

# MANAGEMENT PLAN SANTA FE RIVER RURAL PROTECTION ZONE

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## INTRODUCTION

The Santa Fe River Rural Protection Zone (originally known as the Santa Fe River Preserve) is located along the Santa Fe River Corridor, just downstream and southwest of the Santa Fe Wastewater Treatment Plant, on property owned by the City Municipal Airport. Initial efforts to restore this section of the Santa Fe River began in 1997, and in 2000 the Forest Guardians were awarded major funding by the New Mexico Environment Department (The Santa Fe River Restoration Project FY00-E0) to begin intensive revegetation, flood plain restoration and removal of non-native shrubs and trees. This program was the result of concerns that the Santa Fe River in this section of the River was polluted and that it violated State Water Quality Standards, particularly for dissolved oxygen and pH levels in the water column. In 2002, City of Santa Fe, New Mexico, Resolution 2002-77, established the preserve as a Rural

Protection Zone, and provided a mechanism for the continued restoration of the stream within that area, in consultation with various city, county and state agencies, and interested private landowners. The goal of the project was to restore native plant communities and natural ecological processes to the stream and riparian zone within the area. This in turn would positively affect water quality in the river as a result of increased nutrient and pollutant absorption and removal by the native vegetation, increased channel shading that would result in lower water temperatures, and reduced sedimentation rates during high flow periods through the stabilization of bare stream banks. Work under the contract was completed in 2004.

As a result of the restoration efforts, native vegetation within the Rural Protection Zone has been re-established, and a healthy stream and adjacent riparian floodplain is now developing in this section of the Santa Fe River Corridor. The increased vegetation has stabilized the stream banks and provided shade over the water column; this in turn has reduced erosion, lowered the amount of sediment in the stream, and lowered water temperatures. This is also expected to have a positive impact on the CWA §303 (d) listed impairments of dissolved oxygen and pH in this section of the river.

Santa Fe Resolution No. 2002-77, which established the Rural Projection Zone, also directed (in Section 4) that the Santa Fe River Commission would develop a management plan for the area, in consultation with the local community. Although this did not happen at the time the resolution was passed, due to the dissolution of the previous River Commission, the current River Commission has been asked to develop this plan. A committee of the River Commission was established to develop a draft plan. Members of the committee made a site visit to the Rural Protection Zone, along with City staff and representatives of the New Mexico State Environment Department and Forest Guardians (now known as WildEarth Guardians).

# MANAGEMENT PLAN

## General Considerations

### 1. Name of the area

The area under consideration was originally called the Santa Fe River Preserve. This name was changed to the Santa Fe Rural Protection Zone in 2002. However, the new designation has never been widely adopted by the community, and most people continue to refer to the area as the SF River Preserve. We therefore recommend that the name be changed back to the original name, but with the addition of “Santa Fe River-Airport Preserve”, to distinguish it from the existing Santa Fe River Canyon Preserve, which is located in the Santa Fe River Canyon above the city, as well as to recognize the land ownership contribution of the Santa Fe Municipal Airport.

### 2. Current Condition of the Rural Protection Zone

The vegetation planted in the initial restoration project has become well established, and ecological functioning has returned to the area to the point that new plants are likely to become established on their own. As a result, additional plantings of shrubs and trees may be helpful but not necessary in the future. In addition, the increased vegetation cover means that the normal geophysical processes of erosion and sediment deposition have also begun to occur within the channel and on the adjacent stream banks, which will result eventually in an active and healthy riparian flood plain. This has enabled the system to slow down flows during flooding, and reduce

the amount of erosion both within the preserve and further downstream<sup>1</sup>. For example, during the summer of 2008, there were several high flow events in the Santa Fe River that caused extensive erosion of the channel upstream of the Sewage Treatment Plant. However, once the stream reached the Rural Protection Zone, the water spread onto the flood plain, sediment was trapped by the vegetation, and the force of the water was reduced to the point where it no longer caused destructive erosion. This means that, except as noted below, and when necessary to protect human structures and safety, active restoration activities at the Rural Protection Zone probably are no longer necessary to obtain the desired values of reduced pollution levels and sediment control in this stretch of the Santa Fe River. However, to promote the long-term success of the restoration program, and allow for new potential benefits to the City of Santa Fe and the local community from a healthy stream and riparian ecosystem within the Rural Protection Zone, additional aspects of management will now be required.

