

**INTEGRATED SAFEGUARDS DATA SHEET  
APPRAISAL STAGE**

**Report No.: ISDSA12159**

**Date ISDS Prepared/Updated:** 02-Mar-2015

**Date ISDS Approved/Disclosed:** 02-Mar-2015

**I. BASIC INFORMATION**

**1. Basic Project Data**

<b>Country:</b>	Ecuador	<b>Project ID:</b>	P151439
<b>Project Name:</b>	EC Guayaquil Wastewater Management Project (P151439)		
<b>Task Team Leader(s):</b>	Patricia Lopez Martinez		
<b>Estimated Appraisal Date:</b>	23-Feb-2015	<b>Estimated Board Date:</b>	22-Apr-2015
<b>Managing Unit:</b>	GWADR	<b>Lending Instrument:</b>	Investment Project Financing
<b>Sector(s):</b>	Wastewater Treatment and Disposal (70%), Wastewater Collection and Transportation (30%)		
<b>Theme(s):</b>	Pollution management and environmental health (50%), City-wide Infrastructure and Service Delivery (50%)		
<b>Is this project processed under OP 8.50 (Emergency Recovery) or OP 8.00 (Rapid Response to Crises and Emergencies)?</b>			No
<b>Financing (In USD Million)</b>			
Total Project Cost:	247.82	Total Bank Financing:	102.50
Financing Gap:	0.00		
<b>Financing Source</b>			<b>Amount</b>
Borrower			42.82
International Bank for Reconstruction and Development			102.50
EC European Investment Bank			102.50
Total			247.82
<b>Environmental Category:</b>	A - Full Assessment		
<b>Is this a Repeater project?</b>	No		

**2. Project Development Objective(s)**

The Project Development Objective (PDO) is to increase access to improved sanitation services and to reduce wastewater pollution in selected areas of the City of Guayaquil.

### 3. Project Description

The proposed Project will achieve the above-mentioned objectives through the implementation of four components. The pre-investment cost, including the preparation and development of feasibility studies, environmental impact assessment, and final designs, as well as acquisition of the land required for the construction of the new WWTP is being financed by the municipality of Guayaquil through EMAPAG EP for a total amount of US\$6.5 million.

Component 1: Installation of household connections (US\$18 million, with US\$2.8 million of IBRD loan financing). This component will finance the installation and rehabilitation of household connections in specific areas within the southern districts of the city of Guayaquil. These districts are equipped with a dense sewerage collection network which, although requiring rehabilitation of main collectors to reduce infiltration, reaches and could serve almost all inhabited areas. Nonetheless, despite a broad network coverage, just 82 percent of the households in the area are currently actually connected to the system. Most of the remaining 18 percent (around 30,000 families) are poor households located in Suburbio Oeste, Isla Trinitaria, Sector Guasmo and Casco Central sectors, which are riparian areas of the Estero Salado estuary, where household toilets discharge directly to the estuary or to reportedly poorly constructed and maintained pits or septic tanks, which contributes to the degradation of the Estero Salado. Although many houses have a sewer passing in front, these households have not been connected—despite a legal mandate to do so—mainly because of the cost of the connection fee. Other reasons are technical issues (toilets mostly located at the back of their houses or at a lower level than the condominium sewer branch) and lack of information about the households' entitlement to enjoy a social tariff and/or about the benefits that getting connected would bring them in terms of improvement in living conditions.

Component 2: Rehabilitation of sewerage network (US\$37 million, 100 percent financed by IBRD). This component will finance the rehabilitation of the sewerage network (including sections of the primary, secondary and tertiary network) in La Chala basin (Suburbio Oeste area), which, as stated above, is riparian to the Estero Salado estuary. These main collectors in this area require urgent rehabilitation to reduce wastewater losses and enable their effective collection function. This component of the Project aims at reducing infiltrations into the south sewerage subsystem, thus contributing to reduction in contamination of the Estero Salado estuary from domestic wastewater. It is estimated that of the total volume of wastewater collected and pumped in the pumping station of La Chala, approximately 25 percent corresponds to ground water infiltration, which increases wastewater pumping and treatment costs. Also, some segments of the Suburbio Oeste sewer network that are meant to function as gravity mains get pressurized during periods of high tide, which again suggests a high infiltration rate.

