

GRUPO AEROPORTUARIO
DE LA CIUDAD DE MÉXICO

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Mexico City Airport Trust
NAICM Green Bond
Reporting

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NAICM
AIRPORT PROGRAM
PARSONS PROJECT MANAGEMENT OFFICE

1. Introduction

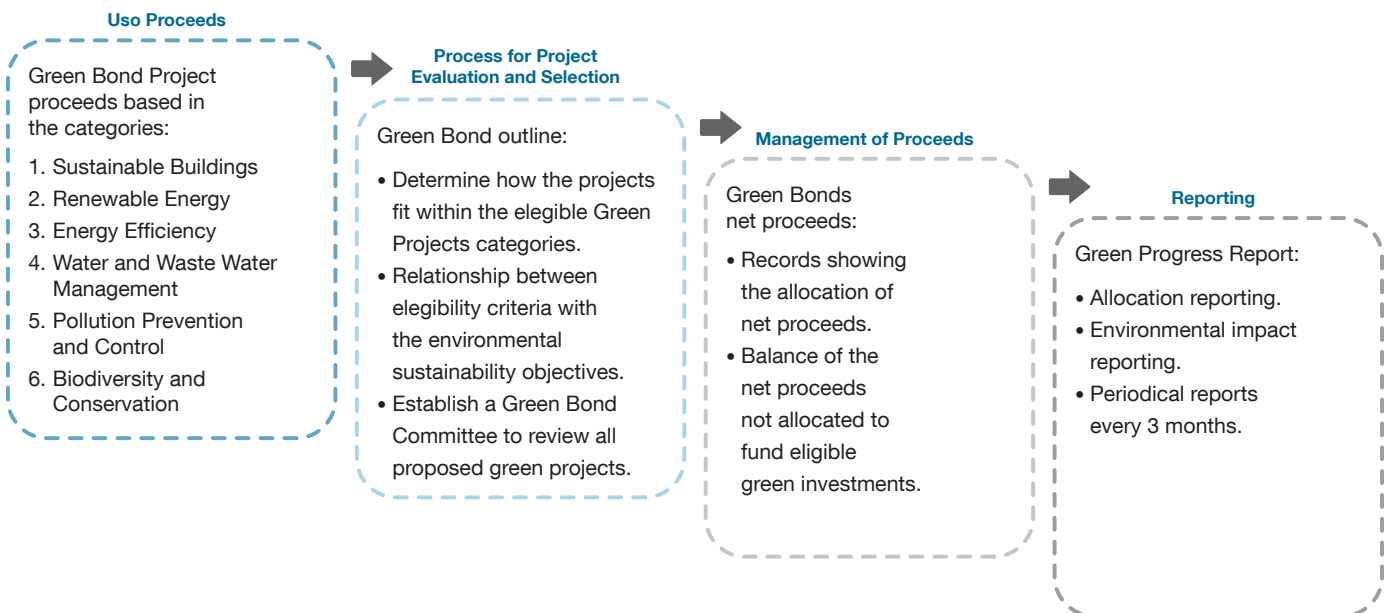
Grupo Aeroportuario de la Ciudad de México, S.A. de C.V. (GACM) is responsible for the preparation and providing a fair representation of this Green Bond Framework as of September, 6th 2016, which will cover the issuance of Green Bond from Mexico City Airport Trust.

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-R), 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.

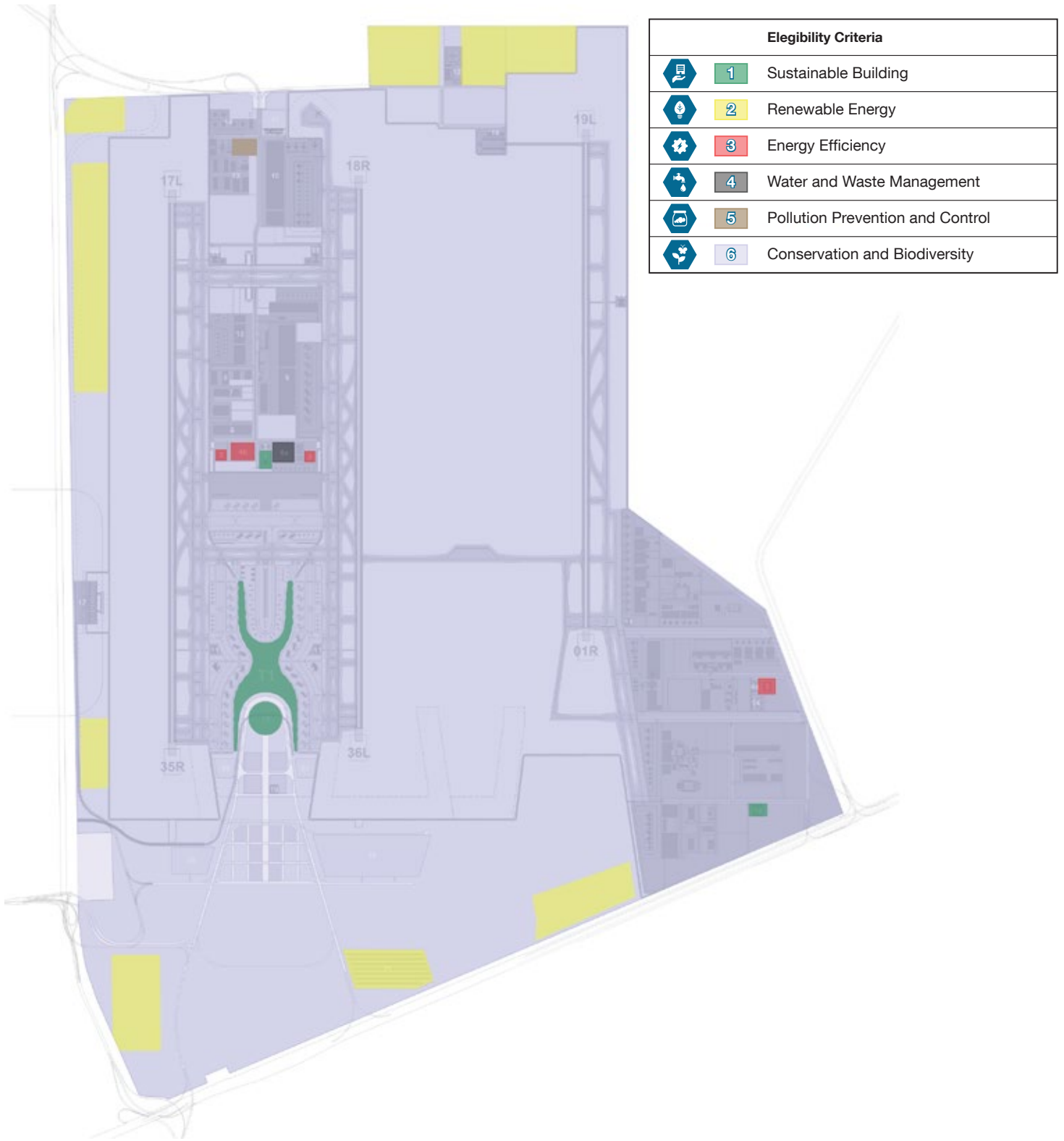


Figure 2 - Site polygon showing location of main program elements per eligibility criteria.

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	\$5,764,394,697

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	\$650,611,031.25	\$420,133.53	\$13,264.49	\$19,133,963.08	\$47,153,312.39	\$25,094,921.80
Total	\$742,426,626.54					

Description	Amount
Amount Available for Allocation	\$5,021,968,070.46

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. Best Practices: Site Zoning Strategies and Implementation for NAICM

4.1. Introduction

Site-zoning is a tool that allows effective site planning for construction. For the New Mexico City International Airport (NAICM) Project the works and activities taking place in the overall site area, “the Polygon”, require undertaking logistics strategies to divide, control and regulate the Polygon’s use and hence are used to minimize environmental impacts during the Airport construction works. These strategies depend on the site planning for each of the phases and matching with the construction works of the Project. The objective of this report is to provide a summary of the importance of zoning for this megaproject, and the implementation of strategies and environmental mitigation measures related with eligible categories: 4) Water and Waste Management, 5) Pollution Prevention and Control, and 6) Biodiversity and Preservation.

4.1.1. What is Zoning?

Zoning is the division of a piece of land into sub-areas or zones that are to be used or protected for a specific function or need. There are different types of zoning according to the use or activity intended to be managed in a geographical area. Some examples are: agro-ecological, flood-planes, ecological-protection, economic-use and urbanization. For each type of zoning, different categories are identified according to the land’s characteristics, scale and potential uses. Additionally, zoning is a multi-scale tool allowing for land-use management from the national and regional to the local level. These are regulated by governmental institutions, national and local laws and codes to provide a framework to all land-use types at all scales.

In Mexico, each Federal State has the authority to exercise their power for zoning and the allocation of land-uses, protection and nature reserves, plot size and scale and construction types. Land management through the publication of Code and Standards is aimed at delivering a mix of land-use areas for ecological conservation, separation zones between different uses, reserve areas and urban development areas. Zoning is also used to establish criteria for the management of land with specific characteristics that require to be done by other procedures.

