CERTIFICATION PROPOSAL

BAY ACRES WASTEWATER COLLECTION SYSTEM AND WASTEWATER TREATMENT PLANT EXPANSION DOUGLAS, ARIZONA

Revised: November 14, 2016

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INDEX

EXECUTIVE SUMMARY

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Project: The proposed project consists of new wastewater collection infrastructure for the unserved residential area of Bay Acres subdivision, including installation of yard-line connections from the home to the Wastewater Collection System (WWCS) and decommissioning of existing on-site wastewater disposal systems, as well as upgrades to and expansion of the treatment capacity of the wastewater treatment plant (WWTP) in the city of Douglas, Arizona (the "Project").

Project Objective: The purpose of the Project is to provide access to and use of first-time wastewater services in unserved areas, eliminate exposure to untreated or inadequately treated wastewater discharges, and provide adequate wastewater treatment capacity contributing to the reduction of water pollution and the risk of waterborne disease.

Expected Project Outcomes: The Project is expected to generate environmental and human health benefits related to the following outcomes:

- Provide access to wastewater collection services for 342 existing homes, including the installation of household wastewater connections to 100% of the existing homes in the Project area.
- Eliminate untreated or inadequately treated wastewater discharges of approximately 0.096 million gallons per day (mgd).[1]
- Improve wastewater treatment service for 100% of the system's wastewater connections.

Population Benefited: 17,378 residents of Douglas, AZ.[2]

[1] Based on the Project's Final Design Criteria Memorandum, anticipated flows have been calculated using a discharge rate of 80 gallons per capita per day, in accordance with the Arizona Administrative Code (ACC) for wastewater collection systems. Considering the 342 new residential connections, a person per household factor of 3.5, the eliminated discharges are estimated as 95,760 gallons per day.
[2] Source: U.S. Census Bureau 2010.

Project Sponsor: City of Douglas, AZ.

Estimated Construction Cost: US$16,332,904.

BEIF Grant: US$7,475,697.

Uses & Sources of Funds:
(US$)

Uses*	Amount	%
WWCS – Bay Acres	$ 6,800,114	41.9
WWTP expansion/upgrade	9,532,790	58.1
TOTAL	**$ 16,332,904**	**100.0**
Sources	**Amount**	**%**
USDA-RD grant**	$ 6,800,114	41.6
WIFA loan***	2,057,093	12.6
NADB-BEIF grant	7,475,697	45.8
TOTAL	**$ 16,332,904**	**100.0**

* Includes construction, contingencies, supervision, and impact fees.

** Part of a US$6,883,056 grant from the U.S. Department of Agriculture Rural Development (USDA-RD), that will fund construction, impact fees and other associated administrative costs.

*** Part of a US$3,500,000 loan from the Water Infrastructure Finance Authority of Arizona (WIFA).

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1. ELIGIBILITY

Project Type

The Project falls within the eligible sector of wastewater.

Project Location

The City of Douglas (Douglas) is located in the U.S.-Mexico International Border adjacent to the City of Agua Prieta, México at Latitude 31.34 North and Longitude of 109.55 West. The Project is in the border region, which in the U.S. is defined as 100 kilometers (62.5 miles) from the U.S.-Mexico International border.

Project Sponsor and Legal Authority

The public-sector Project sponsor is the City of Douglas, AZ (the "Sponsor"). Pursuant to City Ordinance 405 § 1, 1975, and Municipal Code, Title 13, Chapters 04 and 08, the City of Douglas has the legal authority to operate and maintain wastewater collection and treatment systems, as well as water treatment, storage, and distribution systems.

