

Project Name	Mexico-Federal Highway Maintenance (@) Project
Region	Latin America and Caribbean Region
Sector	Highways
Project ID	MXPE65779
Borrower(s)	Banco Nacional de Obras y Servicios Publicos, S.N.C. (BANOBRAS)
Implementing Agency	Address SECRETARIA DE COMUNICACIONES Y TRANSPORTES (SCT) Guarantor: United Mexican States Calle Magdalena 21 Colonia del Valle 03100 Mexico City, Mexico Contact Person: Ing. Mario Gonzalez Tel: (52-5) 682-8615 Fax: (52-5)682-8928
Environment Category	B
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1. Country and Sector Background

Road transport is by far the dominant mode for both passenger and freight transportation in Mexico, accounting for about 98% of intercity passenger movement and about 89% of cargo movement by land. In general, road traffic grew by 10% per annum in the 1970s and by about 5% per annum thereafter. Traffic growth occurred despite periodic economic recessions and substantial real price increases for road freight. Within the context of NAFTA, traffic growth on the major road corridors, currently estimated at about 10% annually, is expected to continue at a similar rate or higher. The 302,000 km of interurban roads in Mexico, of which about 93,000 km are paved, are classified as federal, toll, state and rural roads in accordance with the source of funding for the various segments and their economic and strategic roles. The states have jurisdiction over some 83,000 km of mostly secondary links in the road network. Control and responsibility for the approximately 170,000 km of rural roads is shared by local governments, the states and the Federal Government. The Federal Government has primary responsibility for the 41,865 km of highways managed by SCT and for the 7,135 km of toll highways managed by the Federal Toll Roads and Bridges Authority (CAPUFE) and the Unidad de Autopistas de Cuota (UAC). The Mexican Government has taken substantial steps in reforming the sector and in privatizing and deregulating key modes. While there is still a need for strengthening the regulatory and related institutional framework as well as in addressing key growing urban transport issues, the Bank's main focus presently is with regard to the highway sector. The main concerns with regard to road transport are the:

(i) persistent challenge to avoid the deterioration of the condition of the national road network in the face of seriously constrained budgets;

and (ii) declining level of service of the national network as traffic levels increase faster than improvements can be funded. Although there is much variance between regions, average conditions on SCT's or the Federal Highway network appear to have worsened in the 1980s due mainly to the decline in real terms of budgetary allocations for the Highway Maintenance Program (HMP). Because it has had to operate with inadequate budgets for several years, SCT generally limited maintenance to emergencies and to repair works, thereby resulting in a road network with only 45% in good and fair condition in 1995. However, there has been significant improvement in recent years as SCT's budget was restored to near adequate levels during the period 1995-1999. About 60% of the budget was assigned to rehabilitation works and 40% to routine and periodic maintenance and accordingly the condition of the federal network was improved significantly with 57% being in good and fair condition by 1999. The Bank complemented this effort through the Highway Rehabilitation and Traffic Safety (HRTS) Project which helped to increase SCT's efficiency in using available maintenance funds through staff training and strengthening of the maintenance management system. The future management of the SCT network will be affected also by the decentralization process. There was an attempt in 1997 to transfer about 11,000 km of this road network to states, but it was unsuccessful, due mostly to lack of adequate funds to support the transfer and insufficient monitoring and accountability of the recipient states. Moreover, the states' highway administrations, which generally have far less capacity than the SCT, will need considerable strengthening to handle the decentralized responsibilities adequately. So far the Bank has been concentrating on the technical issues of decentralization, however, following a request from the government, Bank assistance will be extended to include a comparative study of different models of decentralization in Europe and Latin America, to select those considered suitable for Mexico, to propose one or several decentralization options to the new Government. The proposed Project was hence designed as the culmination of the Bank's efforts to support the improvement of the national network as well as to lay the groundwork for future efforts to support the states in the management of their portion of the network. It is therefore focused mainly on the maintenance needs of the SCT managed federal network; to a limited extent it will also support the implementation of a mechanism for maintenance financing, decentralization and financial restructuring for toll roads.

