

silvery minnow critical habitat by providing for the necessary habitat components of primary constituent elements 1 and 2.

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. Conservation Recommendation No. 22 (USFWS 2003) is relevant to the proposed action and is stated as follows:

Reclamation should, when possible, cooperate with parties to the consultation to use drains and other works in a manner likely to provide temporary or permanent refugia in the river for the silvery minnow. Potential works will be determined in coordination with the Service and other agencies.

The Habitat Restoration and Improvement Focus Area described in the 2005 and 2006 requests for proposals for the Collaborative Program places emphasis on projects that aid in the prevention of silvery minnow extinction as well as on significant short term measures that include habitat restoration that will benefit silvery minnow populations. The projects expected to benefit silvery minnow include those that establish still or slow-water aquatic habitat in and adjacent to the river channel, and those measures that increase aquatic habitat diversity, specifically through the use of woody debris in the river channels. Additionally, the Collaborative Program identifies habitat restoration in the Isleta Reach as high priority. The proposed action will aid in the prevention of extinction of silvery minnow by creating and enhancing perennial wetted habitat in drain outfalls. The proposed action would further benefit silvery minnow by increasing aquatic habitat diversity through the placement of woody debris in the river channel, in this case at the mouth of drain outfalls in the MRG channel.

1.5 Relevant Statutes, Regulations, and Other Plans

The proposed action does not conflict with any known State or local planning or zoning ordinances. The proposed action would also be required to conform to the provisions of Section 7 of the Endangered Species Act and the Migratory Bird Treaty Act as administered by the U.S. Fish and Wildlife Service and Section 106 of the National Historic Preservation Act (NHPA) as administered by the New Mexico State Historic Preservation Officer (SHPO). Section 401 and 404 Permits will be obtained to meet the requirements of the Clean Water Act.

CHAPTER 2 ALTERNATIVES

2.1 Introduction

This chapter describes the two alternatives analyzed in this EA, the No Action Alternative and the Proposed Action. Seven other drain outfall sites were evaluated but were not selected for habitat enhancement due to the configuration of the drain outfall and/or lack of reliable flows in the drains, and were eliminated from further analysis.

2.2 Description of the Alternatives

2.2.1 Alternative A: No Action

The No Action alternative is “the future without the federal project or activity.” No habitat enhancement measures would be constructed at the mouth of drain outfalls in the Isleta Reach of the MRG. There would be little change from the current condition and trends. Channel drying resulting in RGSM mortalities would continue, while some level of use by RGSM would continue at the mouths of drain outfalls. Poor habitat diversity at the mouth of drain outfalls for the RGSM would continue.

2.2.2 Alternative B: Proposed Action

The Proposed Action consists of three components. The first component is the enhancement of perennial RGSM refugia habitat at the mouths of three drain outfalls in the Isleta Reach of the MRG through the addition of large woody debris. The second component consists of proposed operations of the MRG Project drain outfall/wasteways that would support the created refugia as much as possible without affecting water deliveries. The third component consists of monitoring the refugial pools.

The proposed project is located at the outfalls of the following: (1) Los Chavez Drain Wasteway; (2) Peralta Wasteway; and (3) the Lower Peralta Drain #1 (Figure 1). These drains are located upstream of the Highway 309 bridge near Belen, New Mexico. The river in the upper Isleta Reach is a relatively narrow, confined channel with very little sinuosity. Some braiding is occurring and several unvegetated islands are present in the channel. Vegetation has encroached along the banks, further confining the flows. The MRG has often experienced zero flow conditions in this section.

From three to eight large cottonwood snags would be anchored at the mouths of the three drain outfalls as shown in the general conceptual engineering drawing (Fig. 2). About 0.5 to 1.0 acres of improved wetted habitat will be created at each of the three selected sites. The total amount of habitat created in terms of number of acres however, is not the most critical measure because perennially wetted habitats such as these are disproportionately important to silvery minnows.

Habitat and survey data was collected at each of the proposed three drain outfall sites in November 2005. Habitat data collected included stream flow, water depth and velocity distribution, cover availability, substrate composition, water temperature, and water quality (pH, DO, conductivity, and nutrients) .

