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Environmental Protection
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Region 6
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Water

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Environmental Impact Statement Final

Wastewater Treatment Facilities Northeast El Paso, Texas

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FINAL
ENVIRONMENTAL IMPACT STATEMENT

FOR

WASTEWATER TREATMENT FACILITIES
NORTHEAST EL PASO, TEXAS

ENVIRONMENTAL PROTECTION AGENCY
REGION 6
DALLAS, TEXAS

MAY 1980

APPROVED BY:

Adlene Harrison

ADLENE HARRISON
REGIONAL ADMINISTRATOR

The Final EIS contains only pages or sections which have been revised in response to comments received regarding the Draft EIS. Where portions of a page or table have been revised, the section or paragraphs containing the changes are noted by marks in the margin. Where the entire page has been largely rewritten, or the page is entirely new, the page number is underlined. The following pages contain no changes, but are included for the sake of continuity: 1-1; 5-30; 7-2; Appendix-23.

The Table of Contents identifies all pages which have been changed. All pages in the Draft EIS which are not reproduced here are incorporated into the Final EIS by reference.

The term wetland is no longer used as the principal term for describing the Northeast ponds, since only the overflow areas provide a wetland environment. The term wildlife habitat is used to characterize the entire ponding area ecosystem.

1. SUMMARY

The El Paso Water Utilities Public Service Board (PSB) owns and operates a wastewater treatment plant in Northeast El Paso, Texas. Presently about 5.5 million gallons per day (mgd) of sewage is treated in three oxidation ponds. Inflow will increase to 10 mgd by the year 2000. Substantial overflow occurs onto a dammed area east of the ponds, and then onto low-lying portions of the open desert which are within the Fort Bliss Military Reservation. About 3 mgd of partially treated sewage percolates to the ground water beneath the site, where it is presumed to cause pollution of the Hueco Bolson aquifer, El Paso's most important source of drinking water. The ponds and overflow areas provide a wetland environment which is an important site for waterfowl and shorebirds, including the endangered peregrine falcon and rare species such as the prairie falcon, olivaceous cormorant, and masked duck. The ponds and overflow area are also a source of insect-breeding. The site is considered an attractive nuisance, because of frequent trespass and unauthorized hunting on military and PSB land.

Analysis of water supplies available to the El Paso region indicates that agricultural water users now experience shortages. The water table in the Hueco Bolson is being lowered at the rate of two to three feet per year. Even with implementation of effective water conservation measures, municipal supplies are expected to become inadequate in the first half of the next century. The few new water supplies which may be available to the PSB are generally limited in quantity and/or quality, and expensive. Wastewater collected at the Northeast treatment plant is considered a resource which can be recycled to meet the agricultural and/or municipal shortages. Although there are many possible alternatives for recycling wastewater in Northeast El Paso, two options exist which clearly define the basic choice which is to be made. The first alternative is to construct a secondary treatment plant at the Northeast site, and build a pipeline to the Rio Grande, where most of the effluent would be discharged to the benefit of downstream irrigators. Some effluent could be used by golf courses along the pipeline, and a second pipeline could be built to deliver treated water to a power plant. A typical water and sewer bill would increase by $0.85 per month, compared to 1978 levels. A significant drawback to this option is that under existing contracts, El Paso would receive no water rights in return for augmenting the agricultural water supply.

The second alternative would involve construction of a very sophisticated plant to produce water which meets all existing and proposed drinking water standards. Most of the reclaimed water would be injected into the Hueco Bolson, where it would comingle with natural ground water and eventually be withdrawn into the municipal water system. As with the first option, a portion of the reclaimed water would be delivered to a power plant for use as cooling water. The recharge project would serve as a prototype for larger-scale recycling which could eventually provide 50 percent of El Paso's municipal water needs. Major drawbacks to the recharge alternative include

high direct costs, complex operation, and high rates of energy and chemical use. A typical water and sewer bill would increase by $2.11 per month, compared to 1978 levels.

A recharge project would cause a 1.5 percent increase in the salinity of the water within the Hueco Bolson, and a possible build-up of toxic organic compounds. There is inconclusive evidence that such compounds could increase cancer or other diseases. Many health authorities cite this uncertain risk as reason to oppose a recharge project which is to be implemented at this time. However, most public policies recommend that a risk-benefit assessment be used as the basis for determining whether or not the health impacts of a recharge project are acceptable when compared to the benefits of the project, and when compared to the risks and benefits of other options (including other water supply options). Such an assessment suggests that the health risks of the alternative would be minimized because: there is no industrial waste in the Northeast El Paso sewage; the treatment process is expected to be very effective and reliable; the injected water would be diluted by a ratio of 20:1 during its passage through the aquifer. Preliminary testing indicates that the diluted water is probably not carcinogenic. Assuming that some trace contaminants would be introduced in the water supply as the result of the project, it is estimated that the increased health risk to citizens of El Paso would be between zero and one cancer death per year. This increase would not be detectable. The water supply obtained is lower in cost than other major supplies available to the City. Because of the municipal water-supply benefits, public input during preparation of the Environmenal Impact Statement has indicated that the risks are acceptable.

The recharge alternative would eliminate the existing wildlife habitat. Public input has been received in favor and in opposition to this action. Support for the wetland is based on the absence of comparable wildlife habitat in El Paso County, and on the fundamental environmental benefits associated with maintaining diverse wildlife populations in the face of man's increasing dominance of ecosystems. Positions which accept the elimination of the wetland are in agreement with those who support the habitat, but hold that in the specific case being considered the environmental benefits of using water for the municipal supply outweigh the benefits of using water for preservation of habitat. It is felt that any habitat preserved at the Northeast site would remain an attractive nuisance and provide no recreation benefits.

The U.S. Environmental Protection Agency considered three alternatives: to fund the applicant's preferred alternative, by providing about 55 percent of design and construction costs; to fund an alternative or modified project; or to deny any additional construction grants. The agency is proposing to fund the applicants' preferred alternatives, without requiring retention of wildlife habitat at the site. The agency has determined that in the specific case under consideration, mitigation of the wildlife impacts is not practicable.

2. CONTENTS

a. All pages which contain changes from the Draft EIS are listed. However, if changes relate to Tables, not text, the revisions are listed on page 2-4.

LIST OF FIGURES

a. Appendix pages 24 through 49 have been added to the Final EIS.
b. Page "REFERENCES-8" lists references cited in the Final EIS which were not included in the Draft EIS.

LIST OF TABLES

a. An asterisk (*) is used to identify Tables which contain changes when compared to the Draft EIS.

a. Table 7-1, which was on p. 7-6 of EIS, would be moved to p. 7-11 in the Final. As the table itself is unchanged, it is not reprinted in the Final EIS.

Safe Drinking Water Act. Public Law 93-523, enacted in 1974, is designed to achieve uniform safety and quality of drinking water in the United States. The primary objective of the law is to identify contaminants and establish maximum contaminant levels acceptable in drinking water. Related provisions provide for: protection of important underground aquifers; the regulation of underground injection wells; and funding to support the development and demonstration of projects concerning reclamation, recycling and reuse of wastewaters for drinking purposes.

National Environmental Policy Act (NEPA). NEPA is Public Law 91-190, and was signed in 1969. Among its requirements, the Act provides that an Environmental Impact Statement (EIS) be prepared by Federal agencies which propose to fund an action which could have significant environmental impacts. The EIS must provide information to be used in Federal decision-making. Section 102(2)(c) of NEPA requires the EIS to consider:

a) the environmental impact of the proposed action;
b) any adverse environmental effects which cannot be avoided should the project be implemented;
c) alternatives to the proposed action;
d) the relationship between local short-term effects on man's environment and the maintenance and enhancement of long-term productivity; and
e) any irreversible and irretrievable commitments of resources which would be involved due to the implementation of the proposed action.

Section 511 of the Clean Water Act requires an EIS for EPA actions such as the awarding of grants for the construction of publicly-owned wastewater treatment facilities. This EIS describes the consequences of actions which may be taken by PSB, and funded by EPA, regarding wastewater facilities in Northeast El Paso.

Executive Order 11990. E.O. 11990 directs federal agencies not to undertake or provide assistance for new construction located in wetlands unless there is no practicable alternative and all practicable measures have been included to minimize harm to wetlands.

4. PURPOSE AND NEED

4.1.1 Problems Which Need to be Addressed

The Public Service Board (PSB) operates wastewater collection and treatment facilities which serve Northeast El Paso. Figure 4-1 indicates the service area of the collection system and the location of the present treatment plant. The plant now consists of oxidation and evaporation ponds which lack adequate capacity for serving existing and future populations. At present, partially treated wastewater from the plant overflows onto Federal lands, causing nuisance problems and percolation of contaminants to the ground water; refer to Section 6.2.2 for a discussion of these problems. The wastewater provides benefits by supporting a rare wetland environment which provides feeding, nesting, and breeding habitats for a large number of bird species, especially waterfowl; at least one endangered species utilizes the area. It is projected that future wasteloads will reach 10 million gallons per day (mgd) at the facility by about the year 2000, which will aggravate the overflow and percolation problems (Table 4-1).

The El Paso region is facing increasing problems of water shortages. Irrigation water is already in short supply. The major source of low-cost, goodquality municipal water, the Hueco Bolson, will be exhausted in the first half of the next century, unless new water sources are developed. The Northeast Sewage Treatment Plant is located within the main recharge area of the Hueco Bolson. Given the need to upgrade wastewater treatment in the area, and the desire to plan ahead against foreseeable water shortages, there is considerable interest in reclaiming wastewater in Northeast El Paso by treating effluent to a level which would permit reuse. The wastewater would thus become part of the new water supply for El Paso. Such reuse of wastewater is a general goal of the Environmental Protection Agency (EPA), and a specific objective of PSB.

4.1.2 Purpose of EIS

PSB has obtained a grant from EPA to plan for the upgrading of the Northeast Sewage Treatment Plant. Parkhill, Smith and Cooper, Inc., was selected as the consultant responsible for preparing an engineering report on potential new facilities; the report is known as the facilities plan. EPA determined

TABLE 4-1. PAST AND PROJECTED WASTEWATER LOAD AT NORTHEAST PLANT.

Year	Population in Service Area	Per Capita Flow Gallons/day	Total Flow Gallons/day	Total Flow Acre-feet/year
1970	46,281	85	3,930,000	4,405
1980	68,440	85	5,820,000	6,524
1990	91,890	83	7,625,000	8,547
2000	118,100	84	9,905,000	11,103

Source: facilities plan. Flows increase from 1990 to 2000 because of non-residential contributions.

the reuse potential of this water, and result in continued loss of a valuable resource which could enhance long-term productivity. The alternative is unacceptable as an approach to the management of water resources in the El Paso area, and is not evaluated in the EIS or facilities plan.

5.2 REUSE ALTERNATIVES

Eight distinctly different uses can be considered for the wastewater which is collected in Northeast El Paso. Four options would each utilize only a portion of the projected sewage flow: wildlife habitat (wetlands), recreation, industry, and dual water systems. These alternatives are summarized in Table 5-1. Four options would utilize the entire 10 mgd of wastewater which will be available in the year 2000: discharge to the Rio Grande; new agricultural development; recharge for eventual municipal use; direct recycling into the City water system. The four larger-scale alternatives are described in Sections 5.2.1 through 5.2.4. Each could be implemented as a single project or in combination with one or more of the alternatives described in Table 5-1. Based on the analysis which follows, of the eight reuse options, six are potentially acceptable in Northeast El Paso, and are evaluated in more detail in Section 5.3.

5.2.1 Discharge to Rio Grande

Construction of a treatment plant in Northeast El Paso, and a pipeline to the Rio Grande, would permit discharge of treated wastewater for the benefit of downstream irrigators. By supporting irrigation, wastewater reuse would aid preservation of green open space, would enhance wildlife habitats associated with farms and irrigation drains, and would contribute to the local production of food and fiber. However, the alternative would make no progress toward meeting the need to expand municipal water supplies. Major impacts on public health due to irrigation with wastewater would not be expected, because the wastewater would continue to be a small fraction of the total water supply.

One variation on the discharge alternative would be to use the pipeline to deliver treated effluent to recreation or industrial sites between the Northeast treatment plant and the river. Another variation would be to build the treatment plant at the river; however, this choice provides no special advantages and would involve land requirements and possible nuisance problems (e.g. odors) in built-up areas.

5.2.2 Agricultural Reuse

Rather than discharge treated effluent for use by existing farms, the City could develop a new farm site, recycle the wastewater for irrigation purposes, and utilize the income from crop sales to offset the costs of treatment. Areas in Northeast El Paso are not suitable for farming due to the value of the land for urban development, the risk that percolation of excess water would result in salinity increases in the Hueco Bolson, and the risk of litigation from residents of New Mexico. More acceptable candidate sites

TABLE 5-1. SUMMARY OF REUSE ALTERNATIVES WHICH INVOLVE RELATIVELY SMALL AMOUNTS OF WATER.

mgd = million gallons per day. NEP = existing site, Northeast El Paso Wastewater Ponds.
Reuse options 1, 2 and 3 are discussed in more detail as part of specific alternatives considered in Section 5.3.

Type of Reuse	Description	Water Demand	Advantages	Disadvantages
1. Wildlife Habitat	Retain up to 300 acres of the existing ponds at the NEP; seal ponds to protect ground water; fence to control trespass. Alternately, a new ponding site could be created where public access is better; see discussion of recreation, below.	1.5 mgd	Maintain substantial wildlife habitat at NEP; maintain aesthetic values; probable low dollar cost to build and operate.	Pond salinity would increase (due to elimination of percolation, increase in evaporation); 1.5 mgd of water would not be available for agricultural, municipal or other types of reuse; would not help solve existing or projected water shortage problems.
2. Recreation	Use treated wastewater for existing parks or golf courses (1.0 mgd), future golf courses (1.4 mgd), and/or a recreational lake (0.4 mgd). Facilities would be in NE El Paso and along pipeline from NEP to Rio Grande. [a]	2.8 mgd	Would meet portion of existing and future demand for municipal water, lengthening the lifetime of the existing sources of supply.	Would require relatively advanced treatment for body-contact use (recreational lake), and/or expensive separate piping systems to ensure that recycled water did not mix with potable water.
3. Industrial	Newman generating station (El Paso Electric Co.) can use 3 mgd of effluent for cooling purposes in early 1980s, declining to 1.7 mgd by 1990 as the company phases out the plant. Treatment would include lime softening in addition to conventional processes. Six mile pipeline would be constructed from NEP to power plant. No other major customers exist, nor is there any projection that new industry will locate in the Northeast El Paso area.	2.0 mgd (average over 20 years)	Would meet portion of existing and future demand for municipal water, lengthening lifetime of existing sources of supply. No health risks.	Relatively expensive to build and operate a treatment plant.
4. Dual water Systems [b]	Build two piping systems in built-up areas to deliver both potable and non-potable water (treated wastewater); non-potable supply would be used for lawn watering, fire-fighting and toilet flushing.	0.6 mgd	Would meet portion of existing and future demand for municipal water, lengthening lifetime of existing sources of supply.	Impractical for existing development (TDWR, 1977, p. II-72). Expensive treatment required to avoid health problems from occasional consumption of the recycled sewage (such as drinking from a garden hose). According to facilities plan, dollar costs would approach $2.00 per thousand gallons of delivered water.

a. Existing golf courses: Ft. Bliss and Cielo Vista. New courses are those proposed in City recreation plan (EPDPRD, 1978f). Lake could be at flood retention pond southwest of treatment plant, or in vicinity of Castner Range.
b. See discussion of this alternative in Haney and Beatty, 1977; TDWR, 1977.

TABLE 5-2. ANALYSIS OF ALTERNATIVES WHICH DO NOT INVOLVE RECHARGE TO THE HUECO BOLSON.

	CASE 1 RIVER DISCHARGE	CASE 2 AGRICULTURAL REUSE	CASE 3: RIVER DISCHARGE PLUS REUSE BY INDUSTRY, RECREATION AND WETLANDS
Facilities	Secondary treatment & filtration at existing site; pipeline to river.	Secondary treatment at existing site; pipeline to farm 11 miles ESE of site.	Secondary treatment plus filtration and lime precipitation at site; pipeline to river, via golf course; pipeline to power plant.
Reuse quantities [a]	a. River 8.6 mgd	a. Farm 8.0 mgd b. Wildlife habitat 0.6 mgd [e]	a. River 5.3 mgd b. Wildlife habitat 0.6 mgd [e] c. Industry 2.0 mgd d. Golf course 0.7 mgd
Economics			
annual cost [b]	$2,046,500	$2,330,000	$2,692,100
annual benefit from reuse		a. $390,000 b. none	a. none b. none c. $759,200 d. $313,700
net cost [c]	$2,046,500	$1,940,000	$1,620,200
Advantages	Helps alleviate shortages of Rio Grande irrigation water.	Preserves wetland; increases regional crop production. Could utilize lower degree of treatment [d]	Helps alleviate shortages of Rio Grande irrigation water. Preserves wetland. Meets existing demand for potable water in Hueco Bolson.
Drawbacks	No contribution to municipal water supply. Wetland destroyed.	Creates new demand for water in water-short area. Requires right-of-way on Ft. Bliss and extensive acquisition of private land. Comparatively high energy demand.	Significant amounts of energy and chemicals required for treatment to permit industrial reuse.

a. Average volume of reuse over 20-year period.
b. See Table 5 in Facilities Plan for summary of economic guidelines and unit costs.
c. Cost less benefit.
d. PSB has determined that secondary treatment would be required to protect adjacent land values.
e. See Section 5.4.1 for a discussion of the habitat alternatives.

TABLE 5-3. EVALUATION OF ALTERNATIVES WHICH INVOLVE RECHARGE TO THE HUECO BOLSON.

All cases are broadly comparable in that they augment the municipal water supply, serve as a pilot for larger scale projects, require considerable chemicals, energy, monitoring and operational expertise, result in a salinity build-up in Hueco Bolson, and involve a possible but uncertain health risk.

	CASE 4: POTABLE WATER FOR RECHARGE, PARKS, NON-POTABLE WATER FOR INDUSTRY	CASE 5: POTABLE WATER FOR MULTIPLE REUSE	CASE 6: POTABLE WATER FOR RECHARGE, INDUSTRY ONLY
Facilities	Potable-water plant, with pipeline to parks and recharge wells; advanced secondary treatment plant, with pipeline to power plant.	Potable-water plant, with pipelines to parks, power plant and recharge wells; wetlands retained on small scale.	Potable-water plant, with single pipeline to power plant and recharge wells.
Reuse Quantities	a. Recharge 6.3 mgd b. Power Plant 2.0 mgd c. Parks 0.3 mgd	a. Recharge 5.7 mgd b. Power Plant 2.0 mgd c. Parks 0.3 mgd d. Wildlife habitat 0.6 mgd [d]	a. Recharge 6.6 mgd b. Power Plant 2.0 mgd
Economics			
Gross annual cost [a]	$ 4,814,000	$ 4,697,200	$ 4,803,000
Annual benefits	a. $ 2,391,000 b. $ 759,200 c. $ 130,300	a. $ 2,163,700 b. $ 759,200 c. $ 130,300 d. 0	a. $ 2,505,400 b. $ 759,200
Net Cost [b]	$ 1,533,500 [c]	$ 1,644,000	$ 1,538,400
Advantages	Less than other two cases.	Preserves wetland at site.	
Drawbacks	Flexibility and efficiency of plant is impaired by need to operate two separate facilities at same site. Power plant commitment to utilize water is uncertain after 1993, and will decline before then.	Smaller portion of wastewater is reused for municipal purposes due to retention of wetlands.	Slight increase in water quality impacts and health risk compared to 4 and especially to 5.

a. See Table 5 in facilities plan for summary of economic guidelines and unit costs.
b. Cost less benefit.
c. Decreased by $70,000 per year when parks option is excluded because gross cost is less and recharge benefits are greater.
d. See Section 5.4.1 for a discussion of an alternative which would provide similar habitat.

TABLE 5-4. COMPARISON OF DISCHARGE ALTERNATIVE (CASE 3) TO RECHARGE ALTERNATIVE (CASE 6).

See Figures 5-1, 5-2, 5-3, 5-4 and 5-5 for information on these alternatives.