2. CERTIFICATION CRITERIA

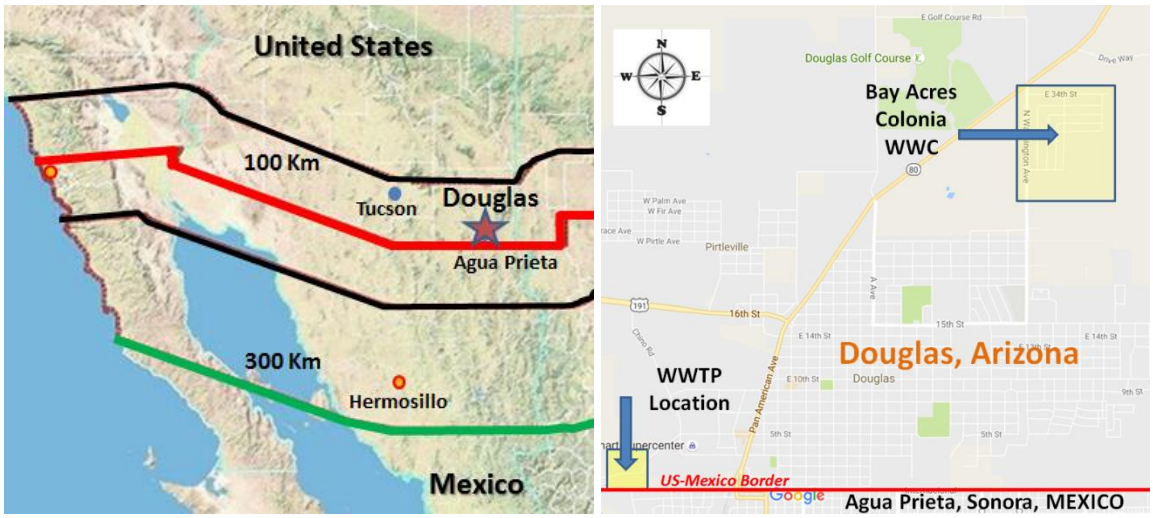
2.1. TECHNICAL CRITERIA

2.1.1. Project Description

Geographic Location

The City of Douglas is located in the southeastern corner of Arizona in Cochise County; approximately 118 miles southeast of Tucson, Arizona. The Bay Acres subdivision is located to the northeast of Douglas, just outside of the city limits and south of Highway 80. The wastewater treatment plant site is located at the southwest corner of the city and is adjacent to the U.S.-Mexico border. Figure 1 shows the approximate location of the Project.

Figure 1
PROJECT VICINITY MAP



General Community Profile

According to the U.S. Census Bureau, in 2010 the City of Douglas had a population of 17,378 residents and had experienced an estimated annual growth rate of 1.14 percent during the previous 10 years.[3] However, from 2010 to 2015, the growth rate for the period was -0.59 percent, most likely due to unemployment, and the housing crisis.[4] Based on these population trends in the community, the Project utilized a 1% annual growth rate to estimate future service demands. The Douglas community consists of residential housing, small commercial districts, a hospital, a fire station, an aquatic center, and a state prison with a population of approximately 2,500 inmates.

The estimated Median Household Income (MHI) in the City of Douglas, was US$26,222 in 2014 with 31.5% of its residents living below the poverty level. Comparatively, the MHI for the State of Arizona was US$49,928, (almost twice that of Douglas), and 18.2% of the state's population lived below the poverty level.[5]

The City of Douglas provides water and wastewater services to several adjacent unincorporated areas, including Pirteville, Bay Acres, and surrounding subdivisions. In addition, City services extend to the state prison. The status of public services in the City's service area is described in Table 1.

[3] Source: Arizona Office of Employment and Population Statistics, weighted average for the Douglas Census County Division (CCD).
[4] Source: Arizona Office of Employment and Population Statistics.
[5] Source: 2010-2014 American Community Survey 5-Year Estimates.

Table 1
BASIC PUBLIC SERVICES AND INFRASTRUCTURE

Water System	
Service coverage:	98 %
Water supply source:	Groundwater (6 wells)
Number of hookups:	5,571 (5009 residential/562 commercial)
Wastewater Collection System (WWC)	
Service coverage:	75 %
Number of connections:	4,673 (4335 residential/338 commercial)
Wastewater Treatment (WWTP)	
Service coverage:	100 %
Treatment facilities:	2.0 mgd capacity, activated sludge facility
Solid Waste	
Solid waste collection:	98 %
Final disposal:	Transfer station, Whetstone County Landfill
Street Paving	
Coverage:	98 %

Source: City of Douglas, Department of Public Works, August 2016.

Local Wastewater System Profile

Residents of the Bay Acres Colonia currently use inadequate, failing onsite wastewater treatment systems (septic tanks with leach fields). The existing residential lots are inadequate in size and do not provide sufficient area for a new or replacement leach field. In addition, the systems are either failing or near the end of their useful lives. As a result, inadequately treated sewage, black water, and gray water are discharged into streets, backyards, and alleyways.

The conditions described above allowed the Project to be selected under Category 1 requirements for U.S.-Mexico Border Water Infrastructure funding, provided by EPA and administered by the Border Environmental Cooperation Commission (BECC) and the North American Development Bank (NADB).[6] Additionally, in order to provide new WWC services to this area, the existing WWTP must be expanded to accommodate existing and new wastewater flows.

The Douglas WWTP has been in operation since 1947 and was originally known as the Douglas-Agua Prieta International Sanitation Project. The facility was originally built and operated to serve both the City of Douglas and the City of Agua Prieta. In 1969, the City of Agua Prieta built its own WWTP and discontinued use of the Douglas WWTP. However, the treated effluent is still

[6] The intent of this category is to identify projects that correct an immediate adverse environmental effect or the potential for an adverse human health effect. These projects are designed to improve a community's quality of life with adequate and safe services.

being discharged across the international border with Mexico, in accordance with IBWC's Minutes 216 and 220 from March 1964 and July 1965, respectively.

The existing WWTP is permitted for a maximum monthly flow of 2.0 million gallons per day (mgd) and is currently receiving an average annual influent of 2.0 mgd. The existing treatment process consists of two headworks with bar screens, an aerated grit chamber, two primary tanks, two secondary clarifiers in parallel, sludge drying beds, and chlorine contact basin for disinfection. The WWTP discharges effluent meeting Class C reclaimed water standards, as per Arizona Administrative Code (A.A.C.) R18-11-307.

Project Scope

The proposed Project will connect 342 new residential sewer services producing approximately 95,760 gallons per day (gpd) of wastewater flow. Additionally, the Project will include an expansion to 2.6 mgd and treatment process upgrade for the existing WWTP. The components are inter-related but will be supported by different funding sources and constructed with independent contracts.