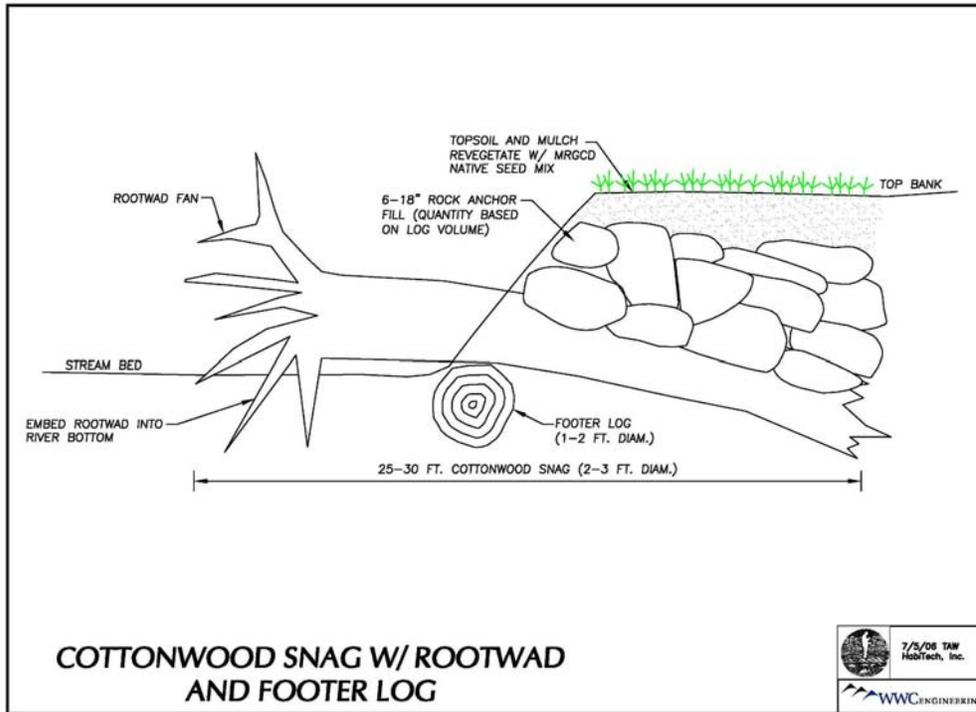


Figure 2. Conceptual engineering drawing of large cottonwood snag anchored on the river bank.

2.2.2.1 Los Chavez Wasteway

An aerial view of the Los Chavez Wasteway located at river mile (RM) 156.8, shows the relationship of the drain outfall to the main river channel, the general access point and the staging area (Fig. 3).

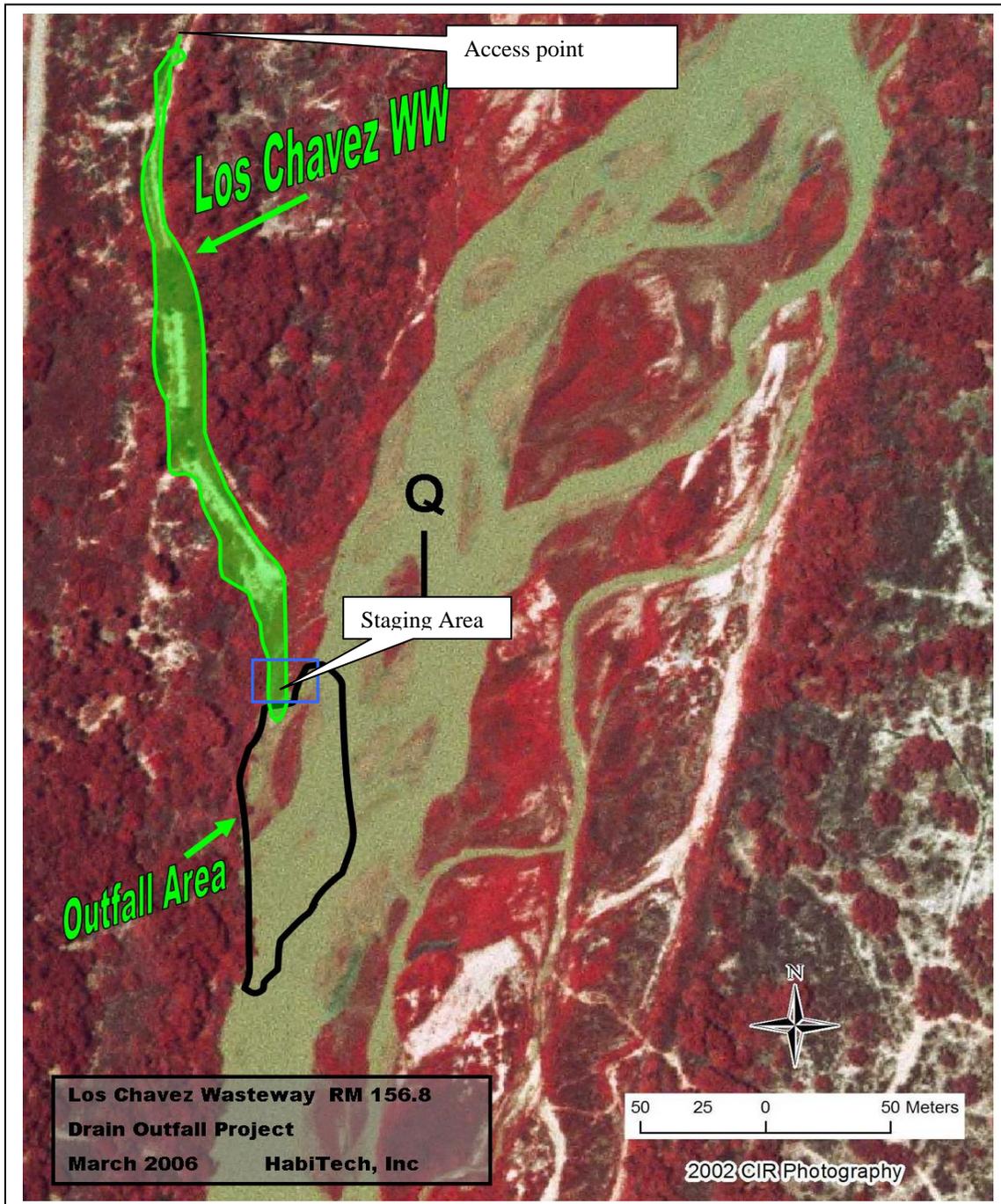


Figure 3. Aerial view of the Los Chavez Wasteway drain outfall showing the access point, staging area and outfall area where the habitat enhancement would occur.

