UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TEXAS 75202-2733

FINDING OF NO SIGNIFICANT IMPACT

To All Interested Agencies, Parties and Private Groups:

In accordance with the guidelines of the Council on Environmental Quality, at 40 Code of Federal Regulations (CFR), Part 1500, and the implementing procedures at 40 CFR Part 6, *Procedures for Implementing the Requirements of the Council on Environmental Quality of the National Environmental Policy Act*, the U. S. Environmental Protection Agency (EPA) has performed an Environmental Assessment (EA) of the following proposed action:

Proposed Action: Funding assistance for the proposed Village of Columbus Wastewater Collection and Treatment System Phase IV Expansion Program through the Border Environment Infrastructure Fund (BEIF).

Applicant: Village of Columbus, Luna County, New Mexico

Proposed Project. The Village of Columbus has experienced unexpected population growth in recent years, exceeding the projected 2020 population of 1,250 by 526 people by May, 2003. Columbus has applied to the Border Environment Cooperation Commission (BECC) for BEIF funding of its proposed Phase IV wastewater treatment plant (WWTP) improvement and collection system expansion program. The Phase IV construction program is based on a population projection update of 3,071 by the year 2025 and will provide area residences with effective and sanitary collection and treatment service and allow infill growth and development. The collection system will be expanded to serve those areas within the Village proper not connected to the wastewater sewer system and will include the installation of 8-inch gravity flow sewer lines and two lift stations. Gravity flow sewer mains will be installed along unpaved existing streets and in areas disturbed previously by street construction and water line installation. The proposed improvements to the existing WWTP lagoon system will add twelve (12) 3-Horsepower surface aerators to the three (3) existing electricity-driven floating aerators and four (4) wind-powered aerators, and construct an on-site 49-acre flood irrigation land application system consisting of a 2-acre storage pond, a 200 gallons per minute lift station, and leveling of the existing clay lined evaporation ponds. Five more aerators will eventually be added for a total of 20 aerators for the 2020 flow.

Findings. On the basis of the Environmental Assessment, EPA Region 6 has made a preliminary determination that the project is not a major Federal action significantly affecting the quality of the human environment and that preparation of an Environmental Impact Statement (EIS) is not warranted. The project individually, cumulatively, or in conjunction with any other action will not have a significant adverse effect on the quality of the environment.

Comments regarding this preliminary decision not to prepare an EIS and issue a Finding of No Significant Impact (FNSI) may be submitted to the U.S. Environmental Protection Agency, Office of Planning and Coordination (6EN-XP), 1445 Ross Avenue, Suite 1200, Dallas, Texas 75202-2733. All comments will be taken into consideration. This preliminary decision and the FNSI will become final after the 30-day comment period expires if no new information is provided to alter this finding. No administrative action will be taken on this decision during the 30-day comment period. Copies of the EA and requests for review of the Administrative Record containing the information supporting this decision may be requested in writing at the above address, or by telephone at (214) 665-8150.

Responsible Official,

/S/

Richard E. Greene
Regional Administrator

Enclosure

ENVIRONMENTAL ASSESSMENT
WASTEWATER COLLECTION AND TREATMENT PLANT SYSTEM IMPROVEMENTS
FOR THE VILLAGE OF COLUMBUS, NEW MEXICO

1.0 PROJECT DESCRIPTION AND NEED

1.1 Project Description. The Village of Columbus (Fig.1) has applied to the Border Environment Cooperation Commission (BECC) for Border Environment Infrastructure Fund (BEIF) monies for its proposed Phase IV wastewater treatment plant (WWTP) improvement and collection system expansion program. The collection system will be expanded into those areas with individual septic tanks, many of which do not meet the New Mexico state minimum lot size, flow volume aerial loading and total nitrogen loading standards, and have the potential to contaminate groundwater in the area. The proposed expansion will service the area north and east of the Highway 11 and the North Boundary Avenue intersection, the area south and east of the Highway 11 and Highway 9 intersection, the area north of Highway 9 and southwest of the existing Columbus development; and the area south of North Boundary Avenue and west of Grant Street (Fig.2). The expansion will be within the Village proper in mostly unpaved road rights-of-way (ROWs). The proposed WWTP improvements will be within the existing plant site previously approved in the facilities plan, Environmental Assessment (EA) and Finding of No Significant Impact (FNSI) issued in 1997 by the Rural Utilities Service (RUS). RUS issued an Environmental Assessment (EA) on May 21, 1997, for the construction of an aerated lagoon/wetland WWTP and a gravity collection system to serve central and east Columbus.

