable)
FFR-1	Policy	Bureau of Reclamation letter characterizing use of Rio Grande Project water for riparian and wetland habitat as an agriculture	
FFR-2	Policy	Memo codifying water accounting rules and guidelines with EBID	1.1
FFR-3	Policy	Memo re: objectives, targets, and water accounting under the program	
FFR-4	Policy	USIBWC October 2011 Final Biological Assessment Integrated Land Management for Long-term River Management of the Rio Grande Canalization Project	
FFR-5	Policy	USFWS biological and conference opinion re: impact of USIBWC's land management alternative on SWWF	
FFR-6	Policy	Audubon memo regarding ITS Coverage of Leasburg Lateral Wasteway Restoration Site	
FFR-7	Policy	USFWS memo clarifying the incidental take statement portion of the biological opinion	
FFR-8	Policy	Final rule designating flycatcher critical habitat (and excluding the Lower Rio Grande)	
FFR-9	Policy	USIBWC-EBID MOU re: habitat restoration projects	2.4
FFR-10	Policy	EBID policy recognizing habitat restoration as a permitted agricultural use and authorizing transfer of water rights to support native plant survival and growth	2.4
FFR-11	Water Rights	Presentation to ROD implementation meeting re: RGEWTP water budgets	2.1
FFR-12	Water Rights	Description of scenarios underlying RGEWTP water budget development	2.1
FFR-13	Water Rights	Summary RGEWTP water and cost budget	2.1
FFR-14	Water Rights	Detailed water budget for RGEWTP water right acquisition	2.1
FFR-15	Water Rights	Detailed cost estimate for RGEWTP water right acquisition	2.1

Document Reference Number	Topic	Document Description	Deliverable Number (where applicable)
FFR-16	Water Rights	Inventory of primary groundwater rights available to support RGEWTP	2.2
FFR-17	Water Rights	Inventory spreadsheet provides additional detail on the individual water rights tallied in the narrative inventory	2.2
FFR-18	Water Rights	Table of Southern Mesilla Valley primary groundwater rights	2.2
FFR-19	Water Rights	Table of Northern Mesilla Valley primary groundwater rights	2.2
FRR-20	Water Rights	Table of Rincon Valley primary groundwater rights	2.2
FFR-21	Valuation	Appraisal of property for RGEWTP Transaction No. 1	
FFR-22	Valuation	Water market report and initial pricing forecast	1.3
FFR-23	Valuation	Waiver valuation of EBID surface water rights - version 2	3.2
FFR-24	Valuation	Yellow book programmatic appraisal of EBID surface water right and combined rights	3.2
FFR-25	Valuation	Yellow book programmatic review appraisal of EBID surface water right and combined rights	3.2
FFR-26	Process	Evaluation memo and description of a posted offer/reverse auction water rights solicitation	3.1
FFR-27	Process	Evaluation memo of effort to purchase flat rate water rights at risk of reclassification	3.1
FFR-28	Process	Evaluation memo on the annual lease of water allotments	3.1
FFR-29	Process	Evaluation memo on purchase of water rights through bilateral negotiation with sellers	3.1
FFR-30	Process	Evaluation memo on term-limited transfer of water rights	3.1