Component 3: Wastewater treatment and disposal facilities (US\$161 million, with US\$58.5 million of IBRD loan financing). This component will finance the construction of a new WWTP, called Las Esclusas WWTP, and associated pumping and transmission facilities to treat 100 percent of the wastewater collected in the southern districts of the city of Guayaquil within the design year of 2045. Wastewater generated in the south subsystem is currently collected in two sewer mains: (a) the Guasmo sewer main, which conducts an average flow in dry weather of 0.60 m<sup>3</sup>/s into the Guasmo H pumping station from where wastewater is pumped directly into the Guayas River through a 180 m long pipeline and an underwater outfall diffuser, and (b) the Parson's Sur sewer main, which conducts 2.10 m<sup>3</sup>/s in dry weather into the La Pradera pretreatment station (equipped with a mechanized pretreatment, a disinfection system that is presently out of service and an underwater outfall diffuser). Therefore, wastewater is currently discharged into the Guayas River with very little

or no treatment, failing to comply with the contaminants concentration thresholds established in the National Norm on Environmental Quality and Effluent Discharges (NCADE in its Spanish acronym).

Sludge-to-energy process. The primary sludge generated from the wastewater treatment process would be pressed, dewatered, and then stabilized through an anaerobic digestion process. Depending on working conditions and on actual contaminant concentrations of the raw wastewater, the treatment process may generate up to 94 tons of primary sludge. The WWTP feasibility study and design includes the construction of a cogeneration facility using the digester gas from the anaerobic digestion to produce electrical power (up to 1.3 MW) and heat. Electricity will be used to offset power demands within the treatment facility (the cogeneration represents around 20 percent of the energy consumption by the plant). This will reduce operating costs, which will reduce the pressure to increase tariffs. Specifications for a minimum amount of electricity generation are being included in the bidding documents for the WWTP. The process will require two co-generators in operation and a third one as standby.

Disposal of bio-solids. The sludge management process described above may generate up to 80 tons per day of bio-solids that will be transported and disposed in the municipal landfill. The standard that has to be met for the sludge to be received at the landfill is a maximum humidity of 70 percent. The landfill is currently receiving and managing over 4,500 tons of bio-solids per day, so the volume arriving from the WWTP represents a minimal addition to the existing capacity. The municipal landfill has all the required environmental permits to receive this type of waste. The Municipality is issuing a certification with the commitment to receive the bio-solids from the Las Esclusas WWTP in the current landfill for at least the first 10 years of operation. A master plan study for the future management of bio-solids generated from Las Esclusas and other future WWTPs will be financed under Component 4. This study will also look at options for reuse of sludge through the production of compost (using secondary dewatering and structuring mix processes).

Component 4: Project management and administration, including communication plan and management of social, environmental, and safety issues (US\$5.4 million with US\$4.2 million of IBRD loan financing). This component will finance activities associated with overall project management by EMAPAG EP, including Project-related audits, monitoring and evaluation, equipment and training to strengthen the implementing entity, as well as individual consultants. It will include support to EMAPAG EP related to the management of environmental and social issues and safeguards. Specifically, this component will fund: (a) a study to set up a system for the physiochemical, bacteriological, and limnologic monitoring of the Guayas River water quality; (b) a study to set up a system for the physic-chemical, bacteriological, and limnologic monitoring of the Estero Salado estuary water quality in relation with Project Components 1 and 2; (c) a master plan for the management and final disposal or reuse of the bio-solids which will be produced at the Las Esclusas WWTP and other planned WWTPs (Los Merinos, Asuncion City, and others); (d) communication campaigns and technical assistance for community development and training; (e) a Project impact evaluation (IE) assessment; and (f) an integrated urban water management study for the planning of development and infrastructure in a growing flood-prone area of the city of Guayaquil (Sistema Tres) which requires interventions in urban drainage and wastewater management.

