



## **Environmental and Social Review Summary**

### **Hanoi-Haiphong Expressway**

*This Environmental and Social Review Summary (ESRS) is prepared by MIGA staff and disclosed prior to the date on which MIGA's Board of Directors considers the proposed issuance of a Contract of Guarantee. Its purpose is to enhance the transparency of MIGA's activities. This document should not be construed as presuming the outcome of the decision by MIGA's Board of Directors. Board dates are estimates only.*

*Any documentation that is attached to this ESRS has been prepared by the project sponsor, and authorization has been given for public release. MIGA has reviewed the attached documentation as provided by the applicant, and considers it of adequate quality to be released to the public, but does not endorse the content.*

Country:	Vietnam
Sector:	Infrastructure
Project Enterprise:	Vietnam Development Bank / Vietnam Infrastructure Development and Finance Investment Joint Stock Company
Environmental Category:	A
Date ESRS Disclosed:	April 23, 2013
Status:	Due Diligence

#### **A. Project Description**

The Hanoi-Haiphong Expressway (“Project” or “Expressway”) is a new six lane, approximately 105.5 km Class A toll road between the capital city of Hanoi and the port city of Haiphong, in the Red River Delta region of northern Vietnam. The Expressway runs parallel to and south of National Highway (“NH”) 5, an existing four lane road that currently serves as the main road link between Hanoi and Haiphong, Vietnam’s second and third largest cities respectively. The Project is expected to reduce congestion, increase traffic safety, provide smoother and more efficient passenger and cargo transport, accommodate projected traffic volumes, and facilitate opportunities for economic development.

The Project begins in the south-western suburbs of Hanoi at Ring Road No. 3, 1025 m from the Thanh Tri Bridge abutment, and terminates at the Dinh Vu dam on the eastern side of Haiphong, close to the city’s port facilities. The selected alignment crosses four provinces (Hanoi, Hung Yen, Hai Duong, and Haiphong) and 14 districts. The route passes through mostly flat terrain featuring agricultural land alternated with residential villages, and divided by natural river systems (Thai Binh river, Kinh Thay river, Bac Hung Hai river, etc.) and local irrigation canals.

The Hanoi section is approximately 6.2 km, starting in Long Bien district and crossing Gia Lam district. The Hung Yen section is approximately 26.8 km crossing Van Giang, Yen My, An Thi, and Khoai Chau districts. The Hai Duong section is approximately 39 km crossing Binh Giang, Gia Loc, Tu Ky, and Thanh Ha districts. The Haiphong section is approximately 33.42 km crossing An Lao, Kien Thuy, and Duong Kinh districts, terminating at Hai An district.

The Expressway is designed to accommodate a maximum speed of 120 km per hour and features a 100 m right-of-way consisting of: a six lane carriageway (6x3.75=22.5 m), a median strip (1 m), two emergency strips between the median and carriageway (2x0.75=1.5 m), two emergency lanes between the

carriageway and shoulder (2x3=6 m), two unpaved shoulders (2x1=2 m), two grass strips abutting the shoulder (2x1=2 m), two frontage roads running parallel to the carriageway (2x5.5=11 m, 2x7.5=15 m for industrial zones and a road corridor on both sides of the frontage roads. A fence system will be placed outside the two greenery strips in order to prevent non-motorized vehicles, pedestrians and large animals from entering the Expressway. The frontage roads will serve local traffic and motorbikes. Vehicles with a registered speed of less than 40 km per hour (e.g. motorbikes) are restricted from entering the Expressway. The Expressway will have nine major interchanges, 104 underpass culverts, nine large-scale bridges (spans ranging from around 110 m to 1,250 m), 36 flyovers, three tunnels and eight small-scale bridges (less than 100 m).

Construction of the Expressway requires sourcing of 40 million m<sup>3</sup> soil, 40 million m<sup>3</sup> sand, and 2 million m<sup>3</sup> stone aggregate from existing, commercially operating borrow pits and quarries strategically located along the route to minimize transport distance. Soil material will be used for construction of subgrade, slopes and embankments and sourced from five commercial borrow pits, with transport distances ranging from 30-76 km. Sand will be used for construction of embankment and soft soil treatment, and supplied from five commercial quarries and nine commercial storage yards obtaining the material from the Red river, Lo river, Van Uc river, Cong river, Thai Binh river and Kinh Thay river. Transport distances from the sand quarries and storage yards range from 2-243 km. Stone aggregate will be used for surfacing and sourced from three commercial quarries, with transport distances ranging from 40-75 km.

Other infrastructure includes two Rest Stops, one Service Station, a Maintenance Facility, a Central Operation Building, and 9 Toll Plazas. The two Rest Stops will provide petrol and oil supply, minor vehicle repair, motel, restrooms, and cafeteria services, and are planned to be located at Km24.6 (Hung Yen) and Km76.9 (Haiphong). The one large scale Service Station will provide major vehicle repair, petrol and oil supply, restaurant, hotel, traveler welcome center, tour and transfer guiding office and will be located at Km53.6 (Hai Duong) and Km105.4 (Haiphong). A Maintenance Facility to service regular maintenance of the entire Project during operations will be located in the middle of the Expressway at Km48.8 (Hai Duong). A Central Operation Building to control traffic flow, manage operations, and supervise operations of Toll Plazas, Rest Stops and Service Stations will be located at Km2.2 (Hanoi).

Following Project completion, four Urban Areas and seven Industrial Parks are planned to be developed along the Expressway. The four Urban Areas are planned adjacent the Expressway in Gia Lam district, Hanoi (355.07 ha); and An Lao (60 ha), Kien Thuy (143 ha), and Hai An (157 ha) districts, Haiphong. The seven Industrial Parks are planned adjacent the Expressway in Yen My (320 ha), An Thi (400 ha), and Khoai Chau (213 ha) districts, Hung Yen; two in Gia Loc (250 ha and 100 ha), and Tu Ky (200 ha) districts, Hai Duong; and An Lao (100 ha) district, Haiphong.