2. Objectives

The proposed project will assist in providing Mexico with a road transport system that can support the needs of a rapidly modernizing and expanding economy and to enable meeting its NAFTA competitiveness challenges. The overarching development objective is to improve transport efficiency on the road network. The complementary objectives include: (i) improving SCT's rehabilitation and maintenance planning performance; and (ii) enhancing private-sector participation in road maintenance.

3. Rationale for Bank's Involvement

There is a continuing need to further improve all aspects of road maintenance, decentralization of road management, and toll roads management; these are areas in which the Bank has wide experience in Latin America. Continuing Bank support would prove helpful in assuring adequate attention is paid to maintenance as Mexico is entering a decade in which, given the strong prospects for NAFTA countries, there will be

significant pressures for expansion of the road network. Also, the introduction of effective approaches to road maintenance by contract, and the implementation of the HDM-4 would significantly improve efficiency in the use of scarce resources.

4. Description

The project would support ongoing efforts intended to protect and enhance past investments in the federal highway network, and introduce a more efficient maintenance management system. It would help SCT to sustain the current annual investment level for the rehabilitation and maintenance of federal highways, while the government seeks solutions to the country's overall highway sector financing problem. The technical assistance component is geared to institutional improvements and to the development of strategies for highway financing and road decentralization. The main components of the project are: (1) Support for the SCT's 2001-2003 programs for Highway Maintenance (HMP) and Bridge Rehabilitation (BRP) along key segments of the 41,865 km federal road network, by providing financing for key components of those programs. The HMP is based on the results of a series of simulations of various strategies of road maintenance using a well documented planning model. Subprojects from the HMP and BRP will be selected for project financing based on the key criteria such as having: (i) an ERR calculated in accordance with a method satisfactory to the Bank of at least 12%; and (ii) neither environmental or social implications, nor requiring changes in the road geometrical design.(2) Introduction of comprehensive maintenance by contract through a pilot program, including technical assistance for design and implementation. This three-year program includes comprehensive maintenance (periodic and routine), minor rehabilitation of selected segments of roads and of bridges, preparation of short term implementation programs, training and management of the program. This component has been deemed a pilot because there has been no experience with comprehensive maintenance contracts in Mexico. These contracts are also a first step towards the design and implementation of rehabilitation and maintenance contracts based on performance in Mexico. (3) Construction of vehicle weight control stations. The principle being proposed is for slow speed weigh-in-motion scales, since this allows for faster processing of vehicles and only infringing vehicles would then be stopped and inspected. This project component will complement the existing mobile scales by piloting the use of fixed scales at 2 stations within the overall program of national vehicle control. The project will finance only the station's civil works. The equipment, including its installation, will be financed by the Government.(4) An institutional and technical development component to support the:(i) implementation of the Highway Development Management Model (HDM-4) in the departments responsible for road maintenance management. HDM-4 will gradually complement and replace the current system being used in Mexico for maintenance works planning, thereby introducing the capability for prediction of road conditions and facilitating a wider range of functionality including strategic planning, programming and project evaluation. This sub-component includes the acquisition of road survey equipment needed for the installation and operation of the model and office equipment; (ii) development of a strategy for road decentralization. This sub-component will support the decentralization strategy to be selected by the Government from the decentralization alternatives to be proposed by a study being carried out under separate

financing. The study will analyze decentralization models in Europe and America and, based on their experiences, propose one or several options to the Government; (iii) implementation of a road financing mechanism. Currently, a study is underway, financed by the HRTS Project, which should provide recommendations on road financing strategies and resource mobilization options. This sub-component will support the implementation of the agreed recommendations; (iv) implementation of a strategy for toll roads. Another study is underway to analyze and then discuss the possible alternatives to solve the problem created by the toll roads financial sustainability issues. Once the study is completed, its recommendations will be discussed with the Government, and this sub-component would assist the SCT in implementing any agreed strategies; and (v) staff training for the SCT directorates most involved in the project, emphasizing technical, managerial and administrative training. It would include equipment, formal training courses, attendance at conferences and study tours, both in Mexico and abroad. Table 1 - Summary of Project Costs

I. Highway Rehabilitation and Maintenance:

- (i) Rehabilitation (1,000 km);
- (ii) Periodic maintenance (1,200) km;
- (iii) Bridge rehabilitation (100 bridges); and
- (iv) Supervision (DGCC 2001-2003 programs).

