

Mexico

1. Noteworthy practices for project preparation



PUBLIC SECTOR CAPACITY FOR PROJECT PREPARATION

Programmatic approach to project planning and implementation

Mexico promotes a programmatic planning approach, which has helped to create quality in institutions, processes, and financing of infrastructure projects, especially in the core sectors of energy and transport.



PROJECT IDENTIFICATION AND CONCEPT DEFINITION

National plans supported by formal agreements for national government–local government coordination

The “Agreements of Coordination Framework” are agreements between national and state/municipal governments, aimed at the alignment of the municipal plans with the national plans and vision, and the promotion of coordination between agencies.



PROJECT PREPARATION FINANCING

Establishment of the National Infrastructure Fund (FONADIN) to support infrastructure financing, preparation and implementation

The role of FONADIN in providing a strong enabling environment for project preparation in Mexico is catalytic. Its functions include coordinating the identification of infrastructure needs and project pipelines, providing advisors to structure projects, project preparation facility support for studies, independent appraisal of feasibility studies and arms-length decision-making. FONADIN focuses on PPPs in highways, ports, airports, the environment, urban mass transportation, water and tourism.



PROJECT MARKETING AND STAKEHOLDER ENGAGEMENT

Robust project transparency standards

The “Mexico Projects Hub” is a unique project marketing tool that provides a snapshot of all the projects in the country at various stages of planning and implementation. The digital platform is considered first of its kind, with detailed information on projects, details of the project lifecycle, and reference documents.

2. Snapshot of project preparation activities

Project preparation activities are decentralised in Mexico, with federal and sub-national level Government Contracting Authorities (GCAs) undertaking them for their respective jurisdictions. While the federal government drove the infrastructure agenda historically, Mexico has embarked on greater decentralisation over the last two decades with the share of sub-national (state) investment in infrastructure increasing from 20% of total investment in the 1990s to around 40% in the 2010s. Mexico's project preparation is categorised by strong public sector capacity, established guidelines, and globally accepted disclosure practices.

Mexico has seen private investment in infrastructure pick up during the late 1980s in sync with Mexico's economic diversification from an oil-dependent economy and falling oil revenues. The country has seen active private participation in infrastructure since the 1990s, starting with the toll roads program, and subsequently expanding to other infrastructure sectors.

The National Infrastructure Fund (Fondo Nacional de Infraestructura, or FONADIN) was established in 2008 to accelerate private participation in Mexico's infrastructure. FONADIN has been instrumental in providing high-quality project preparatory assistance and financing for infrastructure. Today, Mexico is one of the leading economies in Latin America with an established framework for PPP project preparation reflected in a high scoring of 81 out of 100 for 'Preparation of PPPs' under the World Bank's *Procuring Infrastructure PPPs Report 2018*.

INSTITUTIONAL FRAMEWORK

The GCAs at each level of government are responsible for planning, implementing and supervising projects. Project preparation activities are supported by other public institutions, including the Secretariat of Finance and Public Credit (SHCP), the Investment Unit in SHCP, FONADIN/specific sectoral agencies/trusts, the National Development Bank for Public Works and Services (BANOBRAS), the congress (which has final approval for the federal expenditure budget) and the Center of Studies for the Preparation and Evaluation of Socioeconomic Projects (CEPEP) (which provides preparatory financing and project evaluation support).

Among the agencies, the role of FONADIN, in providing a strong enabling environment for project preparation and its established track record in supporting project preparation and implementation, especially in the transportation sector, stands out as a replicable model.

GCAs play a central role in project preparation and are involved in the preparation of the project studies for approval by the relevant authorities. The GCAs are required to prepare a five-year project roadmap, which must be aligned to the national plan. The Investment Unit of SHCP is responsible for the review and approval of project studies (including the cost-benefit analysis and value-for-money analysis) undertaken by the GCAs.

FONADIN's role in project preparation includes the financing of preparatory studies, providing support to sectoral plans and building rigour in project identification, project evaluation, appraisal and approval processes. FONADIN supports both economically viable projects and projects that may be less economically viable but have a desired social impact.

