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IDA/R2017-0207/1

June 5, 2017

Closing Date: Thursday, June 22, 2017 at 6 p.m.

FROM: Vice President and Corporate Secretary

Vietnam - Central Highlands Connectivity Improvement Project

Project Appraisal Document

Attached is the Project Appraisal Document regarding a proposed credit to Vietnam for a Central Highlands Connectivity Improvement Project (IDA/R2017-0207), which is being processed on an absence-of-objection basis.

Distribution:
Executive Directors and Alternates
President
Bank Group Senior Management
Vice Presidents, Bank, IFC and MIGA
Directors and Department Heads, Bank, IFC and MIGA

Document of

The World Bank

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Report No: PAD2239

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 109.4 MILLION
(US$150 MILLION EQUIVALENT)

TO THE

SOCIALIST REPUBLIC OF VIETNAM

FOR A

CENTRAL HIGHLANDS CONNECTIVITY IMPROVEMENT PROJECT

June 1, 2017

Transport & ICT Global Practice
East Asia And Pacific Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective April 30, 2017)

Currency Unit =	Vietnam Dong (VND)
US$1 =	22,743 VND
SDR1 =	US$1.37102

Fiscal Year
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ACG	Anti-Corruption Guidelines
ASEAN	Association of Southeast Asian Nations
BCR	Benefit Cost Ratio
BOT	Build Operate Transfer
CFMB	Central Fund Management Board
CPS	Country Partnership Strategy
DC	Direct Contracting
DLI	Disbursement-linked Indicator
DOF	Department of Finance
DOT	Department of Transport
DPC	District People's Committee
DPI	Department of Planning and Investment
DRVN	Directorate for Roads of Vietnam
DST	Department of Science and Technology
ECOP	Environmental Code of Practice
EHS	Environmental Health and Safety
EIRR	Economic Internal Rate of Return
EM	Ethnic Minority
EMDP	Ethnic Minority Development Plan
ESIA	Environment and Social Impact Assessment
ESMP	Environmental and Social Management Plan
EPC	Environmental Protection Commitment
EPP	Environmental Protection Plan
FMM	Financial Management Manual
GDP	Gross Domestic Product
GFDRR	Global Facility for Disaster Reduction and Recovery
GIS	Geographical Information System
GNI	Gross National Income
GoV	Government of Vietnam
GRM	Grievance Redress Mechanism

GRS	Grievance Redress Service
GSO	General Statistics Office
IA	Internal Audit
IDA	International Development Association
INDC	Intended Nationally Determined Contribution
IPF	Investment Project Financing
IPSAS	International Public Sector Accounting Standards
IRAP	International Road Assessment Programme
IT	Information Technology
M&E	Monitoring and Evaluation
MoF	Ministry of Finance
MoT	Ministry of Transport
MPI	Ministry of Planning and Investment
MTEP	Medium Term Expenditure Plans
NPF	New Procurement Framework
NTSC	National Traffic Safety Committee
O&M	Operation and Maintenance
ODA	Official Development Assistance
PAP	Program Action Plan
PAT	Performance Assessment Tool
PC	People's Committee
PDO	Project Development Objective
PMU	Project Management Unit
POM	Project Operations Manual
PP	Procurement Plan
PPC	Provincial People's Committee
PPSD	Project Procurement Strategy Document
PRMF	Provincial Road Maintenance Fund
PRVR	Program Results Verification Report
PTSC	Provincial Traffic Safety Committee
RAP	Resettlement Action Plan
RF	Results Framework
RVR	Results Verification Report
SAV	State Audit of Vietnam
SBV	State Bank of Vietnam
SCD	Systematic Country Diagnostic
SEDP	Socio-Economic Development Plan
SMART	Specific, Measurable, Assignable, Realistic, Time-related
SOE	State-Owned Enterprise
SSS	Single Source Selection
ST	State Treasury
STEP	Systematic Tracking of Exchanges in Procurement
TA	Technical Assistance
TCQM	Technical Control for Quality Management Department
VHLSS	Vietnam Household Living Standards Survey
VND	Vietnamese Dong
VRAMP	Vietnam Road Asset Management Project
VWU	Vietnam Women's Union

WTO	World Trade Organization

Regional Vice President:	Victoria Kwakwa
Country Director:	Ousmane Dione
Senior Global Practice Director:	Jose Luis Irigoyen
Practice Manager:	Almud Weitz
Task Team Leader(s):	Mitsuyoshi Asada, Phuong Thi Minh Tran, Van Anh Thi Tran

BASIC INFORMATION

Is this a regionally tagged project?	Country(ies)	Financing Instrument
No		Investment Project Financing

[ ] Situations of Urgent Need of Assistance or Capacity Constraints

[ ] Financial Intermediaries

[ ] Series of Projects

Approval Date	Closing Date	Environmental Assessment Category
22-Jun-2017	30-Jun-2023	B - Partial Assessment

Bank/IFC Collaboration
No

Proposed Development Objective(s)

To improve the connectivity, safety and climate-resilience of the National Highway 19.