The Vietnam Infrastructure Development and Finance Investment Joint Stock Company (“VIDIFI”) was formed in 2007 by Government of Vietnam (“GoV”) decree. VIDIFI are the Project investor responsible for construction and operation, and development of industrial and residential areas along the route. The Vietnam Development Bank (“VDB”), the majority shareholder of VIDIFI, are tasked to act as borrower in mobilizing financing. VDB’s current ownership stake in VIDIFI is 76.8 percent, with other shareholders including Vietnam Commercial Bank which owns 1.5 percent, and Vietnam Construction Import-Export Corporation which owns 0.8 percent. VIDIFI will operate the Expressway for 30 years, after which ownership will transferred to the Ministry of Transport (“MoT”) under the terms of a build-operate-transfer contract signed in 2008.

Revisions were made to the Project design in 2009, following comments from provincial People’s Committees (Hanoi, Hung Yen, Hai Duong and Haiphong) and from MoT, including: a re-design

of the Ring Road No. 3 interchange; an increase in the number of interchanges (from five to nine, the additional interchanges will be constructed at later phase of project); adjustments to the number of over and under-passes; and revised design features in relation to paving, frontage roads, drainage, bridges, and landscaping. Construction of the Expressway started in 2011 and is expected to be complete by 2015. Completion of different sections range from 22-52%, except for Hanoi where construction has not yet started. VDB/VIDIFI are currently considering options for operating the Expressway.

VDB/VIDIFI separated the Project into 10 sections (“Packages”) for financing and construction. MIGA is considering providing guarantees to Standard Chartered Bank (UK) and Credit Agricole Corporate and Investment Bank (France) to support financing of Packages 1A, 1B, 4 and 6. Packages 1A and 1B (6.2 km) include Long Bien and Gia Lam districts, Hanoi. Package 4 (14.5 km) is in Binh Giang district, Hai Duong. Package 6 (8.7 km) includes Tu Ky and Thanh Ha districts, Hai Duong. Contracts have been awarded by VDB/VIDIFI to Joint Venture of Civil Engineering Construction Corporation No 6 and Trung Chinh Trading & Construction Co., Ltd. (Viet Nam) for Package 1A, KeangNam Enterprises, Ltd. (Korea) for Package 4, and GS Engineering and Construction Corp. (Korea) for Package 6. A contract has not yet been awarded for construction of Package 1B.

## **B. Environmental and Social Categorization**

The project is Category A based on MIGA’s Policy on Social and Environmental Sustainability because it has potentially significant adverse social or environmental impacts that are diverse, irreversible, or unprecedented. Key social and environmental risks and impacts include livelihood sustainability related to physical and economic displacement resulting from land acquisition, worker health and safety, community health and safety, traffic, waste, dust, soil erosion and runoff, flood risk, noise and vibration, and cultural heritage.

## **C. Applicable Standards**

While all Performance Standards are applicable to this investment, the investment will have impacts which must be managed in a manner consistent with the following Performance Standards:

- PS1: Social and Environmental Assessment and Management Systems
- PS2: Labor and Working Conditions
- PS3: Pollution Prevention and Abatement
- PS4: Community Health, Safety & Security
- PS5: Land Acquisition & Involuntary Resettlement
- PS6: Biodiversity Conservation & Sustainable Natural Resource Management
- PS8: Cultural Heritage

The findings of MIGA's due diligence confirmed that there are no Indigenous Peoples (PS7) impacted by the project.

The World Bank Group (“WBG”) General Environmental, Health and Safety (“EHS”) Guidelines, and Industry Sector EHS Guidelines for Toll Roads are also applicable.

#### **D. Key Documents and Scope of MIGA Review**

MIGA is considering supporting financing for three of 10 Packages (1A/1B, 4 and 6), however the entire Expressway is considered one project for purposes of environmental and social due diligence.

MIGA environmental and social specialists conducted three missions for the Project, occurring in February 2013, November 2012 and June 2012. An international consultant was hired to accompany MIGA's initial June 2012 due diligence mission to identify gaps between GoV land acquisition and compensation policies and PS5.

A local consultant was hired by MIGA to conduct due diligence on availability of socio-economic baseline information and is continuing to support due diligence on livelihood impacts, land acquisition and resettlement. The local consultant will prepare a due diligence report on land acquisition and compensation that is expected to be received following disclosure of this Environmental and Social Review Summary ("ESRS"). This ESRS may be revised according to MIGA's Policy on Disclosure of Information to reflect the findings of the due diligence report. Unless the due diligence report presents material differences in the analysis of the project's impacts, mitigation measures and the project design, the revised ESRS will not change or restart the 60 day disclosure period.

