

**INTER-AMERICAN DEVELOPMENT BANK**



**CONSTRUTORA NORBERTO ODEBRECHT  
(CNO)**

**(BR-L1014)**

***ENVIRONMENTAL AND SOCIAL MANAGEMENT REPORT***

***(ESMR)***

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## I. PROJECT DESCRIPTION

- 1.1 The Project consists of the provision by the Inter-American Development Bank (“IDB” or “Bank”) of credit support via a Partial Credit Guarantee (“PCG”) for the issuance of a 5--year structured corporate bond of up to R\$300 million, to be placed in the domestic capital market, by a 100 % subsidiary of Construtora Norberto Odebrecht S.A. (“CNO” or “the Company”). The Bank would provide a PCG for up to 25% of the bond issue, subject to a cap of US\$28 million.
- 1.2 CNO is a major heavy construction and engineering company in Latin America and the largest engineering and construction company in Brazil. In the heavy construction segment, CNO develops construction projects involving highways, railways, hydroelectric and thermoelectric plants, port installations, and other industrial and infrastructure projects, providing integrated engineering, procurement, construction and management services. CNO presently has over 60 active construction contracts in over 10 different countries (see Table 1.1 for summary of backlog distribution per country and per sector).
- 1.3 Net proceeds of the bond issue will be used to support CNO’s investment program related to its “*eligible project*” contracts during the term of the bond issue. Eligible projects will be in the Bank’s Borrowing Member Countries and will comply with the IDB’s environmental and social requirements (see Section VI for summary). Table 1.2 presents a list of the current proposed use of proceeds.
- 1.4 The PCG is structured as a liquidity support mechanism, such that in the event of debt service shortfalls, and after the structure’s other credit enhancement has been exhausted, the PCG will cover payments to bondholders. Payments due under the bond will also be credit enhanced by the flow of future payments from a pool of existing and future construction contracts in Brazil.
- 1.5 Bank participation in the Project will contribute to the provision of an innovative structured medium-term fixed income security for local investors who have limited access to such securities. This bond will also be the first transaction with a PCG from an international AAA-rated multilateral institution that will be issued in the Brazilian capital markets. The Bank’s guarantee is intended to raise the rating of the bond from CNO’s current rating of brA- by Standard & Poor’s (S&P) to a target level acceptable to the investors (expected to be of AA). The Bank’s PCG would enable the Company to secure local currency funding at longer tenors than it could obtain to date in the market (2 years).
- 1.6 The Bank required CNO to prepare an Environmental Analysis (EA) of the Project, outlining: (i) the potential environmental, social, and health and safety (ESHS) impacts, risks and liabilities associated with the use of the bond proceeds, and (ii) information on the CNO corporate management systems/practices related to ESHS impacts, risks and liabilities. The EA included a more detailed review of ESHS management associated with three high potential risk or impact projects in the present

CNO backlog. These three projects are the Line 3 (Yellow Line) of the Sao Paulo Subway - Brazil, Line 4 of the Caracas Subway - Venezuela, and the Olmos Irrigation Project in Peru. Given the level of information provided at the time of the Due Diligence, the latter could not be considered for IDB funding. In compliance with IDB Operation Policy O.P-102 on Disclosure of Information, the EA has been made available to the public locally and in Washington DC since April, 2004.

