COMPREHENSIVE VISION OF NATIONAL INFRASTRUCTURE

EXECUTIVE SUMMARY

MEXICO CITY, SEPTEMBER 2018





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Introduction

- Diagnostic, sectoral and regional needs
- Guiding axes, inter sectoral aspirations, regional and sectoral objectives
- **Metrics and main goals**
- Prioritization methodology and portfolio of projects



COMPREHENSIVE VISION OF NATIONAL INFRASTRUCTURE



INTRODUCTION





The following issues regarding the scope and content of the Comprehensive Vision of National Infrastructure should be considered:

- In addition to education infrastructure, strategic sectors included in the National Infrastructure Program are addressed: Communications and Transports, Energy, Water (Water and Environment), Health (Social sector) and Tourism; nevertheless, the analysis of infrastructure of the following sectors is not included: security and public order, housing, urban development, solid waste collection, civil protection, production and refining of hydrocarbons, petrochemicals, culture, science and technology and the like
- The main sources of information are Development Programs, Sectoral Programs, Indicative Plans, and the entities of the Federal Public Administration; secondarily, information generated by multilateral organizations, academic national entities, and associations, organizations and institutions of the private sector
- There is no amendatory link in the existing legal framework; therefore, regulatory and institutional arrangement improvements that provide a specific political character to the document beyond public interest, are not included
- The fact that the projects are included in this document does not imply that their sources of funds are guaranteed and/or authorized by the Ministry of Finance. As a consequence, the feasibility of such projects is subject to the resolution of the responsible entities, the Ministry of Finance itself, and to the specific context of each project
- The investment amounts for those projects that are not under execution correspond to preliminary estimates
- All the monetary figures are expressed at constant prices (MXP) as of the first semester of 2018, unless otherwise stated



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Banobras, in cooperation with other entities of the Federal Public Administration prepared a proposal of the Comprehensive Vision of National Infrastructure to provide a view of the actual situation of the country in terms of infrastructure

As a complement, a proposal of a Methodology to establish a long term National Infrastructure Strategy will be developed



The main objectives of the project are: develop the Comprehensive Vision of National Infrastructure and prepare a proposal of the Methodology for the National Infrastructure Strategy...



1. Prepare the

Comprehensive Vision of National Infrastructure based on the needs. opportunities, and existing programs of the entities of the Federal Public Administration

2. Develop a proposal of the Methodology for the long term National Infrastructure Strategy

COMPREHENSIVE VISION OF NATIONAL INFRASTRUCTURE (COMPREHENSIVE VISION)

- Integrate sectoral strategies for the following areas: Communications and Transports, Energy, Social Infrastructure, DOCUMENT Tourism. Water and Environment
 - Develop the Comprehensive Vision and a list of projects that supports it, ensuring the legality of this exercise in inter sectoral tables:
 - Develop an inter sectoral vision of the existing infrastructure plans and programs
 - Develop an inter sectoral strategy that rationalizes, optimizes and creates synergies among sectors and programs to achieve a balanced and sustainable development of the regions
 - Set specific and measurable objectives that encompass the portfolio of projects to be proposed
 - Discuss the Comprehensive Vision in sectoral and inter sectoral workshops
 - Propose a portfolio that includes short term (two years 2019-2020), medium term (six years 2018-2024) and long term (up to 20 years) projects, conservation and maintenance programs, and expansion, modernization and improvement plans for existing infrastructure, while prioritizing the projects

PROPOSAL OF THE METHODOLOGY FOR THE NATIONAL INFRASTRUCTURE 2 STRATEGY (NIS)

- Develop a methodology with its own processes, components, guidelines and institutionalism to elaborate the National Infrastructure Strategy, based on the experience of the Comprehensive Vision, best practices, and the Study to Evaluate and Strengthen the Stages of the Development Cycle of Infrastructure Projects in Mexico
- * Develop a prioritization of projects methodology, considering the Study to Evaluate and Strengthen the Stages of the Development Cycle of Infrastructure Projects in Mexico



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A top-down and bottom-up approach has been used for the preparation of the methodology of the 20 year Comprehensive Vision

The inter sectoral vision has fed the sectoral/regional vision and vice versa



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Mexico will face a series of challenges in the coming years in terms of economic growth, demography, technological disruption, climate change and economic displacement of the commercial relationships' gravity center

The evolution of these factors will be decisive for the effort to predict the reaction of national infrastructure





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The objectives of the 20 year Comprehensive Vision will move around 3 guiding axes: Quality of Life, Competitiveness Improvement and Balance Among Regions...





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DIAGNOSTIC, SECTORAL AND REGIONAL NEEDS



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The 5 sectors that comprise the Comprehensive Vision of National Infrastructure are: Communications and Transports, Energy, Social Infrastructure, Tourism, Water and Environment



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The main conclusions identified for the different sectors as part of the sectoral diagnostic are shown as follows

	MAIN CONCLUSIONS IDENTIFIED IN THE SECTORAL DIAGNOSTIC
COMMUNICATIONS AND TRANSPORTS	 Intermodal connectivity should be strengthen in the medium term to improve companies' logistic competitiveness and expand their possibilities to access the international markets Growth of urban zones demand a higher offer of transport, thus, a larger availability of sustainable alternatives that accelerate urban mobility Competition should be encouraged in the telecommunications industry to reach competitive prices and a total national coverage, specifically of broadband and 4G network (and subsequent)
ENERGY	 The forecasted increase in the installed capacity of clean technologies exceeds that of conventional technologies, representing a significant change in the energy matrix. Natural gas storage capacity should be developed, since combined cycle will be the technology with greater participation There is a potential demand of natural gas in regions without coverage that can be satisfied through the development of strategic interconnections and pipelines The importance of distribution of oil derived products through tank trucks to storage and distribution facilities has increased, despite high logistic costs and the higher efficiency of pipeline transportation.
	 The existing structure of the health public system in Mexico inhibits the coordination among health institutions (S. SALUD, IMSS and ISSSTE) by encouraging the isolated development of infrastructure, causing a lack of efficiency in the delivery of health services The minimum required conditions of education infrastructure suggest the need to expand the coverage of basic services (water, electricity and drainage) in the campuses and the requirement of high investment levels in maintenance; therefore, education infrastructure requires a medium and long term rehabilitation plan
TOURISM	 Touristic destinations with high potential have insufficient intermodal connectivity, thus limiting their development and the nation's touristic offer The limited air connectivity represents a barrier for the diversification of the international tourism market and for the consolidation of alternative tourism products
WATER AND ENVIRONMENT	 Intensive use of water caused the overexploitation of the hydric resources; it is necessary to reduce pressure over its use, allow the artificial replenishment of aquifers and encourage its recycling Deficient infrastructure for water treatment suggests the need to increase purple pipelines¹ and improve the sewerage network to increase the volume to be treated The use of open sky waste fields and low collection coverage increases solid waste management costs
1) Network used to carry the	water resource that allows its recycling after being treated

COMPREHENSIVE VISION OF NATIONAL INFRASTRUCTURE



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DIAGNOSTIC AND NEEDS BY SECTOR EXECUTIVE SUMMARY COMPREHENSIVE VISION

Mexico's road network has 393,473 kilometers, formed by federal, state and rural networks and improved dirt roads¹

Most of the roads are paved and re coated, representing around 80% of the total network

ROADS

- The road network of Mexico consists of 393,473 kilometers, out of which 13% correspond to federal networks and 24% to state networks
- Rural roads represent approximately 45% of the total road network
- 164,458 kilometers of the total road network correspond to paved roads and 148,849 kilometers to re coated
- Improved dirt roads represent 18% of the national road network
- The states with the highest length of road networks are Veracruz and Jalisco with approximately 29,000 km each

Composition of the Road Network

(National total in kilometers and %; 2017)

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Length of the Road Network by State (Federal entity in kilometers; 2016)

Federal Entity	Total (km)
Jalisco	30,663
Veracruz	28,657
Sonora	25,071
Oaxaca	23,032
Chiapas	22,937
Guerrero	18,864
Sinaloa	17,003
Durango	15,696
Michoacán	15,498
México	14,778
Subtotal	212,199



Specifications of the Road Network by Capacity (Total Federal in kilometers; 2017)



1) Improved dirt roads refer to roads with limited technical works. These roads complement regional communication and ensure the integration of the areas. Source: IDOM Analysis with data from the "Anuario Estadístico Sector Comunicaciones y Transportes, 2016 y 2017"



Among the most important requirements of the road sector are the need to solve problems related to the accident rate and to include progressively ITS systems

ROADS

Short (2019-2020)

- Solve traffic congestion problems in certain sections of trunk roads and inter trunk roads
- Include issues related to rights of way in transport planning
- ✤ Increase maintenance
- Solve last mile road problems
- Reduce the participation of rural dirt roads
- Solve accident rate problems (junctions at the same level)

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 Address road safety issues in interurban crossings of the state network

Medium (six year)

- Expand the coverage and quality of massive transport services in consolidated urban zones
- Align the territorial development with the development of urban transport
- Foster inter-city massive transport projects
- Develop urban bypasses
- Encourage synergies with other transport modes
- Increase the participation of the private sector in road infrastructure investments
- Integrate technologies in infrastructure management (ITS systems)

Long (20 years)

- Consider the effects of climate change in the sector (resilience)
- Increase the capacity of the Federal Network to foster competition among different modes of transport
- Consolidate a network of rural roads that contribute to the reduction of geographical margination
- Achieve a higher administrative visibility



National Ports (Location; 2017)

24%

23%

Altamira

0%

1%

Mexico has 117 enabled ports and terminals that annually moveapproximately 306 million tons of cargo and 5.68 million TEUs

The Gulf of Mexico coastline moves around 58% of the total cargo, while the Pacific moves 42%

PORTS

- Mexico moves annually approximately 306 million tons. including deep sea and cabotage
- The coastline of the Gulf of Mexico moves approximately 58% of the total cargo, while the Pacific coastline moves 42%
- In terms of containers, Mexico moves annually around 5.68 million TEUs
- * The main ports for container movement are: Manzanillo, Lázaro Cárdenas, Veracruz and Altamira, which jointly account for 94% of the total



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Total: 117 enabled ports and terminals iolfo de México y Carib Pacífico: 58 Puertos y Terminale Lázaro Cárdena Maritime Freight in the Main Commercial Ports by Line of Business (tons; 2017) 34.601.228 28.080.688 21.624.754 29.492.434 General containerized General loose 26% 32% 40% 1% 5% Agricultural bulk 60% 7% Mineral bulk 3% 16% 5% 5% Other fluids 54%

12%

10%

Manzanillo

2%

Lázaro Cárdenas

0%

11%

Veracruz

6%

6%

Total freight moved NPS (Ton)

Oil and derived

Automobiles

305.615.550



Among the needs of the port subsector stand out the need to increase the installed capacity of the National Port System and the development of LAZs nearby those ports under expansion





Mexico has 23,389 kilometers of railways in operation throughout the country, 74% trunk lines, 19% auxiliary lines and the rest represented by private railway lines

The states with more railway kilometers are Chihuahua, Coahuila and Sonora



Length and type of existing railways in operation (Total National in kilometers: 2017)



National Railway Network



States with more railway kilometers (State Total in kilometers; 2016)



Source: IDOM Analysis with data from the Statistic Yearbook Communications and Transport Sector, 2016 y 2017





Banco Nacional de Obras y Servicios Públicos S.N.C.

