

GRUPO AEROPORTUARIO
DE LA CIUDAD DE MÉXICO

Report 3
30.June.2017

Mexico City Airport Trust
NAICM Green Bond
Reporting



NAICM
AIRPORT PROGRAM
PARSONS PROJECT MANAGEMENT OFFICE

1. Introduction

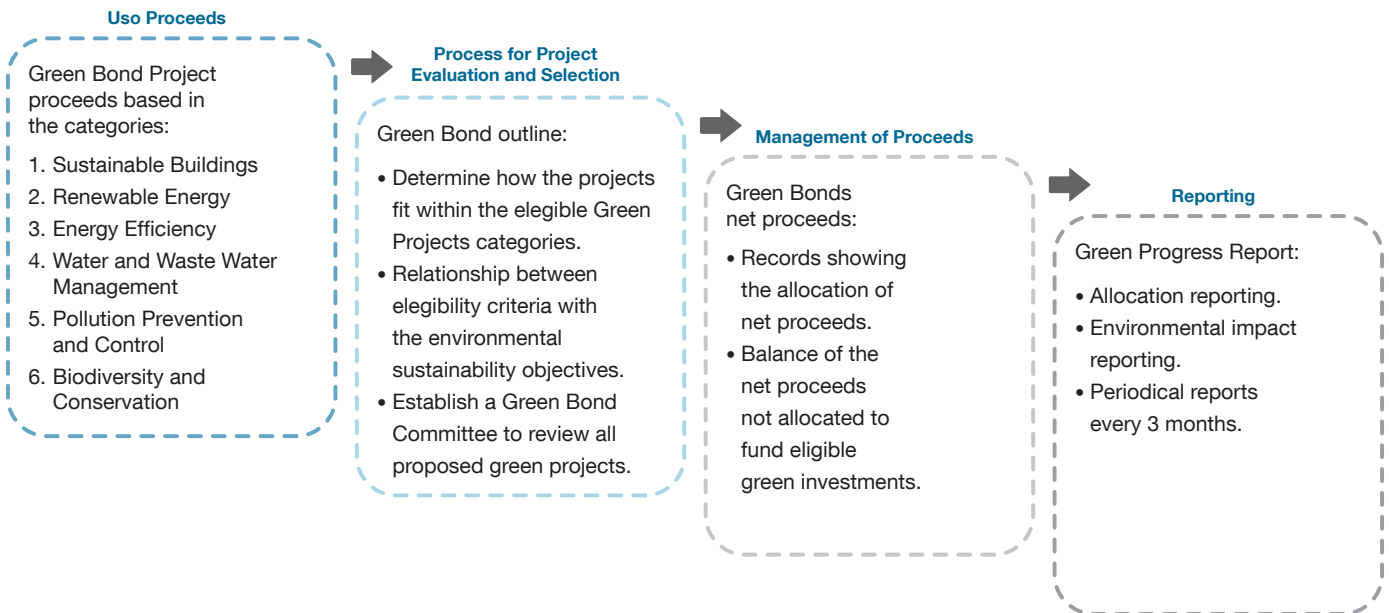
Grupo Aeroportuario de la Ciudad de México, S.A. de C.V. (GACM) is responsible for the preparation and providing a fair representation of this Green Bond Framework as of September, 6th 2016, which will cover the issuance of Green Bond from Mexico City Airport Trust.

For each Green Bond issued by the Mexico City Airport Trust, GACM management asserts that it will adopt the use of the proceeds eligibility criteria and processes and policies as set out in the Mexico City New International Airport (NAICM by its Spanish acronym) Green Bond Framework as outlined in Figure 1.

This report describes an outline of the green works that are currently underway for the Airport program development paying particular attention to currently designed elements and the initial construction and site preparation activities.

This report will be updated quarterly to report on specific activities which have occurred in the report time-frame and to show development of the performance indicators.

Figure 1 - NAICM Green Bond Framework



2. Green Bond Eligibility Categories

The eligibility categories are focused in the planning, design and construction of the NAICM project according to green building & environmental best practices standards.

Six categories were selected to describe the different areas of sustainability focus for the project scope. These are described below:

- **Eligibility Categories**
 1. Sustainable Buildings
 2. Renewable Energy
 3. Energy Efficiency
 4. Water and Wastewater Management
 5. Pollution Prevention and Control
 6. Conservation and Biodiversity

The project is utilizing the rating system Leadership in Energy and Environmental Design version 4 (LEED v4). The rating system seeks to enhance architectural and engineering designs and construction processes to reduce the environmental impacts of the building and its occupants, improve the indoor environmental quality and minimize changes to natural systems. Four of the airport buildings on the site are being designed and constructed to meet these LEED requirements, in particular the 743,000 m² Passenger Terminal Building.

The project undertook Environmental Impact Assessment, commonly known in Spanish as *Manifestación de Impacto Ambiental* (MIA), as it is required for all new major projects in line with SEMARNAT (*Secretaría del Medio Ambiente y Recursos Naturales*) requirements. The MIA is an instrument of environmental policy that is required to present all information about the environmental conditions of the site and analyze and outline requirements for the works and activities that could cause environmental or ecological imbalance.