## **II. CNO ENVIRONMENTAL COMPLIANCE AND PERFORMANCE**

- 2.1 The legal and institutional frameworks applied to CNO vary with each project, depending upon the specific country requirements in which the project is to be constructed. Nevertheless, independently of the differences that may exist from country to country, there are many similarities in the institutional frameworks, laws, and requirements associated with the environmental, social, and health and safety aspects relevant to most CNO contracts. For instance, for large infrastructure projects all countries in Latin America where CNO currently operates require the development of an Environmental Impact Assessment (EIA) and its disclosure and consultation with affected parties before the environmental authority grants the pertinent environmental license or permit. In addition, there are reasonably acceptable laws and regulations on occupational health and safety.
- 2.2. CNO has reported that its operations are in compliance with all applicable legal and regulatory environmental, health and safety legal requirements, including permits and authorizations applicable to its engineering and construction contracts globally. CNO also has reported that there are no significant ESHS liabilities, major legal claims, or material public complaints associated with CNO activities and operations. As part of the IDB environmental and social due-diligence, this was confirmed associated with two “high profile” projects for use of bond proceeds: the Sao Paulo Metro (subway) - Line 4, and the Caracas Metro (subway) – Line 3, two projects on which bond proceeds will definitely be used. See Boxes 1.1 and 1.2 for further detail on these two projects.
- 2.3. CNO initiated the implementation in 1998 of an Integrated Occupational Health and Safety and Environment Management System (PI-SSTMA - *Programa Integrado de Saúde y Seguridad no Trabalho y Meio Ambiente*). Worker accidents were one of the factors that motivated CNO to move in this direction, and effectively the Health and Safety programs of the PI-SSTMA were the ones that were implemented first. As a result, accident statistics have improved significantly over the past years and are currently at a level that is significantly lower than construction sector averages. Lost days per million man-hours were down to 3.54 in 2003 from 7.86 in 1998, and serious accidents in 2003 totaled only 5, as compared to 23 in 1998.
- 2.4. The PI-SSTMA holds ISO 14000 certification, issued by Bureau Veritas Quality International, for the construction of petrochemical plants and thermoelectric power

plants. CNO is apparently the only Brazilian engineering construction company to hold such certification. Audits are conducted twice a year in all contracts where the ISO certification is applicable.

- 2.5. CNO received in April 2002 a corporate loan of the International Finance Corporation (IFC) of US\$ 280 million to refinance existing debt and support the company's future operations. In an evaluation performed before approval, the IFC concluded that CNO met the applicable IFC environmental and social safeguard policies and IFC environmental and health and safety sector guidelines. IFC evaluates CNOs' compliance on a yearly basis, and apparently no significant issues have been identified.

### **III. ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS**

- 3.1 The Bank identified three principal areas of concern associated with the Project: (i) potential ESHS impacts and risks associated with the projects in which the bond proceeds will be used; (ii) potential environmental credit/financial risks associated with projects in CNO's backlog used to provide credit enhancement to the PCG due to due to existing or unforeseen environmental, social, and or health and safety liabilities; and (iii) potential reputation risk to the IDB associated with CNO's potential negative exposure if involved in the construction of environmentally or socially sensitive projects. These three areas are briefly summarized below and their related risk mitigants are summarized in Sections IV and V.
- 3.2 In terms of use of bond proceeds, the potential negative ESHS impacts will depend upon the specific projects. Most of the bond proceeds will be used to purchase heavy machinery for a limited number of large infrastructure projects such as the Metro de Sao Paulo-Line 4 (Brazil) or Metro de Caracas-Line 3 (Venezuela). The impacts associated with these two projects are described in Boxes 1.1 and 1.2, and based upon the IDB's environmental and social due-diligence appear to be adequately managed/mitigated.
- 3.3 Since the receivables from some projects in the backlog will provide the resources to pay bondholders, any environmental, social, or health and safety liability affecting a given project (e.g. fine, clean up costs, legal suit, etc) could affect receivables cash flow. Given the diversity of the projects that compose CNO's backlog, and the different sectors and countries where these projects take place, an individual project may present a potential significant potential financial environmental, social, or health and safety liability. However, given the number and diversity of projects, the risk of a significant portion of the backlog projects containing material ESHS liabilities appears low.
- 3.4 The involvement of CNO in the construction of high profile environmental and social sensible projects, if poorly managed, could jeopardize CNOs reputation, and in turn

potentially exposing the IDB to public scrutiny and NGO's negative feedback and publicity.