In the railway subsector, highlights the short term need to foster railroad competitiveness when compared to freight transport by roads. It is of paramount importance the development of logistic platforms

	Short (2019-2020)	Medium (six years)	Long (20 years)
Freight tr.	 Encourage competitiveness of freight transport when compared to road transport Solve congestion problems in certain interconnection points, such as ports 	 Strengthen foreign trade by railroad with the USA and Guatemala Solve in the best possible manner the railroad-urban coexistence in affected areas 	 Solve height problems in those tunnels that inhibit double stacking
Massive Tr.	Include rights of way in the planning process	Strengthen regional development of massive transport projects (<i>Transit-Oriented</i> <i>Development</i>)	 Expand massive transport service coverage in the Mexican territory Develop interurban passenger trains
ogistic plat.	 Encourage the development of logistic platforms in the country Adopt an comprehensive vision of initiatives and development of existing intermodal terminals 	 Develop strategic customs areas to accelerate freight transit and reduce associated costs Solve existing imbalances in the development of logistic corridors 	 Improve connectivity of interstate axis and logistic platforms Need of a governing body, capable of organizing and regulating the existing conditions of logistic platforms

The National Airport System is formed by 77 airports¹, of which 64 are international and 13 national

Annually, Mexican airports provide service to approximately 138 million passengers



In terms of freight transport, 112,000 tons were moved in the national service (15%) and 628,000 tons in the international (85%) service

Serviced passengers in ASA Airports and Airport Groups (Million passengers, 2017)

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1) The airports managed by ASA, Airport Groups, SCT, State and Municipal Governments are included 2) Preliminary figures for 2017 yearend

Source: IDOM analysis with data from the Communications and Transport Sector Statistical Yearbook, 2017







COMPREHENSIVE VISION OF NATIONAL INFRASTRUCTURE



The increase of airfreight and the development of regional airports are some of the most important needs of the airport subsector

Short (2019-2020)	Medium (six years)	Long (20 years)
 Solve the existing congestion problem capacity of the Mexico City Internation by developing the Mexico New Interna Airport 	 s in the bal Airport Develop and consolidate new air routes for passenger transport ational 	Reach a higher development in regional airports of the country
Achieve a higher share of airfreight	 Achieve a higher share of airfreight transport in airports with non existing participation Develop new air routes for airfreight transport 	Position the country as an international hub for cargo transport
 Improve coordination with the Guatem Belizean custom authorities Improve security conditions in south be crossings 	alan andCreate formal areas in the south border that allow cargo transfer operationsorderIncrease north border crossings capacity	Encourage trade with Central America

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In the communications subsector, in Mexico 29% of households do not have access to fixed telecommunications Broadband and mobile phone services exceed fixed communications and stand for 85% and 83% of the total,

respectively

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COMMUNICATIONS

- 35% of the country's population has no access to fiber optic while 50% has access to two or more networks
- 46% of the total fixed broadband residential connections correspond to DSL, 37% to cable modem and 15% to optical fiber
- In the country, access to telephone lines accounts for 131,220,098, 85% represented by mobile telephone lines and 15% to fixed lines
- Broadband access account for 97,253,959 where mobile access represents 83% and fixed access 17%

Fixed Telecommunication Services in Households (Percentage of the population, 2016)





Fixed Broadband Residential Connection

(Percentage, 2016)







In the communications sector, it is necessary to foster digital training and education among the population in isolated regions



Generation Installed Capacity (% of total installed; 2017)



At year end 2017, Mexico had an electric generation capacity equivalent to 75,211 MW, 70.9% represented by conventional technologies and 29.1% by clean energies

Most of the installed capacity corresponds to combined cycle power plants (2016: 37.3%)



ELECTRICITY (GENERATION)

- ♦ As of 2017, the most important technology that contributes to the 75,211 MW installed capacity¹ is combined cycle, with a capacity of 28,084 MW, followed by hydroelectric (12,642 MW) and thermoelectric (12,546MW)
- ♦ In 2017, **conventional** technologies accounted for 70.9% of the installed capacity, while clean technologies represented the remaining 29.1%; it is estimated that in 2031 the ratio will be 55.1.4% and 44.9%, respectively
- ✤ Veracruz, Tamaulipas, Chiapas, Baja California and Nuevo León altogether represent 38.5% of the installed generation capacity of the National Electric System

Capacity by Technology Group in the Generation Matrix (% of the total installed, 2017)

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Source: PRODESEN 2018-2032 and Prospectiva del Sector Eléctrico 2017 - 2031, 2017, SENER 1. Does not consider distributed generation installed capacity and FIRCO



Generation Installed Capacity (In MW, historic data and estimate 2018 - 2032)



COMPREHENSIVE VISION OF NATIONAL INFRASTRUCTURE



At year end 2017 Mexico had a high voltage Electric Transmission Network of 107,042 km with a transformation capacity equivalent to 158,035 MVA's

The installed capacity of interconnected lines of the National Interconnection System represents 76,697 MV

ELECTRICITY (TRANSMISSION)

- The National Transmission Network (NTN) transports generated electricity to the medium and low voltage GDN (General Distribution Networks); the National Interconnection System (2017) had a capacity of 74,929 MW; likewise, the independent systems of the Baja California Peninsula has a capacity of 1,768 MW
- To modify voltage levels, for distribution and transmission purposes, the country has an installed capacity equivalent to 158,035 MVA

Transmission Lines Length by Voltage Level (AC) (In kilometers, 2017)

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SOURCE: PRODESEN 2018-2032 AND "Prospectiva del Sector Eléctrico 2017 - 2031, 2017", SENER



Transformation Capacity in Substations (By asseti n MVA, 2017)



National Transmission Network Length 230 and 400 kV (RNT) (In kilometers, 2017)

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The medium and low voltage General Distribution Networks account for 829,925 km throughout the National Electric System (2017) In addition, the country has a medium voltage transformation capacity equivalent to 74,133 MVA and a low voltage

capacity of 54,366 MVA



ELECTRICITY (DISTRIBUTION)

- At December 2017, the General Distribution Networks (GDN) are deployed throughout 829,925 km, the medium voltage networks have a length of 506,963 km; likewise, the 13.8 kV, the longest one, with a 42.2% share in the GDN
- The low voltage network (to distribute directly in load centers) has a length of 322,962 km (38.9% of the GDN)
- The installed capacity for reduction to medium voltage is 74,133 MVA, while capacity for reduction to low voltage is equivalent to 54,366 MVA

Distribution Lines Length by Voltage Level (Total National, in km, 2017)









Among the needs of the electric sector highlights the reduction of the energy access gap by encouraging local self-supply clean distribution systems

ELECTRICITY

Short (2019-2020)

- Encourage the successful installation of clean technologies power generation
- Transmit timely the demand of every sector with access to electricity
- Reduce the electricity access gap by encouraging local self-supply clean distribution systems

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- Optimize interconnection capacity with North America
- Develop an efficient energy exchange with Central America, favorable to all the parties

Medium (six years)

- Consolidate generation capacity that reduces the emission of pollutant particles
- Implement the interconnection of independent systems to a single National Electric System
- Implement state of the art technology to limit technical and non-technical losses
- Reduce the intensity of energy consumption

Long (20 years)

- Establish an intelligent and hyper connected GDN and NTN system that allow the maximum exploitation of renewable energies
- Generate in an efficient way affordable energy with significant low levels of pollutant particles



The public pipeline infrastructure for oil based products has a length of 14,174 km, and 74 onshore storage terminals for distribution

TRANSPORT AND LOGISTICS OF OIL BASED PRODUCTS

- PEMEX Logística has 74 storage terminals for oil based products, distributed in 8 regions, and two privately operated.
- According to the Diagnostic of the Oil Based Industry 2017, these terminals have a **nominal storage capacity** equivalent to **17.45 million barrels**
- The public transport capacity of oil based products is 3,986 mbd, representing 62% of the oil based products volume to refineries (the rest by other means, such as auto tank, car-tank, etc.)

Public Oil Based Products Transport and Storage Infrastructure (Units and kilometers, 2016)

	Storage infrastrcuture Storage terminals	Facilities 76
	Transport infrastructure	Length
	Oil pipelines	5,259 km
	Polyducts	8,915 km
•••	Total	14,174 km

Fuentes: PRODESEN 2018-2032 y Diagnóstico de la Industria de Petrolíferos 2017, 2017.





One of the most important short term needs in the hydrocarbons subsector is the development of storage projects for oil based products and natural gas that reduce shortage risks

HYDROCARBONS

Short (2019-2020)

- Have the proper penetration capacity to satisfy an increasing demand of natural gas
- Strengthen storage projects for oil based products and natural gas that reduce shortage risks
- Guarantee oil based products logistics to distribution terminals
- Prepare and indicative program for the development and optimization of oil based products transport and storage infrastructure
- Increase the share of SDF¹ for the distribution of oil based products that are supplied through pipelines

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Medium (six years)

- Satisfy the demand of natural gas of all sectors at international competitive prices
- Guarantee free access to transport infrastructure of hydrocarbons and oil based products
- Ensure the growth of strategic capacity for the storage of oil based products and other biofuels
- Develop a strategic storage capacity for natural gas

Long (20 years)

 Ensure the best operation conditions of infrastructure for oil based and natural gas transport and storage

1) SDF: Storage and distribution facilities from which oil based fuels are supplied to distribution stations and final points of consumptio





In 2018, Mexico had 32,290 medical units for first, second and third level attention Most public units contribute to the primary medical attention network; however, these are overcome in the secondary attention level by private units



HEALTH

- ♦ As of February 2018, Mexico had 32,290 active health facilities, of which 85.6% correspond to first level attention, 13.9% to second level and 0.5% to the third level
- 14.4% of the units are used for hospitalization
- ✤ The public sector represents 77.7% of the primary attention, while in the secondary level represents only 29.1%
- The states with a higher number of medical units are State of Mexico (2,384) and Veracruz (2,128)

Medical Units by Level of Attention

(number and % of total, 2018)



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Federal Entities with a Higher Number of Medical Units (number, 2018)

Federal Entity	Total		Tatal	22.20
State of Mexico	2,384		Total	32,23
Veracruz	2,128			
Chiapas	2,019			
Oaxaca	1,948	A the for the for		
Mexico City	1,907	A 7 ((~) 77		
Puebla	1,855			
Michoacán	1,567	1 × 1		
Jalisco	1,559	the second second		-
Guerrero	1,344	A LANG		
Guanajuato	1,314	Landra	2 V	
Subtotal	18,025			

Attention Unit	Description	Public	Private
First Level	Basic health facilities where promotion, prevention and health recovery services are provided	21,470	6,173
Second Level	Hospitals and facilities where internal medicine, pediatric, gynecology and obstetrics, general surgery and psychiatry services are provided	1,306	3,176
Third Level	Hospitals and institutions reserved for specialized and high technology attention, as well as research centers	159	6

Source: IDOM analysis, "Catálogo Clave Única de Establecimientos de Salud (CLUES)" February 2018. "Niveles de atención, de prevención y atención primaria de la salud", Vignolo J et al, 2011.