#### **4. Project location and salient physical characteristics relevant to the safeguard analysis (if known)**

Project Component One will finance the installation and rehabilitation of household connections within the southern districts of the City of Guayaquil, including poor households located in Suburbio

Oeste, Trinitaria, Sector Guasmo and Casco Central neighborhoods. These are riparian districts of the Estero Salado estuary, where household toilets discharge directly to the estuary or to reportedly poorly constructed and maintained pits or septic tanks, which contributes to the degradation of the Estero Salado. Component Two will finance the rehabilitation of the sewerage network in La Chala basin within the Suburbio Oeste area, which as stated above, is riparian to the Salado estuary. Component Three involves the construction of a WWTP that will directly benefit the central and southern districts of Guayaquil, located within La Pradera and Guasmo wastewater sewer watersheds. The proposed Las Esclusas WWTP will be constructed on the southern shore of the Cobina estuary, in the proximity of its intersection with the Guayas River.

The wastewater collection and transportation network of Guayaquil serves 1,705,000 people (representing around 80% of the population of the city) through a sewer network composed of 3,926 km of sewer mains and 61 pump stations that drains into the Daule and Guayas Rivers. Rain waters are collected by a separate sewer system that drains into the Estero Salado. There is an existing WWTP (lagoon system) presently operating and serving the northern part of the city.

The City of Guayaquil is surrounded by the Daule and Guayas Rivers on the East and by the Estero Salado Estuary on the West. The Guayas River and its tributaries form the largest watershed in South America draining into the Pacific Ocean, with an extension of 32,130 km<sup>2</sup> partially covering eight provinces of the country. The Guayas River rises at the intersection of the Daule and the Babahoyo, located 5km north of the city, and has a flow that varies from 230 m<sup>3</sup>/s in the dry season (60 percent coming from Babahoyo) to 1500 m<sup>3</sup>/s during the rainy season (66 percent from Babahoyo). Due to its proximity to the ocean, at the vicinity of Guayaquil, the Guayas presents the characteristics of an estuary: its water is saline (with a salinity range of 5,000 -10,000 mg/l) and its actual flow, influenced by the tides ebb and flow patterns, varies from -15,000 to +15,000 m<sup>3</sup>/s during the cycle. The Guayas River is affected by several wastewater discharges and other pollution sources (e.g., storm water runoff) upstream of the Project location with none or very limited treatment.

## 5. Environmental and Social Safeguards Specialists

Carlos Vargas Bejarano (GENDR)

Martin Henry Lenihan (GSURR)

Robert H. Montgomery (GENDR)

6. Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	<p>The proposed Project has been classified as an Environmental Category A due to the type and size of the Project Component Three, the construction of a 3.6 m<sup>3</sup>/s WWTP. The overall Project impact is expected to be positive due to the improved effluent quality that will be discharged into the Guayas River and the reduction of untreated wastewater that is presently leaking from the existing sewer system and affecting shallow ground and surrounding surface water bodies, like the "Salado" Estuary.</p> <p>For Component Three (Las Esclusas WWTP and works), an Environmental and Social Impact Assessment (ESIA)</p>