Document Reference Number	Topic	Document Description	Deliverable Number (where applicable)
FFR-31	Process	Checklist detailing the RGEWTP water rights transaction process	2.5
FFR-32	Communications	Article in Irrigated Agriculture Trade Journal Publication titled "Collaboration not Litigation: A Water Transfer Partnership on the Rio Grande"	4.1
FFR-33	Communications	Article in National Audubon Magazine titled "The New Deal--In the West, the Saying Goes, Whiskey is for Drinking and Water is For Fighting. So Why on Earth Did Farmers in New Mexico--During a Severe Drought, no Less--Decide to Share their Precious Drops with Endangered Birds?"	4.1
FFR-34	Communications	Press release on EBID adoption of precedent setting policy to authorize transfer of surface water to habitat restoration	4.1
FFR-35	Communications	Presentation to 20th Annual Statewide Meeting of the New Mexico Water Dialogue titled "Shorage Sharing between Farmers and Birds"	4.1
FFR-36	Communications	Press release on first-ever irrigation of Leasburg Extension Lateral WW#8 restoration site with newly acquired water rights for habitat. News stories ran in KRQE Channel 13 TV segment, Las Cruces Sun News, KRWG Fronteras, All Things Considered, Albuquerque Journal, and Science Recorder.	4.1
FFR-37	Communications	Press materials on irrigation of Leasburg Extension Lateral WW#8 restoration site - RGCP Restoration Site Map	4.1
FFR-38	Communications	Press materials on irrigation of Leasburg Extension Lateral WW#8 restoration site - USIBWC Restoration Project Brief	4.1
FFR-39	Communications	Press materials on irrigation of Leasburg Extension Lateral WW#8 restoration site - USIBWC RGEWTP Project Brief	4.1
FFR-40	Communications	Presentation to Rio Bosque Wetland Partners Meeting titled "Rio Grande Environmental Water Transaction Partnership"	4.1, 4.2
FFR-41	Communications	Article in Irrigated Agriculture Trade Journal Publication titled "Irrigating Cottonwoods: Water Transactions for Rio Grande Habitat Restoration"	4.1
FFR-42	Communications	Glossy, color, 8.5 x 11 bi-fold brochure on the Rio Grande Canalization Project Environmental Water Transaction Program: Restoring Riparian Habitat Along the Lower Rio Grande	4.1
FFR-43	Communications	Glossy, color, 4 x 9, rack card on the Rio Grande Canalization Project Environmental Water Transaction Program: Restoring Riparian Habitat Along the Lower Rio Grande	4.1
FFR-44	Process	Fox Consulting memo on Overview of Regulatory application and licensing process for select water rights transfer activities within the Lower Rio Grande Basin of New Mexico	2.3
FFR-45	Process	Case study of the Columbia Basin Water Transactions Program	
FFR-46	Contact List	Points of contact for information about and/or professional services for the RGEWTP	

13.2 Appendices by Topic

13.2.1 Policy Framework Documents

Document Reference Number	Document Description	Deliverable Number (where applicable)
FFR-1	Bureau of Reclamation letter characterizing use of Rio Grande Project water for riparian and wetland habitat as an agriculture	
FFR-2	Memo codifying water accounting rules and guidelines with EBID	1.1
FFR-3	Memo re: objectives, targets, and water accounting under the program	
FFR-4	USIBWC October 2011 Final Biological Assessment Integrated Land Management for Long-term River Management of the Rio Grande Canalization Project	
FFR-5	USFWS biological and conference opinion re: impact of USIBWC's land management alternative on SWWF	
FFR-6	Audubon memo regarding ITS Coverage of Leasburg Lateral Wasteway Restoration Site	
FFR-7	USFWS memo clarifying the incidental take statement portion of the biological opinion	
FFR-8	Final rule designating SWWF critical habitat (and excluding the Lower Rio Grande)	
FFR-9	USIBWC-EBID MOU re: habitat restoration projects	2.4
FFR-10	EBID policy recognizing habitat restoration as a permitted agricultural use and authorizing transfer of water rights to support native plant survival and growth	2.4

13.2.2 Water Rights Documents

Document Reference Number	Document Description	Deliverable Number (where applicable)
FFR-11	Presentation to ROD implementation meeting re: RGEWTP water budgets	2.1
FFR-12	Description of scenarios underlying RGEWTP water budget development	2.1
FFR-13	Summary RGEWTP water and cost budget	2.1
FFR-14	Detailed water budget for RGEWTP water right acquisition	2.1
FFR-15	Detailed cost estimate for RGEWTP water right acquisition	2.1
FFR-16	Inventory of primary groundwater rights available to support RGEWTP	2.2
FFR-17	Inventory spreadsheet provides additional detail on the individual water rights tallied in the narrative inventory	2.2
FFR-18	Table of Southern Mesilla Valley primary groundwater rights	2.2
FFR-19	Table of Northern Mesilla Valley primary groundwater rights	2.2
FFR-20	Table of Rincon Valley primary groundwater rights	2.2

13.2.3 Valuation Documents

Document Reference Number	Document Description	Deliverable Number (where applicable)
FFR-21	Appraisal of property for RGEWTP Transaction No. 1	
FFR-22	Water market report and initial pricing forecast	1.3
FFR-23	Waiver valuation of EBID surface water rights - version 2	3.2
FFR-24	Yellow book programmatic appraisal of EBID surface water right and combined rights	3.2
FFR-25	Yellow book programmatic review appraisal of EBID surface water right and combined rights	3.2

