Environmental and Social Management Framework IT Projects involving IT Parks

Final Report

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Environmental and Social Management Framework for IT Projects involving IT Parks

Final Report

For and on behalf of: Environmental Resources Management Japan

Approved by: L. Reed Huppman

Signed: 

Position: Partner

Date: January 10th, 2007

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EXECUTIVE SUMMARY

ESMF implementation and Safeguard Policies
An ESMF is an upstream management framework for lending programs with multiple, often unidentified subprojects. An ESMF to be prepared for any Project involving IT Parks, have to ensure that requirements of OP 4.01 are met via appropriate screening, impact mitigation, monitoring and training and capacity building measures for each of the downstream subprojects under the loan. The ESMF adequately addresses the issue of resettlement and displacement and provides the appropriate measures on how to incorporate resettlement planning in the preparation and implementation of subprojects.

Objective of the ESMF
The ESMF is a set of guidelines that are to be applied by the respective project implementing unit (PIU) on any project involving the deployment of an IT Park to ensure that all environmental and social safeguards are adequately addressed. The main purpose of the ESMF is for all subprojects to (a) establish clear procedures and methodologies for the environmental and social assessment, review, approval and implementation of investments to be financed under the project; (b) specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to project investments; (c) determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF; and (d) provide practical information resources for implementing the ESMF.

Legislative framework
The ESMF has been developed to follow both international standards and practices and the local regulations and laws relevant to the Project; in particular, the Regulation of the General Law of Ecological Equilibrium and Environmental Protection on Matters of Environmental Impact Evaluation (Reglamento de la Ley General del Equilibrio Ecológico y la Protección al Ambiente en Materia de Evaluación de Impacto Ambiental-RLGEEPAEIA) which applies specifically to the environmental impact assessment (EIA) process. EIAs are evaluated and either authorized/ conditionally authorized/ rejected by the Environment and Natural Resources Secretariat (Secretaría del Medio Ambiente y Recursos Naturales or SEMANART). According to Article 32 Bis of the Federal Public Administration Organic Law (Ley Orgánica de la Administración Pública Federal – LOAPF) and the Internal Regulation of SEMANART, this agency’s main purpose is to issue and oversees compliance with legislation on environment and natural resources management.

In regards to the establishment of operation of an IT industrial park, the most important Mexican norm in this context is the Classification of Industrial Parks Norm (NMX-R-046-SCFI-2005) in which the specifications regarding infrastructure, resource use, greenspace and other attributes of industrial parks in Mexico are outlined in very detailed terms. In addition to this, a number of specific official standards and regulations are applicable to the establishment and operation of an IT park, which includes:

- Solid Particulate Air Pollution Emissions from Stationary Sources (NOM-043-ECOL-1993)
• Hazardous Wastes Characteristics and List (NOM-052- SEMANART-2005)
• Noise Emission from Stationary Sources (NOM-081- SEMANART -1994)
• Maximum Permissible Limits of Smoke, Total Suspended Particulate, SO2, and NOx from Stationary Sources (NOM-085- SEMANART -1994)
• Environmental Specifications for Liquid and Gaseous Fossil Fuels Used in Stationary and Mobile Sources (NOM-086-SEMANART- SENAR-SCFI-2005)
• Ecological Criteria on Water Quality (CE-CCA-001)

Institutional roles and responsible stakeholders
The ESMF hereby presented has been designed under the assumption that IT industry projects that involve IT Parks are to be implemented by the Direction of Digital Economy (DDE) within the Secretariat of Economy - as is the case of the specific project that is used as a practical application of the Framework. However, the recommendations and guidelines contained in this report would apply to any project implementing unit responsible for directly implementing the mechanisms and recommendations outlined in the ESMF. Other agencies at the federal and state level and municipal level will also play a key role in the implementation and monitoring of the ESMF. These institutions include:

• Secretariat of Environment and Natural Resources (SEMANART)
• Labor and Social Prevision Secretariat
• State Economic Development Agencies
• Municipal Land-Use Authorities
• Municipal Construction Authorities

In regards to resettlement issues, the principal agency that overlooks the fair compensation (monetary and in kind) of resettled communities is the Secretariat of Agrarian Reform (Secretaría de Reforma Agraria) which administers the communal lands (ejidos) that cover close to 50% of the Mexican territory.

The National Commission for the Development of Indigenous Peoples (Comisión Nacional para el Desarrollo de los Pueblos Indígenas - CDI) is the federal institution in charge of promoting and overseeing all issues related to indigenous communities. However, in many cases communities are not exclusively indigenous and are therefore looked after in broader terms by the Social Development Secretariat (Secretaría de Desarrollo Social - SEDESOL). SEDESOL would be at the forefront of the resettlement issue in the event that the lands are not communal (ejiditarias, in which case it would be the Secretaría de Reforma Agraria).

In terms of archeological resources, all matters are regulated and administered by the National Institute of Anthropology and History (Instituto Nacional de Antropología e Historia). However, it is important to mention that the EIA process does not require an archeological survey as part of the baseline studies for an EIS and these are still voluntary. However, if this agency is aware of or suspects archeological resources in the project area, it may stop all development works until the area has been surveyed.

EIA preparation, review and appraisal process
Under the proposed ESMF, the EIA preparation, review and appraisal process for subprojects will be conducted by the project implementation unit and SEMARNAT as follows:

• Once a subproject has been identified and the location has been selected, the Proponent will carry out a preliminary screening of the subproject to determine
what the potential impacts may be. The output of the screening will be a decision as to whether or not an EIA and/or resettlement action plan is required based on the nature and significance of the impacts predicted.

- If the decision cannot be made based on the information provided in the screening form, the Proponent may decide to undertake a follow up scoping which requires a site visit and preliminary baseline study to determine the significance of the impacts, specifically in terms of whether the location will result in involuntary resettlement; the displacement of indigenous communities; and/or whether the proposed site will have major impacts on cultural and/or protected areas. In this case, based on the findings, the Proponent will prepare a terms of reference for conducting a full EIA and if necessary the preparation of the associated plans (ie Resettlement Action Plan (RAP), an Indigenous Peoples Plan (IPP) and/or a Physical Cultural Resources Management Plan, as applicable).

- Once the EIA has been conducted and alternative project designs and locations have been evaluated, an EIS must be prepared and submitted to SEMANART for authorisation of an environmental permit. The EIS will include an Environmental Management Plan which outlines the impact mitigation and action plan and monitoring requirements for the construction and operation of the subproject. If identified as a requirement of the subproject through the screening process, a RAP, an IPP and/or a Physical Cultural Resources Management Plan, or a combination of these, is prepared alongside or as an integrated part of the EMP.

- In addition, if a RAP and/or IPP were required, these plans should be submitted to the Secretariat of Agrarian Reform to agree on the measures of compensation and resettlement prior to approval of the subproject.

- SEMANART will review the EIS and make a decision as to whether a permit can be granted. If the EIS fails to meet the agency’s and World Bank requirements, the EIS must be re-submitted. Once a permit has been granted, the Proponent will need to complete the necessary compensation and resettlement plans outlined under the RAP that was prepared for the specific subproject.

- Once the compensation and resettlement of project affected parties has been completed, the Proponent may begin construction of the project.

- Contractors will submit monthly progress reports on the implementation of the EMP and associated plans for each subproject to the Proponent.

- The DDE will undertake an annual environmental and social audit of the ESMF to ensure that the recommendations outlined are being adequately addressed and to verify whether any changes are needed in the mechanisms provided in the ESMF (e.g. modification of the screening tool).

- Accordingly, the supervision arrangements for the EMP should summarize key areas on which supervision will focus—critical risks to implementation of the EMP and how such risks will be monitored during implementation and agreements reached with the Proponent.

**Main environmental and social impacts and benefits of the Project**

The key environmental and social impacts and benefits which may results from activities financed under the Project include:

- Environmental benefits from economies of scale by the provision of common wastewater and solid waste management facilities; and environmental planning.
- Socioeconomic benefits derived from higher living standards, the establishment of knowledge-based companies, innovation, increased employment and
academic opportunities, networking of research organizations and private industry, and the development of industries like real estate, retail, lifestyle and recreation.

- Noise and vibration during construction activities may be caused by the operation of pile drivers, earth moving and excavation equipment, concrete mixers, cranes and the transportation of equipment, materials and people.
- Soil erosion may be caused by exposure of soil surfaces to rain and wind during site clearing, earth moving, and excavation activities. The mobilization and transport of soil particles may, in turn, result in sedimentation of surface drainage networks, which may result in impacts to the quality of natural water systems and ultimately the biological systems that use these waters.
- Air quality may be impacted during construction by emissions of fugitive dust caused by a combination of on-site excavation and movement of earth materials, contact of construction machinery with bare soil, and exposure of bare soil and soil piles to wind. During operation, emissions may be generated from kitchen stacks; air conditioning and central heating systems; fuel storage tanks (if present); and diesel motor vehicles. Specific emissions related to the semiconductor and electronics manufacturing (in case such a plant is built within the IT parks) include greenhouse gases, toxic, reactive, and corrosive substances (for example, acid fumes, dopant, cleaning gases, and volatile organic compounds [VOCs]), resulting from diffusion, cleaning, and wet-etching processes.
- Non-hazardous solid waste generated at construction sites may include excess fill materials from grading and excavation activities, scrap wood and metals, and small concrete spills. Other non-hazardous solid waste generated during operation includes office, kitchen, and domestic wastes.
- Hazardous solid waste that may be generated includes spent solvents and oily rags; empty paint cans; chemical containers; used lubricating oil; used batteries (such as nickel-cadmium or lead acid); and lighting equipment, such as lamps or lamp ballasts. Specific facilities, such as semiconductors (i.e. chip) and electronic manufacturing, -that might be built in the IT parks- may include special hazardous wastes, such as those generated from spent cleaning solutions, sludge from wastewater treatment, spent epoxy material (printed circuit board [PCB] and semiconductor manufacturing), spent cyanide solutions (electroplating), and soldering fluxes and metals residue (printed circuit board assembly [PCBA]).
- Hazardous materials include the potential for release of petroleum based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment. These materials may be encountered during decommissioning activities in building components or industrial process equipment.
- Wastewater discharges may include sanitary wastewater with effluents from domestic sewage, food service, and laundry facilities serving site employees. Miscellaneous wastewater from laboratories, medical infirmaries, water softening etc. may also be discharged to the sanitary wastewater treatment system. Process wastewater from a number of semiconductor and PCBA manufacturing steps (if these are built within IT parks) may include organic compounds, particularly non-chlorinated solvents (e.g. pyrrole-based, aminebased, fluoro / ether-based resists, isopropyl alcohol, and tetramethylammonium hydroxide) from cleaning, resist drying, developing, and resist stripping; metals and cyanides from metallization and CMP processes; acids and alkalis from spent cleaning solutions,
process operations such as etching, cleaning, and metallization, among others; and suspended solids from film residues and metallic particles (derived from photolithography, metallization, backgrinding, and dicing processes).

- Energy consumption in semiconductor manufacturing involves significant energy use.
- Involuntary physical or economic resettlement during land acquisition to develop the IT parks that may include: loss of shelter; loss of assets or access to assets; or loss of income sources or means of livelihood, whether or not the affected persons must move to another location.
- Indigenous peoples, although unlikely to be encountered in the outskirts of the cities, where the subprojects will be developed, should be considered during the EA. Impacts to these vulnerable groups include loss of identity, culture, and customary livelihoods, as well as exposure to disease. In addition, indigenous populations might have limited capacity to defend their interests in and rights to lands, territories, and other productive resources, and/or restricts their ability to participate in and benefit from development.
- Archaeological findings may be encountered and potentially damaged during excavation activities of construction works. Culturally sensitive areas (i.e. where cultural practices or artefacts are evident) may become impacted both by construction and operation works, by modifying the religious or cultural value of a certain area.

**Proposed mitigation measures**

As part of the EIA process, Environmental Management Plans (EMPs) will need to be prepared and implemented. Effective implementation of EMPs will ensure that the appropriate mitigation measures have been employed to avoid and/or minimize any potential impacts resulting from the proposed activity. The DDE should agree with SEMANART and other federal environment agencies on the supervision of the EMP within the overall plan for the project. Accordingly, the supervision arrangements for the EMP should summarize key areas on which supervision will focus—critical risks to implementation of the EMP, how such risks will be monitored during implementation and agreements reached with the Proponent. If identified as a requirement of the sub-project through the screening process, a Resettlement Action Plan, Indigenous Peoples Plan, and/or a Physical Cultural Resources Management Plan, or a combination of these, is prepared alongside or as an integrated part of the EMP.

**Public consultation and disclosure**

Public consultation and disclosure, although an important element in the process of gaining social acceptance of a project, is not mandated in Mexico to the same degree that international best practices call. The applicable consultation requirements in Mexico are stated in Article 34 of the Ecological Equilibrium and Protection of the Environment General Law and 40 to 43 of its Regulation in the Matter of Environmental Impact Evaluation, establishing the mechanisms by which social participation (or consultation) can be requested and made.

Under the proposed ESMF process for the IT project, a consultation/workshop will be held in Mexico City with the principal stakeholders prior to the generation of the EIS or the regular consultation opportunities in the Mexican context. In addition, during the environmental impact assessment process of the subprojects, consultations will need to be conducted by the project developers with project-affected groups and local
nongovernmental organizations (NGOs) about the project’s environmental aspects and will take their views into account. Consultation will need to be initiated as early as possible, relevant material will be provided in a timely manner prior to consultation and in a form and language that are understandable and accessible to the groups being consulted.

**Training on the implementation of the ESMF guidelines**

This training will focus on the process by which the ESMF will be implemented by the DDE, with a specific focus on the World Bank standards and Mexican regulations.

A detailed 2-day training course will be delivered within the first month of appraising the Project (see Table 6). The target audience will be the Secretariat of Economy (SoE); Direction of Digital Economy (DDE); SEMANART; and Municipalities that will be part of the lending process. It will be the responsibility of the DDE to ensure that short refresher trainings on a demand basis are provided to staff within the stakeholder groups. This could be a 1-day presentation briefly outlining the procedures of the ESMF.

**Monitoring**

The ESMF outlines a number of indicators as part of the ESMF implementation which will be included in the overall project monitoring. In addition, an Annual Audit on ESMF Implementation will be prepared by the implementing agency and submitted to SEMANART.