Columbus is situated at the crossroads of New Mexico State Highway (SH) 11, which connects Deming and Palomas, Mexico, and New Mexico SH 9, which extends westward towards the Arizona border. The Columbus-Anapra road extends to IH-10 between Las Cruces and El Paso (Fig.3). Across the border to the south is the Mexican town of Palomas with a population estimated at 12,000. The Port of Entry and the Columbus International Industrial Park are on the U.S. side of the border.

1.2 Project History. The Village of Columbus has experienced unexpected population growth in recent years, increasing to 1,776 by May, 2003. The Phase I construction of the wastewater treatment and collection system, initiated in 1997 under funding from the RUS, was based on a 2020 population estimate of 1,250. In late 1999, Phase II construction expanded the collection system to serve west Columbus. Phase III of the collection system was completed in 2002, to serve portions of northwest Columbus. The Phase IV construction program is based on a population projection update of 3,071 for the year 2025 (Table 1) and will provide area residences with effective and sanitary collection and treatment service and allow infill growth and development.

1.3 Proposed Improvements.

1.3.1 Collection System. The collection system improvements include the installation of 8-inch gravity flow sewer lines and two lift stations. Gravity flow sewer mains will be installed along existing streets and ROWs disturbed previously by street construction and water line installation.

The expanded collection system will transport wastewater from new service areas to the existing WWTP. No special construction problems are anticipated for the improvements to the sewage collection system.

1.3.2 Wastewater Treatment Plant. The proposed WWTP improvements to the existing lagoon treatment system include the addition of twelve (12) 3-Horsepower surface aerators to the three (3) existing electricity-driven floating aerators and four (4) wind-powered aerators, and construction of an on-site 49-acre flood irrigation land application system consisting of a 2-acre storage pond, and 200 gallons per minute lift station, and leveling of the existing clay lined evaporation ponds (Fig.4).

2.0 ALTERNATIVE ANALYSIS

2.1 Alternatives Available to the EPA.

2.1.1 Approval for Grant Funding for the Project as Proposed. Depending on available funding, EPA can recommend approval of the grant for the proposed purpose.

2.1.2 Approval for Grant Funding for a Modified Project. Information received during the EA process could result in identification of significant adverse impacts that would require modification of the project to mitigate the impacts. Modification of the project may allow the EPA to accept the project as modified and recommend approval of the grant funding.

2.1.3 Recommend Preparation of an EIS. A determination that the project as proposed could result in potentially significant adverse impacts to the environment that cannot be satisfactorily mitigated would preclude a recommendation of approval of the grant funding. The preparation of an Environmental Impact Statement (EIS) would then be recommended to evaluate the potentially significant impacts. The EIS process includes a scoping meeting to identify critical facts and issues, a Draft EIS, a public comment period on the Draft EIS, a public hearing on the Draft EIS, the Final EIS, a public comment period on the Final EIS, and a Record of Decision.

2.2 Alternatives Considered by the Applicant.

2.2.1 No-action Alternative. Columbus is a low to middle level income community with limited capital resources and residents have difficulty maintaining, installing, and replacing their septic tank systems. A significant portion of the community consists of migrant workers who are not always present or able to adequately install and maintain septic systems. These systems have a history of poor performance. Many of the existing residential lots do not meet the size requirement of at least 0.75 acres and the soils in a large portion of the area are not suitable for septic tanks. The number of these individual wastewater systems in a community without the resources to manage, monitor, and enforce compliance performance compound the risks to public health.

The No-action Alternative would leave residences and commercial properties connected to individual septic tanks and development of these areas would necessitate the continued use of

septic tanks. This alternative also would leave the WWTP evaporation ponds susceptible to overflows. The existing WWTP is permitted for flows up to 48,000 gallons per day (gpd). Year 2003 flows to the plant ranged up to 67,000 gpd; out of compliance with the wastewater permit on a flow basis. Engineering water balance calculations indicate that the capacity of the pond system is 58,000 gpd and that the existing evaporation ponds will overflow by December, 2005, if no action is taken.