Bay Acres Subdivision WWC

Although only 342 dwellings and three commercial buildings exist, a total of 459 connections are anticipated in the future for this area, based on the potential for in-fill, producing approximately 153,060 gpd of wastewater flow; therefore, the infrastructure was sized to accommodate the full build-out of the area. The City of Douglas applied for construction funds from the USDA Rural Development Agency under the Section 306C Water and Waste Disposal Grants program to alleviate health risks associated with wastewater disposal. USDA funding will be applied for the construction of Bay Acres WWC infrastructure only.

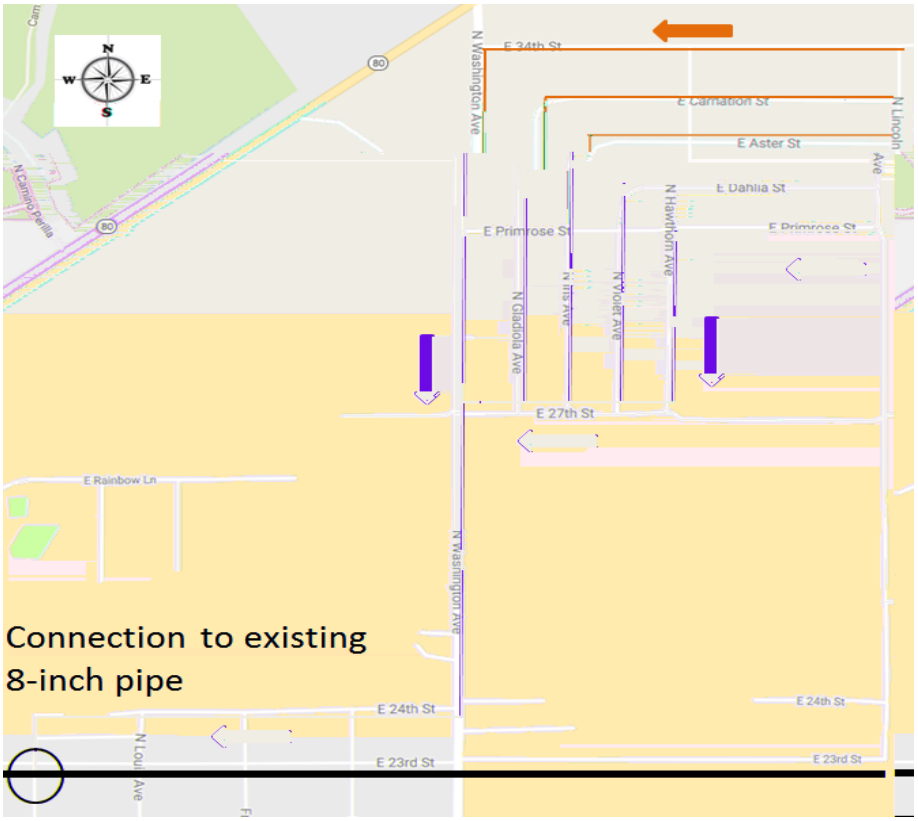
The Bay Acres WWC system will include approximately:

- 26,165 linear feet of 8-inch and 12-inch gravity sewer line,
- 65 watertight manholes,
- 34 manhole vents,
- Service lines for 459 properties consisting of:
    - 342 residences including yard lines from the home to street
    - 3 commercial establishments, including the line within the property to connect the building to the service line
    - 114 properties that are currently vacant, will be provided with a service stub out up to property line for future connection, and
- Decommissioning of up to 370 septic systems.[7]

[7] The number of septic systems reflects habited and abandoned properties, plus an estimation of 10 additional septic tanks for properties with more than one septic system.

The overall site plan for Bay Acres WWC system is presented in Figure 2.

Figure 2
BAY ACRES WASTEWATER COLLECTION SYSTEM SITE PLAN



Douglas WWTP

The Project will also increase the capacity of the wastewater treatment plant to an annual average flow of 2.6 mgd, in order to accept and treat flows from the expanded wastewater collection system and modest growth in the City of Douglas. The Project will provide capacity to meet the needs of the Bay Acres Colonia and other existing homes in the area adjacent to the colonia that may connect to the system in the future, as well as allow for limited and controlled build out within the City and its associated subdivisions.

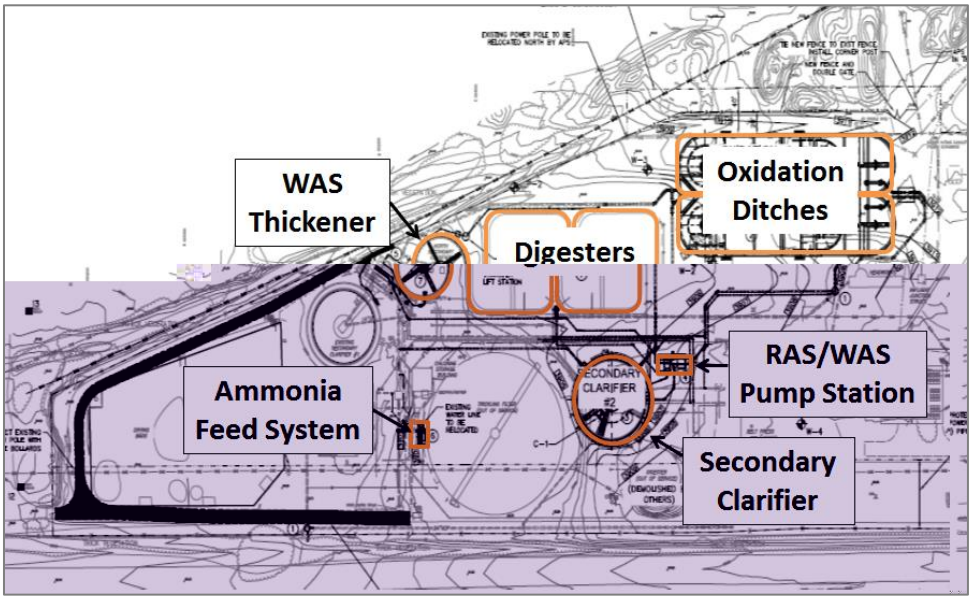
The WWTP Expansion and improvements include:

- Two new oxidation ditches
- A new secondary clarifier
- A new Return Activated Sludge/Waste Activated Sludge (RAS/WAS) Pump Station
- Modification to an existing RAS/WAS Pump Station
- Modifications and upgrades to the existing surface aeration basins to convert them to aerobic digesters

- Conversion of existing clarifier into a digested bio-solids thickener, and
- An ammonia feed system as an additive alternate for effluent disinfection

The oxidation ditch and associated infrastructure will achieve secondary treatment. The existing chlorination process potentially in conjunction with a new ammonia feed system will be used for effluent disinfection. The existing aeration basins will be upgraded and converted to aerobic digesters. The existing clarifier will be converted into a digested biosolids thickener. Sludge will continue to be stored on site and hauled off-site to the Western Regional Landfill at Whetstone, Arizona, for disposal in accordance with State and Federal Regulations. The overall site plan for the WWTP improvements is presented in Figure 3.

Figure 3
DOUGLAS WWTP EXPANSION SITE PLAN



An amendment to the Aquifer Protection Permit (APP) is required as a result of the proposed WWTP capacity expansion. The facility has been designed to meet Best Available Demonstrated Control Technology (BADCT) standards and minimum Class B+ effluent standards; enabling future upgrade to Class A reclaimed water for open access effluent reuse.

After the proposed upgrades, the WWTP will continue to dispose its effluent at the existing point of discharge, across the U.S.–Mexico border. The discharge pipe on the Mexican side is undersized, decreasing in size from 20-inches diameter exiting the WWTP to 10-inches across the border. The discharge pipe and the receiving concrete box in Mexico are in need of replacement. Design for this work has been coordinated with the Mexican section of the International Boundary Water Commission (IBWC) and CONAGUA, and completed as part of the Project. Construction funding for replacement of the structures, is not part of the Project and is anticipated to be funded through Mexican sources.

The designs of the wastewater collection system and WWTP improvements have been completed. It is estimated that once procurement is finished and the notice to proceed given, the duration of the Project will be approximately 26 months—18 months for construction of the wastewater treatment plant and wastewater collection system, followed by an additional eight months to complete service connections and decommissioning of septic systems. Table 2 presents a projected milestone schedule.

Table 2
PROJECT SCHEDULE

Key Milestones	Status
Procurement	Second quarter of 2017
Construction period	26 months from Notice to Proceed (NTP)

Bay Acres construction will begin approximately six months prior to the completion of the WWTP upgrades, which must be completed before new wastewater flows are conveyed to the WWTP.

2.1.2. Technical Feasibility

Design Criteria

Using a discharge rate of 80 gallons per capita per day (gpcd) in accordance with the Arizona Department of Environmental Quality (ADEQ) AAC R18-9-E301(D) and AAC R18-9-B301(K), and 3.5 persons per household; a total of 95,760 gallons per day (gpd) of wastewater flow will initially be conveyed to the Douglas WWTP from Bay Acres and adjacent surrounding areas. Adding the future vacant lots to account for future in-fill within the Project Area, a total of 153,060 gpd is expected to be produced and conveyed to the WWTP from 546 connections.

Table 3 provides detail of the total count for existing residential dwellings and commercial establishments, as well as vacant lots and potential future connections.

Table 3
PROJECTED FUTURE GROWTH FOR BAY ACRES AND OVERLOCK/SURROUNDING AREAS

ID	Existing Residential Dwellings	Existing Non-Residential Buildings	Vacant Lots	Vacant Lots Not Subdivided	Total Units (infill)	No. of Persons (future)
Bay Acres Subdivision	292	3	104	0	399	1,397
Overlock Addition	31	0	1	31	63	220
Surrounding Areas	19	0	9	56	84	294
Total	**342**	**3**	**114**	**87**	**546**	**1,911**

The proposed wastewater collection system was designed under ADEQ AAC R18-9-E301 4.01 General Permit: Sewage Collection Systems design standards. Gravity sewer lines were designed to accommodate dry weather peak flow and wet weather inflow and infiltration, in accordance with AAC Section R 18-9-E301(D)(1)(b). The Project is tying into existing pipelines, which are adequately sized and sloped to convey peak flow.