The following documents were reviewed by MIGA:

- *Report on Environmental Impact Assessment*, Hanoi – Haiphong Expressway Project. November 2007. Vietnam Development Bank. Prepared by the Institute of Meteorology and Hydrology.
- *Supervision Report on Social Economics*, Hanoi – Haiphong Expressway Project. August 2011. Vietnam Infrastructure Development and Finance Investment Joint Stock Company. Prepared by the Institute of Environmental Technology.
- *Report on Environmental Monitoring*, Hanoi – Haiphong Expressway Project. August 2011, February 2012 & September 2012. Vietnam Infrastructure Development and Finance Investment Joint Stock Company. Prepared by the Institute of Environmental Technology.
- *Supervision Report on Worker Health in Construction Area*, Hanoi – Haiphong Expressway Project. August 2011, February 2012 & September 2012. Vietnam Infrastructure Development and Finance Investment Joint Stock Company. Prepared by the Institute of Environmental Technology.
- *Monitoring Report on Aggradation of Riverbank, Land Erosion and Flooding Risk*, Hanoi – Haiphong Expressway Project. August 2011, February 2012 & September 2012. Vietnam Infrastructure Development and Finance Investment Joint Stock Company. Prepared by the Institute of Environmental Technology.
- *Monitoring Report on Ecosystem Change and Biological Resource*, Hanoi – Haiphong Expressway Project. August 2011, February 2012 & September 2012. Vietnam Infrastructure Development and Finance Investment Joint Stock Company. Prepared by the Institute of Environmental Technology.
- *Feasibility Study Report*, Hanoi – Haiphong Expressway Project. February 2012. Vietnam Development Bank. Prepared by Transport Engineering Design Inc.

- *Summary of the General Statement, Hanoi – Haiphong Expressway Project.* November 2012. Vietnam Infrastructure Development and Finance Investment Joint Stock Company.
- *Land Access and Resettlement Work performed for the HaNoi - HaiPhong Expressway (VietNam): Status, gaps analysis against MIGA PS 5 and proposed gap filling measures.* September 2012. MIGA. Prepared by Dr. Kai Schmidt-Soltau.

## **E. Key Issues and Mitigation**

### PS1: Social and Environmental Assessment and Management Systems

*Social and Environmental Assessment:* An environmental impact assessment (“EIA”) was prepared in 2007 for VDB/VIDIFI by the Institute of Meteorology and Hydrology (“IMH”) of the Ministry of Natural Resources and Environment (“MONRE”), based on GoV legal standards. The EIA provided environmental baseline information; generalized socio-economic baseline information (insufficient for preparing a Resettlement Action Plan consistent with PS5); identified major environmental and socio-economic impacts; assessed environmental risks and impacts during both construction and operation phases at 24 locations, assigning an “Impact Level” (A, B or C) to identify “serious” (A), “moderate” (B), or “no impact” (C); an analysis of alternative route alignments; and an proposed measures to mitigate adverse environmental risks and impacts during construction and operation phases.

Construction phase environmental and social risks and impacts were identified and assessed related to construction of interchanges and the expressway with regard to settlement activities, economic activities, public infrastructure, community separation, cultural heritage, water, sanitation, waste, natural disaster, traffic accidents, geology, soil erosion, ground water, surface water quality, fauna and flora, landscape, air pollution, water pollution and noise and vibration. Risks and impacts were assessed as “serious” (A) for “settlement activities” at five specific locations, community separation at one specific location and air pollution at one specific location along the expressway.

Operations phase environmental and social risks and impacts were identified and assessed with regard to impacts on land (including subsistence), water courses and hydrological conditions, water quality, noise, vibration, air quality, waste, public health and safety, local traffic and roads, local land use, ecological system, local economic activities, existing traffic and public services, culture, community health, and risks and danger. No operations phase risks and impacts were assessed “serious” (A).

The EIA prepared and approved by MONRE in 2007 was not required to be updated following revisions to the Project design in 2009. Construction began in 2011, with impacts realized prior to MIGA engagement in the Project. The identification and evaluation of environmental, health and safety risks and impacts presented in the EIA has been supplemented by environmental and social monitoring reports prepared on a semi-annual basis since the start of construction in 2011.

The sources of construction materials, including soil borrow pits, sand quarries and storage yards, and stone aggregate quarries are not considered “associated facilities” under PS1 and therefore outside the Project’s area of influence. VDB/VIDIFI have represented to MIGA that these are all pre-existing commercial facilities owned and operated by third parties.

The development of Urban Areas and Industrial Zones are not part of the Project, however their future development is expected as part of VIDIFI’s mandate. Although they are not covered as part of MIGA’s

guarantee and cumulative impacts were not assessed as part of the EIA, an environmental impact assessment will be required for each development under GoV law prior to VDB/VIDIFI receiving approval to proceed. Development of the first of these sites is tentatively expected to begin in 2013.

*Management Program and Monitoring:* VDB/VIDIFI has a dedicated Environmental and Social Officer (“ESO”) responsible for environmental and social management and supervision of the Project. The EIA includes an Environmental Management and Monitoring Plan (“EMMP”) and defines general principles of environmental and social management and supervision contractors are expected to follow. These general principles include: establishing an environmental and social management program to identify, evaluate, prevent, minimize and manage impacts during construction and operations, including procedures for reporting and auditing to ensure compliance with GoV laws and regulations; closely coordinate with local environmental management agencies for implementation of the environmental and social management program; and implement measures to minimize and mitigate impacts related to air, noise, flood risk, surface water, waste, traffic, resettlement and livelihoods.

Contractors for each of the 10 Packages are required, under their respective construction contracts with VDB/VIDIFI, to prepare and submit occupational health and safety (“OHS”) and EHS management and supervision plans based on the EMMP, and consistent with the general principles outlined in the EIA and GoV legal requirements and standards. The OHS and EHS plans are submitted to Meinhardt (who are an international engineering consultancy contracted by VDB/VIDIFI as the Construction Supervision Consultant) for review and approval. Meinhardt’s engineers maintain their daily on-site presence to supervise the execution by the Contractors to ensure that the Project is completed to technical specifications and the OHS and EHS plans are fully observed.

