



Management of Environmental FARAC (Support Trust to Rescue the Highways under Concession, as per initials in Spanish) Projects

I. WORK DESCRIPTION

Concession to construct, operate, exploit, conserve and maintain for 30 (thirty) years the following highways: (i) Maravatío-Zapotlanejo and (ii) Guadalajara-Aguascalientes-León, which includes the stretches: Guadalajara-Zapotlanejo, Zapotlanejo-Lagos de Moreno and León-Lagos de Moreno- Aguascalientes, in the States of Michoacán, Jalisco, Guanajuato and Aguascalientes, and also the Expansion Works determined by the Secretary of Communications and Transports associated to the highways mentioned. Concession awarded through International Public Bid No. 00009076-010-06, called by the Secretary in order to award a Concession to construct, operate, exploit, conserve and maintain for 30 (thirty) years, the highways.

Expansion Works, means the construction associated to the Highways in Operation, listed herein below and to be carried out in accordance with provisions under the Concession Title:

1. Construction of Sub-stretch Junction Santa Ma. de Enmedio - stretch León- Aguascalientes, approximately 19 kms long, in the state of Jalisco, first phase with a type A2 road with a 12 m crown, left body in accordance with the project made by the Secretary and that should be reviewed and supplemented, as the case may be, by the Concessionary.
2. Construction Zacapu Highway – Junction highway Maravatío- Zapotlanejo, of km 11+100 to km 19+733, approximately 8.67 km long, in the state of Michoacán. It will be built as a type A2 road with a 12 m crown, in accordance with the project made by the Secretary, which should be reviewed and supplemented, as the case may be, by the Concessionary.
3. Upgrading to 6 lanes (3 in each direction) of highway Guadalajara- Aguascalientes- León, in the Guadalajara- Zapotlanejo stretch, from km 9+000 to 25+500, 16.5 km long, in the state of Jalisco, including the expansion and reinforcement to 6 circulation lanes of Ing. Fernando Espinosa bridge, using the existing structure.
4. Reconstruction of the running surface of highway Guadalajara- Aguascalientes- León, in the Zapotlanejo- Lagos de Moreno stretch, El Desperdicio sub stretch Junction km 118+500- León- Aguascalientes Federal highway junction km 146+300, approximately 27.8 km long, in the state of Jalisco, including the improvement of horizontal and vertical signposting.
5. Reconstruction of the running surface of the Guadalajara- Aguascalientes- León highway, León- Aguascalientes stretch, El Salvador sub stretch junction km 103+850- Border of Jalisco and Aguascalientes states, equivalent to km 108+190, approximately 4.3 km long, in the state of Jalisco, including the improvement of the horizontal and vertical signposting.

II. ENVIRONMENTAL IMPACT MANIFEST SUMMARY: San Juan de los Lagos - Encarnación de Díaz

In the environmental impact Manifest, the works and activities related to the Construction project of the San Juan de Los Lagos - Encarnación de Díaz highway, stretch from Km 0+000 to 18+636.443, was evaluated. In the Construction is a paved four-lane road (type A4-S-12-10.5); and 111.82 Ha shall be used, and only 36.64 of land will have to be cleared (Chapter II). NOTE: the study includes the construction of two highway stretches, A and B, and thus a Type A4 highway project would be integrated. However, for the works to be carried out in this phase only the construction of Stretch A (first phase, A2 road type) with a 12 m crown width would be considered.

The applicable legal framework was analyzed as part of the evaluation (Chapter III) detecting that the project is compatible with the state territorial code and does not infringe municipal regulations, zone codes or Mexican Official Standards. In addition, in the area where the project is to be carried out is not within a federal, state or municipal protected natural area.

The limits and characteristics of the Sistema Ambiental Regional (Regional Environmental System, SAR as per initials in Spanish) were set and an environmental diagnosis was made. Using state indicators, it was determined that 31.6% of the area located in conserved environmental units, 47.2% in disturbed environmental units and 21.2% in highly disturbed units; no high conservation conditions are presented by SAR. The vegetation basically corresponds to grazing land association – Huizachal (42.12%), that alternates with both irrigation as well as seasonal agricultural land (58.8%). Within this area no flora or fauna species subject to a risk category (threatened, severe endangerment of extinction) was found, in accordance with



Mexican Official Standard NOM-059-SEMARNAT-2001. It should be highlighted that the land where the highway shall be built shows currently a high degree of disturbance (that includes the loss of the original vegetal coating and the displacement of fauna species susceptible of being disturbed), derived from the fragmentation of the economic activities in the area (specially agriculture and cattle breeding).