The existing average annual influent flow for the WWTP is 2.0 mgd. For design purposes, using a 20-year planning period from 2015 to 2035, at a growth rate of 1 percent yields a projected annual influent flow of 2.6 mgd by the year 2035. Similarly, the annual average flow resulting from a 30 percent population increase over current population is 2.6 mgd. Therefore, a design flow of 2.6 mgd was considered. Based on these assumptions, the WWTP influent flow is expected to reach 85 percent of the design flow in the year of 2020. However, in recent years the City of Douglas has observed a decrease in population. In addition to this, the projection analysis has considered that the prison population, which accounted for most of the growth in Douglas since its annexation in the year 2000, is not expected to grow further.

The effluent quality will be improved from Class C effluent to Class B+, however it will not receive a new classification because it will not be reused in the United States. The new facility will meet BADCT standards [A.R.S. § 49-243(B) and A.A.C. R18-9-A202(A)(5)], as well as the design effluent quality requirements as per A.A.C. R18-9-B204.

Table 4 presents a summary of the design effluent quality requirements used for the WWTP upgrade.

Table 4
DOUGLAS WWTP DESIGN SUMMARY

BOD_5 and TSS (mg/L)	$CBOD_5$ (mg/L)	pH (std. units)	Total N (mg/L)	Fecal coli. (cfu/100 mL)	E. coli. (cfu/100 mL)
<30, 30-d avg.	<25, 30-d avg.	6-9	<10, 5 mo. rolling geometric mean	Non-detect in 4 of 7 samples	Non-detect in 4 of 7 samples
<45, 7-d avg.	<40, 7-d avg.		1	<23 in a single sample	<15 in a single sample

BOD_5 = Biochemical oxygen demand; $CBOD_5$ = Carbonaceous biochemical oxygen demand; N = Nitrogen; TSS = Total suspended solids; mg/l = milligrams per liter; cfu/mL = colony forming units per milliliter

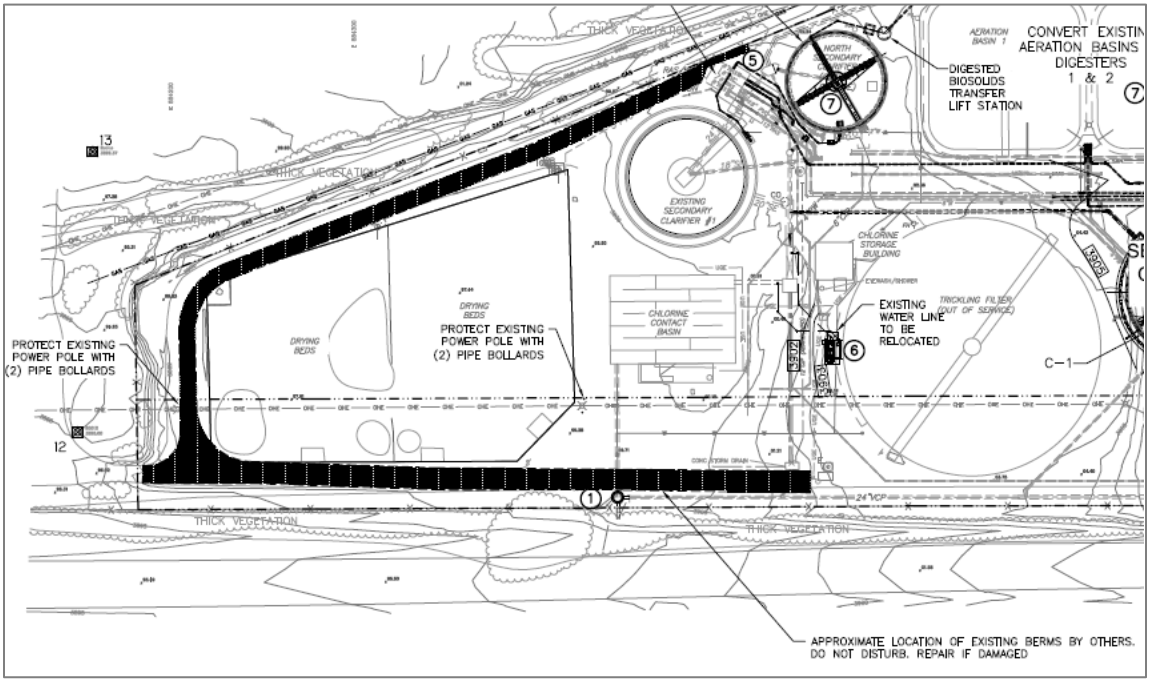
In addition, the design considers Pima County Regional Wastewater Reclamation Department (RWRD) Standard Specifications and Details for Construction; Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction; Occupational Safety and Health Act (OSHA); and Cochise County Building Safety Code.

An additional design criterion required for the Project is related to flood mitigation for the WWTP. The Federal Emergency Management Agency (FEMA) indicates that a portion of the Douglas WWTP is in an area designated as a Zone A floodplain, as shown in the Flood Insurance Rate Map No. 04003C2879F, created in August 28, 2008. This designation indicates that the area

lies inside the delineated 1-percent annual flood; therefore, flood hazards are a significant design consideration in this area.

In a letter dated August 26, 2016, The City of Douglas acting as the flood administrator for the site of the WWTP, assumed responsibility to design, build, and maintain diversion berms, ditches, retention ponds, and flood control levees to protect the WWTP from any flood event including a 500-year storm. The design indicates the approximate location of berms to be built independently by the City of Douglas, as demonstrated in Figure 4.