FACTOR	DISCHARGE ALTERNATIVE (Case 3)	RECHARGE ALTERNATIVE (Case 6)
Description	Secondary treatment + filtration and lime precipitation plant built at existing site in N.E. El Paso. Pipeline built to river, serves golf courses along the way; second pipeline to power plant. Small wetland (50 acres + 50-acre overflow) retained. Figure 5-1 shows location facilities; Figure 5-2 illustrates the treatment system.	Plant producing potable water built at existing site in N.E. El Paso. Pipeline built to serve recharge wells and power plant. Existing ponds would dry up. Figure 5-4 shows location of facilities; Figure 5-5 illustrates the treatment system.
Reuse Quantities	a. Drinking water (recharge) none b. Power plant 2.0 mgd c. City parks 0.3 mgd d. Wetland ponds 0.6 mgd e. Discharged to Rio Grande 5.3 mgd	a. Drinking water (recharge) 6.6 mgd b. Power plant 2.0 mgd c. City parks none d. Wetland ponds none e. Discharged to Rio Grande none
Economics		
Capital cost, plant	$ 11,782,500	$ 25,283,000
Capital cost, pipelines and wells	7,935,000	3,956,000
Cost, total	19,717,500	29,239,000
Annual labor cost	466,000	604,000
Annual energy cost	306,000	621,000
Annual chemical cost	112,500	772,000
Annual materials cost	110,000	230,000
Total annual operating cost	994,300	2,232,000
Annual income	109,500	109,500
Annualized capital and operating costs, adjusted for income	2,692,100	4,802,500
Value of water reclaimed	1,071,900	3,264,000
Costs less benefits	1,620,200	1,538,400
Impact on utility rates [a]	Average increase monthly water bill $0.19 Average increase monthly sewer bill $0.66	Average increase monthly water bill $1.21 Average increase monthly sewer bill $0.66
Resources used or produced per year		
Chlorine used	160,000 pounds	14,000 pounds
Lime used	583 tons	3,044 tons
Carbon used	none	200 tons powdered 37.5 tons granular
Energy used [b]	4,840,000 kilowatt hours	9,830,000 kilowatt hours
Other chemicals used	180,000 pounds carbon dioxide	3,650,000 pounds carbon dioxide 124,000 gallons methanol 30,000 pounds polymers
Water reclaimed	3,035 acre-feet	9,672 acre-feet
Compost produced	3,000 cubic pounds/year	2,000 cubic pounds/year
Comparative environmental advantages	Provides water for irrigation uses; preserves wetland; direct costs and resource use modest. Assuming 70% efficiency in reuse, and $33 income added per acre-foot of water (Landsford et al., 1977), the value of the reused water would be about $150,000 per year.	Provides more water for municipal needs, at a lower cost than alternative water supplies. Economic productivity associated with the reused water reflects value of urban water, which is high. Serves as prototype for large-scale recycling which would markedly improve improve long-term availability of municipal water; also will be a project of national and international prominance due to interest in potable recycling. Some resource costs may be recovered: energy by use of turbines in recharge wells; lime by recycling of spent sludge. May help control saline intrusion into Hueco Bolson. By stabilizing water levels in Bolson, helps maintain well yields near present levels, thus improving ability of well fields to meet intense summer peaking demands. Rate increase will induce conservation of water.
Comparative environmental drawbacks	City pays for cost of discharge to river; but receives no income or water rights in return. By not recycling wastewater, City will need larger volumes of alternative water supplies, which are more expensive than recycling; thus in long run, water rates will be higher. Construction impacts associated with pipelines would be greater than those of Case 6, involving temporary alterations in drainage, air quality, sound quality, and noise. Rate of drawdown of Hueco Bolson would continue to accelerate.	Wetland lost. Some salinity build-up and other quality changes in Bolson. Health risks are uncertain, but presumed slightly greater than for conventional water (see Wilson, 1980). Potential air pollution from carbon regeneration and methane combustion; would be controlled by scrubbers. Operation of facility would be complex, require extensive monitoring, considerable use of energy, chemicals and materials.

a. Assumes 65 percent EPA funding of capital costs of Case 6; 75 percent funding of Case 3. Rates have already been increased to reflect anticipated costs. Present indications are that funding of Case 6 could be as low as 55 percent.
b. Excludes raw sewage pumping costs, which are the same for both options, and includes credit for energy recovery at treatment plant (methane combustion).

5.4 ALTERNATIVE COMPONENTS OF A RECHARGE PROJECT

Most decisions about the detailed characteristics of a recharge project properly would be made during project design. However a few basic alternatives must be evaluated during project planning. One major choice is the extent to which wildlife habitat is to be maintained at the site; this is addressed in more detail below (5.4.1). Another choice involves the selection of a recharge method, which is discussed in 5.4.2. A third option involves selection of the most effective treatment system, and is considered in Section 5.4.3. A number of other considerations are discussed in 5.4.4, including: plant relocation; solids handling; resource conservation; operation and monitoring; influent control; and flow reduction.

5.4.1 Wildlife Habitat (Wetland)

The Northeast El Paso treatment site presently includes 482 acres of ponding area which provide a significant wildlife habitat (see p. 6-29 and section 6.4.1). If a recharge project were to be implemented, retention of the entire ponding and habitat area would not be possible for the following reasons.

1. The most valuable pond (for wildlife) is within Ft. Bliss; the Army indicates the overflow discharge onto military land must stop (see p. 6-30). This position reflects specific opposition to the unauthorized use of the military reservation, and general opposition to the nuisances associated with the entire Northeast ponding area. Elimination of this pond cannot be avoided under any alternative and would substantially reduce the value of the area as wildlife habitat. In theory, the treatment ponds within PSB land could be modified to provide ecological conditions similar to those which exist at the Ft. Bliss pond. However, in practice deed restrictions may allow Ft. Bliss to veto such an action.

2. Assuming that the Army would permit existing wildlife habitat to be maintained at the remaining ponds (322 acres), there would be a perpetual commitment of 1.75 mgd of water to offset evaporation losses. This represents about 20% of the average flow which would be processed by a recharge project. The water lost to evaporation would have a dollar value of $1.4 million per year (at $1.19 per thousand gallons). A cost of this magnitude would cause Case 3 (river discharge) to become cost-effective. (Note: this analysis assumes the ponds would be lined to prevent pollution of ground water. An alternative involving unlined ponds is given in Section 5.4.2.)

The economic considerations presented above illustrate a fundamental conflict which relates to the compatibility of a recharge project with the maintenance of wildlife habitat in Northeast El Paso. The purpose of a recharge project (such as Case 6) is to invest a large amount of money and effort to convert wastewater into a water resource which can supply municipal demands. Such a project can be justified only if the need for municpal water is great, and the prospective users of the water resource are willing to pay the costs involved. Wildlife cannot pay such costs directly. Therefore, the price of any water used by wildlife must be paid by the human users of the water.

Agreement to pay such costs represents a decision that the intangible values of an ecological preserve justify a commitment of high-value water which otherwise would be available for municipal uses.

Different individuals would undoubtedly place different values on the life support benefits of the Northeast Ponds. There is no direct way to determine what value would be assigned by the 'average' citizen of El Paso. However, an indication of the value can be determined by developing a specific alternative which would provide wildlife habitat as part of a recharge project. Such an alternative, labelled Case 6A, is discussed in Table 5-6. Case 6A would have a water cost of 600,000 gallons per day; use of the site would continue the nuisance problems which now occur near the existing ponds (see Table 5-6). The princial reason for selecting Case 6A over Case 6 would be to provide for mitigation of wildlife impacts caused by the Hueco Bolson Recharge Project. Such mitigation would benefit a variety of waterfowl and shorebirds, for which comparable habitat is scarce or absent in El Paso County (see section 6.4.1). Although the total acreage of open water would be reduced, special design and construction of the habitat would maintain an area of shore habitat comparable in dimensions and effectiveness to that which now exits.

During preparation of the Draft and Final EIS there was extensive public discussion of Case 6A. Representatives of environmental groups such as the Sierra Club and Audubon Society, as well as individual citizens, expressed support for the concept that society should be willing to pay to protect the existing habitat at the Northeast ponds (see discussion in Section 7.2.2). They indicated that the added costs associated with Case 6A were small compared to the benefits (measured both in dollars and water). These groups feel that, given the historical destruction of habitat in the El Paso area, it is especially important to protect such habitat when implementing a recharge project.

Under EPA direction, PSB established a full-scale public participation program to provide input to the planning process (see Chapter 7). A Citizens Advisory Committee was appointed to provide public participation during EIS preparation. Committee membership reflected a full range of public attitudes within the City, and provided a good cross-section of the community at large. The recommendations of the Committee were considered by PSB and EPA to reflect the opinions of the majority of El Pasoans. With regard to wildlife habitat, the Committee supported the preservation of wetlands as a generally desirable objective. However, the committee determined that under the special conditions which occur in Northeast El Paso, the retention of habitat in association with a recharge project could not be justified. The committee therefore recommended that that Case 6A be rejected in favor of Case 6 (see additional discussion in Section 7.2.1).

The Committee decision was based on an evaluation of the environmental benefits and drawbacks associated with the use of water for recharge versus wildlife purposes. A very large environmental benefit was assigned to the recycling of water for municipal use. This benefit reflects the long-term water supply needs of the City. Such needs are the basis for determining that

TABLE 5-6. EVALUATION OF ALTERNATIVES TO MITIGATE WILDLIFE IMPACTS

	RETENTION OF HABITAT AT NORTHEAST SITE (CASE 6A)	DEVELOPMENT OF HABITAT AT OTHER SITES
Description	Modify existing oxidation ponds to create shore, island, nesting and open-water habitat. Two ponding areas of 50 acres each could be developed, and supplied with primary effluent from the treatment plant. The first pond would contain fresh water (less than 1,500 mg/l total dissolved solids; 5000 mg/l water would occur in the second pond. Existing natural seals would prevent percolation; however, monitoring (using a water budget) would be needed to verify that percolation does not occur. Fences and/or patrols would be needed to control trespass; mosquito control programs would be continued.	Develop man-made or man-modified shore, nesting, open-water habitat. Locations could be any site having adequate land and water, such as historic bosque areas along the Rio Grande.
Economics	Gross cost $4,615,000/year or $188,000/year less than Case 6 (see Facility Plan). When water supply benefits are considered, Case 6A would cost $1,548,200/year while Case 6 would cost $1,518,400 per year (including salvage value). Thus 6A is $40,000/year more costly than Case 6. These evaluations do not include any added expenses for pond lining and/or habitat modification.	Not evaluated, but assumed to be similar to 6A, unless the land involved required purchase.
Benefits	1. Would provide ecosystem for life support of diverse bird population, including shore and nesting habitat which occurs in limited amounts elsewhere in El Paso County The small wildlife sanctuary would offset to small degree the elimination of habitat which has occurred over the last century or more. 2. Proper design could enhance habitat compared to existing overflow ponds; even though total acreage would be reduced, net effect on populations could be minimal. 3. Committment of water (see below) is small compared to regional needs.	1. Sites would potentially have benefits similar to 6A, although a saline pond might not be provided if the water used were clean and could be allowed to percolate. 2. Sites could provide recreational and educational benefits and avoid attractive nuisance drawbacks of Case 6. 3. Sites along the river would help maintain the Rio Grande as a major natural corridor for the movement of birds and other wildlife, and would compensate, to some extent, for losses of habitat for municipal and agricultural needs.
Drawbacks	1. Maintenance of 100 acres would require commitment of 600,000 gallons of water per day; this water otherwise would be available for recharge and municipal reuse. Over the long run, more expensive water would need to be purchased to replace this supply. The long-term impact would be 50% greater, since for each two gallons recycled into the municipal system, one gallon eventually returns as wastewater suitable for further recycling. 2. Deed restrictions imposed by Ft. Bliss appear to preclude official use of Northeast site for wildlife (or other non water/wastewater purposes). Such use could provide legal basis for reversion of ownership. 3. Access problems would limit use of site for formal recreation purposes. However, informal (trespass) recreation could continue; indiscriminate discharge of firearms could jeapordize plant personnel and/or require additional security measures. 4. Site would remain potential source of mosquito breeding and diseased waterfowl. Spraying for vector control could present hazard to waterfowl. 5. Habitat value would be reduced by proximity to the traffic noises and human activity at a hidden treatment plant, which would be greatly increased compared to present levels. The more reticent fauna would no longer visit the site. Fencing could restrict the presence of larger mammals.	1. Maintenance of ponds would require water, probably in amounts similar to Case 6A. The value of this water would depend on the alternative uses to which it would otherwise be put, and the cost of replacement supplies. 2. Possible increased costs and/or impacts if land to be used has present productive value. This could be avoided if dedicated open space or park land is available. 3. Habitat sites within Fort Bliss are not supported by the Base Commander at this time (Conyers, 1978). Habitat at a public park in Northeast El Paso remains a possibility which could be explored as park planning in the area progresses. However, at this time no appropriate site has been identified.

a recharge project is cost-effective when compared to the river discharge alternative. In the specific instance of Case 6, the project would require committment of considerable resources (dollars, energy, chemicals). The public participation indicated that, because of this commitment, the community value of the water produced by the project was enhanced. In effect, the value judgement was made that "if the need for municipal water is so great that wastewater recycling is cost-effective (and there was no disagreement on this point), then it is imperative that such recycling be fully implemented". Diversion of water to non-municipal uses could be considered only under unusual and compelling circumstances.

The principal of protecting wildlife habitats, and/or mitigating wildlife impacts, was also assigned a high value. However, in the specific instance of the Northeast Ponds, it was felt that this value was diminished for several reasons (see p. 6-29). The site is considered an attractive nuisance, because of its location in and near military land. Trespass by hunters and bird-watchers is common, and in conflict with the military use of the area. Indiscriminate discharge of firearms by some hunters presents a hazard to all others who may use the site. Recreational use of the site by the general public is not practicable due to access limitations. The site is a prospective source of mosquitoes and, perhaps, diseased waterfowl. The fact that the habitat area was created accidently, as the result of an inadequate wastewater treatment plant, was also considered. This situation, while not diminishing the ecological value of the ponds, was considered to make arguments for preserving the habitat much less forceful. A natural habitat was considered to have a much greater standing when making decisions to protect habitat or mitigate wildlife impacts.

In discussing the comparative environmental benefits of Case 6 and Case 6A, the Committee indicated that there would be support for diverting municipal water to a wildlife use, if the habitat area did not have the drawbacks associated with the Northeast Ponds. Consequently, a search was made for alternative sites within the planning area which might provide substitute habitat, with emphasis on locating sites which could provide either municipal-type recreation, or safe hunting. Hunting sites within Ft. Bliss were ruled out by the Base Commander (Conyers, 1978). The possibility of a combined wildlife-recreation area in Northeast El Paso was explored during the planning process (see Table 5-6). Good candidate sites do not exist (EPDPRD, 1978f). Possible habitat development elsewhere in El Paso is to be discussed in the context of a second facilities plan which is currently being prepared. The study is separate from the Northeast El Paso facilities plan and is not considered as providing mitigation for the impacts of a recharge project.

Upon determining that alternative sites were not available, the Committee then judged the environmental benefits of using some wastewater to provide a habitat at the Northeast ponds (Case 6A), versus use of all wastewater for municipal use (Case 6). The unanimous decision was that the municipal use carried a greater benefit to the El Paso community as a whole. Therefore, Case 6A was judged to have a more adverse environmental impact than Case 6.

Put another way, the Committee determined that, for the specific circumstances of Northeast El Paso, the sole measure of cost-effectiveness would be the degree to which an alternative met municipal water supply needs, unless there were compelling reasons to divert municipal water for another use (in this case, wildlife ponds). The Committee felt that there were not compelling reasons to provide wildlife habitat at the Northeast site, and that alternative sites were not available. Consequently, the most cost-effective alternative would be that which provided the greatest amount of water for municipal needs. On this basis, Case 6 was determined to be more cost-effective than Case 6A.

Although economic factors were considered in the evaluation of wildlife habitat, the discussions at Citizens Committee meetings indicated that the final decision to eliminate the habitat was not based on the dollar value of the water which would be diverted to wildlife. Similarly, the presence or lack of direct economic benefits from a habitat area was not considered to be of substantial importance. Based upon the considerations given above, retention of a wildlife habitat at the existing site is not considered cost-effective by PSB. As mitigation would require commitment of water resources, it is considered to be not practicable unless accomplished in association with a municipal recreation site. Such mitigation is not feasible within the project area.

5.4.2 Recharge Method

Percolation basins are an alternative to the use of wells for recharge of treated effluent. Evaluations in the facilities plan indicate that the lowest-cost option would involve removal of clay loam soils and caliche in order to maximize the percolation rate. This approach would require 162 acres of ponds to dispose of 10 mgd. Additional acreage could be provided to provide shoreline habitat, so that the ponds could function as a desirable wildlife habitat. The cost would be approximately $3,800,000, including land acquisition, which is considerably greater than the cost of drilling and operating 10 recharge wells. Alternately, most of this cost could be avoided by using the existing plant site. However, the site is poorly situated with regard to placing water into the aquifer in a location where a large volume will be recovered by municipal wells within a relatively few years. Instead most of the water would flow toward wells on Ft. Bliss, and would not become part of the city supply.

A potential advantage of percolation is that passage of wastewater through the soil provides additional treatment, especially the removal of bacteria and other pathogens. This removal is very desirable for recharge projects which involve a traditional treatment process which produces effluent containing considerable amounts of contaminants. However, the approach of Case 6 is to provide complete wastewater reclamation within the controlled environment of the treatment plant, requiring no additional removal by uncontrolled natural progress. Additional treatment during recharge is not essential to the success of the project, but instead would be an additional safety factor.

Use of percolation ponds would lead to evaporation of 0.88 mgd in an average year. This is water which, if recharged by wells, would augment the municipal water supply and have a dollar value of approximately $382,500 per year. An additional 7,000 acre feet of water valued at $2.7 million, would become a permanent part of the soil and would never reach the water table. Evaporation would increase the salinity of the recharge water by about 10 percent. Additional salinity build-up would occur because the percolating water would dissolve out soil minerals. Consequently, changes in the salinity of the municipal water supply would be greater than if wells are used for recharge. Ponds would be less effective than wells in accomplishing goals such as the control of saline intrusion.

In summary, recharge by percolation would be more expensive than recharge by wells, and produce greater degradation of the quality of ground water. Benefits normally attributed to percolation are relatively unimportant, although this approach would avoid the wildlife impacts associated with Case 6. The fundamental problem, however, is that the approach would consume (through evaporation) water of extremely high quality and value, which is counter to the fundamental objective of a recharge project. Therefore, percolation is not considered to be cost-effective.

Many of the same factors would limit the usefulness of well recharge into the unsaturated zone above the water table. In addition, operation of wells would be more difficult because back flushing would not be possible until the unsaturated zone became saturated.

5.4.3 Treatment Alternatives

Production of potable water requires three steps: primary treatment for settleable solids; secondary treatment to remove soluble organic matter, nitrogen and some trace contaminants; and tertiary processes for further removal of trace contaminants and for complete disinfection. Alternative approaches to each treatment step which are considered in the facilities plan are summarized in Appendix A.

No alternatives were considered regarding primary treatment, which would involve primary clarification and use of anaerobic digestion for solids. Three different biologically-based processes were considered for secondary treatment: conventional biological treatment; the BARDENPHO process; and the PACT process. Tertiary treatment options involve different combinations of certain basic processes such as chemical coagulation, filtration, disinfection, and carbon filtration. The facilities plan indicates that this process using the PACT system costs $1.055 per thousand gallons of treated product, compared to $1.075 for BARDENPHO, and $1.195 for a conventional system. Although the overall costs of PACT and BARDENPHO are similar, the PACT system is more cost-effective because it is considered to be particularly stable, which is essential if potable water is to be reliably produced. The PACT system is also more highly rated than other alternatives in the removal of trace organics and inorganics.

5.4.4 Other Components of a Recharge Project

Plant Site. The existing treatment plant site is well-located in a remote area and would produce no particular environmental problems once the existing overflow problem is eliminated. The only sites available for plant relocation are west of the railroad tracks, in areas which are desirable for urban development. Land costs would be significant, and conflict with the future urban land use would eventually occur if one of these sites is utilized. No benefits result from relocation of the plant; hence relocation is not recommended.

Solids Handling. The only alternative considered for management of conventional biologic sludge is dewatering and composting with sawdust. This option permits recovery of the resource values in the sludge, and its sale as a soil conditioner. The process is well-established and currently in use at other El Paso facilities. Sludge from the high-lime process and ash from regeneration of PAC are to be disposed of at the McCombs landfill. Based on data in the facilities plan, the alternative of recycling the lime-sludge is not economical at this time, but could become cost-effective in the future.

Resource Conservation. A number of actions to reduce resource use are considered in the facilities plan. Carbon regeneration is proposed for both the powdered and granular activated carbon. The PAC material would be recycled at the site using a wet-air furnace, while GAC would be returned for regeneration at the supplier's facility. Both regeneration options were selected on the basis of lowest dollar costs, which in turn reflect considerations such as energy use.

Energy use at the scale required for an advanced wastewater treatment plant must be obtained largely through purchase of electricity. Where energy can be recovered from by-products of the treatment process, such recovery is proposed in the facilities plan. Methane from the sludge digestors can be used to power some engines and pumps; heat from these machines can be used in turn in the digestors. According to the facilities plan, solar technology is not as yet sufficiently developed to make it economical for use in any capacity other than heating sludge digestors; the machine heat noted above is a more efficient source of energy for the digestors.

The potential exists for some energy to be generated in the injection wells, using down-hole turbines. According to the facilities plan, energy valued at $135,000 per year could be produced; this option would be considered in detail during project design, with adoption contingent upon results of a pilot program.

Operation and Maintenance. To reliably produce potable water from sewage, every technique of good operation and maintenance must be utilized. The facilities plan considers no alternatives to a rigorous maintenance program; rather it outlines the steps necessary to assure fail-safe operation. Flexibility is to be obtained by measures such as flow-equalization to provide a steady flow through the plant; piping which would permit any single unit to be bypassed if it is out of service; and the recycling through the plant of any

effluent which does not meet stringent water-quality standards. Reliability is to be achieved by the use of several treatment processes which provide for redundancy in the removal of contaminants such as metals, viruses, and organics. Criteria set by EPA regarding alarm-systems, stand-by equipment and other essential components of a reliable plant would be used in plant design. Operation of the plant would be assisted by computerized controls. Staffing would be sufficient to provide close surveillance of the treatment system, as well as continuous preventive maintenance and effective emergency repairs.

Monitoring would be a key component of plant operation. Figure 5-5 indicates parameters to be tested to obtain process control. Product water is to be sampled and measured routinely for all drinking water standards. Monitoring would also include viruses, gross organic content and specific organics. It is anticipated that bio-monitoring would be included in the project, using cell-toxicity and/or animal-feeding experiments; post-injection monitoring would also be performed using observation wells between the injection and public supply wells. A detailed program is to be developed during the design phase of the project. The program would include upgrading of the U.S. Geological Survey computer model of the Hueco Bolson to permit more accurate management of the recharge wells.

In the event that the reclaimed water failed to meet standards, it would be stored in the existing oxidation ponds (which would be retained for this purpose). At design flows, 30-days of storage would be provided. In the event that plant operation remained inadequate for a longer period, excess flows would be discharged into the overflow areas, as now occurs. Unless the plant were inoperative for a period of 45 days, all inflow would be contained within PSB land, and there would be no discharge onto Ft. Bliss. In the event of overflow, the potential for renewed contamination of ground water would occur. However, once the existing overflow areas are dried up, the soil beneath the ponds will develop a capacity to absorb a considerable amount of the overflow before again becoming fully saturated. Until such saturation occurs, the percolation from the overflow ponds would not reach the water table.

Influent Control. Presently the wastewater collected in Northeast El Paso is free of industrial discharges and excess levels of toxic contaminants. To maintain this situation the facilities plan proposes: a) to require any new industrial dischargers to pre-treat effluent to control toxic components; b) to initiate a public education program citywide to explain what should not be discarded into the sewer system.