II. Pilot program of comprehensive maintenance (routine, periodic, and some rehabilitation) by contract of an additional 240 km including provision of consulting services works supervision, and for preparing and managing the program:

- (i) Civil works; and
- (ii) Consulting services.

III. Construction of 2 (one single, and one twin) weight-and dimensions control stations

IV. Institutional Strengthening

Provision of technical assistance and training for:

- (i) installing the HDM-4 model (including equipment acquisition);
- (ii) developing a strategy for decentralization of road administration;
- (iii) implementing a road financing mechanism;
- (iv) implementing the Government strategy on toll roads; and
- (v) training.

V. Contingencies

5. Financing

	Total (US\$m)
GOVERNMENT	91
IBRD	218
IDA	
Total Project Cost	309

6. Implementation

Implementation Agencies. BANOBRAS will be the Borrower and will transfer the loan proceeds to SCT under the same terms and conditions as the Bank loan, with the Government bearing the foreign exchange and interest rate risks. No separate project management unit will be required. The project will rely for its implementation on existing institutions, especially the

SCT, which has overall responsibility for the transport sector. It would be responsible for the execution of the project through its various Directorates. All of the above agencies have sufficient capacity to play their roles in executing the project. Implementation Period. Project implementation is expected to start in April of year 2001 and be completed by December 31, 2004. Accounting, Financial Reporting and Auditing Arrangements. SCT has good administrative capacity and ample experience in managing IBRD projects. The financial management, accounting system, and internal controls are already in place, and have been utilized by previous Bank projects. They have been operating satisfactorily and their use would be continued under the project. Resources and mechanisms that would permit financial monitoring and reporting of the project will be in place prior to effectiveness. SCT has begun to take steps to adapt its financial management systems in line with Bank's Financial Management Initiative (LACI) for project management. Banco Nacional de Obras y Servicios Públicos (BANOBRAS) will be responsible for managing the Special Account. This local development bank has ample experience on IBRD requirements on disbursement, auditing and traditional reporting. The project will feature PMR reporting but excludes PMR-based disbursements. An annual audit report of project accounts, and a separate opinion with respect to the Statements of Expenditures and the Special Account prepared by independent auditors acceptable to the Bank will be submitted to the Bank no more than six months after completion for each fiscal year. SECODAM via its SCT internal audit department, will audit all project operations annually. Disbursement. Loan disbursements, similar to the HRTS project, will be via traditional Statement of Expenditures (SOEs), Direct payments (DP) and Special Commitments. Nevertheless, for project management, SCT will produce satisfactory PMRs within the first year after project effectiveness. Monitoring and Evaluation Arrangements. Biannual reviews, in April and in October of each year would be held to review the progress in project implementation and to agree on the program for the following year's activities. The review would focus on: (a) the progress with respect to the previous year's implementation schedule; (b) the level and composition of the SCT road maintenance budget for the fiscal year in which the review takes place; (c) the performance with respect to the project monitoring indicators; and (d) the finalization of the selection of sub-projects for the next year, taking into consideration the balance of the SCT road maintenance budget. SCT would provide update reports on the progress of each component of the project, prior to the annual review. Mid-Term Review. In April 2003, the Government and the Bank would conduct a mid-term review of the progress in implementation, which in addition to the items covered in the annual review, would focus on the: (a) adequacy of funding for the maintenance of the federal network; (b) progress on the institutional strengthening being supported under the project; (c) progress being made in bringing the federal road network to good condition; (d) progress of the training program; and (e) confirmation that no resettlement would be needed under the project.