Figure 4
WWTP FLOOD PROTECTION BERMS



Selected Technology

The Preliminary Engineering Repot (PER) was prepared to evaluate various alternatives to address the infrastructure needs of the Project. The WWC system options considered for the alternative analysis were: gravity wastewater collection system; vacuum collection system; and a separate centralized system of aerated treatment ponds (ponds).

Additionally, the PER and a PER Review conducted by the design engineer, analyzed alternatives and outlined the results and recommendations for the WWTP upgrades. In both evaluations, it was determined that the existing facility was not capable of meeting future permit discharge limits without significant improvements to the existing treatment process. The detailed analysis considered the following wastewater treatment alternatives: aeration basin (Modified Ludzack-Ettinger or MLE); oxidation ditch; sequencing batch reactors (SBR); and AeroMod Sequox (SEQUOX).

In order to identify the most appropriate technologies, the technical evaluations considered the following factors:

- Design criteria
- Site layout and environmental impacts
- Land requirements
- Operational aspects
- Capital cost
- Operation and maintenance (O&M) cost
- System reliability

In consideration of the factors mentioned above, a gravity wastewater collection system was selected as the "best value" option based on its constructability, reliability, and low operation and maintenance cost. Similarly, oxidation ditch technology was selected due to its reliability and operability, low risk of permit non-compliance and relatively low capital cost.

2.1.3. Land Acquisition and Right-of-way Requirements

The proposed wastewater collection system and recommended improvements to the WWTP will not require acquisition of land or rights-of-way (ROW). The Project's proposed alignments are in the public ROW within Cochise County. A joint pavement project between the City of Douglas and Cochise County, which is not part of the Project cost, is expected to follow the installation of the new sewer lines in Bay Acres. However, a specific pavement impact fee proportional to the affected area was negotiated and is included in the Project cost. This coordinated effort intends to improve the overall existing pavement conditions in Bay Acres and decrease the cost of the Project. The WWTP site is already owned and occupied by the City's existing wastewater treatment facilities.

2.1.4. Management and Operations

Management and operation of the proposed wastewater collection and treatment Project will be the responsibility of the City of Douglas through the Department of Public Works. The sponsor has an O&M manual that includes routine tasks as well as procedures to address unexpected conditions needed to ensure the proper operation of the system. The utility infrastructure currently serves approximately 5,571 water hookups and 4,673 wastewater connections in its service area.

Services provided by the City of Douglas include water, sewer, solid waste collection, public safety, highways and streets, culture and recreation, development and housing, collection. Electricity is provided by the Arizona Public Service Electric Company (APS).

An updated O&M manual will be developed to guide future upkeep of the improved WWTP. Training will be provided to city staff during start-up of the new WWTP by the construction contractor. The impacts of the proposed Project to the O&M budget and procedures have been

reviewed and considered sustainable. The public outreach process will inform the new infrastructure users of the applicable rates.

In accordance with funding program requirements, the sponsor is responsible for enhancing its pretreatment program, originally established by the City in 1978 as ordinance no. 427. On April 13, 2016 the City adopted as Ordinance no. 16-1062, section 13.04.010 titled Pretreatment Program, to augment regulation and specificity of requirements related to sewer use, sewer construction and Fats-Oils-Grease (FOG) discharges.

2.2. ENVIRONMENTAL CRITERIA

2.2.1. Compliance with Applicable Environmental Laws and Regulations

Applicable Laws and Regulations

The Project is subject to the environmental clearance process included in the National Environmental Policy Act (NEPA). In considering funding from the US-Mexico Border Water Infrastructure Program, the Project was reviewed in accordance with the U.S. National Environmental Policy Act (NEPA), 42 USC §§4321-4370f. In accordance with NEPA, Council on Environmental Quality (CEQ) regulations found at Title 40 CFR §§1500.1-1508.28, and EPA NEPA regulations at 40 C.F.R. Part 6, EPA Region 9 completed the environmental review and clearance process.

Implementation of the Project will require an amendment to the existing APP and a Discharge Authorization Permit, in order to protect the water quality of the State of Arizona. An APP amendment application was coordinated with ADEQ during development of design and formally submitted after completion of design. It is currently undergoing ADEQ review. In accordance with ADEQ's recommendation, the City of Douglas will apply for an Approval to Construct authorization for the wastewater collection system in the first quarter of 2017, to avoid expiration of the permit after two years of issuance.

Environmental Studies and Compliance Activities

Since the Project is subject to regulations under NEPA; an Environmental Information Document (EID) was prepared for the Project. The EID discloses the environmental impacts that would result from the implementation of the Project. The document presents an assessment of the Project alternatives related to the following areas for environmental consequences:

- Land use
- Soils
- Water resources
- Vegetative habitat
- Wildlife resources
- Protected species and critical habitat
- Cultural, Historical and Archeological Resources
- Air Quality

- Noise
- Energy and natural resources
- Roadways and traffic
- Hazardous materials
- Socioeconomics
- Environmental justice and protection of children
- Sustainability and Greening
- Human health and safety

In accordance with NEPA, Council of Environmental Quality (CEQ) Regulations, EPA Region 9 prepared an environmental assessment (EA) describing the potential environmental impacts associated with, and the alternatives to, the proposed Project. After carefully considering the regulatory, environmental (both natural and human) and socio-economic factors as described in the EA, EPA Region 9 did not identify any significant impacts to the environment that would result from the implementation of the proposed Project. A Finding of No Significant Impact (FONSI) documenting EPA Region 9's decision that the proposed Project will not have a significant effect on the environment was signed on February 28, 2014.