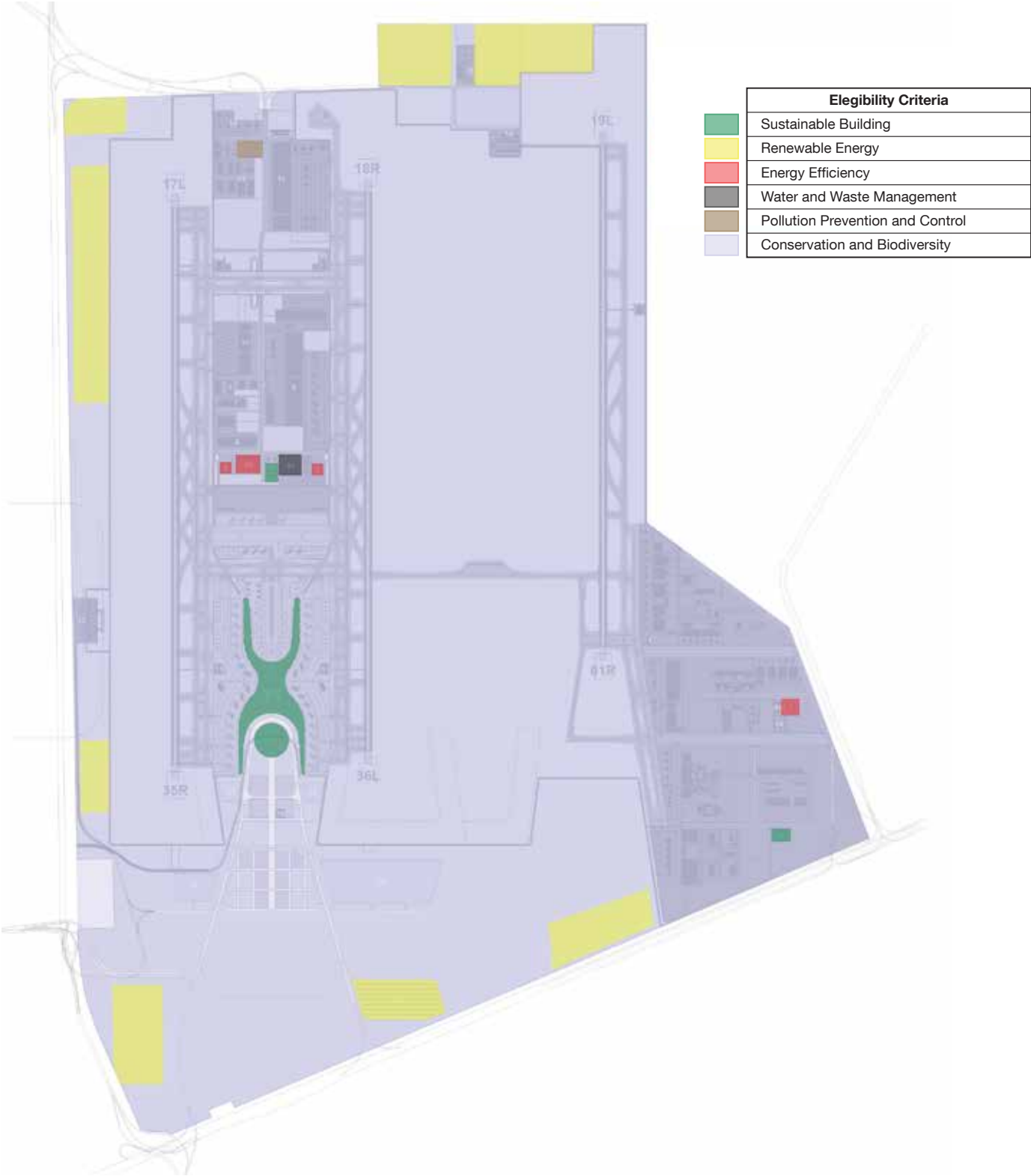


Figure 2 - Site polygon showing location of main program elements per eligibility criteria.

2.1. Categories Description

The project must meet one or more of the following eligibility criteria:

1. Sustainable Buildings:

Any project for an existing or new building;

- (i) that has received, or expects to receive based on its design, construction and operational plans, rating according to third party verified green building standards such as LEED Silver or higher, or an equivalent rating scheme; and
- (ii) that has achieved, based on third-party assessment, a reduction in energy consumption of at least 15% relative to industry standards and benchmarks such as ASHRAE 90.1 or equivalent.

2. Renewable Energy:

Development, construction, installation, operation and upgrades of;

- (i) equipment or facilities wholly dedicated to renewable energy generation; or
- (ii) wholly dedicated transmission infrastructure for renewable energy generation sources.

The projects must meet the definitions of renewable energy outlined in Mexico's Energy Transition Law (Ley de Transición Energética) and may include wind, solar, tidal, geothermal, biomass and run-of-river hydro projects.

3. Energy Efficiency:

Development, construction, installation, operations and upgrades of any projects (products or technology) that reduce energy consumption or improve resource efficiency in airport management and operations, including but not limited to;

- (i) projects that enable energy performance monitoring and modelling such as design and installation of computer controls, sensors, or building information systems; or
- (ii) projects that optimize the amount and timing of energy consumption and minimize peak loads such as design and installation of metering, peak load shedding, or fuel switching systems;
- (iii) projects that involve installation, maintenance or replacement of energy efficient heating, ventilation, air-conditioning, cooling, lighting and electrical equipment.

4. Water and Wastewater Management:

Development, construction, installation, operations and upgrades of any projects (products or technology) that reduce water consumption or improve resource efficiency in airport management and operations, including but not limited to;

- (i) new or existing facilities that are used for the collection, treatment, recycling, or re-use of water, rainwater, wastewater or sewage; or
- (ii) infrastructure for flood prevention, flood defense or storm-water management such as wetlands, retention berms, reservoirs, lagoons, sluice gates, drainage systems, tunnels and channels.

5. Pollution Prevention and Control:

Development, construction, installation, operations and upgrades of any projects (products or technology) that reduce and manage waste generated in airport management and operations, including but not limited to:

- (i) new or existing facilities, systems and equipment that are used for the collection, treatment, recycling or re-use of solid waste, hazardous waste or contaminated soil; or
- (ii) new or existing facilities, systems and equipment that are used to divert waste from landfills and reduce emissions from transport of waste.

6. Conservation and Biodiversity:

Any projects for;

- (i) reforestation and ecological restoration;
- (ii) creation and protection of forests and wetlands; or
- (iii) monitoring and mitigation of adverse impacts on flora and fauna such as potential impacts from construction and noise pollution.

3. Use of Proceeds Summary

Description	Amount USD
Net Proceeds from Green Bonds	\$1,914,264,909

Allocated Amount to each Eligible Category (USD)						
Category	1	2	3	4	5	6
USD	Sustainable Buildings	Renewable Energy	Energy Efficiency	Water and Waste Water Management	Pollution Prevention and Control	Conservation and Biodiversity
Disburse Amount	\$410,809,064.47	\$418,043.32	\$13,264.49	\$12,361,660.93	\$713,547.77	\$16,787,747.34
Total	\$441,103,328.32					

Description	Amount
Amount Available for Allocation	\$1,473,161,580.68

Note: Values are shown in dollars. The exchange rate used from MXN to USD is the applicable rate at the time for each disbursement being paid.