Components

Component Name	Cost (US$, millions)
Road Improvements	145.00
Implementation Support	8.70

Organizations

Borrower : Socialist Republic of Vietnam

Implementing Agency : Projects Management Unit No. 2

PROJECT FINANCING DATA (US$, Millions)

[✓] Counterpart Funding	[ ] IBRD	[✓] IDA Credit [ ] Crisis Response Window [ ] Regional Projects Window	[ ] IDA Grant [ ] Crisis Response Window [ ] Regional Projects Window	[ ] Trust Funds	[ ] Parallel Financing

Total Project Cost:	Total Financing:	Financing Gap:
153.70	153.70	0.00
	Of Which Bank Financing (IBRD/IDA): 150.00	

Financing (in US$, millions)

Financing Source	Amount
Borrower	3.70
International Development Association (IDA)	150.00
Total	**153.70**

Expected Disbursements (in US$, millions)

Fiscal Year	2017	2018	2019	2020	2021	2022	2023
Annual	0.00	6.04	28.55	43.18	35.26	26.55	10.42
Cumulative	0.00	6.04	34.59	77.77	113.03	139.58	150.00

INSTITUTIONAL DATA

Practice Area (Lead)

Transport & ICT

Contributing Practice Areas

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF

Yes

b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment

Yes

c. Include Indicators in results framework to monitor outcomes from actions identified in (b)

Yes

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Low
2. Macroeconomic	Low
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Moderate
9. Other	Low
10. Overall	Moderate

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	✓	
Natural Habitats OP/BP 4.04	✓	
Forests OP/BP 4.36		✓
Pest Management OP 4.09		✓
Physical Cultural Resources OP/BP 4.11	✓	
Indigenous Peoples OP/BP 4.10	✓	
Involuntary Resettlement OP/BP 4.12	✓	
Safety of Dams OP/BP 4.37		✓
Projects on International Waterways OP/BP 7.50		✓
Projects in Disputed Areas OP/BP 7.60		✓

Legal Covenants

Sections and Description

Institutional Arrangements

Financing Agreement: Schedule 2, Section I.A.1

Recurrent, Continuous

Obligation of the Recipient, through MOT, to maintain the PMU2 with composition, powers, functions, staffing, facilities and other resources satisfactory to the Association.

Sections and Description

Annual Work Plans

Financing Agreement: Schedule 2, Section I.B.1

Annual, Continuous

Obligation of the Recipient, through MOT, to prepare and furnish to the Association not later than July 15 in each

year, beginning in 2017, a draft annual work plan; and finalize and furnish to the Association not later than December 31 in each year, beginning in 2017, a final annual work plan; and thereafter ensure the implementation of the Project during the following calendar year in accordance with the annual work plan agreed with the Association.

Sections and Description
Project Operations Manual
Financing Agreement: Schedule 2, Section I.B.2
Recurrent, Continuous
Obligation of the Recipient, through MOT, to carry out the Project in accordance with the Project Operation Manual; and not amend, waive or abrogate any provisions of the manual unless the Association agrees otherwise in writing.

Sections and Description
Safeguards
Financing Agreement: Schedule 2, Section I.D
Recurrent, Continuous
Obligation of the Recipient to ensure that the Project is carried out in accordance with the safeguards instruments (as defined in the Financing Agreement); and not amend, abrogate, or waive any of the safeguard instruments unless the Association agrees otherwise, and report on their status of implementation as part of the semiannual progress reports.

Sections and Description
Mid-Term Review
Financing Agreement: Schedule 2, Section II.A.2
Due Date: 30 months after the Effective Date
Obligation of the Recipient, through MOT, to carry out jointly with the Association a midterm review to assess the status of Project implementation, as measures against the performance indicators set forth in the Project Operations Manual.

Conditions

Type	Description
Effectiveness	Financing Agreement: Article IV, Section 4.01 The Project Operations Manual has been duly adopted by MOT.

PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
Mitsuyoshi Asada	Team Leader(ADM Responsible)		GTI02
Phuong Thi Minh Tran	Team Leader		GTI02
Van Anh Thi Tran	Team Leader		GTI02
Hoai Van Nguyen	Procurement Specialist(ADM Responsible)	Procurement	GGO08
Cung Van Pham	Financial Management Specialist	Financial Management	GGO20
Abigail C. Baca	Team Member	DRM	GSU08
Aristeidis I. Panou	Team Member	Legal	LEGES
Chi Kien Nguyen	Team Member	Transport	GTI02
Dzung Huy Nguyen	Team Member	DRM	GSU08
Hien Thi Thu Vu	Team Member	Coordination	EACVF
Hong Chen	Team Member	Operations	GTI10
Parthapriya Ghosh	Safeguards Specialist	Social	GSU06
Romain Pison	Team Member	Transport	GTI02
Tara Shirvani	Team Member	Climate Change	GTI08
Thao Phuong Tuong	Team Member	Coordination	EACVF
Thu Ha Le	Team Member	Legal	LEGES
Thu Thi Le Nguyen	Environmental Specialist	Environment	GEN2B

Extended Team

Name	Title	Organization	Location
J. R. Cook	Civil Engineer		Hanoi,
Ly Thi Dieu Vu	Consultant		Vietnam
Tam Giang Nguyen	Safeguards and Social Development Consultant	World Bank Office in Hanoi	Hanoi,Vietnam