An additional 0.6 acres of property located immediately north of the existing WWTP fence line was required to accommodate the new facilities. Because it was not included in the original EA and FONSI, EPA reviewed the need for a new or amended environmental clearance process and found that the extended site was eligible for a categorical exclusion from a detailed environmental review under 40 CFR §6.204. The Categorical Exclusion was signed by EPA on February 2, 2016.

Pending Environmental Tasks and Authorizations

There are no formal environmental clearance authorizations pending.

Compliance Documents

The following compliance documentation is available for the Project:

- U.S. EPA FONSI issued on February 28, 2014.
- U.S. EPA Categorical Exclusion issued on February 2, 2016 for additional land.

2.2.2. Environmental Effects/Impacts

Existing Conditions and Environmental Impact

The Bay Acres Colonia is currently serviced by inadequate, failing onsite wastewater treatment systems (septic tanks with leach fields). These onsite treatment systems are a health hazard in the subdivision because the existing residential lots are inadequate in size and the systems are either failing or near the end of their useful lives. In addition, these lots do not provide an adequate area for a new or replacement leach field. Treatment system failures are resulting in the discharge of inadequately treated sewage, black water, and gray water into streets,

backyards, and alleyways. This is a public health concern due to various pathogenic microorganisms, ammonia and nitrate that may produce a health risk to humans and degrade the environment.

The wastewater collection system will eliminate approximately 0.096 mgd of untreated or inadequately treated wastewater discharges. The risk for waterborne diseases transmission and the level of environmental contamination will be reduced as a result of the implementation of the Project.

The following are the expected Project environmental benefits:

- Provide access to wastewater collection services for 342 existing homes, including the installation of household wastewater connections to 100% of the existing homes in the Project area.
- Eliminate untreated or inadequately treated wastewater discharges of approximately 0.096 mgd. [8]
- Improve wastewater treatment service for 100% of the system's existing wastewater connections.

Additionally, the Project will provide the capacity to generate an improved effluent quality to a minimum of Class B+ effluent standards; and enable a future upgrade to Class A reclaimed water for open access reuse of the effluent.

Mitigation of Risks

Although implementation of the Project will have no significant long-term adverse impacts on the environment, mitigation measures will be established to address temporary, minor adverse impacts during construction. Potential impacts during construction include the following:

- The local air basin will be temporarily impacted by fugitive dust and emissions of carbon monoxide, nitrous oxide and sulfur dioxide emissions due to vehicles and equipment used during construction.
- Noise levels may be elevated during construction activities. This impact will be short in duration and concentrated in the work area and will include temporary roadway blockages.
- Wildlife and endangered species may be temporarily disturbed primarily through noise and dust.
- Existing WWTP sludge drying beds are located within the floodplain. Sludge could wash out of the drying beds in the event of flooding.

[8] Based on the Project's Final Design Criteria Memorandum, anticipated flows have been calculated using a discharge rate of 80 gallons per capita per day, in accordance with the Arizona Administrative Code (ACC) for wastewater collection systems. Considering the 342 new residential connections, a person per household factor of 3.5, the eliminated discharges are estimated as 95,760 gallons per day.

In summary, the mitigation measures include the following:

- Best Management Practices (BMP) and compliance with local ordinances to reduce the temporary impacts of construction.
- The City of Douglas is responsible for continuous coordination with both the U.S. Fish and Wildlife Service (USFWS) and the Arizona's Game and Fish Department, prior to and during construction to insure that protected species and their designated habitat in the area will not be adversely impacted by construction. Special management considerations might include:
    - Use of fences or escape routes in excavated areas
    - Biological spot-monitoring and survey of trenches for protected species (Chiricahua leopard frog and the lesser long-nosed bat)
- The City of Douglas will be responsible for construction and maintenance of diversion berms, ditches, retention ponds, and flood control levees to protect the WWTP from flood events
- If cultural materials are encountered during construction, work will stop immediately in the general area of the discovery, and the funding recipient will immediately notify the State Historic Preservation Office (SHPO) of the discovery.
- All vehicles and equipment used in the construction of this Project must comply with federal regulations concerning the control of air pollution from mobile sources.

By following BMPs and other mitigation efforts, the temporary impacts due to construction will be minimized.

Natural Resources Conservation

The Project contributes to improved water resource management and conservation by protecting surface and ground water from inadequately treated sewage discharges by conveying these flows to the WWTP for treatment. The WWCS has been designed for energy efficiency, utilizing gravity to convey wastewater to an existing lift station.

No Action Alternative

The no-action alternative was not selected because the consequences of not developing the Project include:

- Continued non-compliance with environmental and health-related directives developed by EPA and the ADEQ.
- Continued pressure for municipal services in areas with rapidly expanding, minority, and lower-income populations.
- Increased potential for surface water and groundwater contamination from untreated or poorly treated sewage discharged at the surface.
- Negatively impacted health and safety of Project area residents with the lack of adequate wastewater collection and treatment services.