Flow Reduction. Water conservation programs in El Paso are already designed to reduce wastewater flows, since water-saving fixtures are required in all new construction and in remodelled buildings. Additional water conservation alternatives, discussed in the facilities plan are most likely to reduce outdoor water use and would have water-supply benefits and a small impact on wastewater volume. Conservation is discussed further in Section 7.2.2.

Summary. Most components of a recharge project are either mandatory because of the need to provide reliable treatment or are best considered during

the design phase of the project. A few alternatives can be evaluated at this time. Eeconomic considerations are the primary determinant of cost-effectiveness in all cases. Examples of cost-effective options include: retention of existing plant site; landfill disposal of lime sludge; energy recovery from digestor gas and plant machinery.

B. ALTERNATIVES AVAILABLE TO EPA

Three options available to EPA in executing its construction grants program under Section 201 of the Clean Water Act include awarding additional grants for the design and construction of the grantee's preferred alternative, awarding additional grants on a modified or alternative project and denying additional grants.

Awarding Grants for the Grantee's Preferred Alternative. EPA may award additional grants for the design and construction of the recharge project. Significant environmental effects associated with this action include hydrology and water quality changes in the Hueco Bolson, increased risks to public health, alterations to areas which contain biological and/or archeological resources, increased use of energy, chemicals and financial resources, production of solid wastes and enhancement of the area's water supplies (see Chapter 6 for a detailed discussion of these and other impacts).

EPA considers the preferred alternative to be multiple purpose in nature because it provides benefits beyond meeting the enforceable requirements of the Clean Water Act. Based on an EPA Headquarters review (Appendix B) it appears that EPA's level of funding for this alternative would be 55 percent of the capital costs; exact dollar figures have not been finalized.

Awarding Grants for an Alternative Project. EPA may award additional grants for the design and construction of an alternative or modified project if it is more cost-effective and has less adverse environmental impacts.

Denying Additional Grants. EPA can deny awarding additional grants for the design and construction of the preferred alternative if the project does not meet EPA criteria for eligibility or if environmental impacts of the project are considered significantly adverse.

EPA is proposing to award grant funds for Case 6. This decision is made despite the impacts to wildlife habitat which will occur, and makes no provision for mitigation of the impacts. EPA concurs with the majority of the citizen input to the EIS, as reflected in the actions of the Citizens Advisory Committee. That input states, in effect, that there is a need for developing long-term municipal water supplies in El Paso which is so compelling that the recycling of wastewater is clearly cost-effective, despite high dollar costs and possible health effects. The willingness of El Pasoans to commit to this approach demonstrates the overriding importance which they attach to the provision of an adequate municipal water supply. In the face of this strong commitment, alternatives which dilute the effectiveness of recharge are not cost-

effective, and it is appropriate that the alternative be implemented without modification. Therefore diversion of water for wildlife purposes, which would occur from alternatives such as 6A, is not cost-effective. Mitigation, which would also require the commitment of water resources, is also in conflict with the fundamental objective of a recharge project, and is not considered practicable.

EPAs decision is specific to the circumstances of Northeast El Paso. Projects lacking conditions of a similarly compelling nature, and having adverse impacts to wildlife, would not be supported unless adequate mitigation measures were undertaken pursuant to NEPA and Executive Order 11990.

Contamination at the existing wastewater treatment plant is inferred from water-balance estimates and well records. Percolation from the ponds is estimated at 2.9 mgd (see p. 6-30). This seepage must create a local recharge zone, which should be reflected by a comparatively high water table beneath the site. The exact location of recharge is difficult to predict because clay layers and fractured caliche underlie the pond area, and may cause the seepage to move laterally as well as vertically. Indirect evidence of recharge is found in records from one well north of the ponds, where the rate of water-level decline has slowed markedly since overflow to Ft. Bliss began in 1968 (PSB file data). Presumably, the recharge has caused local ground water contamination, since the sewage contains comparatively high levels of salts and nitrates (see p. 6-30). In addition, salts could be added to the water as it passes through the unsaturated sediments. The clays would purify the sewage of many impurities, but salts and nitrate would be little affected. There are no wells which permit a sample to be taken beneath the site, so the pollution problem cannot be confirmed or quantified at this time.

Ground-water Management. In Texas, ownership of rights to ground water is tied to ownership of the overlying land. In 1954, the Public Service Board purchased all available private land in Northeast El Paso from the then city limits to the state line, and thereby obtained control over much of the fresh-water portion of the Hueco Bolson. Since then, most of the remaining private water rights in the Northeast have been sold, deeded or committed to the Board. However, there are substantial portions of the Bolson in New Mexico and Mexico which are outside of City control, and perhaps half of the Texas portion of the fresh-water aquifer lies beneath military land, and is controlled by Fort Bliss.

About 150 major wells tap the Bolson in Texas, Chihuahua and New Mexico. In 1977 nearly 126,500 acre-feet of water were withdrawn with El Paso (49 percent) and Juarez (36 percent) being the major users. Industrial users (power plant, refineries, natural gas facilities) accounted for 7 percent of the water and Ft. Bliss pumped 4 percent of the supply (in addition to water purchased from the City). The remainder of the supply was withdrawn by scattered subdivisions, golf courses, and other users.

6.2.3 Summary of Water Availability and Use

The El Paso region has a complex pattern of water supply and consumption. Important features of this pattern include:

- surface water availability has declined and quality has deteriorated over time;

- good quality ground water is abundantly available at present, although some supplies are becoming saline and the water table is declining in some areas;

- surface water is managed via long-standing institutional arrangements which cross political boundaries, while ground water is essentially uncontrolled and is not available across major political boundaries.

In an effort to summarize the overall water supply and demand characteristics of the region, a highly generalized water budget has been developed for the EIS. Table 6-4 presents the budget, which is not intended to be precise, but only to provide approximate values. The budget indicates:

- annual water use is about 570,000 acre-feet per year in El Paso County and Ciudad Juarez;

- the renewable water supply of the region (including portions of New Mexico) is 350,000 acre-feet per year, which is less than the demand;

- a reserve of about 50 million acre-feet of ground water is stored in the major aquifers of the region.

Table 6-4 also shows the following for the City of El Paso:

- the annual water use is about 90,000 acre-feet;

- renewable water supplies amount to 30,000 acre-feet per year;

- water rights permit economic recovery of perhaps 9 million acre-feet of ground water from storage.

Regionally and in the City there is a net deficit in renewable water supply compared to demand, which means that ground water reservoirs are being mined. The deficit directly affects agricultural water users at present. Fortunately, because of the large volume of stored water, no critical shortage of drinking water is imminent. However, the excess of water use over renewable supply cannot continue forever; the data indicate that important decisions must be made in the future regarding regional water management. Some of the possible decisions are discussed in Section 6.2.5.

6.2.4 Water and Wastewater Utilities

Water Utility. The water system of El Paso has a long and interesting history (see discussions in USBR, 1973 and Bluntzer, 1975). Today the City has a modern system which provides ample supplies of good-quality water to all residents. The utility is managed by a five-member Public Service Board (PSB), which includes the Mayor and four citizens appointed by the City Council. The Board appoints a General Manager who oversees the daily operations of the Utility. The water system of El Paso is unusually complex; it contains many different sources of supply, numerous storage and pumping facilities, and an extensive network of distribution lines. Figure 6-9 is a schematic drawing which illustrates the functional relationships among the different components of the system; Appendix E provides basic information about the facilities.

As described in Table 6-4 and Appendix E, El Paso draws upon three major sources of water. The well fields of the Hueco Bolson have provided about 63 percent of the supply over the last decade; the Canutillo wells account for 25 percent; and 12 percent has come from the Rio Grande. Within the Bolson, three-quarters of the supply comes from the Mesa-Nevins and Airport well

6.1 PHYSICAL ENVIRONMENT

None of the alternatives presented in Chapter 5 would have a major effect on the physical environment of the El Paso region. Minor soil disturbance associated with construction would occur from the HBRP or any other alternative. For convenience, construction impacts are discussed together, in 6.4.2. The following section presents information on climate, geology and soils of the EIS area, as background for subsequent discussions of water resource impacts.

There are three distinctive natural environments or regions in the El Paso area: mountains, inter-mountain basins, and river valleys. These environments are typical of the desert country in the southwestern U.S. Each region can be subdivided (Figure 6-1), and described as to typical landscape, geology, soils, vegetation and wildlife (Table 6-1). Most low-lying natural regions are urban or urbanizing, while some of the valley remains agricultural and the mountains are largely open space. Major topographic features are shown on Figure 6-2.

Climate. El Paso has a sunny, dry climate. Summers are hot, with an average temperature maximum of 95°F in June. Winters are mild, with an average daily minimum of 30°F in January. Mean annual precipitation averages only 8.4 inches in the valley, and is slightly higher in the mountains. In contrast lake evaporation averages about 73 inches per year, creating a severe moisture deficit which limits natural vegetation to desert shrubs and grasses. Most precipitation occurs as brief summer thunderstorms. Other climatic features of interest include: very low humidity; unpleasant dust and sandstorms, most often in spring months; frequent inversions which can trap air pollutants near the ground, especially in winter; a long growing season; and abundant solar energy.

Geology. The geology of the El Paso region is well described in many reports, including: Sayre and Livingston (1945); Knowles and Kennedy (1956); Davis and Leggat (1965); and Bluntzer (1975). There are three major geologic units in the area, corresponding to the natural regions (Figure 6-1) and topographic features (Figure 6-2). The mountain areas contain upfaulted and tilted sedimentary and igneous rocks. The basins between the mountains are downfaulted structural depressions, partially filled with debris eroded from the adjacent uplands. These basin-fill sediments are called bolson deposits. In the Hueco Bolson (Figure 6-2), the deposits range in thickness from less than 100 feet near the mountains to about 9,000 feet four miles east of the mountains. The basin fill consists of many irregular lenses of sediment which can be traced laterally for short distances. In the Rio Grande valley, up to 200 feet of alluvium covers the bolson material. Geologic resources in Northeast El Paso are limited to sand and gravel deposits. Geologic hazards include possible moderate-size earthquakes (Sayer and Livingston, 1945; Sanford and Toppozada, 1974), and soils which can cause building foundation problems due to the expansion of bentonite (Kuhfal, 1977). No alternative would impact the resources or be significantly affected by the bentonite. Bolson deposits which experience water-level declines, normally under-

fields. The contribution from the Rio Grande is declining as growing water demands require greatly increased pumping of the Hueco Bolson.

Water use. In 1977 the El Paso water utility produced and distributed 92,814 acre-feet of water, or more than 30 billion gallons. Table 6-5 provides data on historic (and projected) water use, and reveals that the demand has grown rapidly through the years due to population growth and increased per capita use. Per capita consumption was about 210 gallons per day in 1977, which is below average for a city in the western U.S. One factor which keeps use low is that several large consumers have their own water supplies. For example, in 1977 Fort Bliss withdrew 5,130 acre-feet from the Hueco Bolson (in addition to water purchased from PSB), major industries (two refineries, one power plant) pumped 8,603 acre-feet, and Vista Hills Golf Course used 1,034 acre-feet. Juarez, with a larger population than El Paso, used only 45,170 acre-feet, indicating that per capita use was much lower.

El Paso's water use has a strongly seasonal character. About 36 percent of the demand occurs in winter months while 64 percent occurs in April-September. During dry summer periods (especially June), weekly and daily demands can be extremely high. On June 21, 1978, the peak daily demand set a record of 164 million gallons. This peaking load places considerable stress on the facilities of the utility, and requires that the water system invest heavily in pumping and storage facilities which operate at full capacity only a few weeks or months of the year. Presently the City's peak supply capacity has no surplus compared to demand. A deficit in capacity exists on the east side of the City, where recent growth has been rapid.

TABLE 6-5. WATER DEMAND

FROM PSB FILES, AND TDWR (1979); no provision is made for the effects of water conservation programs.

Year	Population in El Paso	Per Capita Flow Gallons/day	Total Citywide Demand Acre-feet/year	Countywide Demand a/
1940	96,810	95	10,300	-
1950	130,003	134	19,500	-
1960	276,687	165	51,200	-
1970	322,261	195	70,400	-
1980	424,000	210	100,000	123,500
1990	526,000	218	128,500	166,100
2000	625,000	225	157,500	208,700
2010	735,000	230	189,500	276,200
2020	850,000	233	222,000	243,800
2030	970,000	235	255,500	411,300

a. Domestic, municipal, industrial and other non-irrigation sources (TDWR, 1979).

TABLE 6-8. ALTERNATIVES FOR PROVIDING LONG-TERM WATER RESOURCES FOR THE EL PASO REGION.

Based on technical publications (Green, 1968; USBR, 1973; Bluntzer, 1975; TWDB, 1977; Landsford et al., 1977); personal communications (Stallings, 1978; Gilmer, 1978; Reynolds, 1978; Kyburz, 1978; Hickerson, 1978; Moore, 1978); the facilities plan; and analyses made during preparation of EIS.

ALTERNATIVE	ENVIRONMENTAL AND ECONOMIC CHARACTERISTICS	PROSPECTS
A. WATER CONSERVATION		
1. Maintain City water use at current per capita rate by use of rate design, building codes, education.	Essentially no cost to the City, but actual effectiveness of available measures difficult to predict. Saves energy (hot water, pumping), reduces wastewater treatment costs; especially effective in reducing peak demand, which markedly reduces need for capital-intensive pumping, storage and treatment facilities.	Widely recommended and completely feasible. City would need to expand existing programs; actual effectiveness uncertain. The possibility of a more ambitious program, which would reduce per capita water used by up to 20% is discussed in 7.2.2.
2. Substantially reduce per capita use (50% or more) by rationing; place a moratorium on new hook-ups.	Direct impacts include those listed above. In addition, significant disruption of lifestyle would occur; commercial and industrial expansion would be limited; population growth would be curtailed or forced into areas outside city limits.	Not essential if other alternatives are implemented, and therefore unlikely to receive public support.
3. Improved efficiency of agricultural water use by use of drip method, ditch lining, field levelling (by laser), irrigation scheduling.	Most actions require considerable capital, which may not be available in agricultural community. Some decline in yields may occur; otherwise impacts generally beneficial, due to reduction in waste of water.	Will probably occur to a modest degree over time as research progresses and funds become available.
B. INCREASE RIO GRANDE SUPPLY		
1. City to obtain additional water rights by lease or purchase of irrigated land.	Existing program adds 200 acre-feet per year at cost of 71 cents per thousand gallons; increments above this would require new contract, and are estimated to cost 84 cents per 1000 gals. Decrease in irrigated land would reduce green belts, wildlife habitat, food and fiber production, and property tax income. Ultimately, large portion of City water demand would be met, but water would be available mostly in summer, amount would vary from year to year and not be reliable; water would require treatment and be of only fair quality.	Existing contracts may be challenged as to legality. New contracts may eventually occur, but when and the amount of water involved are difficult to predict.
2. Weather modification in headwaters area of Rio Grande.	Environmental consequences are poorly quantified at this time but may include increased frequency of floods, hazardous weather, and erosion. Water yield may be improved by 10% with reasonable dollar costs. This would provide the City with an additional 1,000 acre-feet per year (and farmers with 0.2 acre-feet/acre/year).	Environmental unknowns make implementation of this option uncertain as to scale, timing. Effect on City supply would be small.
3. Phreatophyte control in upstream portion of Rio Grande basin by clearing of salt cedars.	Cost-effectiveness of this approach has been questioned; environmental impacts are significant locally (habitat destruction, possible increases in erosion); likely to reduce salinity of surface supply	Same as above. Similar comments apply to watershed management in headwaters.
4. Retention of all river water for irrigation use, even as farm lands are urbanized.	Differs from option B-1 in that water rights from retired lands would revert to remaining irrigators, increasing annual allotment for the land still under irrigation. No new water would be available to City; farm lands would decline as urbanization proceeds; water supply at each farm would be enhanced; and there would be less reliance on saline ground water.	Except for lands involved in the existing City leasing program, this option will occur unless other alternatives are specifically adopted. Option was recently endorsed at a meeting of those interested in area planning (Moore, 1978).
C. USE LOCAL SALINE GROUNDWATER		
1. Desalinization of water from Hueco Bolson and elsewhere.	Expensive, $2.42 per thousand gallons. Energy-intensive; dewatering of fine-grained sediments may cause land subsidence; concentrated brine waste must be disposed of. Amount of water available is somewhat limited.	Seriously impaired by energy use and costs. May become more competitive as new technology is developed in future, or as other options increase in cost.
2. Blending of saline ground water with fresher water.	Already in effect for both municipal and agricultural users. When proportion of saline water is large, municipal customers may complain about taste; crop yields may decline.	Likely to continue and increase.
3. Use saline water for special purposes, such as lawn watering (dual water systems) or industry, recreation.	Requires dual pipeline facilities, which are expensive; generally most large-scale users who could pay the cost require good quality water, and would prefer option C-2.	Unlikely.

D.	WASTEWATER RECYCLING		
1.	Use wastewater for agriculture by continuing or increasing river discharge or developing new farms in upland areas.	Relatively inexpensive; supports agricultural productivity, and aesthetic/wildlife benefits of farm land. Some health effects may occur if wastewater is improperly used, although none are known from existing disposal practices. New farms would create a newwater demand in a water-short area, and are therefore considered an inefficient use of a scarce resource.	Existing discharges likely to continue in future, and increase in volume as City grows.
2.	Recycle some wastewater for special purpose uses such as industry, recreation, or dual water systems (subdivisions with separate pipes for lawns).	Economic evaluations indicate that this option is feasible for large uses, but cross-contamination must be avoided. All forms of recycling (D-1, D-2, D-3) are compatible with the general goal of efficient resource use. If recycling includes sewage now discharged to Rio Grande, agricultural water shortages would increase.	Feasible where large industrial or recreational use exists in proximity to a wastewater plant, especially where wastewater treatment must be advanced to meet environmental standards.
3.	Recycle wastewater for drinking water use.	Comparatively expensive; raises questions about health risks. Could provide up to 50% of municipal water demand. If recycling includes sewage now discharged to Rio Grande, agricultural water shortages would increase.	Feasible where other water supplies are costly and/or scarce, especially where wastewater treatment must be advanced to meet environmental standards.
E.	IMPORTATION		
1.	Import ground water from nearby New Mexico.	Extremely large supply of water available at cost of than $1 per thousand gallons. Environmental impacts same as mining (G-1). State Engineer of New Mexico indicates that interstate transfer of ground wter from New Mexico is illegal; others challenge this interpretation (Reynolds, 1978; Moore, 1978).	Not feasible unless and until legal issues are resolved.
2.	Import ground water from Trans-Pecos area of west Texas.	Estimated to cost $1.19 per thousand gallons for a supply of up to 3 million acre-feet. (Based on hypothetical example and limited data). Would require large amounts of capital for land, water rights, rights-of-way and construction. Availability of supply uncertain; would dry up existing farm lands; involves extensive impacts from construction of pipe-line in difficult terrain; large energy costs for pumping.	Depends upon acquisition of water rights and demonstration of economic feasibility.
3.	Import from East Texas or beyond.	Similar to E-2, but with much greater dollar and other costs. Now being evaluated for Texas Panhandle. If this proves feasible, then it might be extended to El Paso.	No firm proposals exist; all past studies have indicated that this option is not likely to be cost-effective.
F.	INSTITUTIONAL ARRANGEMENTS		
1.	Renegotiate Rio Grande Compact.	Has been suggested as means of implementing E-1, with same obstacles.	Remote possibility at this time.
2.	Negotiate interstate or international compact on ground water.	Could enhance efficiency of ground water use and extend life of the local aquifers.	Despite several proposals for such a compact, the directly affected parties have not pursued the option at this time.
G.	GROUND WATER MINING		
1.	Withdraw water from Hueco Bolson in amounts greater than recharge.	Presently occurring. Low dollar cost of 15 cents per thousand gallons. Salinity of supply will increase over time, especially in valley area; land subsidence is possible. Major concern is that this water is an important reserve once it is exhausted, the water-supply problems of the area will become critical.	Will occur unless local water demand is drastically reduced, or alternative supplies are developed.
2.	Withdraw water from La Mesa Bolson (Texas portion).	Impacts similar to above, except that recharge rate is higher and storage is less. Over the long run, more water can be obtained by balancing withdrawals with recharge than by depleting the storage.	Present practice of balancing withdrawals with recharge is likely to continue.

local food production and perhaps an increase in food costs. It is possible that these impacts would cause society to conclude that the amount of water-rights transfers should be minimized; certainly that is the prevalent attitude today.

The complex issues which are associated with use of the Rio Grande make it difficult to predict the specific role this resource will play in meeting El Paso's future water needs. For planning purposes an appropriate assumption is that the role will be defined by existing contracts for an indefinite period. Consequently, except for water obtained under the existing lease program, it is assumed that in the foreseeable future there will be no substantial increase in the amount of surface water available for municipal use.

Probable solutions. The alternatives in Table 6-8 which do appear to be viable at this time are: conservation (A-1); continued leasing of water-rights land (B-1); desalinization and/or blending of saline ground water (C-1, C-2); wastewater recycling (D-2, D-3); imported ground water from the Trans-Pecos area (E-2); and mining of the Hueco Bolson (G-1). Together with the steady state supply available to the City from existing surface water rights and ground-water recharge, these alternatives represent the primary water resources of interest in long-range planning. Except for water conservation, all of these alternatives have one or more significant drawbacks. Some are expensive, energy-intensive, and have potential adverse environmental impacts. Examples include desalinization, wastewater recycling and importation. Others, such as use of river water and the blending of saline water, may be less expensive and have fewer adverse effects; however they provide a relatively small amount of water. Mining of the Hueco Bolson, which provides the largest and one of the cheapest resources, must be approached with caution. If this aquifer is exhausted before El Paso obtains adequate alternate supplies, severe water shortages can be expected, with associated economic, social, and environmental disruptions.

Although detailed evaluation of the water-supply alternatives is beyond the scope of a wastewater plan and EIS, a simple analysis can be performed to indicate the probable strategy which El Paso will adopt. This analysis is based upon Figure 6-10. The figure provides a forecast of the cumulative water requirements for the City in the period 1980-2050. The projection is a linear extension of Table 6-5. A total of 14.5 million acre-feet of water must be obtained during the 70-year period. Figure 6-10 also illustrates the amounts of water which can be obtained from the available alternatives.