4. Description of the Environmental Impact Assessment of the NAICM

4.1. Introduction

The Environmental Impact Assessment (commonly known by its Spanish acronym “MIA”) is essential for compliance of the requirements established by environmental policy for all the distinct phases of development of the New International Airport of Mexico City (NAICM). It is important to mention that the property of this airport is part of the former lake area of the Ex Lago de Texcoco, located in the State of Mexico. Given the ecological value that this area represents, and the scale of the megaproject proposed, adherence to the environmental impact legislation is necessary.

Due to the aforementioned, diverse environmental specialized entities of the public and private sectors performed a diagnosis, analysis and description of the most significant and potential environmental impacts derived from the works and activities of the NAICM project, in order to avoid or minimize negative effects on the environment. This section provides a brief description of the analysis and diagnosis of the MIA to follow-up the categories: 2) *Renewable Energy*, 3) *Energy Efficiency*, 4) *Water and Waste Management*, 5) *Pollution Prevention and Control*, and 6) *Biodiversity and Preservation*, as classified in the Green Bond framework. This, to inform on the environmental plans and programs contributing to the sustainability of the NAICM project during the different stages of its development, construction and operation.

4.1.1. SEMARNAT Legislation - What is a MIA?

The MIA is part of the Environmental Impact Assessment, that is an environmental legislation instrument regulated by the Ministry of the Environment and Natural Resources (SEMARNAT), in an attempt to integrate a specific project or activity into the environment in which it is to be developed Said assessment consists of a technical-administrative proceeding known as Environmental Impact Assessment Procedure (MIA-R), from which three options are derived, depending on the control of impacts and the dimensions of the area it is intended to develop:

1. Preventive Report
2. Modality Environmental Impact Statement
3. Regional Modality Environmental Impact Statement

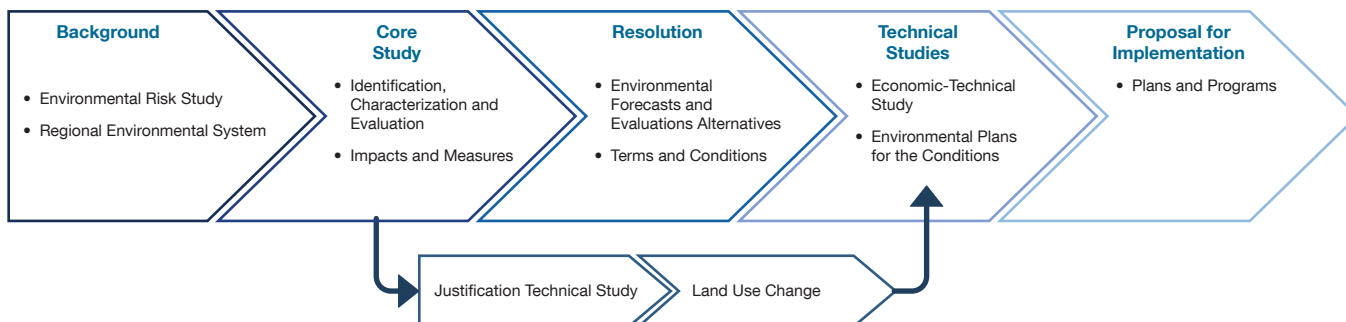
The MIA is a technical study part of the environmental policy instruments that SEMARNAT requests from those individuals or companies which intend to conduct works and activities, as foreseen in article 28 of the General Law of Ecological Balance and Environmental Protection (LGEEPA). This technical study describes and analyzes the environmental conditions present before the impact of works or activities intended in a project; this, in order to assess the significant and potential impacts which could cause an ecological imbalance and exceed the limits set during preparation, construction, operation and maintenance of the project, and thus to propose measures to prevent, mitigate or compensate the impacts caused.

4.1.2. MIA-R Preparation and Approval Procedure

The Regional Modality MIA is different from the Particular Modality one because its scope includes the Regional Environmental System (SAR), which may include one or more ecosystems, and thus, the effects of the project proposed may increase cumulative and residual impacts. Although the MIA-R is mainly based on the legal framework of the LGEEPA, however, for the NAICM project, federal and local laws and regulations under the legislation of the State of Mexico are also applicable. In accordance with the LGEEPA, planning instruments and legal systems applicable to the NAICM project must include the Environmental Impact Statement in its regional modality, thus the study of the project includes a delimited territory under certain environmental criteria.

Although this study focuses on diagnosis of impacts, there are also base documents which are part of the process; to explain this procedure, Figure 3 shows the studies and documents required in MIA-R. This procedure is divided in five phases: The *Background* or initial studies, which provide information to contextualize the current state of intervention site; the *Core Study*, which focuses on the environmental impact study evaluated by the General Directorate of Environmental Impact and Risk (DGIRA), the *Justification Technical Study*, whereby the change in the use of soil is derived and which is done in parallel with the Resolution; the *Resolution* which is the result issued by the DGIRA after evaluating the environmental impact; the *Technical Studies*, which are documents following the opinion issued by DGIRA; and lastly, the *Proposal for Implementation* of the project, addressing the mitigation measures and conditions.

Figure 3 - MIA-R Process Schedule



For evaluation purposes, the DGIRA is the entity of the SEMARNAT responsible of assessing the effects of the works and activities described in the MIA-R, based on certain criteria. It should be noted that these criteria consider the set of elements that make the ecosystem up, including those resources subject to exploitation. After the evaluation, the DGIRA issues a duly founded and motivated resolution, authorizing the execution of works and activities under the terms requested, or in a conditioned manner. In this case, the DGIRA authorized the works and activities of the NAICM project in a conditioned manner; thus, Grupo Aeroportuario de la Ciudad de Mexico (GACM) was requested to implement additional prevention and mitigation measures.

4.1.3. Importance of the MIA-R for the NAICM project

The project of the New International Airport of Mexico City seeks to encourage the implementation of sustainable practices in the development of infrastructure megaprojects and transportation in the country. Technology and innovation are essential nowadays to meet air traffic needs; likewise, economic, social and environmental aspects established by sustainable development are of great importance for moving towards better development schemes. In environmental and social matters, the project is based on different instruments, such as: the LEED certification, the Equator Principles -which provide a frame of reference used by financial institutions to assess and manage environmental and social risks and impacts- and lastly, the preparation of the MIA-R. All of these studies are complemented throughout the stages of the NAICM project; however, in environmental terms, the MIA-R is a study of preventive and planning nature, allowing identification at a local and regional scale of the effects the NAICM project can cause in the environment of the area in which it is located. In this way, the MIA-R is fundamental for defining and implementing plans and programs to improve pollution of water and soil control, waste management, air pollution and conservation of biodiversity.