Large cottonwood snags would be anchored in the mouth of the drain outfall and slightly downstream of the outfall as shown in Figure 4. A small staging area will be located at the end of the road, approximately 100 ft. in length by approximately 50 ft. wide (Fig. 5). No vegetation clearing will be required. A number of large standing dead cottonwood snags are available from

50 to 100 ft. from the roadway. A small amount of Russian olive and saltcedar would be disturbed; however no native vegetation is present in this immediate area. Priority will be given to utilizing already downed cottonwood snags from the Middle Rio Grande Conservancy District (MRGCD) or BOR maintenance activities if available within an economically practical distance.



Figure 4. Site plan for the Los Chavez drain outfall.

Access to the Los Chavez Wasteway is via an existing road (Fig. 6). Recreational and river management activities have kept the road clear of brush and debris and no vegetation removal will be required.



Figure 5. Closeup of the staging area for the Los Chavez Wasteway outfall.



Figure 6. Access road to the Los Chavez Wasteway drain outfall.

A portion of the jetty jacks in the immediate vicinity of the bank where the cottonwood logs would be anchored will be removed to allow installation of the logs. Any required removal of the jetty jacks would be coordinated with the Corps of Engineers.

2.2.2.2 Peralta Main Canal Wasteway

An aerial photo of the Peralta Wasteway Main Canal Wasteway (Peralta Wasteway) located at RM 152.5, shows the relationship of the wasteway to the main river channel, as well as the access point and the staging area (Fig. 7).

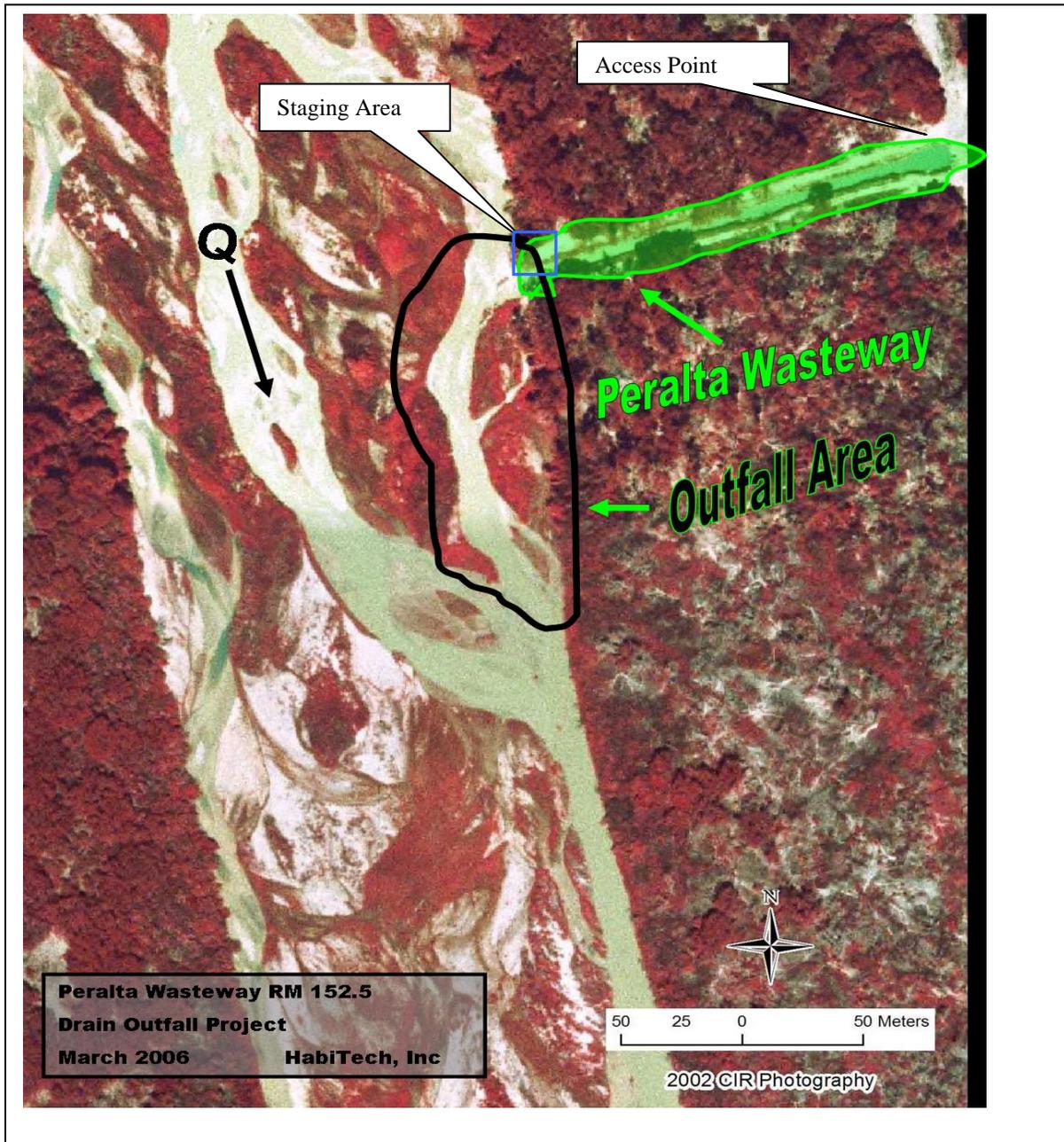


Figure 7. Aerial view of the Peralta Wasteway drain outfall.