#### **IV. ENVIRONMENTAL AND SOCIAL MANAGEMENT**

- 4.1 In order to mitigate and manage potential environmental, social and health and safety impacts and risks associated with its operations, CNO has developed and implemented at the corporate level an Integrated Health and Safety and Environmental System (PI-SSTMA - *Programa Integrado de Saúde y Seguridad no Trabalho y Meio Ambiente*). This system is designed on the basis of the principles of ISO 14.001 with regard to environmental aspects and OHSAS 18.001 with regard to health and safety aspects. For individual CNO projects, the system is utilized and implemented based upon the characteristics of the individual project.
- 4.2 The Integrated Program (PI-SSTMA) Manual is the main corporate document reflecting CNO's system for managing Environmental and Health and Safety (EHS) aspects of its operations, and includes (i) EHS Policy, (ii) General Requirements, (iii) Organization and Responsibilities, (iv) Training, (v) Communication, (vi) Measurements and Monitoring, (vii) Inspection and Corrective Actions, (viii) Documentation and (ix) Auditing Program. Additionally, specific corporate procedures complementing the PI-SSTMA include, (i) EHS Management Plan, (ii) EHS Risk and Impact Evaluation Procedure for Health and Safety and Environment, (iii) Emergency Planning and Preparedness, and (iv) Internal Auditing Procedures.
- 4.3 A main instrument of the PI-SSTMA is the "*Kit Canteiro*", which provides generic EHS procedures for activities typically associated with infrastructure construction projects. Specific procedures include: (i) design and construction of sanitary controlled landfills, (ii) design and construction of facultative and aerobic ponds for waste-water treatment, (iii) oil-water separators for equipment and maintenance waste wash water, fuel tanks, storage tanks, and safety spill prevention containment tanks, (iv) project designed and installation of sanitary septic systems, (v) project design and installation for medical (from medical posts) and odorous waste incineration, (vi) land reclamation and re-vegetation procedures, (vii) spill prevention and control measures, (viii) erosion and silting control measures, (ix) water, wastewater and solid waste monitoring programs, (x) environmental monitoring programs, (xi) compliance monitoring programs, and (xii) assessment criteria for the application of CNO's social and environmental guidelines.
- 4.4 Social aspects such as expropriation and resettlement issues are typically excluded from CNO's contractual scope and generally are the client's responsibility. However, in the event of direct involvement with these issues, CNO has a Corporate Guideline for Involuntary Resettlement, which was requested by IFC under their loan agreement and is compatible with World Bank policies (OD 4.30), and shares the principles of IDB O.P. 710 on Involuntary Resettlement. CNO also has corporate guidelines

regarding indigenous populations and cultural property patterned after the respective IFC safeguard policies.

- 4.5 In terms of Social and Community Relations, CNO view community related activities as components of each construction contract, and has developed a “*Guia Prático de Relações Institucionais*” (Practical Guide to Institutional Relations) to orient individual project teams on how to prepare community related programs and recommended practices for interactions with affected communities. CNO also has an AIDS policy that recognizes the risk for contamination with the HIV virus, establishes employee education for appropriate protection and preventive measures, and is based on non-discriminatory and privacy protection principles.
- 4.6 EHS are managed at the corporate level by a four-member team, including the system manager, the occupation health specialist (medical doctor), the health and safety specialist, and an assistant. This corporate team is responsible for developing and improving guidelines and procedures, assisting contract managers when necessary, and supervising proper environmental and health and safety practices. The corporate team is also responsible for maintaining and updating CNO’s database of best practice and operational procedures, which is available via intranet to all contract managers globally.
- 4.7 In terms of worker health and safety, CNO assures that all contracts apply industry best safe practices at work/construction sites to prevent accidents, and includes workers training, accident record keeping, etc. CNO has developed a system to monitor and supervise health and safety aspects on all contracts (both in Brazil and abroad) and relies heavily on a monthly report prepared by each Contract Manager. This monthly report consolidates all pertinent statistics (accident records, etc.) and transforms them into a series of CNO-customized performance indicators. These indicators are closely monitored and they affect the contract management team’s premium remuneration at the end of the contract. A team of 31 engineers currently staffs this area, 18 working in Brazil and 13 abroad.
- 4.8 CNO also has an employee occupational health program which includes employee/worker entrance physical exams, monitoring of the health conditions of workers/employees to assure good working environment, actions to avoid spread of contagious or sexually transmitted diseases, providing proper ergonomic conditions, and hearing and visual protection. A team of over 20 medical doctors staffs this area, and helps monitor worker occupational health. A monthly report with CNO-customized indicators is currently operational only on contracts in Brazilian territory and, as with health and safety indicators, has an effect on the contract management team’s premium remuneration. It is currently being tested on contracts abroad and should be implemented globally during 2006.
- 4.9 CNO has developed a preliminary set of environmental performance indicators for individual projects. These indicators evaluate (i) compliance with local regulations,

(ii) pollution prevention and other environmental control plans and procedures (EMPs), (iii) monitoring programs, (iv) eco-efficiency practices – recycling programs, re-use and reduction, etc, (v) compliance with CNO environmental and social guidelines, practices, and policies, and (vi) interaction with affected communities. CNO's plan is to test these indicators during the first semester of 2005 and implement them during the second half of 2005 starting with Brazilian contracts.

