

**Rodoanel Oeste S.A.
Concession of Existing Toll Road
Brazil**

Environmental and Social Strategy⁽¹⁾

I INTRODUCTION

- 1.1 The 32-kilometer *Rodoanel Mário Covas - Trecho Oeste* (“Rodoanel Oeste”) - is an existing freeway⁽²⁾ located on the outskirts of the Metropolitan Region of São Paulo (“MRSP”), in Brazil (see **Annex 1: Project Location Map**). It has mainly been developed to alleviate the traffic, particularly that of trucks and buses, coming into or crossing the Metropolitan Area through its essentially radial road network. The first segment of the Rodoanel Oeste has been under operation by a state-owned company since December 2001 and the whole section since October 2002. As part of the State of São Paulo Program of Highway Concessions, the government decided in 2007 to award the concession for operation of the Rodoanel Oeste to a private company, through an international public bidding process. The concession has been awarded to *Rodoanel Oeste S.A.* (the “Borrower” or the “Company”) in March 2008, and the Company took over operation in June 2008.
- 1.2 The Bank has been approached regarding potential financing for the works that are necessary (upgrade and expansion) for the operation of the freeway, pursuant to the award of a 30-year Concession Agreement (the “Concession” or the “Project”) to a private company, under the responsibility of the Government of the State of São Paulo (“GoSP” or the “Granting Authority”) through the *Agência de Transportes do Estado de São Paulo* (“ARTESP”). The Project represents the first highway development to be launched as part of the GoSP’s second generation of State toll road concessions.
- 1.3 The Concession does not involve the construction of any new highway segment. Nevertheless, to fulfill the requirements of the terms of the Concession a limited amount of works will be necessary to be undertaken by the Company. The main civil works foreseen under the Concession will be mostly developed inside the right-of-way (“ROW”) of the Rodoanel and essentially limited to: (i) construction of new frontage or service roads on both sides of a segment of the Rodoanel; (ii) improvement in existing frontage roads; (iii) construction of new lanes and new acceleration and deceleration lanes on some highway segments; (iv) construction of toll stations; (v) construction of six additional pedestrian overpasses; and (vi) installation of acoustic barriers on some segments (four barriers of 1 km each).
- 1.4 Some of the works will have to be implemented at the beginning of the Concession, others, like the construction of new frontage roads, will need to be initiated 25 months from the start of the Concession.

(1) *This Environmental and Social Strategy (ESS) is being made available to the public in accordance with the Bank’s Policy on Disclosure of Information. The ESS has been prepared based primarily upon information provided by the project sponsors and does not represent either the Bank’s approval of the project or verification of the completeness or accuracy of the information. The Bank, as part of its due diligence on the feasibility of the project, will assess the environmental and social aspects.*

(2) **Freeway** - means a divided arterial highway with full control of access and with grade separations at intersections.