**Proposed implementation budget**

It is estimated that the implementation of the ESMF including the required provisions and training will cost approximately USD 355,000 for the project lifecycle. The provisions proposed under Training and Awareness Raising (USD 180, 000) account for the majority of the costs in line with the proposed project budget outlined in the PAD. These costs may vary depending on when and how the ESMF implementation takes place; therefore it can be expected that the proposed ESMF budget may increase or decrease depending on the workplan agreed upon.
# ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ANIEI</td>
<td>National Association of IT Education Institutions</td>
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<tr>
<td>CPEUM</td>
<td>Mexican Political Constitution (Constitución Política de los Estados Unidos Mexicanos)</td>
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<td>DDE</td>
<td>Direction of Digital Economy (Dirección de Economía Digital)</td>
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<td>EIA</td>
<td>Environmental Impact Assessment</td>
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<tr>
<td>EIS</td>
<td>Environmental Impact Statement (Manifestación de Impacto Ambiental)</td>
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<td>EMP</td>
<td>Environmental Management Plan</td>
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<td>ESMF</td>
<td>Environmental and Social Management Framework</td>
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<tr>
<td>ETJ</td>
<td>Technical Justificative Study (Estudio Técnico Justificativo)</td>
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<tr>
<td>INAH</td>
<td>National Institute of Anthropology and History (Instituto Nacional de Antropología e Historia)</td>
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<td>IPP</td>
<td>Indigenous Peoples Plan</td>
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<tr>
<td>IT</td>
<td>Information Technology</td>
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<td>ITES</td>
<td>Information Technology Enabled Services</td>
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<td>ITIDP</td>
<td>Information Technology Industry Development Projects</td>
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<tr>
<td>IT.Link</td>
<td>Information Technology Linkages Network</td>
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<tr>
<td>LGEEPA</td>
<td>General Law of Ecological Equilibrium and Environmental Protection (Ley General del Equilibrio Ecológico y la Protección al Ambiente)</td>
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<tr>
<td>MexicoFIRST</td>
<td>Mexico Federal Institute for Remote Services and Technology</td>
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<td>NOM</td>
<td>Mexican Official Norms (Normas Oficiales Mejicanas)</td>
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<td>NMX</td>
<td>Voluntary Mexican Norms (Normas Mejicanas Voluntarias)</td>
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<td>OP</td>
<td>Operational Policy</td>
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<tr>
<td>PAPs</td>
<td>Project-affected persons</td>
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<td>PIU</td>
<td>Project Implementing Unit</td>
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<td>PPP</td>
<td>Public Private Partnership</td>
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<tr>
<td>PROSOFT</td>
<td>Program Software</td>
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<tr>
<td>RAP</td>
<td>Resettlement Action Plan</td>
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<tr>
<td>RLGEEPAEIA</td>
<td>Regulation of the General Law of Ecological Equilibrium and Environmental Protection on Environmental Impact Evaluation Matters (Reglamento de la Ley General del Equilibrio Ecológico y la Protección al Ambiente en Materia de Evaluación de Impacto Ambiental)</td>
</tr>
<tr>
<td>SEMANART</td>
<td>Secretariat of Environment and Natural Resources (Secretaría del Medio Ambiente y Recursos Naturales)</td>
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<tr>
<td>SME</td>
<td>Small and Medium Size Enterprises</td>
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<tr>
<td>SMIs</td>
<td>Small and Medium Size Industries</td>
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<tr>
<td>SOA</td>
<td>Service Oriented Architecture</td>
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<tr>
<td>SoE</td>
<td>Secretariat of Economy (Secretaría de Economía)</td>
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1 INTRODUCTION

This document provides an Environmental and Social Management Framework (ESMF) for IT Projects involving IT Parks. This ESMF is generic and applicable to all IT projects in Mexico that involve the development of IT Parks. However, in order to give a context to some of the specific guidelines that are required, it makes some references to the IT Industry Development Project (ITIDP), which is currently being prepared by the World Bank in coordination with the Secretariat of Economy (SoE). The project implementing unit, responsible for implementing the ITIDP including the provisions of this ESMF, will be the Direction of Digital Economy (DDE) within the SoE in Mexico. The actual project is briefly explained in Annex 7. However, given its generic approach towards IT Parks - they represent a small component within the project - it represents a very good sample to be used as a show case for the application of this ESMF.

This report is to be used by the ITIDP and future IT projects in order to ensure that all environmental and social safeguards are adequately addressed and that the relevant capacity and training needs are established in order for the recommended measures to be implemented effectively. The management framework has been developed in such a way that it is applicable to any site that falls under the ITIDP in Mexico and other IT Projects involving IT Parks.

1.1 Scope of Understanding

According to the World Bank’s safeguard OP 4.01, Environmental Assessment (EA) is a process used to assess the potential environmental and social impacts of a project. Different instruments may serve the function of the EA and must be tailored to the characteristics of the loan or project.

An ESMF is an upstream management framework for lending programs with multiple, often unidentified subprojects. In such cases, the types of subprojects which the program will finance are specified or limited by project design (e.g. IT parks in this case), but the exact location, design, size or extent of the individual subproject(s) has not yet been determined. Hence, an ESMF is a management system to assure that the requirement of OP 4.01 are met via appropriate screening, impact mitigation, monitoring
and training and capacity building measures for each of the downstream subprojects under the loan.

In addition to OP 4.01, the ESMF incorporates additional safeguard policies which may be triggered, including the potential for resettlement and/or economic displacement of project affected parties within the Project’s scope.

1.2 **OBJECTIVE AND SCOPE OF THE ESMF**

The objective of the ESMF is to ensure that IT Projects involving IT Parks comply with the World Bank guidelines and regulations. Additionally, the ESMF has used the ITIDP for an illustrative application; the project description for ITIDP is presented in Annex 7. The DDE within the SoE is the project implementing unit (PIU) and will be responsible for ensuring the implementation and monitoring of the ESMF.

Specific objectives of the ESMF include:
- Establish clear procedures and methodologies for the environmental and social assessment, review, approval and implementation of investments to be financed under the project;
- Specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to project investments;
- Determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF; and
- Provide practical information resources for implementing the ESMF.

The scope of the ESMF includes the following:

*(i) Legislative framework:* describes the laws and regulations and pertinent norms with a focus on environmental and social requirements that will apply to the planning, approval and implementation of the projects and subprojects. The analysis may extend to new laws and regulations foreseen to be implemented in the future.

*(ii) Institutional Framework:* includes a review of the authority and capability of institutions at different levels (e.g. federal, state and municipal), and their capacity to manage and monitor ESMF implementation, including EIA preparation, review and approval. The analysis may extend to new agencies or agency functions, inter-sectoral arrangements, management procedures, staffing, operation and maintenance training.
(iii) **Impact assessment and mitigation measures**: identifies and evaluates the potential positive and negative impacts of the project at a sector level. Impacts are categorized on the environmental and social components. Impact identification and evaluation include the screening of potential for involuntary resettlement and/or economic displacement. The mitigation measures identify and recommend cost-effective and attainable measures to avoid and reduce negative impacts, as well as the institutional requirements and training in order to implement them. Measures include, when necessary, recommendations needed to develop a Resettlement Action Plan (RAP) for subprojects.

(iv) **Framework Appraisal process**: is a management system designed to include the environmental and social screening, review, approval and implementation of investments to be financed under the ITIDP. The framework serves the PIU (Direction of Digital Economy) in ensuring that the subprojects that apply for finance meet the World Bank safeguard policies and applicable regulations and norms. In addition, a site screening criteria is established to ensure the identification of other safeguard policies that may apply in the proposed sites; for example Natural Habitats (OP 4.04); Physical Cultural Resources (OP 4.11); Involuntary Resettlement (OP 4.12); and Indigenous Peoples (OP 4.10).

(v) **Institutional issues**: identifies institutional needs to implement the environmental assessment recommendations. The level of authority and capacity of the environmental organizations at the local, state, and national levels is reviewed to the extent possible. Ways to strengthen these organizations are recommended, in order to improve the implementation of management and follow up plans.

(vi) **Follow-up Plan**: includes project monitoring of the ESMF and how subprojects will implement their mitigation measures during operation. An Action Plan for the ESMF is presented and describes the work program, timeline, and estimated level of effort for each activity. Training and organizational strengthening is also described in order to implement the mitigation measures for the different stages of the Project. A budget for capital and operational costs has also been designed.

(vii) **Participation and Disclosure**: establishes the participatory framework, identifies key stakeholders and establishes the mechanisms to address cross-institutional coordination for the participation of civil groups and NGOs as well as the ESMF disclosure.
1.3 **APPLICABLE SAFEGUARD POLICIES AND MEXICAN LEGISLATION**

The document will comply with both the relevant World Bank safeguard policies and national EIA legislation.

(i) **World Bank Safeguard Requirements**

The Project Appraisal Document (PAD) (version 2.0) provided by the World Bank on October 16th 2007, indicates that the following Safeguard Policies have been triggered by the ITIDP project. Similar safeguard policies are expected to be triggered in other future IT projects involving IT Parks.

<table>
<thead>
<tr>
<th>Safeguard Policies Triggered by the Project</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Environmental Assessment (OP/BP 4.01)</td>
<td>[X]</td>
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<tr>
<td>Natural Habitats (OP/BP 4.04)</td>
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<td>Pest Management (OP 4.09)</td>
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<td>Physical Cultural Resources (OP/BP 4.11)</td>
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<td>Involuntary Resettlement (OP/BP 4.12)</td>
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<td>Indigenous Peoples (OP/BP 4.10)</td>
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<td>Forests (OP/BP 4.36)</td>
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<td>Safety of Dams (OP/BP 4.37)</td>
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<td>Projects in Disputed Areas (OP/BP 7.60)</td>
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<td>Projects on International Waterways (OP/BP 7.50)</td>
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? : Note: To be determined at Appraisal

As the OP 4.01 is the umbrella policy for the other safeguard requirements, the ESMF has been prepared in a manner which addresses the requirements of other potentially applicable policies such as OP 4.04 (Natural Habitats), OP 4.11 Physical Cultural Resources, OP 4.12 (Involuntary Resettlement), and OP 4.10 (Indigenous Peoples).

Based on the discussions and agreements with the World Bank representatives at an earlier stage, OP 4.12 Involuntary Resettlement will be addressed within the ESMF.

(ii) **Mexican Environmental Regulations**

The ESMF has been developed to follow the local regulations and laws relevant to the Project; in particular, the Administrative Rules on Environmental Impact Assessment (dated May 30, 2000), which provides the basis for assessing environmental and social impacts. Other applicable laws and regulations may include, and are not limited to:
(iii) Public Disclosure

For projects such as the ITIDP, the World Bank procedures require that an ESMF be prepared and publicly disclosed prior to project appraisal. This allows the public and other stakeholders to comment on the possible environmental and social impacts of the project, and for the Appraisal Team to strengthen the frameworks, particularly measures and plans to prevent or mitigate any adverse environmental and social impacts.

Towards this end, the document will be publicly released through the World Bank’s InfoShop, and in public locations in Mexico prior to project appraisal. The documents will be made available in English and Spanish.
2.1 OVERVIEW OF THE NATIONAL LEGISLATIVE REQUIREMENTS

Mexican legislation is based on the Constitution and the General and Organic Laws that dictate the national strategies for the Republic and the principles that rule of law is expected to uphold. These laws are supported by regulations that state the specific actions mandated by law. Finally, more explicit rules are set forth through norms, which may either be mandatory in the form of Mexican Official Norms (NOM) or Voluntary Mexican Norms (NMX). The development of the IT Parks is subject to a variety of sector-specific and federal and state Mexican environmental laws and regulations, as well as some municipal ordinances. The principal laws and regulations that apply in this context are described below.

- **Mexican Political Constitution (Constitución Política de los Estados Unidos Mexicanos- CPEUM)**
  Among the many important principles established by the Constitution is the level of governance at which land-use is to be determined; which is the local level. This gives specific municipalities jurisdiction over the planning of productive activities and makes them an integral player in the establishment of an industrial (or IT) parks.

2.1.1 Laws and Regulations

- **General Law of Ecological Equilibrium and Environmental Protection (Ley General del Equilibrio Ecológico y la Protección al Ambiente- LGEEPA)**
  Environmental impact assessment (EIA) in Mexico is based on this law which states, amongst other things, that an EIA may be performed either at the “particular” level or at the “regional” level (the latter applies in the case of industrial parks and thus the environmental system in which the project must be inserted has a much wider scale).

  This piece of legislation (published in May 2000) sets precise guidelines regarding all the issues that must be considered in the EIA process. According to the RLGEEPAEIA, the ecological baseline (flora and fauna) as well as hydrological and soil dynamics issues must be studied with great
rigor prior to determining a project’s impacts and proposing the corresponding mitigation measures. However, socioeconomic issues are handled at a more general level and no specific consideration of indigenous communities or archeological resources is mandated as part of the evaluation process.

Although social participation is not mandatory as a component of the EIA process in Mexico, federal environmental law (i.e., Article 34 of the LGEEPA) does allow for any element of civil society (communities, NGO’s, Academia, the private sector, etc.) to request a Public Consultation for a project once the EIS has been submitted to the authorities for evaluation. Furthermore, when submitting the EIS, SEMARNAT requires the project promoter to submit a set of the documents specifically for the public to have access to it and make comments to SEMARNAT during its evaluation phase, present additional data, or simply request the public consultation process for the project.

It is important to note that, according to the legislation, the Proponent may maintain certain information from the EIS undisclosed (in the public consultation copies of the document). In order to carry out a public consultation, SEMARNAT must notify the Proponent of its decision to go ahead with it. The mechanism of consultation per se is basically the Informational Meetings format. SEMARNAT can organize the event in coordination with the local authorities.

- Regulation of the General Law of Ecological Equilibrium and Environmental Protection on Atmospheric Pollution Prevention and Control Matters (Reglamento de la Ley General del Equilibrio Ecológico y la Protección al Ambiente en Materia de Prevención y Control de la Contaminación de la atmósfera)

This piece of legislation specifies the permitted emissions of all contaminant gases arising from diverse forms of industrial activity.

- General Law on Waste Prevention and Integral Management (Ley General para la Prevención y Gestión Integral de los Residuos) and its Regulation

In these pieces of legislation, all of the management practices required for every type of solid and hazardous waste are outlined and the various responsibilities of industrial generators regarding waste production are determined in detail. Among the important principles set forth by this law and specified in its regulation is the fact that all industries must ensure proper disposal of their own hazardous and solid waste and have management plans in place. In the context of an industrial park, the conglomeration may choose to have a joint waste management strategy.
• **National Waters Law (Ley de Aguas Nacionales) and its Regulation**
These legislations describe the maximum loads of all water contaminants that a generator may discharge into national waters, the minimum quality that treated water must have before its reuse in diverse contexts, and the process by which water rights may be obtained and maintained. For any industrial park, a critical set of information to document for any inspections from the authorities is that related to water provision (supply and demand) and water quality, particularly relating to sewage and industrial process waters.

• **Wildlife General Law (Ley General de Vida Silvestre)**
This law is very important in the context of any EIA given that it states that attention must be given to flora and fauna prior to any development, especially relating to issues of particularly vulnerable, ecologically valuable, or endangered species.

• **Labor Federal Law (Ley Federal del Trabajo) and Regulation of Federal Labor Environmental, Health, and Safety (Reglamento Federal de Seguridad, Higiene y Medio Ambiente de Trabajo)**
These laws and regulation primarily support occupational health and safety and will be of paramount importance in the establishment and operation of an IT Park.

2.1.2 **Norms**

With regards to the establishment and operation of IT Parks, the most important Mexican Norm in this context is the Classification of Industrial Parks Norm (NMX-R-046-scfi-2005) in which the specifications regarding infrastructure, resource use, green space, and other attributes of an industrial park in Mexico are outlined in very detailed terms, including the requirement for an EIA.

Some of the norms that have been established in order to support the above laws and regulations include:

- Environmental Specifications for Liquid and Gaseous Fossil Fuels Used in Stationary and Mobile Sources (NOM-086-SEMARNAT-SENAR-SCFI-2005)
- Solid Particulate Air Pollution Emissions from Stationary Sources (NOM-043-ECOL-1993)
- Noise Emission from Stationary Sources (NOM-081-SEMARNAT-1994)
In terms of the ancillary infrastructure and services that the industrial park will require, the following norms are applicable:


In regards to occupational health and safety, nearly 40 NOMs are in place, the most important of which is:

- Buildings, installations, and workplace health and safety conditions (NOM-001-STPS-1999)

Finally, although it is a Norm Project (meaning it is still under development and not official yet) the following guidelines are directly related to the establishment of an industrial park:

- Information Requirements for the Provision of Real Estate Services and the Purchase/Sale of Real Estate Property (PROY-NOM-112-SCFI-1995)

2.1.3 State Legislation

Regardless of the final location of the IT Park, all federal states have an official environmental law to manage their jurisdiction. These laws are in line with the LGEEPA but specify certain criteria for the State’s particular ecosystems. For example:
Finally, municipal regulatory instruments are also very important and traditionally the first point of contact between a project and the “authorities”. The most important local permits in the context of the IT Parks include:

- Municipal Urban Land Use Plans (Planes de Uso de Suelo Urbano Municipales and
- Reglamentos de Construcción Municipales (Municipal Construction Regulations)

Both of these legislative instruments are designed to guide the special distribution of economic activities in the locality and provide the guidelines for accepted densities and other issues regarding environmental planning. It is important to note that since municipal governments change every 3 years in Mexico, these plans are regularly revised and updated.
3 INSTITUTIONAL AND REGULATORY FRAMEWORK

3.1 OVERVIEW OF THE INSTITUTIONAL AND REGULATORY FRAMEWORK FOR ENVIRONMENTAL MANAGEMENT

The Federal Public Administration Organic Law (Ley Orgánica de la Administración Pública Federal) is the legislation that stipulates the faculties of different federal agencies in Mexico. According to this Law (Article 32 Bis), the main purpose of the Secretariat of Environment and Natural Resources (Secretaría del Medio Ambiente y Recursos Naturales or SEMARNAT) is to issue and oversee compliance with legislation on environment and natural resources management. As part of this responsibility, EIAs in Mexico are evaluated and either authorized, conditionally authorized, or rejected by SEMARNAT.