7. Sustainability

The sustainability of the project would be defined by the condition of the road network and the continued application of the improved maintenance management systems. Regarding road maintenance funding, the government is currently carrying out a comprehensive review of SCT's highway financing issues with Bank assistance under another operation. The review is expected to lead ultimately to the establishment of financing mechanisms

that will ensure the financial sustainability of the sector. On the application of systems and skills to be developed under the project, SCT has demonstrated its commitment to continue using them through its performance under the ongoing HRTS.

8. Lessons learned from past operations in the country/sector

The overall conclusion is that, after slow and at times halting starts, the Borrower has become progressively more effective in implementing highway projects. Furthermore, although the implementation of institutional measures has taken longer than expected, progress has been substantive. Most of the lessons learned are reflected in the project design as follows: (i) the budgetary reductions generated by the economic crises forced SCT to postpone rehabilitation of important segments of the federal highway. Instead, they had to assign most of the resources available to heavy maintenance of longer segments so as to avoid their further deterioration. The proposed project, includes a Bank financing participation of 70% so as, to help mitigate the risks associated with budgetary fluctuations; (ii) the adoption of standard bidding documents agreed by the Bank with the Mexican Government should help to streamline procurement; (iii) the change in the criteria to prepare annual federal highway maintenance programs, from an empirical assessment of the physical conditions of the federal highway network to a maintenance management system, will permit a better definition of annual investments required under various scenarios; and (iv) the environmental assessment model developed under the previous project, is to be applied by all SCT agencies, as appropriate.

9. Program of Targeted Intervention (PTI) N

10. Environment Aspects (including any public consultation)

Issues : Most proposed works involve the maintenance and repaving of existing federal highways along long established right of ways (RoW). As such, direct impacts on sensitive ecosystems and human populations along the RoW will be minimal. An initial screening of the proposed projects identified no potentially significant direct or indirect impacts. As such, the subprojects do not require independent, stand-alone environmental analysis. The scope and type of works to be carried out will not entail any resettlement of population along the RoW. Other: Construction related nuisances and disturbances along the right of way. Justification/Rationale for category rating: Most impacts are related to the civil works and can be managed through the application of good environmental practices. A review of similar road rehabilitation projects recently carried out in Mexico showed that good environmental practices are being adopted satisfactorily for the design and implementation of road rehabilitation and maintenance. However, the project will help to standardize these measures through the preparation of standard environmental manuals for road rehabilitation. In addition, the road sector is applying standard procedures for environmental assessment of road projects (Modelo de Evaluación Ambiental: automatización de la información y modelo de simulación - Manual del Usuario). This manual relies on the application of Geographical Information Systems (GIS) to categorize and identify environmental issues and mitigatory measures for road and other transport infrastructure. Proposed Actions: Construction related impacts would be managed through the application of environmental clauses in construction contracts. These clauses will focus on the

implementation of good housekeeping measures to reduce nuisances during construction. These measures include dust, noise and pollution control, protection of construction sites, final landscaping, proper disposal of construction wastes, selection, exploitation and restoration of burrow pits and quarries, traffic management and pedestrian safety, health and safety of workers and public relations. The application of these good housekeeping measures will be ensured by their inclusion in the tender documents and construction contracts. The contractors will be responsible for complying with these measures and the Supervision Engineer will be responsible for ensuring that contractors are in compliance. All subprojects will comply with existing environmental requirements in Mexico. The General law of Ecological Equilibrium and Environmental protection stipulates that a very limited Type 1 Environmental Statement, requiring the presentation to the environmental agency of very basic project information and following simplified administrative procedures be prepared for this type of project. Status of any other environmental studies: No stand alone environmental studies are required. Resettlement The type of maintenance and repaving works will not entail any resettlement of population along the RoW. The 2001-2003 programs of the DGCC, of which the loan would finance about 25%, include only pavement and drainage rehabilitation and pavement maintenance activities, that are all to be implemented within the existing road platform and with no need to resettle any people.

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Note: This is information on an evolving project. Certain components may not be necessarily included in the final project.