VIETNAM
CENTRAL HIGHLANDS CONNECTIVITY IMPROVEMENT PROJECT

TABLE OF CONTENTS

I. STRATEGIC CONTEXT

A. Sectoral and Institutional Context

1. **Over the past decade, Vietnam has taken advantage of its rapid economic development to develop both its transport infrastructure and services, but road investment in the Central Highlands region is still low.** The Government has continued to increase public spending on transport, from about US$1 billion in 2002 to more than US$5 billion in 2012, and has introduced a number of measures to improve the competitiveness of road transport. The road network has been significantly transformed over the past 10 years from 2005 to 2014, with a total percentage of paved network that increased from 19 to 50 percent, and a total length that increased by 30 percent. While Vietnam has a complete road network with a relatively high road density of about 0.87km of road per sq.km, the full potential of such a network is indeed hindered by its poor condition due to low levels of maintenance and maintenance financing, as well as the lack of a sufficient core network of main roads. Currently the extent of expressways is at 740km, or 2.2km per 1000 km2, a significantly lower density than most neighboring countries. About 96 percent of national roads are paved, but only about 43 percent are in good condition; 37 percent are in average condition; and 20 percent are in poor to very poor condition. Provincial and local roads are in worse condition than national and urban roads. The overall network is only about 30% paved due to the significant share of district and commune roads that remain unpaved. When paved, the road pavements are often of poor quality. The average spending on road maintenance in the Central Highlands region is one of the lowest in the country in absolute value, with about VND 270 billion spent in 2011 at the Provincial level, far behind the VND 2,800 billion spent in the Red River Delta (MoT/DRVN data). Such a level of spending cannot stem further deterioration of the road asset and hinders the life-cycle performance of the roads. Road investment spending in the Central Highlands region is also one of the lowest on average in the period 2011-2015, with about VND 6,055 billion spent in 2011, to be compared with the VND 12,552 billion spent in the Red River Delta in the same year (MoT/DRVN data).

2. **Recent figures from the General Statistics Office of Vietnam report an exponential increase in trade after 2007, with trade between Vietnam and Cambodia reaching US$2.3 billion in 2010 and US$3.03 billion in 2015.** Border gate trade between Vietnam, China, Laos and Cambodia is estimated to have reached US$30 billion in 2016. Trade between Cambodia and Vietnam is supported by the Regional corridor R9 from the Association of Southeast Asian Nations (ASEAN) Highway Network, which includes the National Highway No. 19 (NH19) on the Vietnamese side. This project will not only improve the connectivity of the coastal regions to the poorer central highlands regions, but also help the Cambodian economy by linking it to the thriving economy of Vietnam. The increase of regional trade and cross-border trade is hindered by the quality of the road, low density of the core road network, and high cost of road transport. Average road transport costs, represented by trip time, are the highest in the region after Indonesia, and are indeed holding back Vietnam's competitiveness and trade efficiency. Meanwhile, there is a serious backlog of unmet demand, as inter-city two-lane roads such as NH19 are insufficient in meeting the growing demand for regional and inter-city mobility. The core national road network, representing the main corridors of the country, is not sufficient to support growth and trade development, and needs further investment. This shows that investment needs in the road sub-sector are still substantial and would benefit from continued financing, especially for inter-modal road links between major transport hubs, such as the proposed project.

3. **Road fatalities account for about 96 percent of transport fatalities in Vietnam, and while death rates have been reduced by more than 30 percent between 2004 and 2012, road safety remains a challenge.** According to the Asia Development Bank's estimates, the economic loss and damage caused by annual road accidents in Vietnam is about US$880 million, making up 2.45 percent of GDP (in 2003), which is higher than the average level of ASEAN countries (2.1 percent of GDP). According to the Master Plan on road traffic safety in Vietnam, the loss and damage caused by traffic accidents on roads in 2007 was estimated to be 2.89 percent of GDP, equivalent to VND 32,600 billion and keeps increasing. An increase in motorcycle use has substantial consequences in terms of the increase in accidents; additional vehicles within the same area, increased capacity of vehicles to accelerate, as well as the limited protection offered to users, are all elements that make this transport mode more dangerous than others. In 2004, Vietnam had a death rate from road accidents of 16 per 100,000 inhabitants, but reduced this to 10.2 in 2012 (MoT/DRVN data), an encouraging reduction (World Bank data). Motorization rates increased by 320 percent from 2002 to 2013 (compound annual growth rate (CAGR) of 11 percent), while road length network increased by 30 percent over the same period (CAGR of 4 percent). This motorization rate, coupled with weak regulations and capacity to tackle the challenge of road safety, is leading to further levels of congestion, faster degradation of assets, as well as lower levels of safety for road users.

4. **The traffic characteristics on NH19 are quite mixed, with large numbers of heavy trucks and high speed vehicles, plus significant numbers of motorcycles, non-motorized traffic and local pedestrians. The lack of road capacity and safe conditions not only constrains NH19's connectivity role but also exposes vehicles using the road to a high risk of traffic accidents.** During the implementation of the Vietnam Road Safety Project (VRSP), financed by IDA and completed in 2012, the International Road Assessment Programme (iRAP) consultant assessed most of NH19 as Star 1 and 2 ratings, which revealed that NH19 was one of the critically dangerous roads, and strongly suggested NH19 be a next priority road safety project. NH19 is on the priority list of the National Traffic Safety Strategy up to 2020 with vision to 2030.

5. **The current climatic environment, with its variability and extreme weather events, makes Vietnam infrastructure highly susceptible to climate impacts, which are likely to increase over time**. The interaction of infrastructure assets with terrain and climate results in a range of potential vulnerabilities depending on the nature of both the infrastructure assets and the climate threat. The NH19 corridor comprises a range of geomorphological and climatic zones; from near coastal through mountainous to central plateau, and the principal concerns as to its climate resilience are likely to be centred around: (i) Erosion and instability of earthworks in steep terrain, (ii) Flooding of sections of the highway where the vertical alignment is low, and (iii) Erosion to bridge abutments and piers. The combination of this with significant changes in land-use, the variable geotechnical environment and the impact of climate have made these mountainous provinces areas of significant landslide activity. According to statistics published by the Vietnam Institute of Geosciences and Mineral Resources (under the Ministry of Natural Resources and Environment), there are over 10,250 points of landslide risk in the 10 Northern Mountain Provinces, of which about 2,100 have been classified as large to very large. Every year during the rainy season significant soil or rock failures affect these highways, sometimes with a soil-rock mass up to thousands of cubic meters. Such landslide risks and other climate and disaster risks, including flooding, do not uniquely apply to roads, but all modes of transport.