The potential impact of the project's activities on environmental factors was detected through the field and cabinet work (and the natural and social environment as a whole). The adverse and beneficial impacts associated to the project, were evaluated by a multi-criterion indicator (Chapter V) that takes into consideration the magnitude, duration, extension, context and synergy criteria. Five (5) relevant adverse impacts were identified in this project; four are moderate and the other one of high impact. However, there are procedures that can be carried out to avoid or reduce these impacts. In addition, three beneficial impacts were identified; two high and the other one very high. The latter is associated to regional benefits due to the improved communication between the trunk axes Manzanillo-Tampico with the México-Nuevo Laredo (the span take 1 h less).

Seven (7) mitigation measures of adverse impacts were determined and they are considered feasible from the technical, environmental and economic standpoint and that mitigate relevant impacts. Measures that although do not mitigate any significant impact were included and are mandatory as they are included in a Mexican law, regulation or Official Standard:

Mitigation measures synthesis.		
Measure	Application phase	Impacts on which it acts, or compliance of Standard of Environmental Law
Preventive measures		
1	Guidelines during the stay of personnel at the work site	Prior to beginning the site's preparation
3	Frighten off fauna, recovery of nests and species that live underground and in holes in this clearing and leveling area.	Preparation of site: Two days prior to clearing of tree and bush vegetation. 5 hours before clearing the land, move in with the work up front
5	Handling of material from clearing and leveling of the land	During the clearing, leveling and excavation work, to set the basis of the embankment body
Compensation measures		
4	Recovery of juveniles and mesquite seeds for reforestation work at the edge of the road.	Gathering of seeds will be done prior to clearing the land
7	Reforestation program, to offset the area that has been cleared	When road signing the work, after the embankment body has been built with its accessory works
2	Measures to reduce the machinery and equipment emissions monitoring.	During all phases
6	Construction of watering areas for fauna in the minor drainage works to encourage their continuing with their movement routes.	While performing the minor and major placement of drainage work

The duration foreseen of the residual adverse impact is approximately of 2 years after the construction of the embankment body, until the fauna has made new movement routes, through the implementation of the mitigation No. 4, 6 and 7 measures.

After analyzing the functioning of SAR, the project affectation, and the implementation of mitigation measures, we can state tat the project will not generate impacts that will risk the operation of SAR. On the other hand, beneficial significant impacts will be generated and they will have an impact in SAR and outside it also because of traffic moving faster between the 2-trunk axis to communicate the northern and central areas of the country. Due to the above, the following was recommended, The construction and operation of the project be authorized and also the implementation of the mitigation measures.



**RESOLUTION OF THE ENVIRONMENTAL IMPACT (Resolution SEMARNAT:
S.G.P.A./DGIRA.DEI.2202.06)**

In accordance with the procedure established in Section UI of Article 34 of the Ecology Balance and Environmental Protection General Law (LGEEPA, as per initials in Spanish) and article 40 of its Regulations on environmental impact issues, after the environmental impact study was received SEMARNAT gave it a **file number (14JA2006V0016)**, which was published in offprint number DGIRA/025/06 in the weekly Gaceta Ecológica (Ecology Magazine) (June 22 to 28). In addition, starting on July 12, 200__ and based on Articles 34 and 35 of LGEEPA, the project file was made available to the public at large in the Document Center at SEMARNAT, and also through the Internet website, in order to guarantee the social participation right as part of the environmental impact evaluation procedure.

As can be seen in the Environmental Impact Resolution (pages 5 through 35) when the Impact and Environmental Risk General Direction issued the resolution, it had not received public consultation, gathering of information, complaints or claims requests from any member of society or a government agency, related to the project. It should be noted that the project's file may be freely checked through SEMARNAT's Internet website with the following link :

http://www.semarnat.gob.mx/Pages/Consultatutramite.aspx?bita_numero=14JA2006V0016

Results:

Conditioned Project authorized, beginning on December 20, 2006, for a 4-year period for the Construction and 25 years for the operation and maintenance (extendable). The authorization has the following conditioning elements:

- Request authorization for the change of use of soil.
- Comply with all the prevention, protection, control, motivation and restoration proposals in the environmental impact Manifest.
- Implement actions to rescue the wild fauna, in case there are fauna specimens that could be affected. Record these activities in a field log book.
- Develop a reforestation program with native species in a surface of 34.46 has. (or equivalent, since for this phase only a length of the highway will be constructed).
- Carry out soil restoration actions in the areas that could be affected by provisional installations during the Construction phase.
- If the banks of materials or the access roads require change of use of soil, process the corresponding authorization.
- The following is forbidden:
 - Use of fire as a land clearing method
 - Deposit of materials in areas that have arid zone vegetation.
 - Carry out the reforestation with exotic and/or aggressive tree species
- Present to SEMARNAT and PROFEPA bi-annual reports of compliance with the mitigation measures and conditions of the environmental impact resolution.
- Notify SEMARNAT date of initiation and termination of Construction works.