II PROJECT LOCATION AND MAIN CHARACTERISTICS OF EXISTING ROAD

- 2.1 The Metropolitan Region of São Paulo encompasses 39 municipalities and, with an estimated population of approximately 21.6 million people (in 2008) dispersed over around eight thousand square kilometers, is ranked as either the second or third most densely populated in the Americas and one of the largest metropolitan areas in the world. In the MRSP there are approximately 7.2 million vehicles (cars, buses and trucks).
- 2.2 The State of São Paulo has a population of approximately 42 million inhabitants and its road network develops greatly on a radial pattern converging to the capital city, São Paulo. With the absence of a beltway that could better direct the traffic coming from these roads, this type of design drains a significant amount of traffic and has a deleterious effect on the MRSP traffic, as several dislocations are not meant to the MRSP, but need to cross it heading to other destinations. This through traffic contributes significantly to deteriorate the circulation conditions in the major traffic corridors of the MRSP. In addition, the heavy traffic conditions not only generate clogged streets and expressways, but also contribute to increase noise levels and air pollutant concentrations in the region.
- 2.3 In fact, the MRSP endures considerable and periodic air pollution problems. Air quality drops below minimum acceptable standards for several days a year. Motor vehicles are responsible for a great proportion of toxic pollutants released into the atmosphere. Buses and trucks, the majority of which are powered by diesel engines, are major contributors to air pollution.
- 2.4 The Rodoanel Oeste is the first section of a 182-kilometer beltway that will eventually surround a great part of the MRSP and be located 20 to 40 km from downtown São Paulo. The primary objective of implementing the beltway is to better allocate traffic flows across the MRSP, but also to reduce the traffic congestion in central São Paulo, where trucks and passengers currently cross the city as the most direct linkage between productive areas in the State, coastal areas and the Port of Santos. The GoSP is constructing the beltway in four distinct sections (West, South, North and East), all of which will be constructed by the State before being delivered to the private sector under concession, as was the case for the Rodoanel Oeste. Each of these sections can be developed and operated independently and the GoSP is implementing them separately.
- 2.5 Rodoanel Oeste links some of the most important access roads to the MRSP (responsible for almost 50 percent of the traffic entering the MRSP), including: (i) *Bandeirantes* Highway (SP-348); (ii) *Anhanguera* Highway (SP-330); (iii) *Castello Branco* Highway (SP-280); (iv) *Raposo Tavares* Highway (SP-270); and (v) *Régis Bittencourt* Highway (BR-116). Construction of Rodoanel Oeste began in 1998 with traffic flows commencing in the first segment in 2001. Since that time, Rodoanel Oeste has been operated under the responsibility of *Desenvolvimento Rodoviário S.A* (“DERSA”), a state owned company charged with operating and maintaining various sections of the São Paulo State highway network. The freeway currently has traffic of approximately 240 thousand vehicles per day, which is presently un-tolled. Once tolling commences by the Company, traffic is estimated at the outset at approximately 197 thousand vehicles per day and the year-on-year growth rates in traffic over the loan period range from 6 to 11 percent. All such traffic projections will be reviewed as part of the appraisal process.

- 2.6 The Rodoanel Oeste crosses mainly urban and peri-urban areas on the outskirts of the Metropolitan Region, but there are also segments crossing more forested areas and in some of them a development in tunnel has been adopted to minimize the impacts on those areas. In addition, the freeway crosses via a bridge a small section of the Tietê River Plain Protection Area (*APA da Várzea do Tietê*), which has mainly been created to preclude commercial and residential occupation of the low-lying areas prone to periodic flooding.
- 2.7 The main characteristics of the Rodoanel Oeste are: (i) total extension of approx. 32 km; (ii) typical cross section includes - two roadways (one for each direction of traffic), three or four lanes and one outer shoulder in each roadway, and an 11-meter wide median strip; (iii) design speed of 100 km/h; (iv) 68 bridges and three double tunnels; and (v) seven interchanges. The ROW has been established unusually wide (standard width of 130 meters and minimum of 100 meter), to accommodate future works that may be needed, such as frontage roads and toll stations. The Rodoanel Oeste presents also physical barriers and fences to deter unwanted crossings.

III COMPLIANCE WITH ENVIRONMENTAL LICENSES AND POLICIES

- 3.1 For most of the works involved in the Concession, a specific environmental license is not required under the State of São Paulo and Brazilian legislation, due to their limited magnitude and the fact that they will mostly be developed inside the ROW of the Rodoanel Oeste, and the State Environmental Authority issued a specific Resolution on this matter. Regarding the new frontage road segments, although they will also be developed inside the ROW, the Concessionaire will have in the future to consult the State Environmental Authority, in due time and on a timely basis, to ascertain if a specific environmental license will be required, and if so, what type of environmental assessment will be needed, which most likely will be a simplified procedure, requiring either a Simplified Environmental Assessment (Portuguese Acronym: “EAS”), or a Preliminary Environmental Report (Portuguese Acronym: “RAP”).
- 3.2 Nevertheless, some of the environmental requirements associated with the Operating License for Rodoanel Oeste will be applicable to the Concession, others have already been resolved by the state company. The Operating License for Rodoanel Oeste has been renewed in 2006 and is valid for five years. Previously, in 1997 the road project has been granted the necessary Preliminary License, and to support the licensing process, an Environmental Impact Assessment Report and respective Statement (Portuguese Acronym: “EIA/RIMA”) have been prepared and widely disclosed through a series of public consultation activities, which were developed and implemented in accordance to good practices and State legislation. Subsequently, the road project received also the necessary Installation Licenses required for construction.
- 3.3 The Project will not: (i) convert or degrade critical natural habitats or damage critical cultural sites; (ii) significantly convert or degrade natural habitats; (iii) raise any significantly negative indigenous issues; (iv) generate any resettlement issues; or (v) have associated any trans-boundary issue. An analysis of the Project made under the applicable directives of IDB’s OP 703 Environment and Safeguards Compliance Policy have triggered the following: (B.04) Environmental or Social liabilities of the project and/or other projects

or nearby sites; (B.05) An Environmental Assessment is going to be performed; (B.06) Consultations will be performed; (B.11) Potential to cause air, soil or water contamination; (B.12) Part of the investment is already under construction by the Executing Agency or the Borrower; and (B.15) Any part of the investment or component(s) is being co-financed. Taking into account the potential environmental and social impacts and mitigation measures associated with the Project, as per IDB's OP 703 the Team proposes the Project to be classified as a Category B operation.