FONADIN also provides financing and technical support through advisors for the planning, design, construction and final transfer of projects developed through private sector participation. FONADIN focuses on PPPs in sectors such as highways, ports, airports, environment, urban mass transportation, water and tourism.

Mexico has followed a programmatic approach to project planning, especially in the transport and energy sectors, which has yielded transformational service delivery impact. Specific programs are designed to meet the medium- to long-term objectives laid out under the national and sectoral plans. The programmatic approach has also created institutional capacities, either within the existing department or external to the departments (for example, FONADIN and PROTRAM), and streamlined the project preparation and review processes. Select examples include the toll road program, renewable energy program, and urban mass transit program.

MEXICO'S REFORMS AND RENEWABLE ENERGY SUCCESS

Mexico's renewable energy program is shaped by its General Climate Change Law, which affirms Mexico's commitment to increase clean energy generation to 35% of total generation capacity by 2024 and 50% by 2050. The solar program benefitted from reforms enacted in 2014, which introduced competition in generation and helped to create an independent grid operator (CENACE), enabling customers to purchase power directly from generators.

Three long-term auctions managed by SENER during 2016 and 2017 have created renewable capacity of 20 TWh with an investment of US \$9 billion. Together, these auctions helped Mexico to procure power at internationally low prices; solar power at US \$19.70/ MWh and wind power at US \$17.70/ MWh.

PROJECT PREPARATION LANDSCAPE

Project preparation activities are championed by the GCAs, which are actively involved in project preparation from conception to procurement.

Project conceptualisation and planning. The National Development Plan (NDP) and the national infrastructure program, prepared by SHCP, serve as guidance documents for infrastructure development. The GCAs prepare sectoral plans in line with the NDP. Mexico has also established an "Agreements of Coordination Framework" that formally binds the federal government and the sub-national governments to promote alignment in project planning and promote greater coordination among sub-national government agencies.

The project prioritisation in the NDP is based on various considerations including socioeconomic benefits, impact on extreme poverty, regional development, and alignment with other investment programs and projects.

Project studies and structuring. While project feasibility studies are largely handled by GCAs, project structuring involves multiple stakeholders, including the project financing entities (FONADIN, Investment Unit of the SHCP, Federal Mass-Transit Support Program (PROTRAM) etc.). In the case of PPPs, the Investment Unit under the Ministry of Finance issues guidelines applicable to PPP projects in terms of registry, social cost-benefit assessment, convenience and value-for-money as a PPP.

Project appraisal and review. With respect to PPPs, the GCA prepares a business case for the project, which includes cost-benefit analysis, feasibility assessment, environmental and social assessment and value-for-money analysis. In the case of viable projects, the GCA is only required to get a binding opinion from the Investment Unit.

On the other hand, if the projects require federal budgetary support, specific approvals are required from the Investment Unit of the SHCP. All projects that would require support from the government budget at the federal level are reviewed and approved by the Inter-ministerial Commission of Public Spending, Financing and Divestiture for incorporation into the federal budget, which is then approved by the congress.

Project preparatory financing. Mexico does not have a national level project preparation facility. Preparatory studies are either financed under the respective budgets of GCAs at the federal and sub-national level, multilateral development facilities (including the Inter-American Development Bank (IDB) and the World Bank) or from project preparation funds managed by FONADIN.

Project disclosure. The "Mexico Projects Hub" serves as a database of investment projects and assists domestic and international investors to identify investment opportunities in Mexico. The Investment Unit of the SHCP also maintains a portfolio of investment programs and projects, which captures information on all projects under various stages of preparation. The procurement-specific aspects of projects are managed through an online portal called "Compranet", which promotes transparency, market competition and efficiency in the procurement of PPPs.

FONADIN'S ROLE IN STRENGTHENING PROJECT PREPARATION

The federal government established Mexico's National Infrastructure Fund (Fondo Nacional de Infraestructura, or FONADIN,) which is managed by the National Development Bank of Mexico (Banco Nacional de Obras y Servicios Públicos or BANOBRAS), the country's leading lender to infrastructure. FONADIN is an independent trust fund responsible for coordinating the financing and development of infrastructure projects (especially PPPs) in highways, ports, airports, the environment, urban mass transportation, water and tourism.