Figure 8 is the site plan for anchoring large cottonwood snags in the mouth of the drain outfall and slightly downstream.

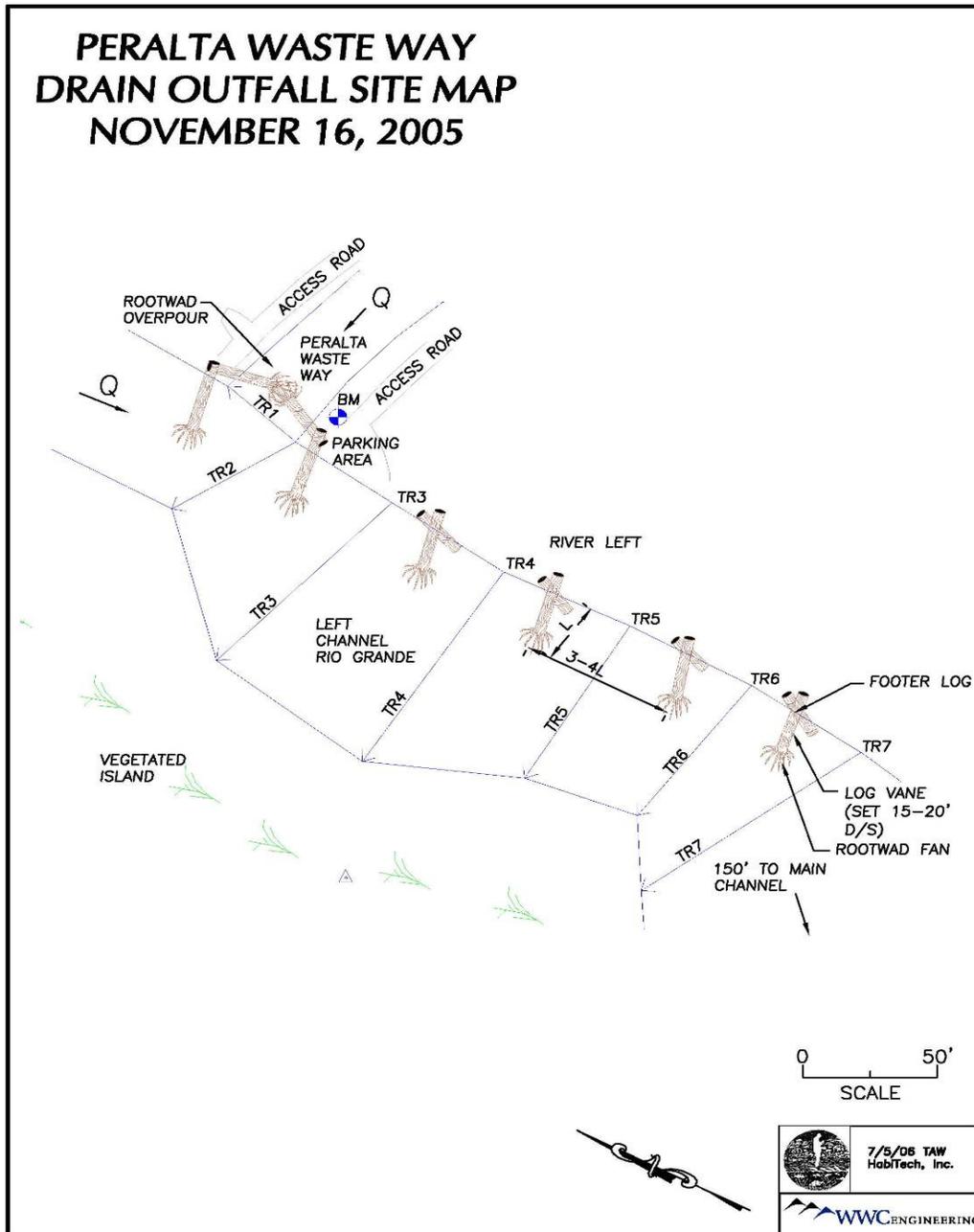


Figure 8. Site Plan for the Peralta Wasteway Drain Outfall.

The Peralta Wasteway is accessible by a well developed dirt road used primarily for recreation use and water management activities (Fig. 9). A small staging area will be sited at the drain in already-existing cleared area near the drain outfall (Fig 10). The staging area will be approximately 100 feet long by 50 feet wide. Priority will be given to utilizing already downed cottonwood snags from MRGCD or BOR maintenance activities if available within an economically practical distance. If not available, cottonwood snags would be obtained from the

cleared area adjacent to the access road (on the right side of the road in Fig. 10). An excavator will be used to dig out the root wad and tip over the standing snag. The snag would either be dragged or lifted and carried to the site using a front end loader. No vegetation will be disturbed as existing roadways and cleared areas will be used. The areas where the snags would be obtained adjacent to the drains have been mechanically cleared of non-native vegetation.