4.1.2. Zoning and Land-use Criteria

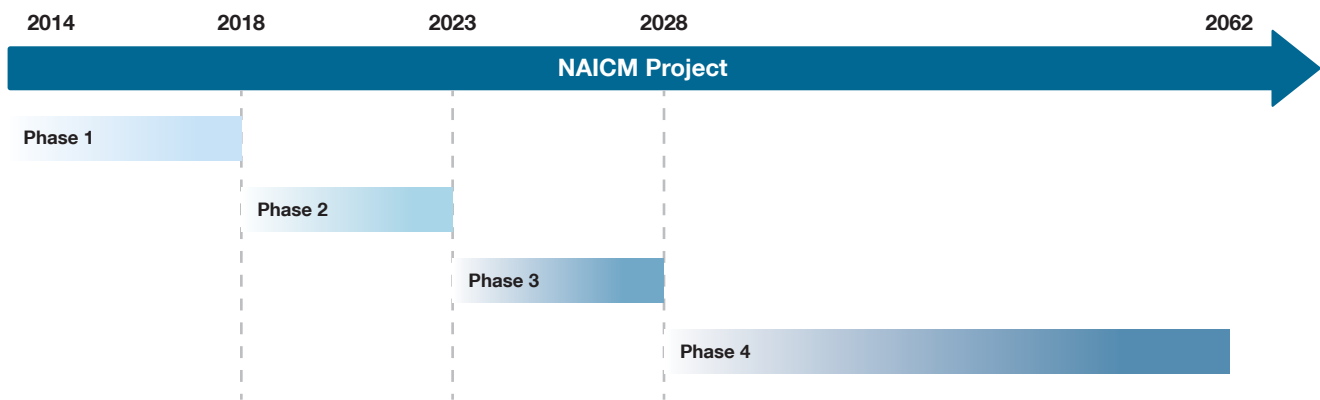
When dealing with land which has environmental characteristics that are specific it is crucial to zone, since the criteria for environmental management is established based on the area boundary. Aiming to preserve and restore the Mexican lands, the National Forestry Commission (CONAFOR, per its Spanish acronym) oversees ecological zoning to identify and map areas with productive and ecological potential. It is part of the Secretary of the Environment and Natural Resources (SEMARNAT, per its Spanish acronym) and CONAFOR has the responsibility to establish the methodologies, criteria and procedures for the integration and update of forestry zoning. Based on forestry zoning, it is possible to implement programs for the selection, handling and use of forestry germplasm, such as seeds and other reproductive organic cells, and decisions regarding reforestation and the protection of species.

Forestry lands are found on Federal, State, Municipal, Communal and private property. All owners must comply with the restrictions for forestry land use. It is sometimes possible to request a land use change to listed forestry areas based on their ecological characteristics. The General Law for Sustainable Forestry Development (LGDFS, per its Spanish acronym) sets out the regulation in the Land Use Change of Forestry Lands (CUSTF, per its Spanish acronym) when the total or partial removal of vegetation from forestry lands is required to be used for other activities. In this process, the interested party must provide a Technical Justificatory Study, along with the land use change request, to SEMARNAT, which is the entity managing the assessment of documents to authorize or reject the requested change.

4.2. NAICM Zoning and Land-use

The NAICM Project is intended to gradually develop and the site preparation and construction stages are divided into four phases (see figure 3). Each phase requires a logistics strategy to manage the works and activities based on the requirements established by the Environmental Impact Statement in its Regional modality (MIA-R) and follow the CUSTF criteria. Below is a description of the characteristics of the area in which the airport is located and its relationship with the environmental policies regulating the Project.

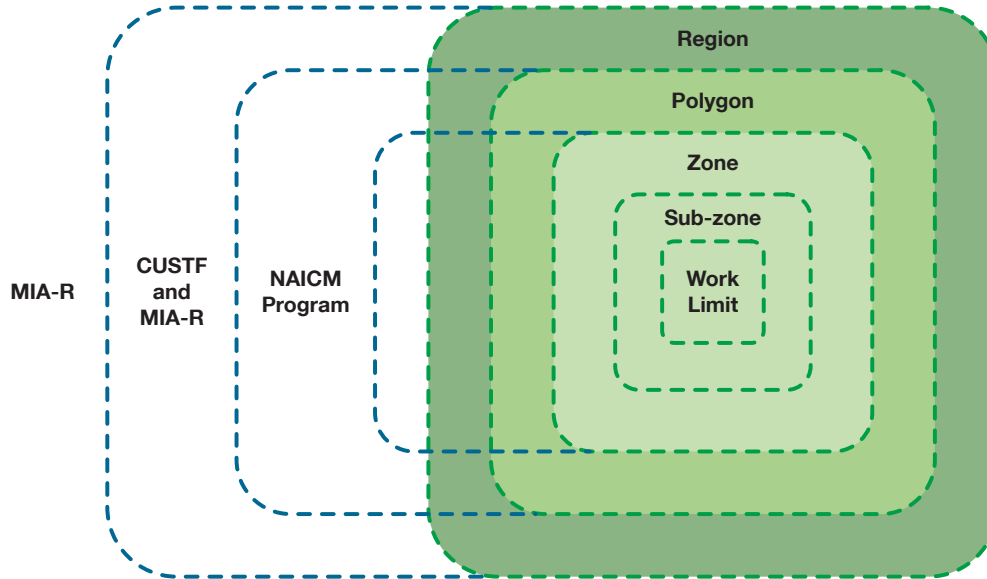
Figure 3 - NAICM Phases



To help explain the zoning scales of the development in relation to the environmental regulation criteria, the Master Plan and the Logistics Plan, there are five scales described. There are two scales related to the regulatory framework and three related to the Project works as seen in figure 4.

1. Region refers to the impacts of the project on the surrounding zone that identified by the MIA-R.
2. Polygon is the project area regulated by the MIA-R and includes certain polygon surfaces derived from the CUSTF.
3. Zones are the boundaries assigned for general activities and works.
4. Sub-zones are used for specific tasks within each zone.
5. Work limits refer to the area in which each contractor or sub-contractor will perform their construction works.

Figure 4 - Scales

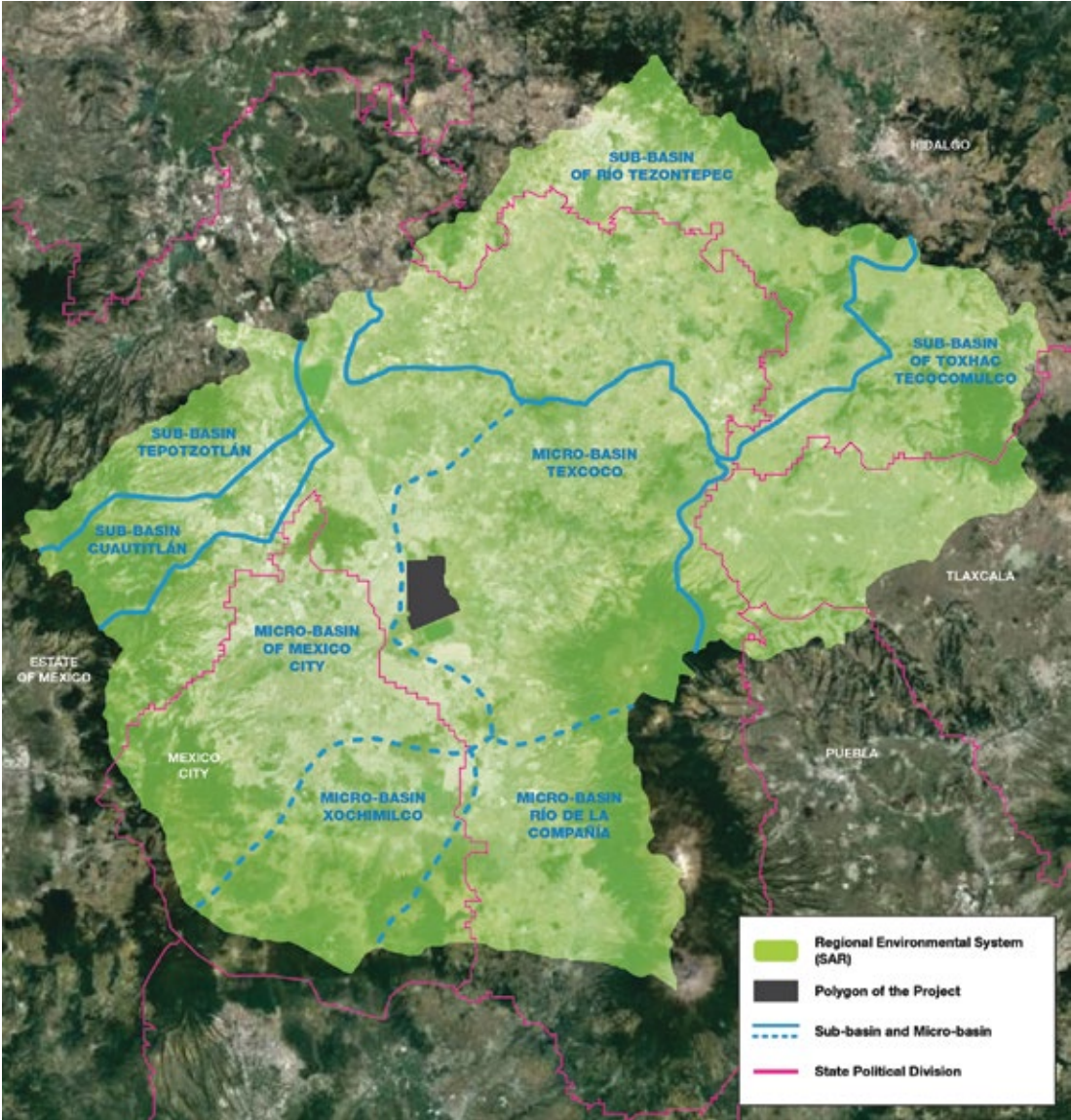


4.2.1. Ecological Regional Context and Location of the NAICM

The Polygon for the construction of NAICM is located just North East of Mexico City, approximately 14 kilometers east from the current Mexico City International Airport (AICM, per its Spanish acronym). Surrounding the Polygon, there are areas with specific environmental characteristics such as water bodies, agricultural land, and different areas classified due to their ecological value. The Project is located on the former lake “Lago de Texcoco”. The neighboring areas are to the North there is the solar evaporation plant “El Caracol”, to the West there is the urban Municipality of Ecatepec, to the East there is the municipal capitals of Texcoco de Mora and Atenco, and to the South there is the reservoir “Laguna Nabor Carrillo” and running parallel to the West of the project with the Great Drainage Canal.