Among the needs of the health sector highlight the substitution or overhaul of equipment in medical units, and the proper maintenance of existing devices

M HEALTH

Short (2019-2020)

- Encourage the completion of projects that have an important progress and those that represent high impact social benefits
- Provide maintenance to existing infrastructure
- Guarantee the availability of required resources for the operation of new/existing health units
- Foster the coordination among the Ministry of Health, IMSS and ISSSTE, and infrastructure planning state entities
- Strengthen the different sources of funds and their regulation
- Overhaul or substitute equipment in medical units, as well as the proper maintenance of existing devices
- Increase attention capacity of existing units according to local needs
- Encourage telemedicine and information technologies

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Foster synergies between public and private sectors

Medium (six years)

- Establish a regulatory entity responsible for planning, financing and audit of infrastructure of all sector levels
- Develop physical and financial supervision mechanisms for state sanitary entities
- Plan infrastructure according to health needs of the population
- Develop infrastructure in lacking communities
- Strengthen primary attention through the development of infrastructure and preparation of professionals
- Increase investment in public hospital infrastructure (second and third attention level)
- Execute agreements for the provision of services among the different institutions, public and private
- Strengthen adequate infrastructure related to transplants
- Develop Research Centers for chronical diseases

Long (20 years)

- Strengthen the rectory of the Ministry of Health over the public and private sectors
- Include technological advances to provide quality services
- Foster Hospital Information Systems
- Encourage the use of technology to reduce costs
- Improve the exchange of sanitary services among public entities
- Implement medical specialties that cope with epidemiological transition (nutrition, geriatrics, mental health, oncology)



Until 2017, Mexico had 36.6 million students and 259,355 schools in all education levels

70.4% of the students belong to the basic education level, as well as 87.7% of the country's' schools

EDUCATION

- The Mexican Education System is form of 36.6 students of all educational levels: 70.4% of basic education, 14% middle education, 10.3% high education and 5.3% are trained for a job
- 70.7% of the students of the Mexican Education System assist to state schools, 10.2% to federal, 13.5% to private, and 5.6% to independent
- Mexico has 259,355 schools: 87.7% correspond to basic education, 8.0% to middle education, 2.1% to high education and 2.2% to training for a job

Federal Entities with the Higher Number of Schools per 1,000 inhabitants (Federal Entity, 2017)



Total Students by Education Level



Source: Sistema Educativo Mexicano: Principales Cifras 2016-2017. Secretaría de Educación Pública

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Among the needs of the education subsector highlights maintenance and remodeling programs to improve education infrastructure

EDUCATION

Short (2019-2020)

- Identify education infrastructure needs in the three educational levels by type of project, location and actions to be implemented
- Strengthen the INIFED to exercise regulatory and policy powers for the construction of new facilities and remodeling/maintenance of existing educational spaces, where the works are carried out by federal entities
- Foster or strengthen programs such as "Escuelas al CIEN" (Schools at 100%) to execute maintenance/remodeling programs and neutralize schools age
- Attend lags of infrastructure and services in basic education schools
- Ensure the proper maintenance of physical education infrastructure in the country

Medium (six years)

- Attend lags of infrastructure and services in the different education levels
- Expand the offer and quality of physical education infrastructure in middle and high levels
- Develop research and development infrastructure
- Ensure the proper maintenance of physical education infrastructure in the country

Long (20 years)

- Attend lags of infrastructure and services in the different education levels
- Expand the offer and quality of physical education infrastructure in middle and high levels
- Develop research and development infrastructure
- Ensure the proper maintenance of physical education infrastructure in the country





International tourists demand is highly concentrated in beach and sun destinations

In 2017, Cancun Airport recorded the highest number of international arrivals and the port of Cozumel the highest number of passengers



- In 2017, the airports that received the highest number of foreign visitors (93.7%) were: Cancun, Mexico City, Los Cabos, Puerto Vallarta, Guadalajara, Monterrey, and Cozumel
- In 2017, the ports with a higher flow of passengers (78.9%) were Cozumel, Mahahual, and Ensenada
- Concentrated demand in Cancun, Riviera Maya y Los Cabos; Quintana Roo represents 47.5% of total international arrivals and 62% of nights occupied by international tourists
- The United States is the country with the highest number of reserved seats to Mexico, with a 68.5% share, followed by Canada with 9.9%, and Panama with 2.5%. The cities with the highest growth in the number of reserved seats are San José del Cabo, Querétaro and Mérida
- The number of cruise passengers in 2015 was 11% below the highest number recorded in 2010 of 6.7 million. In 2016, 77.3% of cruise passengers (6.4 million) focused in Cozumel, Ensenada and Mahahual
- According to interviews, road and railway connectivity between touristic destinations is limited

Airports with the Highest Number of Foreign Visitors (Federal Entity, in arrivals of foreign visitors, 2017)

Airport	Total (foreign arrivals)	%
Cancun	7,545,761	46%
Mexico City	4,158,099	26%
Los Cabos	1,664,879	10%
Puerto Vallarta	1,466,028	9%
Guadalajara	978,886	6%
Monterrey	259,539	2%
Cozumel	201,453	1%
Cancún	7,545,761	46%
Subtotal	16,274,645	100%



Ports with the Highest Number of Passengers (Federal Entity, in number of passengers, 2017)

Port	Total (pax)	%
Cozumel	4,098,491	63%
Majahual	1,000,818	15%
Ensenada	647,757	10%
Cabo San Lucas	390,987	6%
Puerto Vallarta	338,153	5%
Subtotal	6,476,206	100%



Source: Resultados de la Actividad Turística 2017, DATATUR; World Heritage Statistics, UNESCO;

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Among the needs of the tourism subsector highlight beach recoveries in priority touristic centers, foreseeing climate change impacts

🗄 TOURISM

Short (2019-2020)

- Strengthen the conservation and, if applicable, restoration and inclusion in Mexico's cultural heritage
- Develop urban public services infrastructure to satisfy the increasing demand in touristic centers
- Increase the number of beaches certified by SEMARNAT and Blue Flag certified
- Foster and develop infrastructure and private investment in beach and sun destinations that are less consolidated
- Beach recovery in priority touristic centers, foreseeing climate change impacts
- Develop and strengthen initiatives such as the Comprehensive Beach Center program
- Implement improvement and training strategies to professionalize tourism services, specially in Magical Towns

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Medium (six years)

- Expand air, road and railway infrastructure and connectivity to support market diversification
- Encourage the certification of medical services suppliers through infrastructure programs of the health sector, as well as other related industries such as hospitals, clinics, doctors' offices, etc., to consolidate health tourism
- Beach recovery in priority touristic centers, foreseeing climate change impacts
- Develop intelligent touristic centers through the expansion of telecommunications and digital platforms infrastructure
- Develop infrastructure for the strengthening of embarkment ports and ports of call

Long (20 years)

- Develop infrastructure for the consolidation of embarkment ports and ports of call
- Develop intelligent touristic centers through the expansion of telecommunications and digital platforms infrastructure
- Beach recovery in priority touristic centers, foreseeing climate change impacts





Water recycling is crucial to reduce pressure over the resource, reduce extractions, over exploitation and reverse the trend of renewable water

WATER SUPPLY

- * To satisfy water demand, Mexico has 5,163 defined damns and reservoirs with a storage capacity of 150 thousand hm3, approximately.
- * It is necessary to recycle treated water and water from other uses to reduce over exploitation in approximately 105 aquifers
- * It is considered that the aquifers reload through rainfall and natural infiltration in the basins will not satisfy the expected demand
- Mexico has 908 drinking water plants that are operating at 76% of their installed capacity
- Of the 874 drinking water plants, 301 operate by inverse osmosis, 215 by conventional clarification and 154 by clarification through patented methods
- Mexico has over 3,000 km of aqueducts, with a total capacity that exceeds 112 m3/s, and are used to supply water to different sectors and for different uses



Main Aqueducts by Length (Aqueduct, kms y l/s, 2015) Length (km) Designed Flow (I/s) 0,000 25,000 250 206 20,000 200 000 ഗ ☐ 15,000 150 1,000 10.000 100 64 5.000 50 25 Λ

9 10

11 12 13 14 15 16 17 18 19

3

2

Purified Water / Installed Capacity (Total National, m3/s y %, 2006 - 2016)

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COMPREHENSIVE VISION OF NATIONAL INFRASTRUCTURE



Mexico has water treatment infrastructure with deficiencies, with transport problems and high operating costs

WATER TREATMENT

- There are 2,477 municipal waters treatment plants operating at 58% of their installed capacity of 212 m3/s
- * There are 2,832 industrial waters treatment plants operating at 80% of their installed capacity of 87.64 m3/s
- * The flow volume for water treatment is affected by leaks and bad conditions of the infrastructure required to supply water to water treatment plants
- * Water treatment plants have low operational efficiency due to the lack of water volume, high operation costs, and lack of financial resources

Treated Flow / Installed Capacity (By Hydrological Region, m3/s, %, 2016)



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Urban Centers (Municipal Discharges) (Thousand hm3 / year, 2015)


Farmed Area with Irrigation Infrastructure

Lack of technology and technified infrastructure in rural areas creates pressure over water resources, since agriculture takes approximately 76%, while limiting the resource for other uses



AGRICULTURAL USE OF WATER

- Mexico has approximately 6.5 million ha with irrigation infrastructure, where 3.3 million ha correspond to irrigation districts and 3.2 million ha to irrigation units
- In addition, the country has infrastructure in technified seasonal districts for the evacuation of water excess
- The infrastructure and technology used in irrigation districts and units has deteriorated due to the lack of modernization and maintenance, generating low productivity of rural regions
- ✤ 43% of the irrigation districts are concentrated in 3 hydrological regions
- * There is a sub utilization of irrigation systems in hydrological regions, where the irrigated area is smaller than the area with irrigation systems



Total Area / Irrigated Area

(By Hydrological Regions, Thousand Ha y \$, 2014-2015)



The lag in the collection and recovery of solid waste is associated to the lack of infrastructure. The most important effects are relflected in the low coverage of controlled sites in the Southeast of the country

SOLID WASTE

- A collection of 84% of urban solid waste is estimated¹
- * The appropriate disposal of residues that arrive to landfills is 61% and only 11% is recovered for its exploitation ¹
- * It is estimated that 28% of waste has not the proper handling ² basically due to the practice of open sky landfills

Urban Solid Waste Management in Mexico1 Percentage of generated residues



Solid Waste Generation1 (Thousand Tons)



Source: PROMARNAT 2013-2018, SEMARNAT 2013 Source: Informe de la situación del medio ambiente en México 2015, SEMARNAT 2016





Among the short term needs of the water sector are the improvement of drinking water and sewerage networks to reduce losses, as well as the increase of aquifers artificial recharge

WATER

Short (2019-2020)

- Develop infrastructure to expand recycling and water treatment capacity
- Reduce over exploitation of aquifers
- Increase artificial recharge of aquifers to encourage water recycling
- Improve drinking water and sewerage networks to reduce water losses
- Install water meters and control clandestine outlets to reduce the economic deficit of the operators
- Modernize agricultural productive areas to reduce consumption, as well as surface irrigation¹

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 Reduce sub utilization of irrigation systems in technified agricultural areas

Medium (six years)

- Improve water transport and supply to water treatment plants
- Increase financial resources assignment to drinking and treated water operating entities
- Improve and increase the use of installed capacity of water treatment plants
 - Improve water treatment capacity
 - Improve quality and efficiency in the management of treatment plants
- Increase efficiency in water management
- Modernize transport and sewerage networks to reduce leaks