4.1.4. MIA-R Objectives

The goal of the MIA-R is to identify potential impacts caused by the works and activities during the NAICM preparation, construction, operation and maintenance stages, and on that basis to propose measures to prevent, mitigate or compensate for environmental impacts.

In its character of promoter of the NAICM project construction and operation, the GACM has taken on the responsibility of processing the MIA-R before SEMARNAT, as well as complying with the measures, plans and programs issued in the Resolution.

4.2. Background

In this stage, two specific studies are conducted to determine potential risks and impacts on the environmental system in which it is intended to develop the NAICM project. It is worth mentioning that the SEMARNAT defines the environmental system as the interaction between the biotic and abiotic components of the ecosystem, and the socio-economic subsystem of the region in which it is intended for a project to be established. The two studies described below are extremely important, because through them, the project and its area of influence are cartographically delimited. In addition, these allow determination of the current status of the environmental system, which the DGIRA evaluates on the basis of two different criteria; 1) *functional integrity*, defined as the set of mechanism allowing to keep the ecological balance and the permanence of an ecosystem; and 2) *load capacity*, defined as the capacity of an environmental component (water, air, soil, flora or fauna) to clean, disperse, absorb or withstand discharges, emissions or waste without affecting its quality, structure or function.

4.2.1. Characteristics of the Environmental Risk Assessment (ERA)

In compliance with Article 147 of the LGEEPA, an Environmental Risk Assessment (ERA) was conducted based on the Airport Master Plan and has the purpose of analyzing the activities considered as highly risky. Risk is defined as the combination of the frequency expected and the consequences of the accidents that could occur as a result of a given activity. Assessment of a risk consists on identification of the relevant accidents that could occur, estimation of the frequency of occurrence and assessment of their possible consequences.

In the NAICM, two highly risky activities were detected, which include the use and management of jet fuel and LP gas; therefore, a study was conducted for these substances. The situation posed by NAICM in the field of environmental risk is considered acceptable since:

- Most of the events identified and evaluated are reasonable and acceptable.
- Two events were identified and evaluated within the ALARP (as low as reasonably possible) range.

Considering these two events would happen within the property of the NAICM, there would be no repercussion to the population, environment or infrastructure outside the boundaries of the NAICM property.

4.2.2. Characteristics of the Regional Environmental System (SAR)

The NAICM project is located in a property with a surface of approximately 5,000 hectares, located in the municipalities of Texcoco and Atenco in the State of Mexico. It is worth mentioning that the property is close to six Natural Protected Areas, four at a State level, and two at f Federal level. Also, the area where the project is located is part of the Program of Priority Regions driven by the National Commission for the Knowledge and Use of Biodiversity (CONABIO), which identified three regions according to the characteristics of its biodiversity: terrestrial regions, hydrological regions and regions focused on bird conservation.

The Regional Environmental System (SAR) was defined based on the polygon established to develop the NAICM project, and from this basis studies were conducted on: surface and groundwater hydrology, noise cones, emissions to the atmosphere within the Atmospheric Basin of the Mexico City Metropolitan Area (ZMCM), distribution of flora and fauna, emphasizing analysis for the flock of birds, as well as the area of influence for the socio-economic analysis of the project on the Mexico Basin. This with the purpose of delimiting the SAR, which has a total length of 953,570.31 ha over the Basin of Mexico and extending to Mexico City and the municipalities of Ecatepec, Atenco, Texcoco, Nezahualcoyotl, Chimalhuacan, Tezoyuca, Acolman, Chiautla, Chiconcuac, Chicolapan and La Paz. Once the SAR was defined, a characterization and a retrospective analysis of the environmental quality of the system in three types of environment was conducted.



Figure 4 - Shows the Mexico Basin with the applications making up the SAR, as well as the polygon of the project. *

* Information obtained from the MIA-R study

The following briefly describes some important aspects to be analyzed in each environment:

1) Abiotic Environment

The erosion of the SAR is associated to the intensification of agriculture, which has resulted in the chemical degradation of the soil, although the natural accumulation of salt in the area has also contributed to the degradation. Likewise, the physical degradation of the soil due to compaction and loss of the productive function is related to the expansion of urban areas.

In terms of hydrology, this area has suffered changes caused by human activity since the construction of pre-Hispanic works, the desiccation of the Lake Texcoco during the colonial period and, in the following years, the construction of large hydraulic works to drain and pump water towards other areas, resulting in alteration of the area which is currently disappearing.

2) Biotic Environment

The studies conducted to characterize this environment resulted in a division into three groups, for practical purposes; the first, referring to flora, identified a total of 17 ecosystems. Of these, the most important are induced grasslands, temporary agriculture, irrigated agriculture, oak forest and pine forest. The following table shows the use of the soil and vegetation within the project property.

Table 1 - Soil use and vegetation within the project property *

Soil use and Vegetation	Surface (ha)	Percentage (%)
Induced Grasslands	2,267	51.16
Halophilic Grassland	241	5.43
Water Bodies and Floodable Area	1,862	42.04
Internal Roads (Dirt Roads and Asphalt)	52	1.17
Civil Works	9	0.20
Totals	4,431	100%

* Information obtained from the MIA-R study



Figure 5 - Vegetation inside the project polygon *

In general terms, the desiccation of Lake Texcoco turned the area into a dry and saline habitat. The authorities introduced species at the project site to revegetate the area, including the predominant five species of arboreal, shrubby stratum and the halophilic grasslands that integrate the major patches of vegetation, in addition, 46 species were identified on the property.

The second group corresponds to birdlife and the delimitation of its area of influence in the project; in which the general outline of the flight routes was studied, as well as the main migratory movements of the 74 species of aquatic and terrestrial birds found in the SAR. The three predominant species in the former Lake of Texcoco are the Northern shoveler (*Anas clypeata*), ruddy duck (*Oxyra jamaicensis*) and the American coot (*Fulica Americana*).



Figure 6 - Flocks of *Anas clypeata* at Lago Nabor Carrillo in the surroundings of the polygon *

The third group corresponds to the minor fauna which includes fish, amphibians and mammals reported by the SAR. The presence of 208 species was identified; 9 of them endemic, 6 subject to special protection, 12 in threat situation, as well as one in danger of extinction.

