

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

Expansion of Drinking Water Distribution and Wastewater Collection Services to Colonia Luis Donaldo Colosio and Surrounding Areas Nogales, Sonora, Mexico

July 2013

I. Introduction

The U.S. Environmental Protection Agency (U.S. EPA) is considering authorizing the award of a Border Environment Infrastructure Fund (BEIF) grant to the Water and Wastewater Utility of Nogales, Sonora (Organismo Operador Municipal de Agua Potable y Alcantarillado y Saneamiento [OOMAPAS]) to expand their drinking water distribution and wastewater collection systems to unserved areas within and around Colonia Luis Donaldo Colosio (Donaldo Colosio). The proposed project will provide drinking water service to an estimated 2,400 homes, as well as wastewater collection and treatment to an estimated 4,000 homes in Nogales, Sonora, Mexico. The project will address the public health risks associated with an inadequate supply of sanitary potable water and failing and/or non-existent on-site wastewater treatment systems.

This Supplemental Environmental Assessment (SEA) expands the project scope identified in the June 2009 *Environmental Assessment for Drinking Water Distribution Expansion to Un-served Areas Colonia Luis Donaldo Colosio, Nogales, Sonora, Mexico* (Colosio Drinking Water EA). Additionally, this SEA incorporates by reference the SEA for the May 2009 *Los Alisos Wastewater Treatment Plant and Conveyance System Construction Nogales, Sonora, Mexico* (Los Alisos Wastewater SEA), which evaluated the potential environmental impacts associated with expansion of the wastewater collection system to Donaldo Colosio and surrounding areas.

II. Purpose and Scope of Supplemental EA/FONSI

The purpose and scope of this SEA are twofold. The first is to supplement the Colosio Drinking Water EA, which evaluated the potential environmental consequences of providing drinking water services to approximately 800 unserved residences in Donaldo Colosio. This SEA will address an expanded project scope that will include constructing drinking water infrastructure in parts of five additional colonias (Flores Magnon, Las Torres, Las Primavera, Jardines de la Montaña, and Restro) and therefore bring centralized water distribution services to an additional 1,600 homes that were not considered in the original Colosio Drinking Water EA. Currently, these homes rely on

hauled water deliveries for drinking water. The Colosio Drinking Water EA is included as an appendix to this SEA.

The second purpose of this SEA is to incorporate by reference, the prior environmental evaluation of expanding wastewater collection and treatment to residences in and around Donaldo Colosio. The impacts of new wastewater service to the proposed project area were evaluated in 2009 as part of the Los Alisos Wastewater SEA, which can be found in the appendices to this SEA.

The proposed project will be constructed entirely within Mexico. This SEA examines the transboundary environmental impacts of the proposed federal action on the U.S. An environmental review on impacts directly to Mexico from the proposed project was waived by the Secretaria de Medio Ambiente y Recursos Naturales since the project's installation of sewer and drinking water lines will all occur on previously disturbed ground.

III. Project Location and Description

The proposed project is located in the Municipality of Nogales, in the north central area of the Mexican state of Sonora. Nogales abuts the international border and shares its northern boundary with Nogales, Arizona. The proposed project lies within Donaldo Colosio and surrounding areas, approximately 2-5 miles south of the border.

Currently, the Nogales water distribution system reaches an estimated 60% of the population of Donaldo Colosio and surrounding areas. The remaining population relies on drinking water hauled by truck, a practice that is subject to significant risk of contamination in the delivery and storage of drinking water. In most cases, the delivered supply is not adequate to support the population's drinking water needs. In addition, a portion of the residents in Donaldo Colosio and surrounding area also lack adequate wastewater collection and treatment. Inadequately collected and treated wastewater jeopardizes the health of these residents by the potential exposure to pollutants. In addition, the discharge of untreated wastewater contributes to groundwater and surface water contamination both in Mexico and in areas around the Nogales Wash and Santa Cruz River in Arizona. An estimated 50% of the wastewater generated in Donaldo Colosio is collected and sent to the Los Alisos Wastewater Treatment Plant (WWTP) for treatment and disposal to the Rio Los Alisos. The remaining wastewater is either disposed of in cesspools before entering the environment or is discharged directly to the environment as raw sewage.

The proposed project will provide drinking water services to approximately 2,400 residences in Donaldo Colosio and the surrounding area. Project design includes installation of a water distribution system network of 29,679 linear meters of 2 to 20-inch pipe.

The raw water resources needed to provide 24 hour per day service to the 2,400 new service connections will come from the Los Alisos well field, south of Nogales. Sufficient capacity exists in the source aquifer and infrastructure to provide drinking water to these new connections. New wastewater flows generated by the project's new drinking

water infrastructure are expected to be approximately 1.69 MGD. The flows will be collected and conveyed through OOMAPAS's Tecnológico wastewater collection main to the Los Alisos pump station where the flows will either be pumped to the Los Alisos WWTP for treatment and discharge to the Rio Los Alisos River or be sent by gravity flow via the Ruiz Cortines collector, across the border and through the International Outfall Interceptor (IOI), to the Nogales International Wastewater Treatment Plant (NIWTP) for treatment and discharge to the Santa Cruz River. There is capacity available at these two wastewater treatment facilities to accommodate the additional flows generated by the proposed project. Project design includes installation of a gravity wastewater collection network of 72,126 linear meters of 6, 8, and 16-inch PVC pipe and connecting to the Tecnológico collector.