Long (20 years)

- Increase drinking water, drainage and sewerage coverage to population
- Increase storage capacity through the development of dams and reservoirs
- Develop infrastructure in dams and rivers to generate power





Among the needs of the environment subsector is the increase of disposal centers to ensure the collection of residues in the peripheral areas of the cities

Short (2019-2020)

- Increase the coverage of disposal centers to ensure the collection of residues in the peripheral areas of the cities
- Encourage separation and selective collection to increase the amount of reusable inputs in compost and recovery plants
- Foster the development of inputs from compost plants to encourage private investment in this type of infrastructure
- Generate a strategy to develop energy power plants based on solid waste, without affecting existing collection and recycling processes

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Medium (six years)

- Foster the development of transfer stations to increase the use of recovered organic and inorganic residues
- Map the development of cogeneration power infrastructure and implement the most profitable projects
- Improve infrastructure for air quality measurement
- Standardize criteria for the development of vehicle inspection centers
- Schedule an inter sectoral program of projects that improve the quality of vulnerable strategic infrastructure

Long (20 years)

- Implement and maintain policies for landfills management after their useful life
- Develop co generation power plants while considering a permanent match with social development



A regional analysis allowed the identification of views that should drive infrastructure planning in each region in the economic, social balance, and sustainability fields

Regions defined by SEDATU in the Regional Development Programs: North, Central y South-Southeast



There are economic, social and environmental imbalances among the three regions of the country; specifically, the south-southeast region has the most important infrastructure gaps

	NORTH	CENTRAL	SOUTH-SOUTHEAST
ECONOMIC	 The lack of intermodal connectivity (roads and railways), undermine logistic corridors of the region, and therefore the companies' logistic and commercial capacity The limited connectivity among touristic destinations inhibits the exploitation of the region's potential The lack of exploitation of renewable resources has limited the capacity to generate clean energy 	 The lack of intermodal connectivity (roads and railways), undermine logistic corridors of the region, and therefore the companies' logistic and commercial capacity The commercial growth of the region suggests the need to expand the capacity of port infrastructure The limited connectivity among touristic destines inhibits the exploitation of the region's potential 	 The lack of intermodal connectivity (roads and railways), undermine logistic corridors of the region, and therefore the companies' logistic and commercial capacity Limited connectivity with other regions makes access difficult to international markets and slows down sustainable growth of the region The high availability of renewable resources makes necessary the maximization of the installed capacity of clean power
SOCIAL	The high motorization levels and dependence upon private vehicles suggest the need to foster sustainable transport modes	 There are federal entities with high population density and limited access to water The high utilization level of public transport as a whole with insufficient coverage and maintenance reduces the quality of this transport 	 Limited access to electricity, sewerage, basic sanitation and piped water contribute to margination and poverty School dropout, limited access to the education system, among others, have generated an important educational lag, in spite of the high rate of schools per inhabitant
ENVIRONMENT	 High risk of drought periods High level of pressure over water resources Vulnerability of an important number of schools and hospitals due to climate change effects 	 High level of pressure over water resources High risk as a result of earthquakes and floods Vulnerability of an important number of schools and hospitals due to climate change effects 	 Maintain pressure over water resources in low levels Low coverage of Air Quality Measurement Systems (AQMS) High risk as a result of earthquakes, floods, tropical cyclones and landslides

To outweigh imbalances, the Special Economic Zones Program seeks to encourage public and private investment to boost the economic and social development, specially in the South-Southeast region

Special Economic Zones (AFDZEE, 2018)



GENERAL COMMENTS

- Actually there are 9 Special Economic Zones: Coatzacoalcos, Veracruz; Puerto Chiapas, Chiapas; Salina Cruz, Oaxaca; Lázaro Cárdenas, Michoacán; San José Chiapa, Puebla; Ciudad Sahagún, Hidalgo; Progreso, Yucatán; Carmen, Campeche; Paraíso, Tabasco
- The Special Economic Zones seek to strengthen productive vocations through investment, tax benefits, a flexible regulatory framework, competitive infrastructure, assistance programs and complementary public policies
- The Development Programs of the SEZ consider a series of comprehensive actions to foster regional development by providing the infrastructure required by the specific needs of the South-Southeast region

GUIDING AXES, INTER SECTORAL ASPIRATIONS, REGIONAL AND SECTORAL OBJECTIVES







The guiding axes constitute the main pillars of the 20 year Comprehensive Vision that give rise to inter sectoral aspirations

On a relationship level, sectoral aspirations can be associated to one or more inter sectoral aspirations





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The objectives of the 20 year Comprehensive Vision move around 3 main Guiding Axes: Quality of Life, Improvement of Competitiveness and Balance Among Regions...

IMPROVEMENT OF PEOPLE'S QUALITY OF LIFE

How investment in infrastructure supports development of people, allowing an improvement in their quality of life, reducing elements such as pollution and congestion, guaranteeing its universal access to reduce poverty

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IMPROVEMENT OF COMPETITIVENESS

How investment in infrastructure can support improvement in competitiveness, encouraging at the same time logistics of goods and services, while reducing costs and increasing availability of services



BALANCE AMONG REGIONS

How investment in infrastructure can help reduce imbalances among regions, specially in the south-southeast, as well as strengthen inter and intra regional connectivity





Inter sectoral aspirations for the 20 year Comprehensive Vision were defined, based on the guiding axes

The guiding axes and inter sectoral aspirations represent the objectives' definition of the Comprehensive Vision at a high level





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The relationship among sectoral aspirations and regional challenges and opportunities for each of the defined regions: north, central and south-southeast is shown as follows

GUIDING AXIS		INTER SECTORAL ASPIRATIONS	NORTH	CENTRAL	SOUTH-SOUTHEAST
	•1	Reduce poverty by ensuring universal access to the population to basic services: water, electricity, telecommunications, health and education	Develop sustainable mobility infrastructure to reduce dependence on private vehicles	 Ensure universal access to drinking water and sanitation Develop sustainable urban mobility infrastructure, particularly public transport, to satisfy the existing demand 	Expand drinking water, sanitation, and electricity infrastructure coverage to guarantee universal access
IMPPROVE PEOPLE'S QUALITY OF LIFE	2	Reduce pollution and congestion levels in cities and regions, improving air quality and mobility of persons	Promote adaptation to climate risks, specially droughts, through the development of water collection and storage infrastructure	 Optimize the use of water resources by developing and maintaining infrastructure Improve air quality and solid waste management 	Promote adaptation to climate risks, specially earthquakes, floods, landslides and cyclones through the development of infrastructure
	3	Guarantee safe, sustainable and resilient infrastructure capable to respond and protect people against climate change effects	 Reduce the risk of pressure over water resources Mitigate health and education infrastructure vulnerability towards climate change effects 	 Foster the development of infrastructure considering earthquake resistance criteria Mitigate flood risks through rainwater management infrastructure 	 Foster the development of infrastructure considering earthquake resistance criteria Mitigate flood risks through rainwater management infrastructure

COMPREHENSIVE VISION OF NATIONAL INFRASTRUCTURE

The inter sectoral aspirations of the 20 year Comprehensive Vision are closely connected to the sectoral aspirations



INTER SECTORAL ASPIRATIONS 20 YEAR COMPREHENSIVE VISION



QUALITY OF

LIFE OF

PEOPLE

Reduce poverty by ensuring universal access to the population to basic services: water, electricity, telecommunications, health and education



SECTORAL ASPIRATIONS

Address **physical infrastructure** lags in all education levels in terms of capacity, quality and proper operation; ensure the required resources to improve teaching and learning conditions



Improve inhabitants' **quality of life** in cities by providing mobility options that facilitate daily activities with an efficient use of resources and lowest impact to **environment**

Stop and reverse the loss of natural capital and pollution of water, soil and air.



congestion levels in cities and regions, improving air quality

Reduce pollution and

and mobility of persons

Foster commerce competitiveness in all regions of the Mexican Republic, increasing efficiency and reducing costs of transport of goods and passengers by improving connectivity among regions and with the rest of the world, guaranteeing a **safe and sustainable transport** throughout the Mexican Republic



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climate change effects

Encourage economic and social development by guaranteeing safe and universal access to a competitive, **sustainable and efficient energy system**.

Ensure universal availability of water for all uses, guaranteeing a **sustainable** exploitation and increasing the efficiency of infrastructure and rural productivity



The relationship among sectoral aspirations and regional challenges and opportunities for each of the three regions: north, central and south-southeast is shown below







INTER SECTORAL ASPIRATIONS 20 YEAR COMPREHENSIVE VISION



NORTH

- Maximize the value of productive sectors by consolidating logistic corridors, and road and railway infrastructure
- Speed-up ground transportation by implementing intelligent transport systems

CENTRAL

- Maximize the value of productive sectors by consolidating logistic corridors, and road and railway infrastructure
- Assess the possibility to declare SEZ's in the central region of the country to boost its competitiveness
- Boost intermodality by implementing transport intelligent systems for port logistics
- Boost ports competitiveness
- Create touristic circuits and/or corridors through connectivity infrastructure

SOUTH-SOUTHEAST

- Maximize the value of productive sectors by consolidating logistic corridors, and road and railway infrastructure
- Develop complementary infrastructure to foster a sustainable growth of SEZ
- Boost intermodality by implementing transport intelligent systems for port logistics
- Boost ports competitiveness
- Expand installed capacity of clean energy generation
- Encourage a comprehensive management of water resources by maintaining and developing collection and maintenance infrastructure



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Reduce costs associated to the use of strategic infrastructure, specially transport, energy, telecommunications and water infrastructure

- Expand installed capacity of clean energy generation
- Encourage a comprehensive management of water resources by maintaining and developing collection and maintenance infrastructure





The inter sectoral aspirations of the 20 year Comprehensive Vision are closely connected to the sectoral aspirations





The relationship among sectoral aspirations and regional challenges and opportunities for each of the three regions: north, central and south-southeast is shown below





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The inter sectoral aspirations of the 20 year Comprehensive Vision are closely connected to the sectoral aspirations





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The first sectoral aspiration of the communications and transport sector is closely connected to objectives and strategies that seek the improvement of competitiveness and connectivity, among others (1/3)

Sectoral Aspirations	Foster commerce competitiveness in all regions of the Mexican Republic, increasing efficiency and reducing transportation costs of goods and passengers by improving connectivity among regions and with the rest of the world, guaranteeing a safe and sustainable transport throughout the Mexican Republic					
Objectives by aspiration	Have competitive logistic transport services in terms of efficiency and costs that stimulate a higher economic development of the country	Improve connectivity conditions of people and goods to ensure a proper regional development and encourage equal access to opportunities for al the communities in the country	Reduce the number of deaths and injuries caused by traffic accidents	Develop reliable , sustainable , resilient and quality infrastructure , included regional and trans border infrastructure, to support economic development and human well being		
Objective's strategy ∴	 Foster cost reductions for logistic transport services Encourage the efficiency, speed and reliability of the most important logistic chains for the economic development of the country Develop ICT infrastructure that supports the creation and operation of efficient logistic services 	 Improve connectivity of the federal, state and rural road networks, giving priority to the main passengers and goods corridors, including service to feeding roads Strengthen the railway system of the main passengers and goods corridors by implementing actions that boost multimodal transfer Encourage the creation of multimodal logistic platforms to strengthen the main logistic corridors, in order to create synergies among the different modes of transportation Foster passenger connectivity in regional airports, while covering the needs of air cargo transportation Foster maritime transport of goods and passengers among the ports of the Mexican Republic 	 Improve the road network, specially in trunks axis by adapting it to vehicle traffic of each section, to avoid congestions and accidents Provide roads with the required physical specifications such as emergency lanes, lighting, and water intakes to reduce risks of catastrophic accidents Equip roads with ITS technology in order to include the required ITC elements that allow the improvement of existing security conditions 	 Boost investment in sustainable transport projects in order to reduce, GEG emissions Foster investment in projects that improve transport infrastructure quality and resilience, in a sustainable level Ensure resilience of critical infrastructure towards damages generated by natural disasters or high impact extreme events 		
	C ASSISTED BY:			54		