3) Socioeconomic Environment

Although the SAR is made up by five federal entities with 3,336 communities, the analysis of the socio-economic aspects was defined through two areas of influence:

- Direct Socio-economic area of influence (DAI): constituted by 5 municipal conurbations adjacent to the project site.
- Indirect Socio-economic area of influence (IAI): covers the total of the Mexico City Metropolitan Area.

The municipalities considered within the DAI have a degree of marginalization that goes from low to very low, although some of the localities in the municipalities of Nezahualcoyotl and Texcoco have a very high degree of marginalization. Regarding the migration status, the MIA points out that the municipalities of Atenco and Texcoco attract a large number of immigrants from other states of the country, because they are urban areas with greater employment opportunities and better quality of life. While all municipalities are dedicated to primary sector activities, only Texcoco has an important participation in agricultural production, while Ecatepec, Atenco and Texcoco represent around 30% of GDP of the industrial sector; yet, the tertiary sector is the most important in each of the DAI municipalities. In this way, it is expected that the NAICM project will have a significant economic impact within the DAI and IAI; specifically, it is specifically recommended to employ the workers from the DAI municipalities.

4.2.3. Social and environmental diagnosis of the SAR

Social

The construction of the project in the Metropolitan Zone of the Valley of Mexico is a key investment for infrastructure and for the generation of jobs, as well as economic opportunities in general. The project creates value in the short, medium and long term for the region and for the country, by maximizing aviation revenue streams. This is necessary, as failure to do so would lead to saturation at the AICM (Mexico City International Airport), which means high costs for the transportation of passengers and goods to and from the ZMVM. The development of the NAICM will contribute to the creation of a physical barrier to contain and further order urban growth in that area of the ZMVM.

Environmental

To make the diagnosis of the environmental conditions of the SAR at the present time, scenarios depicting the different environmental interactions in the region and in the grounds of the NAICM project were prepared. The technical criteria used to determine the conservation status concluded that, based on the historical background of the SAR, there is a modification of the habitat as a result of anthropogenic activities. In this way, it went from being an aquatic environment to a terrestrial saline-brackish, isolated areas with natural vegetation due to the growth of urban and agricultural areas were also identified, but there are no biological corridors. Additionally, the habitat of the SAR is in a constant process of conversion and, although there are areas of protection at the federal and local level, there is no input from individuals or species of flora and fauna.

4.3. Core Study

Once the initial studies to determine the current status of the site have been completed, the next phase of the process consists of the evaluation of the environmental impacts resulting from human intervention. The purpose of this phase is to address three analytical functions: identification, characterization and evaluation of the cumulative and synergistic impacts that may occur in ecosystems during the development of a project, and to show the difference between environmental conditions expected in the SAR and the area of influence of the said project. To analyze these three functions, it is necessary to know the objectives, as well as the works and activities planned for the different phases of the project and to identify potential environmental changes associated with such activities. In terms of evaluation, the Core Study is fundamental for the DGIRA to analyze and determine under which scheme they will authorize realization of the works and activities in the project; this includes the Justification Technical Study, which helps to determine soil use status.

4.3.1. Project Phases

Before beginning the impacts analysis, it is necessary to describe each of the actions with potential to cause an impact in the different stages of progress in the project, and on this basis, to predict the nature and magnitude of the effects, depending on the characteristics of the SAR. The activities foreseen for each one of the NAICM phases are described below:

Site Preparation

Considers activities to prepare the ground for arrival of the equipment, workers and to start the construction process. Some of the activities are: clearing and grubbing of vegetation, site leveling and preparation of ground slopes, temporary works (camps, offices, warehouses and shops), contracting of labor and staff, among others.

Construction

These are the activities necessary to carry out the project. Some of them are listed below: Construction of pavements and foundation, construction of Passenger Terminal Building, runways, Air Traffic Control Tower, Ground Transportation Center, Area Control Center, support facilities (central utility plant), among others.

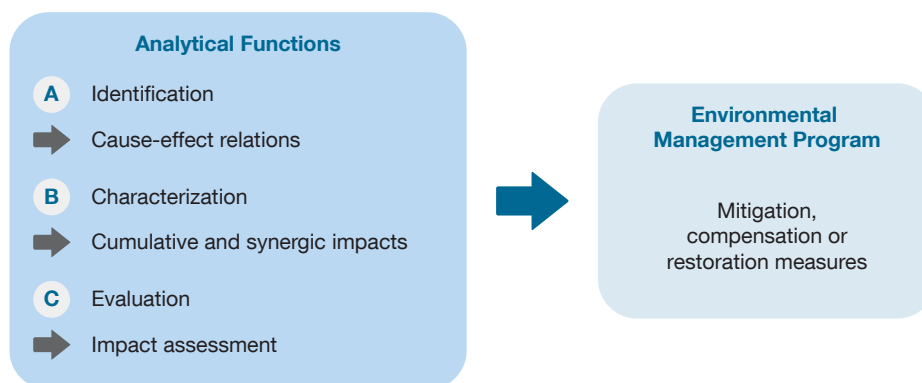
Operation and Maintenance

It refers to the activities carried out while NAICM is functioning. Some of these activities are listed as follows: aircraft maintenance, ground service equipment maintenance, flight catering, automated people mover maintenance, potable water consumption, airfield operation, operation of the waste water treatment plant, management of solid, special and hazardous waste, job generation, among others.

4.3.2. Impacts and Measures

The methodology to identify, characterize and assess the impacts with respect to the characteristics of the ecosystem is divided in three analysis categories: 1) the *environment*, referring to the elements of the abiotic, biotic and socioeconomic environments; 2) the *components*, defined based on the importance in the structure and function of the environmental system; 3) the *factors*, which are those impacting the functional integrity of the ecosystem (see figure 8). These categories are fundamental to identify the cause-effect relations between project components and factors. After identifying the set of impacts, the following step is characterization, which focuses on those impacts considered as significant; this means, those which can affect the environmental system. Finally, an evaluation of the magnitude of alterations that can cause the cumulative and synergic impacts characterized to the factors (see figure 7).