All development projects in Mexico require some level of EIA, from a Preliminary Report (Informe Preventivo) that is carried out for projects in already developed areas, to a regional Environmental Impact Statement (EIS – Manifestación de Impacto Ambiental) that inserts the project in a larger environmental context and requires extensive baseline data collection. Beyond the description of the current ecological conditions on site, an EIS must include an impact analysis and a mitigation proposal on how to reduce said impacts. The EIS must address the site-preparation phase, the construction phase, and the operational phase. This document must be authorized or approved through an official resolution prior to the start of any development activity regarding the project (according to Article 28 of the LGEEPA).

Another important permitting process administered by SEMARNAT is the Technical Justificative Study (Estudio Técnico Justificativo—ETJ) that determines the loss of forest resources that will come from the project (as forested land must change its land-use scheme) and the corresponding compensation to the Federal Government. Only in the event that the IT Park is sited in a greenfield under some potential forested land-use will an ETJ be necessary.
3.2 FEDERAL AGENCIES WITH A ROLE IN THE ESMF IMPLEMENTATION PROCESS

a) Secretariat of Economy

The principal responsibility of Secretariat of Economy (SoE) within the Federal Government is to promote business competitiveness and economic growth in the country, thus promoting both the IT industry and the development of industrial activity clusters, such as IT Parks. In the eyes of the SoE, IT as a sector brings a positive effect across a number of areas of the economy. It is the goal of the SoE to continue developing and implementing the strategies that will make Mexico the Latin American leader in the IT industry. In terms of the mechanisms and supervision outlined in this ESMF, the Direction of Digital Economy (Dirección de Economía Digital – DDE), within the SoE, will be the project implementing unit (PIU) and primary counterpart to the lender. An Environmental Specialist will be assigned within the DDE for ensuring that the ESMF recommendations are met. It will be important to provide capacity building to ensure an adequate monitoring and implementation of the ESMF.

b) Secretariat of Environment and Natural Resources

In charge of all the environmental permitting processes described above, this agency will play a key role in evaluation of the environmental and social impacts of the project.

c) Labor and Social Prevision Secretariat

The Labor and Social Prevision Secretariat (Secretaría del Trabajo y Previsión Social) is the federal agency that will monitor compliance with Mexican labour regulations and norms, including occupational health and safety.

d) Secretariat of Agrarian Reform

In regards to resettlement issues, the principal agency that overlooks the fair compensation (monetary and in kind) of resettled communities is the Secretariat of Agrarian Reform (Secretaría de Reforma Agraria), which administers the communal lands (ejidos) that cover close to 50% of the Mexican territory. Its main goal is to assure the legal possession of private land through land-use planning and regularization. In regards to the ESMF, it will be responsible for the appraisal and approval of the Resettlement Action Plan (RAP), if the RAP is required.

e) National Commission for the Development of Indigenous Peoples
The National Commission for the Development of Indigenous Peoples (Comisión Nacional para el Desarrollo de los Pueblos Indígenas) is the federal institution in charge of promoting and overseeing all issues related to indigenous communities. However, in many cases communities are not exclusively indigenous and are therefore looked after in broader terms by the Social Development Secretariat (Secretaría de Desarrollo Social). Given that urban development and land-use is administered in this agency, it would be at the forefront of the resettlement issue in the event that the lands are not communal (ejiditarias, in which case it would be the Secretariat of Agrarian Reform). If deemed necessary to develop an IPP for the project, it will be submitted to this agency.

f) National Institute of Anthropology and History

In terms of archeological resources, all matters are regulated and administered by the National Institute of Anthropology and History (Instituto Nacional de Antropología e Historia – INAH). It is important to mention that the EIA process does not require an archeological survey as part of the baseline studies for an EIS and these are still voluntary. However, if this agency is aware of or suspects of the existence of archeological resources in the project area, it may stop all development works until the area has been surveyed. Whether a project proponent decides to proactively include archeological resources in the EIS baseline surveys or if these are mandated later on by the INAH, the proponent is required to pay for the costs of exploration, salvage, and/or on-site conservation of the resources. The INAH eventually issues liberation of the site after it is convinced that all important vestiges have been salvaged.

3.3 REGIONAL AND LOCAL AGENCIES WITH A ROLE IN THE ESMF IMPLEMENTATION PROCESS

Beyond the federal stakeholders, some of the regional and local actors that will also prove instrumental in the implementations of the ESMF include the State Economic Development Agencies (that promote diverse and/or specialized economic activities in different parts of the state. The State Environmental Agencies will not come into play as much given that the EIS process will be completely overseen at the federal level, this of course given the nature of the proposed project (IT Parks).
At the municipal level, the principal authority that will have a part in the project is the City Hall (Ayuntamiento). Within this administration there will be specific Municipal Land-Use Authorities and Municipal Construction Authorities, both of which will be in charge of developing short-term and long-term plans for the development of the municipality and issue the corresponding regulations.
4 GENERAL ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

4.1 INTRODUCTION

This section describes the potential positive and negative environmental and socio-economic related impacts of the ITIDP, specifically in relation to the public component on Supporting Infrastructure (i.e. IT Parks), to be financed by the World Bank. The impact assessment will focus on industrial and real estate construction and operation (i.e., roads; power and gas supply; water supply; waste water treatment; waste collection, treatment and disposal; fiber optic and telecommunications supply; security; and other common services).

The impact identification is based on:

- ERM’s experience and understanding of the potential environmental and socio-economic related impacts in the real estate and IT parks development sector likely to arise from the planned investments to be financed by the World Bank under the ITIDP;
- Guidelines provided in the OP 4.01 Environmental Assessment and other applicable policies (i.e. OP 4.12 Involuntary Resettlement, OP 4.10 Indigenous Populations);
- Construction and Decommissioning section, from IFC’s General Environmental, Occupational, Health and Safety Guidelines, April 2007; and
- Other sources of information provided by the World Bank from ongoing IT Park development projects in Mexico (www.piit.com.mx)

In addition, cost-effective and attainable mitigation measures are identified and recommended to avoid and reduce negative impacts.

4.2 ENVIRONMENTAL IMPACTS

4.2.1 Environmental Benefits

A significant environmental benefit of the development of IT parks is the opportunity to take advantage of economies of scale by providing common
wastewater and solid waste management facilities. Individual units, however, must still meet specific discharge or pre-treatment guidelines. The guidelines at a particular IT park will depend on the business mix and type of scale of common facilities. The guidelines for each unit should be described in detail as part of the unit’s contract with the park.

The development of IT parks encourages the environmental planning and fosters sustainable regional development infrastructure options. The benefits of environmental planning associated with the development of IT parks, is the provision of world class infrastructure in select areas, as IT parks are not constrained by availability of natural resources or raw materials. In addition, clustering industrial, commercial and academic uses of land, allows for the enhancement of sustainable residential, recreational and protected offsite areas.

4.2.2 Noise and Vibration

Potential impacts

During construction activities, noise and vibration may be caused by the operation of pile drivers, earth moving and excavation equipment, concrete mixers, cranes and the transportation of equipment, materials and people. Noise and vibrations are not likely to be generated during operations.

Mitigation measure

Some recommended noise reduction and control strategies to consider during construction in areas close to community areas include:

- Planning activities in consultation with local communities so that activities with the greatest potential to generate noise are planned during periods of the day that will result in least disturbance.
- Using noise control devices, such as temporary noise barriers and deflectors for impact and blasting activities, and exhaust muffling devices for combustion engines.
- Avoiding or minimizing project transportation through community areas
4.2.3 **Soil Erosion**

*Potential impacts*

Soil erosion may be caused by exposure of soil surfaces to rain and wind during site clearing, earth moving, and excavation activities. The mobilization and transport of soil particles may, in turn, result in sedimentation of surface drainage networks, which may result in impacts to the quality of natural water systems and ultimately the biological systems that use these waters. During operation, most of the project area will be paved, built or green areas, thus, soil erosion is not likely to occur.

*Mitigation measure*

Recommended soil erosion and water system management approaches are:

- Reducing or preventing erosion caused by sediment mobilization and transport during construction through:
  - Scheduling to avoid heavy rainfall periods (i.e., during the dry season) to the extent practical
  - Contouring and minimizing length and steepness of slopes
  - Mulching to stabilize exposed areas
  - Re-vegetating areas promptly, where appropriate
  - Designing channels and ditches for post-construction flows
  - Lining steep channel and slopes (e.g. use jute matting)
- Reducing or preventing off-site sediment transport during construction through use of settlement ponds, silt fences, and water treatment, and modifying or suspending activities during extreme rainfall and high winds to the extent practical.
- In road design during construction, limiting access road gradients to reduce runoff-induced erosion and providing adequate road drainage based on road width, surface material, compaction, and maintenance
- Depending on the potential for adverse impacts, installing free-spanning structures (e.g., single span bridges) for road watercourse crossings to prevent disturbance of water bodies.
- Avoiding steep slopes to maintain structural (slope) stability
- Providing effective short term measures for slope stabilization, sediment control and subsidence control until long term measures for the operational phase can be implemented
- Providing adequate drainage systems to minimize and control infiltration
• Road preventive maintenance during operation and early detection and repair of structures.

4.2.4 Air Quality

Potential impacts

Construction activities may generate emission of fugitive dust caused by a combination of on-site excavation and movement of earth materials, contact of construction machinery with bare soil, and exposure of bare soil and soil piles to wind. A secondary source of emissions may include exhaust from diesel engines of earth moving equipment, as well as from open burning of solid waste on-site. During operation, emissions may be generated from kitchen stacks; air conditioning and central heating systems; fuel storage tanks (if present); and diesel motor vehicles. Specific emissions related to laboratories; pilot plants; design and production of prototypes; semiconductor and electronics manufacturing (that could potentially be built) include greenhouse gases, toxic, reactive, and corrosive substances (for example, acid fumes, dopant, cleaning gases, and volatile organic compounds [VOCs]), resulting from diffusion, cleaning, and wet-etching processes.

Mitigation measure

Techniques to consider for the reduction and control of air emissions include:

During construction:
• Minimizing dust from material handling sources, such as conveyors and bins, by using covers and/or control equipment (water suppression, bag house, or cyclone)
• Minimizing dust from open area sources, including storage piles, by using control measures such as installing enclosures and covers, and increasing the moisture content
• Dust suppression techniques should be implemented, such as applying water or non-toxic chemicals to minimize dust from vehicle movements
• Managing emissions from mobile sources
• Avoiding open burning of solid
• Considering height and wind direction when planning the location of stacks
During operation and maintenance:
- Managing emissions from mobile sources, including preventive maintenance.
- Avoiding open burning of solids
- Using vapor recovery systems, where applicable, to control losses of volatile organic compounds (VOC’s) from storage tanks.
- Implementing appropriate filters in stacks

4.2.5 Solid Waste

Potential impacts

Non-hazardous solid waste generated at construction sites includes excess fill materials from grading and excavation activities, scrap wood and metals, and small concrete spills. Other non-hazardous solid wastes generated during construction and operation includes office, kitchen, and domestic wastes.

Hazardous solid waste includes spent solvents and oily rags, empty paint cans, chemical containers; used lubricating oil; used batteries (such as nickel-cadmium or lead acid); and lighting equipment, such as lamps or lamp ballasts. Specific facilities, such as laboratories; pilot plants; design and production of prototypes; and potentially semiconductors and electronic manufacturing, may include special hazardous wastes, such as those generated from spent cleaning solutions, sludge from wastewater treatment, spent epoxy material (printed circuit board [PCB] and semiconductor manufacturing), spent cyanide solutions (electroplating), and soldering fluxes and metals residue (printed circuit board assembly [PCBA]).

Mitigation measure

Techniques for preventing and controlling non-hazardous and hazardous construction site solid waste include:

General Waste Management:
- Waste Management Planning: Facilities that generate waste should characterize their waste according to composition, source, types of wastes produced, generation rates, or according to local regulatory requirements.
• Waste Prevention: Processes should be designed and operated to prevent, or minimize, the quantities of wastes generated and hazards associated with the wastes generated.

• Recycling and Reuse: In addition to the implementation of waste prevention strategies, the total amount of waste may be significantly reduced through the implementation of recycling plans.

• Treatment and Disposal: If waste materials are still generated after the implementation of feasible waste prevention, reduction, reuse, recovery and recycling measures, waste materials should be treated and disposed of and all measures should be taken to avoid potential impacts to human health and the environment. Selected management approaches should be consistent with the characteristics of the waste and local regulations, and may include one or more of the following:
  o On-site or off-site biological, chemical, or physical treatment of the waste material to render it non-hazardous prior to final disposal
  o Treatment or disposal at permitted facilities specially designed to receive the waste. Examples include: composting operations for organic non-hazardous wastes; properly designed, permitted and operated landfills or incinerators designed for the respective type of waste; or other methods known to be effective in the safe, final disposal of waste materials such as bioremediation.

Hazardous Waste Management

• Segregation: Hazardous wastes should always be segregated from non-hazardous wastes. If generation of hazardous waste can not be prevented through the implementation of the above general waste management practices, its management should focus on the prevention of harm to health, safety, and the environment, according to the following additional principles.

• Waste storage: Hazardous waste should be stored so as to prevent or control accidental releases to air, soil, and water resources.
  o Appropriately label storage containers for each type of hazardous waste
  o Prevent the commingling or contact between incompatible wastes, and allows for inspection between containers to monitor leaks or spills.
  o Store in closed containers away from direct sunlight, wind and rain
  o Secondary containment systems should be constructed with materials appropriate for the wastes being contained and adequate to prevent loss to the environment
  o Provide adequate ventilation where volatile wastes are stored.
Hazardous waste storage activities should also be subject to special management actions, conducted by employees who have received specific training in handling and storage of hazardous wastes.

Avoiding underground storage tanks and underground piping of hazardous waste

- Transportation: On-site and Off-site transportation of waste should be conducted so as to prevent or minimize spills, releases, and exposures to employees and the public. All waste containers designated for off-site shipment should be secured and labeled with the contents and associated hazards, be properly loaded on the transport vehicles before leaving the site, and be accompanied by a shipping paper (i.e., manifest) that describes the load and its associated hazards.

- Treatment and Disposal: In addition to the recommendations for treatment and disposal applicable to general wastes, the following issues specific to hazardous wastes should be considered:
  - In the absence of qualified commercial or government-owned waste vendors (taking into consideration proximity and transportation requirements), facilities generating waste should consider having all required permits, certifications, and approvals, of applicable government authorities.
  - In the absence of qualified commercial or government-owned waste disposal operators (taking into consideration proximity and transportation requirements), project sponsors should consider installing on-site waste treatment or recycling processes. As a final option, constructing facilities that will provide for the environmental sound long-term storage of wastes on-site (as described elsewhere in the General EHS Guidelines) or at an alternative appropriate location up until external commercial options become available.

### 4.2.6 Hazardous Materials

**Potential impacts**

Construction activities may pose the potential for release of petroleum based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment. These materials may also be encountered during decommissioning activities in building components or industrial process equipment. During operation, hazardous substances may include PCB’s from transformers and generators; and stored fuels, diesel and lubricants. Other specific hazardous materials may come from laboratories; pilot plants and manufacturing.
Mitigation measure

Techniques for prevention, minimization, and control of these impacts during construction and operation include:

• Providing adequate secondary containment for fuel storage tanks and for the temporary storage of other fluids such as lubricating oils and hydraulic fluids,

• Using impervious surfaces for refueling areas and other fluid transfer areas

• Training workers on the correct transfer and handling of fuels and chemicals and the response to spills

• Providing portable spill containment and cleanup equipment on site and training in the equipment deployment

• Assessing the contents of hazardous materials and petroleum-based products in building systems (e.g. PCB containing electrical equipment, asbestos-containing building materials) and process equipment and removing them prior to initiation of decommissioning activities, and managing their treatment and disposal.