Existing Conditions and Project Impact – Human Health

The Project is aimed at eliminating risks associated resulting from human contact with inadequately treated wastewater. According to World Health Organization (WHO) sanitation projects can have the following benefits:[9]

- Improved sanitation reduces diarrhea morbidity by 32%.
- One gram of feces may contain 10M viruses, 1M bacteria, 1000 parasitic cysts, and 100 Helminths eggs.
- 4% of global decease burden can be prevented through improved water supplies, sanitation, and hygiene.

Waterborne diseases are caused by pathogenic microorganisms that are transmitted as a result of inadequate wastewater disposal practices and unsafe water supplies. An individual may

2.3. FINANCIAL CRITERIA

The total estimated cost of the Project is US$16,332,904, which includes the funding for construction, supervision, and contingencies. The Project meets all BEIF program criteria and has been approved by EPA for a BEIF grant of up to US$7,475,697 to complete the financing of the Project. Table 6 presents the total Project costs, as well as the sources of funds.

Table 6
USES AND SOURCES OF FUNDS
(US$)

Uses*	Amount	%
WWCS – Bay Acres	$ 6,800,114	41.9
WWTP expansion/upgrade	9,532,790	58.1
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WIFA loan***	2,057,093	12.6
NADB-BEIF grant	7,475,697	45.8
TOTAL	**$ 16,332,904**	**100.0**

* Includes construction, contingencies and supervision.

** Part of a US$6,883,056 grant from the U.S. Department of Agriculture Rural Development (USDA-RD), that will fund construction, impact fees and other associated administrative costs.

*** Part of a US$3,500,000 loan from the Water Infrastructure Finance Authority of Arizona (WIFA).

2 PUBLIC ACCESS TO INFORMATION

3.1. PUBLIC CONSULTATION

BECC published the draft certification proposal for a 30-day public comment period beginning October 14, 2016. The following Project documentation will be available upon request:

- Preliminary Engineering Report (PER) for Bay Acres Colonia Wastewater Collection System Expansion, prepared by Huitt-Zollars, sealed on February 27, 2014.
- Preliminary Engineering Report (PER) for Douglas Wastewater Treatment Plant Upgrade, prepared by Huitt-Zollars, sealed on February 27, 2014.
- Finding of No Significant Impact (FONSI) issued by EPA Region 9 on February 28, 2014.
- Categorical Exclusion issued by EPA Region 9 on February 2, 2016 for additional land.
- PER Amendment for Bay Acres Colonia Wastewater Collection Expansion for the City of Douglas, prepared by CDM Smith, sealed on July 22, 2016.
- Final Design Wastewater Treatment Plant Upgrade to 2.6 mgd, City of Douglas, AZ, prepared by CDM-Smith, sealed on August 5, 2016. (includes the FD of the Agua Prieta Discharge).

- Final Design Wastewater Gravity Collection System for Bay Acres Colonia, City of Douglas, AZ, prepared by CDM-Smith, sealed on August 5, 2016.
- Public Meeting Minutes, pictures, articles and materials.

The 30 day-public comment period ended on November 13, 2016, with no comments received.

3.2. OUTREACH ACTIVITIES

The City of Douglas conducted extensive outreach efforts to communicate the Project's characteristics, including cost and fees and to obtain the support of the residents of the Project's service area. In accordance with the public outreach requirements of the U.S.-Mexico Border Water Infrastructure Program, activities such as the use of a local Steering Committee, public meetings, and appropriate Project information access were conducted as described in the Public Participation Plan (PPP). The following information provides a summary of the outreach activities carried out for the Project.

The local Steering Committee was formed in December 2015. The Steering Committee includes members of the sponsor's staff, city council, and community business owners. The Steering Committee developed a public participation plan and periodically met with the Project team throughout the development period to help the Project sponsor to disseminate information regarding the Project. The Project's technical and financial information was made available to the public for review. The Local Steering Committee, with assistance from the Project sponsor, prepared a fact sheet and a presentation on the Project. Information on the Project was presented to the community during two public meetings.

A notice of first public meeting was posted on April 24, 2016 and the meeting was held on May 24, 2016, at the Sunnyside Fire Department in Bay Acres. The purpose of the meeting was to present the anticipated Project benefits, potential environmental impacts and other technical information. The meeting gave residents the opportunity to comment on the proposed Project. Approximately 15 Douglas and Bay Acres residents attended, and they all expressed their support for the Project.

A second public meeting will be held on November 4, 2016. The meeting results will be incorporated into this document prior to submittal to the BECC/NADB Board of Directors.

Additionally, the Project included a public comment period that preceded EPA's issuance of the FONSI on February 28, 2014. No public comments were received related to the proposed Project, nor were there any identified environmental effects for the Project.

BECC also conducted a media search to identify potential public opinion about the Project and found seven articles published between 2013 and 2015, which provided information regarding Project planning and development. In addition, a newspaper article in October 2015 reported on the development of a Pretreatment Program for small utilities and a training course, organized by BECC and EPA, which took place in the City of Douglas. No articles related to the Project were identified and no opposition to the Project was detected in the media search.