	<p>has been developed by an international consulting firm (Hazen Sawyer) with the support of a local environmental consulting firm. The Terms of Reference for the ESIA were approved by the Ministry of Environment in Ecuador (MAE). The ESIA includes an assessment of impacts, including mathematical modeling of potential downstream impacts during plant operation, and an Environmental and Social Management Plan (ESMP). The WWTP will treat wastewater from the central and southern districts of Guayaquil located within the “La Pradera” and “Guasmo” wastewater sewer watersheds and will be constructed on the southern shore of the Cobina estuary, in the proximity of its intersection with the Guayas River.</p> <p>The Guayas River is one of the largest watersheds in South America draining into the Pacific Ocean, with an extension of 32,130 km<sup>2</sup> partially covering eight provinces of the country. The Guayas River, is near the intersection of the Daule and the Babahoyo, located 5km north of the city, and has a flow that varies from 230 m<sup>3</sup>/s in the dry season to 1,500 m<sup>3</sup>/s during the rainy season. The river water is saline and its water quality is affected by several wastewater discharges and other pollution sources (e.g., storm water runoff) upstream of the Project location with none or very limited treatment.</p> <p>The WWTP is part of the Municipality of Guayaquil’s Municipal Plan for the Universalization of Wastewater Management Services. The Plan includes the expansion of the sewer network, installation of household connections, and the rehabilitation and construction of five wastewater treatment facilities –Las Esclusas, Los Merinos (existing lagoon system), Mucho Lote, Puerto Azul and Mi Lote- to treat all the wastewaters generated in the city. Project Component Three includes a WWTP (mechanized pretreatment, chemically enhanced primary treatment (CEPT), disinfection system, underwater outfall diffuser, hypochlorite production, sludge digester, diffuser outfall in Guyas River), adaptation of the Guasmo H pump station and the construction of a new pipeline to drive pumped water to the new WWTP, and decommissioning of La Pradera pre-treatment station and closing existing discharge and construction of a new pump station and pipeline to drive pumped water to the new Las Esclusas WWTP. The design will allow compliance with current environmental regulations in Ecuador. EMAPAG EP has</p>
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	<p>planned for the future expansion of the WWTP to enable secondary treatment, if it was required by Ecuadorean environmental regulations in the future. Alternative analyses in terms of WWTP technological and design options and site locations were conducted as part of the regional water planning work (Water Supply and Sewerage Master Plan from 2004 and updated in 2011) and the WWTP feasibility study and design and also in the ESIA. The potential risk of flooding at the WWTP has been addressed in the project design. The main potential negative impacts include: (a) removal of topsoil and changes in terrain and topography; (b) contamination by solid or liquid wastes; (c) generation of dust, combustion gases, noise and vibrations; (d) odor generation; (e) inconveniences caused by urban and traffic congestion; (f) impact on shallow ground quality and groundwater level; (g) impacts on Guayas River water quality; (h) alteration of landscape; (i) worker health and safety; (j) disposal of sludge, and (k) expropriations of land for WWTP. Potential positive impacts identified include: (a) reduction of odors in La Pradera pump station due to its closure; (b) reduction/elimination of overflows of wastewater in the streets; (c) improvement in Guayas River water quality; and (d) local job creation. The ESMP includes the following ten programs (that include 36 environmental measures and 122 activities): Plan for Prevention and Mitigation of Impacts; Handling and Management Plan of Wastes; Monitoring and Measurement Plan; Plan for Restoration of Degraded Areas; Occupational Health and Security Plan; Community Relationship Plan; Training Plan; Contingency Plan; Abandonment Plan; and Environmental Monitoring Plan. Depending on actual operating conditions in the raw wastewater, the treatment and sludge management process may generate up to 80 to 94 tons per day of bio-solids that would be disposed of in the municipal landfill. The primary sludge generated from the wastewater treatment process would be pressed, dewatered and stabilized before transportation and final disposal at the sanitary landfill. The municipal landfill has all the required environmental permits to receive this waste. The landfill has the capacity to receive municipal waste, including the expected volume of sludge during at least the first ten years of operation of the wastewater treatment facility, based on its current rate of exploitation. Plans for the future expansion or the construction of a new municipal sanitary landfill are under discussion between municipal and environmental authorities which</p>
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	<p>will allow the continuation of the sludge disposal in this manner. A Master Plan study for the management of biosolids generated from Las Esclusas and other future WWTPs will be financed under Component Four. This study will look at options for the reutilization of sludge through the production of compost (using secondary dewatering and structuring mix processes).</p> <p>The draft ESIA was disseminated and consulted locally in September and October 2014 and included a formal Public Audience, several permanent Public Information Centers, and informal informative meetings. Public consultations were coordinated and approved by an independent Facilitator appointed by the MAE. Main comments received focused on: (a) requests for proper maintenance of the sewerage collection and transportation systems to avoid blockages and overflows, (b) statements expressing acceptance and support for the Project, (c) concerns about proper odor control from the wastewater treatment plant, (d) concerns over ensuring timely completion of the works, and (e) concerns about inconveniences that could be caused by rupture of street pavement, amongst others. The draft ESIA was also reviewed by 3 independent experts. Comments were addressed in an updated final ESIA. The ESIA is pending approved by the MAE.</p> <p>For Components One and Two, an ESMP was developed for each component and includes an assessment of potential impacts and proposed mitigation and monitoring measures. Component One will finance the installation and rehabilitation of household connections in specific areas within the southern districts of the City of Guayaquil, where household toilets discharge directly into the estuary or to reportedly poorly constructed and maintained pits or septic tanks, which contributes to the degradation of the Estero Salado. The works involve establishing a connection from an existing sewer line in the street to a house and the potential environmental impacts are relatively minor. Component Two involves the rehabilitation of the sewerage network in La Chala basin within the “Suburbio Oeste” area and will improve sewer efficiency by reducing infiltrations and contribute to the reduction of the contamination of the Salado estuary from domestic wastewater. The works should have relatively minor to moderate potential negative environmental impacts during construction (e.g.,</p>
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		<p>generation of noise and dust, minor traffic disruption, disposal of waste) and can be readily mitigated with standard measures established in the ESMP. Even less impacts are associated with works in Component One. The ESMPs include a chance find procedure applicable to natural habitat protection measures, as needed, given the proximity to the works and the Guayas River and the Salado Estuary. The draft ESMPs for Components One and Two were disclosed and consulted in January 2015, and revised ESMPs have been prepared by EMAPAG EP prior to Bank Appraisal and disclosed in country and in the Bank's website. Compliance with the ESMP will be included as part of the construction contracts.</p> <p>The ESMPs for Components One and Two include a description of the Grievance Redress Mechanism (GRM) put in place by EMAPAG EP for the Project. The system includes three tiers for addressing and resolving grievance and complaints: 1) the contractor's appointed focal points for redress solving (who will be present in the project intervention area); 2) EMAPG EP's Directorate for Social Communication and Community Management; and 3) external mediation. A description of the GRM and contact details for addressing any queries before the contractor has started the works has been posted in EMAPAG EP website in the following link: <a href="http://www.emapag-ep.gob.ec/emapag/?page_id=731">http://www.emapag-ep.gob.ec/emapag/?page_id=731</a></p>
Natural Habitats OP/BP 4.04	Yes	No potential significant impacts on natural habitats were identified for Components One, Two or Three; and while the project works should have a positive environmental impact on the Guayas River and the Salado Estuary, the Natural Habitats Policy (OP/BP 4.04) has been triggered on a precautionary basis due to Components 1 and 2 and their proximity to the Salado Estuary. Applicable measures have been included in the ESMPs for each component as needed under OP/BP 4.01.
Forests OP/BP 4.36	No	The Project works to be performed will be located in urbanized and/or in industrial areas. There are no forests or mangrove swamps located within or in the immediate proximity of the project intervention area. The project will not affect forests or forest dependent communities, nor will it involve changes in the management of forests.
Pest Management OP 4.09	No	The Project does not involve the purchase or use of any significant quantities of pesticides.
Physical Cultural Resources OP/BP 4.11	Yes	While no potential significant impacts on physical cultural resources were identified for Components One, Two or