• Assessing the presence of hazardous substances in or on building materials (e.g., polychlorinated biphenyls, asbestos containing flooring or insulation) and decontaminating or properly managing contaminated building materials

4.2.7 Wastewater Discharges

Potential impacts

Construction activities may include the generation of sanitary wastewater discharges in varying quantities depending on the number of workers involved. Adequate portable or permanent sanitation facilities serving all workers should be provided at all construction sites. During operation, sanitary wastewater from commercial and industrial facilities may include effluents from domestic sewage, food service, and laundry facilities serving site employees. Miscellaneous wastewater from laboratories, medical infirmaries, water softening etc. may also be discharged to the sanitary wastewater treatment system. Adequate sanitation facilities should be provided.

Process wastewater from a number of semiconductor and PCBA manufacturing steps (if these are built within IT parks) during operation and manufacturing may include organic compounds, particularly non-
chlorinated solvents (e.g. pyrrole-based, amine-based, fluoro / ether-based resists, isopropyl alcohol, and tetramethylammonium hydroxide) from cleaning, resist drying, developing, and resist stripping; metals and cyanides from metallization and CMP processes; acids and alkalis from spent cleaning solutions, process operations such as etching, cleaning, and metallization, among others; and suspended solids from film residues and metallic particles (derived from photolithography, metallization, backgrinding, and dicing processes).

**Mitigation measure**

Recommended sanitary wastewater management strategies include:

- Segregation of wastewater streams to ensure compatibility with selected treatment option (e.g. septic system which can only accept domestic sewage);
- Segregation and pretreatment of oil and grease containing effluents (e.g. use of a grease trap) prior to discharge into sewer systems;
- If sewage from the industrial facility is to be discharged to surface water, treatment to meet national or local standards for sanitary wastewater discharges or, in their absence, the indicative guideline values applicable to sanitary wastewater discharges;
- If sewage from the industrial facility is to be discharged to either a septic system, or where land is used as part of the treatment system, treatment to meet applicable national or local standards for sanitary wastewater discharges is required.
- Sludge from sanitary wastewater treatment systems should be disposed in compliance with local regulatory requirements, in the absence of which disposal has to be consistent with protection of public health and safety, and conservation and long term sustainability of water and land resources.

**4.2.8 Energy consumption**

**Potential impacts**

Energy consumption in IT parks is expected to include significant power and gas use during operation mainly from the use of computer equipment and other energy sourced equipment, as well as artificial illumination.

**Mitigation measures**

- Implement world class equipment that reduces the energy consumption.
• Install, where applicable, equipment ran by renewable energy systems, such as solar energy.
• Install adequate peak reduction systems and backup generators and transformers.
• Educate and create consciousness among users in energy saving practices within the buildings.

4.2.9 Biological and ecological impacts

Potential impacts

The main impacts associated to the development of IT parks are a consequence of the change of land use in the project area. The magnitude of the impact will depend on the nature of the area, being greater in greenfields located in close proximity to protected areas, wetlands, ecologically sensitive areas or areas of cultural interest; and lower in brownfields located in the outskirts of the cities or where industrial development has already occurred.

In greenfields located close to natural habitats, it will be important to consider individual groups and species that might be of interest for conservation, including endemic and endangered species; as well as those species that make seasonal use of the area (breeding, migration, etc.).

Mitigation measures

• Areas in close proximity to protected areas, natural habitats, ecologically sensitive areas or areas of cultural interest should be avoided.
• The creation of compensation areas or habitat enhancement within and/or outside the project area (offsite) may be useful mitigation measures where the natural habitat change is assessed as detrimental.
• The creation of a conservation fund that may finance training and investigation of natural habitats or species of interest may be considered.

4.3 Socioeconomic impacts

4.3.1 Socioeconomic Benefits

Socioeconomic benefits are derived from higher living standards, the establishment of knowledge-based companies, innovation, increased employment and academic opportunities, networking of research organizations and private industry. It has been observed that IT parks generate spill-over effects leading to a virtuous cycle of local economic
development. IT park development helps generate impetus to local development of industries like real estate, retail, lifestyle & recreation, etc.

4.3.2 Involuntary Resettlement

Potential impacts

Involuntary physical or economic resettlement during land acquisition to develop the IT parks may include: loss of shelter; loss of assets or access to assets; or loss of income sources or means of livelihood, whether or not the affected persons must move to another location. Specific impacts to project affected persons include:

- Compulsory acquisition of land, property, and business
- Economic losses for affected individuals and farm families with a temporary or permanent loss of income for subsistence
- People with fewer resources and skill become more vulnerable
- Social disruption and break up of family ties due to displacement and relocation
- Health problems and various forms of psychological depression
- Loss of community benefits and social disintegration

Mitigation measure

- IT park locations should preferably be located in the outskirts of the cities, with commuting access (i.e. roads, train, public transportation, airports) to universities and residential areas in order to attract human capital. State-owned land will be preferred as opposed to private land.
- Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs.
- Where it is not feasible to avoid resettlement, resettlement activities should provide sufficient investment resources to enable the persons displaced by the project to share in project benefits. Displaced persons should participate in planning and implementing resettlement programs and should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.
- If a subproject is identified to require resettlement; a Resettlement Action Plan should be prepared (see Section 5.4.1).
4.3.3 Migration

Potential impacts

Investment projects, such as IT parks, may attract temporary migration during construction and operation as they generate secondary or spill-over effects of associated services such as restaurants, recreation, and transport. These services are usually installed outside the park boundaries and may generate own environmental and social impacts.

Mitigation measure

Migration impacts should be assessed and anticipated with the provision of adequate accommodations and attention to labour demands. Short-term support may be provided during construction and during operation, specific regulations should be established by the local governments.

4.3.4 Indigenous Peoples

Potential impacts

Indigenous peoples, although unlikely to be encountered in the outskirts of the cities, where the subprojects may be developed, should be considered during the EIA. Impacts to these vulnerable groups include loss of identity, culture, and customary livelihoods, as well as exposure to disease. In addition, indigenous populations might have limited capacity to defend their interests in and rights to lands, territories, and other productive resources, and/or restricts their ability to participate in and benefit from development.

Mitigation measure

- Avoid the development of IT parks where indigenous communities are present in or have collective attachment to the area.
- If indigenous peoples are present in, or have collective attachment to, the project area, a social assessment to evaluate the project’s potential positive and adverse effects on the Indigenous Peoples, and to examine project alternatives where adverse effects may be significant, should be performed.
- Engage free, prior, and informed consultation with the indigenous peoples’ communities during project appraisal, implementation, monitoring, and evaluation.
• Install additional measures, including project design modification that may be required to address adverse effects on the indigenous peoples and to provide them with culturally appropriate project benefits.
• Any formal agreements reached with Indigenous Peoples’ communities and/or their organizations.

4.3.5 Physical Cultural Resources

Potential impacts

Archaeological findings may be encountered and potentially damaged during excavation activities of construction works. Culturally sensitive areas (i.e. where cultural practices or artefacts are evident) may become impacted both by construction and operation works, by modifying the religious or cultural value of a certain area.

Mitigation measure

• Assess the potential for existence of physical cultural resources during site selection.
• If physical cultural resources may be lost, full site protection should be implemented.
• Provisions for managing chance finds, salvage and documentation.
• In sensitive sites, have experts supervise construction works, and stop work in case findings are encountered and a survey must be carried out.
• Training of personnel for recognition of findings and notification to supervisor.
• Control access to site where finding occurred.

4.3.6 Community Health and Safety

Potential impacts

• General Site Hazards: Construction activities for IT parks development should implement risk management strategies to protect the community from physical, chemical, or other hazards. Risks may arise from inadvertent or intentional trespassing, including potential contact with hazardous materials, sharp objects, and other environmental media; manipulation of heavy vehicles (i.e. cargo trucks, front loaders, etc.); buildings under construction, or excavations and structures which may pose falling and entrapment hazards.
• Traffic Safety: Construction activities may result in a significant increase in movement of heavy vehicles for the transport of construction
materials and equipment increasing the risk of traffic-related accidents and injuries to workers and local communities. The incidence of road accidents involving project vehicles during construction should be minimized through a combination of education and awareness-raising.

- Ergonomic effects: related to repetitive movement and heavy weight, during construction activities. During operations, ergonomic effects may arise from inappropriate work stations (i.e. computer desks, laboratories, etc.).

**Mitigation measure**

- Risk management strategies may include restricting access to the site, through local government regulations and a combination of institutional and administrative controls with a focus on high risk structures or areas depending on site-specific situations, including fencing, signage, and communication of risks to the local community. Other measures include, removing hazardous conditions on construction sites such as covering openings to small confined spaces, ensuring means of escape for larger openings such as trenches or excavations, or locked storage of hazardous materials.
- Traffic safety hazards may be reduced by implementing defensive driving training, traffic signaling within the parks, record keeping and investigation of accidents; as well as preventive maintenance controls for vehicles.
- Ergonomic issues should be assessed for permanent and temporary workers and implement specific measures including appropriate work stations. Ergonomic surveys should be conducted at a regular basis and implement corrective measures.

4.3.7 **Community Disenfranchisement**

**Potential impacts**

With the development of IT Parks in the outskirts of cities, there may be a potential to rupture connections or lines of communication in the existing communities. This may happen physically if the IT Park becomes an urban barrier by siting it in the middle of a previously used direct route of transportation. However, the community disenfranchisement may also happen at the social level if the IT Park fails to hire locals and predominantly favours skilled labour external to the area or if the park lacks an adequate grievance mechanism in order to receive timely feedback from the communities in which it is inserted.
Mitigation measure

- Avoid siting IT Parks in locations that currently serve as a communication lane.
- Ensure an adequate consultation and public participation process to understand the concerns and expectations of the local populations.
- Ensure as part of the IT Park’s policy that workforce will be hired from the local communities.
- Ensure that an adequate grievance mechanism is established prior to the IT Park’s operation.
This section sets out the environmental and social impact assessment procedures, reporting systems, and responsibilities to be adopted by the Direction of Digital Economy (DDE, as the PIU) during the implementation of the ESMF for the ITIDP. As the locations for the subprojects are not clearly identified at this stage, it is important to have the appropriate tools in place to assist the DDE in screening these activities and implementing adequate measures to fully address any likely impacts.

It is envisioned that the proposed screening and appraisal process will be used primarily for investments to be financed under the Component for Supporting Infrastructure, as these involve the establishment and construction of IT Parks and related services.

The design of this assessment process is based on a review of the tools developed by a number of previous World Bank-financed projects (source: *Environmental and Social Management Framework “Toolkit” for Projects with Multiple Small Scale Subprojects, World Bank, 2003*) and complies with both the World Bank’s safeguard policies and the Mexican environmental guidelines.

5.1 SCREENING AND REVIEW

*Figure 5.1* illustrates the process for screening and review of investments to be financed under the ITIDP.

(a) Screening and classification of subprojects

Once the subproject activity is defined and the location has been selected, a screening form will need to be filled out by the Proponent (see *Annex 1*). The form will allow for identification and classification of the potential environmental and social impacts associated with the proposed activity. Based on the impact classification, the Proponent can determine whether an Environmental Impact Assessment (EIA) may be required or whether an Environmental Management Plan (EMP) outlining mitigation and monitoring clauses for contractors is sufficient.

The screening form will also be used to identify whether involuntary resettlement or displacement of project affected parties will result from the activity, recommending a Resettlement Action Plan (RAP).
### Figure 5.1 Proposed Screening, Review and Appraisal Process

#### Subproject Appraisal Process

- **Application for subproject by Proponent**

#### Corresponding Safeguard Requirements

<table>
<thead>
<tr>
<th>Step</th>
<th>Low risk</th>
<th>Medium risk</th>
<th>High risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Subproject Screening</td>
<td>Identification of subproject</td>
<td>Screening determination (low or high risk)</td>
<td></td>
</tr>
</tbody>
</table>
| 2. Impact assessment | - Develop generic mitigation and monitoring measures for subproject sectors  
- Apply environmental conditions in contract agreements | - Develop and implement an EMP for each subproject  
- Apply environmental conditions in contract agreements | - Carry out a subproject specific EA study  
- Develop subproject specific EMPs (and RAPs if applicable)  
- Apply environmental conditions in contract agreements |
| 3. Environmental and social review | EMPs (and RAPs) reviewed by local Environmental and Social Specialists (or technical service providers e.g. NGOs)  
Subproject approved on the basis of environmental and social review findings |  |  |
| 4. Subproject implementation | Implement mitigation measures under the EMP (and RAP) for subprojects  
Training of project staff, local govt officers, and communities in EMP (and RAP) implementation |  |  |
| 5. Environmental and social monitoring | Monitor environmental and social compliance, pollution abatement, and EMP (and RAP) implementation  
Carry out annual environmental and social audits for subprojects |  |  |
The following table provides an indication of the level of impact typically associated with proposed activities to be financed under the component to Supporting Infrastructure (i.e. IT Parks). The classification structure is based on the World Bank OP 4.01 environmental categories (A, B, and C) (see http://go.worldbank.org/OSARUT0MP0) and relevant IFC Guidelines (see http://www.ifc.org/ifcext/enviro.nsf/Content/EnvironmentalGuidelines) and is defined as follows:

- **High risk** activities are those which will result in significant environmental and social impacts and will require an EIA (and/or a RAP).
- **Medium risk** activities are those which result in environmental and social impacts but do not require an EIA as they can be adequately mitigated and addressed through the insertion of clauses in the construction and operation contracts as outlined in the subproject’s Environmental Management Plan.
- **Low risk** activities are those which pose minimal or no environmental and social impacts as they tend not to be infrastructure related (i.e. provision of services, equipment, etc).

<table>
<thead>
<tr>
<th>Types of activity</th>
<th>High / (A)</th>
<th>Medium / (B)</th>
<th>Low / (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Real estate development (greenfield) in vicinity to nature reserves, ecologically sensitive areas and/or areas of cultural interest</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>• Real estate development (brownfield) in existing parks or industrial areas</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>• New construction of roads, bridges, access routes</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Extension to existing roads and access routes</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>• Provision of water and wastewater treatment services for IT parks</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>• Installation of waste treatment or storage facilities for IT parks</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>• Power and gas supply for IT parks</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>• Provision of optic fiber/telecom services for IT parks</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>• Supplies storage for IT parks</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>• Semiconductor (chip) manufacturing (potentially built; no other manufacturing projects will be accepted)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(b) Scoping and field appraisal

If the information provided in the screening form is found inadequate to make a decision regarding the subproject’s classification, the Proponent should undertake a more detailed investigation of the potential impacts through a field appraisal. Information collection for this exercise will be achieved through observation and use of professional expertise and, in some cases, interviews with the local people could also provide information regarding human use values and/or environmental significance.

As part of the scoping and field appraisal, the Proponent shall identify the major stakeholders and community groups within the affected area that are likely to be impacted. A list of potentially affected groups shall be compiled and appended to the appraisal report.

(c) Identifying alternatives to subproject design

For subprojects which are deemed high risk, as they may result in significant impacts, the Proponent will re-assess the location and design of the subproject to evaluate whether there are no alternatives which may minimize or avoid these potential environmental and social impacts. If an alternative is not feasible, then the Proponent must follow local requirements for the preparation of an EIA (refer to Figure 5.2).

5.2 Appraisal

(d) Appraisal and Approval

For Category A subprojects requiring an EIA:

The Proponent will submit a copy of the EIA to SEMARNAT (refer to Figure 5.2). This should include all relevant information (as outlined in the country’s legislative requirements – refer to Section 2), namely an EMP, a set of environmental contract clauses and a summary of public consultations carried out. Annex 2 provides a sample Terms of Reference for preparation of an EIA.