1. The steady state water supply is assumed to be 35,000 acre-feet per year (Table 6-4), which would provide 16.9 percent of the projected demand (2.45 million acre-feet).

2. Water conservation is assumed to maintain the projected 1980 per capita demand at 210 gallons per day; if such conservation can be obtained, 9.6 percent of the projected demand would never occur (1.34 million acre-feet). Conservation is not a water supply as such, but is included in the figure to illustrate its quantitative significance. Refer to Section 7.2.2. for a discussion of the potential benefits of greater conservation.

These limitations do not affect the validity of the computer model for purposes of generalized interpretations of hydrologic impacts.

The most useful long-term simulation for assessing HBRP impacts is that which involves: recharge of 8,950 acre-feet for 10 years in four injection wells; recharge of 11,770 acre-feet for the second 10 years in the same wells; pumping of 33,000 acre-feet/year for the first 10 years from existing wells; pumping of 43,000 acre-feet/year for the second 10 years from existing wells. A 20-year project life is used here for analytical purposes only, and presumes that a new treatment and disposal system would be implemented after 20 years. Conditions which result from this simulation include the following:

1. A mound in the water table would build up near each recharge well, and would have a maximum height of about 5 to 10 feet after 20 years. (This is about half the drawdown typically experienced near pumping wells.)

2. The water table in the Bolson as a whole would continue to decline, but in the area of recharge the decline would be slowed. Without recharge the decline would probably be 55 feet between 1978 and 1998; this is similar to the prediction of a 48-foot decline between 1973 and 1991 made by Meyer (1976). With recharge the decline would be reduced to about 35 feet over an area of 15 square miles.

3. As shown in Figure 6-11, the general shape of the water table in 1998, assuming recharge, would be similar to that which now occurs except for the mounds near recharge wells.

4. The combined effect of water-table decline near pumping wells (and in the Bolson as a whole), and mounds near recharge wells, would be a marked increase in the water-table gradient and an associated increase in average velocity of ground-water flow. Table 6-10 lists the velocities which are predicted for a range of short-term (one-year) conditions. For the long-term conditions specified at the beginning of this paragraph, an average velocity of 300 feet can be predicted if gradients are as shown in Figure 6-11. This velocity is about three times as great as the natural velocity in the absence of recharge.

The prediction that recharge would cause an increase in flow velocity to 300 feet per year probably understates the actual increase in flow because: a) the model did not simulate the steep water-table gradient which occurs near individual pumping wells; and b) it did not simulate the more rapid flow which would occur in those layers of the aquifer containing the most permeable material. For this EIS a worst-case prediction of flow velocities has been made using the following assumptions:

-hydraulic conductivity of 100 square feet per day (compared to an average value of 30 to 50 feet per day);

The third benefit of the HBRP would occur if the project proves as cost-effective as projected in the facilities plan, and if environmental and water-supply conditions are as forecast in this EIS. In this case, the project would serve as a prototype for expanded recycling which could provide from 25 to 50 percent of El Paso's long-term water-supply needs.

Other Changes. Some minor permanent changes to drainage may be necessary in order to flood-proof the site. These changes are illustrated in Figure 22 of the facilities plan, and would involve construction of a dike which would divert some runoff from the drainage area upstream of the treatment plant into the drainage area southwest of the site. During project design, flood protection measures will also be considered for well sites. Figure 6-3 (p. 6-10) illustrates a possible layout of recharge wells, and identifies areas where flood problems are known to occur. It should be possible to site all wells in areas where flooding is not a hazard.

The recharge process can lead to physical changes in an aquifer, such as clogging. As analyzed in PSB (1979), and summarized in the EIS (see p. 6-46), these impacts are expected to be very small.

Waste flows to the Northeast plant would be reduced by 0.6 million gallons per day in the year 2005 as the result of a flow reduction program which is to be incorporated into the HBRP. The program would include public education, use of building codes requiring installation of water-saving fixtures, and modifications to rates and rate designs. Refer to Section 7.2.2. for a discussion of the potential for a greater reduction in wastewater flows.

6.3 AIR AND SOUND QUALITY

6.3.1 Existing Conditions

Carbon monoxide, photochemical oxidants and total suspended particulates occur in concentrations which exceed air-quality standards in parts of El Paso. Figure 6-12 shows locations where particulate levels exceed standards. Excessive levels of carbon monoxide occur over the same area. The oxidant problem is citywide. Table 6-14 lists Federal standards for ambient air quality, and summarizes data from the only monitoring site in Northeast El Paso. Standards are being met in the Northeast, although the secondary standard for particulates is equalled. Automobiles are a major source of air pollution in El Paso. Industrial sources are also significant in the Northeast, and include a rock quarry, gravel pit and large power plant. Plans have been developed to deal with the major problems through controls on automotive and industrial emissions. It is anticipated that nitrogen oxide levels may continue to increase in the Northeast due to the presence of the power plant and growing automobile traffic. Particulate levels will also remain high due to dust-storms.

Odors do not appear to be a problem in Northeast El Paso. There are no residences in the vicinity of the Northeast ponds, and there are no complaints on record concerning odor from this facility.

Major noise sources in the region include the interstate highway and international airport. In most of the Northeast area, noise levels can be expected to be typical of residential areas (30-60 decibels). The wastewater treatment plant is remote and quiet except for the sounds of abundant bird life, a few pumps and an occasional military convoy.

6.3.2 Impacts of HBRP

Construction of the HBRP would produce temporary alterations in vegetation, drainage and erosion, air quality, sound quality and traffic. For convenience, all these short-term impacts are listed together in Table 6-15. The table also identifies mitigating measures. The impacts are considered small because: a) most construction will occur in undeveloped areas which are relatively remote from populated areas and b) the changes in environmental conditions will be very brief and comparatively easy to control or mitigate.

Odors would not be expected to be a problem at any properly designed and operated treatment plant built at the Northeast site. The remote location of the site, which is generally downwind of developing areas, would help minimize odor impacts from occasional plant upsets.

6.4 BIOLOGY

6.4.1 Existing Conditions.

El Paso is in the Lower Sonoran Life Zone (Chihuahuan Desert Aspect). Each natural region has a characteristic suite of plants and animals (Table 6-1). The ponds at the Northeast Sewage Treatment Plant provide the only significant wetland habitat in the Northeast, and one of the largest such habitats in El Paso County. Detailed information on the biology of the site is limited to bird sightings by the El Paso Trans-Pecos Audubon Society, and to ecological observations made by society members. Zimmer (1978) reports that the ponds are an important site for wintering, summering and migrating waterfowl and shorebirds. Table 6-16 is a list of birds observed at the ponds. The list includes the endangered peregrine falcon and rare birds such as the prairie falcon, Mexican duck, masked duck, ferruginous hawk, white-faced ibis and olivaceous cormorant. The ponds are the only known summering site in the area for American avocets and blacknecked stilts (nesting is suspected) and for eared grebes and black terns. Ruddy ducks and common gallinules nest at the site in larger numbers than elsewhere in the county.

The ponds represent a diverse habitat and include: deep water with rocky shores; shallow water with sandy beaches; and swampy areas with abundant emergent vegetation (including some cottonwoods). Though all ponds are used, the most popular is the southeast overflow area which provides the best cover. Most of the nesting and 80 percent of the sightings occur in this area. The reliable water supply also makes the ponds of value to other native desert wildlife and their predators (Riley, 1978). Common species of mammals, reptiles, and amphibians likely to frequent the ponds are those listed for the

TABLE 6-16. LIST OF BIRDS RECORDED AT FT. BLISS (NORTHEAST EL PASO) SEWAGE PONDS. Key to symbols: A = abundant; normally present in large numbers in proper habitat. C = common; normally present in moderate numbers in proper habitat. FC = fairly common; seen most of the time in smaller numbers. U = uncommon; seen irregularly in small numbers in appropriate environment. R = rare; occupies only small percentage of preferred habitat, or a specific limited habitat; usually seen only by experienced observers. * = nesting species. Source: Zimmer, 1978.

	Summer	Fall	Winter	Spring
Avocet, American	U	FC	R	FC
Bittern				
American		R		
Least				R
Blackbird				
Brewer's		A	A	C
Red-winged	FC*	FC	C	FC
Yellow-headed		A	A	A
Bobolink				
Bunting, Lark		A	A	FC
Coot, American	C*	C	A	C
Cormorant				
Double-crested			U	
Olivaceous			R	
Cowbird, Brown-headed	C*	C	C	C
Cuckoo, Yellow-billed	R*	R		
Curlew, Long-billed		R	R	R
Dove, Mourning	A*	A	A	A
Dowitcher, Long-billed		U	U	U
Duck				
American Wigeon		C	C	C
Bufflehead		U	U	
Canvasback			U	
Gadwall			FC	
Lesser Scaup		FC	FC	
Mallard	R*			
Masked	R			
Mexican	U*	U	U	U
Northern Shovelet		FC	C	FC
Pintail		FC	FC	
Redhead			FC	
Ring-necked			R	
Ruddy		FC	FC	FC
Eagle, Golden	U	U	U	U
Egret, Cattle	U		U	U
Falcon				
Prairie		R		R
Peregrine		R		
American Kestrel	U*	C	C	C
Finch, House	A*	A	A	A
Flicker, Common	U*	FC	C	FC
Flycatcher				
Ash-throated	U*			U
Western Wood Pewee	U	C		C
Willow		R		R
Gallinule, Common	FC*	FC	FC	FC
Godwit, Marbled		R		
Goldfinsh, Lesser		FC	FC	FC
Grackle, Great-tailed	A*	A	A	A
Grebe				
Eared	FC	C	C	C
Western			U	
Pied-billed			U	
Grosbeak,				
Black-headed		FC		FC
Blue	FC*			FC
Gull				
Bonaparte's		R		R
Franklin		U		
Herring		U	U	
Ring-billed		FC	FC	
Hawk				
Cooper's			FC	
Ferruginous		U	U	
Marsh		C	C	C
Red-tailed	C	C	C	C
Sharp-shinned		R		
Swainson's		FC	FC	FC
Heron				
Black-crowned night		R		R
Great blue			U	
House Sparrow	A*	A	A	A
Hummingbird, Black-chinned	C*	C	R	C
Ibis, White-faced		U		
Junco, Dark-eyed		C	A	A
Kingbird, Western	A*	A		A
Kingfisher, Belted		FC	FC	FC
Kinglet, Ruby-crowned		FC	C	FC
Meadowlark, Western	C	C	C	C
Merganser, Red-breasted			R	
Mockingbird	C*	C	C	C
Nighthawk		R		R
Lesser	C*	C		C
Oriole, Northern	FC*			FC

	Summer	Fall	Winter	Spring
Owl				
Barn		R		
Burrowing	FC*	U	U	U
Pelican, White			R	
Phalarope				
Northern		R		R
Wilson's		FC		FC
Phoebe				
Black		FC	FC	
Say's	FC*	C	C	FC
Pipit, Water		U	U	U
Plover				
Black-bellied		R		R
Killdeer	FC	C	C	FC
Semi-palmated		R		R
Pyrrhuloxia	U*	FC	FC	FC
Quail				
Gambel	C*	C	C	C
Scaled	C*	C	C	C
Rail				
Virginia	R	R		
Sora				
Raven, White-necked		A	A	
Roadrunner	C*	C	C	C
Sandpiper				
Baird's		U	U	U
Semi-palmated		U	U	U
Solitary		U	U	U
Spotted	R	U	U	U
Stilt		U		U
Western	R	FC	R	FC
White-rumped		R		R
Shrike, Loggerhead	FC*	FC	FC	FC
Snipe, Common		U	U	
Sparrow				
black-throated	C*	C	C	C
Cassin's	FC*			FC
Chipping		A	C	A
Lark	U*	U	U	U
Lincoln's		U	U	
Savannah		FC	FC	FC
Song		FC	FC	FC
Vesper		U	U	U
White-crowned		C	A	A
White-throated			R	
Starling	C*	C	C	C
Stilt, Black-necked	U	FC		U
Swallow				
Bank		U		U
Barn	C*	C	C	C
Cliff	C*	C	C	C
Rough-winged		U		U
Tree		U		U
Violet-green		C		C
Tanager, Western		U		U
Teal				
Blue-winged		C	FC	
Cinnamon	R	FC	FC	FC
Green-winged		FC	C	
Tern				
Black	FC	FC		U
Forster's		R		R
Thrasher				
Crissal	C*	C	C	C
Sage		U	U	FC
Towhee				
Brown	FC*	FC	FC	FC
Green-tailed		FC	FC	FC
Turnstone, Ruddy			U	
Verdin	FC*	FC	FC	FC
Vulture, Turkey	U	U	U	U
Warbler				
Wilson's		C		C
Yellow-rumped		C	C	FC
Yellow-throat	R	R		R
Willet		U	U	U
Woodpecker, Ladder-backed	FC*	FC	FC	FC
Wren				
Bewick's	U	U	U	U
Cactus	C*	C	C	C
Long-billed marsh		FC	FC	
Rock	C*	C	C	C
Yellowlegs				
Greater		FC		FC
Lesser	FC	FC	FC	FC

Hueco Bolson in Table 6-1, including badgers, deer, coyote and bobcat. So far as is known the ponds contain no fish.

Major riparian (riverside) habitats occur elsewhere near El Paso County. Regional wetlands include (all to the north, unless otherwise noted): Bosque del Apache National Wildlife Refuge (130 miles away), a major wintering area on the Rio Grande that accommodates about 80,000 birds annually; Elephant Butte Marsh Habitat Management Area and Elephant Butte and Caballo Reservoirs (75 to 115 miles); numerous salt lakes and flats frequented by shorebirds (within 100 miles); and to the south in Mexico the Rio Carmen, Laguna de Patos, and several large ephemeral lakes (75 miles).

Extensive riparian habitat once occurred within El Paso County, but is now much diminished when compared to conditions early in this century. Prior to channelization of the Rio Grande in the 1930's, the effective floodplain was one or more miles wide and contained many seasonal marshes and swamps, with associated emergent vegetation. Channelization, and drainage through irrigation works, has eliminated most of these features. Although there are no data available regarding the magnitude of the original habitat, a rough estimate can be made by assuming a mile wide area on each side of the river, for the 55 mile length of the river through El Paso County. On the Texas side of the border this would represent 35,200 acres of habitat.

Although such habitat is now absent in the downtown area, it does exist (in modified form) in the upper and lower valleys. Most such habitat is confined within the river levees, in thin strips averaging about 500 feet across and amounting to perhaps 1200 acres (Smartt, 1980). Within or adjacent to the habitat are salt cedar, willow and cottonwood trees. A few small ponds with emergent, marsh-like vegetation occur, such as the Rainbow Lakes oxbow area near Anthony, in the upper valley. In combination, the levee and ponds provide habitat which is suitable for most of the bird species found at the Northeast Pond. For example, migrating shorebirds are able to use the sandy banks of the river during the low-flow season, while migrating waterfowl are more common when the river bottom is covered by water. However, the levee/pond habitat is certainly limited in total area, and does not provide the yearround combination of wading and nesting opportunities which exist at the Northeast Ponds.

Additional riparian habitat exists along the 1,000 miles plus of irrigation canals, laterals and drains in El Paso County. The Bureau of Reclamation has estimated that there are 23 square miles (14,720 acres) of such features in El Paso County. A Bureau ecologist indicates the presence of emergent vegetation makes the canals and drains more suitable than the laterals as wildlife habitat (Schraeder, 1980). Frequent use by varied bird populations (especially migrating ducks and wading birds) is reported and occasional nesting has been observed (see Table 6-1).

On balance, it appears that the total amount of riparian habitat in El Paso County is less than half the historical amount (35,200 acres versus the present 14,720 acres in the irrigation system, 1200 acres along the river, and

482 acres at the Northeast Ponds). The Rainbow Lakes and Northeast Ponds provide the most diverse habitats. Additional large-scale riparian areas exist elsewhere in the County, such as in areas of bosque (salt cedar) vegetation, and at the sewage ponds at PSB's Socorro treatment plant. However, productivity of the local riparian sites is limited by several factors. The river is lined with concrete in places, has been under study for channelization downstream, is frequently dry, and preserves little of its original mix of wetland and bosque vegetation. Irrigation drains and canals provide a the most consistent and sheltered water supply, but are subject to disturbance by routine maintenance; the canals are dry outside of the growing season. The Socorro ponds are large but lack the vegetation, remoteness, and variety of habitat that would attract large numbers of waterfowl or shorebirds (Zimmer, 1978). Of the bosque areas, Rio Bosque Park may be the most significant due to its relatively rural location and proximity to open water.

On balance, there is little yearround habitat which provides both wading and nesting opportunities for shorebirds and waterfowl. Only the Northeast Ponds and the Rainbow Lakes can be considered as providing such habitat in significant amounts.

Threatened or and Endangered Species. In accordance with Section 7 of the Endangered Species Act, as amended, EPA has requested that the U.S. Fish and Wildlife Service identify any plant or animal species in the area that is listed, or proposed for listing, as endangered or threatened. The FWS list was provided to EPA on October 12, 1979, and is as follows.

Listed Species: Peregrine falcon (Falco peregrinus); not known to nest in area, though may be present as a migrant.

Proposed Species: Coryphantha scheeri var. uncinata; found in the rocky hills of the Chihuahuan Desert. C. sneedii var. sneedii; known to occur on limestone ledges of the Franklin Mountain desert and grassland areas.

Critical Habitat: none.

A survey of available information indicates that the peregrine falcon has been sighted at the ponds, and that C. sneedii does not occur within the Bolson area (Champie, 1980). State, Federal and private biologists familiar with the wasterwater ponds and Northeast El Paso are unaware of any other endangered species that frequent the area (Rische, 1978; Riley, 1978; Von Finger, 1978; Zimmer, 1978).

6.4.2 Impacts of the HBRP

Construction of the HBRP or any other alternative would involve disturbance of vegetation; this impact is summarized in Table 6-15.

Because the prime habitat at the Northeast site is associated with overflow ponds, which must be eliminated to prevent pollution, the HBRP would substantially reduce the biological resources which presently occur in the area. Once the project is operational, any ponding area which remains will be small and much modified by construction and maintenance activities. Consequently the site will no longer support any wildlife other than species which are typical of the desert environment. Reduction or elimination of the wetland habitat will have the following consequences:

-animals dependent on the habitat and unable to migrate to other habitats (such as amphibians) would die;

-animals dependent on the habitat but able to migrate would be displaced to other locations in West Texas, southern New Mexico, or beyond (this includes most of the species found at the site);

-because there is little other wetland habitat in El Paso County, and that habitat (Rio Grande Valley) is declining due to urbanization, few of the displaced individuals would relocate in the immediate El Paso vicinity, and local wildlife populations would thus decline;

-because comparable habitat is generally available in the region, the elimination of habitat in Northeast El Paso would not cause a significant decline in the total number of individual animals found in the region;

-no species would vanish entirely from the region;

-informal recreation (bird-watching, hunting) at the treatment plant site would cease.

No mitigation measures are proposed which would offset the impacts listed above, for reasons which are discussed in Section 5.4.1.

The biological value of the ponds depends to some extent on the scale of concern. Regionally, much land has been set aside, either directly or indirectly, for the use of birds and other wildlife, and the significance of the Northeast ponds is small by comparison. Locally, the ponds offer a more diverse and effective habitat than available elsewhere in El Paso County. According to state and federal Fish and Wildlife personnel (Rische, 1978; Riley, 1978), while the ponds are very valuable to local waterfowl and shorebirds, they do not provide a habitat which is critical to the maintenance of aquatic bird populations in the region.

The significance of the lost habitat is difficult to evaluate because ecological productivity and diversity provides benefits which are largely intangible. The following considerations bear on the judgement as to whether the impacts of habitat loss are 'acceptable'.

1. Regionally significant wildlife habitats no longer occur in the El Paso vicinity, but do occur within 130 miles (e.g., Bosque del Apache, New Mexico).

2. Only a small acreage of bosque and surface water in the Rio Grande Valley of El Paso County is permanently committed to maintain wildlife. Urbanization and water-table lowering are causing continued loss of remaining habitats in the area.

3. The decision to use water resources to support urbanization rather than wildlife appears to be a conscious one; certainly this question was explicitly discussed as part of public input to the EIS, and the majority of comments favored urbanization in the specific case being evaluated.

4. The elimination of ecological productivity in favor of urban productivity is consistent with some provisions of the National Environmental Policy Act (NEPA) and inconsistent with others.

5. The amount of water needed to maintain 100 acres of ponds is 0.6% of the wastewater which could be recycled by the year 2030 (120,000 acre-feet per year).

NEPA permits the public to make a conscious choice to sacrifice some aspects of environmental quality in order to meet other objectives of society. Public input to the EIS indicates that dedication of resources to urban use rather than to wildlife is supported by a majority of area residents. Such a decision would give highest priority to the provisions of NEPA which favor enhancing "the quality of renewable resources" (Section 101(a)(6)), and the achievement of a "balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities" (101(a)(5)). The public input indicates that such recycling is explicitly considered as fulfilling "the responsibilities of each generation as trustee of the environment for succeeding generations" (101(a)(1)), because water and not wildlife is considered to be the most critical environmental resource which requires protection. The decision would not fulfill the NEPA objectives to "preserve important ... natural aspects" of the environment (101(a)(4)), and would not support "the widest range of beneficial uses of the environment" (101(a)(3)).

The overflow ponds (at least the one on Ft. Bliss) represent a wetland environment. Even though the environment is man-made and has nuisance aspects, it is the interpretation of EPA that NEPA and Executive Order 11990 (see p. 3-3) require mitigation of the wildlife impacts of a recharge project, if practicable. As discussed in more detail in 5.4.1, mitigation is not practicable in the specific case under consideration, because: a) the use of the

Northeast ponds as a habitat area has drawbacks; b) alternative sites for replacement habitat are not available within the project area; and c) actions taken to diminish the water supply benefits of a recharge project are considered to reduce the cost-effectiveness of the project, and have a net adverse environmental impact.