6. **The proposed project aligns with the Government of Vietnam's objectives, policies and strategies**, as confirmed by the Prime Minister Decision No. 07/2011 / QD-TTg approving the plan of transport development in the key economic zone of the Central Vietnam to 2020 and orientations to 2030 for national highways, as well as the Minister of Transportation Decision No. 3936 / QD-BGTVT on December 3rd, 2014 approving orientations and

transport infrastructure development in the Central Highlands in 2015, and to 2020. The proposed project also aligns in vision and timing with the one stop one window approach for the Le Thanh/Ou Yadav border gate at the Vietnam-Cambodia border, inaugurated in December 2015 as a way to reinforce trade and cooperation between the two countries, and to create favorable conditions in the transport links between Vietnam, Cambodia and other member states of ASEAN.

B. Higher Level Objectives to which the Project Contributes

7. **The proposed project is closely aligned with the World Bank Group's twin goals of ending extreme poverty and boosting shared prosperity, as well as the overarching theme of sustainability, given the evidence of the strong negative relationship between extreme poverty and accessibility/mobility as an auxiliary support to trade and competitiveness.** Research carried out in Vietnam and neighboring countries since 2000 has shown that investments in roads has had significant impacts on poverty alleviation, social participation, and health services (Van de Walle & Cratty 2002, Banwatt 2014). It has been estimated that an investment of 1% of GDP per year in transport benefitting the rural and lagging areas has helped reduce the poverty rate by 1.5% per year, on average. As such, the proposed project will further leverage benefits from the current Government-financed program to rehabilitate in parallel the feeder roads that link the agricultural zones to the main NH19 corridor, therefore reducing further transport costs along the corridor.

8. **This operation is also consistent with the World Bank Group's Vietnam Country Partnership Framework (CPF) FY18-22 (Report 111771-VN).** In particular, in its recommendations and focus areas to: (a) enable inclusive growth, and in particular its sub-focus area on "[…] trade competitiveness, multi-modal transport connectivity, and logistics services", and (b) enable environmental sustainability and resilience, and in particular its sub-focus areas on "[…] climate resilience, strengthen natural resource management and improve water security", and "[…] strengthen disaster risk management and preparedness". The principal rationale for Bank assistance is that the proposed project directly contributes to the poverty reduction and economic growth objectives set out in the Vietnam Systematic Country Diagnostic (SCD) and is fully aligned with the Government's development strategies, notably the SEDS and the 2016-2020 SEDP. The project is also aligned with Vietnam 2035, in particular in its focus areas: (a) Chart an environmentally sustainable development path and enhance climate resilience, and (b) Promote equality and inclusion of marginalized groups, to develop a harmonious middle-class society.

9. The proposed project supports the Intended Nationally Determined Contribution (INDC) plan of Vietnam to the UNFCCC. In particular the project directly responds to the INDC's climate change adaptation priority actions outlined for 2021-2030, which include among others to: 1) implement disaster prevention plans and measures, protect peoples' lives, and ensure national defense and security, 2) Consolidate and develop prioritized and urgent disaster prevention projects; strengthen the capacity of search and rescue forces, 3) develop infrastructure and make plans for residential areas; relocate and resettle households and communities from areas affected frequently by storm surges, floods, riverbank and shoreline erosion, or areas at risk of flash floods and landslides and 4) allocate and mobilize resources for community-based climate change adaptation and disaster management; raise awareness and build capacities for climate change adaptation and disaster risk management. Moreover, the project addresses the government's commitment to the "V20" or "Vulnerable 20" group of top nations globally which are most affected by the catastrophes rooted from climate change.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

To improve the connectivity, safety and climate-resilience of the National Highway 19[1].

B. Project Beneficiaries

10. **The Project's Key Beneficiaries will be people living in the Binh Dinh and Gia Lai Provinces, both in rural areas and the periphery of the main cities that NH19 corridor is crossing, representing approximately 1.5 million people, and 6,200 light motor vehicles per day**. These will include farmers, livestock producers, small business owners, freight and passenger transport companies. Road users benefitting from the improved road corridor will be both from a local traffic dimension and a transit traffic dimension, including cross-border traffic with Cambodia. Road user benefits will accrue thanks to increased access to social services and markets, as well as the decongestion in roads that provide improved access to the city of Pleiku and around, as well as the Anh Khe Pass which would consequently reduce travel costs and times, together with the accompanying road safety outcomes.

11. **Additional beneficiaries include the commuters residing outside of the Central Highlands and shippers of freight, representing approximately 1,400 trucks per day.** Commuters who use daily several sections of the NH19 corridor to access jobs and services will benefit from the economic agglomeration opportunities generated by the project through the reduced congestion and consequent reduced travel/commuting times. Moreover, important benefits will be generated for freight movement at the national level contributing towards reduction of transport and logistics costs through travel time and vehicle operating costs reductions, and ultimately enhancing the agricultural export potential, as well as imports from Cambodia.