		Three, this is policy is triggered and an archeological monitoring program and chance find procedure are included in the ESMPs as a preventive measure.
Indigenous Peoples OP/ BP 4.10	No	There are no indigenous peoples present that meet the criteria defined by OP 4.10 in the Project area. According to the 2010 census, less than 1.4% of the population of Guayaquil identify themselves as indigenous. This population is not concentrated in the Project area, nor does it have a collective attachment to land in that area, which is used for modern urban residential or industrial purposes.
Involuntary Resettlement OP/BP 4.12	Yes	<p>The water treatment plant will be located on a site of 40.74 has, which has been the property of 6 different private owners. Expropriation has been ongoing since 2011, with two property owners contesting the original valuations in court (two other cases went to court because the owners were not available due to liquidation or legal presence in another country). In one of the contested cases, the site hosts a radio antenna for a local radio station along with the house of an employee of that station. The value of the structure and need to resettle the occupant was not taken into account in the original assessment of the site, but were subsequently the subject of remedial measures agreed between the owner and the client, which is documented in the remedial RAP. Another site belongs to an aquaculture business, where the commercial value of the land was fully taken into account as part of the valuation. The remaining sites are unoccupied and have not been used for either economic or residential purposes. In the case of one of these vacant sites, the owners also contested the original municipal valuation, which was subsequently validated by an independent court appointed expert (the valuation is now being appealed by the owners, with a final court sentence expected in April 2015). Despite the court cases, judicial orders allow the client to occupy the sites as the owners only contested the price, rather than the declaration of public good. In the meantime, the funds to pay the owners have been transferred to the judges responsible for adjudicating the sentences.</p> <p>The client has prepared a Remedial Resettlement Action Plan explaining the extent to which the expropriation process conforms to the World Bank Policy on Involuntary Resettlement, and the additional measures required to address gaps identified. The RAP demonstrates how for the most part, the client offered</p>