Currently, FONADIN is one of the most important conduits for PPPs in Mexico. FONADIN provides financing and technical support for the planning, design, construction and final transfer of projects developed through private sector participation. FONADIN was capitalised by transferring assets from the Fund for Support of Rescue of Highway Concessions (FARAC) and Infrastructure Investment Fund (FINFRA). As of the end of 2016, FONADIN has cumulatively supported 117 projects with almost US \$8 billion in investments, of which 44% was non-refundable, mobilising a total of US \$25 billion, mostly in highways (51%).

FONADIN has played a catalytic role, primarily in transportation project preparation, through (i) the financing of preparatory studies, (ii) providing support to sectoral plans and (iii) building rigour in project evaluation, appraisal and approval processes.

Prior to its establishment, government agencies faced several challenges in project preparation, such as:

- limited focus on national plans and a multi-year planning horizon;
- quality constraints on feasibility studies, leading to arbitrary traffic forecasts (overstating traffic numbers) and stress on public finances;

- absence of standardised guidance and weak oversight processes, which led to quality challenges in project preparation;
- institutional capacity constraints in the public sector to undertake adequate project preparation, including limitations in appropriate design, cost and demand forecasts, as well as weak appreciation of risk issues and their management;
- most preparatory activities being driven largely through inadequate budgetary allocations, as there was limited access to project preparation financing and technical assistance facilities;
- limited appreciation of project preparation. Originally the objective was to maximise PPP participation. However, there was an inadequate focus on the preparatory aspects, leading to many of the projects not achieving financial close. Furthermore, inadequate time was provided for advisors appointed to undertake project due diligence and feasibility assessments; and
- absence of a specialised entity that had the right resources and could enhance project preparation quality.

FONADIN provides financing for preparatory studies for infrastructure projects through two facilities: (i) recoverable or part-financing (for profitable projects) through a credit line for up to three years, covering 70% of the project preparation costs, and (ii) non-recoverable support (for socially important but less profitable projects) through grants, covering up to 50% of expenses.

The following conditions should be met by the project to seek project preparation funding from FONADIN: (a) have private participation; (b) be procured through competitive bidding; and (c) have a partial or full source of repayment.

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Key highlights of FONADIN's interventions include:

- **Support to the National Infrastructure Program**—one of the major objectives of FONADIN is to support the implementation of the multi-year National Infrastructure Program, which is a six-year roadmap for infrastructure development prepared by SHCP. FONADIN provides technical and financial support for line departments and agencies in preparing the sectoral plans and project planning.
- **Strengthening sectoral focus through targeted programs**—many of FONADIN's projects are under major sectoral programs that incorporate PPPs in Mexico. These include the toll roads program (PROMAGUA), the water operators' modernisation program (PRORESOL), a municipal solid waste program, and the federal urban mass transportation program (PROTRAM).
- **Approval process and quality control**—FONADIN's detailed operational guidelines elaborate on eligibility criteria, project preparation, quality review and approval processes, such as:
 - *Project preparation*: FONADIN's Business Unit supports GCAs to identify and prepare projects. This covers all activities related to identifying projects and conducting the studies required, including pre-feasibility studies, feasibility studies and project structuring.
 - *Project review*: The Studies and Technical Evaluations Unit reviews the financing proposals prepared by Business Units, requests changes, makes adjustments, and issues a technical report, which it submits to FONADIN's Sub-Committee for Evaluation and Financing.
 - *Project approval*: The Technical Committee reviews the technical and financial aspects of the project, considers the observations and recommendations by the Sub-Committee for Evaluation and Financing, and approves or rejects the project.
 - **Enhancing institutional capacity for project preparation**—FONADIN has a multi-tier project oversight, review and approval system with a judicious mix of government representation, banking and financial sector expertise, as well as subject-matter private sector expertise. For instance, the Sub-committee on Evaluation and Financing is chaired by the Ministry of Finance and comprises of members including the Director of the Public Credit Unit and Investment Unit in the Ministry of Finance, three representatives of the private sector who specialise in infrastructure (two must come from academic institutions and one from a civil society organisation), and one representative each from BANOBRAS, the Ministry of Public Administration and the division of BANOBRAS that manages the FONADIN trust.