- 4.10 CNO's PI – SSTMA is highly decentralized and most responsibilities are delegated to the individual project or contract level. Contract managers have the responsibility to develop the project-specific environmental, social, and health and safety plans based on contract specific requirements and on corporate guidelines and procedures (e.g., PI-SSTMA), as well as staffing for EHS project-specific personnel. Corporate inspections take place on a selected sub-set of active projects; for example, projects with more significant impacts and risks may be inspected several times a year.

## **V. RECOMMENDATIONS**

- 5.1 The Bank will require as part of the Partial Credit Guaranty (PCG) Agreement that CNO at the corporate level shall, at all times during the life of the PCG Agreement, comply with each of the following:
- (a) All applicable environmental, social, health and safety, and labor legal requirements;
  - (b) Use proceeds from the bond issuance only for eligible projects (see paragraph 5.2);
  - (c) CNO's Environmental, Social, and Health and Safety Management System, (IP-SSTMA) including development and implementation of the modifications, in form and substance acceptable to the IDB, identified in the Environmental, Health and Safety Action Plan (see paragraph 5.3);
  - (d) Implement the Environmental, Health and Safety Action Plan (see paragraph 5.3) to the satisfaction of the IDB;
  - (e) Maintain the ISO 14001 certification in currently certified areas; and
  - (f) Send written notice of any and all non-compliances with any environmental requirement of the PCG Agreement and any significant environmental, social, health and safety, and labor accident, impact, event, and/or claim.
- 5.2 Eligible projects under the PCG Agreement shall be defined as those complying with the following:
- (a) All applicable environmental, social, health and safety, and labor host country regulatory requirements, including all environmental, social, health and safety, and labor requirements of the individual project contracts, and any subsequent modification, and all requirements associated with any environmental, health and safety related permits, authorization, or license that apply to the individual project;



- (b) The applicable aspects of the (i) World Bank General Environmental Guidelines (World Bank Pollution Prevention Handbook, July 1, 1998), World Bank Monitoring Guidelines (World Bank Pollution Prevention Handbook, July 1, 1998), International Finance Corporation Guidelines for Occupational Health and Safety (2003), and International Finance Corporation section guidelines;
  - (c) Present and implement, both in form and substance acceptable to the IDB, prior to the start of construction an (i) Environmental and Social Management Plan, (ii) Health and Safety Plan, (iii) Contingency Plans and Spill Prevention and Counter-control Plans, and (iv) when applicable, a Resettlement Plan that is fully compliant with IDB Operational Policy OP-710 on Involuntary Resettlement;
  - (d) Implement appropriate level of information disclosure and public consultation given the characteristics of the individual project.
- 5.3 Prior to the date of the Guaranty Issuance the IDB will require CNO to present, in form and substance satisfactory to the IDB, an Environmental, Social, and Health and Safety (ESHS) Action Plan. The plan will include enhancements to the existing CNO EHS Management system, including (i) the development of a screening mechanisms to rate current projects (both use of proceed and backlog) and future according to their environmental and social impacts, risks and potential liabilities, (ii) a procedure to supervise, monitor, and report compliance of all eligible projects with IDB requirements established as part of the PCG, (iii) consolidate the development and global application of the system of environmental indicators, (iv) implement the occupational health indicator program in all the contracts outside Brazil, (v) develop and implement ongoing, information disclosure and consultation related to environmental, social, and health and safety aspects associated with CNO (e.g. Environmental, Social, Health and Safety Annual Report, web-based consultation and disclosure site, etc). In addition, the EHS Action Plan will include specific actions identified during the IDB Environmental and Social Due-diligence related to the Metro de Sao Paulo Project and the Metro de Caracas Line 3 Project (see Boxes 1.1 and 1.2).
- 5.4 During the life of the PCG Agreement, CNO must prepare and submit an Environmental and Social Compliance Report, in form, content and frequency acceptable to IDB. The report shall include certification of compliance with the environmental and social requirements established in the PCG Agreement by an independent environmental and social consultant, stating that CNO is fully compliant with the IDB environmental requirements.
- 5.5 The Bank will monitor the Project's environmental, social, health and safety aspects via internal Bank supervision actions (e.g., site visits, review of documentation, etc.) and will contract an external independent environmental consultant to perform more detailed supervision/monitoring actions of CNO corporate EHS management systems, individual eligible projects, and selected projects in the backlog. In addition, the Bank will have the right, as part of the PCG Agreement, to contract for the performance of an independent environmental, health, and safety audit, if needed.