The second sectoral aspiration of the communications and transport sector is related to objectives and strategies to improve urban mobility (2/3)

Sectoral Aspirations	Improve quality of life in cities by providing mobility alternatives that facilitate the development of daily activities in an efficient manner, in terms of use of resources and impact to environment					
Objectives by aspiration	Foster the creation of integrated systems for sustainable public transport	Encourage technological developments to transform urban mobility into an efficient, modern, attractive, and environmentally sustainable alternative for the population	Reduce the number of deaths related to transport to have more friendly cities			
Objective's strategy ×♪ ö××	 Boost investment in sustainable transport projects in those cities that have a mobility global planning strategy 	 Reinforce public transportation technological platform to increase service reliability and information to the user 	 Implement actions aimed at improving road safety in urban zones Increase actions aimed at reducing the use of private 			
	 Foster the creation of interconnection nodes among different routes and transport modes to facilitate transfer among them Develop segregated and exclusive infrastructure for pubic transportation to improve commercial speed 	 Diversify energy sources for transport systems. Decarbonization through "electro-mobility" 	vehicles in the cities			
		 Apply new technologies to urban distribution of goods (UDG) to improve its efficiency, competitiveness and customer service 				
	 Improve pedestrian and cyclist infrastructure 					



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The third sectoral aspiration of the communications and transport sector is associated to objectives and strategies to foster and expand communications infrastructure (3/3)

Sectoral **Aspirations** Contribute to economic development and competitiveness by providing a quality and broad coverage of telecommunications networks and spectrums, providing fair access to all individuals **Objectives by** Develop reliable, sustainable, resilient and quality Develop regional and trans border communications Encourage the development of technology and aspiration communications infrastructure to support economic infrastructure, ensuring affordable and equitable innovation through digital training for the population, development and well being access, under competitiveness conditions specially in schools and isolated regions **Objective's** Encourage investment in communications infrastructure Foster the development of equitable and affordable Develop regional and trans border communications communications infrastructure throughout the Mexican infrastructure, emphasizing affordable and equitable that increases the quality and sustainability of strategy access under competitiveness conditions infrastructure while ensuring resilience of critical Republic ×ĵ infrastructure towards damages generated by natural óx× disasters or high impact external events Foster the development of complementary communications infrastructure for the rest of the sectors to improve economic activities in the country, as well as people's quality of life

COMPREHENSIVE VISION OF NATIONAL INFRASTRUCTURE



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The sectorial aspiration of the energy sector is connected with those objectives and strategies related to the use of clean and renewable energies, universal access to infrastructure with sufficient capacity that provides security in the supply of energy resources





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The sectoral aspiration of the health subsector is associated with objectives and strategies aimed to ensure the availability and effective use of resources, promote health and prevent diseases, as well as progress in the development of a Universal National Health System, among others

Sectoral Aspirations	Guarantee access to quality health services for all the population through: the development of new infrastructure, optimization of the existing one, strengthening of preventive actions, management and optimization of financial and operational resources in medical units, and expansion of social coverage and the universalization of services				
Objectives by aspiration	Ensure the availability and effective use of resources used for health infrastructure	Foster health promotion, as well as prevention diseases and their complications	Progress in the creation of a Universal National Health System governed by the Ministry of Health	Take advantage of new health technologies and make them available for the population	
Objective's strategy ∴ ĵ o × ×	 Establish physical and financial surveillance mechanisms to guarantee the conclusion of project with high level of progress and those that have high impact social benefits Foster investment in sanitary infrastructure maintenance and rehabilitation programs Guarantee 100% initial equipment of all medical units, their maintenance and timely substitution according to their useful life Establish human resources planning and formation to guarantee a full operation of new and existing medical units Implement planning and management schemes for the supply of medicines and materials Implement innovative public-private financing mechanisms to boost financial sustainability of public entities 	 Give maintenance to primary attention units Guarantee job positions through an incentive system for a proper distribution of health professionals Adapt primary attention units according to official standards Strengthen the health reference and counter reference networks in the primary attention level Implement an education campaign for the population regarding the use of the national health system 	 Develop the required physical and equipment infrastructure, aligned to demographic, epidemiological, socioeconomic and cultural needs Strengthen and optimize inter institutional infrastructure to guarantee effective access to quality health services Generate infrastructure mechanisms to foster security, energy and water savings, sustainability and the use of clean technologies Implement an inter institutional planning channel for the development of sanitary infrastructure Standardize coverage catalogs of the different health institutions 	 Promote the use of new technologies for health equipment Integrate a universal health information system (electronic clinical dossier) Foster the use of telehealth, with emphasis in zones where the population lives in vulnerability situations Take advantage of e-health and big data advances to strengthen patients prevention, surveillance and control Regionalization of diagnosis centers 	

COMPREHENSIVE VISION OF NATIONAL INFRASTRUCTURE

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The sectoral aspiration of the education subsector is associated with objectives and strategies aimed at increasing the number of educative spaces, improving their conditions, and increase their coverage

Sectoral Aspirations	Address physical infrastructure gaps at all education levels regarding capacity, quality, and proper operations, and ensure the required resources to improve teaching and learning conditions				
Dbjectives by aspiration	Increase the number of educative spaces for middle and high education; use existing basic education infrastructure to increase the offer of education services, and guarantee the required resources for the operation of new and existing buildings in the three education levels	Implement maintenance and rehabilitation programs for existing school buildings to cover the needs of students and handicapped persons, ensuring gender issues are covered to provide safe learning environments	Ensure a larger education coverage, inclusion and equity among all population groups for the construction of a fairer society		
Dbjective's strategy × ∱ o × ×	 Prepare a diagnostic of the needs of the physical conditions or education infrastructure, as well as of the offer and demand of education services, taking into consideration cultural and socioeconomic conditions of the population Strengthen development programs of existing physical education infrastructure to ensure the population access to compulsory education Create infrastructure mechanisms to foster security, sustainability, energy and water savings, and the use of renewable technologies Implement and strengthen coordination mechanisms and establish financial and physical supervision procedures of the construction activities carried out by state and municipal education authorities, according to the source of financing Implement planning and management schemes for human resources and procurement to guarantee a full operation of educational sites Implement innovative public-private financing mechanisms to boost the development of new education infrastructure in Mexico 	 Identify educational spaces that require attention to plan, coordinate, and develop physical education infrastructure rehabilitation, maintenance and equipment programs Strengthen inter institutional coordination to increase the ratio of schools with access to electricity, drinking water, computers and internet; as well as infrastructure and materials customized to handicapped students, and independent basic sanitary facilities for men and women Develop and strengthen coordination mechanisms and establish financial and physical supervision of maintenance activities carried out by state and municipal authorities, according to their funding source Implement innovative public-private financing mechanisms to carry out the required maintenance, rehabilitation and equipment of new and existing education infrastructure in Mexico 	 Foster education coverage in the different levels and modalities by developing buildings, with special emphasis in those that benefit vulnerable groups Promote the removal of barriers that limit access and permanence of education within vulnerable groups Increase the absorption index (students that enter the next education level compared with the total students that enter the last grade of the previous immediate degree), and reduce middle and high education student desertion Encourage the construction of new education spaces and forms and the adaptation of existing ones for the inclusion of handicapped and outstanding abilities persons in all education levels Continue promoting the use of information technologies to expand education coverage in its three levels 		

COMPREHENSIVE VISION OF NATIONAL INFRASTRUCTURE



territorial order

The sectoral aspiration of the tourism sector is associated with objectives and strategies aimed at developing infrastructure to foster competitiveness, diversify markets, encourage the sustainable development of the different touristic destinations, and expand social and economic benefits

Sectoral Aspirations	Increase competitiveness, as well as economic and social benefits of the sector, by diversifying tourism products, improving national and international connectivity, and by protecting, conserving and preserving the county's cultural and natural resources				
Objectives by aspiration	Develop infrastructure that boosts tourism competitiveness as a strategic axis for regional productivity and as a social well being detonator	Develop infrastructure to contribute to market diversification and to the sector's development and growth	Encourage the sustainable development of touristic destinations and extend social and economic benefits to receiving communities		
Objective's strategy	 Develop new terrestrial, port and air connectivity to increase competitiveness of touristic destinations 	Promote the creation of new touristic infrastructure to diversify the sector's offer	Develop infrastructure with sustainability criteria to lead the tourism sector to a clean and resilient industry		
× ∴××	 Improve existing infrastructure and equipment in touristic destinations 	Foster the development of the domestic market by promoting Mexico's destinations among the country's population	 towards climate change Increase tourism contribution for preservation of national heritage and its sustainable use by ensuring 		





The sectoral aspiration of the water and environment sector is associated to objectives and strategies aimed at improving urban solid waste management, improve air quality, and reduce vulnerability of strategic services infrastructure

Sectoral Aspirations	Stop and reverse the loss of natural capital, as well as water, soil and air pollution				
Objectives by aspiration	Improve urban solid waste management (SWM)	Improve air quality and reduce Greenhouse Effect Gas emissions	Reduce vulnerability of strategic services infrastructure and population to natural disasters		
Objective's strategy × ? ö××	 Improve logistics of SWM Expand SWM transfer infrastructure Expand infrastructure for the selection of SWM recoverables Improve management of final disposal of non exploitable SWM 	 Modernize the National System for Air Quality Measurement (AQMS) Improve air quality in the Valley of Mexico Metropolitan Area Reduce Greenhouse Effect Gas Emissions 	Expand the coverage of works developed for the protection of vulnerable groups		





The South-Southeast region has the most significant shortages in terms of access to basic services due to the lack of infrastructure, and has higher vulnerability to climate effect risks



SPECIAL OBJECTIVES – NORTH REGION

- Optimize distances between energy generation and consumption to reduce transmission costs, by leveraging alternative generation regional potential
- Achieve inclusive, safe, resilient and sustainable cities and settlements

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Provide access to safe, affordable, accessible and sustainable transport systems for all the population

SPECIAL OBJECTIVES – CENTRAL REGION

- Boost access to touristic destinations in the country to generate a higher flow of national and foreign visitors
- Provide access to safe, affordable, accessible and sustainable transport systems for all the population
- Optimize the use of water resources by developing and maintaining distribution, processing and collection infrastructure
- Reduce the negative environmental impact per capita of the cities, by addressing air quality and municipal waste management

a standard

SPECIAL OBJECTIVES SOUTH REGION

- Have logistic capacity that fosters the commercialization of goods within the national territory and abroad
- Improve connectivity of the most important attraction centers in the country
- Reduce the education lag by developing accessible and quality education infrastructure, according to the population demands
- Ensure access for all people to housing and adequate, safe and affordable basic services
- Reduce the negative environmental impact per capita of the cities, by addressing air quality and municipal waste management
- Strengthen resilience and adaptation capacities to climate and natural disasters related risks