		<p>replacement cost as compensation for the land to be acquired by using market comparators as a basis for valuation. The only exception was the site of the radio antenna which was the subject of remedial measures documented in the RAP.</p> <p>In the case of Component 2, no resettlement impacts are anticipated as the works will be taking place in residential neighborhoods with little or no encroachment on the sidewalks, and using trenchless technology in order to minimize impacts. In terms of associated facilities, the landfill for the WWTP has sufficient capacity, and the land necessary for the expansion is vacant land that was expropriated by the municipality at full market value. Aggregate material for construction will be sourced from pre-identified private suppliers, and as such will not require temporary land acquisition. The Remedial Resettlement Action Plan has been reviewed and approved by the Bank and publicly disclosed prior to Appraisal. The remedial measures agreed as part of the Remedial Resettlement Action Plan were consulted on through a series of four meetings between EMAPAG and the affected people (the owner and the resident). The funds necessary for finalizing the pending expropriations are held in trust by the Judge responsible for adjudicating the individual cases and will be available to be paid to the PAPs once these cases have been finalized.</p>
Safety of Dams OP/BP 4.37	No	The Project will neither support the construction or rehabilitation of dams nor will it support other investments which rely on services of existing dams.
Projects on International Waterways OP/BP 7.50	No	The Project will not finance activities involving the use or potential pollution of international waterways.
Projects in Disputed Areas OP/BP 7.60	No	The Project will not finance activities in disputed areas as defined in the policy.

## II. Key Safeguard Policy Issues and Their Management

### A. Summary of Key Safeguard Issues

<p><b>1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:</b></p> <p>The overall Project impact is expected to be positive due to the improved effluent quality that will be discharged into the Guayas River and the reduction of untreated wastewater that is presently leaking from the existing sewer system and affecting shallow ground and surrounding surface water bodies, like the "Salado" Estuary.</p> <p>There are no anticipated negative large scale, significant or irreversible environmental impacts</p>
<p><b>2. Describe any potential indirect and/or long term impacts due to anticipated future activities</b></p>