Monitoring, supervision and reporting on the environmental and social performance during construction is conducted by the Institute of Environmental Technology (“IET”), who are contracted by VDB/VIDIFI as an independent consultant to carry out environmental and social monitoring during the execution of the Project and are on site periodically to collect samples, data and information. IET have produced monitoring and supervision reports on a semi-annual basis covering environmental monitoring, worker health and safety, flood risk and biological resources since the start of construction in 2011. IET have additionally produced one supervision report (August 2011) on socio-economic impacts related to land acquisition, resettlement and livelihood impacts. VDB/VIDIFI are responsible for reviewing IET’s monitoring and supervision reports, reporting environmental and social performance to MONRE, engaging local communities, and advising on corrective actions to remedy potential deficiencies. VDB/VIDIFI are responsible to report to MONRE and affected communities on environmental quality during construction and operations phases.

While VIDIFI has qualified technical staff and a number of staff were recruited from organizations such as Vietnam Expressway Corporation (an agency of the MoT that has been charged with developing the country’s expressways), VIDIFI as an organization has no experience or track record in developing or operating Class A toll roads. During construction, Meinhardt has been important in improving project management. Should VIDIFI decide to operate the Expressway themselves, MIGA will require VIDIFI to engage technical assistance for environmental and social management of the project during operations and has had preliminary discussions with the World Bank Hanoi Office to assess whether there is scope to provide a technical assistance program to support VIDIFI’s operation and maintenance of the Expressway. MIGA requires an environmental management plan, consistent with MIGA’s Performance Standards, be prepared and implemented for operation of the Expressway prior to commissioning.

To manage environmental and social risks during construction and operations, MIGA has proposed to the GoV a framework to structure MIGA's engagement in the Project. Under the proposed framework, MIGA has requested GoV assurance that:

- (i) construction and operation of the Project complies with MIGA's Performance Standards and the WBG EHS Guidelines, with the exception of PS5 requirements for restoration of livelihoods;
- (ii) land acquisition, compensation and resettlement regulations are followed, a robust grievance mechanism is in place and legacy issues are addressed; and
- (iii) a Corrective Action Plan ("CAP") is prepared (prior to MIGA's Board meeting) and implemented, with monthly monitoring, for the remaining construction phase that identifies specific remedial measures consistent with MIGA's Performance Standards and WBG EHS Guidelines.

### PS2: Labor and Working Conditions

VIDIFI currently employs approximately 200 direct hire workers, of which approximately 115 are engineers by training. As of September 2012, there are approximately 1641 workers employed by construction firms operating in seven Packages. MIGA requires receiving a Human Resources policy for VIDIFI and all construction contractors consistent with GoV labor law and PS2, reflecting transparent worker relations, terms and duration of employment, and a grievance mechanism, all based on the principle of non-discrimination.

OHS measures provided in the EMMP include requiring contractors to establish an OHS management program, which includes: setting up a labor safety committee; preparing and implementing work site regulations (e.g. entry and exit, labor protection facilities, traffic safety, fire and explosion safety, etc.); worker training and education on work site regulations with regular inspections; organization of health care at the work site; and timely investigation of occupational accidents to identify and apply remedial measures for accident prevention.

OHS management by GS Engineering and Construction Corp. for Package 6 was found consistent with the EMMP and good international industry practice, as provided in the WBG EHS Guidelines. GS Engineering and Construction Corp. had appointed a dedicated health and safety manager with a continual on site presence, daily health and safety meetings were held, all workers were issued personal protective equipment ("PPE") consistent with workplace hazards (hard hats, reflective vests, protective footwear, gloves) and strict PPE requirements were enforced for entering the work site. Variability of OHS practices, particularly regarding PPE, was observed between contractors operating at other Packages during MIGA's June 2012 site visit.

The September 2012 IET *Supervision Report on Worker Health in Construction* surveyed OHS performance of seven contractors (Packages 2, 3, 4, 5, 6, 8 and 10) and reported all contractors surveyed to provide health and safety equipment and training, satisfactory worker accommodation, access to staffed on-site or nearby medical clinics for first aid, and rehabilitative medical care. Six of the seven contractors surveyed (Packages 3, 4, 5, 6, 8 and 10) provided workers annual or semi-annual preventative medical check-ups. Incidences of occupational (respiratory) diseases were reported to have declined to 11 in September 2012 from 79 in the previous reporting period (February 2012). Additionally, three occupational accidents were reported occurring in Package 10 since the start of construction; however during MIGA's June 2012 site visit, MIGA was informed of a 2011 fatality accident occurring in Package 7.

MIGA requires VDB/VIDIFI to comply with PS2 during construction and operations phases. For Packages MIGA is considering supporting (Packages 1A/1B, 4 and 6), contractors will be required to

comply with PS2 during the remaining construction phase. MIGA will require a CAP be prepared and implemented, consistent with PS2 and WBG EHS Guidelines, to remedy any gaps in OHS management of the Project during construction. For the operations phase, OHS management plans will be required prior to commercial operations of the Expressway.

### PS3: Pollution Prevention and Abatement

The EIA identified and assessed “moderate” (B) adverse risks and impacts from construction and operation of the Expressway related to air emissions, surface water, soil erosion, and waste at multiple locations along the Project. “Serious” (A) risks and impacts were identified and assessed regarding air emissions in the construction phase for one location, near Km20.3 at the Ly Thuong Kiet Interchange with NH-39. These risks and impacts are expected to be managed through project design and mitigation measures provided in the EMMP, contractor EHS plans and CAP.