**Table 1.1 - CNO's Backlog per Country and per Sector**

(as of September 30, 2003)

	<b>In US\$ million</b>	<b>%</b>
<b>Brazil</b>	<b>1,189</b>	<b>35.7</b>
Infrastructure (water and sewerage, transportation and general infrastructure)	728.5	21.8
Energy	232	7
Industrial plants	210	6.3
Real estate and tourism	18.6	0.6
<b>Abroad</b>	<b>2,140</b>	<b>64.3</b>
Central America and the Caribbean	33.1	1.0
Angora	226	6.8
Ecuador	72	2.2
USA	360	10.8
México	6.5	0.2
Peru and Bolivia	12	0.4
Portugal	509	15.3
Venezuela	922	27.7
<b>Total</b>	<b>3,329</b>	<b>100</b>

**Table 1.2 - Preliminary List of Eligible Projects**

Use of Proceeds (R\$ million)

<b>Capex Program 2004-2008</b>	
Construction machines (cranes, trucks, excavating machines, general construction equipment) for several projects to be executed in Brazil and in Latin America, including:	
2 tunnel boring machines and ancillary equipment for the new Sao Paulo Line 4 metro	60
1 tunnel boring machine and ancillary equipment for the new Caracas subway line in Venezuela	45
CNO's Equipment Center	108
CNO's Export Base, Rio de Janeiro	48
Other equipment and/or development costs for projects to be determined	39
<b>Total Capital Expenditures</b>	<b>300*</b>

\*Amount to be net of bond issuance costs

## Box 1.1

### Metro de Sao Paolo – Yellow Line (Brazil)

**Client:** Metro de Sao Paulo, Brazil

**Project Description:** CNO was selected as the lead construction company of the Consortium hired to build the first phase of Line 4 of the Sao Paulo metropolitan subway, also known as the Yellow Line. The contract includes the construction of a 12,8 km underground 9-meter diameter tunnel, the complete civil works of five stations, and the partial civil works of other six stations that will be finalized and operational at a later date. The excavation of the tunnel will use two Tunnel Borrowing Machines (TBMs). Trains, tracks, and electromagnetic installation are not part of CNO's contract.

The total value of the Consortium contract is US\$ 540 million, with an execution chronogram of 42 months. CNO is expecting to hire a total of 1,800 employees, including 1,500 direct construction labor workers. The World Bank finances the execution of this project.

**Compliance:** The first EIA was presented to the Department of Environmental Impact Assessment of the Sao Paulo State Environmental Secretariat (*Departamento de Avaliacao de Impacto Ambiental – DAIA- da Secretaria Estadual do Meio Ambiente – SMA*), in August 1994. This study was updated via a *Relatorio Ambiental Preliminar* (RAP) on September 1998. Both studies were timely disclosed and discussed with stakeholders as required by Brazilian legislation. The DAIA/SMA provided the environmental license N° 000098 (08/04/1997) and N° 000220 (09/06/1999), and the Technical Evaluation (*Pareceres Tecnicos*) CPRN/DAIA N° 026 (17/02/1997) and CPRN/DAIA N° 116/98 (19/05/1999). Additionally the Installation License N° 00219 was granted on 19/12/2001, and the *Pareceres Tecnicos* CPRN/DAIA N° 401 was granted on the 23/11/2001.