<b>in the project area:</b>
There are no anticipated negative indirect or long term environmental impacts.
<b>3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.</b>
<p>The construction of the Las Esclusas WWTP is part of the Municipality of Guayaquil's Program for the Universalization of Sewerage and Wastewater Treatment Services in the Southern part of the City. The analysis of alternatives and selection of site locations for the treatment plant was conducted in 2004 as part of the Master Plan for Water Supply and Sewerage Services of Guayaquil, which was updated in 2011. The Master Plan considers the expansion of the sewer network and the installation of household connections to reach an effective access rate of close to 100%; the rehabilitation of the oldest and most degraded segments of the existing networks to reduce infiltration; and the rehabilitation and construction of five wastewater treatment facilities, including Las Esclusas, to treat all the wastewater generated in the city.</p> <p>As part of the Feasibility Study for the Treatment of Wastewater in the City of Guayaquil which started in 2012, an analysis of alternative technologies was undertaken for the treatment of the wastewater flows collected in the four wastewater catchment basins that compose the main sewer system of the city: the Guasmo H, Las Praderas, Los Merinos and Progreso subsystems. The selection of the treatment technology to be employed in the different subsystems was undertaken using multi-criteria decision making methods. Each of the prescreened technologies was modelled and a simulation was run to evaluate its performance and undertake a pre-dimensioning of the different phases and elements of the treatment process using different criteria (including environmental). The CEPT option was retained since it allows to consistently meet the authorized regulatory limits set for the Total Suspended Solids (TSS), Biochemical Oxygen Demand (BOD) and all other pollutant concentrations, and eases the implementation of effective odor control.</p>
<b>4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.</b>
<p>For Component Three (Las Esclusas WWTP and works), an Environmental and Social Impact Assessment (ESIA) has been developed by an international consulting firm with the support of a local environmental consulting firm. The ESIA includes an assessment of impacts, including mathematical modeling of potential downstream impacts during plant operation, and an Environmental Management Plan (ESMP). For Components One and Two, an ESMP was developed for each component and includes an assessment of potential impacts and proposed mitigation and monitoring measures. See OP/BP 4.01 for details.</p> <p>A Project Implementation Unit (PIU) established under EMAPAG's General Manager, will be responsible for day-to-day Project implementation, including environmental aspects. The PIU has been staffed with a dedicated qualified environmental safeguards specialist who will be responsible for the supervision of environmental safeguard requirements. Any additional environmental safeguards support required by the Project would be assessed during Project implementation.</p> <p>The operation and maintenance of the Project, once constructed, will be the responsibility of INTERAGUA, which is the private consortium to which EMAPAG EP has delegated the management of Guayaquil's drinking water, wastewater and drainage systems. EMAPAG EP has experience managing environmental safeguards associated to multilateral financing institutions, particularly with Corporacion Andina de Fomento (CAF) and Inter-American Development Bank (IADB) loans. INTERAGUA has environmental staff, experience managing wastewater treatment</p>

facilities and its management system is ISO 14001, ISO 18001 and ISO 9001 certified. Specific details on environmental and social safeguards responsibilities and supervision has been established in the Project's Operational Manual.

A Remedial Resettlement Action Plan (RAP) has been prepared for Component Three related to the WWTP site which has been the property of six different private owners. Expropriation has been ongoing since 2011. The main remedial measures necessary involved additional compensation to the owner of the site of a radio antenna, which was also host to a residential structure occupied by an employee of the owner. These compensations covered the cost of relocating the antenna without the interruption of the signal, and the cost of replacing the residential structure of the employee. There was also an agreement that the employee would maintain employment with the owner. As a contingency, the client further outlined an agreement to monitor the situation of the employee, and to provide an alternative residence and employment should, for any reason, these not materialize following relocation. In addition to the RAP, the client completed a beneficiary assessment which served as the basis for the design of the Social Management Chapter of the Project Operational Manual.

The implementation capacity of EMAPAG and the Municipality of Guayaquil, for the social management of this operation is considered high. EMAPAG has a dedicated and qualified social management team within the Directorate for Social Communication and Community Management (Dirección de Comunicación Social - Gestión Comunitaria) made up of a director, two analysts and three assistants. This Directorate will be responsible for social safeguards management and supervision and for the management of the Grievance Redress Mechanism for the Project, in close coordination with the PIU. This group of professionals has experience in successfully managing the roll out of communication campaigns and community consultation processes, facilitating conflict resolution and grievance redress, building the capacity of community based organizations, as well as the resettlement of households affected by the works of EMAPAG. In order to support the implementation of the social management of this project, it has been agreed that two additional social specialists will be recruited. In terms of land acquisition, the municipality of Guayaquil has decades of experience, having established a dedicated area within its legal department in 2002 to work alongside the Valuation and Cadaster Department. The majority of expropriation cases (80%) are settled through agreement with the owner, rather than recourse to the judicial system.