Depending on the individual treatment, the large cottonwood snags would be installed either in the bank or in the channel. For bank installation, a trench would be dug out and the log/root wad set in, backfilled with rock and soil, and revegetated. In-channel placements would require anchoring similar to the method originally described for the cottonwood snags placed in the Albuquerque Reach described in Wesche et al. (2004) and as shown in the general schematic (Fig. 2).

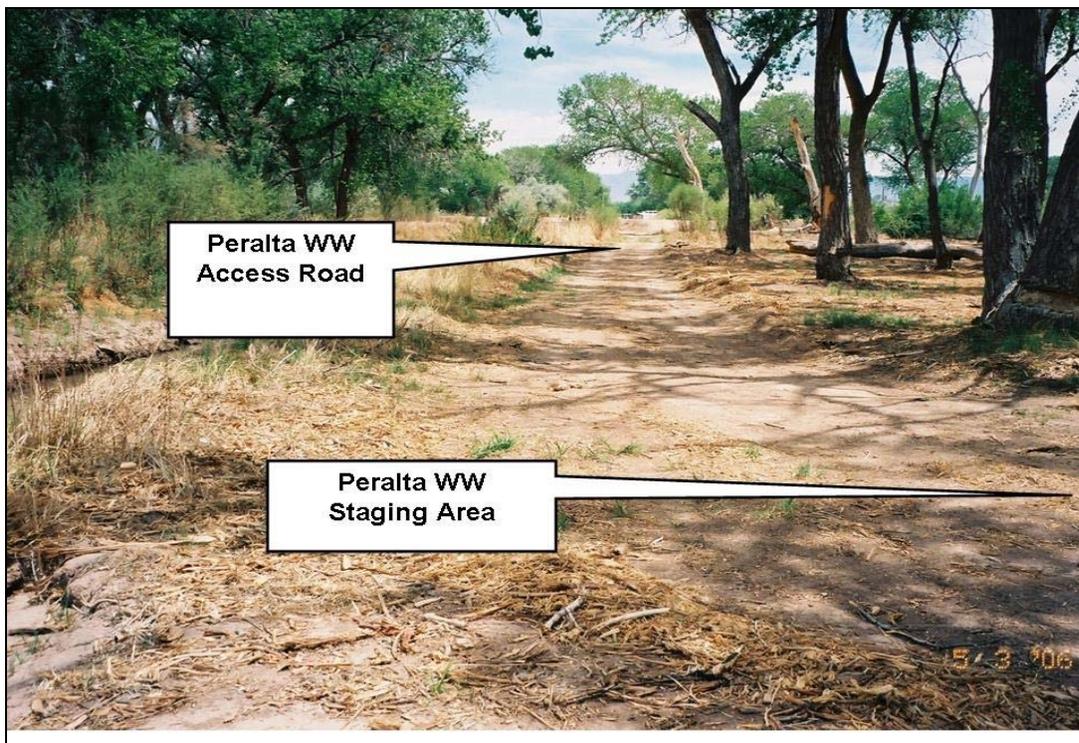


Figure 9. Access point and staging for the Peralta Wasteway Drain Outfall.