Air pollution during construction is expected from fugitive dust generated from excavation, backfilling and transport of materials (soil, sand and stone), emissions generated by operations of four asphalt concrete mixing stations, and gaseous emissions from vehicles, equipment and machinery using diesel fuel. The EIA estimates construction to generate approximately 2,785.8 tons of suspended dust from excavation and backfilling, with additional contributions expected from transport of materials for the Project. Measures to mitigate dust impacts provided in the EMMP include regular watering of the construction site and temporary access roads during the dry season (particularly near populated areas) and requiring vehicles hauling construction materials to cover loads with canvas. MIGA’s June 2012 site visit found material loads to be consistently covered and a relatively low frequency of water trucks along the access roads. The four 100 ton per hour asphalt concrete mixing stations are located near interchanges with NH-39 (Km20), NH-38 (Km49), NH-10 (Km74) and PR-353 (Km96). Emissions from the asphalt concrete mixing stations were modeled and forecast to meet GoV standards and the WBG EHS Guidelines. Measures to mitigate emissions from the asphalt concrete plants provided in the EMMP include a 300-500 m minimum set-back from populated areas, siting downwind of populated areas at least 150m, dust filters, and banning use of timber, rubber or waste as fuel for asphalt heating. Vehicles, equipment and machinery are required to comply with GoV standards on gaseous emissions and will receive regular and close inspection and maintenance during the construction phase, as provided in the EMMP. The EMMP provides for quarterly monitoring and semi-annual reporting of ambient air quality during construction at 12 locations, sampling for carbon monoxide, nitrogen oxides, sulfur dioxide, total suspended particles and volatile organic compounds.

Air emissions during operation of the Expressway are expected from vehicle traffic. The EIA found baseline conditions of air pollutants along the road to meet GoV standards, except for particulate matter (PM10), and assessed ambient conditions in 2020 using a Gaussian dispersion model to project impacts from sulfur dioxide, nitrogen oxides, and carbon monoxide. Forecasts of sulfur dioxide and carbon monoxide in 2020 were found to meet GoV standards for the entire Project, while nitrogen oxides were expected to exceed GoV standards in Hanoi. Particulate matter (PM10) was forecast to exceed GoV standards in 2020. Measures to mitigate impacts to ambient air quality during operations provided in the EMMP include planting of a total of approximately 58,263 trees at 5-10 m intervals in the greenery strips along the length of the Expressway and coordinating with MONRE and provincial environment agencies for managing and monitoring ambient air quality through a regional air pollution control program. The EMMP provides for semi-annual monitoring of ambient air quality during operation at 12 locations, sampling for carbon monoxide, nitrogen oxides, sulfur dioxide, total suspended particles and volatile organic compounds.



Impacts to surface water during construction are expected from excavation and backfilling, bridge construction, storm water runoff, sanitary wastewater from workers accommodation and hydrocarbon (fuel, residual oil and grease) spills which are expected to temporarily increase concentration of pollutants in surface waters, including suspended solids, biological oxygen demand, chemical oxygen demand, oil and grease, nitrogen, phosphorous, ammonia and coliform. Measures to mitigate impacts to surface water quality during construction are provided in the EMMP, including requirements for proper disposal of wastes (construction, domestic and hazardous); installation of septic tanks at worker accommodations; and cleanup of riverbeds following bridge construction. Special measures are provided in the EMMP for protection of the Da Do river, a source of drinking water supply source for Haiphong, including minimum set-back requirements for storage yards, temporary structures, and waste dumps, as well as prohibitions from direct discharges of sanitary wastewater. Measures to mitigate impacts of hydrocarbon spills during construction are provided in the EMMP, including minimum set-asides from surface water bodies for fuel storage tanks, trapping and collecting oil sludge from construction of bridges, siting equipment and machinery storage and maintenance areas away from water bodies, and requiring hydrocarbon wastes to be collected and disposed away from the construction site. The EMMP provides for periodic monitoring of surface water quality during construction at 12 locations, sampling for carbon monoxide, nitrogen oxides, sulfur dioxide, total suspended particles and volatile organic compounds. The EMMP provides for quarterly monitoring and semi-annual reporting of surface water quality during construction at six locations, sampling for water temperature, pH, dissolved oxygen, chemical oxygen demand, biological oxygen demand, total suspended solids, nitrate, ammonia, total phosphorous, pesticides, oil, total coliform, and heavy metals.

During operations, impacts to surface waters from runoff are expected to be mitigated through installation of a storm water drainage and collection system, as part of the project design, which will be checked and maintained on a periodic basis and monitoring of surface water quality to identify and detect pollution sources. The EMMP provides for semi-annual monitoring of surface water quality during operation at six locations.

Soil erosion during construction is expected from storm water runoff prior to ground settlement and slope stability being achieved following excavation, backfilling and embankment construction activities. The EIA identifies approximately 804,948 m<sup>2</sup> of side slopes along the length of the Expressway at risk for erosion. Measures to mitigate risks of soil erosion during construction are provided in the EMMP, including using geotextile fabric on embankments for slope stability; covering the side slopes with grass; covering bridge ends and culvert inlets with stone or cement bricks; reduce slope gradients; and installation of gutters and spillways to control and direct storm water flows beyond the construction site. Semi-annual reporting on supervision of soil erosion is conducted.

Construction waste and domestic waste are expected to be generated during construction from excavation and grading, operation of asphalt concrete mixing stations and worker accommodations, with measures to mitigate these impacts provided in the EMMP. Prior to starting construction works, contractors are required to agree to a waste management procedure with the provincial authorities to govern the location of waste disposal and method of sorting. Construction wastes are to be disposed in a designated location in accordance with the instruction of the site engineer and consent of local authorities. MIGA's June 2012 site visit found that some Packages had not yet agreed on a disposal location for construction waste with local authorities. For domestic waste, contractors are required to agree with local authorities on waste collection procedures and landfilling. To date, such an agreement with the local authorities have been reached for most of the Packages. Unused material or waste at asphalt concrete mixing stations is required to be collected and disposed to the assigned landfill with the consent of the local authority. Contractors are required to sign contracts with local authorities for domestic waste collection, where those services are available; otherwise contractors are responsible for domestic waste collection. Prohibitions on littering,

placement of receptacles and a periodic garbage collection program are expected to mitigate impacts from domestic waste during operations.