During the development of the MIA-R, the Regional Environmental System (SAR, per its Spanish acronym) was outlined and justified. This is where the impacts associated to the construction and operation of the NAICM are identified at a regional scale, along with the prevention, correction, restoration and compensation measures adopted to mitigate impacts. The SAR area covers the Polygon of the Project and extends out through the Valley of Mexicobasin, to cover the environmental and socioeconomic criteria of the MIA-R. The Project’s Polygon covers 4,968.13 ha, and the SAR has an area of 953,570.31 ha, including Mexico City and eleven municipalities of the State of Mexico, which in total conform the area of influence of the project (see figure 5).

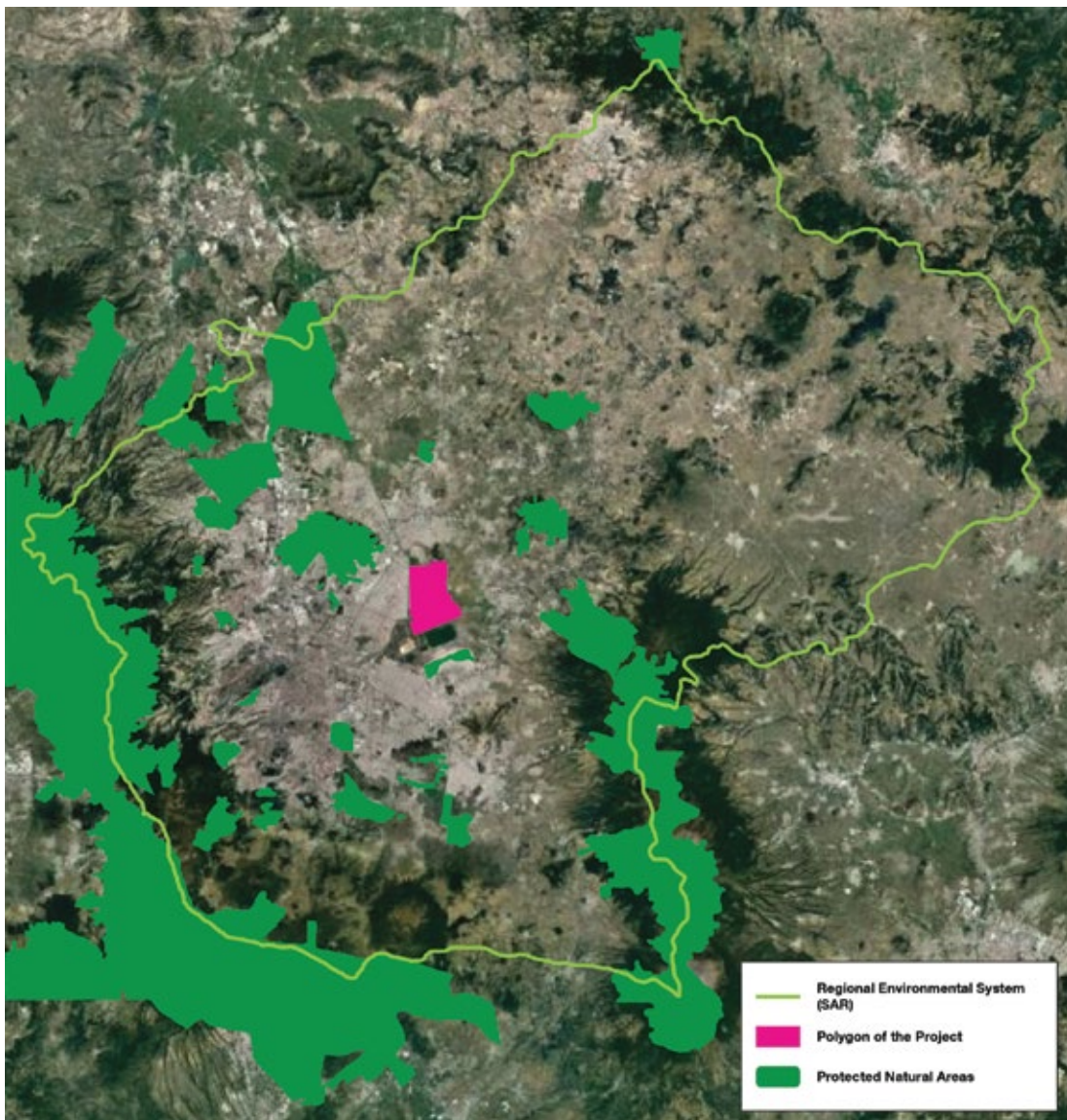
Figure 5 - Regional Environmental System (SAR)



The areas with ecological value located near the Polygon are under the jurisdiction of Federal and State authorities and are classified in five different categories as follows:

1. Protected Natural Areas (PNA),
2. Priority Regions,
3. Priority Terrestrial Regions,
4. Priority Hydrological Regions, and
5. Areas of importance for the Preservation of Birds.

Figure 6 - Protected Natural Areas



The SAR identifies 32 Protected Natural Areas. Twelve of them within Federally controlled areas, and twenty within state controlled areas (see figure 6). The MIA-R establishes it is necessary to identify these areas for compliance and supervise environmental management programs and the normativity applicable to the NAICM Project, as well as compliance with the guidelines for land use, management of natural resources and ecological management programs.

The land use and vegetation identified in the SAR are classified by 19 types, with 15 in the micro-basin of the former Lago de Texcoco. The following table 1 specifies the types of vegetation identified in the SAR, the area corresponding to each type, and which ones have a forestry land use classification category. Based on the classification established in the forestry land inventory that was developed by SEMARNAT, calculations indicate the SAR has a forestry land surface of about 20%, and a non-forestry land surface of 80% in relation to the total surface.

Table 1 - Forestry and Non-Forestry Surface

Types of Vegetation	Vegetation Classification	Surface (Ha)
Induced Grassland (IG)	Non-Forestry	12,809.46
Oak Woodland (OW)	Broadleaf	7,252.66
Piney Woodland (PW)	Coniferous	5,901.94
Halophile Grassland (HG)	Other Forestry Areas	5,593.09
Crassicaule Scrub (CS)	Arid Areas	3,398.46
Oyamel Woodland (OW)	Coniferous	1,669.21
Pine-Oak Woodland (POW)	Coniferous and Broadleaf	981.54
Oak-Pine Woods (OPW)	Coniferous and Broadleaf	1,122.95
Halophile Hydrophilic Vegetation (HHV)	Other Forestry Areas	682.75
Juniper Woods (JW)	Coniferous	635.99
High-Mountain Prairies (HP)	Other Forestry Areas	71.94
Reeds (R)	Other Forestry Areas	93.30
Cultivated Forest (CF)	Other Forestry Wooded Associations	2,540.46
Temporary Agriculture (TA)	Non-Forestry Areas	52,209.74
Irrigated Agriculture (IA)	Non-Forestry Areas	26,363.70
Without Visible Vegetation	Non-Forestry Areas	6,846.65
Body of Water	Non-Forestry Areas	1,437.93
Human Settlements	Non-Forestry Areas	2,358.64
Urban Area	Non-Forestry Areas	12,384.05
Total		144,354.54

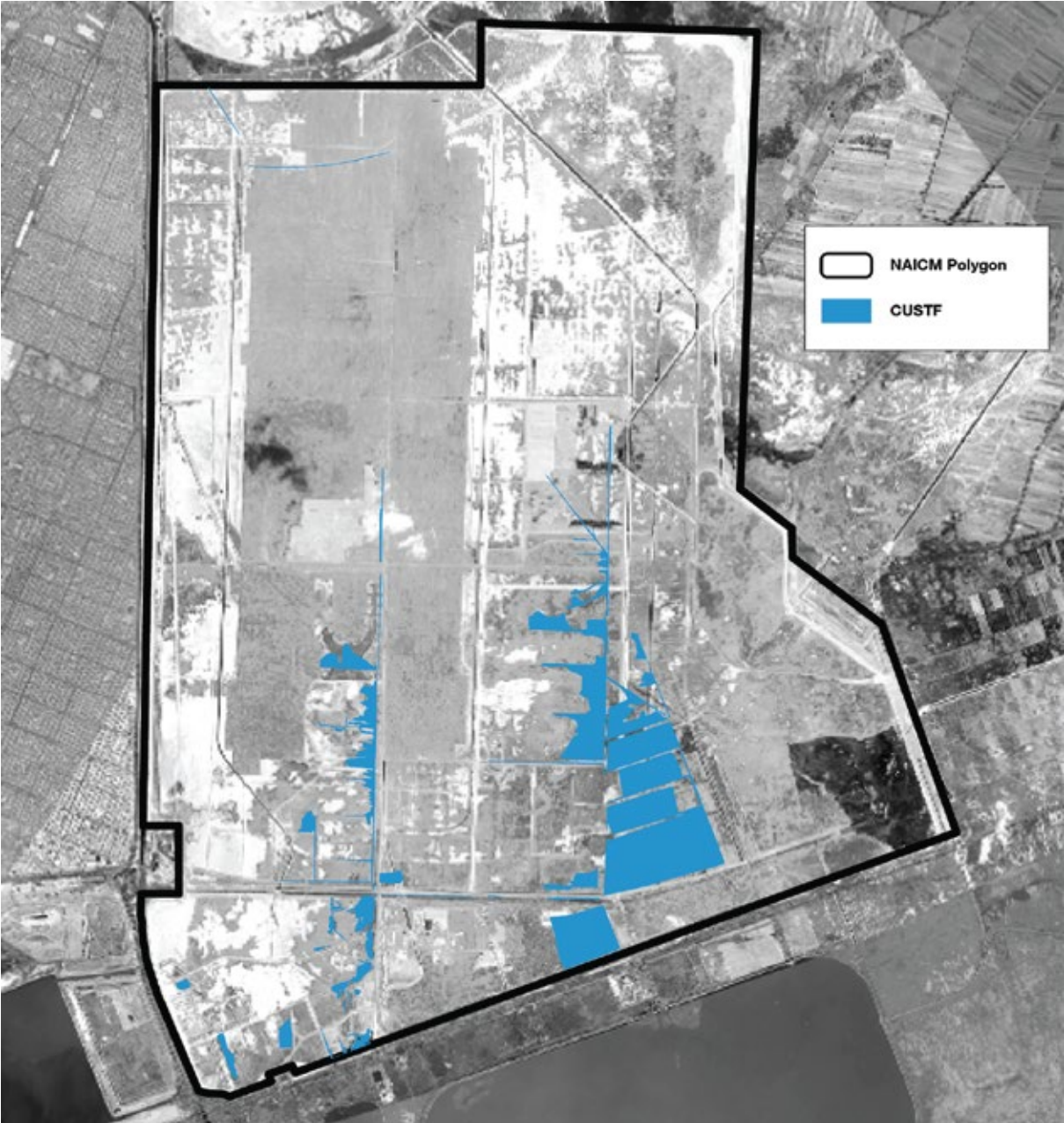
Aiming to classify the land use and type of vegetation in the Polygon, land areas were estimated based on the type of vegetation found, bodies of water, roadways and civil works. Induced grasslands are the predominant type of vegetation in the plot, followed by bodies of water and halophilic (salt-resistant) grasslands, which constitutes the forestry areas (see table 2).