III. PROJECT DESCRIPTION

A. Project Components

12. The proposed Project will be financed by an IDA credit of US$150 million[2] and counterparts' funds of US$3.7 million to finance the following components, and will build on the lessons and results from previous World Bank-financed transport projects while expanding into new areas of engagement to address road safety and climate change. The Project will finance the following components:

13. **Component 1 – Road Improvements (estimated cost of US$145m including contingencies)**

- This component will support the physical improvement of three sections of NH19 including pavement rehabilitation, widening of the road with paved shoulders, widening of lanes and features for the safe sharing of the road by users, including through the addition of dedicated motorcycle

[1] National Highway 19 is from Quy Nhon Port to the Le Tanh border gate, which is located at the border with Cambodia.
[2] Including US$9.5 million on IDA blend terms and US$140.5 million on IDA hard terms.

lanes, and reinforcement of slopes, to improve road connectivity, safety and to ensure sustainability of road assets.

- The project will also finance the acquisition of land as necessary along the right of way and for the bypasses and compensation related to land and asset loss and involuntary resettlement, for a total estimated amount of US$17 million.

- The total length of these 3 sections is 153km (out of a total length of 247km of NH19), composed on 127km of inter-urban roads and 26km of urban roads (bypasses), to complement the two Build-Operate-Transfer (BOT) sections of 75km implemented by the Government. The MoT and the two Provinces of Binh Dinh and Gia Lai are joining efforts in addressing connectivity and road safety issues on NH19 by promoting two BOT improvement projects in parallel with NH19 during the past few years. The two BOT sections are now in service and collecting tolls. These BOT sections have also established a reasonable precedence for cross-section designs to accommodate the separation of fast and slow speed vehicles and motorcycles in urban, semi-urban and rural areas. By the time of the completion of the proposed NH19 sections, all the other sections totaling 247km of roads will be completed, enabling better connectivity along the entire corridor.

- The proposed component will help improve the remaining sections by completing the establishment of NH19 as a Road Safety Corridor that meets international connectivity requirements with traffic safety standards including the Vietnam's Traffic Safety Strategy requirements of a minimum of iRAP[3] 3-star standard, through road infrastructure safety features.

- As the proposed 153km section for financing contains sections that are highly prone to landslides and potential natural disasters, a targeted intervention on these sections will contribute to the overall connectivity, resilience and safety along the entire corridor.

14. **Component 2 – Implementation Support (estimated cost of US$8.7m including contingencies)** through the following interventions:

- The provision of technical support for Project implementation, including overall detailed engineering design, construction supervision, financial audits, environmental and social management, and monitoring and evaluation.

15. During implementation, the Bank will provide enhanced implementation support and technical assistance to both components of the project through Bank-executed activities funded from the Global Facility for Disaster Reduction and Recovery, and the Global Road Safety Program, as described below:

a) *Bank- executed activities related to road safety supported from the Global Road Safety Program (GRSF): (i)* Conduct a Road Safety Audit (RSA) on NH19 in order to inform MOT's proactive management of safety improvements of NH19 by identifying risks associated with road safety deficiencies, (ii) Assess impacts of

[3] iRAP is the *International Road Assessment Programme* and provides a simple and objective measure of the level of safety provided by a road's design through star rating. Star ratings involve an inspection of road infrastructure elements that are known to have an impact on the likelihood of a crash and its severity. Between 1 and 5-stars are awarded depending on the level of safety which is 'built-in' to the road, 5 stars being the safest.

motorcycle lanes in Vietnam to inform the update of the draft manual for motorcycle lane design and specifications with incorporation of international best practices, and (iii) Strengthen the institutional capacity of MOT and the Project Management Unit No. 2 (PMU2) for managing road safety and physical works to improve road safety measures of the road network (estimated cost 0.15 million).

b) *Bank-executed activities related to climate resilient activities with support from the Global Facility for Disaster Reduction and Recovery (GDFRR)*: (i) Support a landslide risk assessment of the project area that could be used by MOT to inform the identification of suitable climate resilience measures and design options to reduce the impact of landslides on NH19, and (ii) Provide cross-over recommendations on the limits and the strengths of the current technical standards, as well as on possible improvements to incorporate climate change adaptation and disaster risk management considerations in the design of road infrastructure (estimated cost 0.15 million).

B. Project Cost and Financing

Project Components	Project cost (US$)	IDA Financing (US$)	Counterpart Funding (US$)
Component 1:	145.00	141.30	3.70
Component 2:	8.70	8.70	
Total Costs	153.70	150.00	3.70
Front End Fees			
Total Financing Required	153.70	150	

C. Lessons Learned and Reflected in the Project Design

16. **One of the key lessons from the World Bank Group knowledge in transport is that improvement of road safety can only be achieved with strong targeted intervention.** While road improvements will bring a reduction in vehicle operating costs and smooth and organized traffic flows, these do not result in road safety improvement by themselves, as improved road conditions very often induce increases in speed that lead to an actual increase in traffic accidents on the improved road. To achieve road safety improvements, i.e. reduction of traffic accidents, projects should include strong interventions, enforcement, and high standards of signage, with evidenced empirical safety measures on the road. The separation of motorcycle traffic in countries with high volumes of motorcycle traffic has a proven record of effectively reducing motorcycle-related accidents in many countries such as China and Pakistan, and is expected to lead to road safety improvement in Vietnam.