For subprojects which may result in involuntary resettlement or displacement of people, the Proponent is also required to submit a RAP (see Section 5.4.1) to the Secretariat of Agrarian Reform for approval as well as the corresponding Municipal Land Use Authorities.
Figure 5.2 Mexican Environmental Impact Assessment Process for Subprojects

- **Environmental Impact Preliminary Report**
- **Publications of Application**
- **Public Review**
- **Technical Area**
  - (DGMEC, DGZPMT, DGVS & others)
- **Evaluation by the DGIAR**
- **Resolution (Arts 35 y 35 bis)**
  - Within 60 days upon studies submittal
- **Public Hearing if required and SEMARNAT agrees**
- **Public Opinions Reception (if any)**
- **Additional Information or Studies?**
  - Additional copies required?
  - Yes
  - No
- **Within 10 days**
- **Within 20 working days**
- **Within 10 days**
- **Within 20 days after file integration**
- **Within 60 days upon studies submittal**
- **Within 10 days**
- **If no insurance or bond proof is submitted by the applicant SEMARNAT can stop the project**
- **No**
- **Yes**
- **Additional Information or Studies?**
  - Additional copies required?
  - Yes
  - No
- **Within 40 days after file integration**
- **Sanctions determination by PROFEPA**
- **All conditions were observed?**
  - Yes
  - No
- **The project proceeds, must comply with all applicable regulations**
- **Requires insurance or bond?**
  - Insurance or bond cancellation by SEMARNAT
  - All conditions were observed?
  - Yes
  - No
- **If no answer is obtained after 20 labour days then it is understood that the project was authorized as stated**
- **Resolution:**
  - Authorization of the project as stated
  - Conditioned authorization
- **Local SEMARNAT Office Reception Counter**
- **Notification to local authorities Art 28 (Apart. 4, 9, 9 & 11)**
- **Contents review and file integration**
  - Within 10 days
- **Request of additional Information**
- **Within 10 days**
- **Additional Information submittal**
- **Within 60 days upon studies submittal**
- **Preventive report only in cases established in the Art. 29, otherwise prepare particular or regional EIS**
  - Within 40 days after file integration
- **Technical area**
  - (DGMEC, DGZPMT, DGVS & others)
- **Additional Information submittal**
- **Publications of the application**
- **Public Review**
- **Technical area**
  - (DGMEC, DGZPMT, DGVS & others)
For Category B subprojects which require an EMP:

The Proponent will submit a copy of the EMP to SEMARNAT. This can be considered the equivalent of an Environmental Impact Preliminary Report as specified in the Law (refer to Figure 5.2) and the subproject can be authorized without an EIA.

The objective of the EMP is to cater to the environmental and social needs of the project in a simple, responsive and cost effective manner that will not unnecessarily overload or impede the project cycle. Moreover, a good EMP should demonstrate that proposed monitoring activities will encompass all major impacts and identify how they will be integrated into project supervision.

(i) Preparing an EMP

The EMP should be a simple two to four page document outlining the following:

- Potential environmental and social impacts related to siting, construction and operation of the subproject
- Mitigation and monitoring measures to address potential impacts
- Responsibilities for monitoring EMP requirements
- Training and capacity building requirements for project officers and communities
- Estimated budget for implementation and training

Templates for an EMP are provided in Annex 3.

The Proponent is required to include environmental contract clauses in the Technical Specifications and account for these measures in the subproject implementation budget. Annex 4 provides a set of recommended contract clauses to include in contractor agreements.

(ii) Supervision of the EMP

Supervision of the EMP by DDE, along with other aspects of the project, covers monitoring, evaluative review and reporting and is designed to:

- determine whether the project is being carried out in conformity with environmental safeguards and legal agreements;
- identify problems as they arise during implementation and recommend means to resolve them;
- recommend changes in project concept/design, as appropriate, as the project evolves or circumstances change; and
- identify the key risks to project sustainability and recommend appropriate risk management strategies to the Proponent.
It is vital that an appropriate environmental supervision plan is developed with clear objectives to ensure the successful implementation of an EMP.

**(iii) Budget**

The EMP for each subproject will outline the appropriate budget required to implement measures for mitigation and monitoring. It will also indicate the costs of training and capacity building required. Costs should be calculated based on estimates provided by Contractors for any mitigation measures required during the civil works. For example:

- Costs of ensuring the appropriate dust suppression mechanisms are in place during excavation works must be calculated and included in the tender documents;
- Costs of installing erosion control measures should be estimated as part of the engineering costs;
- Training of staff on environmental and occupational, health and safety (OHS) issues should be outlined in detail;
- Costs of monitoring noise during construction should be calculated based on the frequency of monitoring and cost of equipment.

**Criteria for Approval of the EIA/RAP**

Under the EIA legislation in Mexico, all preliminary EIAs must be reviewed and approved by SEMARNAT. The agency will then grant an environmental permit fully, grant it under a set of conditions, or reject the EIA and request for more information. The Proponent shall ensure that all the mitigation measures established in the EMP are adequately implemented during project construction and operation.

In cases where a RAP is required, it will be presented and evaluated by the Secretariat of Agrarian Reform for approval or rejection. It is the responsibility of the Proponent to ensure that all compensation measures and grievances outlined in the RAP are implemented accordingly before proceeding with the project.

As emphasized in the World Bank’s safeguard policies, projects financed by the World Bank cannot be approved and funded until EIAs and RAPs are also received and approved by the Bank, and then disclosed.

5.3  **DISCLOSURE AND MONITORING**

(e) **Disclosure of Subproject Information**

In compliance with World Bank guidelines and local regulations, when a subproject is approved, the applicable documents (EIA, EMP and/or RAP) must be made available
for public review at a place accessible to local people (e.g. SEMARNAT, Municipal Land-Use Authorities, and Municipal Construction Authorities), in a form, manner, and language that can be understood. Documents will need to be disclosed based on the World Bank disclosure policy.

Under the current implementation arrangements of the Project, SEMARNAT will review and approve terms of references and reports, and supervise EMP and RAP implementation for EIAs carried out in Mexico. SEMARNAT and the Proponent will coordinate with the Municipal Land Use Authorities on any technical questions regarding the design and potential environmental and social issues related to the subproject.

(f) Annual Monitoring Reports

Monitoring of the compliance of subproject implementation with the mitigation measures set out in its EMP and/or RAP will be carried out by the DDE. An Environmental and Social Specialist will be assigned to the DDE with the responsibility of ensuring that the ESMF is implemented accordingly. This person will also have the task of reporting annually to SEMARNAT on the adequacy of the framework and its tools. The monitoring will require regular visits to the projects, and pursuing the following corrective measures as required. An annual monitoring report must be submitted to the SoE and World Bank for review.

The purpose of these reports is to provide:
• A record of ITIDP and subproject transactions;
• A record of experience and issues running from year-to-year throughout the ITIDP that can be used for identifying difficulties and improving performance; and
• Practical information for undertaking an annual review.

Annex 5 provides a recommended format for the Annual Report.

5.4 Issues Related to Resettlement, Indigenous Peoples, and Physical Cultural Resources

If identified as a requirement of the sub-project through the screening process, a Resettlement Action Plan, an Indigenous People Plan, and/or a Physical Cultural Resources Management Plan, or a combination of these, is prepared alongside or as an integrated part of the EMP.
5.4.1 Resettlement Action Plan

Human and social impacts include a number of key issues that are directly related to resettlement management, both from policy and operational perspectives. Some of the major impacts caused by infrastructure projects are:

- Compulsory acquisition of land, property, and business
- Economic losses for affected individuals and farm families with a temporary or permanent loss of income for subsistence
- People with fewer resources and skill become more vulnerable
- Social disruption and break up of family ties due to displacement and relocation
- Health problems and various forms of psychological depression
- Loss of community benefits and social disintegration

Subproject under ITIDP should preferably be located in the outskirts of the cities, preferably in State-owned lands so as to avoid involuntary resettlement. Although the project aims to benefit communities and project affected persons (PAPs) within the ITIDP, there may be instances where people are physically displaced from land that needs to be acquired under the project, or alternatively, be economically displaced if the project results in people having to involuntarily relocate as a cause of negative impacts to their livelihood and income.

In general, involuntary resettlement should be minimized and where displacement is unavoidable, a Resettlement Action Plan (RAP) should be implemented. All displaced persons, including those without title to land should be compensated for losses. Resettlers should be directly involved in the various stages of planning and implementation of the resettlement plan. A benchmark socio-economic survey of all project affected persons should be conducted early in the project cycle to avoid a new influx of people (migration). The survey is the principal method used for collecting data for a resettlement plan. This is a detailed demographic and land ownership survey in which standard demographic and household characteristics are recorded.

Once the socio economic survey is completed, an important task is to analyze and present the data in a clear and systematic manner understandable to decision makers. From policy and implementation perspectives, the results of the survey should be presented as follows:

- a list of PAPs categorized by impact or losses;
- a review of existing compensation policy to identify the impacts on affected persons;
- a list of actions and entitlements for each category; and
- a RAP for implementation and monitoring.

When appropriation of land is necessary, the RAP and implementation and program budget shall be prepared with the objective of improving or at least restoring the
economic and productive base of the PAPs in the new resettlement site. Periodic monitoring and evaluation of the RAP be required. PAPs should participate in the monitoring and evaluation. This must include close consultation with communities and households requiring assistance with relocation and restoration of their livelihood.

**Format of a RAP**

The preparation of RAP involves at least the following components:

- a demographic and socio-economic survey of the project affected persons and valuation of assets (refer to templates in Annex 6)
- description of compensation and other resettlement assistance to be provided
  - selection of the resettlement sites, physical planning and technical and economic feasibility studies of the resettlement packages
  - development of the receiving site and infrastructure development
  - transfer arrangements and relocation of PAPs
  - the organization of social and economic support services
- consultations with displaced people about acceptable alternatives;
- institutional responsibility for implementation and procedures for grievance redress;
- arrangements for monitoring and implementation; and
- the preparation of a time table and a budget

The RAP is usually submitted as a separate document along with the EIA to the appropriate regulatory authority, the Secretary of Agrarian Reform, for review and approval. The DDE will also review and approve the RAP to the extent satisfactory to this ESMF. Annex 6 provides guidance forms which can be used for the socio-economic surveys and land asset inventories.

### 5.4.2 Indigenous People Plan

Indigenous peoples, although unlikely to be encountered in the outskirts of the cities, where the subprojects will be developed, will be considered during the socio-economic survey. Impacts to these vulnerable groups include loss of identity, culture, and customary livelihoods, as well as exposure to disease. In addition, indigenous populations might have limited capacity to defend their interests in and rights to lands, territories, and other productive resources, and/or restricts their ability to participate in and benefit from development. The indigenous community will be defined per World Bank standards (OP 4.10) as “a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees:

- **self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;**
collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
- an indigenous language, often different from the official language of the country or region”.

If the subproject, or subprojects collectively, will impact these groups as defined above, then an Indigenous People Plan (IPP) will have to be developed and must be approved by the National Commission for the Development of Indigenous Peoples (Comisión Nacional para el Desarrollo de los Pueblos Indígenas) before project initiation as well as by the DDE.

**Format of an IPP**

The IPP includes the following elements, as needed:

- A summary of the socio-economic survey;
- A summary of results of the informed consultation with the affected Indigenous Peoples’ communities that was carried out during project preparation;
- A framework for ensuring free, prior, and informed consultation with the affected Indigenous Peoples’ communities during project implementation;
- An action plan of measures to ensure that the Indigenous Peoples receive social and economic benefits that are culturally appropriate, including, if necessary, measures to enhance the capacity of the project implementing agencies;
- When potential adverse effects on Indigenous Peoples are identified, an appropriate action plan of measures to avoid, minimize, mitigate, or compensate for these adverse effects;
- The cost estimates and financing plan for the IPP;
- Accessible procedures appropriate to the project to address grievances by the affected Indigenous Peoples’ communities arising from project implementation;
- Mechanisms and benchmarks appropriate to the project for monitoring, evaluating, and reporting on the implementation of the IPP.

5.4.3 **Physical Cultural Resources Management**

It is important that the EIA also identify the process for addressing impacts to cultural property. The objective of the World Bank’s OP 4.11 on Physical Cultural Resources is to avoid, or mitigate, adverse impacts on cultural resources from development projects that the World Bank finances. Measures will need to be integrated into the EMP to address the following areas:

- Avoidance or mitigation of identified adverse impacts;
- Provisions for chance finds;
- Measures for strengthening institutional capacity; and
- Monitoring systems to track progress of these activities.

The plan should be consistent with the Mexican overall policy framework and national legislation on protection of cultural artefacts and should take into account institutional capabilities relating to the management and preservation of physical cultural resources. The National Institute of Anthropology and History (*Instituto Nacional de Antropología e Historia*) must be notified of any chance finds during excavation.
6 TRAINING AND CAPACITY BUILDING REQUIREMENTS

6.1 RECOMMENDATIONS FOR CAPACITY BUILDING

As suggested in the implementation section, it is proposed that an Environmental Specialist be assigned to the DDE which is the PIU. It is important that an Environmental Specialist be part of the project team to provide overall support in supervising the implementation of the ESMF guidelines and coordinating with the relevant stakeholders involved in the Project.

The Specialist will contribute to the objectives of the ITIDP which includes:

- the preparation, together with the implementing entities, of annual work programs and budgets;
- monitoring project progress as it relates to compliance with the ESMF guidelines, resolving implementation bottlenecks, and ensuring overall that project implementation proceeds smoothly;
- collecting and managing information relevant to the project and accounts (i.e. environmental monitoring and audit reports); and
- ensuring that the implementing bodies are supported adequately and that they adhere to the principles of the project, specific to compliance with ESMF guidelines.

The Specialist should be hired on a full-time basis and will report to the main bodies responsible for execution of the Project. Terms of reference for this specialist is provided below.

6.1.1 Terms of reference for the ITIDP Environmental Specialist

Role and responsibility

The Environmental Specialist will be entitled to provide technical advice on environmental management and mitigation, and ensure that the ESMF is fully implemented.

Tasks

- Liaise with SEMARNAT on a regular basis;
- Ensure EIAs/EMP and RAPs/IPP are carried out, as required, to meet Mexican and World Bank requirements
- Commission an independent consulting firm to carry out an environmental performance audit of the ITIDP, on an annual basis;
• Provide technical advice to state and municipal agencies on all technical issues related to environmental management. These issues will relate to impacts derived from construction and operation of IT parks (see Section 4).
• Lead the delivery of capacity-building programmes for state and municipal agencies on environmental issues.

6.2 PROPOSED TRAINING PROGRAMS

6.2.1 Training Programs

Training state and municipal authorities which have a role in the Project on environmental management, is required in the form of initial training, followed by regular refresher courses and updates.

Training and sensitisation will be required among the following groups:
- Direction of Digital Economy (DDE)
- Secretariat of Economy (SoE)
- Secretariat of Environment and Natural Resources (SEMARNAT)
- Secretariat of Agrarian Reform
- State Economic Development Agencies
- Municipal Land-Use Authorities
- Municipal Construction Authorities

Where possible, officers from one agency will provide training to others. For example, a State environmental expert could provide training to other States, thus implementing a “train the trainer” module.

Table 6.1 sets out the specific training requirements of each of these groups, and the chronological order of training. For each training session, the value of inviting participation of other stakeholders, such as those from local authorities and the local private sector, should be considered.

For each group, training will be provided to bring them to a different level of expertise in the different areas (refer to Table 6.1):

(i) In-depth training to a level that allows trainees to go on to train others, including technical procedures where relevant;
(ii) Sensitisation, in which the trainees become familiar with the issues to a sufficient extent that it allows them to demand their precise requirements for further technical assistance; and
(iii) Awareness-raising in which the participants acknowledge the significance or relevance of the issues, but are not required having technical or in-depth knowledge of the issues.
The details of the training to be carried out are set out in Table 6.2, showing that the training will be delivered in five ‘training packages’. Programs will also include refresher courses from time to time, at an on-demand basis or when deemed necessary, in all of the topics identified.