Table 2 - Land Use and Vegetation

Land Use and Vegetation	Vegetation Classification	Surface (Ha)
Artificial Grasslands	Non-Forestry Areas	2,267.2043
Halophilic Grassland	Other Forestry Areas	240.7545
Bodies of Water and Floodable Area	Non-Forestry Areas	1,862.64
Internal Roads (Unpaved and Paved Roads)	Non-Forestry Areas	51.841
Internal Roads (Unpaved and Paved Roads)	Non-Forestry Areas	8.7242
Total		4,431.1640

The total forestry surface subject to the CUSTF covers 240.7545 ha and is divided into 42 areas (see figure 7) and contains halophilic grassland bushes and trees mostly of the *Tamarix chinensis* and *Tamarixaphylla* species. In these areas four species of wild mammals were found: Two small rodents: *Peromyscus maniculatus* (white-footed mouse) and *Microtus mexicanus* (mexican vole), as well as two leporidae reported for the area: *Lepus californicus* (black-tailed jackrabbit) and *Sylvilagus floridanus* (Eastern cottontail).

Figure 7 - CUSTF Areas



4.2.2. Environmental Regulatory Framework for NAICM Zoning

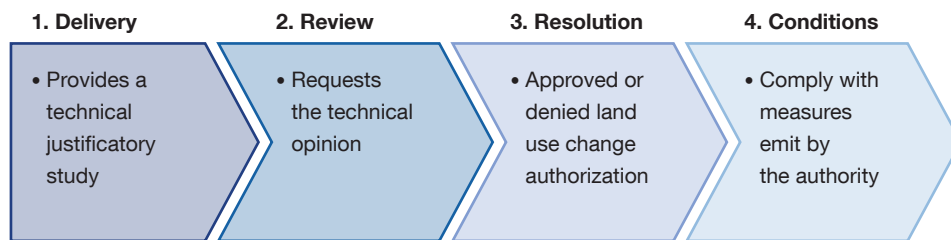
Considering the ecological characteristics of the adjacent zones to the Polygon and the scale of the project, the development the MIA-R identified the effects that NAICM may cause to adjacent areas with environmental value. In addition to the MIA-R, areas with consolidated vegetation were identified within the site, and it was determined to undertake a Technical Justificatory Study for Land Use Change.

This technical study was made since the halophilic grassland include consolidated trees and bushes considered to be forestry vegetation. This study demonstrated motivating reasons to change the land use from forestry to urban, and gave directional measures and actions to prevent, eliminate, reduce and minimize the impacts generated by the implementation of the land use change in the Polygon.

The procedure for authorization of the land use change in the forestry areas of the Polygon intended for the construction of the NAICM is divided into four phases:

1. *Delivery*: GACM provides a Technical Justificatory Study, along with the authorization request for a land use change, to the General Directorate for Forestry and Soil Management part of SEMARNAT.
2. *Review*: The directorate requests the technical opinion from different federal and state entities.
3. *Resolution*: The General Directorate for Forestry and Soil Management issues the CUSTF, through which the land use change authorization is approved or denied.
4. *Conditions*: The General Directorate establishes the conditions for rescuing and relocating forestry vegetation species to comply with the Regulations of the General Law on Sustainable Forestry Development (see figure 8A).

Figure 8A - Procedure of Land Use Change

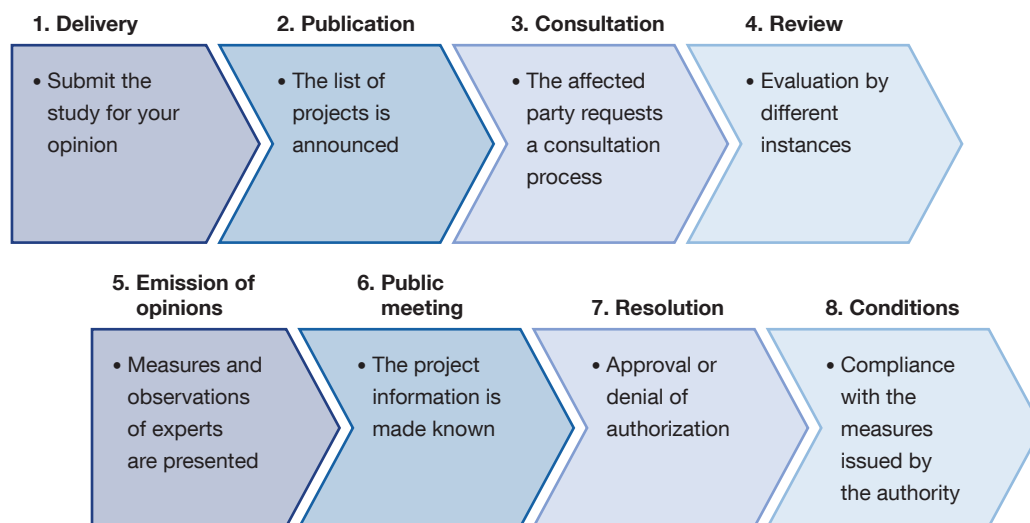


Based on the CUSTF and the MIA-R, the specific intervention criteria in the NAICM Polygon were established. The CUFST provides specifications for the vegetation rescue and relocation programs, while the MIA-R provides measures to regulate the rest of the Polygon surface (see figure 9).

Aiming to attain authorization for the NAICM project, the Environmental Impact and Risk Directorate (DGIRA), entity that is part of SEMARNAT, evaluated the effects of the works and activities described in the MIA-R study. The evaluation procedure is divided into the following phases:

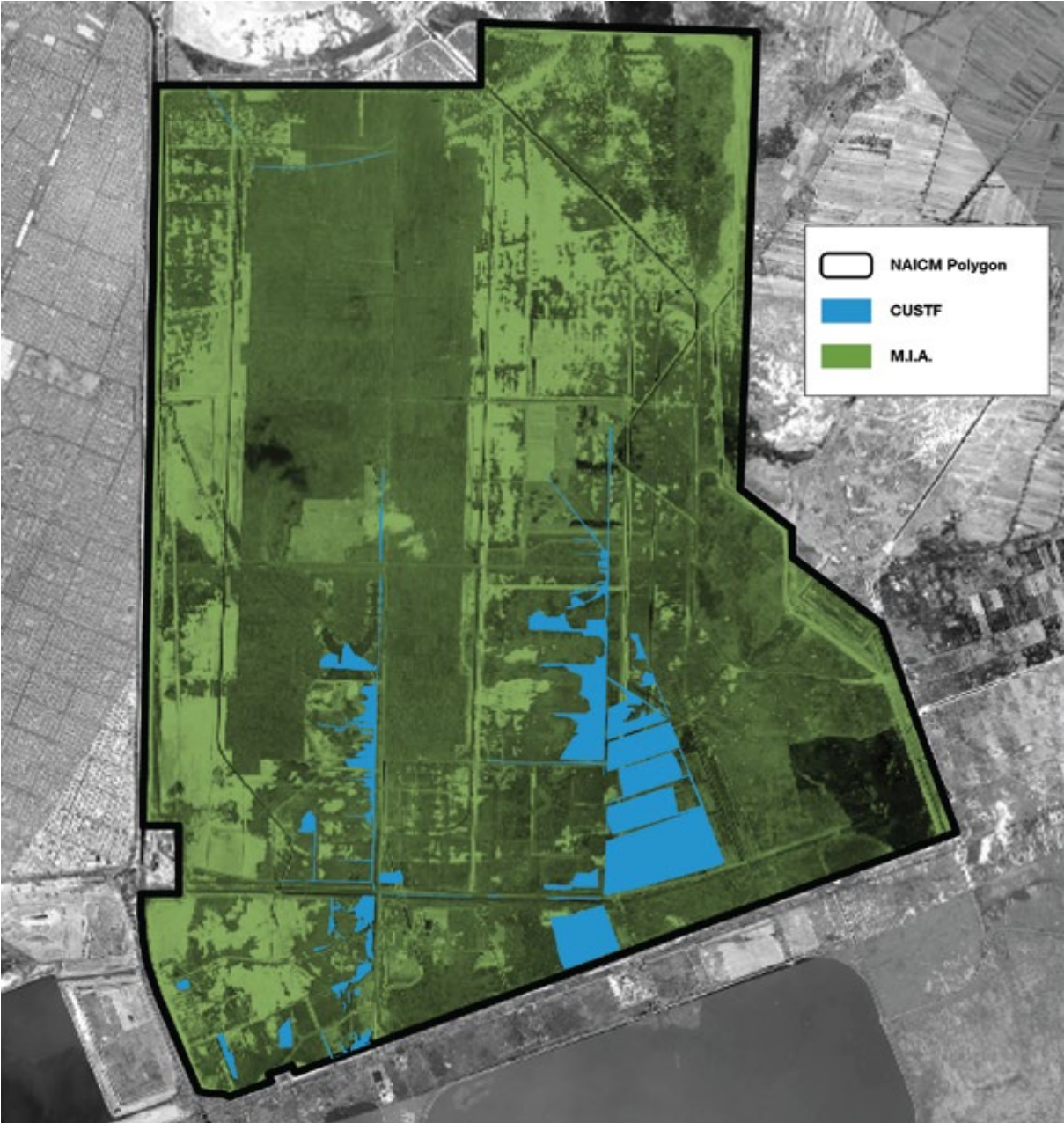
1. *Submittal*: GACM presents the study before the DGIRA for its corresponding assessment and dictamen in terms of Environmental Impact and Risk.
2. *Publication*: The Ecological Gazette contains the list of projects and resolutions stemming from the procedure and evaluation of the Environmental Impact and Risk.
3. *Consultation*: the party affected by the construction of the Project requests to put the process through public consultation. The administration unit then begins said process, making all the information related to the Project available for the general public.
4. *Review*: DGIRA notifies the Project has entered the Environmental Impact Evaluation Process (PEIA), and requests a technical opinion from diverse federal, state and academic entities.
5. *Issuance of Opinions*: the DGIRA, in conjunction with local authorities, arranges for a meeting to disclose the technical information of the Project, as well as potential impacts and mitigation measures.
6. *Public Meeting*: la DGIRA coordina en conjunto con las autoridades locales una reunión para dar a conocer la información técnica del Proyecto, así como potenciales impactos y medidas de mitigación.
7. *Resolution*: SEMARNAT approves or denies authorization of the Project.
8. *Condiciones*: The DGIRA conditionally approves the Project and determines conditions for compliance (see figure 8B).