The following sections of this SEA will evaluate the potential impacts to the transboundary environment of adding new drinking water and wastewater service to Donaldo Colosio and its surrounding area. The proposed project's transboundary area is defined as a semi-circle with a radius of six miles, centered at the point at the international border crossing located at the corner of West International Street and Grand Avenue in Nogales, Arizona. Only those potential impacts and their respected environments that may be affected by the supplemental actions are considered in this document.



IV. Direct and Indirect Impacts to Affected Environments

A. Air Quality/Odors

Nogales, AZ is listed as a *non-attainment* area for PM₁₀. Construction impacts associated with the proposed drinking water distribution and wastewater collection and conveyance systems' installation would include short-term, localized fugitive dust emissions generated during ground disturbance, trenching, and related site preparation activities, and combustion emissions from vehicles and heavy-duty equipment during installation. These impacts will be minimized at the construction site through required dust control and standard engineering processes. The proposed project will be constructed and operated entirely within the project boundaries. The farthest northern extent of the proposed construction would be more than two miles south of the U.S.- Mexico border. Further, dust suppression practices, with specified control measures, such as watering of active construction and trenching areas, aggregate piles and cleared areas to minimize air quality impacts will be a requirement of the BEIF grant agreement. Considering the distance from the project to the border and the required dust suppression practices, the U.S. EPA has determined it highly unlikely that the transport of particulate matter resulting from construction would cause any measurable impact to air quality in the U.S. and that the results of an emissions inventory estimation would show no significant impact and therefore is not needed for this project.

B. Water Resources – Surface Water and Ground Water

Currently, untreated and partially treated wastewater is discharged from homes within the proposed project area. The sewage either forms pools contaminating soil or flows through various arroyos. These arroyos drain to the Nogales Wash which crosses the border into Arizona and ultimately flows into the Santa Cruz River. Contaminated flows represent a threat to the public health and the environment through exposure to enteric pathogens, ammonia, oxygen depleting compounds and industrial pollutants. The current practice of adding chlorine for disinfection into the Nogales Wash further compromises surface water quality in Nogales Wash and the Santa Cruz River. The proposed project will collect the area's untreated wastewater and divert it to existing conveyance infrastructure for treatment, thereby reducing the public health and environmental treats.

Under the proposed project, the truck-hauled drinking water would be replaced by municipal drinking water delivery infrastructure. The potable water provided from the distribution system would originate from the same source (contained entirely in Mexico) as the drinking water that is currently hauled by truck. Availability of drinking water through a distribution system typically increases water consumption because of improved availability. The wells that provide water to Nogales, Sonora, have sufficient capacity to meet the increased demand anticipated with the proposed project. These wells, located in the Los Alisos watershed, draw from a different aquifer than Nogales, Arizona and therefore water supplies in Arizona would not be impacted by project implementation.

Increased water consumption would result in increased flows into the wastewater collection and treatment systems. The recently completed Los Alisos WWTP, with 220 l/s (5 mgd) of treatment capacity treat some of the increased flows. Currently, there is sufficient treatment capacity for all Ambos Nogales collected flows. The new flows from the proposed project will use most of the remaining treatment capacity available.

C. Cumulative Impacts

Potential cumulative impacts relate to concurrent growth in the area adding stresses to the water distribution and wastewater treatment. Additional growth in Nogales is planned primarily in the Los Alisos basin with no anticipated transboundary impacts. Other areas of growth are planned for the border area east of downtown; these developments should include collection and treatment services for wastewater but may draw from binationally shared water resources for drinking water. Additionally, some growth may occur to fill in the Nogales Wash corridor. This too would put added pressure on the drinking water source and wastewater infrastructure systems.

V. Environmental Consequences and Conditions

The U.S. EPA Region 9 has evaluated the means to reduce or mitigate adverse environmental impacts of the proposed project, and ensure it does not create any significant adverse effects. The identified potential negative or adverse effects associated with the implementation of the action alternatives could be minimized through the implementation of appropriate practices and technologies. Construction activities should be conducted in a manner sensitive to potential environmental impacts. Generation of

dust and PM₁₀ emissions should be minimized using appropriate and accepted methods. Construction activities should be limited to normal weekday working hours, if possible, to minimize the potential effects to local residents associated with construction noise.

The following positive effects would be realized by implementing the proposed actions:

- Elimination of leakage and infiltration of untreated wastewater from cesspools into groundwater resources;
- Reduction of human pathogens in surface waters and in the shared transboundary environment and a concomitant reduction in community exposure risks; and
- Reduction of offensive odors.

Therefore, the U.S. EPA, after considering a wide range of regulatory, environmental and socio-economic factors, in compliance with the National Environment Policy Act, has identified no significant impacts to the environment resulting from the implementation of the proposed project.