Figure 7 - Functions and Measures

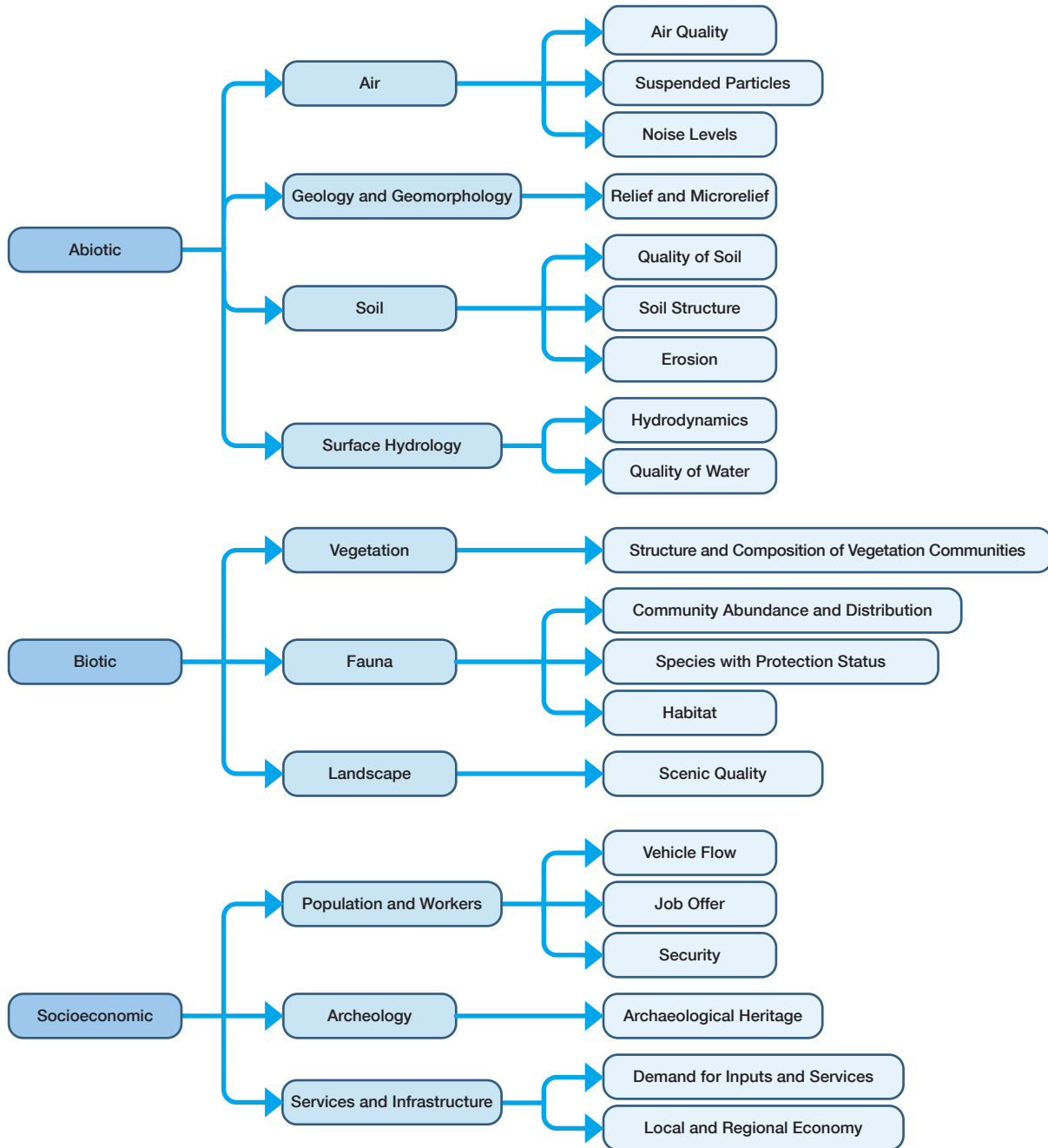


Once the impacts have been assessed based on the three analytical functions, those that respected the functional integrity and load capacity of the SAR ecosystems were considered as acceptable. However, each impact associated to the works and activities require a specific strategy, linked to an environmental factor and component. From the relationship between work/activity and impact, the necessary strategies and measures that will be part of the Environmental Management Program are determined, which is part of the MIA-R documentation for NAICM project delivered to DGIRA to reduce impacts on the environment.

It must be noted that the measures proposed in the program are determined by the magnitude of the impact in each of the development stages, including abandonment; taking this into account will constitute the basis to propose mitigation, compensation or restoration measures. To finish, in order to minimize impacts identified, it is necessary to implement control and follow-up to assure compliance with the said measures.

Figure 8 - Components, Environments and Factors

Symbolization	 Environments	The categories for analyzing the impacts on the environmental system are divided into: 1) the <i>environment</i> , referring to the elements of the abiotic, biotic and socioeconomic environments; 2) the <i>components</i> , defined based on the importance in the structure and function of the environmental system; 3) the <i>factors</i> , which are those impacting the functional integrity of the ecosystem.
	 Components	
	 Factors	



4.3.3. Justification Technical Study

The objective of the study is the justification for change in the use of soil of the ground and it is obtained when assessing the project against the environmental impact it will cause. The impact in the change of soil use is considered to affect during the first six months, which include the stages of clearing and grubbing; this is reflected in the immediate impact cost and the concept of restoration of the area in question. The diversity of species in the project is also considered compared to the ones surrounding this area. An analysis on the direct use or environmental goods will be conducted; that is, through the income obtained by the sale of the existing vegetation in the project area.






After carrying out the said analysis, a concept for restoration will be considered, resulting in a total amount. The project is justified in social and economic terms, as it has a long-term view and will serve to drive urban and regional reordering. On one hand, it provides economic development by creating new work sources and, on the other, it rescues cultural activities and natural zones in the area, emphasizing on environmental protection.