Figure 8B - MIA-R Assessment Procedure



Con base en el CUSTF y la MIA-R se establecieron los criterios específicos para intervenir en el Polígono del NAICM. El CUSTF provee las especificaciones del programa de rescate y reubicación de la vegetación, mientras que le MIA-R proporciona las medidas para regular el resto del Polígono (ver mapa 9).

Figure 9 - MIA-R and CUSTF Areas



The MIA-R measures are related to the fourteen plans and programs that are bound to the twenty conditions specified in the Resolution of the MIA issued by the General Directorate for Environmental Impact and Risk. The CUSTF measures are linked to the conditions of the Resolution, and specially to the Flora Rescue Program. Both regulation criteria are very much alike, but the areas classified as CUSTF are focused on rescuing forestry vegetation and their measures are much more restrictive, as well as the work schedules.

Mitigation Measures of the MIA-R	Mitigation Measures of the CUSTF
<ul style="list-style-type: none"> • Use treated water to irrigate surfaces during the clearing and grubbing activities, as well as on unpaved roads to prevent dust from raising. • Drive at minimal speeds through access roads in order to reduce particulate material dispersion. • Implement a particles catchment system for the asphalt and concrete plants, and reuse dust from the catchment system. • Segregate solids deriving from the asphalt and concrete plants particle catchment system. • Implement a Preventive Maintenance Program, keeping records updated. • Comply with the Vehicle Verification Program, based on NOM-041-SEMARNAT-2006 and NOM-045SEMARNAT-2006. • Prevent vehicles, machinery and equipment from operating when not in-use, with the purpose of reducing the emission of pollutants. • Conduct preventive maintenance to the asphalt and concrete plants. • Comply with the Vehicle Verification Program to evaluate noise emission in accordance with NOM-080-SEMARNAT1994. • Restrict normal activity schedules for machinery and equipment in populated areas near Project areas. • Install silencers to vehicles, machinery and equipment, and monitor the maximum permissible limits for noise emissions. • Place signage and flagmen along access roads into the project. • Limit soil leveling and compaction only to defined areas in the project. • Move materials resulting from the excavation and cutting works to authorized disposal sites. • Define the clearing and grubbing area prior to beginning with the activities, with the purpose of affecting only sites meant for construction. • Develop and implement the Integral Waste Management Plan. • Use concrete and asphalt pits during the construction stage. • Use portable latrines. One to every 20 workers during the Site Preparation and Construction stage. • Implement the species Rescue and Relocation Program. • Execute the wild Fauna Rescue Program • Monitor bird populations in the bodies of water located in the Project's area of influence. 	<ul style="list-style-type: none"> • Irrigate using recycled water tank trucks to avoid the generation of dust and the scattering of particles during grubbing. • Install portable toilets for the staff that will be working in the Project site, considering 1 toilet for every 10 workers. • Implement a rescue and relocation program for forestry vegetation species that will be affected, including their adaptation into the new habitat, prior to the clearing and grubbing works. • Ensure at least a survival rate of 80% for the referred species during the terms established by the program. • Reforest an area of 240,754ha with native vegetation that adapts to the salinity conditions of the area, in accordance with the program. • Grind, chop and store organic soil and forestry residues resulting from the clearing activities for them to be treated in the plant nursery and compost area. • Prevent the stacking of organic material intended for restoration and conservation of areas from obstructing water courses. • Build trenches, levees and 800 individual/hectare terraces in the area proposed for reforestation to recover soil and avoid erosion. • Ban the hunting, capturing, commercialization and traffic of wild fauna species, as well as the gathering, commercialization and traffic of wild flora species found in the subject area. • Ban maintenance activities of machinery or vehicles inside the project area. Use machinery that complies with the normativity in terms of emissions into the atmosphere, noise contamination and soil. • Prevent lubricants and solvents derived from the use of machinery from being spilled on the ground or poured into bodies of water. • Gather and move to a site authorized by the Municipality solid and special handling waste generated during the works and activities. • Comply with the measures for prevention and mitigation of impacts to forestry resources and to wild flora and fauna. • Remove the forestry vegetation authorized for Land Use Change in Forestry Lands within a 4-year term. • Ensure compliance and effectiveness of the commitments derived from mitigation measures caused by the affectation to soil, water, flora and fauna, within a 10-year term. • Notify this Forest and Soil General Direction in writing once initiated the land use change activities.

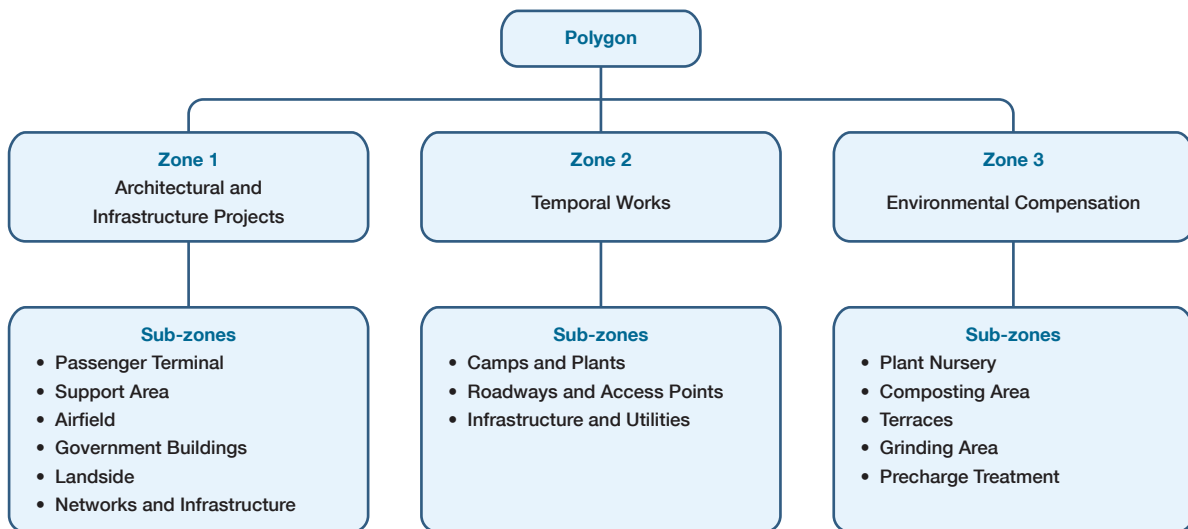
4.2.3. Classification of Zones and Sub-Zones

The purpose of zoning NAICM is to set boundaries for the Program’s development to meet the logistics needs to manage the works and activities within the Polygon and comply with the environmental regulation criteria during construction. It is important to indicate in the logistics Plan the zones where it is permitted to temporarily establish buildings and facilities for the Program’s personnel and temporary works. Zoning also defines internal access schemes to allow the necessary operations and activities by the contractors.

Demarcation of zones identifies where shared areas can be located and plans for zones which will be needed due to critical path timeframes, where the workforce needed continuous progress of the works on different fronts. This also facilitates the monitoring for compliance with the environmental policy instruments requirements since several contractors will be working simultaneously in projects such as the Passenger Terminal Building (PTB).

Zoning is based on the boundaries established in the MIA-R, the CUSTF and the NAICM Program to define each zone or sub-zone. The Polygon is classified into three types of zoning. Each type identifies different categories associated to the construction of projects, logistics of the works and activities, and addresses environmental requirements (see figure 10).

Figura 10 - Zonas y Sub-zonas



- **Architecture and Infrastructure Projects:**

This category is integrated by the 63 projects intended to be built during phase 1. Aiming to represent the projects that constitute the NAICM, a classification was made to arrange them into six sub-areas grouped according to their function.

1. **Passenger Terminal:** it is constituted by the Passenger Terminal Building (PTB), buildings, terminal satellites and their corresponding aprons, parking areas, access routes and the Ground Transportation Center (GTC).
2. **Airside:** it is composed of the runways and taxiways designed for the operation of aircrafts.
3. **Midfield:** it consists of the Air Traffic Control Tower, air cargo facilities, airline maintenance, various administrative buildings, hangars, aprons and infrastructure for servicing and maintaining aircrafts.
4. **Networks and Infrastructure:** this includes cabling systems for telecommunications, medium and low-voltage lines, hydraulic distribution network and deep drainage system, among other utilities.
5. **Landside:** it is conformed by facilities and services for transport such as roadways and interchanges, bays, parking areas, express train station and metro line.
6. **Government Area:** encompasses facilities for the military forces and government entities, presidential hangar, Area Control Center (ACC), administrative buildings, aprons and infrastructure for servicing and maintaining aircrafts.