- 3.4 Although by national and state legislation an EIA and respective RIMA are not required in the case of the Project, the Bank will require the Company to present an Environmental Analysis Report to address potential relevant environmental and social impacts, as well as the correspondent control measures (monitoring and mitigation) associated with the Project being considered for financing by the Bank. This report will be disclosed to the public in accordance with IDB's Operational Policy OP-102 - Disclosure of Information.

IV MAIN ENVIRONMENTAL AND SOCIAL IMPACTS, RISKS AND CONTROL MEASURES

- 4.1 In view of the relatively limited magnitude of the construction works and the fact that they will essentially be developed inside the ROW of the freeway, most of the potential negative environmental and social impacts associated with the construction will not be significant.
- 4.2 Therefore, most of the potential relevant negative environmental and social impacts related to the Concession of the Rodoanel Oeste will be associated with the operation phase.
- 4.3 The Project will be constructed utilizing modern engineering techniques and the Concession Agreement foresees also specific control measures and plans that shall be adopted by the Concessionaire to mitigate and monitor environmental and social impacts.
- 4.4 Furthermore, the Company will adopt policies, procedures, programs and plans similar to the ones undertaken in other projects sponsored by *Companhia de Concessões Rodoviárias S.A. ("CCR")*, one of the main shareholders of Rodoanel Oeste Concessionaire. Some of these projects are being or have been implemented under the support, guidance and supervision of IDB. For instance, in the subway concession for the operation of Metro São Paulo Line 4, which has recently entered in its supervision phase, IDB has successfully introduced requirements to enhance the environmental and social, as well as health and safety management systems of the project as well as the project company; thereby encompassing the activities of the entire company, and this represents a key factor in reducing environmental, social, health and safety risks, for the company and for IDB.

A Potential Negative Impacts and Control Measures Associated with Construction Phase

- 4.5 The main potential negative environmental and social impacts during construction will be those associated with any moderate-scale construction work, such as: (i) soil erosion in relation to vegetation clearing and excavation activities; (ii) slope instability; (iii) siltation of drainage systems; (iv) dust and noise emissions; (v) solid wastes not properly managed; (vi) wastewater discharges; (vi) potential spills; and (vii) increased construction-related traffic in nearby roads. However, most of these impacts will be limited in scale and

temporary, and can be mitigated with standard construction environmental management procedures.

- 4.6 In addition, several plans, programs and procedures adopted by the state company to avoid, mitigate, compensate and monitor impacts during construction of the road project will similarly be adopted during the construction works necessary for the Concession. These will also include plans and procedures to control environmental and social, as well as health and safety performance of contractors, and plans and procedures to address accidents and emergency situations.
- 4.7 Environmental compensation measures associated with the Project include the planting of new trees in a State Recreational Park (*Parque Tizo*) created in 2006 adjacent to the freeway, to compensate for trees in the ROW that will need to be removed to construct the new frontage roads and toll facilities related to the Concession.
- 4.8 As a further guarantee of good environmental and social, and health and safety performance, the construction works and work sites will be periodically inspected by local and State environmental and health and safety authorities.

B Potential Negative Impacts and Control Measures Associated with Operation Phase

- 4.9 The principal potential negative environmental and social impacts associated with the operation of the Project will be: (i) air and noise emissions from road traffic; and (ii) potential soil or water contamination by road runoff, solid wastes and/or spills generated at the road and/or at other road-related facilities, and by accidents with vehicles (can be of particular significance if involve vehicles transporting dangerous materials).
- 4.10 Several plans and procedures adopted by the state company to manage impacts during operation of the road project will similarly be adopted during the operation by the Concessionaire. These will also include: (i) environmental auditing and inspection activities; (ii) hazardous material risk management plan; and (iii) emergency plans to control situations such as: accidents and emergency situations that may pose a risk to the environment (*e.g.*, accidents involving vehicles transporting hazardous materials), fire, flooding and heavy fog conditions.
- 4.11 Relative to noise abatement and monitoring measures, based on a monitoring program implemented by the state company and studies and monitoring activities performed by independent research institution, it has been possible to define freeway segments that require the adoption of acoustic barriers to mitigate noise generated by the road traffic to acceptable values. These acoustic barriers are included in the Project and will be implemented by the Concessionaire, as well as a program to monitor noise throughout the Rodoanel Oeste and the effectiveness of the acoustic barriers.
- 4.12 The Rodoanel Oeste includes specific devices in the drainage system to control spills. These devices in conjunction with the implementation operational measures, when necessary, will be instrumental to attenuate the consequences of possible accidents involving vehicles transporting hazardous materials.