BASIC METRICS AND GOALS





Goals contribute to follow up specific strategies for sectoral objectives





Based in Sectoral Programs, UN Sustainable Development Goals, international benchmarks and other proposed, a series of high impact indicators were selected for each sector

10 year and 20 year goals were established for such indicators



COMMUNICATIONS AND TRANSPORT



HIGH IMPACT INDICATORS	ACTUAL VALUE	10 YEAR GOAL	20 YEAR GOAL
Score in the transport infrastructure sub pillar	4.3	4.8 - 5.0	5.5- 5.7
Logistic Performance Index	3.1	3.3 - 3.4	3-5 – 3.7
% of CO2 emissions of the transport sector vs. total national	25.1%	20-22%	16-18%
% primary network kilometers with high specifications ¹	59.5%	65-70%	75-80%
Accident index	0.075 accidents per million of veh-km	0.060-0.065 accidents per million de veh-km	0.050-0.055 accidents per million de veh-km
Transport modal distribution in main metropolitan centers	31.3% Public / 43% Private / 1.2% Bicycle / 24.5% Pedestrian	38-40% Public / 30-34% Private / 3-4% Bicycle / 25- 26% Pedestrian	45-53% Public / 13-23% Private / 4-5% Bicycle / 28- 30% Pedestrian
Accident index linked to urban transport	143,729	95,000 - 100,000	75,000 – 85,000
% households with broadband subscription	50.9%	65 - 70%	80 – 85%
Renewable and clean energy share in power generation	21%	37 - 40%	42 - 45%
Final average price per KWh distributed, residential	109.43 centavos MXN/kWh	91.68 centavos MXN/kWh	78.05 centavos MXN/kWh
Oil based products storage capacity in days in inventory	9 days	> 11 days	> 25 days

1 Information obtained by IDOM from ProNEIC 2016. The primary network with high specifications is the main network that structures the country, and pretends to be structuring, sustainable, and integrated to other transport modes; is endowed with the required technology to reduce transport costs in a safe manner; boosts a balanced social and economic development through an efficient movement of goods and persons; and contributes to increase Mexico's competitiveness.



Based in Sectoral Programs, UN Sustainable Development Goals, international benchmarks and other proposed, a series of high impact indicators were selected for each sector

10 year and 20 year goals were established for such indicators





HIGH IMPACT INDICATORS	ACTUAL VALUE	10 YEAR GOAL	20 YEAR GOAL
Infant mortality rate (per 1,000 live births)	12.5	9.3 - 9.0	6.9 - 6.7
Maternal mortality rate (per 100,000 live births)	34.6	24.3 - 22.6	17.1 - 15.9
Life expectancy at birth	75 years	76.7 - 77.0 years	78.3 - 78.7 years
Basic, middle and high education coverage	B: 95.5 M: 77.2 S: 36.8	B: 96.2 - 97.0 M: 86.8 - 87.6 S: 64.0 - 65.0	B: 96.8 - 98.5 M: 96.3 - 97.9 S: 91.2 - 93.3
Degree of pressure over resources	19.2%	17% -15%	15% - 8%
Drinking water population coverage (%)	94.4%	97% - 98%	99% - 100%
Waste water treatment (% of population)	52.7%	70% - 75%	92% - 97%



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The inter sectoral metrics are indicators that can be applied to several sectors and allow the quantification of different characteristics in each sector

Inter Sectoral Metric	Communications and Transport	Energy	Water and Environment	Social	Tourism
% GDP	% GDP in communications and transport infrastructure	% GDP in energy infrastructure	% GDP in water infrastructure	% GDP in social infrastructure	% GDP in tourism infrastructure
Unit Cost	Cost per passenger and carried ton / Cost per GB	Cost per kWh residential and industrial	Cost of water per m3 for domestic and industrial use	Health cost per capita	N/A
Emissions CO ₂	Equivalent thousand tons of CO_2 of the transport sector	Equivalent thousand tons of CO_2 of the energy sector (power generation)	Thousand tons of CO_2 of the water sector (waste water treatment and management)	N/A	N/A
Vulnerability reduction index	Vulnerability reduction index the scale, where 1 is a total reduction	rough infrastructure and conserva on of vulnerability,	tion, restoration and sustainable n	nanagement actions of natural cap	pital. It is measured in a 0 to 1
Level of digitalization	PCS (ports), ITS (roads), RTMS (railroads), airports with self-service technologies	Smart network coverage	Air quality meters (environment), control valves for leaks (water)	Universal digital file (health), schools with internet access	Wi-Fi spots / Hot spots in touristic zones
Coverage of infrastructure	Number of fixed broadband subscriptions per 100 households / inhabitants	Urban and rural population percentage with access to the electrical network or generation system	Population percentage with access to drinking water	Population percentage covered by health services / with access to university education	N/A



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PRIORITIZATION METHODOLOGY AND PROJECT PORTFOLIO





AVE INTENTE

VI

IDOM developed a project prioritization methodology in 3 phases, that allowed the preparation of the main projects pipeline for the Comprehensive Vision



Notes: 1) The general project inventory and the prioritization methodology depend on the information provided by the different Entities. In several cases, complete information of the projects has not been obtained. 2) The "Main Continuity Projects" are those that received a higher weight according to the application of the prioritization methodology.



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Each project was evaluated by assigning a binary value to each criteria, obtaining a final value according to the weighing

This allowed the identification of profitable projects, with presence in special economic zones, inter sectoral impact, that complement other projects





ASSISTED BY:

The main continuity projects portfolio is formed by 83 projects, out of which 51 are under execution and 32 are to be launched



The portfolio of main projects under execution consists of 51 projects and represents and investment of over \$685 billion pesos

SUMMARY OF PORTFOLIO OF MAIN CONTINUITY PROJECTS¹: Main projects under execution


Likewise, the main projects portfolio to be launched consists of 32 projects and represents and estimated investment amount of over \$293 billion pesos



IDOM

In addition, a portfolio of main projects to be launched in all sectors in the south-southeast region was prepared, and consists of 27 projects and an estimated investment amount of over \$167 billion pesos





ASSISTED BY:

IDOM

813 communications and transport projects are included in the general inventory, out o which 128 are main projects to be launched in the short and medium term

COMMUNICATIONS AND TRANSPORT (1/2)				
1 GENERAL PROJECT INVENTORY				
Subsector	Projects	Investment amount (mp)		
Airports	48	\$211,424		
BRT	31	\$48,673		
Roads	402	\$713,741		
Communications	7	\$142,516		
Railroads	45	\$187,031		
Passenger RR	8	\$165,273		
Subway	9	\$77,450		
Ports	263	\$203,516		
TOTAL	813	\$1,748,382		

KEY ISSUES

- There are no airport projects directly related to air cargo transportation, except the NAIM
- No projects that boost the development of logistic platforms have been identified

ASSISTED BY:

IDOM

2 MAIN PROJECTS TO BE LAUNCHED

Subsector	Projects	Investment amount (mp)
Airports		
BRT	13	\$ 25,178
Roads	69	\$185,289
Communication	1	ND
Rail roads	5	\$43,048
Passenger RR	2	\$70,000
Subway	2	\$41,299
Ports	36	\$93,410.90
TOTAL	128	\$458,226.61

KEY ISSUES

- Most projects correspond to the road subsector
- Passenger railroad and subway projects are concentrated in the central region of the country

There are 45 main projects in the continuity portfolio that represent and investment amount of over 595 billion pesos, of which 28 are under execution and 17 are to be launched

COMMUNICATIONS AND TRANSPORT

3 PORTFOLIO OF MAIN CONTINUITY PROJECTS ¹

Main projects to be Subsector	launched Projects	Investment amount (mp)
BRT	1	\$3,500
Roads	1	\$2,197
Communications	1	
Railroads	1	\$16,356
Passenger RR	2	\$70,000
Ports	11	\$38,839
Subtotal	17	\$130,893

Main projects under execution

TOTAL:	45	\$595,078
Subtotal	28	\$464,185
Ports	6	\$42,727
Passenger RR	1	\$59,217
Railroads	1	\$ 5,332
Communications	1	\$122,592
Roads	17	\$36,653
BRT	1	\$2,663
Airports	1	\$195,001
Subsector	Trojecto	amount (mp)
Subsector	Projecte	Investment

PROJECTS' LOCATION



1) The portfolio of main continuity projects consists of projects under execution and projects to be launched with medium-high and high priority, and of strategic projects indicated as such by the responsible entities of each sector



Within the general inventory, there are 215 projects of the energy sector, of which 14 are part of the main projects to be launched

ENERGY(1/2)

PROJECTS GENERAL INVENTORY

ASSISTED BY:

IDOM

Subsector	Projects	Investment Amount (mp)
Electricity	180	\$265,029
Oil & Gas	35	\$156,037
TOTAL	215	\$421,066

KEY ISSUES

- Most of the projects correspond to electricity and are in the pre investment stage
- There are no public projects of terminals, pipelines, or storage and distribution of oil based products

2 MAIN PROJECTS TO BE LAUNCHED

Subsector	Projects	Investment Amount (mdp)
Electricity	11	\$157,816.42
Oil & GAs	3	\$48,263
TOTAL	14	\$206,079

KEY ISSUES

- There are power generation projects (cogeneration, wind, combined cycle, thermo electrical, hydro electrical) and electricity transmission projects
- In the oil and gas subsector, projects include the construction of gas pipelines



The main projects within the energy continuity portfolio include high voltage transmission lines, renewable energy and combined cycle power plants, as well as gas pipelines

ENERGY (2/2)

PORTFOLIO OF MAIN CONTINUITY PROJECTS 3

Main Projects to be Launched

Subsector	Projects	Investment Amount (mp)
Electricity	10	\$11,831
Oil & Gas	2	\$142,989
TOTAL	12	\$154,820

Main Projects Under Execution

Subsector	Projects	Investment Amount (mp)
Electricity	2	\$17,346
Oil & Gas	2	\$11,518
TOTAL	4	\$28,864

16

PROJECTS LOCATION



to be launched

TOTAL:

ASSISTED BY:

IDOM

\$183.684

1) The portfolio of main continuity projects consists of projects under execution and projects to be launched with medium-high and high priority, and of strategic projects indicated as such by the responsible entities of each sector



280 projects of the social sector were identified in the projects' general inventory, of which 9 are main projects that are about to be started

SOCIAL (1/2)			
1 PROJECTS' GENERAL INVENTORY			
Subsector	Projects	Investment Amount (mp)	
Health	170	\$82,707	
Education	110	\$90,734	
TOTAL	280	\$173,531	

KEY ISSUES

- It is considered that projects aimed at units maintenance and strengthening of the first level of attention are not sufficient
- For education, no specific projects for the ÷. development of new middle-upper and upper education infrastructure were identified

IDOM

2 MAIN PROJECTS ABOUT TO BE STARTED

Subsector	Projects	Investment Amount (mp)
Health	8	\$5,741
Education	1	\$5, 275
TOTAL	9	\$11,016

KEY ISSUES

- A higher number of hospital substitutions was observed when compared to expansions in installed capacity
- In the education subsector, projects for school ٠. physical infrastructure improvement were included



There are 9 main continuity projects of the social sector that include the construction of new health clinics and the improvement of education infrastructure throughout the Mexican territory

√√→ SOCIAL (2/2)

3 PORTFOLIO OF MAIN CONTINUITY PROJECTS¹

Ма	in Projects Unde		
	Subsector	Projects	Investment amount (mp)
	Health	8	\$11,625
	Education	1	\$49,517
	TOTAL	9	\$61,142

q

PROJECTS' LOCATION





TOTAL:

ASSISTED BY:

IDOM

\$61.142

The general inventory includes 67 projects of the tourism sector that have a special focus in the development and recovery of beaches



KEY ISSUES

- 43% of the tourism projects in the general inventory involve the recovery of beaches
- Over 30% of the projects a located in the Riviera Maya
- All the tourism projects are short and medium term

2 MAIN PROJECTS TO BE LAUNCHED

Subsector	Projecte	Investment
Subsector	FIUJECIS	Amount (mp)
Turismo	1	\$873

KEY ISSUES

Beach recovery projects are included.