MIGA requires a CAP be prepared and implemented, in addition to the EMMP and contractor EHS plans, to remedy any gaps in EHS management of the Project, consistent with PS3 and WBG EHS Guidelines.

#### PS4: Community Health, Safety & Security

“Moderate” (B) adverse community health and safety risks and impacts were identified and assessed in the EIA from noise and vibration, flood risk, and traffic related to construction and operation of the Expressway. These risks and impacts are expected to be managed through project design and mitigation measures provided in the EMMP, contractor EHS and OHS plans, and CAP.

Noise and vibration during construction is expected from vehicles, equipment and machinery, including pile driving machines, drop hammers, trucks, cranes, asphalt spreader, asphalt concrete mixing stations, bulldozers, tractors, rollers and power generators. Maximum noise levels for construction equipment and machinery assessed in the EIA are expected to range from 80-105 dBA at a distance 15 m from the source. Based on the analysis of the EIA, concluding 6dBA reduction in noise levels at each doubling of distance from the source, noise levels from construction activities at the center of the 100 m right of way are not expected to dissipate sufficiently to meet 55 dBA daytime residential WBG EHS Guidelines for nearest sensitive receptors directly adjacent the site. The EIA identified and assessed vibration impacts related to driving piles using a diesel drop-hammer, finding impacts 100 m or more from the source to be not significant. Vibration resulting from compaction of embankment with impact distance of around 20 m is within the Project right of way, thus producing no impact on the local residents. Vibration resulting from construction of sand compaction piles with impact distance of around 80m, 50 m of which falls within the right of way and the remaining 30 m is located in the residential area where residents may be affected. Consulting firms (Center for Environmental Monitoring under Hai Duong Department of Natural Resources and Environment and the Institute of Global Physics under Institute of Construction Science and Technology – Ministry of Construction) with specialized equipment have been contracted by local authorities to monitor and measure vibration impacts in Packages 7 and 8.

MIGA’s June 2012 site visit found significant community concern regarding potential vibration impacts to residences and structures near the site, with contractors coordinating with local authorities to document any claims of potential vibration related damage within 100 m of the right of way and pay compensation where warranted. A compensation framework for damage to structures is provided in the EMMP. Measures to mitigate noise and vibration impacts to communities during construction provided in the EMMP include, requiring all vehicles and machinery to be inspected by the competent authority to ensure compliance with GoV noise standards and only operating well maintained equipment at the construction site, locating construction equipment away from populated areas, turning off equipment and machinery when not in use, erecting temporary noise barriers, and restricting construction activities in populated areas to daylight hours. Quarterly monitoring of noise and vibration impacts during construction at 12 locations is provided for in the EMMP.

Impacts to communities from noise during Expressway operations are expected from traffic flow. The EIA forecast roadside noise emissions at the start of operations range from 78.4-79.6 dBA along the Expressway, dissipating to a range of 68.4-69.6 dBA 100 m from the roadside. These noise emissions are expected to exceed the 55 dBA daytime residential WBG EHS Guidelines for nearest sensitive receptors. Measures to mitigate noise and vibration impacts to communities during operation provided in the EMMP include, tree planting along the greenery strips and erecting permanent noise barriers where the

Expressway passes through populated areas. Semi-annual monitoring of noise and vibration impacts during operations at 12 locations is provided for in the EMMP.

Flood risk in the Project area has been identified and assessed in the EIA as “moderate” (B), however it is considered a significant concern. The Red river-Thai Binh river system is historically prone to flood events, although the last recorded major flood occurred in 1994. The EIA concludes that the higher grade of the Expressway, crossings of several significant and minor surface water bodies (large rivers, channels, lakes and ponds), and construction of service roads and bridges will affect natural drainage patterns and flows, leading to potential water stagnancy and higher flood risk. Project design features to mitigate flood risk to communities during construction include use of culverts and underpasses to effectively promote water drainage. Semi-annual reporting on supervision of flood risk is conducted to identify elements of the construction process affecting drainage and flow.

Increased risk of traffic accidents during construction is expected from increased concentration of vehicles on roads near construction sites from a significant increase in truck traffic, other vehicles, equipment and machinery. The EIA identified and assessed this risk as particularly acute in residential areas or near construction of major interchanges (NH-10, NH-29, NH-38B) and bridges (Thanh Tri bridge). MIGA has been informed of six fatality accidents involving community members along access roads operated for construction of the Expressway. Measures to mitigate traffic accident risks during construction provided in the EMMP include, use of flaggers and crossing guards at crossroads, and public education programs through mass organizations (Association of Veterans, Association of Elderly, Women’s Union, Youth League, etc.).

During operation, higher traffic density and speeds on the Expressway are expected to increase risk of traffic accidents. Motorbikes and other vehicles with a registered speed of less than 60 km per hour will be prohibited from entering the Expressway. Measures to mitigate traffic accident risks during construction provided in the EMMP include, public education programs, signaling and warning board systems, lighting systems, installation of 418,781 m of corrugated steel sheet protection balustrade either side of the median, 2 m steel net fencing along both sides of the Expressway and reflective road marking paint.

Construction areas are fenced with corrugated iron sheets when crossing the existing roads and residential areas; the construction areas passing through agricultural land and other kinds of land are separated from the outside by the service roads and reinstated irrigational canal sections. Such sections as: Interchange with NH No.39 (under Package EX-3), Intersection with PR No.200 (under Package EX-3) or a new detour road shall be constructed so as to secure people during the execution of the Works, such as for Interchange with NH No.10. Corrugated steel sheet protection balustrade around Interchange with NH No.39 was installed in August 2011 and dismantled in February 2012. Access points are arranged for community access across the road prior to installation of underpass culverts. However, the ground treatment and construction of embankment have negative impacts on the local residents’ travel for a short time. MIGA’s June 2012 site visit found additional pedestrian access controls along service roads were needed at some Packages.