13.2.4 Transaction Process and Approaches

Document Reference Number	Document Description	Deliverable Number (where applicable)
FFR-26	Evaluation memo and description of a posted offer/reverse auction water rights solicitation	3.1
FFR-27	Evaluation memo of effort to purchase flat rate water rights at risk of reclassification	3.1
FFR-28	Evaluation memo on the annual lease of water allotments	3.1
FFR-29	Evaluation memo on purchase of water rights through bilateral negotiation with sellers	3.1
FFR-30	Evaluation memo on term-limited transfer of water rights	3.1
FFR-31	Checklist detailing the RGEWTP water rights transaction process	2.5
FFR-44	Fox Consulting memo on Overview of Regulatory application and licensing process for select water rights transfer activities within the Lower Rio Grande Basin of New Mexico	2.3
FFR-45	Case study of the Columbia Basin Water Transactions Program	

13.2.5 Communications Documents

Document Reference Number	Document Description	Deliverable Number (where applicable)
FFR-32	Article in Irrigated Agriculture Trade Journal Publication titled "Collaboration not Litigation: A Water Transfer Partnership on the Rio Grande"	4.1
FFR-33	Article in National Audubon Magazine titled "The New Deal--In the West, the Saying Goes, Whiskey is for Drinking and Water is For Fighting. So Why on Earth Did Farmers in New Mexico--During a Severe Drought, no Less--Decide to Share their Precious Drops with Endangered Birds?"	4.1
FFR-34	Press release on EBID adoption of precedent setting policy to authorize transfer of surface water to habitat restoration	4.1
FFR-35	Presentation to 20th Annual Statewide Meeting of the New Mexico Water Dialogue titled "Shorage Sharing between Farmers and Birds"	4.1
FFR-36	Press release on first-ever irrigation of Leasburg Extension Lateral WW#8 restoration site with newly acquired water rights for habitat. News stories ran in KRQE Channel 13 TV segment, Las Cruces Sun News, KRWG Fronteras, All Things Considered, Albuquerque Journal, and Science Recorder.	4.1
FFR-37	Press materials on irrigation of Leasburg Extension Lateral WW#8 restoration site - RGCP Restoration Site Map	4.1
FFR-38	Press materials on irrigation of Leasburg Extension Lateral WW#8 restoration site - USIBWC Restoration Project Brief	4.1
FFR-39	Press materials on irrigation of Leasburg Extension Lateral WW#8 restoration site - USIBWC RGEWTP Project Brief	4.1
FFR-40	Presentation to Rio Bosque Wetland Partners Meeting titled "Rio Grande Environmental Water Transaction Partnership"	4.1, 4.2
FFR-41	Article in Irrigated Agriculture Trade Journal Publication titled "Irrigating Cottonwoods: Water Transactions for Rio Grande Habitat Restoration"	4.1
FFR-42	Glossy, color, 8.5 x 11 bi-fold brochure on the Rio Grande Canalization Project Environmental Water Transaction Program: Restoring Riparian Habitat Along the Lower Rio Grande	4.1
FFR-43	Glossy, color, 4 x 9, rack card on the Rio Grande Canalization Project Environmental Water Transaction Program: Restoring Riparian Habitat Along the Lower Rio Grande	4.1