III. ENVIRONMENTAL IMPACT MANIFEST SUMMARY: ZACAPU - E.C. ROAD, MÉXICO – GUADALAJARA HIGHWAY, SUB-STRETCH KM 11+600 TO KM 19+600, IN THE STATE OF MICHOACÁN

The project consists of the construction of a paved highway (Type A2 in the Ministry of Communications and Transportation, [S.C.T., for its acronym in Spanish]) highway classification. The project is 8.00 Km long and is located in the municipalities of Jiménez and Panindícuaro, in the state of Michoacán.

The surface of 62.2 has contemplates the right of way, of which 17.37 has are of secondary vegetation that will be cleared, and corresponds to caducifolious tropical forest and gallery forest.

The highway stretch included in this project does not go into natural areas protected by the federal jurisdiction. The project tangentially crosses a protected area of state jurisdiction, "La Alberca Los Espinos", and penetrates up to 120 m (considering the limit of the project's right of way) on one side of the preservation



polygon, considering also that adjustments were made in the stretch to avoid its direct incidence on the area. In the place where the project penetrates the area, the vegetable coverage is comprised of induced grassing land and highly disturbed caducifolious tropical forest (for its closeness to the current highway, where even some constructions can be seen). In accordance with the assessment and as was verified by the DGIRA, the project does not infringe the protected natural area decree and the impact can be minimized with the mitigation and compensation measures proposed.

The applicable plans and regulations were outlined and examined (Chapter III), and what was detected was that the project is compatible with the regional development plans of Michoacán's northwestern zone and that it does not infringe municipal regulations, the zone codes or any Official Standard.

The regional environmental system (SAR, as per initials in Spanish) was defined and characterized and its environmental diagnosis was prepared. Ten SAR environmental units were determined through state indicators (of vegetation and geomorphology). It was found that 88.63 % (4,922.77 Ha) of the SAR correspond to the disturbed category (thus classified for the loss of the original plant covering and / or erosive processes), 4.49 % of the SAR (249.42 Ha) to the preserved category, and 6.88 % (382.24 Ha) to the highly preserved category.

Through field and laboratory work, the impact that the project activities could cause on environmental factors (and on the natural and social environments as a whole) was determined. For this project, 9 impacts were identified and assessed as significant or relevant, and 6 of them are adverse, 1 in the high category, and the remaining 5, moderate; and 3 beneficial impacts, one of them in the high category and the other two, in the very high category. Seven mitigation measures for adverse impacts were determined, which are considered to be feasible from the technical, social, environmental, and economic points of view.

Mitigation Measures System for the SAR cumulative, synergistic and / or residual impacts.		
Mitigation measure	Application stage in accordance with the project activities	SAR impact mitigated and / or standards complied with
1. Guidelines while the staff remain in the works	During the site preparation and construction	It prevents It avoids damage to wild fauna, it establishes procedures that comply with the NOM-081-SEMARNAT-1994
2. Monitoring of machinery and equipment emissions	During the site preparation and construction	Compliance with 3 Mexican Official Standards: NOM-045-SEMARNAT-1996, NOM-085-ECOL-1993, and NOM-050-ECOL-1993
3. Frighten off the fauna, recovery of nests and species that live underground	Before and during the site preparation	It prevents 3.- Effects on wild fauna caused by excavation activities.
4. Recovery of the genome of caducifolious tropical forest and gallery forest for reforestation works.	Before the clearance, juvenile tree recovery and during construction, genome recovery	It compensates 1.- Effects on the forestry vegetation caused by clearance, 2.- Habitat loss for wild fauna.
5. Management of the material produced by clearance, excavation and leveling	During the preparation (excavation and leveling)	It prevents 4.- Effects on the landscape as a result of the improper disposal of excavation material and rocky material.
6. Construction of drinking stations for fauna in the minor drainage works to favor that it continues with their displacement routes	During the placement of minor drainage works	It reduces 6.- Barrier effect for the displacement of wild fauna caused by the cuts, 10.- Risk of running over the wild fauna as a result of vehicle circulation
7. Reforestation program	During the construction, during the signaling and for an additional year	It compensates 1.- Effects on the forestry vegetation caused by clearance, 2.- Habitat loss for wild fauna, 6.- Barrier effect for the wild fauna displacement caused by the cuts

After applying the Mitigation Measures, a scenario comparison was carried out: SAR without project, SAR with project, and SAR with project and mitigation measures. The three scenarios were found to be similar because the SAR functionality and trends follow change factors that have occurred for several decades. However, the scenario that least affects the SAR is the one contemplated by the project and the Mitigation Measures, mainly due to the SAR fragmentation reduction (for the reforestation implementation) and to the transport streamlining to and from the SAR.