*Security Arrangements:* Unarmed security guards are employed by construction contractors to protect construction equipment and machinery when they are not used for construction operations.

MIGA requires a CAP be prepared and implemented, consistent with PS4 and WBG EHS Guidelines, to remedy gaps in EHS management of the Project including traffic management and community health and safety.

#### PS5: Land Acquisition & Involuntary Resettlement

The EIA identified and assessed adverse impacts to livelihoods from land acquisition and resettlement as “serious” (A). The Project is expected to acquire approximately 15,113,069 m<sup>2</sup> of land, of which 96 percent is agricultural land (76 percent rice paddy, 20 percent other) and 4 percent is residential, physically displacing approximately 9,977 people and economically displacing 98,991 people. Approximately 26,426 households are affected by agricultural land loss and 2,626 households are physically displaced. Land acquisition for the Project started in 2008 and is nearly (98 percent) complete – as confirmed by VDB/VIDIFI during MIGA’s February 2013 mission.

MIGA does not expect full compliance with all PS5 requirements will be met. The generalized socio-economic baseline information provided in the EIA was found insufficient to prepare a Resettlement Action Plan and ensure the restoration of livelihoods for project affected people (PAP), according to PS5 requirements. MIGA’s due diligence has attempted to identify socio-economic baseline information for PAP to ensure that impacts to livelihoods can be mitigated according to PS5, however complete social and economic baseline information on all PAP does not exist prior to 2011 and data collected through a survey conducted in 2011 was only for a limited sample of PAP. Because land acquisition and resettlement have been substantially complete and complete social and economic baseline information is unavailable, it is not possible to retrofit compensation packages for PAP. To mitigate livelihood impacts related to agricultural land loss, MIGA has requested the GoV assure that its land acquisition, compensation and resettlement laws and regulations are followed, a robust grievance mechanism is in place and legacy issues are addressed.

According to Letter No.29/11/2007, the Prime Minister issued Decision No.1621/QD-TTg on some pilot mechanisms and policies on investment in the Project, responsibility and authority for Project land acquisition and resettlement was delegated to the four provinces, i.e. Hanoi, Hung Yen, Hai Duong, and Haiphong; and responsibility for funding arrangement in accordance with the local authorities’ compensation for land acquisition to VDB/VIDIFI. Subsequently, the provinces and cities delegated the authority to the 14 districts to conduct land acquisition and resettlement in accordance with GoV laws and regulations. Each district authority is responsible for establishing Compensation Committees tasked with conducting community consultation, preparing a Resettlement Plan according to GoV laws and regulations and implementing the land acquisition and resettlement process. The composition of the Compensation Committee is required to include at least three representatives of affected communities from each commune. Consultation with PAP occurs at two stages, first in drafting the Compensation Plan which establishes the compensation framework and criteria, and second when specific compensation amounts are determined.

The Compensation Committee of each district is responsible for carrying out a community information campaign in respect of the Project, and establishing and implementing compensation and support policies. The Compensation Committee has the responsibility to collect and clarify all inquiries and complaints by the local residents during the compensation process. If the grievances cannot be resolved, the Compensation Committee refers them to higher levels for settlement. The general grievance procedure is that PAP first submit a complaint at the commune level and if it cannot be resolved, it is elevated to the district and provincial levels, with final resolution available at the local People’s Court.

People’s Councils at different levels are elected by the people to act as their representatives in supervising and questioning the activities by the People’s Committees, including the compensation, land acquisition and resettlement in relation to all the local projects. Accordingly, the land acquisition conducted by the People’s Committees at province/district level is supervised by the People’s Councils, audited by the

State Auditing Agency and inspected by the State Inspectors on an annual basis. Third party supervision and monitoring of land acquisition, resettlement and livelihood impacts is contracted to IET, who are responsible to conduct socio-economic supervision of PAP once during construction and once during operation, as provided in the EMMP.

MIGA's due diligence to this date has generally found that physical relocation of PAP to resettlement sites was conducted consistent with PS5 requirements, and is in the process of conducting further analysis on compensation for acquisition of agricultural land and restoration of livelihoods. MIGA has attempted to ensure that additional compensation or support programs are provided through retrofitting compensation packages for PAP who are demonstrated to be worse off. However, implementation of such an approach is limited due to data unavailability. MIGA's local consultant has not found social and economic baseline information for PAP to be complete or reliable. Prior to 2011, some information might have been collected by local authorities to identify vulnerable people and households negatively affected by the project, however such information would not be sufficient to ensure that retrofitting of compensation packages was conducted fairly. Data was collected in 2011 through a survey questionnaire conducted by IET for purposes of the August 2011 *Supervision Report on Social Economics*, however the survey was limited to a sample of 600 households. .

Given that nearly all of resettlement and compensation activities have been completed and the lack of reliable baseline data, MIGA has proposed that the GoV ensure the following principles be adopted:

- Land acquisition, compensation and resettlement complies with GoV law.
- A credible and effective grievance mechanism is in place and outstanding grievances/legacy issues, if any, are addressed consistent with GoV law.
- Vulnerable PAP (as per GoV definition) have access to remedial programs.
- Additional assistance is provided to vulnerable PAP (including possible financial support) through existing or additional programs, as needed.
- Monitoring and annual reporting on the socio-economic condition of PAP and implementation of the grievance mechanism is conducted to ensure that impacts on PAP are remedied properly, the grievance mechanism is functioning, and resolution of grievances is consistent with GoV law.