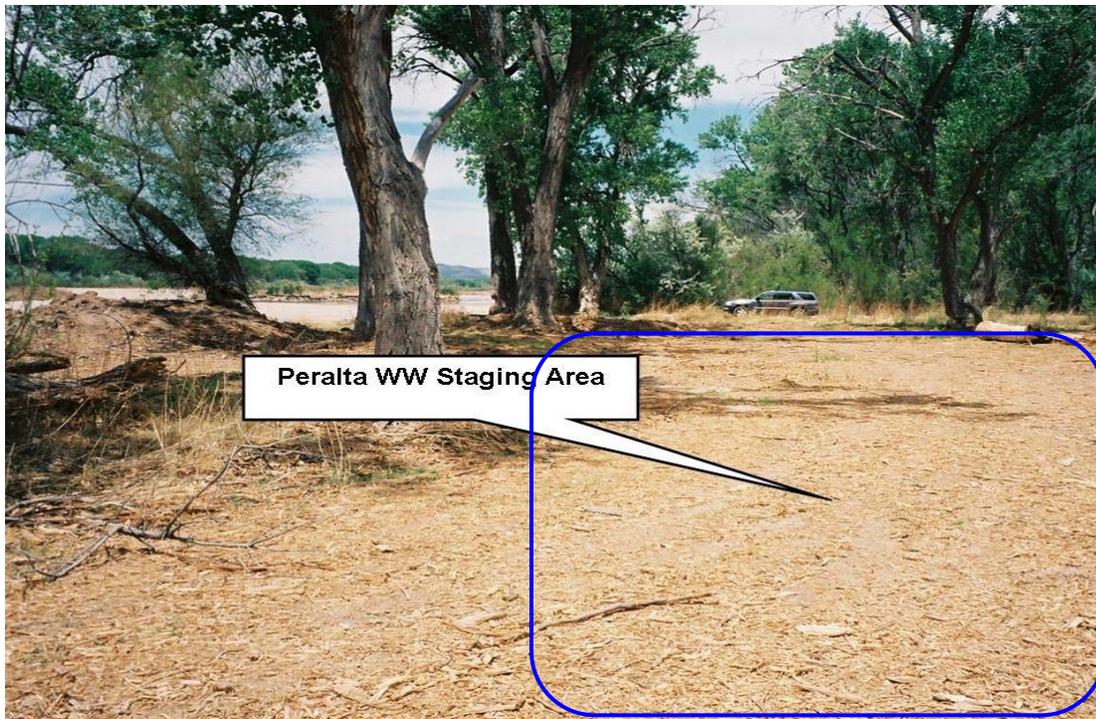


Figure 10. Peralta Wasteway showing the heavily impacted road area proposed for the staging area. A portion of the staging is in the foreground, out of the photo. Approximate dimensions are 100 ft long by 50 ft. wide.

2.2.2.3 Lower Peralta Drain #1

The relationship of the drain outfall to the main river channel, as well as the location of the access road and staging is shown in an aerial view (Fig. 11). The site plan showing the approximate location of cottonwood log placement is shown in Fig. 12. The Lower Peralta Drain #1 is accessible by a well developed dirt road used primarily for recreation use and water management activities. A small staging area will be sited near the drain in already-existing cleared areas.



Figure 11. Lower Peralta #1.

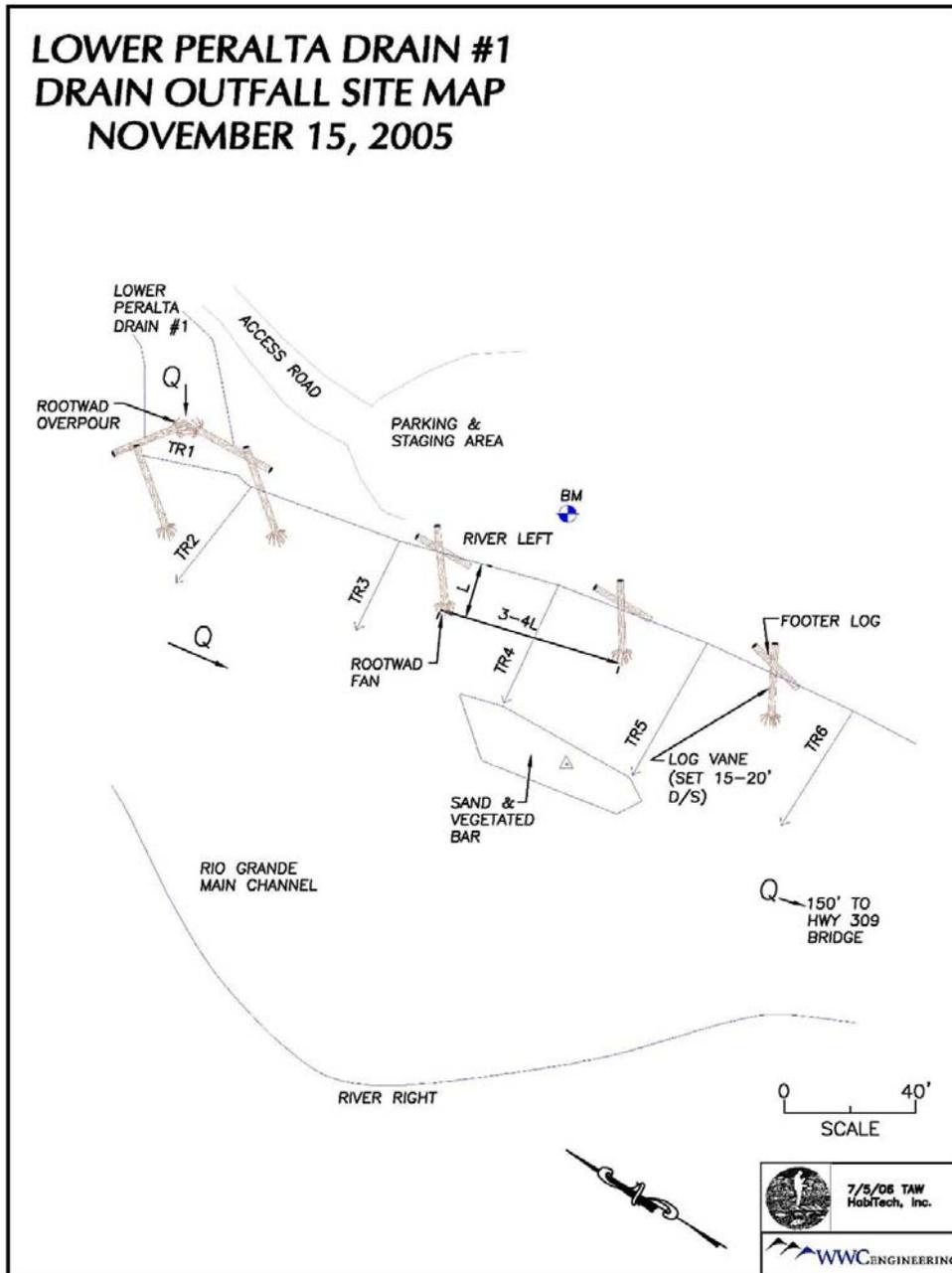


Figure 12. Site Plan for Lower Peralta #1.