4.4. Resolution






In this phase of the process, DGIRA is reviewing and assessing analyzed impact, as well as the Environmental Management Program and associated measures. In the case of the NAICM Project, DGIRA determined, based on provisions and regulations applicable, that it is environmentally feasible, so it decided to approve it in a conditioned manner through Resolution Letter dated November 28th, 2014. The Terms and Conditions issued by the authority are as follows:




- 1) Compliance with mitigation and compensation measures proposed by MIA-R
- 2) Guarantee of compliance with conditions
- 3) Executive summary of the ERA to the municipalities in the Public Works Directorate of the State of Mexico Government.
- 4) Ecological restoration plan
- 5) Devices for dispersion of birds in the project
- 6) Actions to mitigate the impact of wetlands hydrodynamic changes
- 7) Flora and Fauna Rescue Program
- 8) Bird Monitoring and Conservation Actions
- 9) Soil Conservation and Recovery Actions
- 10) Environmental Management Plan
- 11) Plan to Monitor, Record and Check Greenhouse Gas Emissions
- 12) Comprehensive Waste Management Plan
- 13) Program for Prevention and Response to Environmental Contingencies Resulting from Extraordinary Meteorological Events
- 14) Program for Accident Prevention
- 15) Program for Sustainable Use of Water
- 16) Co-responsible Coordination Mechanism (to compensate for and replace wetland areas eliminated)
- 17) Alternative sites to dispose of solid waste
- 18) Hazardous Waste Management Plan
- 19) Temporary Hazardous Waste Storage Areas
- 20) Dismantling, demolition and rehabilitation for site restoration






In order to link measures and constraints to Green Bond categories, Table 3 seeks to integrate the information by considering the classification criteria used in the MIA-R. In this way, the table shows the relationship between measures, constraints, Green Bond categories associated with each stage of the NAICM project, as well as the components and factors in which environmental impacts are classified.




Symbolization	2	 Renewable Energy	5	 Pollution Prevention and Control	m Mitigation Measures
	3	 Energy Efficiency	6	 Biodiversity and Conservation	c Conditions
	4	 Water and Waste Management			






		Green Bonds Categories	
Environmental Component	Factor	Site Preparation and Construction	Operation and Maintenance
	Air Quality	<ul style="list-style-type: none"> m Preventive maintenance program for machinery, vehicles and equipment. m Vehicle pollution control program. m Monitoring of equipment and machinery usage. m Staff training. m Preventive maintenance for asphalt and concrete plants. 	<ul style="list-style-type: none"> m Preventive maintenance program for machinery, vehicles and equipment. m Vehicle pollution control program. m Staff training. m Preventive maintenance for asphalt and concrete plants. c Environmental management plan / Environmental supervision / Environmental surveillance committee.
	Suspended Particles	<ul style="list-style-type: none"> m Irrigation with treated water. 	
		<ul style="list-style-type: none"> m Driving vehicles at minimum speeds. m Collection and reuse of dusts in asphalt and concrete plants. 	
	Noise Levels	<ul style="list-style-type: none"> m Preventive maintenance program for machinery, vehicles and equipment. m Vehicle pollution control program. m Prioritization of schedules and equipment use and use of silencers. 	<ul style="list-style-type: none"> m Preventive maintenance of machines, vehicles and equipment. m Vehicle pollution control program. m Compliance with standard NOM-036-SCT3-2000. m Staff training and personal protection equipment use. m Perimetral fences for noise reduction. m Hearing conservation program for airport workers and officers.



Symbolization	2	 Renewable Energy	5	 Pollution Prevention and Control	m	Mitigation Measures
	3	 Energy Efficiency	6	 Biodiversity and Conservation	c	Conditions
	4	 Water and Waste Management				

		Green Bonds Categories	
Environmental Component	Factor	Site Preparation and Construction	Operation and Maintenance
Geology and Geomorphology 	Relief and Microrelief	m The material generated by excavation works is transferred to approved sites.	
Soil 	Quantity of Soil	m Implementation of Integral Waste Management, including a program to manage solid waste and special management waste, as well as a program for hazardous waste management. m Use of concrete and asphalt pits. c Integral management of urban solid and special management waste. c Alternative sites for disposal of urban solid and special management waste. c Integral hazardous waste management. c Temporary hazardous waste storage areas.	m Implementation of Integral Waste Management, including a program to manage solid waste and special management waste, as well as a program for hazardous waste management. m Detection of hydrocarbons in runways.
		c Actions for soil recover and conservation.	
	Soil Structure	m The clearing and grubbing area is to be delimited before the start of activities, in order to affect only the sites destined for construction and operation.	
	Erosion	m Use of treated water for irrigation.	
Surface Hydrology 	Hydrodynamics	m The quality of the existing bodies of water in the area of influence is to be improved. c Actions to mitigate the impact of wetlands hydrodynamic changes.	c Program for prevention and response to environmental contingencies resulting from extraordinary meteorological events.

Symbolization	2	 Renewable Energy	5	 Pollution Prevention and Control	m	Mitigation Measures
	3	 Energy Efficiency	6	 Biodiversity and Conservation	c	Conditions
	4	 Water and Waste Management				

		Green Bonds Categories	
Environmental Component	Factor	Site Preparation and Construction	Operation and Maintenance
Surface Hydrology 	Quality of Water	<ul style="list-style-type: none"> m Implementation of Integral Waste Management, including a program to manage solid waste and special management waste, as well as a program for hazardous waste management. m Use of portable toilets. 	<ul style="list-style-type: none"> m Implementation of waste management plan. Monitoring for detection of hydrocarbon spills in runways, taxiways and aprons. m Stormwater treatment. m WWTP operation and maintenance program. m Treatment of blue waters. m Collection of a percentage of rain water. c Water sustainable use program.
			<ul style="list-style-type: none"> m Water heating through the use of solar energy.
Vegetation 	Structure and Composition of Vegetation Communities	<ul style="list-style-type: none"> m Vegetation species rescue and relocation program, and environmental compensation program. c Flora rescue program / fauna rescue program. c Ecological restoration plan. 	
Fauna 	Community Abundance and Distribution	<ul style="list-style-type: none"> m Execution of the wild fauna rescue program. m Monitoring of bird populations. c Actions for bird monitoring and conservation. 	<ul style="list-style-type: none"> m Control of aviary risk, rodents and harmful fauna in the operational area, Art 46 of the airports law. c Devices or falconers for dispersion of birds in the project.
	Species with Protection Status	<ul style="list-style-type: none"> m Wild fauna rescue program. 	
	Habitat	<ul style="list-style-type: none"> m The quality of the existing bodies of water in the area of influence is to be improved. 	
		<ul style="list-style-type: none"> m Wild fauna rescue program. m Delimitation of zones. c Flora rescue program / fauna rescue program. 	