#### Environmental and Social Impacts:

Construction:

(a) Potential environmental impacts include (i) alteration of air quality due to increased dust and particulates from demolition and construction works, (ii) increase noise, (iii) disruption of soil stability and of the water table as a result of the tunnel excavation, (iv) alteration of buildings, other infrastructure and public services as a result of excavations and other construction work, and (v) generation of solid waste and service wastewater.

(b) Potential social impacts include (i) involuntary resettlement, (ii) alteration and disruption of vehicle and pedestrian circulation for extended periods of time – over one year, (iii) disruption - and in some cases complete interruption- of economic activities of local business and commercial stores, and (iv) distortion of the real state market in the new line influence area.

As a result of the acquisition of the areas associated with surface (e.g. stations) there will be a total of 134 low-to-middle income residential properties and 147 non-residential/commercial properties affected; no “squatters” or illegal dwellers will be affected.

(c) Liabilities: There is the potential to find contaminated soil in areas in or nearby gasoline or fuel stations where cut-and-cover excavation is being performed, mostly associated with stations. Given the depth of the construction contaminated soils in the tunnels is not expected.

Operation: The impacts associated with the operation are associated with (i) potential increase of noise and vibrations in the areas where the trains surface (e.g. maneuvering patio), (ii) alterations in soils stability, and (iii) generation of solid waste from maintenance activities.

Positive Impacts: This line is expected to be very beneficial for the city of Sao Paulo, (i) improving air quality, (ii) reducing motor-vehicle generated noise and vibrations in the influence areas (with the exception of the maneuvering patio), and (iii) allowing for improved urban planning.

**Application of IP – SSTAM:** The final EMP was consolidated in April 2004 by an environmental consulting firm hired by the Consortium. This same firm will be responsible for monitoring the appropriate execution of the procedures and programs outlines in the EMPs. Since for this case CNO is the leader of the Consortium, it requested modifications of these EMPs to encompass and include all the specification of the *Kit Canteiro* and the PI-SSTMA. At the end of May 2004, the “Technical Proposal for Environmental, Social, and Health and Safety measures for the Sao Paulo Metro Yellow Line” was finalized, which consolidates in a more encompassing and project specific document the application of the PI-SSTMA in the construction of this project, and includes (i) an Environmental Management Program, (ii) Implementation Program, (iii) Resettlement Plan, (iv) Social Communication Program, (v) Monitoring Program, and (vi) Inter-institutional Relationship Program.

All expropriation and resettlement are being managed directly by the client, which currently has a loan from the World Bank and is acting according to World Bank policies and standards. CNO continually monitors the progress of the resettlement process since it will not be able to start works in the stations until all the resettlement has taken place.

The Resettlement Plan was developed by the client, and presented and approved by the World Bank. For the most part, this Plan is satisfactory to the IDB, with minor shortcomings associated with (i) street vendors and (ii) the interruption of access to local stores in the area surrounding the Station *Fradique Coutinho*. These shortcomings will be corrected via an *eligible project* specific ESHS Action Plan

**ESHS Action Plan:** Prior to the date of the Guaranty Issuance the IDB will require CNO to present an *eligible project* specific action plan including (i) the definition of the support and compensation mechanisms for the street vendors and the local stores around *Fradique Coutinho*, (ii) the development of contingency measure/ procedures in cases contaminated soils are encountered during cut-and-cover excavations, (iii) mechanisms to closely monitor landfills and other excess material disposal sites, and (iv) define with the fire department the fire prevention and protection plans around all new stations; given the difficulty for motor vehicle access, special emphasis should be place around the *Republica* Station.

## Box 1.2

### Metro de Caracas –Line 3 (Venezuela)

**Client:** C.A. Metro de Caracas.

**Project Description:** CNO was hired to build the second phase of Line 3 of the Caracas metropolitan subway. The contract includes the construction of 5.96 km of two parallel underground 6-meter diameter tunnels, and the complete civil works of four stations. The contract does include the provision for an additional phase of 2.3 km of tunnel with no new stations, which would connect this line with the existing station of *La Rinconada* and *Zoologico*, completing the first “ring” of the Metro de Caracas. Two TBMs will be used, but only one belongs to CNO, and the other is being subcontracted. Trains, tracks, and electromagnetic installation are not part of CNO’s contract.