The main continuity projects of the sector are located in the states of Baja California Sur, Nayarit, Oaxaca, Quintana Roo and Sinaloa, and aimed at boosting beach tourism



531 water and environment projects are included in the general inventory, with one main project to be launched

WATER AND ENVIRONMENT (1/2) **PROJECTS' GENERAL INVENTORY** 1 Investment Subsector **Projects** Amount (mp) **Drinking Water** \$83,598 48 Dams 37 \$44,667 Irrigation 104 \$26,775 Sanitation 20 \$67,335 Other (water) 110 \$17,720 Protection to settlements 212 \$51,002 (Environment) \$291,097 TOTAL 531

KEY ISSUES

- There is an important number of irrigation projects and a small one of sanitation projects
- All environment projects aim at protecting settlements

2 MAIN PROJECTS TO BE LAUNCHED

Subsector	Projects	Investment Amount (mp)
Drinking Water		
Dams	1	\$4,182
Irrigation		
Sanitation		
Other (water)		
Protection to		
settlements		
(Environment)		
TOTAL	1	\$4,182

KEY ISSUES

The water project is related to the development of dams and will contribute to guarantee water supply in the northern region of the country



8 continuity projects are included, of which 7 are under execution and one from the water subsector is about to be started

WATER AND ENVIRONMENT(2/2)

3 MAIN CONTINUITY PROJECTS PORTFOLIO¹

Main projects about to be launched			lassa atau aut	
	Subsector	Projects	Amount (mp	ונ כ)
	Dams	1	\$4,18	32
	TOTAL	1	\$4,18	2

Main projects under execution

TOTAL:

ASSISTED BY:

IDOM

Subsector	Projects	Investment Amount (mp)
Drinking Water	4	\$36,565
Dams	1	\$9,311
Sanitation	1	\$43,822
Protection to settlements		
(Environment)	1	\$18,528
TOTAL	7	\$108,226

8

\$112.407

PROJECTS' LOCATION

priority, and of strategic projects indicated as such by the responsible entities of each sector





COMPREHENSIVE VISION OF NATIONAL INFRASTRUCTURE

Some examples of main continuity projects are shown as follows² (1/3)

COMMUNICATIONS AND TRANSPORT	
PROJECTS	INVESTMENT AMOUNT (MP)
 TELECOMM: TRUNK NETWORK MEXICO NEW INTERNATIONAL AIRPORT (NAIM) SHARED NETWORK DEVELOP THE INTERURBAN TRAIN MÉXICO – TOLUCA (FIRST STAGE) CANCUN TULUM TRAIN NATURAL EXPANSION OF THE PORT OF VERACRUZ IN THE NORTHERN ZONE EXPRESS TRAIN TO THE MEXICO NEW INTERNATIONAL AIRPORT RAILWAYS REHABILITATION IN THE SOUTHEAST 2018-2024 CONTAINER SPECIALIZED TERMINAL II (2ND EXPANSION PHASE 2) INCREASE THE DEPTH OF THE PORT FROM 32 FT. TO 40 FOOT, API DOS BOCAS MODERNIZATION AND EXPANSION OF THE AROMATICS TRAIN I 	ND \$195,001.0 \$122,592.0 \$59,216.8 \$40,000.0 \$33,730.2 \$30,000.0 \$16,356.1 \$12,274.0 \$5,405.2 \$5,332.0
 ROAD ACAPULCO-ZIHUATANEJO DREDGING FOR THE CONSTRUCTION AND REFILL FOR THE FLUIDS TERMINAL AND PATIO OF THE API (AGREEMENT WITH THE STATE GOVERNMENT: EMPRESA PORTUARIA YUCATECA) PROGRESO MAINTENANCE AND CONSERVATION FO THE ROAD SECTION ARRIAGA-TAPACHULA. BRT'S CONNECTIVITY WITH NAIM COMPLEMENTARY INFRASTRUCTURE (WAYS, PATIO HABILITATION, RAILWAYS) (VERACRUZ EXPANSION, STAGE 2) CIUDAD DEL CARMEN BYPASS DREDGING FOR THE CONSTRUCTION IN THE ACCESS CHANNEL AND DOCK OF CIABOGA IN SEYBAPLAYA (ROCA), API CAMPECHE CONSTRUCTION OF THE EAST SEAWALL OF 3.5 KMS (VERACRUZ EXPANSION, STAGE 2) MONTERREY-NUEVO LAREDO HIGHWAY SECTION LA GLORIA SAN FERNANDO MASSIVE TRANSPORT OF THE NORTH-SOUTH BASIN OF THE METROPOLITAN AREA OF PUEBLA 18 MTS DREDGE FOR THE CONSTRUCTION OF A MAIN AND MANEUVERS DOCK (VERACRUZ EXPANSION, STAGE 2) PORT OF GUAYMAS EXPANSION, SONORA, PHASE I CONSTRUCTION, EQUIPMENT AND OPERATION OF A PUBLIC USE TERMINAL, SPECIALIZED IN HANDLING AND STORAGE OF OIL BASED PRODUCTS AND OTHER FLUIDS (TOPOLOBAMBO) 	\$4,043.2 \$3,704.0 \$3,608.6 \$3,500.0 \$3,382.0 \$3,239.6 \$3,163.5 \$3,005.8 \$3,003.4 \$2,663.0 \$2,400.0 \$2,382.1
 PEÑÓN-TEXCOCO HIGHWAY MAINTENANCE AND CONSERVATION OF THE SALTILLO – MONTERREY – LA GLORIA HIGHWAY CONSERVATION OF THE FEDERAL ROAD NETWORK COATZACOALCOS-VILLAHERMOSA MAINTENANCE, REHABILITATION AND OPERATION FO THE GOLFO CENTRO HIGHWAY MAINTENANCE AND CONSERVATION OF THE PIRÁMIDES-TULANCINGO-PACHUCA HIGHWAY MAINTENANCE AND CONSERVATION OF THE ROAD SECTION TAMPICO (ALTAMIRA)-CIUDAD VICTORIA CONSERVATION OF THE FEDERAL ROAD NETWORK QUERÉTARO-SAN LUIS POTOSÍ SPECIALIZED FACILITY FOR THE HANDLING AND STORAGE OF OIL BASED PRODUCTS AND OTHER TECHNICALLY FEASIBLE PRODUCTS IN COATZACOALCOS 	\$2,250.2 \$2,197.0 \$2,172.4 \$2,151.7 \$2,028.5 \$2,020.0 \$1,948.3 \$1,892.9 \$1,850.0
 MAINTENANCE AND CONSERVATION OF THE SAN LUIS POTOSI-MATEHUALA ROAD SECTION EXPANSION OF THE PORT OF DOS BOCAS MAINTENANCE AND CONSERVATION OF THE CAMPECHE-MÉRIDA ROAD SECTION 	\$1,755.4 \$1,755.0 \$1,752.2



Some examples of main continuity projects are shown as follows² (2/3)

COMMUNICATIONS AND TRANSPORT

	PROJECTS	INVESTMENT AMOUNT (MP
•	OZULUAMA-TAMPICO HIGHWAY	\$1,677.2
•	MODERNIZATION OF THE FEDERAL ROAD MEX 180 SAN ANDRÉS TUXTLA CATEMACO AND COSOLEACAQUE JÁLTIPAN ACAYUCAN SECTIONS. FIRST STAGE	\$1,660.0
•	DREDGING OF THE NAVIGATION CHANNEL FROM LA BOCANA TO LA DÁRSENA DE CIABOGA	\$1,614.8
•	MAINTENANCE AND CONSERVATION OF THE MATEHUALA-SALTILLO HIGHWAY	\$1,589.8
•	SPECIALIZED CONTAINER TERMINAL COATZACOALCOS	\$1,500.0
•	MAINTENANCE AND CONSERVATION OF THE TEXCOCO-ZACATEPEC HIGHWAY	\$1,367.0
•	CONSTRUCTION DREDGING (SALINAS DEL MARQUÉS) SALINA CRUZ	\$1,200.0
•	PORT FACILITIES FOR SPECIALIZED PUBLIC USE, FOR THE HANDLING AND STORAGE OF ENERGY RELATED FLUIDS. (INDUSTRIAL PARK)	\$1,050.0
•	EXPANSION OF THE EAST BREAKWATER. CHIAPAS	\$900.0
•	LA GALARZA – AMATITLANES BYPASS	\$742.8

	PROJECTS	
•	NATURAL GAS STRATEGIC STORAGE FACILITIES	ND
•	SIN-BCS TRANSMISSION LINE WITH SUBMARINE CABLE, BAJA CALIFORNIA SUR AND SONORA	\$29,531.0
•	YAUTEPEC – IXTEPEC DIRECT CURRENT TRANSMISSION LINE, IN THE STATES OF MORELOS, ESTADO DE MÉXICO, OAXACA, CIUDAD DE MÉXICO, PUEBLA AND VERACRUZ	\$22,080.0
•	INTERCONNECTION OF THE BAJA CALIFORNIA ELECTRIC SYSTEM WITH THE NATIONAL INTERCONNECTED SYSTEM, IN THE STATES OF BAJA CALIFORNIA AND SONORA	\$20,240.0
•	COGENERATION POWER PLANT PEMEX TRI (CACTUS)	\$16,565.4
•	COGENERATION POWER PLANT PEMEX TRI (LA CANGREJERA)	\$14,109.9
•	COGENERATION POWER PLANT PEMEX TRI (CADEREYTA)	\$12,051.0
•	JÁLTIPAN-SALINA CRUZ GAS PIPELINE	\$11,831.2
•	COGENERATION POWER PLANT PEMEX TRI (SALINA CRUZ)	\$10,747.7
•	CFE: SAMALAYUCA-SÁSABE GAS PIPELINE	\$10,506.4
•	COGENERATION SALINA CRUZ	\$10,236.0
•	COGENERATION POWER PLANT PEMEX TRI (TULA)	\$9,236.6
•	COGENERATION POWER PLANT PEMEX TRI (MINATITLÁN)	\$7,649.9
•	HYDROELECTRIC POWER PLANT CHICOASÉN II, IN THE STATE OF CHIAPAS	\$7,110.0
•	CFE: EL ENCINO-TOPOLOBAMPO GAS PIPELINE	\$1,012.0
•	ENERGY TRANSFORMATION BANK EL ARRAJAL, IN THE STATE OF BAJA CALIFORNIA	\$777.4