Elimination of the ponds would eliminate potential adverse impacts from mosquitoes and diseased wildlife.

Endangered Species. The proposed endangered cactus species, C. scheeri, which could occur within the Bolson, is so widely dispersed that construction would have no measurable effect (Champie, 1980).

A biological evaluation was performed regarding potential impacts of a recharge project on the peregrine falcon. The evaluation is summarized in a letter from EPA to FWS which is reproduced in Appendix I (Appendix pages 24 and 25). The evaluation determined that the Northeast ponds represent marginal habitat which would be used only occasionally by the falcon, primarily as a temporary feeding and/or resting station, and that it contains no habitat of importance to nesting. On this basis, EPA determined that a recharge project such as Case 6, which would eliminate the habitat, would have no effect on the peregrine falcon. On May 5, 1980, the acting regional director of FWS responded to the EPA letter and stated that "I concur with your finding that the proposed project is not likely to have an effect upon Federally listed species ...". The FWS letter is reproduced on Appendix page 24.

6.5 ARCHEOLOGY/HISTORY

6.5.1 Existing Conditions

Humans have lived in the El Paso region for several millenia. The earliest inhabitants who left traces were pueblo and nomadic Indians. They were followed by Spanish colonists and the first permanent European settlement, in

1682. There are numerous sites of recognized archeological and historical importance in the area, as described in PSC (1975) and WTCOG (1976). Most sites are in the valley. Some archeological remains are found in Northeast El Paso as well.

Specific studies have been undertaken to identify possible resource sites which would be impacted by construction of the HBRP. Reconnaissance and intensive archeological surveys have been made of the Northeast plant. Gerald (1975) found three possible sites near Pond No. 1 during a walkover survey. The first was 130 by 230 feet, encompassing five concentrations of potsherds which appeared to be from the Mesilla Phase of the Mogollon Culture (about 800-1,000 A.D). The second site was a fire-fractured rock hearth, mostly buried and probably prehistoric; scatterings of purple glass were also found. The third site resembled the remains of an ancient pueblo, 115 by 16 feet. Shortly after the Gerald walkover, a more intensive survey was performed by the Texas Department of Survey Archeology (Lynn, 1976), which included recovery of surface artifacts and subsurface sampling. This survey revealed that the possible pueblo site was not a former habitation (Gerald, 1978).

Northeast El Paso is thought to contain a fairly high density of prehistoric sites (Davis, 1978). At present the El Paso Centennial Museum and the El Paso Archeological Society are conducting a walkover survey of the newly annexed area in anticipation of development pressures. Upon completion of the survey, a map will be available locating major sites in the Northeast. Past finds in the Trans-Mountain Road area and along U.S. 54 include rock art, a pit house, and room complexes of the Mogollon Culture.

The Texas Department of Water Resources (TDWR) has conducted a reconnaissance survey of possible pipeline routes and well sites which would be disturbed if the HBRP is constructed (Whitsett and Fox, 1979). Of several archeological sites located, two which were identified as possibly eligible for the National Register of Historic Places were found to be in conflict with the HBRP. One is an El Paso Phase complex, first recorded in 1964, which includes ceramics, hearths and the (now-destroyed) remains of a small pueblo (site 41EP8). The site is greatly disturbed by past construction, although some relatively intact areas remain. The second site is an oval, 500 by 230 feet, containing ceramic and lithic remains from the Mesilla and El Paso Phases (41EP319).

6.5.2 Impacts of HBRP

No sites eligible for inclusion in the National Register of Historic Places occur within the area to be affected by plant construction. A letter to this effect issued by Robert J. Mallouff of the Texas Historical Commission is included as Part 4 of Appendix I. However, a walkover survey by TDWR of the areas to be impacted by pipeline and well construction and access roads shows that the areas do contain such sites. The TDWR recommends that measures be taken to protect the sites 41EP319 and 41EP8, which are potentially eligible for the National Register (Whitsett and Fox, 1979). Prior to con-

struction, proposed pipeline routes, access roads and and well sites in the vicinity of the two sites should be staked out and inspected by a qualified archeologist. Provisions should be made for either mechanical or manual testing, as required by the archeologist, so that eligibility may be determined, and any further necessary mitigative measures may be defined. Additionally, if any significant resources are identified during construction, work will be halted, the SHPO will be contacted and the ACHP will be afforded an opportunity to comment, if appropriate. The Interagency Archeological Services will be notified, pursuant to the Archeological and Historic Preservation Act (Section 3(a)).

It is anticipated that the routing of pipelines and the siting of injection wells will be flexible within limits. If archeological resources are found during the surveys, minor rerouting or resiting would be feasible. However, because specific impacts cannot be obtained at this time, an archeological clearance from the SHPO will not be sought until the grant conditions are in effect.

6.6. SOCIOECONOMICS; LAND USE

6.6.1 Existing Conditions

Population. Figure 6-13 provides information on the rapid growth of the El Paso-Juarez metropolitan region, which now contains more than 1 million persons. The figure also projects population through the year 2000, when more than 1.8 million residents are expected to be in the area. WTCOG (1977) provides a similar projection for use in wastewater planning, and estimates 638,100 residents in El Paso in the year 2000. Northeast El Paso has been growing somewhat more rapidly than the city as a whole, but less than the Northwest and Southeast sectors. A population of 130,000 persons is expected in Northeast El Paso by the year 2000.

-The agricultural use (dairy) northeast of the 1976 City limits has ceased and the land is reverting to open space.

Elsewhere in the City, major trends include the continuing conversion of agricultural land in the lower valley to residential uses, and the rapid expansion of residential development in the southeast sector between Interstate 10 and U.S. 62-180.

The acreage in different land uses in the Northeast is given in EPDPRD, 1977. Compared to the city as a whole, the Northeast has a higher percentage of vacant land and lower percentages of industry, public, and recreational acreage. The recent annexation of land northward to the New Mexico border has greatly increased vacant land in the Northeast (to 45,504 acres); and is the major portion of the developable acreage within City limits.

Much of the recent development has been on Hueco Bolson land, a trend that El Paso planners feel "should be encouraged" (EPDPRD, 1978b). The Bolson portion of Northeast El Paso is particularly suitable in terms of its physical environment. In addition to the large amount of readily developable land available in large parcels (most owned by the Public Service Board), other features in the Northeast are expected to make it more attractive. For example, the extension of the North-South Freeway will eventually cut across presently undeveloped land allowing reduced travel time within the sector and to the downtown area. The development of Castner Range into an educational/recreational/commercial complex will provide a focal point or hub for the area (EPDPRD, 1978d). The establishment of manufacturing in the Northeast industrial parks could provide local employment. The combination of all the above factors is expected to return the Northeast growth rate to higher pre-1970 levels.

6.6.2 Socioeconomic and Land Use Impacts of HBRP

Water-supply benefits of the HBRP were discussed in Section 6.2.6, and are a principal objective of the project. About 192,500 acre-feet of water would be provided to the municipal system. This water has an economic value of between 1 and 30 billion dollars (using assumptions given in Table 6-9).

The investments made to build and operate the HBRP will stimulate the local and regional economy by providing construction jobs, a market for energy and chemicals and 40 permanent jobs. Many of these jobs will require highly-skilled personnel. Alternatives such as river discharge would have impacts similar in type, but less extensive.

The cost of the facilities will be borne by Federal grants and utility rates. For the HBRP, the average monthly utility bill for a typical El Paso residence would increase by $1.02 when compared to rates which would occur from the river discharge option. This estimate assumes 65 percent EPA funding of capital costs; the actual funding is expected to be in the range of 55 to 65 percent. A substantial portion of the bonding capacity of the Public Service Board will be required to provide the City portion of the construction funds, possibly limiting the ability to generate capital for other projects.

TABLE 6-20. PRELIMINARY EVALUATION OF HUECO BOLSON RECHARGE PROJECT.

Supporting information is provided in Appendix H.

Criteria	Characteristics of Hueco Bolson Project	Evaluation
Source Control	Only domestic waste would be recycled; tests show the sewage to be very weak.	Very Favorable
Treatment Technology	Equal or exceeds technology applied elsewhere; effluent should be low in organic carbon and nutrients and free of biological contaminants; total mineral content would be reduced slightly.	Very Favorable
Additives	Reclaimed water similar to natural water. Would contain more organics than natural water. Dissolved solids, sodium would increase 1.5% after dilution by ground water.	Favorable
Standards	Expected to meet all existing and proposed standards.	Very Favorable
Risk Data	Less than one increased cancer death per 100,000 persons per year, which is not detectable.	Favorable, based on public input
Toxicity	Effluent from limited HBRP pilot plant, diluted with Bolson water, is not mutagenic; undiluted effluent was. The nature of the mutagenic substances is not known and it is not known if such substances would remain in a completely processed wastewater.	Favorable
Dilution and Time	Reclaimed water would be diluted about 20:1 by Bolson water; would be 2-15 years before water reaches wells.	Favorable
Benefits; alternatives	Beneficial as prototype for large-scale recycling to provide needed water supplies. Alternative water supply options are difficult, expensive. Alternative wastewater disposal options have comparatively few risks but do not significantly alleviate the City's ultimate water shortage.	Very Favorable

trace levels. It is not certain that these contaminants would indeed increase health risks associated with El Paso's water supply. If risk does exist, the meager data now available suggest that the risk would be significantly less than 1 increased death per 100,000 persons per year, which would not be detectable through any available (or foreseeable) monitoring technique.

6.9. UNAVOIDABLE ADVERSE IMPACTS, SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY, AND IRREVERSIBLE AND IRRETRIEVABLE RESOURCE COMMITMENTS

6.9.1 Adverse Impacts Which Cannot Be Avoided

Minor amounts of noise, dust, soil and drainage disturbance and interference with traffic would result from HBRP construction and cannot be avoided. The most significant and major long-term adverse impacts include: an increase in salinity levels in the Hueco Bolson and in the El Paso water supply; a substantial commitment of energy and chemical resources; a substantial commitment of financial resources which cannot be used for other investments; the production of a small amount of solid waste material to be disposed of by landfill; and the elimination of a wildlife habitat at the Northeast plant site, with a corresponding reduction in the ecological productivity and diversity of the area. The project could also have an adverse public health impact if reclaimed wastewater is found to contain substances which cause chronic health problems.

6.9.2 Short-term Uses of the Environment Versus Long-term Productivity

The purpose of the proposed action is to promote long-term productivity by eliminating existing water-quality problems, and providing a supplemental municipal water supply for El Paso. Long-term ecological productivity from existing wildlife habitat would be lost, and any benefits which might be obtained by alternate use of the public funds, energy resources, and chemicals required by the project would also be foregone. Executive Order 11990 (see p. 3-3), does not permit loss of wetland habitat if practicable alternatives or mitigation measures are available. In this specific case, the determination has been made that a project which involves a 100 percent commitment to recharge is more cost-effective and has less adverse environmental impacts (for the community of El Paso as a whole) than a project which maintains wildlife ponds at the Northeast site. Mitigation of the adverse impacts would be practicable if alternative sites were available; no appropriate sites have been identified in the project area. No aspect of the proposed action has been identified which provides short-term gains at the expense of long-term benefits. However, those who support retention of the wetland habitat consider that the transfer of water from ecological to municipal use is supportive of development goals which are less enduring than the goal of preserving wildlife habitat.

6.9.3 Irreversible and Irretrievable Commitments of Resources

Resources to be used by the HBRP were itemized in Section 5.2.4; in addition energy and materials would be used in project construction. These commitments are irreversible. Similarly the commitments of funds and operational effort by the Public Service Board must continue on an ongoing basis. Restoration of the wetlands habitat is foreseeable only in the context of a major recreation project which provides substantial public benefits; a project of this type is not foreclosed by the HBRP.

7. COORDINATION

This Chapter presents a discussion of public participation in the development of the Draft and Final EIS. Public participation during preparation of the Draft EIS was obtained primarily through a Citizens' Advisory Committee (CAC) formed by the Public Service Board. Selection of Committee members was intended to provide representation from a broad range of public interests. Appendix I (Part 1) lists the fourteen individuals who served on the Committee. The Committee held three afternoon meetings on October 19, November 14, and November 28, 1978, to review information about the wastewater management options available in Northeast El Paso, and to indicate public attitudes about these options. All meetings were announced in advance, were open to the general public, and were attended by representatives of the media. Extensive publicity preceeded a fourth meeting on December 11, 1978, which was held in the evening for the specific purpose of informing the public about the wastewater management alternatives available in Northeast El Paso and obtaining public input on the relative merits of these alternatives. A final meeting was held on April 17, 1980. The Committee's recommendations on the preferred alternative are summarized in Section 7.2.1.

7.1. ISSUES RAISED DURING THE PLANNING PROCESS

The four Committee meetings identifed above involved discussion of several issues, as summarized below.

1. Issue: what amount of Federal funding would be available to facilities in Northeast El Paso, and how would different alternatives affect water bills? Response: Federal funding is generally 75 percent of eligible costs. However, additional funding is available for innovative projects, while multipurpose projects may receive funding for only that portion which is related to the necessary treatment of wastewater. During Committee meetings, estimates of effects on water bills were based on 75 percent Federal funding of design and construction costs. As noted in Part B of Chapter 5, actual funding of the Hueco Bolson Recharge Project (HBRP) would not exceed 65 percent. An estimate of the increase in monthly water bills as a result of the HBRP is given in Table 5-4.

2. Issue: how would qualified employees be obtained to operate a sophisticated treatment facility? Response: to the extent practicable, new employees would be hired from the local labor pool. However, some skilled positions could require nationwide recruitment.

3. Issue: what are the potential health effects of a recharge project? Response: the report by Wilson (1980) was prepared in response to concerns about health effects, and was summarized in draft form in reports prepared for the Citizen's Committee. Section 6.8 contains the same basic information provided to the Committee.

4. Issue: how were Citizens' Advisory Committee members selected? Response: Committee members were selected according to guidelines of the U.S. Environmental Protection Agency (EPA), and the composition of the Committee was subject to EPA approval.

5. Issue: how feasible is it to design a plant to industrial standards and later modify the plant to treat water to drinking quality standards? Response: this alternative was screened out early in the planning process because industrial demand for reclaimed wastewater is too widely scattered to make the project cost-effective.

6. Issue: over what time frame would ground water in the Hueco Bolson be exhausted? Response: based on available projections, and assuming limited new water supplies are obtained, the Hueco Bolson could be exhausted within fifty years.

7. Issue: would it be possible to relocate the wetlands? Response: the alternative of relocation of the wetlands was screened out because of public interest in maximizing the amount of wastewater recycled for municipal water supplies.

8. Issue: what are the potential recreational uses for recycled water? Response: review of the City Parks and Recreation Plan identified relatively few such uses in Northeast El Paso.

9. Issue: would any of the injected water flow into the Juarez area? Response: while Juarez takes water from the Hueco Bolson, El Paso would not be competing for water with Juarez as long as water levels are maintained.

In addition to issues raised at public meetings, three sets of written comments were submitted during the planning process. The U.S. Army Air Defense Center at Fort Bliss requested that the overflow of wastewater onto the Military Reservation from the Northeast El Paso treatment ponds be eliminated and encouraged the upgrading of the treatment plant. All alternatives considered would be responsive to this request. The El Paso City-County Health Unit staff recommended that the environmental problems created by the wastewater treatment ponds be resolved through treating sewage which could be injected into the soil to replenish the water table. The HBRP would accomplish this objective.

The El Paso Regional Group of the Sierra Club commented that the decision to use reclaimed wastewater entirely for recharge, rather than reserving a portion for maintenance of the wetlands, was "unnecessary and irresponsible". The Sierra Club recommended that EPA both commit to retaining the wetlands, and require additional studies of the City of El Paso. The studies should determine how much water would be required to maintain the wetlands, whether recharge could be accomplished, and whether the wetlands could be used as a part of the sewage treatment process. EPA responded by noting that no decision had been made in regard to the award of grant funds for the HBRP. The environmental impacts of various alternatives, including the maintenance of a

wetlands area, are discussed in Chapters 5 and 6 of the EIS. The majority of comments have supported the applicant's current proposal, to use all of the reclaimed wastewater for recharge. In addition, the Citizens' Advisory Committee for the Northeast Plant adopted the recharge alternative, without a wetlands option, at their November 28, 1978 meeting.

EPA requested a list of endangered species from the U.S. Fish and Wildlife Service (USFWS) on September 18, 1979, and received a response identifying endangered species on October 12, 1979 from USFWS. This response provided the basis for a discussion of threatened or endangered species in 6.4.1 (see also Part 4 of Appendix I).

7.2 REVIEW OF DRAFT EIS

The Draft EIS was distributed to the public for review and comment on February 29, 1980. The following organizations and individuals were provided copies of the document.

Federal Offices (other than EPA)

National Park Service, Santa Fe, New Mexico
U.S. Department of Interior, Washington, D.C.
U.S. Department of Commerce, Washington, D.C.
U.S. Public Health Service, Dallas, Texas
U.S. Forest Service, Atlanta, Georgia
U.S. Department of Agriculture, Washington, D.C.
Soil Conservation Service, Temple, Texas
Advisory Council on Historic Preservation, Washington, D.C.
Advisory Council on Historic Preservation, Denver, Colorado
U.S. Department of Housing and Urban Development, Dallas, Texas
Federal Highway Administration, Ft. Worth, Texas
U.S. Department of Energy, Washington, D.C.
U.S. Department of Health, Education and Welfare, Dallas, Texas
Farmers' Home Administration, Washington, D.C.
Agricultural Stabilization and Conservation Service, Washington, D.C.
Federal Aviation Administration, Ft. Worth, Texas
U.S. Department of Transportation, Washington, D.C.
Water Resources Council, Washington, D.C.
U.S. Department of the Army, Army Corps of Engineers, Albuquerque, New Mexico
Honorable John Tower, U.S. Senate
Honorable Lloyd Bentson, U.S. Senate
Heritage Conservation and Recreation Service, Denver, Colorado
U.S. Department of the Interior, Albuquerque, New Mexico
U.S. Fish and Wildlife Service, Corpus Christi, Texas
Bureau of Reclamation, Amarillo, Texas
Bureau of Mines, Denver, Colorado
U.S. Army Air Defense Center & Ft. Bliss, Fort Bliss, Texas
Small Business Administration, El Paso, Texas
U.S. Geological Survey, Denver, Colorado
U.S. Geological Survey, Austin, Texas

Bureau of Reclamation, El Paso, Texas
U.S. Sport Fisheries and Wildlife, Albuquerque, New Mexico
Bureau of Outdoor Recreation, Albuquerque, New Mexico
U.S. Fish and Wildlife Service, Albuquerque, New Mexico

State Agencies

Texas Historical Commission, Austin, Texas
Budget and Planning Office, Austin, Texas
Texas Antiquities Commission, Austin, Texas
Texas Parks and Wildlife Department, Austin, Texas
Texas State Department of Health, El Paso, Texas
Texas Department of Highways and Public Transportation, Austin, Texas
Texas Department of Water Resources, Austin, Texas
Texas Railroad Commission, Austin, Texas

Other Agencies

Planning Department, City of El Paso, Texas
El Paso County Water Improvement District No. 1, El Paso, Texas
West Texas Council of Governments, El Paso, Texas
International Boundary and Water Commission, El Paso, Texas

Environmental Organizations

Sportsmen's Clubs of Texas, Austin, Texas
Sportsmen's Clubs of Texas, Wichita Falls, Texas
National Audubon Society, New York, New York
National Audubon Society, Brownwood, Texas
Audubon Society, El Paso-Trans Pecos Society, El Paso, Texas
Sierra Club, Southwest Office, Santa Fe, New Mexico
Sierra Club, El Paso, Texas
Natural Resources Defense Council, Washington, D.C.
Izaak Walton League of America, Arlington, Virginia
Environmental Defense Fund, East Setauket, New York
Environmental Defense Fund, Denver, Colorado
Texas Environmental Coalition, Austin, Texas
Wildlife Management Institute, Austin, Texas
Texas Archeological Society, Dublin, Texas
Group Against Smog and Pollution (GASP), El Paso, Texas
Nature Conservancy, Texas Chapter, Austin, Texas
National Wildlife Federation, Washington, D.C.
Texas Organization for Endangered Species, Austin, Texas
Texas Committee on Natural Resources, Dallas, Texas
Texas Conservation Council, Inc., Houston, Texas
Citizens Environmental Council, El Paso, Texas
American Lung Association, Trans-Pecos Area, El Paso, Texas
New Mexico Conservation Coordinating Council, Albuquerque, New Mexico

Other Organizations

Southeast Improvement Association, El Paso, Texas
Futuro Progreso Comunidad de Val Verde, El Paso, Texas
League of Women Voters, El Paso, Texas
Citizens' Advisory Committee (El Paso EIS)
El Paso Natural Gas Company, El Paso, Texas
Water Resources Research Institute, Tucson, Arizona
American Water Works Association Research Foundation, Denver, Colorado
Mortimer Hendler, Quebec, Canada
Harry Schwartz, Worcester, Massachussetts
Havens and Emerson, Inc., Saddle Brook, New Jersey

The official 45 day review period commenced on March 14, 1980, when EPA's Office of Environmental Review published a Notice of their receipt of the document in the Federal Register. The review period expired on April 28, 1980.

EPA held a public hearing on the Draft EIS on the evening of April 17, 1980. The Public Notice of the hearing was published in the El Paso Times on March 1, 1980. The hearing also served as the forum for public input to PSB's facility plan.

Section 7.2.1 summarizes the input received during the comment period and at the public hearing. Section 7.2.2 summarizes the two major issues which were raised by the public input, and identifies the responses to these issues which are contained in the Final EIS.

7.2.1 Input to the EIS and Facilities Plan

In 1978, the Committee evaluated the facts available to it and unanimously made the preliminary recommendation that wastewater in Northeast El Paso be reclaimed to potable quality and injected into the Hueco Bolson, rather than be discharged to the Rio Grande. By split vote, the Committee also determined that the alternative of maintaining some wetland habitat at the Northeast plant site was not to be recommended. The discussions which led to these votes included specific consideration of the health risks associated with recycling and the relative benefits to be obtained from water used for municipal versus ecological purposes.