2.2.2 Other Alternatives Considered. Unanticipated growth of the Village of Columbus has resulted in a wastewater flow rate that exceeds the capacity of the WWTP and the New Mexico Environment Department (NMED) permit. The alternatives considered in the Facility Plan Amendment, completed in late 2003, included expansion of the collection system, improvement of the WWTP, and the use of septic tanks, including the following considerations:

- construction of more evaporation ponds;
- off-site flood irrigation land application;
- on-site flood irrigation land application;
- upgrading the septic tanks and having the village operate and maintain the systems;
- septic tank effluent collection system; and,
- installing a package sewage treatment system.

2.2.3 Preferred Alternative. The Preferred Alternative consists of expansion of the collection system into those areas not presently served, and improving the WWTP to allow for future increases in wastewater flows. The surface aerators would be installed within the existing lagoons and the land application system would be constructed within the 75-acres owned by the Village of Columbus, 45-acres of which contain the WWTP and are secured by a six-foot chainlink fence topped with barbed-wire. The remaining 30-acre site will be part of the proposed 49-acre land application system which will use flood irrigation and function much like the existing pond system. A strict application schedule will be adhered to, assuring protection of the local groundwater through nitrogen uptake by plants and salt leaching control based on accepted agricultural practices.

The alternative analyses determined that the most economically, technically and environmentally feasible alternative for the wastewater system was a conventional small diameter gravity collection system. The use of the existing WWTP site for improvement of the treatment system makes this alternative the most favorable for construction and land acquisition costs and environmental effects.

3.0 EXISTING ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES.

3.1 Land Resources. The Village of Columbus is an incorporated municipality situated approximately 3.5 miles north of the US-Mexico border, approximately 30 miles south of Deming, at a central elevation of 4,080 feet. Columbus lies within the Mimbres Basin with the Tres Hermanas Mountains to the northwest and the Florida Mountains to the north. The geology underlying the area is primarily comprised of alluvial deposits of varying age and valleys filled

with alluvial deposits form a broad, nearly level area. The terrain dips generally northwest to southeast at an average slope of 1.5 percent through the central part of Columbus.

The WWTP improvements will be within the 75-acre site of the existing WWTP located in the N/2 of the NE/4 of Section 35, T28S-R8W, just east of the Village of Columbus. The site was previously used as farmland for chile and cotton, but has been fallow for about five years. There are no unusual topographical features in the area and the proposed construction areas can readily accommodate the proposed collection line and treatment plant expansions. There are no existing residential or commercial structures that must be removed for this project. No special construction problems are anticipated for the expansion program.

3.2 Water Quality. Columbus currently has four wells in its water system, only two of which are presently on-line. The most recent well, the Guaderrama Well, is still not connected to the water supply system. Water from the wells has historically exhibited high levels of fluoride, relatively high levels of sodium and total dissolved solids. Recent testing has also shown elevated levels of arsenic and forced the shut down of South Well. Presently, the Village relies on water from the North Well and the Southeast Well, with the Southeast Well being the primary source of water. The WWTP lagoon system includes a constructed wetland and land application system, with provisions for optional reuse of the effluent for agricultural purposes. The constructed wetlands and land application system provide additional wastewater treatment and disposal capabilities.

3.3 Ambient Air Quality. The proposed project area is in an attainment area for all National Ambient Air Quality Standards. There are no major air pollution sources in the area. Insignificant levels of methane and nitrogen gases will be produced in the lagoons during the anaerobic digestion process. The major potential airborne pollutant associated with sewage lagoons is odor. Odors produced from the lagoon cells will be controlled through proper design and siting down wind from populated areas. Dust control, noise and vibration reduction, and traffic control will be controlled by watering of disturbed areas as needed and by limiting active work hours. There should be no significant adverse environmental impact as a result of the expansion project.

3.4 Floodplain Management and Wetland Protection. According to the floodplain map, the north and east portions of the project site area are within the 100-year floodplain associated with desert flash flood areas. The WWTP expansion will be designed to mitigate the potential effects of and on the 100-year flood and no adverse impacts are anticipated to occur. The District Conservationist has determined that there are no wetlands evident on the site and that the soils are not considered hydric soils.