Some examples of main continuity projects are shown as follows² (3/3)

PROJECTS INVESTMENT AMOUNT (M * "Schools AT 100% PROGRAM (TOTAL) \$49,517.0 GENERAL HOSTITAL IN SERVICE MEXICO \$1,952.9 GENERAL HOSTITAL IN THEOTZOTIAN, STATE OF MEXICO \$1,952.8 CUNICS CONSTRUCTION OF FLANILY MEDICINE \$1,952.8 CUNICS CONSTRUCTION OF FLANILY MEDICINE \$1,952.8 VORNES PROGRAM FOR THE CPC NUARAIT. \$4,633.0 EACH RECOVERY IN RIVERA MAYA \$1,952.0 VORNES AND SERVICES PROGRAM FOR THE CPC NAVARIT. \$1,952.0 WORKS ANDS SERVICES PROGRAM FOR THE CPC NAVARIT. \$1,952.0		SOCIAL	
 "Schools AT 100%" PROGRAM (TOTAL) 949.5170 949.51	(PROJECTS	INVESTMENT AMOUNT (MP)
PROJECTS INVESTMENT AMOUNT (N • WORKS PROGRAM FOR THE CPC HUATULCO \$11,567.0 • COMPREHENSIVE PLANIED CENTRE "COSTA DEL PACÍFICO" \$7,312.0 • WORKS ANDS SERVICES PROGRAM FOR THE CPC NAVARIT. \$4,633.0 • BEACH RECOVERY IN RIVIERA MAYA \$873.0 • WORTS AND ENVIRONMENT PROJECTS • CONSTRUCTION OF THE OPE PASTERN DRAINAGE TUNNEL LOCATED IN MEXICO CITY, THE STATE OF MEXICO AND HIDALGO \$43,821.7 • HYDROLOGICAL PROJECT TO PROTECT THE POPULATION FROM FLOODS AND TO MAKE A BETTER USE OF WATER IN THE SATE OF TABASCO (PROHTAB). \$13,528.1 • HYDROLOGICAL PROJECT TO PROTECT THE POPULATION FROM FLOODS AND TO MAKE A BETTER USE OF WATER IN THE SATE OF TABASCO (PROHTAB). \$13,528.1 • NEW SUPPLY SOURCE IN THE WESTERN ZONE OF THE VALLEY OF MEXICO \$13,528.1 • DAM CONSTRUCTION AND ARCHDEACON PUMPING SYTSTEM TO SUPPLY WATER TO THE METROPOLITAN AREA OF GUADALAJARA, JALISCO \$33,10.9 • DESALINIZATION PLAYE BE ROSARITO ⁽¹⁾ \$9,072.9 \$9,072.9 • DESALINIZATION PLAYE BE ROSARITO SUPPLY VATER TO THE CUTZAMALA SYSTEM TO SUPPLY DRINKING WATER TO THE METROPOLITAN AREA OF THE VALLEY OF MÉXICO. \$9,072.9 • DESALINIZATION PLAYE BE ROSARITO ⁽¹⁾ \$9,072.9 \$9,072.9 • DESALINIZATION PLAYE BER ADAM CONSTRUCTION IN NUEVO LEÓN \$9,072.9 \$9,072.9 • DESALINIZATION PLAY	• • • • • • •	"SCHOOLS AT 100%" PROGRAM (TOTAL) GENERAL HOSPITAL IN GARCÍA, NUEVO LEÓN GENERAL HOSPITAL IN TEPOTZOTLÁN, STATE OF MEXICO GENERAL ZONE HOSPITAL IN EN TAPACHULA, CHIAPAS GENERAL HOSPITAL IN TLÁHUAC, MEXICO CITY GENERAL HOSPITAL IN BAHÍA BANDERAS, NAYARIT GENERAL HOSPITAL IN TEPIC, NAYARIT GENERAL HOSPITAL IN VILLAHERMOSA, TABASCO CLINICS CONSTRUCTION FOR FAMILY MEDICINE TOURISM	\$49,517.0 \$1,962.9 \$1,899.8 \$1,741.0 \$1,597.1 \$1,584.6 \$1,452.2 \$1,024.2 \$363.1
WORKS PROGRAM FOR THE CPC HUATULCO WORKS PROGRAM FOR THE CPC HUATULCO COMPREHENSIVE PLANNED CENTER "COSTA DEL PACÍFICO" ST,312.0 SCOMPREHENSIVE PLANNED CENTER "COSTA DEL PACÍFICO" STATUTOR MAYA STATUTOR MAYA A STATUTOR PROGRAM OF THE CUTZAMALA SYSTEM TO SUPPLY MAYAA MAYA A STATUTOR MAREA OF THE VALLEY OF MÉXICO. SONSTRUCTION AND ARCHAGEXON PUMAPING SUSTEMT OS SUPPLY MAYAA MAYAA A STATUTOR PLANT CHARACLE, CONSERVATION, AND REHABILITATION PROGRAM OF THE CUTZAMALA SYSTEM TO SUPPLY MAYAA MAYAA A STATUTOR HEART OF THE METROPOLITAN AREA OF THE VALLEY OF MÉXICO. SONSTRUCTION ANDA SEMPALAME SYSTEM TO SUPPL	(PROJECTS	INVESTMENT AMOUNT (MP)
WATER AND ENVIRONMENT INVESTMENT PROJECTS INVESTMENT AMOUNT (N • CONSTRUCTION OF THE DEEP EASTERN DRAINAGE TUNNEL LOCATED IN MEXICO CITY, THE STATE OF MEXICO AND HIDALGO \$43,821.7 • HYDROLOGICAL PROJECT TO PROTECT THE POPULATION FROM FLOODS AND TO MAKE A BETTER USE OF WATER IN THE SATE OF TABASCO (PROHTAB). \$18,528.1 • NEW SUPPLY SOURCE IN THE WESTERN ZONE OF THE VALLEY OF MÉXICO \$17,689.3 • DAM CONSTRUCTION AND ARCHDEACON PUMPING SYTSTEM TO SUPPLY WATER TO THE METROPOLITAN AREA OF GUADALAJARA, JALISCO \$9,310.9 • MAINTENANCE, CONSERVATION, AND REHABILITATION PROGRAM OF THE CUTZAMALA SYSTEM TO SUPPLY DRINKING WATER TO THE METROPOLITAN AREA OF THE VALLEY OF MÉXICO. \$9,938.8 • DESALINIZATION PLANT PLAYAS DE ROSARITO ⁽¹⁾ \$9,072.9 • LIBERTAD DAM CONSTRUCTION IN NUEVO LEÓN \$4,181.7 • DESALINIZATION PLANT GUAYMAS EMPALME SYSTEM \$704.0 • VARIOUS SECTORS \$704.0	• • •	WORKS PROGRAM FOR THE CPC HUATULCO COMPREHENSIVE PLANNED CENTER "COSTA DEL PACÍFICO" WORKS ANDS SERVICES PROGRAM FOR THE CPC NAYARIT. BEACH RECOVERY IN RIVIERA MAYA	\$11,567.0 \$7,312.0 \$4,633.0 \$873.0
PROJECTS INVESTMENT AMOUNT (N • CONSTRUCTION OF THE DEEP EASTERN DRAINAGE TUNNEL LOCATED IN MEXICO CITY, THE STATE OF MEXICO AND HIDALGO \$43,821.7 • HYDROLOGICAL PROJECT TO PROTECT THE POPULATION FROM FLOODS AND TO MAKE A BETTER USE OF WATER IN THE SATE OF TABASCO (PROHTAB). \$18,528.1 • NEW SUPPLY SOURCE IN THE WESTERN ZONE OF THE VALLEY OF MÉXICO \$17,689.3 • DAM CONSTRUCTION AND ARCHDEACON PUMPING SYTSTEM TO SUPPLY WATER TO THE METROPOLITAN AREA OF GUADALAJARA, JALISCO \$9,310.9 • MAINTENANCE, CONSERVATION, AND REHABILITATION PROGRAM OF THE CUTZAMALA SYSTEM TO SUPPLY DRINKING WATER TO THE METROPOLITAN AREA OF THE VALLEY OF MÉXICO. \$9,098.8 • DESALINIZATION PLANT PLAYAS DE ROSARITO ⁽¹⁾ \$4,181.7 • LIBERTAD DAM CONSTRUCTION IN NUEVO LEÓN \$4,181.7 • VARIOUS SECTORS \$704.0		WATER AND ENVIRONMENT	
 CONSTRUCTION OF THE DEEP EASTERN DRAINAGE TUNNEL LOCATED IN MEXICO CITY, THE STATE OF MEXICO AND HIDALGO HYDROLOGICAL PROJECT TO PROTECT THE POPULATION FROM FLOODS AND TO MAKE A BETTER USE OF WATER IN THE SATE OF TABASCO (PROHTAB). NEW SUPPLY SOURCE IN THE WESTERN ZONE OF THE VALLEY OF MÉXICO DAM CONSTRUCTION AND ARCHDEACON PUMPING SYSTEM TO SUPPLY WATER TO THE METROPOLITAN AREA OF GUADALAJARA, JALISCO MAINTENANCE, CONSERVATION, AND REHABILITATION PROGRAM OF THE CUTZAMALA SYSTEM TO SUPPLY DRINKING WATER TO THE METROPOLITAN AREA OF THE VALLEY OF MÉXICO. DESALINIZATION PLANT PLAYAS DE ROSARITO⁽¹⁾ LIBERTAD DAM CONSTRUCTION IN NUEVO LEÓN YARIOUS SECTORS PROJECTS 	(PROJECTS	INVESTMENT AMOUNT (MP)
VARIOUS SECTORS INVESTMENT AMOUNT (M	•	CONSTRUCTION OF THE DEEP EASTERN DRAINAGE TUNNEL LOCATED IN MEXICO CITY, THE STATE OF MEXICO AND HIDALGO HYDROLOGICAL PROJECT TO PROTECT THE POPULATION FROM FLOODS AND TO MAKE A BETTER USE OF WATER IN THE SATE OF TABASCO (PROHTAB). NEW SUPPLY SOURCE IN THE WESTERN ZONE OF THE VALLEY OF MÉXICO DAM CONSTRUCTION AND ARCHDEACON PUMPING SYTSTEM TO SUPPLY WATER TO THE METROPOLITAN AREA OF GUADALAJARA, JALISCO MAINTENANCE, CONSERVATION, AND REHABILITATION PROGRAM OF THE CUTZAMALA SYSTEM TO SUPPLY DRINKING WATER TO THE METROPOLITAN AREA OF THE VALLEY OF MÉXICO. DESALINIZATION PLANT PLAYAS DE ROSARITO ⁽¹⁾ LIBERTAD DAM CONSTRUCTION IN NUEVO LEÓN DESALINIZATION PLANT GUAYMAS EMPALME SYSTEM	\$43,821.7 \$18,528.1 \$17,689.3 \$9,310.9 \$9,098.8 \$9,072.9 \$4,181.7 \$704.0
PROJECTS INVESTMENT AMOUNT (M		VARIOUS SECTORS	
	(PROJECTS	INVESTMENT AMOUNT (MP)

• COMPREHENSIVE ADMINISTRATOR OF THE FEDERAL SECTION OF THE LÁZARO CÁRDENAS - LA UNIÓN SPECIAL ECONOMIC ZONE

\$2649.6