The CAC was included on the distribution list for the Draft EIS. A CAC meeting was held prior to the EPA public hearing, on the afternoon of April 17, 1980. At that meeting the Committee reaffirmed its previous positions regarding Case 6. By unanimous vote the Committee indicated support for recharge (Case 6) rather than river discharge (Case 3). The Committee then discussed the alternative of retaining a portion of the wildlife habitat at the Northeast ponds, as part of a recharge project. Although the previous vote indicated strong minority support for retaining the habitat, the discussions on April 17th indicated that such support was of a general nature, and did not extend to a specific alternative such as 6A. Committee members who previously had supported the habitat stated that, upon further consideration of the mat-

ter, the specific circumstances of a recharge project in Northeast El Paso made it inappropriate to maintain a habitat at the site. The specific circumstances mentioned included: a) the overriding need to increase water supplies for the municipal needs of El Paso; b) the conflicts between a wildlife use of the site and the possible trespass which would occur through PSB and military lands; c) the fact that the habitat was an accidential by-product of a pollution event, and not a natural phenomenon. Support for the principal of maintaining habitat was still evident; however, it was felt that the factors which led to the support for recharge were so compelling when compared to the wildlife attributes in question that recharge should recieve 100 percent support, without any diversion of water for other purposes. By a vote of 10 to 0, with 1 abstention, the Committee voted to support Case 6, and to reject Case 6A.

Six citizens gave oral testimony at the Public Hearing on April 17, 1980. The testimony is summarized in Part 4 of Appendix I (begining on page Appendix-26). A complete, formal transcript of the hearing is on file in the following locations: EPA Region VI, Dallas Texas; PSB offices, El Paso Texas. All the issues which were presented in the testimony were also discussed in the written comments which are reviewed in section 7.2.2.

Seventeen letters were received by EPA as of April 28, 1980. All the letters are reproduced in full in Part 5 of Appendix I (beginning with an index, on page Appendix-28). Five letters recommended the selection of Case 6A and/or the mitigation of wildlife impacts of Case 6; one letter (from a CAC member) summarized the arguments favoring Case 6. Many of the letters had no substantive comment and/or offered minor editorial comments. Two letters presented detailed substantive comments related to the contents of the Draft EIS. These letters addressed two specific issues which were also raised at the Public Hearing: the concern over impacts to the wildlife habitat at the Northeast El Paso wastewater ponds; and a recommendation that PSB should undertake a more ambitious program to conserve drinking water. The specific responses to these comments are provided along with the letters in Appendix I, and are discussed in general in Section 7.2.2. The Table of Contents of this Final EIS (see Section 2) identifies all pages in the Draft EIS which have been revised in response to the comments.

7.2.2 Issues Raised by Public Comments

Based on the testimony received at the Public Hearing and through written comments it was determined that the Draft EIS required three types of changes before a Final EIS could be issued.

1. Editorial changes were made to improve the accuracy and clarity of the document. These changes were suggested in the written comments (Part 5 of Appendix I) or were identified in the review of the document by the EIS consultant. All pages containing such changes are reproduced in full in the Final EIS.

2. Substantive changes were made to address concerns about the elimination of wetland habitat at the existing wastewater overflow ponds which would occur if the Applicant's preferred alternative is implemented.

3. Substantive changes were required to respond to the recommendation that PSB implement a more ambitious water conservation program.

Issue: Habitat Preservation. This issue is discussed in detail in Sections 5.4.1 and 6.4.2. Several comments received at the Public Hearing and in writing were in support of Case 6A and/or the mitigation of wildlife impacts. There is agreement among those supporting either Case 6 or Case 6A that: a) recharge is the cost-effective alternative when compared to river discharge; b) the wildlife impacts from a recharge project are significant; c) and, for ecological reasons it would be desirable to select Case 6A or to otherwise mitigate the impacts if practicable. The issue, therefore, is whether or not it is possible to implement recharge in combination with a wildlife habitat, and, if not, whether other mitigation measures are practicable.

As discussed on pages 5-25 to 5-28, the Citizens Advisory Committee gave careful consideration to this issue. Their determination was that the diversion of water from a recharge project would lessen the cost-effectiveness of the project and should not be undertaken unless for compelling reasons. While in principal the protection of wildlife habitat or the mitigation of wildlife impacts would represent an appropriately compelling basis for decreasing project effectiveness, there are numerous drawbacks to the use of the Northeast site for wildlife ponds. These drawbacks were considered to be substantial, such that the diversion of water for wildlife would be acceptable only if in association with another site. No suitable alternative sites were found in the project area. Consequently, the Committee made the determination that Case 6 should be selected over Case 6A. Based on the same factors considered by the Committee, the PSB has selected Case 6 as the preferred action and proposes no mitigation for the impacts of a recharge project. EPA now proposes to support the PSB decision, by providing grant funds for Case 6.

The record of the public participation process clearly shows that the wildlife issue was the most widely debated question considered by the Committee, the PSB, and EPA. There are many factors which normally make the protection of wildlife the highest priority in a federal action. In the particular case of a Northeast El Paso recharge project, there were site-specific adverse aspects of the wildlife habitat area which resulted in a lower priority being assigned to that habitat. Further, the recharge project itself placed an extremely high environmental and economic value on the municipal water which would be obtained from the recycling of wastewater. On balance, the decision was made that the circumstances in Northeast El Paso were such that the most cost-effective and environmentally beneficial project would be one involving a total commitment to recharge, without diversion of water for a wildlife habitat, and without diversion of this resource for the mitigation of the significant wildlife impacts which will occur once the recharge project is operational. As discussed on p. 7-6, the final recommendation had unanimous support of the voting members of the Committee.

To summarize, the Citizens Committee, in speaking for the general public in El Paso, viewed recharge as an necessary solution to both water quality and water supply problems of the project area. Because this solution can be accomlished only through a substantial allocation of resources (money, energy, chemicals), it was considered important to ensure the project achieves maximum benefits. The diversion of wastewater from recharge for purposes of maintaining a wildlife habitat or mitigating adverse impacts was seen as a step which would reduce the effectiveness of a recharge project without, in this specific instance, commensurate environmental gains.

Issue: Water Conservation. Testimony (oral and written) by the Sierra Club was received in favor of implementing a strong water conservation program in conjunction with a recharge project. This testimony indicated that the PSB had available to it a number of measures which would effectively reduce the demand for expensive municipal water resources, and that such reductions in demand are necessary given the long-term water supply needs of the community. It was suggested that a 20 percent reduction in per capita water use could be achieved. With such conservation, per capita wastewater flows could be reduced compared to present levels (in contrast to the projection given in the facilities plan, which indicates a nearly-constant per capita flow in the future). The following specific recommendations were made.

1. PSB should develop an active program for leak detection and repair.

2. Codes should be amended to require insulation of hot-water pipes in new and replacement construction, and, where practical, to require that water heaters be centrally located.

3. Codes should be amended to prohibit sales of non-water saving clothes and dish washers, and hose-washing of hard surfaces.

4. The accuracy of industrial and commercial meters should be checked.

5. Amend the code to prohibit hose-washing of hard surfaces.

6. Hours should be established when lawn irrigation would be permitted.

7. A cost-effective retrofitting program should be established to cut toilet and shower use.

8. More effective educational programs should be developed.

Discussions with PSB indicate fundamental agreement that water conservation is of paramount importance as a water management technique in El Paso. The PSB has provided the following specific responses to the recommendations made by the Sierra Club (Hickerson, 1980).

1. The present program to replace leaking pipes costs $600,000 per year and has cut system loses from about 16 percent in 1965 to 11 percent in 1978.

2. The City's Energy Advisory Board has under consideration a code modification to accomplish the objectives of recommendation number 2.

3. Water-saving machines are widely sold and used. The PSB considers economic incentives (increasing water and energy costs) to be the most effective method for ensuring the use of such appliances.

4. A new type of industrial-commercial meter is being purchased to give better accuracy and larger service in large water uses.

5. PSB has not observed large-scale hose-washing of hard surfaces, except at gasoline service stations. Regulation of hose-washing would require considerable manpower, for an uncertain benefit.

6. PSB anticipates the need for the regulation of lawn irrigation in the 1995-2000 period, when peak demand will approach system capacity. In the meantime, it is felt that the new rate structure (especially designed to discourage lawn watering) should be given a chance to work.

7. Retrofitting programs elsewhere in the U.S. have had only a small direct effect on per capita water use, although they have served to increase public awareness.

8. PSB wishes to take any steps appropriate to education of citizens about the need for water conservation. PSB will review any specific recommendations for additional measures which might be used to augment the existing program.

A more general response to the comments requires consideration of three questions: a) is a 20 percent reduction in per capita use reasonable to expect; b) would greater conservation lead to markedly reduced wastewater flows to a Northeast El Paso sewage treatment plant; and c) if the answers to either a or b are positive, is there any aspect of the proposed action which should be modified or reevaluated?

There are at least two reasons why, even with implementation of a more vigorous conservation program, the PSB does not expect to see a decrease in per capita water use (Hickerson, 1980).

1. The City of El Paso has one of the lower rates of per capita water use in the desert southwest, indicating that citizens are already conscious of the need to conserve water. El Paso was one of the first U.S. cities to have all customers metered. The protection of ground water through use of higher-cost surface water was begin in the 1940's. Regulations to restrict the size of residential water meters are in full effect. Recent changes have led to adoption of new customer connection charges and water rates that penalize customers who use large amounts of water. The long-standing summer discount in water price has been eliminated, even though such elimination was in the past politically controversial. All these factors show that there is an effective water conservation program already underway, and that the present rate of per

capita water use is much less than it would be if the program was not in operation. Consequently, while further steps may be appropriate, the additional savings would not be expected to be as great as reductions accomplished in areas which do not have a long history of conservation.

2. In the specific case of El Paso, there is at least one factor which causes increases in municipal water use, but no change in regional water use. This is the tendancy for those with their own water supply to gradually abandon that supply in favor of using City water. One example is the use of river water for irrigation by homes in the valley area. During dry years these homes depend upon the municipal water system to supply considerable amounts of irrigation water. As the areas become more densely populated and urbanized, the tendancy is for the use of water from the irrigation district to decrease. This also results in increased use of municipal water. Another example is the major industries in El Paso who have for many years supplied their own water needs by private wells. Over time these industries have been converting to the municipal supply, thus increasing the apparent per capita water use. Specific examples include ASARCO and Standard Oil.

The net effect of the above factors is to limit the extent to which water conservation programs would cause a decrease in per capita water use. The projection used in the facilities plan and EIS is that conservation will tend to offset the effect of factor number two, above, and that the past trend of increasing per capita use will end. Previous forecasts which anticipated ever higher rates of per capita water consumption have been replaced, by a more ambitious projection that use will stabilize at the present-day rate. Because water use is already relatively low, and because of the effects of irrigation and industrial use discussed above, it is not expected that per capita use would decline. Although such declines could occur, a cautious approach to the planning of facilities would not base design decisions on such declines. With specific reference to wastewater flows, two factors suggest that there is no assurance that water conservation would cause flow reductions beyond the levels utilized in the facilities plan.

1. Most of the effects of water conservation programs would be reflected in reduced outdoor use. Only a few of the measures described on p. 7-8 would be expected to cause a reduction in wastewater flow.

2. El Paso's relatively low rate of per capita water use is reflected by a low value for wastewater flow. For example, per capita waste flows in Albuquerque New Mexico, a city with many basic similarities to El Paso, average 110 gpcd (EPA, 1977). This is 10 percent more than the citywide average in El Paso. Northeast El Paso has a present waste flow which is even lower, 85 gpcd. If Northeast El Paso did not already have a conservation conscious public, and experienced flows of 110 gpcd, then a 20 to 30 percent reduction in wasteloads might be forecast. However, given the low per capita flow of 85 gpcd, there is no firm basis for projecting substantially lower per capita flows in the near future.

In summary, PSB feels that El Paso already has made progress toward water conservation, and that additional measures would not accomplish as much additional progress as experienced elsewhere. Further conservation is necessary, but projections as to the quantitative effect of such conservation should not be based on situations where water use was initially high, and the potential for conservation was great. Because the prospects for substantial reductions in per capita water use and waste flows are not firm, it appears to be reasonable to base decisions on the water use and flow factors developed in the facilities plan.

7.3 PREPARERS AND REVIEWERS

Table 7-1 [a/] lists the individuals who prepared this document, performed consultation, prepared the background report (Wilson, 1980), or otherwise assisted with the Draft Environmental Impact Statement. Resumes are on file with Lee Wilson and Associates, Inc., Santa Fe, New Mexico.

Personnel of EPA, Region VI, who participated in the review of this document prior to public distribution were Mr. Clinton B. Spotts, Mr. Norman Thomas, Ms. Darlene Owsley, and Mr. Gene Wossum.

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a. Table 7-1 is unchanged; refer to page 7-5 of the Draft EIS.

APPENDIX I

RECORD OF PUBLIC PARTICIPATION AND REVIEW

1. Members of the Citizens' Advisory Committee:

Mrs. Lawrence Duncan
3120 Devil's Tower
El Paso, Texas 79904

Mr. John Foster
6044 Gateway East
El Paso, Texas 79905

Mr. Roberto Anchondo
1715 Montana
El Paso, Texas 79902

Mr. Bill Resch
4531 Bliss
El Paso, Texas 79903

Mr. Haskell R. Street
8401 Hopewell
El Paso, Texas 79925

Mr. Bob Moreno
9811 Dyer
El Paso, Texas 79924

Mr. Pat Hagarty
9549 Dyer
El Paso, Texas 79924

Mrs. Mildred Smith
9520 Rutledge
El Paso, Texas 79924

Dr. Thomas G. Barnes
UTEP, Univ. Ave. & Hawthorne
El Paso, Texas 79902

General Lloyd Leech (Ret.)
2925 Stone Edge
El Paso, Texas 79904

Mrs. Helen Tullis
5808 Bob White
El Paso, Texas 79935

Mr. Merle Lee
3406 Titanic
El Paso, Texas 79904

Mr. John McKellips
9348 Dyer
El Paso, Texas 79924

Mr. Joe Wilson
3621 Hercules
El Paso, Texas 79904

2. Responses to Notice Of Intent.

EPA issued its Notice Of Intent to prepare this EIS on July 26, 1978. Letters in response were received from the following:

George C. Marks - Conservationist, U.S. Department of Agriculture, Soil Conservation Service

Louis S. Wall - Assistant Director, Office of Review and Compliance, Denver, Advisory Council on Historic Preservation.

3. Correspondence related to coordination regarding archeological resources and threatened or endangered species.

Texas Historical Commission
Box 12276, Capitol Station
Austin, Texas 78711
Truett Latimer
Executive Director

March 5, 1976

Mr. John T. Hickerson
General Manager
El Paso Water Utilities
Public Service Board
320 South Campbell Street
P.O. Box 511
El Paso, Tx. 79999

Dear Mr. Hickerson:

Enclosed please find a final draft of Archeological Survey Report 15, *Archeological testing at the Northeast Sewage Treatment Plant, El Paso County, Texas,* by Warren M. Lynn, submitted to you in fulfillment of our October 3, 1975 proposal for a subsurface archeological investigation at the Northeast Treatment Plant. Formal printing of this technical report will soon be completed and several copies will be forwarded to your offices. The printed report will contain two additional figures concerning proveniences and distributions of recovered cultural materials.

As stipulated in the introduction and concluding section of this report, the two investigated sites have been found to be ineligible for inclusion in the National Register of Historic Places and need not be maintained as State Archeological Landmarks.

We appreciate the opportunity to have worked with your agency for the preservation of the cultural heritage of Texas. If we can be of any further service, please do not hesitate to call on us.

Sincerely,

Robert J. Mallouf

Robert J. Mallouf
Director
Department of Survey Archeology

RJM:pc

Enclosure

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

SE

POST OFFICE BOX 1306
ALBUQUERQUE, NEW MEXICO 87103

May 5, 1980

Clinton B. Spotts
Regional EIS Coordinator
U.S. Environmental Protection Agency
Region 6
1201 Elm Street
Dallas, Texas 75270

Dear Mr. Spotts:

This is in reply to your letter of April 24, 1980, concerning the proposed wastewater treatment facilities for Northeast El Paso, Texas.

I concur with your finding that the proposed project is not likely to have an effect upon Federally listed species, after reviewing the draft environmental impact statement, "Wastewater Treatment Facilities Northeast El Paso, Texas" and your letter of April 24, 1980.

If I can be of further assistance, please contact the Office of Endangered Species, FTS 474-3972 or commercial 505-766-3972.

Sincerely yours,

Acting Regional Director

cc:
Austin Area Office, (SE), TX
Field Supervisor, (ES), Corpus Christi, TX

Appendix-24

April 24, 1980

Mr. Jerry L. Stegman
Acting Regional Director
Fish and Wildlife Service
U.S. Department of the Interior
P.O. Box 1306
Albuquerque, New Mexico 87103

Dear Mr. Stegman:

Enclosed is a copy of the Draft EIS for the upgrading of El Paso's Northeast Sewage Treatment Plant under EPA grants. Information concerning those speci identified in your October 12, 1979 letter to me is contained on pages 6-51 through 6-56 of the Draft EIS. Based on the information presented therein, EPA has determined that no effect to the proposed cactii species will result from wastewater treatment facility construction at the Northeast site.

With regard to the listed peregrine falcon, a biological assessment of the effects of construction at the plant site has been made by Richard Smartt, P University of Texas at El Paso, using two methods: discussions with and a survey of the records of organizations familiar with birdlife at the existir wastewater treatment and overflow ponds; and a review of the literature regarding the ecology of the peregrine falcon. The results of the analysis indicate clearly that the peregrine falcon is at most a rare visitor to the plant site, possibly visiting during fall-spring migrations. The effects of elimination of ponding areas at the plant site would probably eliminate the rare visits, but since no important habitat would be affected, it would cause no substantial harm to the species. It is concluded that proposed actions at the plant site would have no effect on the peregrine falcon. The basis for this determination follows:

The peregrine falcon breeds in mountainous areas usually near water (Ligon 1 Hubbard 1979). Its preferred nesting sites include high cliffs, large dead trees or other high structures, although occasional nests are found on sand-dunes and plains (Snow 1972, Ligon 1961). The peregrine falcon's diet consi mostly of ducks, geese, herons, other birds and some rodents.

No evidence of breeding exists for the El Paso or Dona Ana County areas (Hubbard 1978, Snow 1972). Frentress (1974) says that a non-migratory remnant population exists in trans-pecos Texas, but no El Paso nest records occur in the literature. Only 8-10 active eyries are known for the entire state of New Mexico and these are in Northern and Southwestern mountainous areas (Hubbard 1978).

Local birdwatchers have reported observing the peregrine falcon at the Northeast Wastewater Plant and elsewhere in the area. However, only one sighting is fully verified and presented in the literature (see Hubbard, 1978). All non-verified sight records have occurred between the months of September and May (non-nesting season). One adult peregrine falcon was sighted by a member of the West Texas Ornithological Society in September 1976 at the Fort Bliss sewage pond. The New Mexico Ornithological Society estimates that 1 to 5 peregrine falcons are sited in the general area per decade, and most are associated with the local river habitat (West Texas Ornithological Society, New Mexico Ornithological Society, personal communication). All of the sighting information is consistent with a conclusion that the peregrine falcon is not found in the El Paso area except as rare migrants or possibly an occasional wintering bird.

Although the possibility exists that a peregrine falcon might on rare occasions use the Northeast El Paso Wastewater Treatment Plant, the area by no means can be considered prime or preferred habitat. The nearest local habitat that could be considered marginally adequate wintering habitat is approximately ten miles from the plant, in the Rio Grande valley where cliff areas occur near water. Since the foraging range of most raptors is under five miles, birds hypothetically associated with the valley habitat would not utilize the ponds for any purpose while wintering. Rather, their occurance at the site would reflect the (presumably temporary) occupancy of atypical habitat nearer to the ponds, such as during migration.

Given that on rare occasions the peregrine falcon might migrate through or even winter at the wastewater treatment site, the effect of the proposed action would be one of displacement and not harm. The area receives constant attention from local birdwatchers. If through an event of very low probability a nest were to be established at the site, it would not go unnoticed by local birdwatchers. Specific consultation with your office, as well as with local groups, could be accomplished prior to construction, if deemed necessary. Prior to construction, protective or mitigating measures could easily be implemented with little effect on or by the proposed action.

We hereby request your concurrence of our determination of no effect. Also since we are planning to distribute the final EIS in May or early June, 1980, we would appreciate receiving your response as soon as possible.

Should you have any questions or need additional information, please contact Darlene Owsley of my staff at FTS 729-2716.

Sincerely,

Clinton G. Spotts
Regional EIS Coordinator (GASAF)

Enclosure

Literature Cited and Bibliography

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McBee, L. G. and M. Keeter. 1967. A checklist of Birds: Region of El Paso. The School Press.

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Ordal, J. M. 1976. Endangered and Threatened Fauna Survey of Dona Ana and Sierra Counties. Bureau of Land Management, District Office, Las Cruces, New Mexico.

Snow, C. 1972. Habitat management series for endangered species. Rept. No. 11; American Peregrine Falcon and Arctic Peregrine Falcon Tech. Note, USDI.

U.S. Dept. of the Interior, Bureau of Land Management. Birds of the Organ Mountains. Bureau of Land Management, District Office, Las Cruces, New Mexico.

West Texas Ornithological Society (personal communications).

Zimmer, K. 1977. Birds of Hueco Tanks State Historical Park: A Field Checklist. Austin: Texas Parks and Wildlife Dept.

4. SUMMARY OF TESTIMONY AT THE PUBLIC HEARING REGARDING NORTHEAST EL PASO SEWAGE TREATMENT PLANT, APRIL 17, 1980

Testimony of JOHN SPROUL, representing the El Paso Regional Group of the Sierra Club

Mr. Sproul commended the Public Service Board for preparing now for wastewater recycling which will be necessary in the future. The Sierra Club recommends that EPA fund a recharge project for Northeast El Paso. The preferred alternative in the EIS should not be funded; rather, two stipulations should be attached to any grant for a recycling project.