FONADIN has supported over 50 studies for various programs and projects authorised to receive financing for preparatory studies and transaction advisory support. These include projects across several sectors including highways, the environment (including energy and waste management), urban transport, water, airports, ports, gas pipelines, and other social sectors including hospitals.

FONADIN's website reports an authorised financing of over US \$320 million in preparatory studies for infrastructure projects.

3. Guidance for project preparation

Guidance	PPP MANUAL
Owner	Secretariat of Finance and Public Credit (SHCP)
Project development stage	Project preparation and approval
Details	<p>The PPP Manual provides overall guidance on the steps to carry out a PPP project. It serves as a guide to the public and private sector stakeholders on the methodologies to be followed, and the key steps in project documentation that must be followed by each entity involved in project preparation.</p> <p>It sets rigorous risk-assessment standards and describes in detail the steps in the preparation and presentation of i) the socioeconomic evaluation, ii) the eligibility criteria, iii) the risk analysis, iv) the public-private comparator and v) Value for Money analysis.</p> <p>Link for further details: https://www.gob.mx/shcp/documentos/manual-con-las-disposiciones-para-determinar-la-rentabilidad-social-y-la-conveniencia-de-llevar-a-cabo-un-proyecto-app</p>

Guidance	MEXICO PROJECTS HUB
Owner	BANOBRAS
Project development stage	Project marketing and disclosure
Details	<p>The Mexico Projects Hub is an initiative of the Mexican Government, managed by the National Bank for Public Works and Services (BANOBRAS). The Projects Hub is a web-based platform providing information on infrastructure and energy projects that require financing from the private sector. The platform also allows the user to browse information on projects according to their needs and access a factsheet of every project in the platform, including its status and additional data provided by the sponsors. Likewise, the user can access additional information to have a broader understanding regarding the way projects are implemented in Mexico, as well as domestic and foreign documents related to planning, procurement and the execution procedures of infrastructure projects and their legal framework.</p> <p>The overall aim of this platform is to increase potential domestic and foreign investors' awareness of the country's infrastructure, thereby encouraging long-term financing for infrastructure.</p> <p>Link for further details: https://www.proyectosmexico.gob.mx/en/home/</p>

4. Project case example: Transport Integrated System (SIT) OPTIBUS – Leon

PROJECT BRIEF

Transport Integrated System (SIT) Optibus is one of the earliest mass transit projects in Leon, Mexico. The project was developed as part of the broader Transport Master Plan of 1998 and is an example of close coordination between the local and federal government.

In a bid to strengthen the public sector capacity of local governments, the Government of Mexico established a Directorate of Mobility, under the Municipality of Leon, to drive the project planning, regulation and monitoring. The project was prepared and implemented in five phases (to date), starting in 2003. The operations under the first phase were managed through 13 different concession agreements, including a centralised fare collection (Pagobus) activity and an operational management activity. The project was implemented across four distinct phases:

- *Phase 1* of 26 km completed in 2003; Serves approximately 39% of the city's transport users
- *Phase 2* of 4 km completed in 2010; Serves approximately 60% of the city's transport users
- *Phase 3* of 5 km completed in 2016; Expected to serve approximately 80% of the city's transport users
- *Phase 4* of 5 km completed in 2016-17; Expected to serve approximately 85% of the city's transport users (523,000 trips per day)

While the project preparation practices during Phase 1 and 2 reflected the success in integrating the stakeholders into a single unit, the subsequent phases were prepared with higher levels of scrutiny and a favourable enabling environment (post PROTRAM).

The case study tracks the project preparation activities during the first phase and its evolution across the subsequent phases.