An example of an agenda for a proposed 2 day training workshop on ESMF implementation is given in Table 6.3.

### Table 6.1 Proposed Training Packages

<table>
<thead>
<tr>
<th>Intended Audience</th>
<th>Training Component</th>
<th>Length</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Economic Development Agencies</td>
<td>Detailed Training in EIA, Public Consultation and Integrating Environment into Development Planning</td>
<td>1 day workshop</td>
<td>quarterly for three years Regular training to bring selected officers up to required level, and regularly update them</td>
</tr>
<tr>
<td>Municipal Land-Use Authorities, Municipal Construction Authorities</td>
<td>Training in EIA, Public Consultation and Integrating Environment into Development Planning</td>
<td>1 day workshop</td>
<td>quarterly per region for three years Regular training to build capacity of municipal staff</td>
</tr>
<tr>
<td>Secretariat of Economy and Direction of Digital Economy, SEMANART and Secretariat of Agrarian Reform</td>
<td>ESMF use and implementation</td>
<td>2 day workshop</td>
<td>once at start of project One-off at project kick-off</td>
</tr>
</tbody>
</table>

### Table 6.2 Proposed training format for ESMF implementation

<table>
<thead>
<tr>
<th>Module</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1. Introduction</td>
<td>1</td>
</tr>
<tr>
<td>• Objective of the ESMF</td>
<td></td>
</tr>
<tr>
<td>• Key stakeholders with a role in the ESMF</td>
<td></td>
</tr>
<tr>
<td>• Relevant legislative and regulatory acts and World Bank safeguard policies</td>
<td></td>
</tr>
<tr>
<td>• Structure and role of relevant environmental authorities as relates to the ITIDP</td>
<td></td>
</tr>
<tr>
<td>Day 2. Summary of guidelines for the subprojects</td>
<td>0.5</td>
</tr>
<tr>
<td>• Screening</td>
<td></td>
</tr>
</tbody>
</table>
Module | Duration
--- | ---
- Appraisal and approval | 0.25
- Disclosure | 0.25
- Annual Review | 
- Annual Reporting | 
Capacity building requirements | 0.25
Budgeting for the ITIDP annual workplans | 0.25
Total | 2 days

**Box 6.1 Possible Agenda for a 2-day Workshop Introducing the ESMF**

**Day 1**
(a) *Introduction to Environmental and Social Management Plans*
This section will introduce participants to the theory and application of ESMF as a decision making tool. It will outline the principles of ESMF and provide clear definitions on EMP practice terminology (e.g. classification of impacts [negative, positive, cumulative, strategic] natural resource base (water, soil, land, biodiversity, air, etc., mitigation and monitoring) and social baseline (employment, social, health, literacy etc). It will also provide guidance on the criteria required for the development of an effective ESMF in practice.

(b) *World Bank Safeguard Policies and Mexican Legislation*
This section will discuss the principal World Bank safeguard policies and their application to subprojects under the ITIDP. Each policy will be discussed in detail. In addition, the applicable Mexican legislation will be discussed in terms of the relevant environmental and social laws and policies which apply to activities under the program.

**Day 2**
(c) *Impact Identification*
Potential impacts related to various types of activities will be discussed, in terms of their significance (adverse or minimal, positive or negative), magnitude (long term versus short term), and impact category (localised or cumulative).

(d) *Mitigation and Monitoring*
Mitigation measures as they apply to real estate development will be discussed, in terms of their application, cost and feasibility. Monitoring measures will also be recommended to measure the effectiveness of mitigation plans and to monitor performance.

(e) *Responsibilities for Planning and Reporting*
For each target audience, responsibilities for environmental and social management will be discussed as they relate to ITIDP implementation. This will include responsibilities for planning, management of impact identification and mitigation/monitoring, partnerships with NGOs and technical service providers, partnerships among community members, and reporting.
6.2.2 Training of contractors and supervision consultants

As part of best practice, and in order to comply with international standards for occupational, health and safety (OHS), contractors and supervision consultants should be provided with awareness raising and environmental and OHS training on site. These should focus not only on the construction phase but also operational phase of the Project.

A proposed format for a 1-day training is provided in the following Table 6.3.

Table 6.3 Awareness raising and training for civil work contractors and supervision consultants

<table>
<thead>
<tr>
<th>Topic</th>
<th>Input</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Awareness raising</strong></td>
<td></td>
</tr>
<tr>
<td>Environmental awareness and the importance of effective mitigation</td>
<td>0.5 day</td>
</tr>
<tr>
<td>Practice mitigation measures and environmentally sound construction techniques</td>
<td></td>
</tr>
<tr>
<td>Compliance with local legislation on OHS, EIA and EMP requirements</td>
<td></td>
</tr>
<tr>
<td><strong>Technical training</strong></td>
<td></td>
</tr>
<tr>
<td>Implementation of the EMP (contract clauses)</td>
<td>0.5 day</td>
</tr>
<tr>
<td>Monitoring of EMPs (and RAPs)</td>
<td></td>
</tr>
<tr>
<td>Preparation of budgets</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1 day</td>
</tr>
</tbody>
</table>
7 MONITORING REQUIREMENTS

7.1 MONITORING OF ESMF IMPLEMENTATION

This section sets out requirements for monitoring of ESMF implementation. Monitoring of the indicators set out here will be mainstreamed into the overall monitoring and evaluation system for the project.

Indicators described as part of the ESMF implementation will be included in the overall project monitoring. In addition, an Annual Audit on ESMF Implementation will be prepared by the DDE, and delivered to the SoE. Any project financed by the World Bank, that has been subject to an EIA study will also be required to produce an annual audit report, for delivery to the SoE.

7.1.1 ESMF Implementation Indicators

Indicators of ESMF implementation are:

- Number of federal, state and municipal staff trained in implementation of this ESMF;
- Number of staff attending a training course in EIA
- Number of written warnings of violation of EMPs issued to project proponents;
- Number of recommendations from the Annual Audit that have been implemented by the beginning of the following Annual Audit.

The indicators are deliberately very simple. Despite their simplicity, the integration of these indicators into the ITIDP project system provides a guarantee that the ESMF will be implemented in full.

7.1.2 Annual Audit

An independently-commissioned environmental and social audit will be carried out on an annual basis. The audit team will report to DDE and the World Bank, who will lead the implementation of any corrective measures that are required. An audit is necessary to ensure (i) that the ESMF process is being implemented appropriately, and (ii) that mitigation measures are being identified and implemented. The audit will be able to identify any amendments in the ESMF approach that are required to improve its effectiveness.

The Annual Audit also provides a strong incentive for ITIDP to ensure that the ESMF will be implemented, and the individual EMPs will be developed and implemented.

An Annual Audit Report will include:
• A summary of the environmental performance of the ITIDP, based on the EIAs and EMPs;
• A presentation of compliance and progress in the implementation of the sub-project EMPs;
• A synopsis of the environmental monitoring results from individual sub-project monitoring measures (as set out in the sub-project EIA/EMPs).

The main tasks of the audit study will be:

• Consideration of the description of the project;
• Indicate the objective, scope and criteria of the audit;
• Verify the level of compliance by the Proponent with conditions in the EMP;
• Evaluate the Proponent’s knowledge and awareness of and responsibility for the application of relevant legislation;
• Review existing project documentation related to all infrastructure facilities and designs;
• Examine monitoring programs, parameters and procedures in place for control and corrective actions in case of emergencies;
• Examine records of incidents and accidents and the likelihood of future occurrence of the incidents and accidents;
• Inspect all buildings and premises, as well as common services (i.e. water and wastewater treatment plants, power supply, waste storage and treatment, goods storage, diesel storage) within the IT parks, and give a record of all significant environmental risks associated with such activities;
• Examine and seek views on health and safety issues from the project employees, the local and other potentially affected communities; and
• Prepare a list of social and environmental concerns of past and on-going activities.

7.2 ACTION PLAN FOR THE IMPLEMENTATION OF THE ESMF

The following action plan has been designed as guidance for the PIU (DDE) to implement the ESMF to all subprojects presented for ITIDP financing in Mexico. Table 7.1 summarizes the elements that will be considered in the action plan. This action plan will be streamlined and adjusted to comply with applicable regulations.

The process by which DDE performs the screening, review, appraisal, implementation and monitoring process of the environmental and social issues is described in Section 5.
Table 7.1  Action Plan for implementation of the ESMF

<table>
<thead>
<tr>
<th>Task</th>
<th>Responsibility</th>
<th>Time Frame</th>
<th>Estimated efforts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project appraisal and launch</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training and sensitisation of local, state and government staff, in environmental and social capabilities to implement the ESMF for projects under ITIDP.</td>
<td>World Bank</td>
<td>Before project launch</td>
<td>M</td>
</tr>
<tr>
<td>Screening and field appraisal (when required). Classification of project category (A, B or C). Alternatives to subproject design (when classification is high risk), to reassess location or prepare an EIA.</td>
<td>Proponent with approval of SEMARNAT and DDE</td>
<td>Before subproject approval</td>
<td>L</td>
</tr>
<tr>
<td>Preparation of subproject environmental instrument based on its classification (EIA or EMP; and if necessary RAP), including impact identification, mitigation measures and costs.</td>
<td>Proponent (may include an environmental specialist)</td>
<td>Before subproject approval</td>
<td>M</td>
</tr>
<tr>
<td>Review, appraisal and approval process of environmental instruments presented for proposed subprojects (EIA or EMP, and/or RAP). Public consultation and disclosure, when applicable.</td>
<td>SEMARNAT (in coordination with other relevant agencies, i.e. DDE, Secretariat of Agrarian Reform, etc.)</td>
<td>Before subproject approval</td>
<td>H/M</td>
</tr>
<tr>
<td>Construction and other permits</td>
<td>Proponent, Municipality, SEMARNAT and DDE</td>
<td>Before and during subproject approval</td>
<td>M</td>
</tr>
<tr>
<td>Develop environmental clauses in contract agreements</td>
<td>Municipality</td>
<td>During subproject implementation</td>
<td>L</td>
</tr>
<tr>
<td>Budget for implementation of mitigation, monitoring and training.</td>
<td>Proponent and contractors</td>
<td>During subproject implementation</td>
<td>M</td>
</tr>
<tr>
<td><strong>Implementation of project</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training of project staff and local government officers in the implementation of environmental management, monitoring and reporting</td>
<td>World Bank</td>
<td>During subproject implementation</td>
<td>M</td>
</tr>
<tr>
<td>Appoint an Environmental Specialist to the Direction of Digital Economy to provide technical advice on environmental management and mitigation and coordinate and implement ESMF</td>
<td>SoE and DDE</td>
<td>During subproject implementation</td>
<td>M</td>
</tr>
<tr>
<td>Implement environmental commitments and measures approved in</td>
<td>Proponent and contractors</td>
<td>During project</td>
<td>H</td>
</tr>
<tr>
<td>Task</td>
<td>Responsibility</td>
<td>Time Frame</td>
<td>Estimated efforts</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
<td>------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>the environmental instrument (EIA, EMP and/or RAP); and other commitments as established by the authority.</td>
<td>DDE, SEMARNAT, SoE</td>
<td>During project implementation</td>
<td>M</td>
</tr>
<tr>
<td>Supervision of project implementation in compliance with established environmental commitments; including: inspections, audits, and recommendations for corrective actions.</td>
<td>Proponent, Municipality and DDE</td>
<td>During project implementation</td>
<td>L</td>
</tr>
<tr>
<td>Public consultation and disclosure of project performance, when applicable.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Environmental Monitoring and Supervision**

<table>
<thead>
<tr>
<th>Task</th>
<th>Responsibility</th>
<th>Time Frame</th>
<th>Estimated efforts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular monitoring as established in the environmental instrument (EIA, EMP and/or RAP); and other applicable commitments. Implementation of corrective actions when needed.</td>
<td>Proponent and contractors</td>
<td>During project implementation and operation</td>
<td>M</td>
</tr>
<tr>
<td>Supervision and annual monitoring reports to meet ESMF and Mexican requirements. Request for corrective actions, when needed.</td>
<td>DDE and SEMARNAT (report to SoE and World Bank)</td>
<td>During project implementation and operation</td>
<td>M</td>
</tr>
<tr>
<td>Training, sensitisation and capacity building in environmental monitoring to Municipal agencies and other relevant entities</td>
<td>World Bank</td>
<td>During project implementation and operation</td>
<td>M</td>
</tr>
<tr>
<td>Public consultation and disclosure.</td>
<td>Project proponent, Municipality and DDE</td>
<td>During project implementation and operation</td>
<td>M</td>
</tr>
<tr>
<td>Follow-up and monitoring plan through ESMF implementation indicators to report World Bank.</td>
<td>DDE and SoE</td>
<td>During project implementation and operation</td>
<td>M</td>
</tr>
</tbody>
</table>

Note: Level of efforts:  L: Low; M: Medium; H: High
It is estimated that the implementation of the ESMF including the required provisions and training will cost approximately USD 355,000 for the project lifecycle.

The provisions proposed under Training and Awareness Raising (USD 180,000) account for the majority of the costs in line with the proposed project budget outlined in the PAD.

These costs may vary depending on when and how the ESMF implementation takes place; therefore it can be expected that the proposed ESMF budget may increase or decrease depending on the workplan agreed upon.
### Table 8.1  Proposed budget for implementation of the ESMF

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Responsible authority</th>
<th>Schedule</th>
<th>Estimated cost (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institutional and management capacity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appoint an Environmental Specialist to the Direction of Digital Economy to coordinate and implement ESMF</td>
<td>Secretary of Economy (SoE) and Direction of Digital Economy (DDE)</td>
<td>To be completed by 2nd quarter of 2008 Project implementation 3 year term</td>
<td>$ 15,000 per year = $ 45,000</td>
</tr>
<tr>
<td><strong>Training and awareness raising</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of resources to the Direction of Digital Economy for developing trainings materials on EIA and RAP preparation</td>
<td>World Bank</td>
<td>To be completed by 2nd quarter of 2008</td>
<td>$50,000</td>
</tr>
<tr>
<td>Training in EIA Public Consultation for relevant State Economic Development Agencies</td>
<td>World Bank</td>
<td>1 day workshop quarterly for 4 years</td>
<td>$10,000 per workshop x 4 = $40,000</td>
</tr>
<tr>
<td>Training in EIA and RAP implementation for Municipal Land-Use Authorities, Municipal Construction Authorities, and Secretariat of Agrarian Reform</td>
<td>World Bank</td>
<td>1 day workshop quarterly per region for 3 years</td>
<td>$10,000 per workshop x 3 = $30,000</td>
</tr>
<tr>
<td>Awareness raising and training for civil work contractors and supervision consultants</td>
<td>World Bank</td>
<td>1 day workshop quarterly for 4 years</td>
<td>$10,000 per workshop x 4 = $40,000</td>
</tr>
<tr>
<td>Training in ESMF use and implementation to the Secretariat of Economy and Direction of Digital Economy, SEMARNART and Secretariat of Agrarian Reform</td>
<td>World Bank</td>
<td>2 day workshop at start of the project</td>
<td>$10,000 per workshop x 2 = $20,000</td>
</tr>
<tr>
<td><strong>Monitoring and supervision</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual monitoring and reporting on EMP/RAP implementation</td>
<td>Direction of Digital Economy (DDE)</td>
<td>FY 2007 – 2011</td>
<td>$25,000 x 4 = $100,000</td>
</tr>
</tbody>
</table>
ANNEX 1: SCREENING FORM

Sub-project name:
Subproject Location (include map/sketch): (e.g. state, municipality, etc).
Type of activity: (e.g. new construction, rehabilitation, periodic maintenance)

Estimated Cost:

Proposed Date of Commencement of Work:

Technical Drawing/Specifications Reviewed:
(circle answer): Yes No

This report is to be kept short and concise.