1) The Public Service Board should be required to incorporate into the recharge project a more ambitious plan for water conservation. Rather than merely maintaining present levels of consumption, a goal should be set to reduce per capita consumption by 15 to 20%.

2) The project should include maintenance of a wetland at the recharge site (as Case 6A of the EIS). The present ponds and overflow areas are a major positive step towards replacing the natural wetlands which have been eliminated in the El Paso area. Although recycling of water for human consumption is important, maintenance of the wetland is yet more important, given the uniqueness and value of the habitat to wildlife. An allocation of 600,000 gpd to the wetland would represent only 7% of the pilot project sewage flow and only 0.6% of potential citywide future flow. The lack of recreational benefit at the present site is a non-issue. The wetland should be maintained for ecological reasons; any recreational benefits would be secondary.

Mr. Sproul pointed out that the wildlife cannot raise a voice for themselves among those clamouring for water. Support for the Sierra Club position is indicated by the fact that 5 of the 12 votes of the Citizen's Committee were for maintenance of the wetlands. Mr. Sproul offered the assistance of the Sierra Club to set up a management program for the wetlands.

Testimony of JOE WILSON, member of the Citizen's Committee
member of the Fort Bliss Rod and Gun Club

The wetland in its present location is an attractive nuisance. It is close to the road, and thus easily accessible to four-wheel drive vehicles and motorcycles. One's life is endangered in the area due to indiscriminate discharge of firearms. Mr. Wilson would discourage maintaining a wetland in relationship to the recharge site. He hoped that a good alternative site could be found, though they have not located such a site to date.

Testimony of JO ELLEN WAROLIN, member of the Audubon Society

Ms. Warolin favored saving some wetland area.

Testimony of JANE FOWLER, member of the Audubon Society

Ms. Fowler expressed support for maintaining the wetland habitat. She stated that we are not doing a good job as trustees of the environment for future generations. If we destroy wildlife habitats and force wildlife to extinction, with what shall we replace them? Animals have value apart from whether we can use them, and they have a right to exist.

Testimony of ROBERT P. BLEICHER, president of the El Paso Trans-Pecos Audubon Society

The Audubon Society hopes for a recharge project which will also leave some area for wildlife. While they realize that some change must take place, they urge a compromise between change and maintaining a place for wildlife. There should be some balance so that life itself can have more meaning. Mr. Bleicher stated that there used to be thousands of migrating species at the Horizon Lake area, which is now drained. He is concerned that one by one, all such areas will be eliminated until there is no place left for stopover or refuge for wildlife. "Our main concern is that ... we just do not wipe out all other forms of life so that all we have is each other to look at".

Mr. Bleicher pointed out that the nuisance aspect of the existing area is caused by people, not by the birds nor the people concerned with maintaining that environment.

Testimony of WEDAD J. SMITH

Mr. Smith indicated that priorities on water should be in the order: people, birds, commercial. Industry should provide their own water.

5. Index to written comments submitted in response to publication of Draft EIS.

a. Many comments in these letters have resulted in changes to the Draft EIS; the changes are contained in the Final EIS. Responses to comments are given in this appendix only when the comment did not lead to a change in the EIS or the change occurred on pages other than indicated in the comment. If there is no response to a comment which is contained in a letter, then the change suggested by the comment has been made and can be found on the appropriate page of the Final EIS.

SIERRA CLUB

EL PASO REGIONAL GROUP

P.O. Box 12380, El Paso, Texas 79912

23 April 1980

Mr. Clinton B. Spotts
Regional EIS Coordinator
Environmental Protection Agency, Region 6
1201 Elm St.
Dallas, TX 75270

Re: Draft Environmental Impact Statement, Wastewater Treatment Facilities, Northeast El Paso, Texas

Dear Mr. Spotts:

The Draft Environmental Statement (DES) for proposed wastewater treatment facilities for Northeast El Paso, Texas, is well done. It is a balanced document EPA should find of value as it debates whether or not to fund the proposed project.

The El Paso Regional Group of the Sierra Club believes EPA should fund a recharge project but not the preferred alternative described in the DES. We favor instead Case 6A, the alternative that would maintain a 100-acre wetland at the project site, or a comparable alternative. Since the DES states repeatedly that the choice not to maintain a wetland will be re-evaluated based on public comment, we want to emphasize our strong support for a small wetland.

We also believe the conservation program outlined in the DES would fall far short of realizing the full potential for water conservation in El Paso. We believe EPA should require El Paso's Public Service Board (PSB) to develop a more aggressive conservation program as a stipulation for project funding.

The Sierra Club's specific comments follow:

1. Pages 3-1 and 3-3: The discussion of laws, regulations and grant programs of the federal government should also discuss how Executive Order 11990, Protection of Wetlands, applies to this project.

See also discussion on p. 6-56.

2. Page 4-1, Table 4-1: The estimates of per capita wastewater flow are fixed at 85 gallons per day in this table. This is an oversimplification. The facilities plan has a similar table (on page 7 of that document) that also considers water savings and increased industrial sanitary wastes. The table in the facilities plan gives lower values for total flow in 1990 and 2000

than does Table 4-1.

Table 4-1 should be revised to reflect the reduced per capita wastewater flow that is possible with an aggressive conservation program. As indicated in Comment No. 15, the program outlined in the DES and the facilities plan is not as aggressive as it could be.

See response to Comment 15. Table has been revised to agree with facilities plan.

3. Page 5-3, Table 5-1: Under reuse alternative No. 3, explain why use of effluent for cooling at the Newman generating station will decline from 3 million gallons per day (mgd) in the early 1980s to 1.7 mgd in 1990. This could be handled as a footnote.

4. Page 5-10, Table 5-3: Under Case 6, for gross annual benefits of recharge, change $4,505,400 to $2,505,400.

5. Page 5-24, paragraph 2, lines 11 to 14: Indicate that monitoring will be necessary to determine whether any wastewater from the small wetland is percolating to the aquifer.

See Table 5-6.

6. Page 5-24, paragraph 3, lines 7 to 9: According to Tables 5-3 and 5-4, the annual cost for Case 6 is $1,538,400. If that for Case 6A is indeed $1,548,200, then the difference is only $9800, not "about $40,000."

See Table 5-6.

7. Page 5-24, paragraph 4, lines 3 and 4: The Sierra Club would welcome the opportunity to work with the PSB to develop a plan for enhancing the value of the wetlands for wildlife.

8. Page 5-25, paragraph 1: This paragraph states there are two substantial problems with maintaining a small wetland. We do not think the second "problem"--lack of public access for recreational purposes--is "substantial." The major value of the wetland is ecological, not recreational. It is a rare and unique wildlife habitat in El Paso County. It is beneficial regardless of the human use of the area. We get the impression the PSB regards recreational benefits as "real" benefits but ecological benefits as secondary because they cannot be quantified.

We recommend revising this paragraph to assign less importance to the lack-of-access "problem." In fact, consider restricted access, on balance, a benefit, since it would reduce harassment of wildlife at the site. The indiscriminate shooting of raptors and illegal hunting now occurring at the ponds could be eliminated. Though we would enjoy using a wetland at the site for nature study, we would willingly forego the privilege should that be the price for maintaining a unique wildlife habitat.

Section 5.4.1 has been revised to clarify the position of the Citizens Committee (and PSB) which holds that recreation is a potentially appropriate use of high-value municipal water, while the ecological value alone of a Northeast pond is not sufficient to warrant commitment of wastewater which could be reclaimed for municipal use. Lack of access was one of several obstacles to the recreational use of the habitat which, in the stated opinion of several committee members, might have tipped the balance in favor of providing water for the habitat.

9. Page 5-25, paragraph 4: The El Paso Regional Group of the Sierra Club does not accept the environmental trade-offs of the Hueco Bolson Recharge Project. Its ecological impact is not acceptable, and we ask that EPA consider Case 6A or a comparable alternative preferable to Case 6.

See revised Sections 5.4.1 and 6.4.2 as well as the discussion of EPA's decision on page 5-31.

10. Pages 5-25 and 5-26, Section 5.4.2: The discussion of percolation ponds fails to indicate that this option would maintain a wetland. Please include the wetland benefit in the discussion.

11. Page 5-28, paragraph 4: The facilities plan indicates that additional water-conservation measures will reduce wastewater volume. For example, it assumes the inverted rate structure will cause an overall 10% demand reduction, with 20% of that reduction in-house use. Also, the facilities plan does not consider additional measures that could further reduce wastewater volume (see Comment No. 15). Revise this paragraph to indicate that flow reduction should be an important part of the recharge project.

See response to Comment 15.

12. Page 6-22, line 12: Change "9 million" to "90,000."

13. Page 6-25, Table 6-5: A footnote should indicate that this table makes no provision for flow-reduction programs.

14. Page 6-32, Table 6-8: Alternative No. 1 under Water Conservation is "Maintain City water use at current per capita rate by use of rate design, building codes, education." Either this alternative should be revised to reflect a more ambitious goal, or a new water-conservation alternative should be added to the table; say, "Reduce current per capita water use by 20% through rate design, building codes, leak detection and repair, use of water-saving clothes washers and dishwashers, education and additional measures." (See Comment No. 15.)

See response to Comment 15.

15. Page 6-34, last paragraph: Should "1980" in the first line be changed to a different year, say "2000"?

This paragraph and Figure 6-10 on page 6-35 should be revised to reflect more aggressive conservation goals. El Paso has the potential to reduce per capita water consumption significantly. The goal of maintaining demand at the current per capita level is nowhere near ambitious enough. We can, and should, do better. As an example from another water-short area, the California Department of Water Resources estimates that, with only modest conservation measures, Los Angeles can reduce water consumption 24% below its 1976 level by the year 2000.

The PSB deserves credit for the steps they have taken to encourage water conservation, but many conservation opportunities remain to be exploited. The PSB can work to:

- develop an active leak-detection and repair program;
- amend the City Code to require insulation of all hot-water pipes in new and replacement construction and require that, where practical, water heaters be centrally located;

The potential for a more effective water conservation program is discussed in Section 7.2.2. As discussed in that section, it is the position of PSB that a number of factors make it difficult to plan on more conservation than is indicated on Figure 6-10, despite the existence of an already effective conservation program. Specific comments on steps such as leak detection and code amendments are discussed in Section 7.2.2.

- amend the Code to prohibit the sale of non-water-saving clothes washers and dishwashers;

- check the accuracy of all industrial-commercial meters;

- amend the Code to prohibit hose washing of hard surfaces; and

- amend the Code to set permissible hours for landscape irrigation.

These are just a few ideas. Not all would reduce wastewater flow, but many would. Two documents worth consulting in development of a more comprehensive water-conservation program are:

- California Department of Water Resources, Southern District. 1977. Effect of conservation on Southern District urban water demand for 1980, 1990 and 2000. District Report.

- California Department of Water Resources. 1978. A pilot water conservation program. Calif. Dept. Water Resources. Bulletin 191.

The facilities plan discusses retrofitting water-saving devices and fixtures in existing residences but rejects the idea as too expensive. We suggest that a more cost-effective retrofitting program could be developed. One possibility would be mass distribution of free toilet and shower retrofit kits. To decrease costs, service organizations could be used for kit assembly and distribution. The Sierra Club would participate willingly in such a program.

The facilities plan estimates that the current public-education program for water conservation can save 5 gallons per capita per day (gpcd) and is already 75% effective. If that is the case, then an expanded public-education program is in order. Personal-habit change alone can save more than 5 gpcd. Refer to the documents cited above.

16. Page 6-48, paragraph 4: As elaborated upon in the previous comment, wastewater flows can be reduced considerably more than 0.6 mgd by the year 2005. As a stipulation for funding the Hueco Bolson Recharge Project, EPA should require the PSB to develop a more aggressive conservation program.

See response to Comment 15.

17. Pages 6-51 to 6-56, Section 6.4: Somewhere in this section, you should quantify, if possible, the historic loss of wetland habitat in El Paso County. The value of the existing sewage ponds would be even more evident if that were done.

18. Page 6-51, paragraph 4, line 6: Change "sitings" to "sightings" and "Audobon" to "Audubon."

19. Page 6-51, paragraph 5, line 5: Change "sitings" to "sightings."

20. Page 6-53, Table 6-16: In the right-hand columns, all of the symbols from Owl down to Loggerhead Shrike are one row too high. Shift them down so they begin at Barn Owl and end at Common Snipe.

    Also, the previous page states that Eared Grebes, American Avocets, Black-necked Stilts and Black Terns summer at the ponds, yet this table shows no summer status for these species. We suggest the following:

	Su	F	W	Sp
Eared Grebe	U	U	FC	U
American Avocet	U	U		U
Balck-necked Stilt	U	U		U
Black Tern	U	U		U

Slightly different changes were made in response to a phone conversation with Kevin Zimmer on May 5, 1980.

21. Page 6-54, paragraph 1: The reader would have a better picture of the proximity of the regional wetlands if you gave distances to each.

    Also, since this paragraph deals with riparian habitat, delete "the Franklin Mountains Wilderness Park."

22. Page 6-55 and 6-56, Section 6.4.2: This section should be revised to reflect choice of Case 6A or a comparable alternative as the favored alternative.

Case 6 has been selected. See discussion pp. 5-31, 6-55, 6-56, and Sections 5.4.1 and 7.2.2.

23. Page 6-56, paragraph 2: Bosque del Apache is a poor example of a regionally significant wildlife habitat that is within 100 miles of El Paso. Distance to Bosque del Apache is more like 130 miles as the crow flies.

24. Page 6-56, item 4: After item 4, add a new item:

    5. The amount of water needed to maintain a 100-acre wetland is small compared to El Paso's ultimate recycling potential. It is 0.6% of the 120,000 acre-feet per year that could be recycled by the year 2030. Dedication of this amount to maintaining a wetland will not seriously disrupt the City's anticipated recycling effort.

A modified version of this statement is included. As discussed in 5.4.1 and on p. 5-31, the decision to allow elimination of the habitat is not based directly on the amount of water involved, its dollar cost, or the lack of value assigned to ecological productivity. Rather, the decision is based on the fact that the need for municipal water in El Paso is so great that expensive large scale wastewater recycling is clearly cost-effective, provided that a 100% commitment to recharge is made. EPA accepts the need for a 100% commitment in this specific instance, notwithstanding the importance of wildlife habitat which would, in most other circumstances, warrant some degree of protection.

    The Sierra Club believes EPA should not forget that the Hueco Bolson Recharge Project is a pilot project, designed to demonstrate the feasibility of wastewater recycling. It is not intended to meet all of El Paso's recycling needs. The major effort will come later. From this pilot project, only 7% of the inflow would be diverted to maintain a unique and valuable wildlife habitat. As noted above, if recycling does prove feasible, just 0.6% of our potentially recyclable water would be diverted to a wetland in the year 2030.

25. Page 6-56, paragraph 7: EPA should not accept the ecological impacts of the Hueco Bolson Recharge Project.

See response to Comment 24.

26. Page 6-77, Section 6.9: This section should be revised to reflect choice of Case 6A or a comparable alternative as the favored alternative.

See response to Comment 24.

In summary, the El Paso Regional Group of the Sierra Club believes EPA should fund a Hueco Bolson Recharge Project but only if it:

- includes a more aggressive water-conservation program and
- allocates sufficient water to maintain a 100-acre wetland either at the site or elsewhere.

As now conceived, the Hueco Bolson Recharge Project has no provision to mitigate loss of the existing wetlands. Today, mitigation for loss of important wildlife habitat is part of any environmentally-sound project. Wetland habitat deserves particular attention, as emphasized by President Carter's Executive Order 11990, Protection of Wetlands. Mitigation must be part of the recharge project.

Sincerely yours,

John Sproul, Jr.

John Sproul, Jr.
Conservation Chair
Sierra Club, El Paso Regional Group
601 W. Yandell #25
El Paso, TX 79902

cc: Brant Calkin, Sierra Club
John Hickerson, El Paso Water Utilities
Rollin Wickenden, Sierra Club

United States Department of the Interior

OFFICE OF THE SECRETARY
SOUTHWEST REGION
POST OFFICE BOX 2088
ALBUQUERQUE, NEW MEXICO 87103

ER-80/199

Mr. Clinton B. Spotts
Regional EIS Coordinator
Environmental Protection Agency, Region 6
1201 Elm Street
First International Building
Dallas, Texas 75270

Dear Mr. Spotts:

This responds to the February 29, 1980, notice from the Environmental Protection Agency signed by Regional Administrator Adlene Harrison, requesting evaluation and comments on the draft environmental impact statement for the awarding of additional grants to the El Paso Public Service Board to upgrade their wastewater treatment facilities in northeast El Paso, Texas. The following comments are provided for your consideration.

GENERAL COMMENTS

Principal insufficiencies in the DEIS are the lack of mitigation plans and the cursory treatment of alternatives that would use percolation ponds, thereby, preserving fish and wildlife resources to the extent possible and still recharge the Hueco Bolson at minimum costs. We also believe that the "man-made" sewage treatment plant wetlands should not be sacrificed because the natural wetlands, for the most part, have already been destroyed by man's activities along the Rio Grande. We urge that illustrations depicting proposed alternatives of plant sites, which would assist the reviewer in making comparisons, be placed in the EIS.

These points are discussed in response to specific comments (next three pages).

Consideration of archeological resources in the proposed project area appears generally adequate.

We suggest that the sponsor conduct a recreation needs analysis to determine if a wildlife habitat area, removed from the plant site, would be cost-beneficial. The analysis should include coordination with private citizens/groups and public agencies, especially Texas Parks and Wildlife Department and El Paso Parks and Recreation Department. Coordination with local recreation plans and the Texas Outdoor

Figure 5-6 illustrates the existing ponds. Alternative 6A would modify the 3 existing oxidation ponds (which are naturally sealed against percolation due to the accumulation of sludge) to provide suitable shore and nesting habitat.

Such an analysis will be conducted as part of a separate facilities plan which deals with the remainder of El Paso. Any decision to develop such habitat would be independent of the development of the Hueco Bolson Recharge Project, and would not be considered mitigation of the wildlife impact of that project.

Recreation Plan should also be a part of the analysis. We realize that provision of an adequate municipal water supply is paramount. However, the popularity of the existing ponds suggests that a wildlife habitat area, perhaps within an existing city park, might be an acceptable reuse of a portion of the wastewater and that the inclusion of a wildlife habitat area pond in project plans should be investigated.

The principal use of the ponds is by hunters; such use would not be appropriate in a city park.

The statement acknowledges the existence of sand and gravel deposits in the northeast area and mentions some effects of bentonite expansion. Reference also is made to a rock quarry and gravel pit in the northeast area. The extent of these mineral occurrences is not discussed in the text, however, and no locations are given for the mineral resource deposits or production facilities in relation to the proposed alternatives for upgrading the treatment plant. The final statement should clarify the locations of the mineral resources and production installations in the northeast area to define the extent of possible impact on these mineral resources because of their apparent proximity to the study area.

A statement has been added to indicate the lack of relationship between the alternatives considered and resources and hazards.

The acreages that would be affected by the various alternatives are either within the city limits of El Paso, bordering the city limits, or on the Fort Bliss Military Reservation. This portion of the El Paso metropolitan area contains the most developable acreage readily available, and some of the area currently is under planned development, both residental and commercial. Because of the location of the proposed project, we do not anticipate any significant conflict between the planned wastewater treatment facilities and mineral resources. Nevertheless, we suggest that subsequent documents discuss more fully the mineral resources and facilities in the area and any plans to alleviate possible conflicts that may arise.

SPECIFIC COMMENTS

Page 1-1, SUMMARY - The fifth sentence in the first paragraph states that the partially treated sewage overflow water is "presumed to cause pollution of the Hueco Bolson aquifer." Supporting documentation needs to be provided before such assumptions can be made. On the contrary, it has been well documented that wetlands perform an important function in wastewater treatment when not overloaded. In this case, downward percolation that may cause pollution is probably very slight because of the underlying caliche and clay soils. Also this document states that percolation through clay has a purifying effect.

The documentation is provided on p. 6-21.

Page 5-4, 5.2.2. Agricultural Reuse - The last sentence of the first paragraph implies that only non-food crops such as cotton and alfalfa, would be grown on the City-owned farm that would use treated sewage wastewater for irrigation to reduce the risk of disease transfer. This concern also needs to be discussed in the Discharge to Rio Grande Alternative (5.2.1, page 5-7) where the type of crops that would be receiving wastewater would be uncontrolled.

Page 5-8, Table 5-2 - This table needs to quantify the number of acres of wetlands that would be maintained with 0.6 mgd of wastewater and the wetlands location. Are these wetlands the existing oxidation ponds?

Page 5-10, Table 5-3 - Same comments as for Table 5-2, Pages 5-8.

Page 5-24, 5.4.1 Wildlife Habitat (Wetland) - The second sentence of the first paragraph needs to be expanded to give the expected salinity of both ponds. The expected salinity level should be compared to the existing salinities and how the salinity changes would impact existing wildlife usage. If it can be determined that the expected salinity levels would not be detrimental to wildlife, then the water should be directed to Pond 4 (Fig. 5-6) which is more distant from the sources of harrassment mentioned in the third paragraph and may eliminate the need for fencing the pond.

See Table 5-6. The salinity would not be detrimental to wildlife. Pond 4 would require control of access due to the potential conflict between unauthorized recreation at the pond and military activity on the adjacent land.

Page 5-25, 5.4.2 Recharge Method - Could any of the existing wetlands be converted to percolation ponds? If so, then the cost of 162 acres required for land acquisition would be reduced or eliminated. Also, this recharge alternative would mitigate for some of the unavoidable adverse impacts if the ponds were designed properly.

Regardless of location or design, percolation ponds would evaporate 20% of the water produced for recharge (at a cost of $1.4 million per year), and have some adverse effect on salinity. See Table 5-6.

Page 5-28, 5.4.4. Other components of a Recharge Project - Operation and Maintenance - This section needs to be expanded to include a discussion of (1) how long could the plant recycle inadequately treated water before the facility would become overloaded, (2) where would untreated and/or inadequately treated effluent be discharged when the plant, or units thereof, break down, needed chemicals or replacement personnel will not operate the equipment because of a labor dispute, etc.? No facility will be operable at the desired level 100% of the time.