The table shown below shows the grouping in each sub zone and in figure 11 are represented in NAICM polygon.

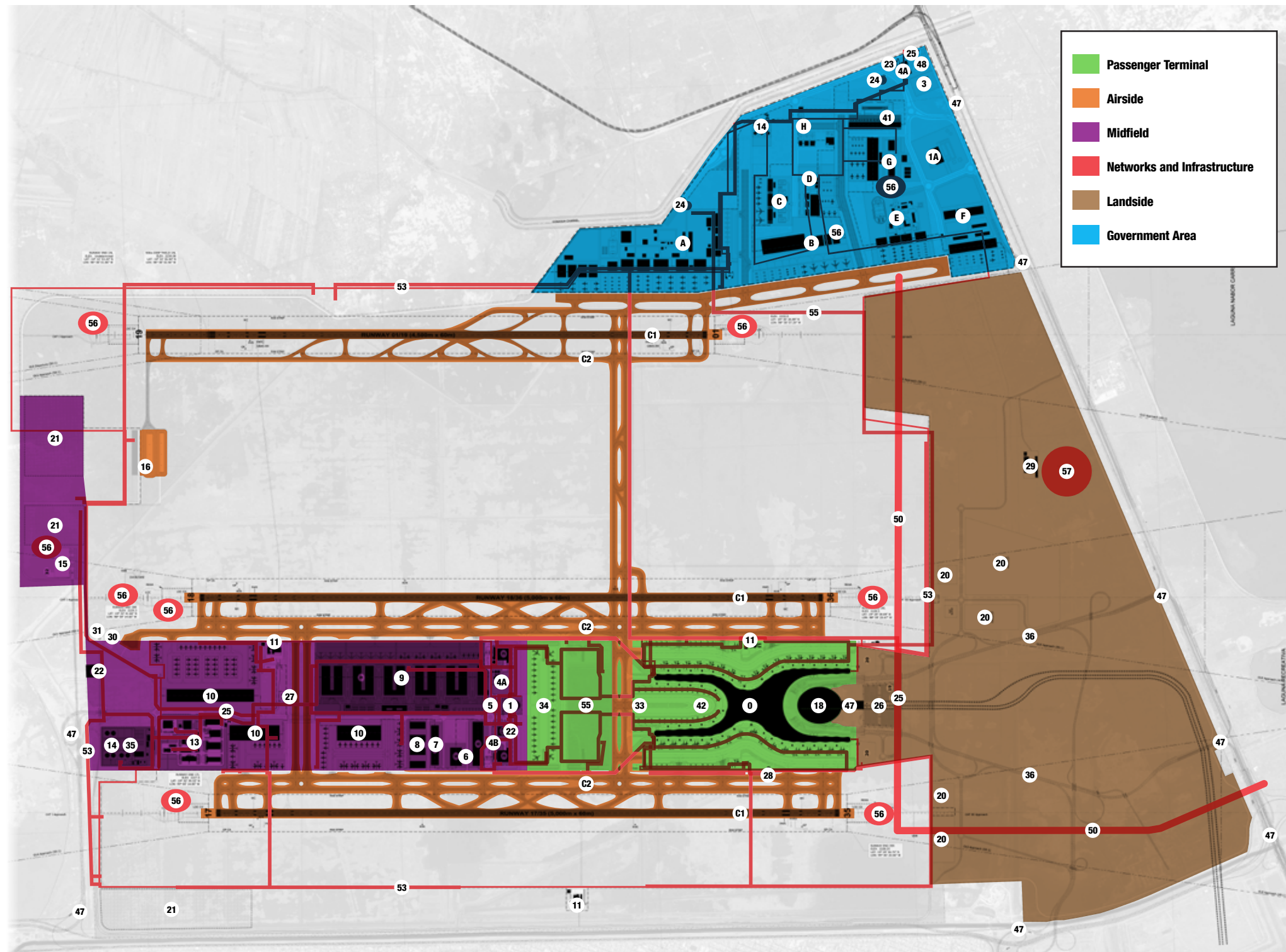
Table 3 - Architecture and Infrastructure Projects

Sub-zone	#	Description
PASSENGER TERMINAL	0	Passenger Terminal Building (PTB)
	33	Terminal Apron
	34	Remote Apron
	18	Ground Transportation Center (GTC)
	42	APM / BHS Tunnel Infrastructure
	28	Aircraft Fuel Rack / South East Campus
AIRSIDE	16	General Aviation (GA)
	C1	Runways 2, 3 and 6
	C2	Taxiways

Sub-zone	#	Description
MIDFIELD	1	Air Traffic Control Tower (ATCT)
	3	Central Utility Plant (CUP)
	10	Aircraft Maintenance
	4A	Sewage Treatment Plant
	4B	Fire Water Storage
	21	Solar Photovoltaic Array
	22	Electrical Substation
	23	Potable Water Storage
	30	Emergency Quarantine Facility
	31	Hazardous Waste Facility
	27	Refuelling Facility for GSE
	35	Fuel Farm
	5	Emergency Response Center
	6	Flight Catering
	7	Logistic Center
	8	Ground Service Equipment (GSE) Maintenance
	9	Air Cargo Terminal
	11	Rescue and and Fire Fighting Services (CREI)
	13	Airport Maintenance Buildings
	25	Radio Communication Buildings
32	Bus Maintenance Facility	
15	Employee Parking / Shuttle Bus Station North	
14	Gas Station	
NETWORKS AND INFRASTRUCTURE	50	Deep Drainage
	52	Surface Drainage
	53	23 Kvs
	55	Distribution Network Fuel
	56	NAVAIDS
	57	Primary and Secondary Surveillance Radar

Sub-zone	#	Description
LANDSIDE	36	General Roads
	20	Surface Parking
	47	Interchanges
	19	Airport Administration Building (GACM)
	26	Train Station
	43	Train Express
	25	Radio Communication Buildings
GOVERNMENT AREA	A	Mexican Air Force
	1A	Area Control Center (ACC)
	B	Comandancia General de Transportes Aereos Presidenciales
	C	Unidad Especial de Transporte Aéreo del Alto Mando
	41	Heliport, FATO and Aprons / South East Campus
	D	Escuadrón Aeronaval del Alto Mando
	E	Secretaría de Marina - Armada
	F	Procuraduría General de la República
	G	Federal Police
	H	Other Government Agencies
	24	Potable Water Wells
	48	Electrical Substation / South East Campus
	47	Interchanges
	49	Radio Communication Building / South East Campus
	20	Surface Parking
	39	Rescue and Fire Fighting Services / South East Campus
	40	Aircraft Fuel Rack / South East Campus
23	Potable Water Storage	
3	Central UtilityPlant (CUP)	

Figure 11 - Sub zones Classification



- Temporary Works

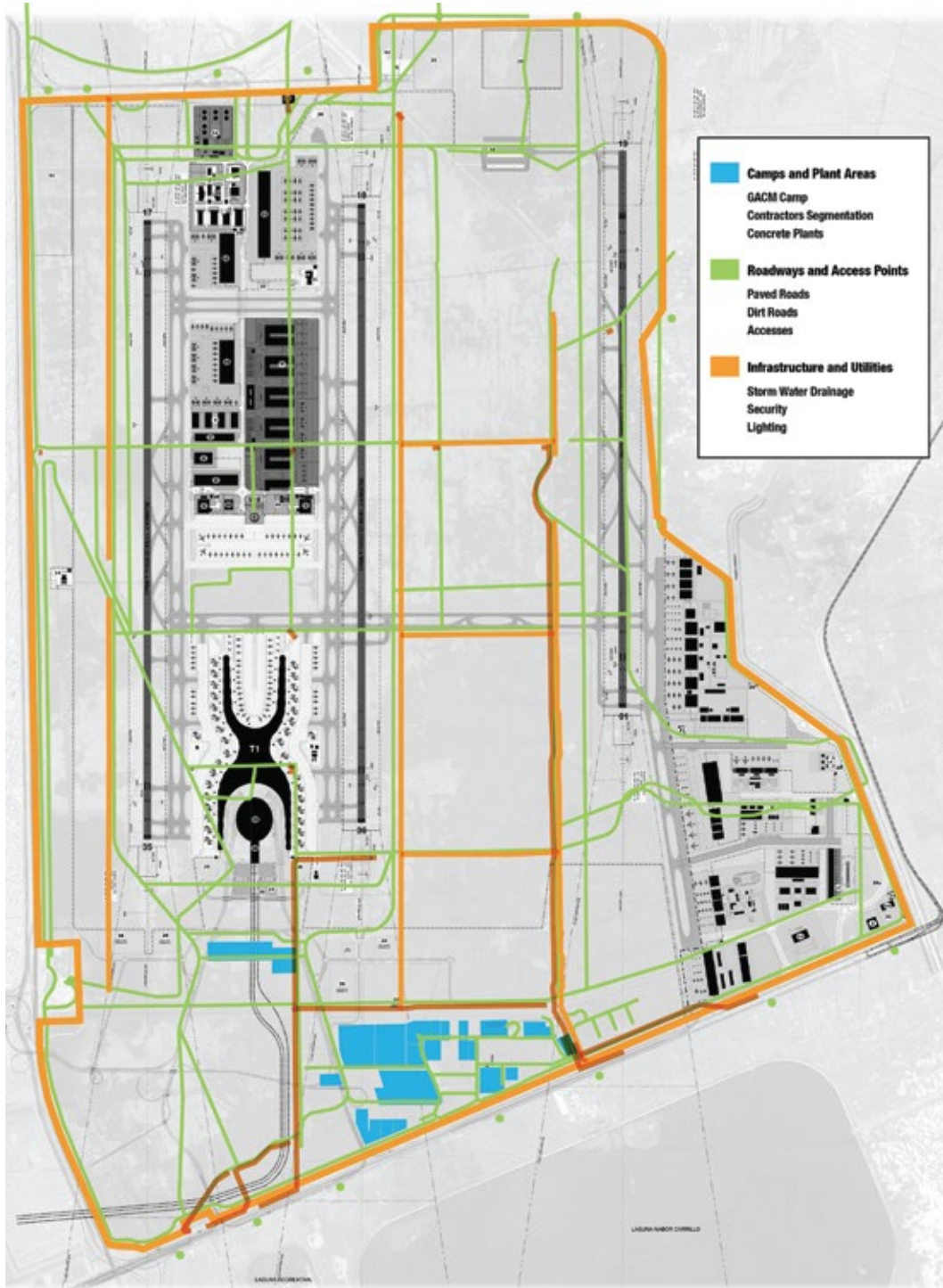
Temporary works include site facilities, access locations, roads and infrastructure developed to provide the requirements needed during the construction of phase 1. Currently, there are 37 camps, 1,900m of paved roads, 2,800m of unpaved roads and 2,900m of roads for the contractors’ complexes. The sub-zones intended for the contractor complex include offices and meeting areas, work areas, enabling workshops, warehouses, parking areas, common facility areas (toilets, dining areas, waste facilities), and all other needs.