13.2.6 Legal References

Statute or Document	Description	Source or Citation
Antideficiency Act	The Antideficiency Act provides that no government employee may spend funds that have not been appropriated unless a contract or obligation has been "authorized by law."	Antideficiency Act (ADA)
Applications for Transportation and Use of public water outside the state		New Mexico Statutes Annotated §72-12B (2006).
Approval of sufficiency of title prior to acquisition.	Public money may not be expended to purchase land or any interest in land unless the Attorney General gives prior written approval of the sufficiency of the title to the land for the purpose for which the Federal Government is acquiring the property.	Pub. L. No. 107-217 (2002) (codified as amended at 40 U.S.C. §3111 et seq.)
Basic acquisition policies.		49 C.F.R. pt. 24.102 (2014).
Convention for equitable distribution of the waters of the Rio Grande		May 21, 1906, art. I, U.S.-MX., 34 Stat. 2953.
Fish and Wildlife Act.		70 Stat. 1119 (1956) (codified as amended at 16
International boundary commission.		43 Stat.118 (1924) (codified as amended at 22 U.S.C. §277 et seq.).
Miscellaneous Purposes Act	Sale of water for miscellaneous purposes act	45 Stat. 451 (1920)
Reclamation Act		Pub. L. No. 57-161, 32 Stat. 388 (1902) (codified as amended at 43 U.S.C. § 391 et seq.).
Rio Grande Canalization Act	An act authorizing construction, operation, and maintenance of Rio Grande canalization project and authorizing appropriation for that purpose.	Act of June 4, 1936, Pub. L. No. 648, 49 Stat. 1463
Rio Grande Project Act	Rio Grande project act	33 Stat. 814 (1905)
Special Water Users Association		New Mexico Statutes Annotated §73-10-48
Title Standards (Department of Justice)	The Title Standards serve as a guide for the preparation of evidence for title for all acquisitions by the United States of land or interests in land, including acquisitions by direct purchase, exchange, donation, or condemnation.	http://www.justice.gov/enrd/2001-title-standards.pdf
Uniform relocation assistance and real property acquisition policy act of 1970 (Uniform Act)	The Uniform Act establishes minimum standards for federally funded programs and projects that require the acquisition of real property. Minimum standards include criteria for notices to would be sellers and appraisals for voluntary acquisitions.	Pub. L. No. 91-646 (codified as amended at 42 U.S.C. §4601-4655)
Uniform Act (CFR)	Implementation Regulations for Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970	
Yellow Book	Compendium of Federal eminent domain appraisal law, both case and statute, regulations and practices.	http://www.justice.gov/enrd/land-ack/Uniform-Appraisal-Standards.pdf

13.3 Transaction Process Checklist Supporting Documents

Supporting documents for the transaction process checklist (document FFR-31) are listed below.

Document Reference Number	Document Description
Transaction-Specific Document Templates	
TEM-1	Letter of Seller Interest Template
TEM-2, TEM-3	Release of Records Template
TEM-4	Purchase Offer Letter Template
TEM-5	Purchase and Sale Agreement (PSA) Template
TEM-6	Legal Comments on Revised PSA Template
TEM-7	Warranty Deed Template
TEM-8	Lease Agreement Template
TEM-9	Non-Foreign Affidavit Template
Program Support Documents	
PS-1/ FFR-13	Summary RGEWTP water and cost budget
PS-2/ FFR-24	Yellow book programmatic appraisal of EBID surface water right and combined rights
PS-3/FFR-25	Yellow book programmatic review appraisal of EBID surface water right and combined rights
PS-4/FFR-23	Waiver valuation of EBID surface water rights - version 2
Examples	
EX-1	Preliminary Title Report for RGEWTP Transaction No. 5
EX-2	Corporate Resolution for RGEWTP Transaction No. 2
EX-3	Good Standing Document for RGEWTP Transaction No. 2
EX-4	Technical Negotiation Notes for RGEWTP Transaction No. 2
EX-5, EX-6	Purchase and Sale Agreement for RGEWTP Transaction No. 5
EX-7	Release of Mortgage Lien on Water Rights for RGEWTP Transaction No. 2
EX-8	Mortgage Electronic Registration System Release for RGEWTP Transaction No. 5
EX-9	Broker's Opinion for RGEWTP Transaction No. 5
EX-10	Offer of Judgment for RGEWTP Transaction No. 2
EX-11, EX-12	Stipulated Subfile Order for RGEWTP Transaction Nos. 2 and 5
EX-13, EX-14, EX-15	EBID Board VST Order for RGEWTP Transaction Nos. 2 and 5
EX-16, EX-17	Incidental Take Statement Coverage Memo
EX-18	NMELC Final Opinion Re:surface water rights subject to PSA for RGEWTP Transaction No. 5
EX-19	IBWC Preliminary Title Opinion for RGEWTP Transaction No. 5
EX-20	DOJ Checklist for preparing title opinions
EX-21, EX-22	Federal Court Records Search for RGEWTP Transaction No. 5
EX-23	Closing Instructions for RGEWTP Transaction No. 5
EX-24, EX-25, EX-26, EX-27	Post-Closing Documentation for RGEWTP Transaction No. 2

13.4 Transaction Approach Evaluation Memo Supporting Documents

The following tables provide an index of the exhibits to the four evaluation memos detailing RGEWTP experience with different transaction approaches. Supporting documents for each evaluation memo are cross-referenced with the supporting documents for the transaction process checklist (document FFR-31) (see Section 13.3 above).

13.4.1 EBID Water Rights at Risk of Involuntary Suspension

The complete list of exhibits to the evaluation report on trial implementation of acquisition of EBID water rights at risk of involuntary suspension (document FFR-27) is below.