Page 6-51, 6.4.1. Existing Condition - This section is accurate and supports the case for the preservation of the wetlands associated with the Northeast Treatment Plant because of the previous loss of existing natural wetland and riparian habitats.

Page 6-55, 6.4.2. Impacts of the HBRP - Item 1, Page 6-56 should read, "Regionally significant wetland wildlife habitats no longer occur in the El Paso vicinity except at the Northeast Treatment Plant overflow ponds and Bosque del Apache, New Mexico, 100 miles away."

Personal communications cited on p. 6-54 indicate that the Northeast ponds are not critical to the maintenance of aquatic bird population in the region. Therefore they are not considered regionally significant (in contrast to an area such as Bosque del Apache).

Page 6-56, Item 4 needs to be expanded to show which provisions of NEPA are not being complied with along with those provisions that are in compliance. An explanation of why no mitigation plan is presented or contemplated by the project sponsor should be provided. NEPA requires that mitigation/compensation be performed concurrently with project plans and activities and that environmental concerns be given equal consideration. This section also should be expanded to show compliance with Executive Order 11990 entitled Wetland Protection.

Pages 6-57 and 6-58 - Determinations of eligibility should be requested for sites 41EP319 and 41EP8 and proposed mitigation activities should be coordinated with the Texas State Historic Preservation Officer and the Advisory Council on Historic Preservation. Second, if resources are discovered during construction Interagency Archeological Services should be notified, pursuant to the Archeological and Historic Preservation Act, Section 3(a).

SUMMARY COMMENTS

Because of the uniqueness and importance of the wetlands in this xeric environment and lack of proof that the Hueco Bolson is being polluted by the existing wetlands, we believe that the wetlands should be preserved in their present status or with an alternative that maximizes the maintenance or creation of wetlands. Therefore, alternatives should be developed which consider tertiary treatment of excess effluent from the wetlands for reuse or injection into the Hueco Bolson. A section which includes a mitigation or environmental quality plan, should be included in the document for compliance with NEPA. Also, conformance with Executive Order 11990 needs to be shown. The sponsor is responsible for compensation of all unavoidable adverse impacts to wildlife resources. These mitigation/compensation costs must be considered in the benefit-cost ratio developed for each alternative. The high use of the existing wetland habitat area indicates importance of the resource and dictates they receive due consideration in the planning process.

We appreciate the opportunity to comment on this statement.

Sincerely,

Raymond P. Churan

Raymond P. Churan
Regional Environmental Officer

3 Apr. 1980

Mr. Clinton B. Spotts -

I would like to make comment on the issue of the El Paso Water & Utilities Public Service Board proposal to do away with the fresh-water marsh near the sewage-oxidation plant here in El Paso. As far as I'm concerned they'd be doing this citizen a disservice by drying up the ponds, I'm against that happening whole heartedly. What does it have to hurt to let the birds keep that area?

Pam Nielsen
3616 Nations
El Paso, Tx.
79930

April 1, 1980

Mr. Clinton B. Spotts
Regional EIS Coordinator EPA
Region 6
1201 Elm Street
Dallas, Tex. 75270

Dear Mr. Spotts,

I am a resident of El Paso, Tex. and am a member of the El Paso/Trans-Pecos Audubon Society. I would like to state that I am very much in favor of maintaining the 100 acre wetland habitat for our wildlife (alternative 6A in the EIS).

The wastewater reclamation program as stated in the draft EIS is going to be expensive and may pose some health risk to the citizens of El Paso. There are several unknowns regarding the health aspects of this proposal which are found in the summary (page 6-76).

I realize that we live in an area with a limited water supply and as the population is ever increasing, some kind of program must be initiated and soon. But I do not want to see the economic considerations completely take precedence over the environment and our health. This statement seems to give the economic considerations top priority.

I feel strongly that the wetlands are worth protecting. We need this tiny haven to preserve our wildlife and migrating waterbirds.

It will be a tragic existence and end for man if someday, the world is teeming with people and their wastes, and everything is covered with buildings, streets, and other man-made structures with no trees, grass, or other living creatures to be found.

It won't be living at all---only a sad survival.

Sincerely,
Jane Fowler
Jane Fowler
8212 Parkland Drive
El Paso, Tex. 79925

10423 Adonis
El Paso, Texas 79924
April 24, 1980

Clinton B. Spotts
Regional EIS Director
1201 Elm Street
Dallas, Texas 75270

RE: Northeast Sewage Treatment Plan

Dear Mr. Spotts,

After having attended a meeting on April 17, 1980 concerning the above plan, I felt an urgent need to write directly to you on behalf of those who can't- our wildlife.

I am extremely disappointed that the El Paso Public Service Board decided to abolish the sewage ponds in Fort Bliss in favor of a more sophisticated water treatment system. As you know, the ponds and overflow areas are of vital importance for numerous waterfowl, including some endangered species.

As an educator in the El Paso Public Schools, I am also writing to you on behalf of El Paso's younger citizens. The children in our schools are very concerned about our wildlife. After having discussed the sewage plant problem with the class, the children unanimously agreed that wildlife is more important in this world than ever growing population needs. The children are willing to make a few sacrifices in conserving water in order to save the ponds. They want to have the opportunity to be able to see such beautiful birds as sandpipers, olivaceous cormorants, prairie falcons, etc. in this area. If the children are willing to make such sacrifices, why can't they be given the opportunity to do so?

Mr. Spotts, I urge you to please consider saving the ponds for the children and for our much needed wildlife. Thank you!

Sincerely,

Magdalena Heisel

Magdalena Heisel

OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO
IBWC BUILDING
4110 RIO BRAVO
EL PASO, TEXAS 79902

APR 3 1980

Mr. Clinton B. Spotts
Regional EIS Coordinator
Environmental Protection Agency, Region 6
1201 Elm Street
First International Building
Dallas, Texas 75270

Dear Mr. Spotts:

Regional Administrator Harrison's February 29, 1980 transmittal provided a copy of your agency's Draft EIS Wastewater Treatment Facilities, Northeast El Paso, Texas, February, 1980 for review and comments.

The preferred alternative will not have an adverse international impact.

It is suggested that the statement in the middle of page 6 - 22 "the annual water use is about 9 million acre-feet" be corrected to read "the water in groundwater storage is about 9 million acre-feet."

The opportunity to comment on the draft EIS is appreciated.

Sincerely,

George R. Baumli

George R. Baumli
Principal Engineer
Investigations &
Planning Division

Mr Clinton Spotts
Regional E.I.S. Coordinator
Environmental Protection Agency
1201 Elm St. International Bldg.
Dallas, Texas. 75270

Reference. Wastewater Treatment Facilities
Northeast El Paso, TX. E.P.A. Hearing 17 April 80

I wish to thank your staff that was present and for the Courtesy they extended to everyone.
I was the Vice Chairman of the Citizens Advisory Committee, and received opinions from Many Citizens, and searched for an Alternative plan or solution to relocate the Waterfowl to a protected area if a recreational proposal could be accomplished, but since none could be found. I estimate that I support a 100 acre or so Wetland proposal at the present location. for the following reasons.

1. The area can't be protected from trespassers
2. A 100 acre site encourages a Mile long short cross, thereby killing the Waterfowl
3. Health Hazzards
4. These Waterfowl can easily migrate and relocate to nearby ponds or water areas just a few or miles away.
5. Drinking Water has priority.

Please accept this letter and move forward on the re-Clarp project Without Maintaining a Wetlands.

Respectfully submitted
Joe Wilson

JOE WILSON
1621 HERCULES
EL PASO, TEX.
79904

OFFICE OF THE GOVERNOR

WILLIAM P. CLEMENTS, JR.
GOVERNOR

April 14, 1980

Ms. Adlene Harrison, Regional Administrator
Environmental Protection Agency, Region VI
1201 Elm Street
Dallas, Texas 75270

Dear Ms. Harrison:

The Environmental Impact Statement pertaining to Wastewater Treatment Facilities, Northeast El Paso, prepared by the Environmental Protection Agency, has been reviewed by the Budget and Planning Office and interested state agencies. Copies of the review comments are enclosed for your information and use. The State Environmental Impact Statement Identifier Number assigned to the project is 0-03-50-024.

The Budget and Planning Office appreciates the opportunity to review this project. If we can be of any further assistance during the environmental review process, please do not hesitate to call.

Sincerely,

Donald E. Harley

Donald E. Harley, Manager
General Government Section
Budget and Planning Office

epg

Enclosures: Comments by Texas Department of Health
Texas Department of Community Affairs

EXECUTIVE OFFICE BUILDING • 411 WEST 13TH STREET • AUSTIN, TEXAS 78701

Appendix-42

Texas Department of Health

Robert Bernstein M.D., F.A.C.P.
Commissioner
A. M. Donnell, Jr., M.D., M.P.H., F.A.C.P.
Deputy Commissioner

1100 West 49th Street
Austin, Texas 78756
(512) 458-7111

April 7, 1980

Mr. Paul T. Wrotenbery, Director
Governor's Budget and Planning Office
Executive Office Building
411 West 13th Street
Austin, Texas 78701

ATTENTION: General Government Section

SUBJECT: Wastewater Treatment Facilities, Upgrading
Northeast El Paso, Texas
El Paso County
Draft Environmental Impact Statement
No. 0-01-50-024
Environmental Protection Agency

Dear Mr. Wrotenbery:

The Draft Environmental Impact Statement for the proposed upgrading of the El Paso Public Service Board's Northeast Sewage Treatment Plant as prepared by the Environmental Protection Agency has been reviewed for its public and environmental health implications.

We feel that the El Paso Water Utilities Public Service Board should be commended for their initiative expressed in this wastewater reuse program. The public and environmental health conditions in the community are expected to be enhanced through the elimination of existing sewage related nuisance conditions and through the augmentation of the municipal drinking water supply which should result from this project. Although the aquifer's productive life is expected to be extended by recharging, we feel that the total solution to the water shortage problem should encompass even more stringent conservation measures than presently practiced and enumerated in the report.

As previously indicated by this Department, we wish again to express our concern for the placing of even highly treated sewage effluent in an aquifer and we wish to stress the necessity of strict quality control testing in the sewage treatment plant by responsible, competent personnel employing reliable and accurate equipment.

We appreciate the opportunity to review and comment on the proposed upgrading of the subject Wastewater Treatment Facilities.

Sincerely,

G. R. Herzik, Jr., P.E.
Deputy Commissioner for Environmental
and Consumer Health Protection

ELJ/dbs

ccs: Bureau of State Health Planning
and Resource Development, TDH
Public Health Region 3, TDH
Division of Wastewater Technology
and Surveillance, TDH
El Paso City-County Health Department
Local Health Services, TDH

Texas Department Of Community Affairs

Sidney M. Wieser, Executive Director

April 1, 1980

RECEIVED

Budget, Planning

Mr. Ward Goessling
Governor's Budget and
Planning Office
411 West 13th Street
Executive Office Building
Austin, Texas 78701

Dear Mr. Goessling:

Enclosed you will find comments made by our Local Government Services Division on the Draft EIS, Wastewater Treatment Facilities, Northeast El Paso (EIS No. 0-03-50-024) and the Notice of Intent to Prepare an EIS for the "Elm Creek" Watershed, Runnels and Taylor Counties (EIS No. 0-02-50-258).

Please contact me at 475-2431 if further information is desired.

Sincerely,

Tom A. Laramey, Jr.
Deputy Executive Director

TAL:ps

Enclosures

MAILING ADDRESS
BOX 13166, CAPITOL STATION
AUSTIN, TEXAS 78711
TELEPHONE 1 800 252 9642 or 512 475-2431

BUILDING LOCATION
210 BARTON SPRINGS ROAD
AUSTIN, TEXAS 78704

OFFICE OF THE GOVERNOR

BUDGET AND PLANNING OFFICE

Executive Office Building — 411 West 13th Street — Austin, Texas 78701

STATE CLEARINGHOUSE

APPLICANT: Wastewater Treatment Facilities Northeast El Paso, Tx SAI NUMBER: 0-03-50-021

BUDGET AND PLANNING OFFICE CONTACT: Ward Goessling PHONE: 512/475-6021

COMMENTS

This is one of the more exciting projects that we have seen in some time. Reclamation and reuse of water is mandatory, particularly in an area like the El Paso area where current water use totals 570,000 acre feet per year and the renewable water supply is approximately 350,000 acre feet, a deficit of 22,000 acre feet per year.

The statement has addressed the key factors, which involve the health and safety of the future users of the recycled water. Knowing that much of the surface water in use today is recycled, we should not be too concerned about direct and deliberate recycling through another medium--that is through the fresh water acquifer. We note that several statements such as "more research is needed". We hope that the small unknowns and the meager risk involved will not delay approvals and funding of a project which will in fact extend the very life of the acquifer upon which the El Paso area relies for its very existence.

We recommend that the EIS statement be approved and that the Hueco Bolson Recharge Project be encouraged to proceed.

RECEIVED

MAR 31 1980

LEGAL

Name of Reviewing Person (Signature): [signature]

Agency: Texas Department of Community Affairs

To: Director, Local Government Services

Date: 3/27/80

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road / Whittier, California
Mailing Address / P. O. Box 4998, Whittier, California 9060[illegible]
Telephone (213) 699-7411 / From Los Angeles (213) 685-521[illegible]

WALTER E. GARRISON
Chief Engineer and General Manager

April 3, 1980

Mr. Clinton B. Spotts
Regional EIS Coordinator
EPA, Region 6
First International Building
1201 Elm Street
Dallas, Texas 75270

Dear Mr. Spotts:

We have recently reviewed the draft EIS for the El Paso Northwest Sewage Treatment Plant and would very much like to keep in touch with the progress of the project in light of our involvement with an ongoing study assessing the health effects of groundwater recharge. This study is one part of a regional study which will develop and implement a water reuse plan for the Orange and Los Angeles Counties area of Southern California. The Los Angeles County Sanitation Districts, under subcontract to the Regional Water Reuse Study, is conducting a wide range of research tasks designed to produce data for California health authoritries upon which rational decisions can be made regarding expansion or curtailment of water reuse by groundwater recharge. These studies include chemical, bacterial, and viral water quality characterizations, toxicologic assessments, development of population exposure data, and an epidemiology study. We are in the 13th month of a 3-1/2 year study and consequently are still heavily involved with data collection. We would, however, be pleased to keep you informed about our study as it progresses and possible applications to the El Paso project. Enclosed for your consideration is a paper describing the study. Please feel free to contact this office if you have any questions or would like additional information about the study.

Sincerely,

Walter E. Garrison

By Margaret H. Nellor

Margaret H. Nellor
Project Engineer
Research Section

MHN:ver
Encl.

Enclosures not reproduced

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
1720 Peachtree Road, N. W.
Atlanta, Georgia 30309

1950
April 14, 1980

Mr. Clinton B. Spotts
Regional EIS Coordinator
Environmental Protection Agency Region 6
1201 Elm Street
First International Building
Dallas, Texas 75270

Dear Mr. Spotts:

We have reviewed the Draft Environmental Impact Statement for Wastewater Treatment Facilities for Northeast El Paso, Texas, and have no substantive comments to offer.

Thank you for the opportunity to comment on the EIS.

Sincerely,

For ROBERT D. RAIGH
Area Director

6200-11 (1/80)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
824 FEDERAL OFFICE BUILDING
AUSTIN, TEXAS 78701

March 17, 1980

IN REPLY REFER TO

HC-TX

Draft Environmental Impact Statement
Wastewater Treatment Facilities
Northeast El Paso, Texas

Mr. Clinton B. Spotts
Environmental Protection Agency
28th Floor Library
1201 Elm Street
First International Building
Dallas, Texas 75270

Dear Mr. Spotts:

We have reviewed the subject document and have no comments to offer. It is our understanding that the State Department of Highways and Public Transportation is reviewing the document and will provide appropriate comments on the impact of the action on the highway environment.

Sincerely yours,

W. L. Hall, Jr.
District Engineer

STATE DEPARTMENT OF HIGHWAYS
AND PUBLIC TRANSPORTATION
AUSTIN, TEXAS 78701

ENGINEER-DIRECTOR
B L DEBERRY

March 26, 1980

IN REPLY REFER TO
FILE NO

D8-E 854

Draft Environmental Statement
Wastewater Treatment Facilities
Northeast El Paso

Mr. Clinton B. Spotts
Regional EIS Coordinator
EPA, Region 6
1201 Elm Street
First International Building
Dallas, Texas 75270

Dear Sir:

Thank you for the opportunity to review the draft environmental statement regarding the upgrading of the El Paso Northeast Sewage Treatment Plan under an EPA grant.

We foresee no significant direct adverse effects on transportation by any of the described reuse or non-reuse alternatives for the wastewater disposal.

Sincerely yours,

B. L. DeBerry
Engineer-Director

By: James M. Bass
R. L. Lewis, Chief Engineer
of Highway Design

TEXAS
PARKS AND WILDLIFE DEPARTMENT

CHARLES D. TRAVIS
EXECUTIVE DIRECTOR

4200 Smith School Road
Austin, Texas 78744

March 31, 1980

Ms. Adlene Harrison
Regional Administrator (6A)
U. S. Environmental Protection Agency
Region VI
1201 Elm Street
Dallas, Texas 75270

Re: Draft Environmental Impact Statement:
Wastewater Treatment Facilities,
Northeast El Paso, Texas

Dear Ms. Harrison:

The Texas Parks and Wildlife Department has reviewed the above-referenced proposed project, forwarded by letter dated February 29, 1980, and has no comment to offer.

Thank you for the opportunity to review and comment on this document.

Sincerely,

CHARLES D. TRAVIS
Executive Director

CDT:JDR:dsb

United States Department of Agriculture
Soil Conservation Service
P. O. Box 648
Temple, TX
76501

March 14, 1980

Mrs. Adlene Harrison
Regional Administrator (6A)
U.S. Environmental Protection Agency
1201 Elm Street
Dallas, TX 75270

Dear Mrs. Harrison:

We have reviewed the draft environmental impact statement for the proposed construction of Wastewater Treatment Facilities, Northeast El Paso, Texas, and feel this statement adequately reflects the impacts this project will have on the soil, water, and plant resources.

We appreciate the opportunity of reviewing this statement.

Sincerely,

George C. Marks
State Conservationist

Advisory Council On Historic Preservation

ADVISORY COUNCIL ON HISTORIC PRESERVATION
LAKE PLAZA SOUTH
SUITE 616
44 UNION BLVD.
LAKEWOOD, COLORADO 80228

1522 K Street NW.
Washington D.C.
20005

April 4, 1980

Mr. Clinton B. Spotts
Regional EIS Coordinator
Environmental Protection Agency
First International Building
1201 Elm Street
Dallas, Texas 75270

Dear Mr. Spotts:

This is in response to your request of February 29, 1980, for comments on the draft environmental statement (DES) for the proposed Northeast Sewage Treatment Plant at El Paso, Texas. The Council has reviewed the DES and notes that while cultural resource studies to date indicate that no properties included in or eligible for inclusion in the National Register of Historic Places will be affected by the proposed undertaking, additional cultural resource studies will be undertaken prior to project implementation. The Council also notes that the Environmental Protection Agency recognizes its responsibilities pursuant to Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. Sec. 470f, as amended, 90 Stat. 1320) should the above-cited cultural resource studies identify previously unknown significant properties. Accordingly, the Council looks forward to working with the EPA in accordance with its regulations, "Protection of Historic and Cultural Properties" (36 CFR Part 800) in the future, as appropriate.

Should you have questions or require assistance, please contact Jane King of the Council staff at (303) 234-4946, an FTS number. Your continued cooperation is appreciated.

Sincerely,

Louis S. Wall
Chief, Western Division
of Project Review

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FORT WORTH REGIONAL OFFICE
221 WEST LANCASTER AVENUE
P.O. BOX 2905
FORT WORTH, TEXAS 76113

REGION VI

April 8, 1980

IN REPLY REFER TO:

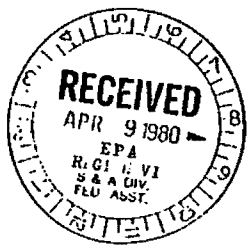
Mr. Clinton B. Spotts, Regional EIS Coordinator
Environmental Protection Agency
1201 Elm Street
Dallas, Texas 75270

Dear Mr. Spotts:

The Draft Environmental Impact Statement for Wastewater Treatment Facilities, Northeast El Paso, Texas, has been reviewed in the Department of Housing and Urban Development's Dallas Area Office and Fort Worth Regional Office, and it has been determined that the department will not have comments on the statement.

Sincerely,

Billy G. McKenzie
Acting Regional Director for Community
Planning and Development

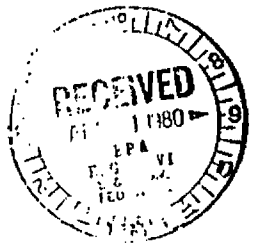


AREA OFFICES
DALLAS, TEXAS · LITTLE ROCK, ARKANSAS · NEW ORLEANS, LOUISIANA · OKLAHOMA CITY, OKLAHOMA · SAN ANTONIO, TEXAS

DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT CORPS OF ENGINEERS
P O BOX 1580
ALBUQUERQUE NEW MEXICO 87103

REPLY TO ATTENTION OF
SWAED-EP

31 March 1980



Mr. Clinton B. Spotts, Reg. EIS Coord.
EPA, Region 6
1201 Elm Street
First International Building
Dallas, TX 75270

Dear Mr. Spotts:

I have reviewed the draft Environmental Impact Statement on the Wastewater Treatment Facilities Northeast El Paso, Texas. The facilities plan as described in the draft EIS does not affect any existing or proposed Corps of Engineers projects. If discharge to the Rio Grande is the alternative selected, it will be necessary to obtain a permit under Section 404 of the Federal Water Pollution Control Act Amendments of 1972.

Sincerely,

for JASPER H. COMBES, P.E.
Chief, Engineering Division

Cliett, Tom, 1979. Personal communication. Geologist, Public Service Board, El Paso, Texas.

Hickerson, John, 1980. Personal communication. General Manager, Public Service Board, El Paso, Texas.

Schraeder, Thomas, 1980. Personal communication. Ecologist, Bureau of Reclamation, El Paso, Texas.

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