17. **Road investment and maintenance, especially in areas prone to landslide and climate change related disasters, require adequate identification, planning, and costing procedures in order to obtain the highest value for money over road life cycles.** Lessons from all previous road transport projects in Vietnam and China show that sound analysis and feasibility studies at appraisal are required to put in place adequate procedures

for: a) the planning of the investments and subsequent maintenance activities, and b) the paving and engineering choices adapted to the local economics of the investment and the level of engineering necessary for sustained operations of the infrastructure. In Vietnam, the choice of construction design and paving technique based on resilience and local climatic conditions may need to be fine-tuned locally with regards to transport economics and detailed spatial development considerations so that the value for money is maximized. A detailed road costing exercise that takes into account, among other factors, population density, localization of economic and social centers, locations of hazard areas, as well as construction material cost and availability, may help optimize the road design choices over the road life cycles.

18. **Analysis of past projects in Vietnam implemented by the World Bank also shows that successful implementation of projects is the outcome of strong institutional capacity particularly in infrastructure projects.** There is a strong correlation between the success of a project and the capacity of the implementing agency, and enhanced capacity of the implementing agency is a perquisite for a successful project. Therefore the eventual evidence of institutional enhancement should be measured by the successful implementation of the project.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

19. **The Ministry of Transport (MOT) is the owner of the project and will have the overall responsibility of overseeing the implementation of the project.** MoT will report to the GOV, coordinate the activities of central and provincial government agencies and fulfill IDA requirements. MOT will also approve the overall feasibility/construction investment report and the overall procurement plan; provide policy/strategic guidance and instruction to the Project Management Unit No. 2 (PMU2). The PMU2 is MoT's authorized executing agency, and will have the overall responsibility for approving survey methodologies and plans, detailed engineering designs and cost estimates, bidding documents and requests for proposals, bid and proposal evaluation reports, bidding results and signing contracts in accordance with procurement requirements, as well as monitoring the quality of works and reviewing periodic reports such as the audits.

20. **MoT has assigned PMU2 to be responsible for the project implementation at the national level.** PMU2 will act as the fiduciary agent on behalf of MoT in procurement and financial management (FM) for these components. PMU2 will be in charge of the procurement of goods, works and services related to all project components and supervision including contracting and payments. PMU2 will also be responsible for coordination, quality assurance, training, monitoring and evaluation, day-to-day supervision of project activities. PMU2 is also responsible for implementation of the traffic safety activities in close collaboration with National Traffic Safety Committee (NTSC) and Provincial Traffic Safety Committees (PTSCs) of Binh Dinh and Gia Lai Provinces. PMU2 is familiar with the Bank's fiduciary and safeguard requirements as it has successfully completed the Bank-financed Vietnam Traffic Safety Project (VRSP) in 2012. In addition, it also has rich experiences in managing various projects financed by GoV's budget and ODA donors.

21. At the Provincial level, Provincial People's Committees (PPCs) of Binh Dinh and Gia Lai Provinces will be responsible for overall implementation of the resettlement and compensation of their related project road sections within their administrative jurisdiction.

B. Results Monitoring and Evaluation

22. The Monitoring and Evaluation (M&E) system, including a Results Framework (RF), is designed to assess whether the project is being implemented in line with the proposed objectives and its achievement of expected results. Measurement of the project's progress in the carrying out of the activities within the identified components that feed the M&E system will be documented in project Progress Reports.

23. **The responsibility for the preparation of these reports falls under the PMU2**. In order to collect all relevant information, and data, this unit will coordinate with departments within MoT. The reports will be prepared on a semi-annual basis and submitted to IDA for review. In addition to reporting on the project results indicators and intermediate outcome indicators, the reports will include information on disbursements, compliances with financial management, procurement, social and environmental policies and guidelines, and an updated annual plan of works and activities.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

24. **The overall risk to the Project is rated Moderate. The key risks are mainly imposed by fiduciary prospects, technical, environmental and social, and institutional risks, as detailed hereafter.**

25. **The Fiduciary Risk is rated Substantial** due to the risks related to the financing of land acquisition and compensation for resettlements and loss of assets, including risks that (i) the payments are not made not in accordance with the approved RAPs, (ii) cash will be misappropriated during the payments, (iii) counterpart budgets are not allocated sufficiently for project implementation; the procurement risks identified in section D of the Appraisal Summary, including the Borrower's unfamiliarity to the Bank's New Procurement Framework (NPF), (iv) inconsistencies between local legislation and the Regulations particularly in relation to the Construction Law, (v) delays due to factors beyond the control of procurement such as resettlement, and unclear decisions within the government on on-grant/on-lending arrangements between Ministry of Finance and the project executing Ministry (MoT). There are three main mitigation actions identified: (i) the update of the Financial Management Manual (FMM) to reflect recent developments in the ODA project management regulations and the updated Bank guidance, and train the project staff on the updated version of the FMM and the designed procedures and controls relating to the payment of compensation for resettlement, (ii) the allocation of sufficient annual budget for project implementation; (iii) an independent thematic audit on compensation will be conducted to ensure the compliance of the compensation activities, and (iv) the support of the World Bank towards the use of the NPF, as well as procurement specific recommendations detailed under section D of the Appraisal Summary. The first was completed by Negotiations and the second and third actions will be carried out during the project life.

26. **The Technical Design risk is Moderate** as it relates to the complexity of the implementation of road safety and climate resilient infrastructure features in a context that mixes inter-urban roads and urban roads with a broad range of road users. The likelihood of this risk to achieving result is moderate, and will be managed by sound feasibility studies, which will assess the best technical features for each segment of the NH19. Segregated motorcycles lanes, for instance, may not be appropriate on all segments of the corridors; additional lanes/ramps

for trucks may be only necessary in certain zones. The detailed review of such studies will help to limit the technical risk and ensure value-for-money of the road investment. In addition, technical audits will be conducted during the program implementation period in coordination with the Client so that it will ensure technical compliance.