3.5 Cultural Resources and Historic Preservation. An archeological/cultural resources field survey of the Phase IV area was performed by a Geo-Marine, Inc. By letter dated December 21, 2002, the State Historic Preservation Officer stated that no further archaeological investigation is required for those lines within existing street ROWs. Archaeological/cultural investigation will be performed for lines in the northwest and southeast areas where no clear ROW exists. Where

streets have not been cut will not be immediately impacted because the collection lines will only be installed in areas with developed homes or businesses.

3.6 Endangered Species Act. By letter dated November 4, 2002, the New Mexico Department of Game and Fish (NMDGF) determined that it does not anticipate significant impacts to state listed species, other wildlife of concern, or their habitats from the proposed Phase IV project. The U.S. Fish and Wildlife Service (FWS) issued a "No Effect Finding" for the proposed action under Consultation # 2-22-97-I-159. It was their determination that the proposed project will not affect listed species, wetlands or other wildlife resources. The FWS and the NMDGF will be contacted should any threatened or endangered species be encountered during construction.

3.7 Prime Farmland Protection. The water rights for the site of the proposed expansion project of the existing WWTP were sold and the District Conservationist has determined that the soils on the site are capability class 7 without irrigation, and are not considered prime or unique farmland.

3.8 Environmental Justice and Socio-economics. The economy of Columbus has been historically centered around ranching, mining and farming. The economy of the area has expanded by retirees who live in Columbus during the winter season, and local artists and tourists attracted to the area by the high desert setting, abundant sunshine, its close proximity to Mexico, and its colorful history including the Pancho Villa raid.

Under Section 601 of Title VI of the 1964 Civil Rights Act (42 USC 200), and Executive Order 12898 (February 1994), federal agencies must identify and address, as appropriate, disproportionately high and adverse effects on human health and environment of their programs, policies, and activities on minority and low-income populations. The Environmental Justice[1] (EJ) analysis utilizes the EJ Index[2] to assess potential disproportionately high and adverse effects of the proposed project on minority and low income communities. The EJ study considers (1) whether the community currently suffers, or has historically suffered, from environmental and health risks or hazards, (2) whether a potential for disproportionate risk exists, and (3) whether the community has been sufficiently involved in the decision-making process. The analysis compares (1) the percentage of minority people, (2) the percentage of economically stressed households earning less than $20,000 a year, and (3) the population within a one-half and four mile radius of the site with state-wide percentages. The index does indicate a high percentage of

[1] The EPA defines environmental justice as conveyed by the Executive Order, as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The goal of fair treatment is not to shift risks among populations, but to identify potential disproportionately high and adverse human health and environmental effects on minority populations and low income populations and identify alternatives to mitigate those impacts.

[2] The EPA Region 6 EJ Index Methodology defines demographic criteria and applies basic principles of science to evaluate the potential impacts on minority and low-income communities. The methodology uses Geographical Information System maps, U.S. Census demographic data, and a mathematical formula to analyze one square mile and 50 square mile geographic areas around a project site. The index indicators range from 0, where the factors affecting minorities are considered to be in proportion when compared to the state average, to 100, where the factors are considered to be greatly disproportionate when compared to the state average.

minority and low income populations in the Columbus area, but in these situations, the index becomes a good indicator for high priority for financial assistance.

4.0 OTHER ENVIRONMENTAL CONSIDERATIONS

4.1 Cumulative Impacts. No cumulative significant adverse environmental impacts have been identified as resulting from the proposed project in association with other ongoing or completed actions in the area. However, failure to implement the proposed improvements could result in increased wastewater flows without the treatment capacity, and exacerbate the existing raw sewage discharge problems.

4.2 Cross-Border Impacts. Columbus is about 3.5 miles from the U.S.-Mexico border and the proposed improvements would benefit communities in the two nations. There is the potential for odors emanating from the WWTP to affect these areas. However, implementation of the proposed project and the reduction in the use of on-site wastewater treatment systems will improve the ambient air quality, and the quality of surface and ground water in the region. The predominant wind direction is from southeast to northwest, into primarily undeveloped agricultural areas.