- 4.13 Furthermore, to reduce the barrier action (severance of pedestrian routes) associated with the implementation of the freeway, six additional pedestrian overpasses will be constructed by the Concessionaire.
- 4.14 Also included in the Concession contract are several specific requirements, plans and procedures relating to the environmental management that must be in place during operation, and the Concessionaire will also have to prepare and present annually to the State Regulator an Environmental Performance Report.

C Monitoring Programs

- 4.15 The Concessionaire will continue to implement the monitoring programs that were being carried out by the state company to monitor relevant environmental aspects related to the road, which include the following: (i) noise levels; (ii) air quality; (iii) erosion and slope stability; (iv) spill containing devices; and (v) silting and spills in crossed water streams.

D Environmental and Social Corporate Responsibility

- 4.16 The Company will also operate with responsible and committed attitude towards environmental and social sustainability, as currently observed with other concessionaires under CCR's administration. This performance involves projects and programs in the area of social, cultural, sports and environmental responsibility. The purpose is to contribute to the development of the communities and regions in which the Company operates and of the populations that interact with them.
- 4.17 Currently, the Social Responsibility Program of CCR Group is based on the following programs and projects: (i) to foster the donation of blood; (ii) birth support program to reduce infant mortality rates; (iii) itinerant cinema project in municipalities near the concessions; (iv) free dental care program; (v) program to help fight sexual exploitation of minors, created by the World Childhood Foundation ("WCF") and Ethos institute.

E Potential Positive Impacts or Benefits

- 4.18 Traffic studies performed after some years of operation of the Rodoanel Oeste indicate that the freeway effectively contributes to improve traffic flow and reduce both total travel time (vehicle-hour per day) and total travel distance (vehicle-kilometer per day) of road users in the MRSP; consequently, contributes to reduce also fuel consumption and air pollutant emissions from vehicles that would be in stop-and-go or idling traffic.
- 4.19 Also, the Rodoanel Oeste contributed to a reduction in the heavy-load traffic flow into the MRSP, particularly that carrying hazardous loads; thereby providing better traffic conditions for mass and individual transportation in the MRSP. For instance, as a result of the operation of the Rodoanel Oeste, the heavy-load traffic in some of the most important highways in the capital (the *Marginal* Avenues) has decreased by 30 percent.
- 4.20 The improvement in traffic flow allow less stressing travel conditions and enhancement of well-being and quality of life of people, and contributes to the abatement of noise and reduction in air pollutant emissions in the MRSP from vehicles that would be in stop-and-go or idling traffic.

- 4.21 It is particularly relevant to note also the contribution of infrastructures such as the Rodoanel Oeste to control climate change by reducing greenhouse gas (“GHG”) emissions from vehicles that would be in stop-and-go or idling traffic. In fact, thorough and very detailed traffic studies performed in relation to the Rodoanel Oeste impact on the MRSP transit indicates a potential reduction in CO₂ emissions in the MRSP estimated to be on the order of more than 110 thousand ton CO₂ per year. Also important to note is the potential reduction in the emissions of other important GHGs such as methane (CH₄). It should be pointed out that on a long-term assessment basis, a molecule of CH₄ has about 23 times the effect of CO₂.
- 4.22 It is also important to register that the freeway contributes to lower the risks of traffic accidents in densely populated areas, which is an impact that can be particularly relevant in case of vehicles transporting hazardous loads.