Figure 13. Location of the access road and staging area for the Lower Peralta #1 Drain.

Depending on the individual treatment, the large cottonwood snags would be installed either in the bank or in the channel. For bank installation, a trench would be dug out and the log/root wad set in, backfilled with rock and soil, and revegetated. In-channel placements would require anchoring similar to the method originally described for the cottonwood snags placed in the Albuquerque Reach described in Wesche et al. (2004).

2.2.3 Operation of Drain Outfalls/Wasteways

As much as feasible, the MRGCD will operate the drain outfalls/wasteways to support the refugia created at the three sites. However it is essential to understand that there will be no changes to water deliveries, nor will any more water be consumed as a result of these changes. There will be no net depletions. Water deliveries will continue to be made as in the past. The number of zero flow days in the Peralta Wasteway and Lower Peralta #1 Drain will likely be similar to that observed for 2003 through 2005 (summarized in Table 1). The changes in operations involve small improvements in efficiency that result in small increments of water that can be released through these three drain outfalls. Such small improvements result in focusing more water in these drains rather than spreading out releases among many drain outfalls as has been done in the past.

Drain	Average Q (cfs) March-October	Peak Q (cfs) March -October	Number Zero Q Days July-September	Consecutive Zero Q Days July-September
Peralta Wasteway				
2003	12.0	84	76	52
2004	21.7	155	55	21
2005	60.6	157	17	13
Lower Peralta #1 Drain				
2003	5.9	79	51	10
2004	3.6	40	48	10
2005 ¹	12.8	93	13	6

Table 1. Drain flow analysis for Peralta Wasteway and Lower Peralta #1 Drain for average flow, peak flow and number of zero flow days for 2003 through 2005. Los Chavez is not gaged.

The following sections describe the operations for each of the three drain outfalls proposed for enhancement.

2.2.3.1 Peralta Main Wasteway

This site is located at the tail-end of the Peralta Main Canal. Small volumes of water are generally, but not always, available at this location. These small volumes of water are normally directed through a side gate off the wasteway into the Peralta Drain. The side gate is located about 30 feet upstream of the point where the wasteway discharges to the river. Discharge to the river (and the proposed habitat area) now occurs only when larger volumes of water (estimated greater than 40 cfs) go through the wasteway. The side gate is normally fully open, but cannot fully divert the flow, so the excess spills over the measuring weir and into the river.

The proposed operation would replace the manually operated slide in the side gate to the drain with an automatic gate. This gate has already been purchased by MRGCD, and will be installed sometime this season (2006). The gate will be set to maintain a fixed water surface elevation in the wasteway channel, sufficient that the desired discharge to the habitat area falls over the measurement weir. Most water will still go through the side gate to the drain, but a small and relatively constant flow will be maintained to the habitat area. Normally, this would be a small flow, perhaps 2 to 4 cfs. Flows through the wasteway in excess of side gate capacity will also go to the river and the habitat area, providing some range of variability. Since this facility is fed solely from an MRG Project canal, it is also possible that flow to the habitat area could be zero. If MRGCD were not diverting, or if all water on the canal were being used, none would be available for the habitat area.

2.2.3.2 Lower Peralta Drain Outfall #1

This site is located about three miles south of the Peralta Main Wasteway. It is an outfall from the drain which is fed from the side gate on the Peralta Wasteway. The drain also receives significant tail water returns from other canals in the area, in addition to groundwater returns from irrigated lands. There is also some component of flow which originates as groundwater

¹ Record through August 19, 2005

leakage from the river. In the wintertime, base-flows of 40 to 60 cfs are typically seen in this drain. In the summer, groundwater base-flows may be much reduced, but are more than offset by increased irrigation returns. It is common for this drain to be carrying as much as 150 cfs at times during the irrigation season. At the outfall point, an automatic gate is currently used to control level. Normally, this gate is raised partly or completely, so that all water in the drain is retained, and only a small amount of gate leakage finds it way to the river through outfall #1. Only at times of great excess in the drain does water discharge over the gate to the outfall point.

The proposed operation would use the existing automated gate to maintain a small steady flow (estimated 2 to 4 cfs) over the gate to the outfall and the habitat area. This would entail only a simple programming change, and would have little impact to other operations at the site. Excess flows would still be released to the outfall and habitat area when necessary to prevent flooding or damage to the drain. These periodic increases in flow would also introduce some degree of hydrologic variability to the habitat area. It is unlikely that the drain would ever be completely dry, although it is possible for the water surface elevation in the drain to drop to a point where it could no longer pass over the top of the automatic control gate in the outfall. Fortunately, there is a check structure in the drain, just downstream of Outfall #1, which could be operated when necessary to increase the water surface elevation.