27. **The Environmental and Social Risk is Moderate** as the project is expected to bring about significant positive socio-environmental impacts during operation phase and adequate mitigation measures and environmental monitoring programs have been developed and are presented in the Environment and Social Management Plan (ESMP). Vietnam is however one of the world's most disaster prone countries and specific activities related to landslide and climate resilience will be conducted. Every year extreme weather and climate change impacts in the form of floods and droughts lead to serious damages to the infrastructure, including roads, and impose high economic costs on Vietnam. The World Bank is working closely with the Government to help reduce the high levels of vulnerability, promote mainstreaming of disaster risk reduction in relevant sectors and to improve local capacity for disaster risk reduction and management. At the Project level, this will be mitigated through careful understanding of potential climate and disaster impacts on the Project road sections, incorporation of climate resilient designs, and strengthening institutional capacity of the transport sector to address climate adaptation in the road sector. This will partially be informed by the climate scenarios and landslide study for the road network previously conducted by MoT with support from JICA. The social risks are limited as the two bypasses avoid urban populated areas, and an EMDP and two RAPs have been prepared accordingly. The project does not carry any risk of significant degradation of critical natural habitat, forests or physical cultural resources in any tangible and/or irreversible ways. Measures to mitigate these potentials are specified in the project's ESIA and ESMP. Land acquisition is limited to 191.7 ha of private agriculture land and 5.6 ha of residential land for both (i) widening of existing alignment and (ii) two proposed bypasses.

28. **The Institutional Capacity risk is Moderate** as it consists in the capacity of the implementing agencies to design, implement and monitor the project in a satisfactory manner, given the road design and use. The likelihood of this risk to achieving result is moderate, and will be managed by a close and reinforced implementation support from the Bank, including through the use of a Performance Assessment Tool (PAT) to assess and visualize the progress of the works on each section of the road.

VI. APPRAISAL SUMMARY

A. Economic Analysis

29. **An economic evaluation following conventional economic appraisal methodology for road improvement has been conducted for three technical options for bypasses. The analysis gives an Economic Internal Rate of Return (EIRR) of 15 percent for the best option (option 2 as detailed here below) and the sensitivity analysis confirms the robustness of the project's return, with a worst case of an 11 percent EIRR if the costs increase by 20 percent and the benefits decrease by 20 percent**. Three technical options have been analysis as follows:

		Option 1	OPTION 2	Option 3
Base Case				
NPV (10%)	US$	$55,045,296	$64,773,916	$30,767,279
IRR	%	14.50%	15.72%	13.67%
Worst Case (cost to increase by 20% AND benefit decrease by 20%)				

NPV (10%)	US$	$150,669	$11,463,357	($7,843,690)
IRR	%	10.01%	10.97%	9.09%

30. **The three options that have been analyzed are as follows**: (i) Option 1: Construction of 13.7km section to bypass An Khe Town and 21km section to bypass Pleiku City and Dak Doa Town, (ii) Option 2: Construction of 13.7km section to bypass An Khe Town and 13km section to bypass Pleiku, and (ii) Option 3: No bypass. The five measure points for the traffic counts are defined vis a vis chainage of NH19 as follows: (1) average of counts at km20 and km 49+550, (2) average of counts at km76 and km90+900, (3) counts at km124+720, (4) average counts at km142+040, km135, and km157, and (5) average counts at km180 and km197+300. The analysis quantifies five typical benefits of a road improvement scheme as follows: (i) Vehicle operating cost savings as result of better road or/and shorter road, (ii) Value of time savings both passengers and freight as result of better road or/and shorter road, (iii) Accident savings as result of safer road, (iv) GHG savings as result of better road or/and shorter road, (v) Emergency repair savings as result of better and more resilient road. Benefits are quantified basing on available data using combined standard transport modelling and a separate traffic assignment model. Traffic, as well as the three main contributions to benefits are detailed hereafter:

Traffic (Vehicles per Day, 2016)

Road sections	Motorcycle	Car	Van/Bus	Truck	PCU
Measure Point 1	8,777	912	719	1,987	6,852
Measure Point 2	6,841	696	659	1,239	4,779
Measure Point 3	2,458	722	606	1,259	4,835
Measure Point 4	9,256	1,231	579	1,441	5,504
Measure Point 5	2,969	582	273	776	2,851

VOC Savings

Million US$

Option	2022	2025	2030	2035	2040	2042
Option 1	13.4	15.5	19.7	24.1	29.1	31.4
Option 2	13.3	15.4	19.7	24.1	28.9	31.2
Option 3	6.9	8.0	10.1	12.4	14.9	16.1

VOT Savings

Million US$

Option	2022	2025	2030	2035	2040	2042
Option 1	1.15	1.33	1.70	2.09	2.51	2.71
Option 2	1.15	1.34	1.70	2.09	2.50	2.70
Option 3	0.83	0.96	1.23	1.51	1.81	1.95

Accident Savings

Million US$

Option	2022	2025	2030	2035	2040	2042
Option 1	4.4	5.8	9.4	14.6	22.7	27.1
Option 2	4.4	5.8	9.4	14.6	22.7	27.1