Symbolization	2	 Renewable Energy	5	 Pollution Prevention and Control	m	Mitigation Measures
	3	 Energy Efficiency	6	 Biodiversity and Conservation	c	Conditions
	4	 Water and Waste Management				

		Green Bonds Categories	
Environmental Component	Factor	Site Preparation and Construction	Operation and Maintenance
Landscape 	Scenic Quality	m Elaboration and implementation of the Integral Waste Management Plan.	
		m Work areas delimitation.	
Archeology 		m Prospective studies determined by INAH will be continued. m The measures determined by INAH to rescue archaeological remains will be implemented.	

4.5. Technical Studies

In general, the measures and strategies proposed by the MIA-R technical study are assessed with respect to cost, duration, possibility to execute, training requirements, etc. Although all these topics are important for the project execution, among requirements by DGIRA, there is an environmental insurance or guarantee, for which it is fundamental to assess each and all the measures proposed. Thus, the insurance aims at fulfillment of the conditions referring to flora, fauna and water bodies protection, in order to protect the natural resources in view of the works or of risk activities. It must be noted that the amount of this insurance is supported by an *Economic Technical Study*, which objective is to provide backup to the cost of carrying out environmental prevention, control, mitigation and compensation strategies.

4.5.1. Economic-Technical Study

The study consists on analyzing the estimated economic cost of each of the environmental programs resulting from the Environmental Management Program in the stages of site Preparation and Construction, as well as calculation of the estimated annual cost for the Operation and Maintenance stages of the NAICM project. Specifically, the study analyzes and calculates the estimated preliminary cost of the measures associated to the factors: suspended particles, air quality, traffic flow, soil structure, soil quality, water quality, structure and make up of vegetation communities, abundance and distribution of communities, species with conservation status. With regards to the conditions, this study considers 4, 6, 7 and 8 described on item 4.3, referring to the Resolution.

4.6. Proposals for Application of the Project

As of the result issued in the Resolution about the Core Study and the Environmental Management Program proposed, the plans and programs are prepared based on the requirements reported by DGIRA. Particularly, DGIRA establishes that the activities authorized in the project shall be subject to the twenty conditions issued.

4.6.1. General description of the plans and programs

This section briefly describes the plans relative to the conditions mentioned in Section 4.3 of the Resolution.

Table 3 - Relationship between plans and programs and the conditions

Plans and Programs	Condition Number
Ecological Restoration Plan	4
Wetlands Hydrodynamic Impact Mitigation Actions	6
Fauna Rescue Program	7
Flora Rescue Program	7
Bird Monitoring and Conservation Actions	8
Proposals for Soil Recovery and Preservation Actions	9
Environmental Management Plan	10
Proposal and Follow-up on Environmental Plan Compliance	10
Greenhouse Gas Emissions Monitoring Plan	10
Greenhouse Gas Actions Proposal	11
Urban Solid and Special Handling Waste Plan	12 y 17
Climatic Event Response Program	13
Water Sustainable Use Program	15
Hazardous Waste Management Plan	18 y 19

Para lograr lo anterior es necesario llevar a cabo acciones de monitoreo que garanticen que las medidas propuestas en la MIA-R y las condicionantes recomendadas en el Resolutivo estén siendo incorporadas en la ejecución del proyecto.

Referencias

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5. Performance Indicators

Specific performance indicators are being developed for tracking through the on-going reporting in line with the Green Bonds framework.

5.1. Eligible Buildings

The Airport program is currently developing designs for LEED v4 ratings for the following buildings.

Building	LEED v4 Rating Target
Passenger Terminal Building	Platinum
Ground Transportation Center	Gold
Air Traffic Control Center	Gold
Area Control Center	Gold

In addition to the specific buildings undergoing the LEED rating process, there are impacts for other ancillary buildings and systems to achieve these targets.

The Central Utility Plants A & B (CUPs) are located in the West airfield and supply chilled water for cooling the Passenger Terminal Building (PTB) and Air Traffic Control Tower (ATCT), as well as facilities to the North within the Midfield area. The cooling systems are being designed to a high level of energy efficient performance.

The Ground Transportation Center will include a bus station and a metro rail station. A further bus station will be located to the North of the site for employees of the Midfield areas. Connectivity for the airport workers as well as passengers is critical for successful opening of the project and reducing car travel.

The project includes a dedicated Waste Water Treatment Plant. All black water from the initial phase of development will be treated to a high level to meet California Building Code requirements to provide a supply of treated water to airport buildings for lavatory flushing, irrigation and cleaning needs.

5.2. Energy and Water Consumption and Reduction Strategies

The MIA reviewed the currently observed values of water and energy consumption at the existing airport; based on these usages the new airport is targeting a reduction of around 70% in its use of potable water and 40% for energy usage.

All the buildings seeking a LEED rating are currently targeting a 50% energy cost reduction to meet the full points available. This 50% cost reduction is being designed through the following strategies:

- Implementation of Energy Conservation Measures (ECM's) within the building.
- Connection to a High Efficiency Campus Central Utility Plant.
- Power sourced from renewable energy sources.

Water consumption is being reduced through the following strategies:

- Dedicated on-site Waste Water Treatment Plant to provide a supply of treated water.
- Use of low flow fixtures for toilet flushing using treated water in buildings seeking a LEED rating.
- Use of low flow fixtures for lavatory fixtures using potable water in buildings seeking a LEED rating.

5.3. Greenhouse Gas Emissions

As laid out in the MIA the proposed building designs, boilers and power plants will reduce the Greenhouse Gas emission by 50% compared to the current Mexico City Airport.

Reduction in Greenhouse Gas emissions aligns with the energy reduction strategies noted above for energy consumption.

Other opportunities which are being implemented or investigated at this time are as follows:

- Use of photovoltaic panels to provide site lighting and perimeter protection during construction.
- Provision of sufficient infrastructure to allow electric Ground Source Equipment (eGSE) for airlines and ground handlers to reduce non-aircraft airside air pollution.
- Identification of locations of natural resources and products to reduce pollution from transportation to the site.

5.4. Waste Reduction and Diversion from Landfill

The MIA outlines a range of reduction and recycling targets. Overall the new airport seeks a reduction of 10% to 30% in waste generation and an improvement of 10 to 30% in the amount of waste diverted to recycling facilities.

5.5. Energy Purchased or Generated On-site from Renewable Energies

The use of photovoltaics is currently being utilized for site lighting.

An extensive feasibility study is also currently in progress. This is to determine the best cost solution to meet the LEED demands of the project.