The total value of CNO’s contract is US\$ 323 million, with an execution chronogram of 42 months. Approximately, a total of 1,327 employees are expected to be hired, including 1,200 direct construction labor workers, 35 CNO employees, and 92 sub-contractors.

**Compliance:** The EIA was presented to the Environmental Ministry (*Ministerio del Ambiente y los Recursos Naturales – MARN*) on April 2004, and on May 20<sup>th</sup> of the same year there was a public seminar to discuss the technical and environmental aspects of the project. Additionally, Metro de Caracas disclosed and discussed the project with over 30 *asociaciones de vecinos* present in the influence area.

The works that CNO is currently performing in *La Rinconada* station fall under the Line Caracas – Cua, an already licensed project which end coincides with that of the Metro Line 3. To be able to start construction work in *La Rinconada* Station, CNO signed an *Acta de Inicio de Obras* with Metro de Caracas on March 31<sup>st</sup>, 2004.

#### Environmental and Social Impacts:

Construction:

(a) Potential environmental impacts include (i) alteration of air quality due to increased dust and particulates from demolition and construction works, (ii) increase noise, (iii) disruption of soil stability and of the water table as a result of the tunnel excavation, (iv) alteration of buildings, other infrastructure and public services as a result of excavations and other construction work, (v) generation of solid waste and service wastewater, (vi) modification of the original topography, and (vii) modification of surface drainage patterns.

(b) Potential social impacts include (i) involuntary resettlement of residences and of commercial legal and illegal activities, (ii) alteration and disruption of vehicle and pedestrian circulation for extended periods of time, as well as some public services, and (iii) distortion of the real state market in the new line influence area.

In this case there is very limited need for resettlement or relocation associated with the project. In total (i) 37 single family properties will be demolished, and only one is occupied by illegal dwellers, (ii) eight residential apartment buildings, one school, one church and a hospital will lose a portion of un-built lands (e.g. gardens, parking space, etc), and (iii) a total of 65 legal vendor kiosks currently in the sidewalk will also be relocated.

(c) Liabilities: There is the potential to find contaminated soil in areas in or nearby gasoline or fuel stations where cut-and-cover excavation is being performed, mostly associated with stations. Given the depth of the construction contaminated soils in the tunnels is not expected.

Operation: The impacts associated with the operation of this line are (i) generation of solid waste from regular maintenance activities, (ii) disruption of soil stability potentially affecting poorer neighborhoods (e.g. squatters located in the mountains nearby the Line 3 influence area), and (iii) potential enhancement of the development of illegal squatters in areas abandoned after construction.

Positive Impacts: This line is expected to be very beneficial for the city of Caracas, (i) improving air quality, (ii) reducing motor-vehicle generated noise and vibrations in the influence areas, and (iii) improved urban landscaping in the influence area.

**Application of IP – SSTAM:** CNO has two other contracts with the Metro de Caracas besides the construction of Line 3, and therefore it has a team of 10 professionals directly in charged of assuring the appropriate application of the PI – SSTAM. Additional to the standard procedures established in the *Kit Canteiro* and the PI – SSTAM, a total of 25 special procedures have been developed including (i) drainage control, (ii) monitoring of soil stability in neighboring squatters, (iii) geo-morphological mapping, (iv) landfill management, (v) access road erosion control, (vi) dust and noise mitigation and control measures, and (vii) urban re-vegetation.

All expropriation and other social compensation are the client's responsibility, but CNO will be making the payments upon the client's instructions. There is a "Strategic Plan for Metro de Caracas Line -3 ROW acquisition" which was developed by the client, and it is compliant with IDB OP-710 on Involuntary Resettlement, including the treatment of street vendors and the only illegal dweller.

**ESHS Action Plan:** Prior to the date of the Guaranty Issuance the IDB will require CNO to present an eligible project specific action plan including (i) definition of the contingency measures associated with the removal and disposal/treatment of contaminated soils, if found during cut-and-cover excavation activities, (ii) final selection and approval by local authorities of the landfill for disposal of excess soil and construction materials, (iii) develop an air quality (particular matter) and noise baseline study in the areas around the five planned stations, and (iv) a preventive vigilance procedure to avoid new illegal settlements. Additionally, CNO will not begin construction activities in this line until the Environmental License is granted by the MARN.