Exhibit Reference Number	Cross-Reference	Document Description
Exhibit A	none	Value Analysis of EBID Flat-Rate Parcels at Risk of Reclassification

13.4.2 Acquisition of EBID Water Rights through Annual Lease

The complete list of exhibits to the evaluation report on trial implementation of acquisition of EBID water rights through annual lease (document FFR-28) is below.

Exhibit Reference	Cross-Reference	Document Description
Exhibit A	none	Example of an EBID Brokered Water Form Completed by Alvarez to Sell their Water Allotment for the 2014 Irrigation Season
Exhibit B	none	Example of a Brokered Water Transfer Form Completed by USIBWC and Alvarez to Transfer Alvarez' Allotment to USIBWC for the 2014 Irrigation Season
Exhibit C	none	Example of the Lease Agreement Between Galliarts and USIBWC for Galliarts' Allotment for the 2014 Irrigation Season

13.4.3 Individual Transaction of EBID Water Rights through One-on-One Negotiation

The complete list of exhibits to the evaluation report on trial implementation of individual transactions through one-on-one negotiations with owners of EBID surface water rights (aka Individual Bilateral Negotiations) (document FFR-29) is below in three parts.

Exhibit Reference Number	Cross-Reference to Other Appendices in the RGCP RGEWTP Final Framework and Program Report	Document Description
Exhibit A	FFR-31, TEM-1	Example of Galliard's Letter of Interest to USIBWC Re Sale of Water Rights
Exhibit B	FFR-31, TEM-2	Seller's Release of EBID Records Template
Exhibit C	FFR-31, TEM-3	Seller's Release of NMOSE Records Template
Exhibit D	none	Southwestern Abstract and Title Company's Proof of License to Issue Title Insurance and Title Guaranty
Exhibit E	FFR-31, TEM-4	USIBWC Letter Re Offer to Purchase Alamogordo Moving & Storage EBID Surface-only Water Rights
Exhibit F	FFR-31, TEM-4	USIBWC Letter Re Offer to Purchase Galliaris' EBID Surface-only Water Rights
Exhibit G	FFR-31, EX-4	Technical Negotiation Notes for RGEWTP Transactions 2 and 5 (Alamogordo Moving & Storage and Galliaris)
Exhibit H	none	USIBWC Cover Letter Re Purchase and Sale Agreement for RGEWTP Transaction No. 2 (Alamogordo Moving & Storage)

Exhibit Reference Number	Cross-Reference to Other Appendices in the RGCP RGEWTP Final Framework and Program Report	Document Description
Exhibit I	FFR-31, TEM-5 and TEM-6	USIBWC Purchase and Sale Agreement for RGEWTP Transaction No. 5 (Alamogordo Moving & Storage)
Exhibit J	none	Signature Page for Purchase and Sale Agreement for RGEWTP Transaction No. 5 (Alamogordo Moving & Storage)
Exhibit K	none	USIBWC Cover Letter Re Purchase and Sale Agreement for RGEWTP Transaction No. 5 (Galliart)
Exhibit L	FFR-31, TEM-5, TEM-6 and EX-5	Purchase and Sale Agreement for RGEWTP Transaction No. 5 (Galliarts)
Exhibit M	none	Memo Re Selection of Holt, Mynatt & Martinez as Closing Agent for RGEWTP
Exhibit N	none	Preliminary Title Report for RGEWTP Transaction No. 2 (Alamogordo Moving & Storage)
Exhibit O	FFR-31, EX-1	Preliminary Title Report for RGEWTP Transaction No. 5 (Galliarts)
Exhibit P	none	Bank of America's Instructions on How to Secure a Partial Release of Mortgage for RGEWTP Transaction No. 5 (Galliarts)
Exhibit Q	FFR-31, EX-9	Broker's Opinion on Fair Market Value of Real Property for RGEWTP Transaction No. 5 (Galliarts)
Exhibit R	FFR-31, EX-8	Mortgage Electronic Registration System Release for RGEWTP Transaction No. 5 (Galliarts)
Exhibit S	none	City of Las Cruces Notice of Termination of Interest in Contract to Convey Real Estate
Exhibit T	FFR-31, EX-7	Partial Release of Mortgage Lien on Water Rights for RGEWTP Transaction No. 2 (Alamogordo Moving & Storage)
Exhibit U	FFR-31, EX-12	Stipulated Subfile Order in Lower Rio Grande Adjudication for RGEWTP Transaction No. 5 (Galliarts)
Exhibit V	FFR-31, EX-11	Stipulated Subfile Order in Lower Rio Grande Adjudication for RGEWTP Transaction No. 2 (Alamogordo Moving & Storage)
Exhibit W	FFR-10	EBID Policy 2013-ENG14
Exhibit X	none	EBID Fact Sheet on Water Right Transfers
Exhibit Y	none	EBID Water Right Transfer Application and Legal Notice for RGEWTP Transaction No. 5 (Galliarts)
Exhibit Z	FFR-6; FFR-31, EX-16	Contractors' Incidental Take Statement Coverage Memo for Leasburg Extension Lateral Wasteway #8 Restoration Site