1. Site Selection:

When considering the location of a subproject, rate the sensitivity of the proposed site in the following table according to the given criteria. Higher ratings do not necessarily mean that a site is unsuitable. They do indicate a real risk of causing undesirable adverse environmental and social effects, and that more substantial environmental and/or social planning may be required to adequately avoid, mitigate or manage potential effects.

<table>
<thead>
<tr>
<th>Issues</th>
<th>Site Sensitivity</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural habitats</td>
<td>No natural habitats present of any kind</td>
<td>No critical natural habitats; other natural habitats occur</td>
</tr>
<tr>
<td>Water quality and water resource availability and use</td>
<td>Water flows exceed any existing demand; low intensity of water use; potential water use conflicts expected to be low; no potential water quality issues</td>
<td>Medium intensity of water use; multiple water users; water quality issues are important</td>
</tr>
<tr>
<td>Natural hazards vulnerability, floods, soil stability/erosion</td>
<td>Flat terrain; no potential stability/erosion problems; no known volcanic/seismic/ flood risks</td>
<td>Medium slopes; some erosion potential; medium risks from volcanic/seismic/ flood/ hurricanes</td>
</tr>
<tr>
<td>Issues</td>
<td>Low</td>
<td>Medium</td>
</tr>
<tr>
<td>------------------------</td>
<td>------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Cultural property</td>
<td>No known or suspected cultural heritage sites</td>
<td>Suspected cultural heritage sites; known heritage sites in broader area of influence</td>
</tr>
<tr>
<td>Involuntary resettlement</td>
<td>Low population density; dispersed population; legal tenure is well-defined; well-defined water rights</td>
<td>Medium population density; mixed ownership and land tenure; well-defined water rights</td>
</tr>
<tr>
<td>Indigenous peoples</td>
<td>No indigenous population</td>
<td>Dispersed and mixed indigenous populations; highly acculturated indigenous populations</td>
</tr>
</tbody>
</table>

2. **Checklist questions:**

**Physical data:**

Yes/No answers and bullet lists preferred except where descriptive detail is essential.

- Site area in ha
- Extension of or changes to existing alignment
- Any existing property to transfer to sub-project
- Any plans for new construction

Refer to project application for this information.

**Preliminary Environmental Information:**

Yes/No answers and bullet lists preferred except where descriptive detail is essential.

State the source of information available at this stage (proponents report, EIA or other environmental study).

Has there been litigation or complaints of any environmental nature directed against the proponent or sub-project?

Refer to application and/or SEMANART for this information.

**Identify type of activities and likely environmental impacts:**

Yes/No answers and bullet lists preferred except where descriptive detail is essential.

What are the likely environmental impacts, opportunities, risks and liabilities associated with the sub-project?

Refer to ESMF Section 5 – Impact and Mitigation Guidelines
<table>
<thead>
<tr>
<th>Determine environmental screening category:</th>
<th>Yes/No answers and bullet lists preferred except where descriptive detail is essential.</th>
</tr>
</thead>
<tbody>
<tr>
<td>After compiling the above, determine which category the subproject falls under based on the environmental categories A, B and C.</td>
<td></td>
</tr>
</tbody>
</table>

Refer to ESMF Section 6 – Screening and Review Process

<table>
<thead>
<tr>
<th>Mitigation of Potential Pollution:</th>
<th>Yes/No answers and bullet lists preferred except where descriptive detail is essential.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the sub-project have the potential to pollute the environment, or contravene any environmental laws and regulations?</td>
<td></td>
</tr>
<tr>
<td>Will the subproject require pesticide use?</td>
<td></td>
</tr>
<tr>
<td>If so, then the proposal must detail the methodology and equipment incorporated in the design to constrain pollution within the laws and regulations and to address pesticide use, storage and handling.</td>
<td></td>
</tr>
<tr>
<td>Does the design adequately detail mitigating measures?</td>
<td></td>
</tr>
</tbody>
</table>

Refer to ESMF Section 5 – Impact and Mitigation Guidelines

<table>
<thead>
<tr>
<th>Environmental Assessment Report or environmental studies required:</th>
<th>Yes/No answers and bullet lists preferred except where descriptive detail is essential.</th>
</tr>
</thead>
<tbody>
<tr>
<td>If Screening identifies environmental issues that require an EIA or a study, does the proposal include the EIA or study?</td>
<td></td>
</tr>
<tr>
<td>Indicate the scope and time frame of any outstanding environmental study.</td>
<td></td>
</tr>
</tbody>
</table>

| Required Environmental Monitoring Plan: | |
|-----------------------------------------| |
| If the screening identifies environmental issues that require long term or intermittent monitoring (effluent, gaseous discharges, water quality, soil quality, air quality, noise etc), does the proposal detail adequate monitoring requirements? | |

Refer to ESMF Section 5 – Impact and Mitigation Guidelines

<table>
<thead>
<tr>
<th>Public participation/information requirements:</th>
<th>Yes/No answers and bullet lists preferred except where descriptive detail is essential.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the proposal require, under national or local laws, the public to be informed, consulted or involved?</td>
<td></td>
</tr>
<tr>
<td>Has consultation been completed?</td>
<td></td>
</tr>
<tr>
<td>Indicate the time frame of any outstanding consultation process.</td>
<td></td>
</tr>
</tbody>
</table>

Refer to Section 3 – Relevant legislative requirements

| Land and resettlement: | |
|-----------------------| |
| Yes/No answers and bullet lists preferred except where descriptive detail is essential. |
### What is the likelihood of land purchase for the sub-project?

<table>
<thead>
<tr>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>How will the proponent go about land purchase?</td>
</tr>
<tr>
<td>What level or type of compensation is planned?</td>
</tr>
<tr>
<td>Who will monitor actual payments?</td>
</tr>
<tr>
<td>Does the project site impact on the livelihoods of indigenous people?</td>
</tr>
<tr>
<td>Have indigenous people been involved in the public participation process?</td>
</tr>
</tbody>
</table>

Refer to ESMF Section 6 – Screening and Review Process

### Actions:

List outstanding actions to be cleared before sub-project appraisal.

<table>
<thead>
<tr>
<th>Approval/rejection</th>
</tr>
</thead>
<tbody>
<tr>
<td>If proposal is rejected for environmental reasons, should the sub-project be reconsidered, and what additional data would be required for re-consideration?</td>
</tr>
</tbody>
</table>

Yes/No answers and bullet lists preferred except where descriptive detail is essential.

### Recommendations:

- Requires an EIA and/or RAP and/or IPP, to be submitted on date: ______________
- Requires EMP, to be submitted on date: ______________
- Does not require further environmental studies

**Reviewer:**  
**Name:**  
**Signature:**  
**Date:**
ANNEX 2: TERMS OF REFERENCE FOR ESIA

An environmental impact assessment (EIA) report for a real estate development project should focus on the significant environmental, social, health and safety issues of the proposed project, whether it is/or includes new construction, rehabilitation or expansion. The report’s scope and level of detail should be commensurate with the project’s potential impacts.

The EIA report should fulfill the requirements under the EIA law of Mexico, primarily as well as applicable norms and standards, including the Classification of Industrial Parks Norm (NMX-R-046-SCFI-2005) and should comply with international best practice which includes the World Bank Pollution Prevention and Abatement Handbook – Guideline on Industrial Estates (1998).

The EIA report will include the following sections (not necessarily in the order shown):

(a) *Executive summary*. Concisely discusses significant findings and recommended actions.

(b) *Policy, legal, and administrative framework*. Discusses the policy, legal, and administrative framework within which the EIA is carried out. Explains the EHS requirements of any co-financiers. Identifies relevant international environmental agreements to which the country is a party.

(c) *Project description*. Concisely describes the proposed project and its geographic, ecological, social, and temporal context, including any offsite investments that may be required (e.g., dedicated pipelines, access roads, power plants, water supply, housing, and raw material and product storage facilities). Indicates the need for any resettlement action plan. Normally includes a map showing the project site and the project’s area of influence.

(d) *Baseline data*. Assesses the dimensions of the study area and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences. Also takes into account current and proposed development activities within the project area but not directly connected to the project. Data should be relevant to decisions about project location, design, operation, or mitigatory measures. The section indicates the accuracy, reliability, and sources of the data.

(e) *Environmental and social impacts*. Predicts and assesses the project’s likely positive and negative impacts, in quantitative terms to the extent possible. Identifies mitigation measures and any residual negative impacts that cannot be mitigated.
Explores opportunities for environmental enhancement. Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions, and specifies topics that do not require further attention.

(f) Analysis of alternatives. Systematically compares feasible alternatives to the proposed project site, technology, design, and operation—including the “without project” situation—in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. For each of the alternatives, quantifies the environmental impacts to the extent possible, and attaches economic values where feasible. States the basis for selecting the particular project design proposed and justifies recommended emission levels and approaches to pollution prevention and abatement.

(g) Environmental management plan (EMP). Covers mitigation measures, monitoring, budget requirements and funding sources for implementation, as well as institutional strengthening and capacity buildings requirements.

(h) Appendixes

(i) List of EIA report preparers – individuals and organizations.
(ii) References — written materials both published and unpublished, used in study preparation.
(iii) Record of interagency and consultation meetings, including consultations for obtaining the informed views of the affected people and local nongovernmental organizations (NGOs). The record specifies any means other than consultations (e.g., surveys) that were used to obtain the views of affected groups and local NGOs.
(iv) Tables presenting the relevant data referred to or summarized in the main text.
(v) List of associated reports (e.g., socio-economic baseline survey, RAP, IPP)
ANNEX 3: EXAMPLE OF ENVIRONMENTAL CONTRACT CLAUSES

Proper environmental management of construction projects can be achieved only with adequate site selection and project design. As such, the EA for projects involving any new construction, or any rehabilitation or reconstruction for existing projects, should provide information as to screening criteria for site selection and design including the following:

**Site selection**
Sites should be chosen based on community needs for additional projects, with specific lots chosen based on geographic and topographic characteristics. The site selection process involves site visits and studies to analyze: (i) the site’s urban, suburban, or rural characteristics; (ii) national, state, or municipal regulations affecting the proposed lot; (iii) accessibility and distance from inhabited areas; (iv) land ownership, including verification of absence of squatters and/or other potential legal problems with land acquisition; (v) determination of site vulnerability to natural hazards, (i.e. intensity and frequency of floods, earthquakes, landslides, hurricanes, volcanic eruptions); (vi) suitability of soils and subsoils for construction; (vii) site contamination by lead or other pollutants; (viii) flora and fauna characteristics; (ix) presence or absence of natural habitats (as defined by OP 4.04) and/or ecologically important habitats on site or in vicinity (e.g. forests, wetlands, coral reefs, rare or endangered species); and (ix) historic and community characteristics.

**Project design**
Project design criteria include, but are not limited to, the consideration of aspects such as heating, ventilation, natural and artificial light energy efficiency, floor space (ft²) per bed/ward, requirements for x-ray rooms, adequacy of corridors for wheelchair access, adequate water supply and sanitation systems, historical and cultural considerations, security and handicapped access.

**Construction activities and environmental rules for contractors**
The following information is intended solely as broad guidance to be used in conjunction with local and national regulations. Based on this information, environmental rules for contractors should be developed for each project, taking into account the project size, site characteristics, and location (rural vs. urban).

After choosing an appropriate site and design, construction activities can proceed. As these construction activities could cause significant impacts on and nuisances to surrounding areas, careful planning of construction activities is critical. Therefore the following rules (including specific prohibitions and construction management measures) should be incorporated into all relevant bidding documents, contracts, and work orders.
Prohibitions
The following activities are prohibited on or near the project site:
- Cutting of trees for any reason outside the approved construction area;
- Hunting, fishing, wildlife capture, or plant collection;
- Use of unapproved toxic materials, including lead-based paints, asbestos, etc.
- Disturbance to anything with architectural or historical value;
- Building of fires;
- Use of firearms (except authorized security guards);
- Use of alcohol by workers.

Construction Management Measures

Waste Management and Erosion:
Solid, sanitation, and, hazardous wastes must be properly controlled, through the implementation of the following measures:

Waste Management:
- Minimize the production of waste that must be treated or eliminated.
- Identify and classify the type of waste generated. If hazardous wastes (including health care wastes) are generated, proper procedures must be taken regarding their storage, collection, transportation and disposal.
- Identify and demarcate disposal areas clearly indicating the specific materials that can be deposited in each.
- Control placement of all construction waste (including earth cuts) to approved disposal sites (>300 m from rivers, streams, lakes, or wetlands). Dispose in authorized areas all of garbage, metals, used oils, and excess material generated during construction, incorporating recycling systems and the separation of materials.

Maintenance:
- Identify and demarcate equipment maintenance areas (>15m from rivers, streams, lakes or wetlands).
- Ensure that all equipment maintenance activities, including oil changes, are conducted within demarcated maintenance areas; never dispose spent oils on the ground, in water courses, drainage canals or in sewer systems.
- Identify, demarcate and enforce the use of within-site access routes to limit impact to site vegetation.
- Install and maintain an adequate drainage system to prevent erosion on the site during and after construction.

Erosion Control
- Erect erosion control barriers around perimeter of cuts, disposal pits, and roadways.
o Spray water on dirt roads, cuts, fill material and stockpiled soil to reduce wind-induced erosion, as needed.

o Maintain vehicle speeds at or below 10mph within work area at all times.

Stockpiles and Borrow Pits
o Identify and demarcate locations for stockpiles and borrow pits, ensuring that they are 15 meters away from critical areas such as steep slopes, erosion-prone soils, and areas that drain directly into sensitive waterbodies.

o Limit extraction of material to approved and demarcated borrow pits.

Site Cleanup
o Establish and enforce daily site clean-up procedures, including maintenance of adequate disposal facilities for construction debris.

Safety during Construction
The Contractor’s responsibilities include the protection of every person and nearby property from construction accidents. The Contractor shall be responsible for complying with all national and local safety requirements and any other measures necessary to avoid accidents, including the following:

o Carefully and clearly mark pedestrian-safe access routes.

o If school children are in the vicinity, include traffic safety personnel to direct traffic during school hours.

o Maintain supply of supplies for traffic signs (including paint, easel, sign material, etc.), road marking, and guard rails to maintain pedestrian safety during construction.

o Conduct safety training for construction workers prior to beginning work.

o Provide personal protective equipment and clothing (goggles, gloves, respirators, dust masks, hard hats, steel-toed and –shanked boots, etc.) for construction workers and enforce their use.

o Post Material Safety Data Sheets for each chemical present on the worksite.

o Require that all workers read, or are read, all Material Safety Data Sheets. Clearly explain the risks to them and their partners, especially when pregnant or planning to start a family. Encourage workers to share the information with their physicians, when relevant.

o Ensure that the removal of asbestos-containing materials or other toxic substances be performed and disposed of by specially trained workers.

o During heavy rains or emergencies of any kind, suspend all work.

o Brace electrical and mechanical equipment to withstand seismic events during the construction.

Nuisance and dust control
To control nuisance and dust the Contractor should:
o Maintain all construction-related traffic at or below 15 mph on streets within 200 m of the site.

o Maintain all on-site vehicle speeds at or below 10 mph.

o To the extent possible, maintain noise levels associated with all machinery and equipment at or below 90 db.

o In sensitive areas (including residential neighborhoods, hospitals, rest homes, etc.) more strict measures may need to be implemented to prevent undesirable noise levels.

o Minimize production of dust and particulate materials at all times, to avoid impacts on surrounding families and businesses, and especially to vulnerable people (children, elders).

o Phase removal of vegetation to prevent large areas from becoming exposed to wind.

o Place dust screens around construction areas, paying particular attention to areas close to housing, commercial areas, and recreational areas.

o Spray water as needed on dirt roads, cut areas and soil stockpiles or fill material.

o Apply proper measures to minimize disruptions from vibration or noise coming from construction activities.

Community Relations
To enhance adequate community relations the Contractor should:

o Following the country and EA requirements, inform the population about construction and work schedules, interruption of services, traffic detour routes and provisional bus routes, as appropriate.

o Limit construction activities at night. When necessary ensure that night work is carefully scheduled and the community is properly informed so they can take necessary measures.

o At least five days in advance of any service interruption (including water, electricity, telephone, bus routes) the community must be advised through postings at the project site, at bus stops, and in affected homes/businesses.