Contractors’ complexes consist of a single access-point for all users, such as pedestrians, light vehicles, utilities transport (food, waste, stationary, etc.), heavy vehicles (personnel carrier). Aiming to facilitate workers’ mobility inside the premises, the complex incorporates bus stops. Concerning roadways and access points, primary and secondary routes have been established based on the existing infrastructure in the area. Access points for light and heavy vehicles were designated. Table 4 describes the services identified in the sub-zones that meet the needs of the temporary works (see figure 12)

Table 4 - Description of Sub-zones

Sub-zones	Services
Camps and Plant Areas	Gacm Camp
	Contractors Segmentation
	Concrete Plants
Roadways and Access Points	Paved Roads
	Dirt Roads
	Accesses
Infrastructure and Utilities	Storm Water Drainage
	Lighting
	Security

Figure 12 - Sub-zones for Provisional Works



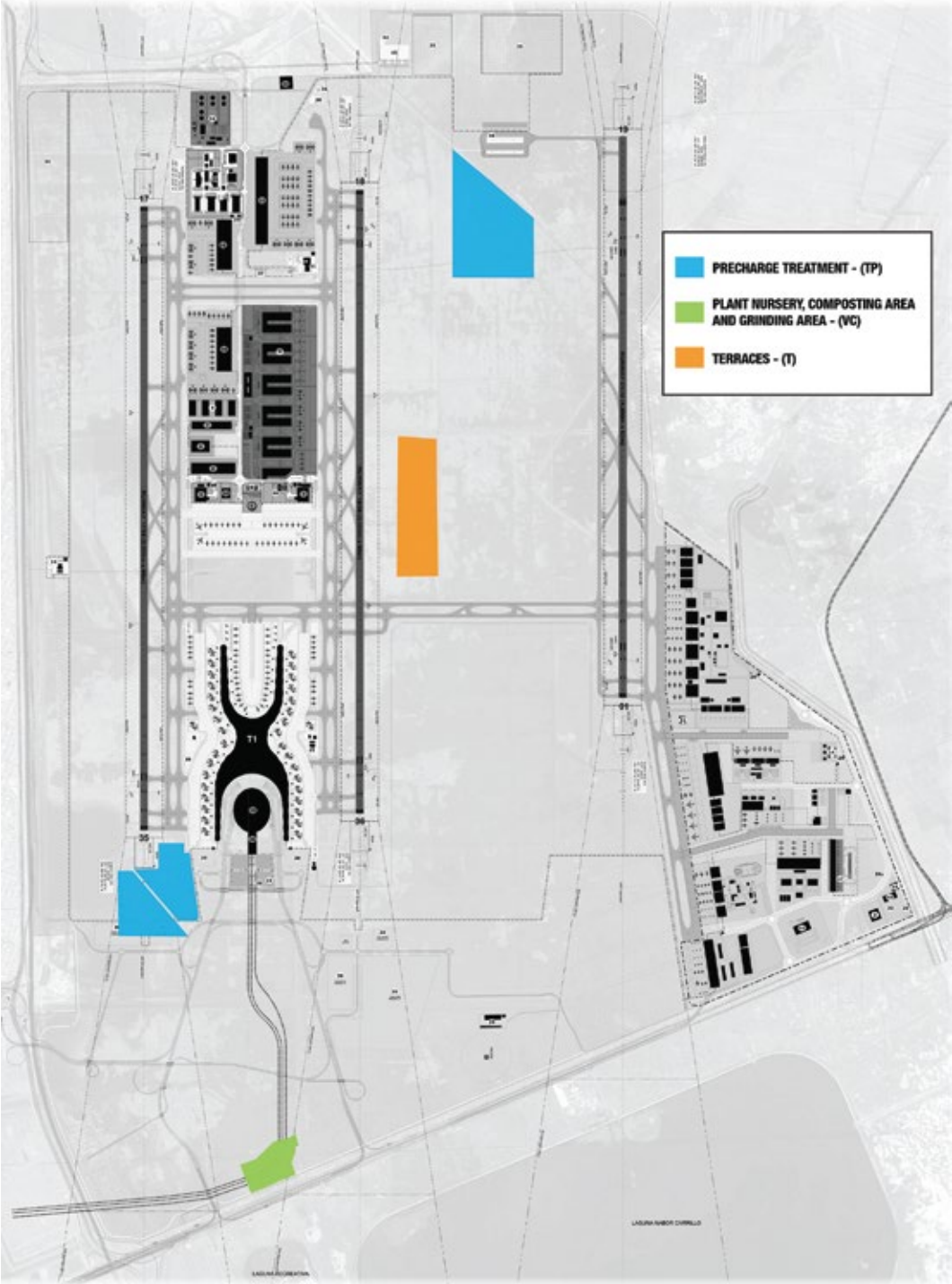
- Environmental Compensation

This category includes the areas intended for the removal of vegetative forestry species and the handling of forestry germplasms to reforest areas surrounding the Polygon that are part of the SAR. Prior to these activities, it is necessary to conduct actions concerning rescue of vegetation species, soil remediation and handling of organic material within the Polygon. Below are described the five sub-areas in which compensation activities are being conducted:

1. Plant nursery: is a transition area where the recovered species and germplasm are monitored before being transplanted.
2. Composting area: recovery of organic soil to be reused in reforestation areas.
3. Terraces: disposal area for removed organic soil.
4. Grinding area: Treatment of materials resulting from the clearing and grubbing activities to be used in the plant nursery and compost area.
5. Precharge treatment: grinding of sediments for the retrieval of stone material

In figure 13 are represented the five sub-zones described above.

Figura 13 - Sub-zones for Compensation



4.2.4. Zoning for Construction

Apart from the three general types of zoning identified within the Polygon, each sub-zone of the *architectural and infrastructure* projects requires zoning to properly manage the works and activities. Zoning of all the projects identified in this category must comply with the criteria established by the MIA and with the CUSTF criteria, some of the LEED buildings (see table and figure 14) have to comply with the requirements specified in the Guide of the certification. In general, the areas managed by each contractor must incorporate an area for storing waste, an area for the loading and unloading of materials, work areas, access area, parking area, office spaces, washroom areas, etc.

Table 5 - Environmental Requirements for LEED

Building	LEED	MIA-R	CUSTF
Passenger Terminal Building (PTB)	X	X	X
Ground Transportation Center (GTC)	X	X	X
Air Traffic Control Tower (ATCT)	X	X	—
Area Control Center (ACC)	X	X	—

Figure 14 - Environmental Requirements for LEED



The four LEED buildings must document three plans (see figure 15) to comply with the prerequisites specified in the LEED v4 guide, in addition to the requirements of the MIA-R. In general, the three plans are related to the measures established by the environmental regulatory framework. However, they include other issues. For example:

- The Construction and Demolition Residues Management Plan specifies a storage area for recyclable works materials, in addition to the classification requested by the MIA and official normativity.
- The Erosion and Silting Control Plan requests to assign, in each works, a tire washing area to prevent soil contamination in adjacent areas.

Figura 15 - LEED Plans



4.2.5. Photo Example Case Studies

In this section a photographs show some of the activities that are taking place in the different work areas to meet the different environmental and sustainability related needs and goals of the Project.

- Tire washing



- Waste storage areas



- Padding or geomembrane erosion prevention



- Areas for cleaning activities



4.3. Environmental Management Activities Status

Certain environmental benefits result from the allocation of space for conservation activities as well as the appropriate location and usage of infrastructure works such as internal roads, perimeter fence, and organic material handling, among others, since these minimize construction generated impacts.