## **Specific Management Practices**

1. Erosion control and protection of existing roads and culverts.

Several management actions and channel modifications have been undertaken in the past in order to protect Calle Debra, off of State Road 56 where it passes through the preserve, and in particular to insure the proper functioning of the culverts that carry the river under the road.

Should similar action be necessary again in the future, either here or in other parts of the Rural

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<sup>1</sup> For example, the Santa Fe Preserve was observed as a functioning floodplain/wetland during a large runoff event in 2008. During the early evening of August 4, a major flood of approximately 300-500 cfs was spilling over the concrete grade check at the lower end of San Ysidro Park below Caja Del Oro Grant Road. However, once the uncontrolled flow entered the upper end of the Preserve, it was quickly dissipated by branching and anastomosing throughout the riparian vegetation and soil of the 50 yard wide floodplain. Within a couple of hours of this major flow, approximately 100 cfs in the river channel left the lower end of the Preserve, followed by diminished flows throughout the following days. The floodplain had captured the unnaturally high flow and then slowly released it downstream (G. Z. Jacobi, SF River Commission, personal observation, 2008).

Protection Zone, the involved local or state agency will make a proposal for action to the SF River commission, after consultation with restoration ecologists and other interested parties. These will include the WildEarth Guardians, due to their long experience with the area and its restoration. Proposals will be presented to the River Commission for approval in order to insure that any proposed action is consistent with the overall management and ecological functioning of the preserve. In this context, it is particularly important to allow for the natural movement and migration of the channel within the flood plain, and that there be intervention only to the extent that it is necessary to protect the existing infrastructure and any new developments.

Routine cleaning of the culverts and similar activities to prevent flooding may be conducted as necessary without prior approval of the River Commission on an “as needed” basis.

## 2. Beaver and other wildlife management.

Beavers are keystone species in western riparian ecosystems, and they have an effect on almost all aspects of the stream and adjacent floodplain. They can play a particularly important role in trapping sediments and pollutants in their dams, and in reducing downstream flooding by slowing down the water during high flow events. Beaver control devices may be established at culverts (and near roads) if necessary to protect those structures, but except as described below, beavers will not be disturbed or removed when present elsewhere in the area.

Since the preserve is adjacent to the Santa Fe Airport, there may be instances when beaver or other wildlife occurring within the preserve must be managed in order to reduce the threat of hazards to aircraft using the airport and its facilities. Whenever a wildlife hazard, as defined under sections §139.337 (b) 1–4 of the FAA Regulations, or their equivalent, is detected by the airport, that involves wildlife that occur either primarily or principally within the

preserve, or that are dependent upon habitat within the preserve for their presence near the airport, the River Commission will work in cooperation with Santa Fe Airport to develop and help implement a Wildlife Hazard Management Plan as required under the Sections §139.337 of the FAA regulations. If immediate action is required to alleviate any wildlife hazard, as defined as under sections §139.337 (b) 1-4 of the FAA Regulations, the Santa Fe Airport will notify the River Commission before specific actions are taken. The overall goal of this management is to maintain a living and ecologically functioning Santa Fe River within the preserve, including the presence of a diverse wildlife community, while at the same time meeting the needs of the airport to alleviate any demonstrated wildlife hazards to aircraft that use the airport.

### 3. Routine maintenance.

From time to time, routine maintenance within the Rural Protection Zone may be required, including such activities as fence repairs, invasive species control, and trash removal. To the extent possible, these activities will be conducted through and integrated with youth groups in the City of Santa Fe.

### 4. Fire management.

Fire management within the Rural Protection Zone will be passive: fires will be controlled when they occur only if it is necessary to protect nearby structures or property. Tree thinning and removal of woody debris are not recommended, since these elements are important for the healthy functioning of the river, and help provide for a diverse and productive plant and animal community within the Rural Protection Zone.

## 5. Wildlife values.

The Rural Protection Zone will be managed to protect existing and developing habitat for all species of native wildlife. This management will primarily be passive in order to not conflict with other management goals. However, there are many native shrubs that would have historically occurred in this section of the Santa Fe and that are still generally absent within the Zone at the present time. These shrubs should be actively planted in the Zone in order to provide food and nesting cover for wildlife, including birds. Possible species to be restored include red-barked dogwood, New Mexico privet, raspberry, currant, chokecherry, false indigo bush, buffaloberry, and sumac.