Chance Find Procedures for Culturally Significant Artifacts
The Contractor is responsible for familiarizing themselves with the following “Chance Finds Procedures”, in case culturally valuable materials are uncovered during excavation, including:

o Stop work immediately following the discovery of any materials with possible archeological, historical, paleontological, or other cultural value, announce findings to project manager and notify relevant authorities;

o Protect artifacts as well as possible using plastic covers, and implement measures to stabilize the area, if necessary, to properly protect artifacts

o Prevent and penalize any unauthorized access to the artifacts

o Restart construction works only upon the authorization of the relevant authorities.
Environmental Supervision during Construction

The bidding documents should indicate how compliance with environmental rules and design specifications would be supervised, along with the penalties for non-compliance by contractors or workers. Construction supervision requires oversight of compliance with the manual and environmental specifications by the contractor or his designated environmental supervisor. Contractors are also required to comply with national and municipal regulations governing the environment, public health and safety.
### ANNEX 4: FORMAT OF AN ANNUAL ENVIRONMENTAL REPORT

<table>
<thead>
<tr>
<th>Relevant environmental authority:</th>
<th></th>
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<tbody>
<tr>
<td>Reporting dates:</td>
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<tr>
<td>District:</td>
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</table>

#### Subprojects approved:

<table>
<thead>
<tr>
<th>Subproject title</th>
<th>Activities</th>
<th>Project phase (a)</th>
<th>Env. category</th>
<th>EIA / EMP completed?</th>
<th>Env. Permit granted?</th>
<th>Effectiveness of EMP</th>
<th>Issues (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(name, location, title or reference)</td>
<td>(new construction, rehabilitation, maintenance)</td>
<td>See note below</td>
<td>(A, B or C)</td>
<td>Yes, No or N/A</td>
<td>Yes, No or N/A</td>
<td>Good, poor, or needs improvement</td>
<td>See note below</td>
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#### Subprojects rejected:

<table>
<thead>
<tr>
<th>Subproject title</th>
<th>Activities</th>
<th>Reasons for rejection</th>
<th>Remarks (3)</th>
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<tbody>
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</table>

#### Notes:

1. Subproject phase will be one of the following: (a) under project preparation or appraisal, (b) appraised, or (c) implementation.
2. Issues: accidents, litigation, complaints or fines are to be listed.
3. e.g. if an environmental permit was not granted, explain why.
ANNEX 5: TERMS OF REFERENCE FOR AN EMP

The EMP should be formulated in such a way that it is easy to use. References within the plan should be clearly and readily identifiable. Also, the main text of the EMP needs to be kept as clear and concise as possible, with detailed information relegated to annexes. The EMP should identify linkages to other relevant plans relating to the project, such as plans dealing with resettlement or indigenous peoples issues. The following aspects should typically be addressed within EMPs.

Summary of impacts: The predicted adverse environmental and social impacts for which mitigation is required should be identified and briefly summarized. Cross-referencing to the ESIA report or other documentation is recommended, so that additional detail can readily be referenced.

Description of mitigation measures: The EMP identifies feasible and cost effective measures to reduce potentially significant adverse environmental and social impacts to acceptable levels. Each mitigation measure should be briefly described with reference to the impact to which it relates and the conditions under which it is required (for example, continuously or in the event of contingencies). These should be accompanied by, or referenced to, designs, equipment descriptions, and operating procedures which elaborate on the technical aspects of implementing the various measures. Where the mitigation measures may result in secondary impacts, their significance should be evaluated.

Description of monitoring program: Environmental performance monitoring should be designed to ensure that mitigation measures are implemented, have the intended result, and that remedial measures are undertaken if mitigation measures are inadequate or the impacts have been underestimated within the ESIA report. It should also assess compliance with national standards and World Bank Group requirements or guidelines.

The monitoring program should clearly indicate the linkages between impacts identified in the ESIA report, indicators to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions, and so forth. Although not essential to have complete details of monitoring in the EMP, it should describe the means by which final monitoring arrangements will be agreed.

Institutional arrangements: Responsibilities for mitigation and monitoring should be clearly defined. The EMP should identify arrangements for coordination between the various actors responsible for mitigation.
# Environmental Management Plan

## A. Mitigation

<table>
<thead>
<tr>
<th>Project Activity</th>
<th>Potential Environmental and Social Impacts</th>
<th>Proposed Mitigation Measure(s) (Incl. legislation &amp; regulations)</th>
<th>Institutional Responsibilities (Incl. enforcement &amp; coordination)</th>
<th>Cost Estimates</th>
<th>Comments (e.g. secondary impacts)</th>
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<tbody>
<tr>
<td>Pre-Construction Phase</td>
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<td>Construction Phase</td>
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<tr>
<td>Operation and Maintenance Phase</td>
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</table>

## B. Monitoring

<table>
<thead>
<tr>
<th>Proposed Mitigation Measure</th>
<th>Parameters To be Monitored</th>
<th>Location Measurements (Incl. methods &amp; equipment)</th>
<th>Frequency of Measurement</th>
<th>Responsibilities (Incl. review and reporting)</th>
<th>Cost (equipment &amp; individuals)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Construction Phase</td>
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<td>Construction Phase</td>
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<td>Operation and Maintenance Phase</td>
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<td>Total Cost for all Phases</td>
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</table>
### C. Institutional Strengthening and Training for Implementation

#### I. Institutional Strengthening Activity

<table>
<thead>
<tr>
<th>Position(s)</th>
<th>Scheduling</th>
<th>Responsibilit(ies)</th>
<th>Cost Estimates</th>
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<tbody>
<tr>
<td>(Institutions, PIUs, contractors, construction supervision consultants)</td>
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#### Mitigation Measures

| | | | |
| | | | |

#### Monitoring Requirements (incl. compliance)

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| | | | |

#### II. Training Activity

<table>
<thead>
<tr>
<th>Participants</th>
<th>Types of Training</th>
<th>Content (modules, etc.)</th>
<th>Scheduling</th>
<th>Cost Estimates</th>
</tr>
</thead>
</table>

- EMP Implementation, Re-design, Conflict Resolution, etc.
- Environmental Processes, Methods & Equipment
- Environmental Policies & Programs

#### D. Scheduling and Reporting

<table>
<thead>
<tr>
<th>Activity</th>
<th>Year 1 Q1</th>
<th>Year 1 Q2</th>
<th>Year 1 Q3</th>
<th>Year 1 Q4</th>
<th>Year 2 Q1</th>
<th>Year 2 Q2</th>
<th>Year 2 Q3</th>
<th>Year 2 Q4</th>
<th>Etc.</th>
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<tr>
<td>Mitigation Measures</td>
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## ANNEX 6: CENSUS SURVEY AND LAND ASSET INVENTORY FORMS

### Socio-economic Household Datasheet of PAPs

<table>
<thead>
<tr>
<th>Name of Interviewer</th>
<th>ID Code</th>
<th>Signature</th>
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<table>
<thead>
<tr>
<th>Name of Supervisor</th>
<th>ID Code</th>
<th>(after verification of interview)</th>
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<thead>
<tr>
<th>Village Name</th>
<th>ID Code</th>
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<thead>
<tr>
<th>Number of Concession in Village (GPS Coordinates)</th>
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Date: .................................
Day     Month     Year

Name of Head of Extended Family :

Number of Nuclear Families in Extended Residential Group (including household of head of extended family)
### Household Interview

<table>
<thead>
<tr>
<th>Name and Surname</th>
<th>Relationship to Head of Family</th>
<th>Sex</th>
<th>Place of Birth</th>
<th>Age</th>
<th>Marital Status</th>
<th>Residence Tenure</th>
<th>Ethnic Group</th>
<th>Religion</th>
<th>Educational Level</th>
<th>Income Earner</th>
<th>Economic Activities</th>
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</table>

**Relation to Head of Family**: 1 HoH; 2 Spouse of HoH; 3 Child of HoH; 4 Spouse of child of HoH; 5 Grandchild of HoH; 6 Parent of HoH; 7; 8 Other (specify); 0 No Answer.

**Marital Status**: 1 Married; 2 Widowed; 3 Divorced; 4 Unmarried; 0 No Answer.

**Residential Status**: 1 PRP (Permanent Resident); 2 RA (Resident absent); 3 Member of non-resident HH; 4 Visitor; 9 Other (specify); 0 No Answer.

**Occupations**:
- **Principle Occupation**: 1 Farmer; 2 Shepard; 3 Household; 4 Merchant; 5 Religious leader, teacher; 6 Artisan; 7 Transport; 8 Unemployed; 9 Other (specify); 0 No Answer.
- **Secondary Occupations**: idem.

**Educational Level**: 1 Illiterate; 2 Three years or less; 3 Primary School; 4 Secondary School; 5 Technical School; 6 Religious School; 0 No Answer.

**Religion**: 1 Christian (specify denomination); 2 Other (specify); 0 No Answer.
# Land asset inventory for Project Affected People

**Canton:** ____________________________  **Date:** ____________________________  
**Village:** ____________________________

<table>
<thead>
<tr>
<th>Survey no.</th>
<th>Name of Head of Household</th>
<th>No. of Persons in household</th>
<th>Total land holding of Hhold (m²)</th>
<th>Land to be acquired (m²)</th>
<th>Land Use Type *</th>
<th>Loss of % total</th>
<th>Loss of assets</th>
<th>Loss of crops</th>
<th>Loss of other assets</th>
<th>Other losses</th>
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<thead>
<tr>
<th>Structures Permanent (m²)</th>
<th>Structures temporary (m²)</th>
<th>Area of residential land lost (m²)</th>
<th>Fruit trees lost type and number</th>
<th>Agricultural land lost (m²)</th>
<th>Other (specify e.g. graveyards, wells, etc. (type and no.))</th>
<th>Residence lost</th>
<th>Business lost</th>
<th>Income loss</th>
</tr>
</thead>
</table>

* *Land types are as follows (please fill in the types of land for Mexico)*  
1.  
2.  
3.  
4.
**Entitlements of Project Affected People**

Canton: ___________________________         Date: ___________________________
Village: ___________________________

<table>
<thead>
<tr>
<th>Survey no.</th>
<th>Name of Head of Household</th>
<th>Compensation for Land</th>
<th>Compensation for structures</th>
<th>Compensation for crops and trees</th>
<th>Compensation for other assets and losses (e.g., graveyards, wells, businesses, etc)</th>
<th>Total (Peso)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Quantity (m²)</td>
<td>Unit price (Peso) per m²</td>
<td>Quantity (m²)</td>
<td>Unit price (Peso) per m²</td>
<td>Unit price (Peso) per m²</td>
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</table>
ANNEX 7: PROJECT DESCRIPTION

The general objective of the Information Technology Industry Development Plan (ITIDP) is to develop the IT and ITES Industry in Mexico. The Project aims to transfer the best international experience to: (1) develop the indigenous IT Industry; (2) attract outsourcing companies to Mexico; and (3) attract captive offshoring of international corporations to Mexico. The Project will initially focus in key states that show better leadership and have resources to achieve success in creating a vibrant industry in the short term and in market segments where Mexico has comparative advantages: as capacity in these successful states saturates, it will spread to less developed regions and states and will benefit all Mexico in the end, improving the competitiveness and efficiency of the Mexican economy and fostering the development of SMEs.

PROJECT COMPONENTS

The project is designed in response to a strong demand from State Governments, and strongly reinforces previous efforts made by the SoE through the PROSOFT program. It is expected that the project could cost US$92 million and would include six components described in Table 2.1.

The component for Supporting Infrastructure is aimed at the construction of IT parks through Public-Private-Partnerships (PPP). The ESMF will focus on the public participation within this component (i.e. public services such as water supply and wastewater treatment) and ensure that the national laws, regulations and norms, as well as the World Bank policy requirements are met when developing the IT parks.
### Table a. Project Components to be Financed by the World Bank through the Secretariat of Economy

<table>
<thead>
<tr>
<th>Component and cost</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Human Skills Development</strong> ($30 million)</td>
<td>Help the IT/ITES industry ramp up and compete globally by increasing the quantity and the quality of skilled manpower. Three main initiatives have been agreed: (i) the establishment of MexicoFIRST, using a PPP approach that will bring together global standards bodies, industry organizations, leading corporate, academia and government entities; (ii) to take up English language training programs for the IT and ITES sector; (iii) to support ANIEI in their efforts towards changing the curricula and train the trainers in technical and tertiary education institutions.</td>
</tr>
<tr>
<td><strong>Strengthening of IT Clusters and Selected State Agencies</strong> ($20 million)</td>
<td>Help existing IT Clusters and associations in promising States having high potential in the IT/ITES sector. Two sub-components have already been agreed on: (i) the IT.Link Program will provide Mexican SMEs with access to technologies, processes and markets by linking up with global IT companies; (ii) provide support for the implementation of specific components included in IT/ITES States’ strategies to help grow the local industry and give access to international markets, or support in the design of IT/ITES strategy, for States with enough resources.</td>
</tr>
<tr>
<td><strong>IT Industry financing</strong> ($15 million)</td>
<td>Partially finance PPP schemes that will provide technical assistance to IT companies, mainly SMEs, and finance them on a project-by-project basis. This sort of Micro Project-Finance approach will be mostly financed and managed by the private sector.</td>
</tr>
<tr>
<td><strong>Supporting Infrastructure</strong> ($15 million)</td>
<td>This component will support the construction of IT parks through PPPs with investments coming from the private sector and marketing, management and expansion of IT/ITES facilities being done by the private sector, including all the ingredients mentioned above to foster clustering of the industry and in line with lessons learned. The role of the public sector will be limited to public infrastructure and shared services, while the private sector will invest in building, managing, marketing and operating the IT parks. This component will also fund equipment needed by the industry but unaffordable by an individual company due to its high cost, which therefore must be shared by all.</td>
</tr>
<tr>
<td><strong>Outsourcing of Government Services</strong> ($10 million)</td>
<td>The execution of a handful of sub-projects at the Federal, State and Municipal levels using innovative outsourcing and PPP approaches. Support the creation of an Integration Centre to help government agencies and private sector players to adopt a flexible, agile and highly modular approach to e-government including the adoption of Service Oriented Architecture (SOA).</td>
</tr>
<tr>
<td><strong>Institutional strengthening and Review of Legal and Regulatory framework</strong> ($2 million)</td>
<td>Support the implementation of recommended changes and/or improvements to the legal and regulatory framework; as well as a continuous monitoring and evaluation of the performance of the PROSOFT program. This component will also include an evaluation of the performance and effectiveness of all policies and institutions involved in the development of the IT industry.</td>
</tr>
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INSTITUTIONAL AND IMPLEMENTATION ARRANGEMENTS

The Direction of Digital Economy (DDE) within the Secretariat of Economy (SoE) will be the project implementing unit (PIU) and Bank’s counterpart. This is the same unit that manages the PROSOFT Program. The unit has successful managed the PROSOFT Fund, since 2003 and in 2007 had a budget of $42 million. Figure 2.1 shows the Organization Chart of the unit within the SoE. This unit (DDE) is a small and very effective group and the Bank has successfully appraised its capacity to implement the Project.

Figure 2.1. Organization Chart of the Project Implementing Unit

MONITORING AND EVALUATION OF OUTCOMES/RESULTS

An external auditing firm will monitor the outcome of the PROSOFT Program every year, including the six components of the ITIDP. As explained previously, the evaluation of PROSOFT Projects impact have been carried out by a National University (UNAM) in the past. These evaluations focused on the completion of the activities that the proponents committed to deliver as part of the PROSOFT application. Therefore the evaluation was directed towards ensuring that the funds disbursed under PROSOFT were employed according to the rules and regulations of the Fund. The evaluation of impact we are referring to in the beginning of this paragraph aims to determine whether the PROSOFT program has been beneficial to the development of the Industry and on getting feedback from the Industry on its components and their impact, and on future changes/recommendations to the Program.