#### PS6: Biodiversity Conservation & Sustainable Natural Resource Management

The EIA identified and assessed impacts from construction and operation of the Project related to biodiversity, finding that the Project area is mostly agricultural land with low biodiversity value and impacts to biodiversity were not significant. The selected alignment does not pass through sensitive ecological areas, natural forests or biodiversity zones. The Project will acquire approximately 15,113,069 m<sup>2</sup> of land, of which 76 percent is rice paddy, 20 percent other (aquaculture, fruit trees, timber), and 4 percent is residential. The EIA indentified, 249 species of higher plants, 11 species of wild fauna, 54 species of birds, 19 reptile species and 144 insect species in the Project area, and no IUCN Red List endangered or critically endangered species. Land clearing for the Project will involve the felling of 172,698 trees (166,539 fruit trees and 6,150 timber trees). Natural habitats identified in the Project area include coastal wetlands and freshwater aquatic ecosystems. The Project area is considered modified habitat under PS6.

Construction and operations risks and impacts to fauna and flora are identified and assessed in the EIA related to habitat loss, disruption to photosynthetic processes of flora from deposition of suspended dust particles, and degradation of aquatic habitat. These risks and impacts are expected to be managed according to mitigation measures provided in the EMMP, contractor EHS plans and CAP (discussed above in PS3), including planting of approximately 58,263 trees in the greenery strips, restoration

construction support areas to their prior state, and measures to avoid or mitigate impacts related to air emissions and surface water quality. Semi-annual reporting on supervision of biological resources is conducted during construction, surveying terrestrial and aquatic flora and fauna, vegetation cover change, and aquaculture.

#### PS8: Cultural Heritage

Impacts to cultural heritage during construction of the Expressway result from the relocation of tombs, pagodas and temples. The EIA identified 633 masonry tombs and 64 earth tombs necessary to be relocated for construction of the Project and provided that grave relocation would only be conducted following consultation, with compensation provided for costs of exhuming, transportation and building new tombs, as well as the costs of offering and awaiting the right date for the burying ceremony based on the spiritual life of each community, consistent with PS8. Compensation amounts for relocation of tombs provided in the EIA ranged from VND300,00-1,000,000 depending on province and were based on the costs of exhuming, transportation and construction of a new grave. Actual compensation amounts for relocation of tombs ranged from VND1,000,000 to VND3,000,000, in some special cases. Although the EIA did not identify and assess impacts to temples, concerns were identified through community consultation and impacts monitored. The EMMP provides for socio-economic supervision (including impacts to quality of spiritual life) once during construction and once during operation. To date, all complaints due to the relocation of pagodas, temples and tombs in Hung Yen, Hai Duong and Haiphong have been adequately resolved, consistent with the religious practices of each locality. MIGA requires a community grievance mechanism consistent with PS4 and a Chance Finds Procedure consistent with PS8, prior to MIGA's Board meeting. Relocation and compensation for tombs, pagodas and temples impacted by the Project has been completed.

### **F. Environmental Permitting Process and Community Engagement**

The Project Owner prepared an EIA at the same time as the feasibility study report and the EIA was approved by MONRE at Decision No.1940/QD-BTNMT dated 30 November 2007. During the preparation of EIA, IMH complied with the regulations on publishing of the Project's information and provided the Summary of the Project's impacts on the environment to all the communes where the Project goes through for their comments; obtained comments from the relevant Ministries, sectors and environmentalists in Vietnam. Following public comments, the EIA was revised and approved by the EIA Appraisal Council of MONRE.

VDB coordinated with the local authorities of affected communities in 2005 and 2007, representing the 14 districts, as well as local authorities at the commune and precinct level. During preparation of the EIA, written comments were received from the local authorities of 35 communes and precincts and IMH conducted interviews with 114 individuals and household representatives. A summary of the written comments and interviews were provided in the EIA. Respondents reported awareness of and support the Project, with concerns regarding land acquisition and resettlement, pollution and working at night (noise). Additional consultations were conducted with PAP by district and commune officials regarding land acquisition and resettlement (see PS5 above).

### **G. Availability of Documentation**

- [Report on Environmental Impact Assessment](#), Hanoi – Haiphong Expressway Project. 2007. Vietnam Development Bank. Prepared by the Institute of Meteorology and Hydrology.

- [\*Supervision Report on Social Economics\*](#), Hanoi – Haiphong Expressway Project. August 2011. Vietnam Infrastructure Development and Finance Investment Joint Stock Company. Prepared by the Institute of Environmental Technology.
- [\*Report on Environmental Monitoring\*](#), Hanoi – Haiphong Expressway Project. September 2012. Vietnam Infrastructure Development and Finance Investment Joint Stock Company. Prepared by the Institute of Environmental Technology.
- [\*Supervision Report on Worker Health in Construction Area\*](#), Hanoi – Haiphong Expressway Project. September 2012. Vietnam Infrastructure Development and Finance Investment Joint Stock Company. Prepared by the Institute of Environmental Technology.
- [\*Monitoring Report on Aggradation of Riverbank\*](#), Land Erosion and Flooding Risk, Hanoi – Haiphong Expressway Project. September 2012. Vietnam Infrastructure Development and Finance Investment Joint Stock Company. Prepared by the Institute of Environmental Technology.
- [\*Monitoring Report on Ecosystem Change and Biological Resource\*](#), Hanoi – Haiphong Expressway Project. September 2012. Vietnam Infrastructure Development and Finance Investment Joint Stock Company. Prepared by the Institute of Environmental Technology.

The above listed documentation is available electronically as PDF attachments to this ESRS at [www.MIGA.org](http://www.MIGA.org).