QUICK FACTS



VALUE
(IN US \$ MILLION)

60



STATUS

Operational



PROJECT OWNERSHIP

Municipality of Leon,
SEDESOL



SOURCE OF PROJECT
PREPARATORY FINANCING

Budgetary funds,
GEF, PROTRAM



SUPPORT AGENCIES

PROTRAM, World Bank,
SEDESOL

PROJECT TIMELINE



1993	Transport State Law 1993 – Decentralisation of transport functions
1994	Transport Coordination Entity (TCE) – partnership of 13 bus companies
1995	Route reorganisation study
1997	Establishment of the Directorate of Transport of the Municipality of Leon
1999	Technical team appointed to undertake project studies – LOGITRANS as technical consultants
2002	Construction of Phase I
2003	Operations of Phase I
2006-07	Initiation of preparation of Phase II under retroactive financing by Global Environment Facility
2009	Establishment of PROTRAM under FONADIN
2010-14	Preparation of Phase III and Phase IV studies under PROTRAM
2010	Initiation of Phase III studies
2016	Operation of Phase III and IV

LEARNINGS FOR PROJECT PREPARATION

1. Integrated approach to project planning

The project identification and phasing were undertaken based on a comprehensive assessment of mobility patterns in the city and long-term considerations. While the Integrated Transport Plan of 1988 (Plan Integral de Transporte Urbano de León – PITUL) served as the mobility plan for Phase I and II, the Integral Sustainable Mobility Master Plans (Plan Integral de Movilidad Urbana Sustentable – PIMUS) served as the guidance for subsequent phases. The PIMUS preparation was grounded in a comprehensive analysis of the existing mobility systems, including road networks for public and non-motorised transportation and parking facilities in a specific planning area, in order to define strategies which prioritise and promote sustainable transportation.

The Municipality of Leon went a step ahead in mobility planning with the preparation of a vision for sustainable mobility under the Vision 2040 – Strategic Plan for Urban Territorial Planning.

2. Strengthening public sector capacity and clarity in delegation of powers, accountability and targeted capacity building actions.

Appreciating the need to create capacities for project management, the Government of Mexico initiated a range of actions including institutional reform actions and capacity building initiatives.

- *Institutional reform* – The project preparatory actions highlighted the need for project management by the local government instead of a state or federal entity. The State Transport Law 1993 started the decentralisation of transport activities to local government, followed by the agreements for the transfer of functions in 1995. Finally, the State Transport Law 2002 provided clear operational control for the local governments in transport planning, regulation and control. The Government of Mexico also established a separate Directorate of Mobility of the Municipality of Leon (within the Secretariat of Sustainable Development of the municipality) to strengthen the capacity of the local government in project planning and implementation. The staff of the secretariat include technical, environmental and social sector experts.

- *Capacity building* – The project preparation was also supported by targeted capacity building initiatives across each of the phases. The capacity building initiatives in Phase 1 were facilitated by the Municipal Planning Institute IMPLAN (established in 1994) and targeted programs for technical training. During the subsequent phases, the government also leveraged the World Bank Global Environment Facility (GEF) and PROTRAM funds to provide specific training for the local government staff and other civil servants in project planning and technical understanding.

3. Stakeholder engagement to facilitate private sector ownership

The bus transport model prior to the implementation of the BRT system faced several challenges due to the prevalence of “hombre-camion” models¹, wherein private bus ownership was dispersed, leading to management challenges, negative externalities, oversupply and unfavourable working conditions. The transformation of the individual companies into consolidated transport companies led to the professionalisation of operations. Specific routes were consolidated, and each private stakeholder became a shareholder in the new entity. The consolidation of transport stakeholders has been one of the critical reasons for the success of the network. The success of the model can be attributed to the clear and transparent selection process to facilitate the transformation in ownership, and the leadership and trust associated with the key officials in the Secretariat of Social Development (SEDESOL) and local government.

4. Quality of external consultants critical to the success of specialised projects

The Leon BRT system was one of the first mass transit systems in Mexico and hence, the local capacity and understanding of the technical aspects of the project was limited. The initial route reorganisation studies conducted in 1995 by the departments were largely inadequate in meeting the requirements of a mass transit system. Consequently, in 1999, Brazil-based consultant LOGITRANS was selected as the technical consultant to undertake the detailed technical design and operational planning. The consultants brought in deep expertise and knowledge of developing BRT systems in other countries including Curitiba, Brazil and TransMilenio, Colombia. The project was also able to engage a high-quality advisory team for the subsequent phases, supported by dedicated funding under PROTRAM and GEF, which helped to attract quality transaction advisors for project preparation.