4.3 Unavoidable Adverse Effects. Implementation of the No-action Alternative would allow public health and safety risks from an inadequate wastewater system to continue. The No-action Alternative would not provide the needed service to the planning area, and the potential growth of the area could aggravate any existing environmental and health problems generated by the unregulated private wastewater systems. Implementation of the preferred alternative would improve the existing wastewater collection system, eliminate the potential sewage overflow, comply with the requirements of the NMED, and improve the quality of life for the community. This course of action would increase the living standards and improve health conditions for the entire community. Construction activities would be limited to normal weekday working hours to minimize the potential effects to local residents and business associated with construction noise.

4.4 Relationship Between Local, Short Term Use of the Environment and the Maintenance/enhancement of Long Term Beneficial Uses. Installation of the wastewater collection system will occur within the Village of Columbus within mostly unpaved ROWs and the environmental effects of the construction will be short term. Management of these short-term effects such as dust control, noise and vibration reduction, and traffic control will be controlled during the construction activity and should cause no adverse environmental consequences. This project will not have a significant effect on the quality of the human environment. It is expected that there would be minimal short-term socioeconomic impact in the region with the implementation of the preferred alternative.

Long-term beneficial uses of the environment would result in improved public health and safety and environmental resources. The total number of permanent jobs directly related to project construction and maintenance that would be created would be minimal, but the system

improvements may make the area a more desirable place to live, and could result in some increase in population.

4.5 Irreversible and Irretrievable Commitment of Resources. The only irreversibly and irretrievably committed resources associated with this project are the land, labor, materials, machinery wear, monies spent, and energy used for construction and operation of the facilities.

5.0 COORDINATION AND PUBLIC PARTICIPATION

U.S. Fish and Wildlife Service - Ecological Services
U.S. Natural Resources Conservation Service
U.S. Army Corps of Engineers - Construction Operation Division - Regulatory Office
U.S. Bureau of Land Management District Office
U.S. National Park Service IMDE/PE
U.S. International Boundary and Water Commission
Rural Development, Utilities Services
Rural Economic and Community Development
Federal Emergency Management Agency
New Mexico Environment Department
New Mexico Energy, Minerals and Natural Resources Department
New Mexico Office of Cultural Affairs - Historic Preservation Division
New Mexico Department of Game and Fish
Luna County
- Flood Commission
- Grants Administrator
- Director of Planning and Development

6.0 TABLES, MAPS, AND CORRESPONDENCE LETTERS

Table 1: Population and Flow Rate (gpd) Projections

Flow Condition	2003[1]	2005	2010	2015	2020	2025
Population	1,776	1,867	2,115	2,395	2,712	3,071
Average wastewater flow[2]	67,205	121,355	137,475	155,675	176,280	199,615
Peak hydraulic flow[3]	268,820	485,420	549,900	622,700	705,120	798,460
WWTP design flow	67,205	121,355	137,475	155,675	176,280	199,615

Note:

1 2003 population is based on 538 water connections and 3.3 persons per household. 2003 wastewater flows are based on actual Parshall flume gauge readings at plant influent.

2 Per capita flow is 65 gpcd

3 Hydraulics peaking factor is 4.0

7.0 REFERENCES

Supplemental Environmental Assessment, Environmental Assessment Update - Increased Population Wastewater Collection System Improvements and Wastewater Treatment Plant Improvements, prepared by Parkhill, Smith & Cooper, Inc. for the Village of Columbus, New Mexico, and the Border Environmental Cooperation Commission; February, 2004.

Cultural Resources Survey of Proposed Wastewater Lines and Lift Stations in Columbus, New Mexico, for Parkhill, Smith & Cooper, Inc.; October, 2002.

Finding of No Significant Environmental Impact and Necessary Environmental Findings for Village of Columbus; Rural Development, Rural Utilities Service; U.S. Department of Agriculture; June 16, 1997.

Response Letter from State of New Mexico, Office of Cultural Affairs, Historic Preservation Division, December 21, 2002.

Response Letter from the U.S. Fish and Wildlife Service, New Mexico Ecological Services Field Office; November 18, 2002.

Response Letter from U.S. Natural Resources Conservation Service, January 10, 1997.