Exhibit Reference Number	Cross-Reference to Other Appendices in the RGCP RGEWTP Final Framework and Program Report	Document Description
Exhibit AA	FFR-7; FFR-31, EX-17	USFWS Memo Re Additional Clarification on Incidental Take Statement
Exhibit BB	FFR-31, EX-13	EBID Resolution 2014-S&T-05: Voluntary Suspension and Transfer Order for RGEWTP Transactions Nos. 2 & 5 (Alamogordo Moving & Storage and Galliarts)
Exhibit CC	none	EBID Resolution 2014-S&T-05: Exhibit A Move-From and Move-To Parcels
Exhibit DD	FFR-31, EX-14	EBID 2014-WT-012: GIS Map of Move-From and Move-To Parcels for RGEWTP Transaction No. 2 (Alamogordo Moving & Storage)
Exhibit EE	FFR-31, EX-15	EBID 2014-WT-013: GIS Map of Move-From and Move-To Parcels for RGEWTP Transaction No. 5 (Galliarts)
Exhibit FF	none	EBID Parcel Information Report on USIBWC Water Righted Land
Exhibit GG	FFR-31, EX-18	NMELC Final Opinion Re Validity of Surface Water Rights for RGEWTP Transaction No. 2 (Alamogordo Moving & Storage)
Exhibit HH	none	NMELC Final Opinion Re Validity of Surface Water Rights for RGEWTP Transaction No. 5 (Galliarts)
Exhibit II	none	DOJ Delegation of Authority to USIBWC to Determine Title Sufficiency
Exhibit JJ	none	Closing Instructions for RGEWTP Transaction No. 2 (Alamogordo Moving & Storage)
Exhibit KK	none	USIBWC Preliminary Title Opinion for RGEWTP Transaction No. 2 (Alamogordo Moving & Storage)
Exhibit LL	FFR-31, EX-23	Closing Instructions for RGEWTP Transaction No. 5 (Galliarts)
Exhibit MM	none	Southwestern Abstract and Title Updated Title Report and Certificate of Title for RGEWTP Transaction No. 2 (Alamogordo Moving & Storage)
Exhibit NN	FFR-31, EX-25	Closing Agent's Settlement Statement for RGEWTP Transaction No. 2 (Alamogordo Moving & Storage)

13.4.4 Term-limited Transfer of EBID Water Rights

The complete list of exhibits to the evaluation report on a term-limited transfer of EBID water rights (document FFR-30) is below.

Exhibit Reference Number	Cross-Reference	Document Description
Exhibit A	none	Legal Memo Regarding Ownership of Water Rights as a Requirement for Use of Rio Grande Project Water
Exhibit B	none	Draft agreement for term limited transfer (aka "lease") between USIBWC and City of Las Cruces
Exhibit C	none	Estimated total cost of term-limited transfer of water rights and brokered water for restoration sites
Exhibit D	none	Estimated cost of term-limited transfer of water rights and brokered water by restoration site

13.5 RGEWTP Transactions

The table below provides summary descriptions of the five RGEWTP water transactions.

Transaction Number	Description
1	Recommendation to purchase 88.42 acres of pre-Rio Grande Project surface water rights and/or primary groundwater rights
2	Purchase of 4.0 acres of EBID surface-only water rights for \$7,808
3	Annual lease of 1.6 acres of EBID surface-only water rights for \$258.50 (the EBID annual assessment)
4	Annual lease of EBID brokered water of 5.87 acres of EBID surface-only water rights for \$450.95 (the EBID annual assessment)
5	Purchase of 1.6 acres of EBID surface-only water rights for \$2,552.46 (purchase price adjusted for prior lease)

13.6 Points of Contact

A list of points of contact for information about and/or professional services for the RGEWTP is provided in document FFR-46.