5. Programmatic approach to project preparation with strong appraisal standards and a dedicated source of funds helps drive economies of scale and project quality

Learning from the success of BRT projects in Leon, Guadalajara and Mexico City, the Government of Mexico established a country-wide plan to scale up mass transit projects, with the establishment of PROTRAM under FONADIN. The feasibility and technical studies under Phases 2, 3 and 4 were supported by PROTRAM (Phase 2 studies were retroactively financed by GEF), by leveraging its own funds, as well as funds from GEF. A programmatic approach (under PROTRAM) helped strengthen the project preparatory environment and also helped in scaling up mass transit projects in Mexico.

¹ A transport model whereby bus facilities are highly fragmented and owned by private individuals.

MEXICAN FEDERAL MASS TRANSIT PROGRAM (PROTRAM)

Learning from the initial success of select mass transit projects, the Government of Mexico created a Federal Mass Transit program (PROTRAM) in 2009 within FONADIN to drive scale and efficiency of the sector in line with its objective of low-carbon growth. PROTRAM's role includes the financing of preparatory studies and investing in mass transit projects through grants and loan guarantees.

PROTRAM ensures quality in project preparation through the following areas of assistance:

- **Strong guidelines for project selection**—PROTRAM follows strict eligibility criteria for project preparation and implementation. In the case of project preparation, the projects selected have to be aligned with the Integral Sustainable Mobility Master Plan (PIMUS). The projects supported by PROTRAM should also meet climate change considerations and emission standards. Additionally, the project concept note must include a preliminary assessment of supply and demand analysis and cost-benefit analysis, commitment to private sector participation, and minimum population criteria.
- **Availability of a dedicated and sustainable source of project preparation financing**—PROTRAM is funded by national toll road revenues and financed partly by MDB loans from the World Bank and the Inter-American Development Bank. The program supports the development of project preparatory studies including mobility planning, demand-supply assessment, and technical studies for project preparation. PROTRAM offers grants to sub-national governments to cover up to 100% of study costs and 50% of infrastructure costs for public transport projects that meet certain criteria (the city must have a population of at least 500,000).
- **Superior quality assurance standards**—The project appraisal and review standards for the approval of project studies, set by PROTRAM, are stringent and involve multiple stakeholders. PROTRAM is supported by the Center for Sustainable Transport Mexico (CTS-Mexico), which serves as the technical arm of PROTRAM, in charge of reviewing the technical and financial feasibility studies, project designs and other preparatory documents. PROTRAM undertakes a two-stage approval process – the first stage review is conducted by the Consultative Working Group (GTC) in PROTRAM, followed by final approval from FONADIN's Technical Committee (CT). The GTC analyses projects from the technical, social, environmental, and financial viewpoints to determine the basic feasibility of projects presented to PROTRAM by the cities. The GTC involves representatives from SHCP, the Secretariat of Communications and Transportation (SCT), the Secretariat of Social Development (SEDESOL), the Secretariat of Environment and Natural Resources (SEMARNAT), BANOBRAS, and FONADIN, who participate as consultant advisers. The detailed process of approval is provided in the fund guidelines.
- **Institutional strengthening**—Support in capacity building initiatives for the local government related to planning, regulation and administration of integrated urban public transport systems.

The Mexican Government has also established a National Urban Transport Transformation Program (UTTP), to focus on other types of urban transport projects, including non motorised transport, such as bicycle and pedestrian projects. As of April 2017, the PROTRAM pipeline included 42 mass transit projects, which included 19 projects with authorised financial support, eight projects under evaluation and 15 projects in the preparation phase.

The detailed guidelines are provided in the following portal: http://www.fonadin.gob.mx/wp-content/uploads/2016/08/Lineamientos_Programa_Transporte.pdf