2.2.3.3 Los Chavez Wasteway

This site is a few miles north of the Peralta Main Wasteway, on the opposite (west) side of the river. It is a currently abandoned wasteway from the Belen Riverside Drain. The drain in this area functions as a part of the conveyance system for getting water to Socorro division via the Unit 7 Drain. It receives only scant groundwater inflows, and minor tail-water returns. However, the heading of the drain can, and generally is, fed water from the Belen High Line canal via the 240 Feeder. A gate at the end of the 240 Feeder allows up to about 80 cfs to be diverted into the drain. This water currently may supply Unit 7, be routed in to several small canals north of Belen, or be released to the river just south of Belen.

The proposed change would reactivate the abandoned wasteway (done temporarily in 2005). MRGCD would install an automatic gate in an existing check structure in the drain. The gate would maintain a constant water level in the drain, regardless of discharge. An overflow weir would be constructed at the heading of the wasteway with appropriate dimensions to maintain the desired discharge (estimated 2 to 4 cfs) to the river and habitat area. Changes to flow would be accomplished by changing the water level in the drain. It is not expected that flows would vary through the wasteway, so hydrologic variability of the habitat area would only result from water moving naturally through the river. It is possible, though not probable, that flows in the drain could naturally drop to the point that the desired discharge in the wasteway could no longer be met.

2.2.4 Evaluation of Perennial Wetted Instream Habitat Use by RGSM

The ultimate measure of success for this project will be the creation of permanent, perennial refugia at three drain outfalls within the project area that provide habitat for RGSM, thereby enhancing the survival rate and relative abundance of the species. Pre-installation physical and

biological surveys and post-installation monitoring will be designed to quantitatively measure these indicators of success.

Physical evaluations will be conducted at each of the three sites by:

- 1) establishing a permanent benchmark as a consistent point of reference,
- 2) developing detailed 3-dimensional maps by engineering surveys,
- 3) measuring associated habitat characteristics within the enhanced area, including mean water depths, maximum water depths, residual depths, water velocities, substrate composition, and volume of accumulated woody debris, among others,
- 4) utilizing permanent photo points to document structure condition and stability, and
- 5) periodic observations of the enhancement areas during periods of low or zero river flow.

Biological monitoring will include sampling of fish relative abundance (non-lethal sampling only with electrofishing), macroinvertebrates and periphyton using Hester-Dendy plate samplers both in the immediate vicinity of each enhancement site and at permanent control sites located nearby, but at a suitable distance to avoid construction-related influence. Also, water quality parameters such as DO, pH, salinity, conductivity and water temperature will be routinely monitored. Appropriate statistical techniques will be applied for spatial and temporal comparisons to document physical and biological responses to the enhancement measures.

2.2.5 Equipment, Staging, and Access

Equipment proposed for construction of the habitat enhancement structures will include an excavator, dump truck and a front end loader. Equipment will not operate in the wetted river and silt fences will be installed along the banks when excavation will be along the bank line at or near the current water level. The construction contractor will be held to the following specifications:

- Prior to leaving contractor facilities, all equipment will be thoroughly inspected, and any leaky or damaged hydraulic hoses will be replaced.
- To avoid any potential impacts to RGSM critical habitat or southwestern willow flycatcher proposed critical habitat, all fueling activities will take place outside of the active floodplain.
- An environmental specialist trained in spill prevention and spill clean-up will be onsite during all construction activities.
- All equipment will be steam-cleaned before arriving and departing the job site.
- A spill kit will be maintained on every piece of motorized equipment in the river, with spill pans, containment diapers, oil booms, absorbent pads, oil mats, plastic bags, gloves, and goggles.

- Steel-mesh guards will cover all external hydraulic lines.
- Each individual operator will be briefed on and will sign off on local environmental considerations specific to the project tasks.
- Access and staging areas for the three drain outfalls would utilize existing access roads and disturbed areas. Heavy recreational use has resulted in large areas of disturbance. The drains and river channel can be accessed from the existing access roads and no access ramps will be cut into the floodplain.
- Construction will occur between August 15 and April 15 after migratory bird and southwestern willow flycatcher breeding season restrictions have been lifted August 15.

2.3 Alternatives Considered but Eliminated from Detailed Analysis

Seven other drain outfall sites were considered for enhancement in both the Albuquerque and Isleta Reaches, but were eliminated because of lack of flows, lack of drain flow management flexibility, discontinuous drain channel, poor access, or lack of readily accessible large cottonwood snags. These sites included:

Upper Corrales Drain	UCRDR
Corrales Main Canal Wasteway	CORWW
Lower Corrales Riverside Drain	LCRDR
Central Avenue Wasteway	CENWW
Lower Peralta Riverside Drain #2	LP2DR
Feeder # 3 Wasteway	FD3WW
Storey Wasteway	STYWW

Refer to Figure 1 for a map of the location of these sites.

CHAPTER 3 AFFECTED ENVIRONMENT

3.1 Introduction

This section describes the current condition of resources in the project site that may be affected by the Proposed Action. Resources and related topics presented include geomorphology and soils, hydrology, water quality, net depletions, vegetation, wildlife, fish, threatened, endangered and special status species, cultural resources, environmental justice, and Indian trust assets.

The affected environment is within the Isleta Reach of the Middle Rio Grande. This area has been identified by Reclamation and the Interstate Stream Commission, as well as the Collaborative Program, as being a reach of the Rio Grande where habitat/ecosystem restoration projects would be highly beneficial to all life stages of the RGSM.