**5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.**

The draft ESIA was disseminated and consulted locally in September and October 2014 and included a formal Public Audience, several permanent Public Information Centers, and informal informative meetings. Public consultations were coordinated and approved by an independent Facilitator appointed by the MAE. The main comments received focused on: (a) requests for proper maintenance of the sewerage collection and transportation systems to avoid blockages and overflows, (b) statements expressing acceptance and support for the Project, (c) concerns about proper odor control from the wastewater treatment plant, (d) concerns over ensuring timely completion of the works, and (e) concerns about inconveniences that could be caused by rupture of street pavement amongst others. The draft ESIA was also reviewed by three independent experts. Comments were addressed in an updated final ESIA. The draft ESMPs for Components One and Two were disclosed and consulted in January 2015, and revised ESMPs have been prepared by EMAPAG EP prior to Bank appraisal. Compliance with the ESMPs will be included as part of the construction contracts.

The remedial measures agreed as part of the remedial resettlement action were consulted on through a series of four meetings between EMAPAG and the affected people (the owner and the resident). The other land acquisition cases involved a minimum of two meetings between the affected people and the municipality – one meeting to discuss their rights, followed by another to discuss the terms of expropriation.

### **B. Disclosure Requirements**

<b>Environmental Assessment/Audit/Management Plan/Other</b>	
Date of receipt by the Bank	21-Nov-2014
Date of submission to InfoShop	16-Dec-2014
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	11-Mar-2015
<b>"In country" Disclosure</b>	
Ecuador	16-Dec-2014
<i>Comments:</i> <a href="http://www.emapag-ep.gob.ec/emapag/?page_id=731">http://www.emapag-ep.gob.ec/emapag/?page_id=731</a>	
<b>Resettlement Action Plan/Framework/Policy Process</b>	
Date of receipt by the Bank	06-Feb-2015
Date of submission to InfoShop	20-Feb-2015
<b>"In country" Disclosure</b>	
Ecuador	20-Feb-2015
<i>Comments:</i> <a href="http://www.emapag-ep.gob.ec/emapag/?page_id=731">http://www.emapag-ep.gob.ec/emapag/?page_id=731</a>	
<b>If the project triggers the Pest Management and/or Physical Cultural Resources policies, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.</b>	
<b>If in-country disclosure of any of the above documents is not expected, please explain why:</b>	

### **C. Compliance Monitoring Indicators at the Corporate Level**

<b>OP/BP/GP 4.01 - Environment Assessment</b>	
Does the project require a stand-alone EA (including EMP) report?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>OP/BP 4.04 - Natural Habitats</b>	
Would the project result in any significant conversion or degradation of critical natural habitats?	Yes [ <input type="checkbox"/> ] No [ <input checked="" type="checkbox"/> ] NA [ <input type="checkbox"/> ]
If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?	Yes [ <input type="checkbox"/> ] No [ <input checked="" type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>OP/BP 4.11 - Physical Cultural Resources</b>	
Does the EA include adequate measures related to cultural property?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]

Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>OP/BP 4.12 - Involuntary Resettlement</b>	
Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>The World Bank Policy on Disclosure of Information</b>	
Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>All Safeguard Policies</b>	
Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have costs related to safeguard policy measures been included in the project cost?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]

### III. APPROVALS

Task Team Leader(s):	Name: Patricia Lopez Martinez	
<b>Approved By</b>		
Safeguards Advisor:	Name: Glenn S. Morgan (SA)	Date: 02-Mar-2015
Practice Manager/ Manager:	Name: Wambui G. Gichuri (PMGR)	Date: 02-Mar-2015