F Risks Related to Existing Road

- 4.23 Besides the impacts described in the previous sections, indirectly related to the Project being considered for possible financing by IDB, there may be some potential environmental and social liabilities and/or reputational risks associated with possible pending issues or improper mitigation of construction and operation-related impacts by the public sector prior to the Concession.
- 4.24 These risks are expected to be limited as the road project has been developed and implemented under close and strict scrutiny of the State Environmental Protection Agency, local governmental authorities and civil society, and designed and constructed using modern engineering techniques.
- 4.25 All resettlement issues related to the construction of the Rodoanel Oeste have been resolved. The state company developed and implemented a Resettlement Plan according to good practices and the plan has been subsequently used as a reference to other projects.
- 4.26 The road project incorporates also the following impact control structures or measures: (i) two of three tunnels (one 1.7 km long) were introduced in the road project to avoid causing deleterious effects on forested areas crossed by the freeway; (ii) all tunnels are provided with ventilation and air filters to facilitate the dispersion of the air already filtered; (iii) devices in the drainage system to control spills and operational measures to attenuate the consequences of accidents involving vehicles transporting hazardous materials; and (iv) fauna protection fencing and passageways.
- 4.27 As mentioned before, several plans, programs and procedures were adopted by the state company to manage environmental and social, as well as health and safety impacts associated with construction and operation of the road project, including programs to monitor relevant environmental aspects related to the road.
- 4.28 It is also important to note that a series of environmental compensation measures have been introduced and undertaken in the implementation of the Rodoanel Oeste. As per Brazilian environmental legislation, an equivalent to 0.6 percent of the total project cost, or approximately 4 million dollars have been invested in compensatory measures, above and

- 4.29 The Bank will assess these types of liabilities and risks during due diligence and make the necessary recommendations for mitigation, if applicable.

V ENVIRONMENTAL STRATEGY FOR DUE DILIGENCE

- 5.1 As mentioned, the Bank will require the Company to present an Environmental Analysis Report related to the Project being considered for financing by the Bank. This report will be disclosed to the public in accordance with IDB's Operational Policy OP-102 - Disclosure of Information.
- 5.2 The Bank will perform an Environmental and Social Due Diligence in order to confirm that all Project relevant impacts and risks have been, or will be properly and adequately evaluated and mitigated. The environmental and social due diligence will specifically address the following aspects:
- (a) Assessment of Project and Concessionaire compliance status with the applicable country (national, state, and municipal) environmental, social, health and safety and labor regulatory requirements (e.g., laws, regulations, standards, permits, authorizations, applicable international treaties/conventions, etc.); project-specific legal requirements; and any applicable Bank environmental and social policy or guideline, in particular the OP-703 Environment and Safeguards Compliance Policy, OP-102 on Information Disclosure and OP-710 on Involuntary Resettlement.
 - (b) Particularly, the Bank will examine the status of compliance of Project and Concessionaire with the environmental and social requirements established in the Operating License for the Rodoanel Oeste.
 - (c) Evaluation of the available environmental impact assessment reports related to the Project, particularly the Environmental Analysis Report, to confirm that the Project's relevant direct, indirect, cumulative and regional environmental and social impacts and risks have been properly identified and evaluated.
 - (d) Assessment of the adequacy and sufficiency of all Project's existing environmental and social plans, programs and procedures.
 - (e) Evaluation of Company's Environmental and Social, and Health and Safety Management Systems, including plans and procedures, to assess their adequacy in terms of responsibilities, training, auditing, reporting, and resources to be made available to ensure

adequate implementation, and specifically all the system components necessary to ensure that the Project will not generate significant negative impacts.

- (f) Assessment of potential environmental and social liabilities and/or reputational risks associated with possible pending issues or improper mitigation of construction and operation-related impacts by the public sector prior to the Concession and make the necessary recommendations for mitigation, if applicable.
- (g) Assessment of available studies analyzing the effect of tolling on traffic on parallel, adjacent and/or secondary roads in the area of the Project.
- (h) Review of available studies on pedestrian movement across the Rodoanel Oeste.
- (i) Evaluation of potential greenhouse gas emission reductions associated with the Project and explore with the Company the possibilities to apply for carbon reduction credits.
- (j) Evaluation, and further development as necessary, of Project execution monitoring/supervision procedures to ensure proper implementation of environmental, social, health and safety and labor actions and requirements.
- (k) Assessment of corporate social responsibility programs and other initiatives developed by the Company to improve integration and relationship with local communities and, if applicable, formulate actions and opportunities for further improvements. Evaluation of Company's programs intended to maximize the positive outcomes of the Project.
- (l) As part of the ESDD process, the Project Team will analyze the environmental and social aspects of the Project and prepare an Environmental and Social Management Report ("ESMR").

Brazil