After an analysis was performed of SAR functioning, the effects caused by the project, and the implementation of mitigation measures, we can state that the project will not cause any impacts that compromise the SAR functioning. On the other hand, it will cause significant beneficial impacts that will have



an influence inside and outside the SAR for the transport streamlining between Zacapu and the Atzacomulco – Guadalajara highway.

ENVIRONMENTAL IMPACT RESOLUTION (Official document SEMARNAT: S.G.P.A/DGIRA.DG.0597.07)

Pursuant to the procedures established in section I of article 34 of the LGEEPA and article 40 of its Regulation in environmental impact matters. Once the environmental impact study was received, SEMARNAT assigned it the **record number (16MI2006V0012)**, which was published through the offprint number DGIRA/001/07 in the weekly Ecology Gazette (January 8 to 10, 2007). Additionally, as of July 12, 200 (sic) and based on articles 34 and 35 of the LGEEPA, the project file was made available to the public, both in the SEMARNAT documentary center and on its Internet website ([http:// portal. Semarnat.gob.mx/portal](http://portal.semarnat.gob.mx/portal)). As is stated in the environmental impact resolution (page 5 of 48) when the Environmental Impact and Risk General Direction prepared the resolution, no public consultation requests, information collection, complaints or denunciations had been received from any member of the society or non-governmental organization regarding the project. Worth mentioning is that the project file can be consulted freely on the SEMARNAT Internet page, with the following link: http://www.semarnat.gob.mx/Pages/Consultatutramite.aspx?bita_numero=16MI2006V0012

Result:

Project authorized conditionally as of June 20, 2007 for a 2-year period for construction, and 25 years for its operation and maintenance (extendable). The authorization contains the following conditions:

- Request authorization to change the use of soil
- Comply with all the prevention, protection, control, mitigation and restoration measures proposed in the environmental impact statement and in the environmental impact resolution.
- Prepare a wild flora management plan, in protection status, which must be endorsed by the SEMARNAT General Wildlife Direction.
- Develop a reforestation program with native species in a surface of 34.46 has. (or its equivalent, because for this stage only one highway body will be built).
- Prepare a soil restoration program in the areas affected by the provisional facilities during the construction stage and the material banks opened.
- It is forbidden:
 - To pour or spill oil, fats or hydrocarbons in the soil or water bodies
 - To perform works outside the authorized sites or those established for the works.
 - To open new material banks or disposal sites in the ecologic preservation zone “La Alberca de los Espinos”,
- Submit to SEMARNAT and PROFEPA bi-annual reports the compliance with the mitigation measures and conditions established in the environmental impact resolution.
- Notify SEMARNAT the initiation and termination of the construction works.

IV. SURFACE EXPANSION AND RECONSTRUCTION PROJECTS OF THE EXISTING STRETCHES

The Ecology Balance and Environmental Protection General Law, and its Regulations on Environmental Impact Matters (published in the Daily Gazette on May 30, 200) (sic), establish the list of projects that require an environmental impact assessment. In this list, the general communication routes are included. However, these Regulations also establish the following exceptions:

CHAPTER II. OF THE WORKS OR ACTIVITIES THAT REQUIRE ENVIRONMENTAL IMPACT AUTHORIZATION AND THE EXCEPTIONS

ARTICLE 5. *Anybody who tries to perform any of the following works or activities requires the prior authorization of the Secretary in environmental impact matters:*

B) GENERAL COMMUNICATION ROUTES:

*Construction of vehicle or railroad federal highways, roads, bridges, or tunnels; ports, railways, airports, heliports, aerodromes, and major infrastructure for telecommunications that affect natural protected areas or with forestry vegetation, forests, vegetation or arid zones, coastal or wetland ecosystems and national water bodies, **with the exception of:***



a) The installation of wires, cables or optic fiber for the transmission of electronic signals on the stretch that corresponds to the right of way, as long as the existing infrastructure is used and

b) The maintenance and rehabilitation works when performed in the stretch of the corresponding right of way.