4.3.1. Erosion and Sedimentation Control

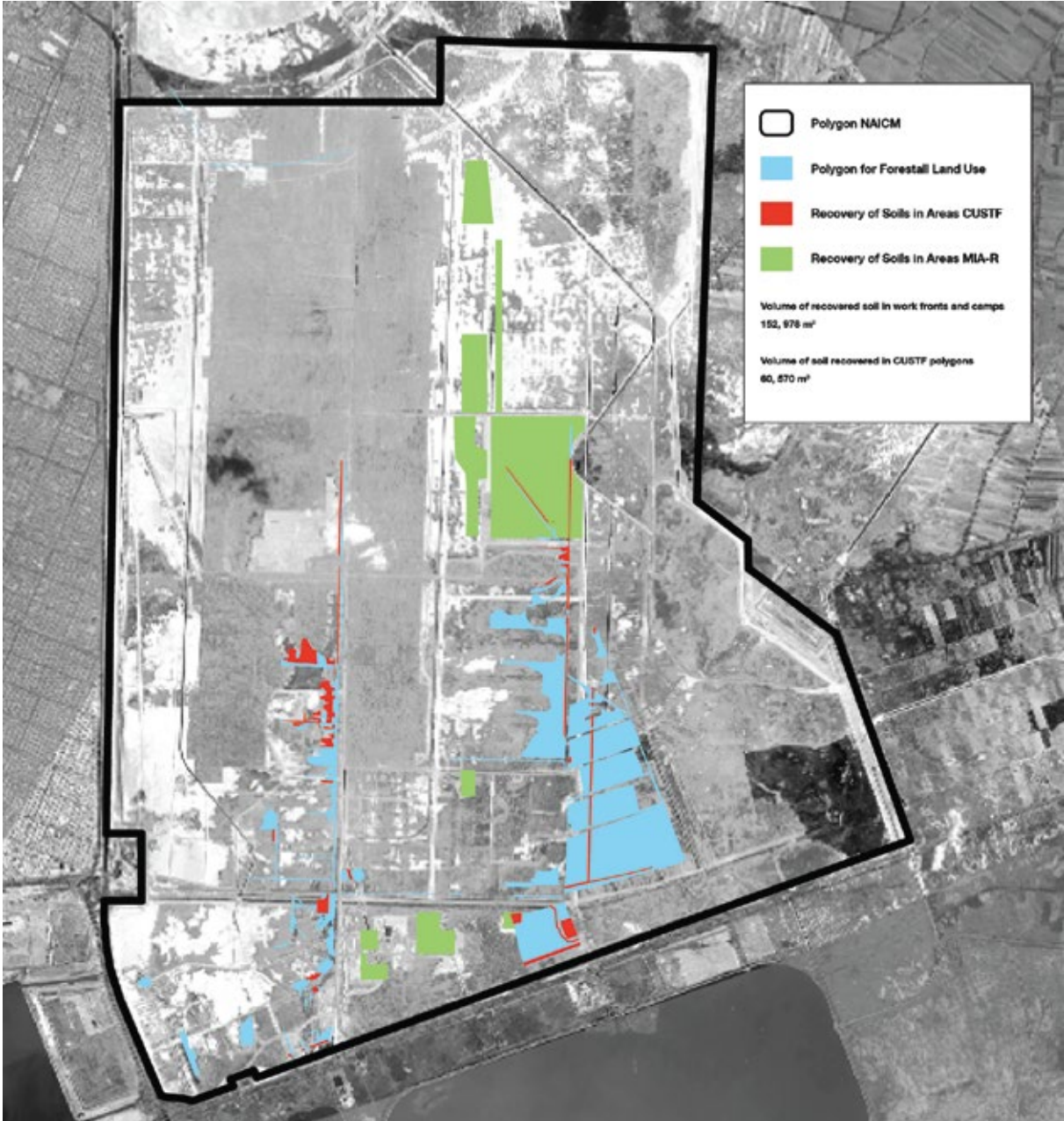
There are many elements contributing to soil erosion and sedimentation during construction. One of the main causes is the circulation of vehicles within the Polygon. Considering the heavy and light weight transit associated with airport construction activities, paved and unpaved roads have been installed as needed to meet the usage. To control the erosion of the soil and unwanted sedimentation from eroded soils and earth being discharged by run-off-water, heavier used roads are paved and granular materials protect unpaved roads have been established to prevent soil deterioration and avoid the generation of dust. All roads undergo maintenance activities to preserve their conditions and optimize circulation, as well as to prevent soil alterations on and off said roads.

4.3.2. Handling of Organic Materials

Site preparation is the first stage of the construction process for any project. This includes undertaking vegetation grubbing, clearing, leveling and clean-up activities. This removal of forestry vegetation and earth gives useful material for soil stabilization for green areas. In the case of NAICM, the forestry material removed during the grubbing activities is grinded and stored, while the organic soil resulting from the clearing activities is sent to the compost area.

Once in the compost area, the soil, along with other previously ground organic materials, breaks down to useful compost. This production will be used to fertilize and enrich the earth with nutrients in the MIA-R and CUSTF compensation areas that will be reforested or replanted. The total accumulated volume of soil removal to date is 4,447.103.89 m³. From this total, 2,902,228.16 in total m³ was recovered. Figure 16 shows the CUSTF soil recovery areas.

Figura 16 - Soil Reclair

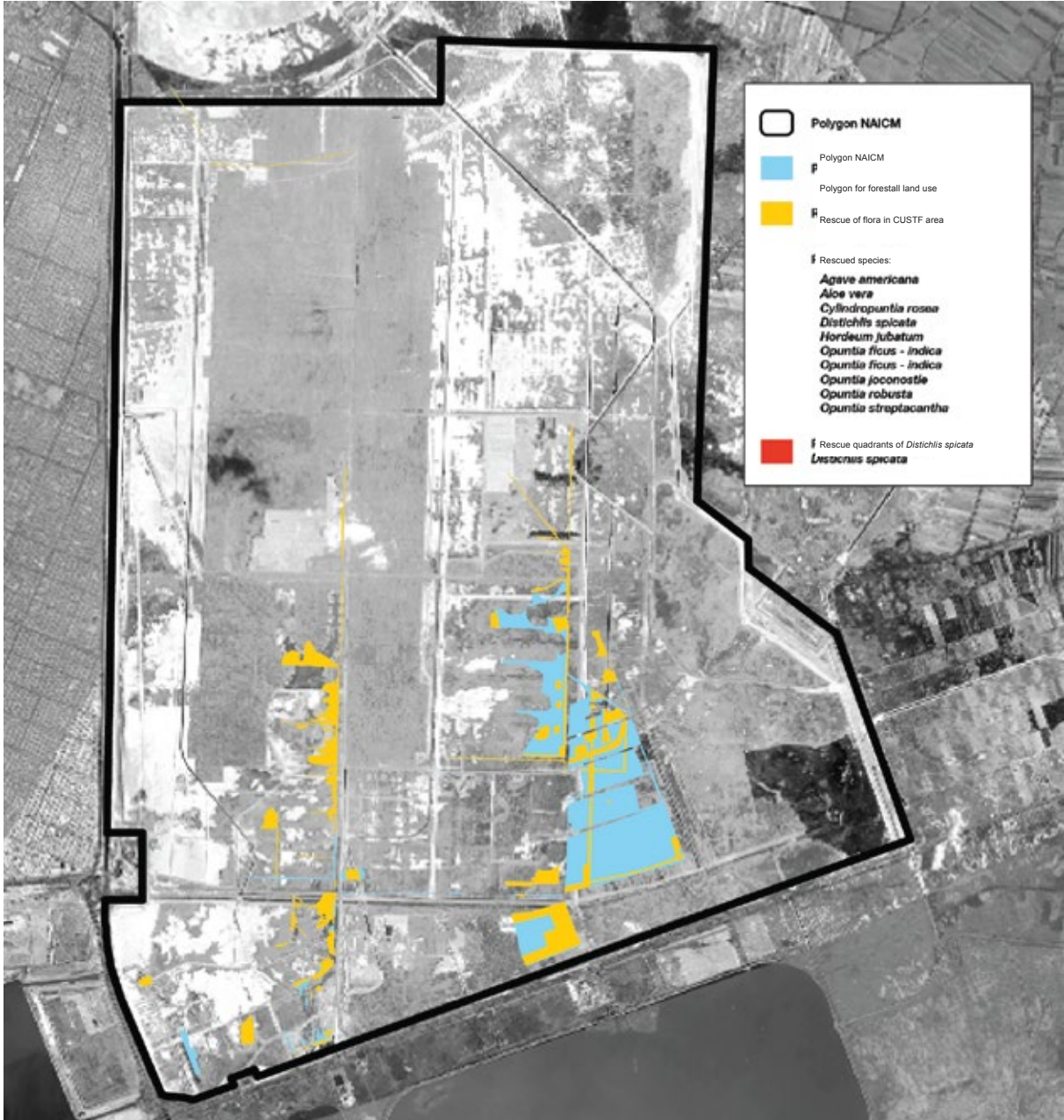


4.3.3. Management for Preservation

When forestry land use categories have a change and need intervention, there are specific requirements for construction that are different from the ones used in urban-use land. Before commencing any works, it is necessary to analyze the vegetation and then undertake vegetation rescue, propagation and transplant schemes.

In the 240.7545 hectares requested for NAICM land use change, CUSTF proposes a sowing density of 1,100 individuals. Currently, 240 ha have been reforested, of which 143 were carried out in the upper part of the SAR, where there is a greater impact in terms of environmental services (see figure 17). The process consists of recovering species to propagate them in the plant nursery, before being replanted.

Figure 17 - Rescue of Vegetation



4.3.4. Other Practices

There are other actions that are being implemented to minimize environmental impacts during the construction such as the installation of photovoltaic lighting. This harnesses solar energy and reduces energy consumption during the execution of construction works for the airport. In this case, the plan is that the lighting installation along the temporary roads in the NAICM will be moved to match the needs during the different phases of the Program.

Another example is the usage of stone materials extracted from the precharge areas for paving temporary roads. This practice is beneficial as it reduces total costs in the purchase of materials and mitigates impacts caused through transportation.

Conclusions

- Zoning of the NAICM and its surrounding areas is crucial to comply with the measures requested by the environmental regulation framework.
- Identifying and clarifying the different areas encompassed by the territory intended for the construction of the NAICM helps to visualize the works and activities, as well as other requirements which will happen in the same area.
- Zoning facilitates decision-making for the parties involved in the NAICM for managing the works and activities during construction.
- Site planning allow each construction zone to put into practice actions that minimize environmental impacts.
- Zoning of the project phases linked to the Logistics Plan allows critical zones during different works-execution periods to anticipate complexities in advance and ensure the environmental actions are considered and controlled.

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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 to 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.