## 6. Educational and Recreation Values

The Santa Fe River Rural Protection Zone will be considered an integral component of the restored Santa Fe River Corridor in the Santa Fe. Because of its location, the area may be subject to different management objective and public use demands than are other parts of the river closer to the City. An advisory group will be established to consider how the Rural Protection Zone could be integrated into the overall River corridor. The advisory group will consider the extent to which the preserve should be developed for educational and recreational opportunities. This area now comprises one of the most ecologically functional and diverse stretches of the river in the Santa Fe region, and could be valuable in demonstrating to both the general public and school children how the Santa Fe River might look if it was restored once again to a “living river”. Such programs could play a key role in developing public support for the restoration of other parts of the river corridor.

The advisory group will also consider the extent to which to preserve could be developed for low impact recreational activities, since the recreational use of river corridors in other parts of the United States has led to strong public support for the restoration and maintenance of healthy, living, rivers in urban areas. We emphasize, however, that any recreation uses be controlled so that it does not impact the ecological condition and functioning of the preserves, and will be limited to such non-consumptive activities as hiking, biking, picnicking, bird watching, etc. The area will remain closed to all hunting, firearm use, off-highway vehicle activities, and the stocking of non-native fish. These plans will be developed in cooperation with the Santa Fe Municipal Airport, and address the safety and security concerns of the airport.

Until an educational and recreational plan is fully developed, limited parking and a small footpath will be established within the preserve. This would provide safe access to the area without requiring visitors to park on the side of existing roads. A limited system of footpaths would help guide hikers through the area while reducing damage from off-trail activities.

## 7. Consumptive Uses

Whenever there is a request to harvest plant material or if there is any other request for any other type of consumptive use of the resources of the Rural Protection Zone, the requestor will present a proposal to the River Commission and the Santa Fe City River Commissioner. All requests will be considered on a case-by case basis, and will be reviewed to insure that they do not conflict with other uses and values of the Rural Protection Zone, and that they do not harm the long-term integrity and ecological functioning of the area.

## 8. River Flow

As is the case with other sections of the Santa Fe River, the continued health of the stream and the riparian area flood plain in the Preserve depends upon a continuous flow of water in the river channel. This flow is provided primarily by effluent from the Santa Fe Municipal Waste Water Treatment Plant, with additional flows occurring during storms and programmed releases from upstream reservoirs. In the future, there is likely to be increased demands to remove the sewage plant discharge from the river so that it can be used for other purposes. Any major diminution of the flows through the preserve are likely to have a profound impact on the river system, reducing the current healthy vegetation, increasing erosion, and encouraging the return of exotic species like salt cedar and Russian olives. Any period during which the stream would go completely dry throughout a substantial portion of its length through the Preserve will also necessarily lead to the death of individual fish and the loss of the currently existing healthy fish population within the preserve. In addition, these changes would be likely to cause the stream in the preserve to revert to the polluted conditions that existed before the restoration program began.

We therefore recommend that a minimum flow in the river be established below the Treatment Plant, and that this flow will have priority over other potential uses of the effluent.

At the present time, there are not sufficient data to allow for a determination of the exact amount of water that would need to be released from the Treatment Plant to prevent the stream from regularly drying up. However, some information is available. There is a record of the daily and monthly releases from the plant between 2001 and 2007. Minimum daily flows over this period (averaged across the entire month) have never dropped below 1.8 million gallons per day. The lowest discharges usually occurred in June, and over the last seven years the average of the minimum daily flows in June was 2.8 million gallons per day. The average for all other months

has been higher. Local residents have noted that the stream at the bottom of the preserve will be completely dry when daily releases from the plant are in the order of 1.9 million gallons per day. To insure that the level of water in the stream is sufficient to maintain the continued health of both the aquatic and terrestrial ecosystem throughout the preserve, we recommend that the city maintain a minimum daily release from the Treatment Plant of at least 2.5 million gallons per day. We recognize the uncertainty in this figure, and urge that research be undertaken to determine the exact amount of release that is required to maintain flows in the Santa Fe River throughout the preserve. We also recognize that this level of release from the Treatment Plant may not be sufficient to meet the needs of individuals that hold water rights downstream from the Preserve.

#### 9. Additional Data Collection

In addition to the information on water releases from the Waste Water Treatment Plant and minimum flow levels in the Santa Fe River throughout the preserve that was described in the previous section, water quality will be measured in the Rural Protection Zone on a regular basis as part of the overall city water quality monitoring plan. This is necessary to determine whether the River in this reach conforms to existing State Water Quality Standards.