ARTICLE 6. The infrastructure expansions, modifications, substitutions, rehabilitation and maintenance of facilities related to the works and activities outlined in the previous article, as well as those that are in operation shall not require the environmental impact authorization, as long as they meet all the following requirements:

I. The works and activities already have the respective authorization or when this authorization was not required;

II. The actions to be performed have no relationship with the production process that generated said authorization, and

III. These actions do not imply an increase in the environmental impact or risk level, considering their location, dimensions, characteristics, or scope, such as the preservation, repair and maintenance of real estate; construction, installation, and demolition of real estate in urban areas or modification of real estate when the idea is to perform these actions on the ground surface occupied by the construction or installation in question.

In these cases, the interested parties shall give notice to the Secretary prior to performing these actions.

The infrastructure extensions, modifications, substitution, the rehabilitation and maintenance of installations associated with the works and activities outlined in article 5, as well as those that are in operation and that are different from those mentioned in the first paragraph of this article, can be **exempt** from the submittal of the environmental impact statement when proof is given that they shall not cause any ecologic unbalance nor that they shall exceed the limits and conditions established in the legal provisions regarding the environmental protection and the ecosystem preservation and restoration.

For effects of the previous paragraph, the requestors shall give notice to the Secretary of the actions they intend to perform so that this Secretary, within ten days, determines whether the submittal or an environmental impact statement is required or if the actions do not have to be assessed and, consequently, they can be performed without requiring an authorization.

Under this program and considering that these are existing projects and that should they require any rehabilitation, there is a prior environmental impact assessment, the request will be made to apply the exemption for these projects. The status of the authorizations of each project is described below, as well as the proceedings carried out on the applicable dates:

Stretch	Existing permits of Environmental Impact Assessment	Proceedings to be performed and legal bases	Status
3. Modernization of 6 lanes of the Guadalajara- Aguascalientes- León highway, in its Guadalajara- Zapotlanejo stretch, from km 9+000 to km 25+500, including the expansion and reinforcement of 6 circulation lanes of the Ing. Fernando Espinosa bridge.	This stretch was built around the middle of last century, before the LGEEPA and the requirements related to the environmental impact assessment existed.	For this case, an environmental impact exemption will be requested, based on Art. 6 of the Regulation, considering that the works will be developed within the right of way and that is a project in operation.	To this date, the SCT is preparing the technical information and justification to request the exemption before the SEMARNAT. The request will be presented in November.
4. Reconstruction of the running surface of the Guadalajara- Aguascalientes- León highway, in its Zapotlanejo- Lagos de Moreno stretch, Junction El Desperdicio sub-stretch, km 118+500- junction with León- Aguascalientes federal highway km 146+300, with an approximate length of 27.8 km	The environmental impact resolution number 453 is available, granted by the National Institute of Ecology for the construction and operation of the project "Carretera Concesionada Zapotlanejo – Lagos de Moreno" (Zapotlanejo – Lagos de Moreno under concession highway) Date: October 5, 2004. Official document: A.O.O.DGNA-9554	Exempt works. The preparation of an Environmental impact Statement is not required, based on clause Art. 5, point B), clause b).. The maintenance and rehabilitation works are exempt when they are performed in the corresponding section of the right of way	SCT, only the notice of the works to be performed will be presented.
5. Reconstruction of the running surface of the Guadalajara- Aguascalientes- León highway,	The environmental impact resolution number 667 is available, granted by the	Exempt works. The preparation of an Environmental impact	SCT, only the notice of the works to be performed will be



Stretch	Existing permits of Environmental Impact Assessment	Proceedings to be performed and legal bases	Status
León- Aguascalientes stretch, Junction El Salvador sub-stretch km 103+850- Border of the states of Jalisco and Aguascalientes, equivalent to km 108+190,.	National Institute of Ecology for the construction and operation of the project "León - Aguascalientes" Date: November 30, 2004. Official document: A.O.O.DGNA-11070	Statement is not required, based on clause Art. 5, point B), clause b).. <i>The maintenance and refurbishing works are exempt when they are performed in the corresponding section of the right of way.</i>	presented.

**Environmental impact assessment*

ICA (Construction Company), has an Environmental Management System, certified since 2000 under the standard ISO 14001:2004, through which the legal requirements will be complied with (Mexican Official Standards of SEMARNAT, Regulations in matters of wastes, etc.) applicable to each project, whether the projects are exempt or not from an environmental impact assessment.

Important Notes:

- This summary will be available for public consultation at the offices of the concessionaire located in Guadalajara city near the Guadalajara-Zapotlanejo toll booth.
- During 2008, the concessionaire will organize two informative meetings for local citizens. One with respect to the San Juan de los Lagos - Encarnación de Díaz project and another with respect to the road to Zacapu project. In these meetings, personnel of the concessionaire will explain the additional works that will be undertaken. The date and time when the meetings will take place will be published at least 15 days in advance.