Option 3	4.4	5.8	9.4	14.6	22.7	27.1

31. **The analysis compares annual discounted costs and benefits of the project to society as a whole over the project life-time in "with" and "without" cases using the Net Present Value (NPV) and the Internal Rate of Return (IRR) indicators to justify the economic viability. The project will generate economic benefits by reducing vehicle operating costs by US$13.3 million by 2022, and US$31.2 million by 2042**. Annual project costs and benefits are evaluated for a 25 year period, allowing for a 5 year construction period starting in 2018, followed by a benefit period of about 20 years. A discount rate of 10 percent is employed to convert annual cost/benefit streams into present value in the year 2017 according to the most recent Guidelines of the World Bank in 2016. Movement along the Southern Central corridor from Quy Nhon to the Border gate of Cambodia will be improved by upgrading the existing National Highway 19 (NH19) and constructing new road sections to bypass cities the corridor passes through. While there is a single engineering design proposed for the upgrade of the existing NH19, there were 3 options studied for bypasses, which resulted in differences not only in resettlement, civil work costs but also traffic reassignment on influenced road network. The 3 options have been compared and the most economically sound one selected (with an EIRR of 15 percent as indicated above), with the construction of 13.7km section to bypass An Khe Town and 13km section to bypass Pleiku.

32. **Given the public and the private natures of the interlinked investments that consist in the proposed project and the existing BOT sections, the economic analysis for the proposed project analyzed the mutual economic impacts between the project and the BOT sections**. Those impacts include: (1) the estimated additional toll revenues to the BOT operators due to the "induced" traffic increase attributed to the proposed project, and (2) the influence of the existing BOT to the proposed project.

33. **The analysis clarified that the proposed project will not bring substantial additional induced benefits to the BOT sections.** This result is due mostly to the fact that there is no network effect on the traffic, with no competing primary road segments along NH19, as it constitutes the only key corridor in the area running West to East through the BOT sections. Given the traffic forecast, it is estimated that the revenues of the two BOT sections will increase at most by 7.5 percent in the first year (year 2022) and will then slowly decrease down to 2.3 percent (year 2040), in with project case compare to without project case.

34. **The influence from the BOT sections to the traffic volume on the proposed project is solely attributed to the "toll impedance" to the traffic on the proposed project section of NH19.** Tolls of any kind increase the costs of using the travel route. The local traffic might favor non-tolled local road options around the BOT sections, and may therefore potentially divert from the continued sections of the proposed project. However, the behavior of long-distance journeys, which are the majority users, is quite different and it is unlikely that these journeys are diverted from the BOT sections by sacrificing the significant time saving benefit, and therefore, it is unlikely that they are diverted from the proposed project sections.

35. **The GHG evaluation concludes that without the project 4.936 million tons of CO2 emissions are expected over the evaluation period, while with the project the CO2 emissions increase marginally to 4.954 million tons (increase of 0.018 million tons of CO2 or 0.35 percent).** The analysis was done with the estimation over the evaluation period the total CO2 emissions with and without the project on the project road that are a function of vehicle speeds and vehicle utilization. Without the project 4.936 million tons of CO2 emissions are expected over the evaluation period, while with the project the CO2 emissions increase marginally to 4.954 million tons (increase of 0.018 million tons of CO2 or 0.35 percent). The increase is marginal because the vehicle utilization over the evaluation period with the project remains about the same as without the project because the added

generated and induced traffic with the project is compensated by the reduction in the length of the project road. The marginal increase in CO2 emissions with the project has negligible impact on the economic justification of the project.

B. Technical

36. **Based on experience in the execution of past road projects in Vietnam, the technical aspects have been solidified with a mix of good design, best practice, and adaptation of solutions to the country context**. The main technical choices consist in: (i) the choice of Category III with 11m-wide paved surface for most of the sections with the highest level of traffic, (ii) the improvement of the remaining Category IV sections of the road and designated bridges to meet upgraded standards, (iii) the full rehabilitation of bridges when considered not meeting the width and load capacity necessary to accommodate the current and future traffic, (iv) the adaptation with the incorporation of differentiated design approaches to include more hazard resilient measures in more climate vulnerable roads; and (vi) the integration of road safety measures in the design, with special attention to motorbikes.

37. **The proposed upgrade will include widening of the road to provide dedicated motorcycle lanes, pavement rehabilitation, improvement of intersections, and the furnishing of road safety facilities.** Designated existing bridges along the road will also be widened and strengthened under the proposed Project. As NH19 is impacted by a range of climatic zones, from near coastal through mountainous to a possible rain shadow at the Vietnam/Cambodia border area, the upgrade will also improve the road's resilience to climate threats and impacts by investing in prioritized resilience works along the road. Summaries of the proposed upgrade for the road sections follow:

a) *From Km 50 to Km 90*, the existing road will be widened to provide 11m wide carriageway consisting of one motor lane and one dedicated motorcycle lane at each side except for section Km 59 – Km 67 on An Khe Pass where the carriageway will be minimum 8m wide, and sections in residential areas where the carriageway will be 13m wide. This section includes the An Khe Bypass where a new 13.7km-long road section with the carriageway of 11m will be constructed.

b) *From Km 131 to Km 180*, the width of the existing carriageway will be increased from 7 to 11m in non-residential areas and to 13m in residential areas with an exception of sections Km 131+300 – Km135+00 and Km 155 – Km160, where 14m and 16m wide carriageway will be provided respectively. This section will consist of a new road section of 13km length (from around Km 157 to Km177 of the existing road) to bypass the Pleiku City. No work will be carried out for the section Km 160 – Km 180 where the existing road has met the required standards.

c) *From Km 180 to Km 243*, carriageways of 11m and 13m widths will be provided in non-residential and residential sections, respectively, as a result of the road widening of the proposed Project. At the end of the road, section Km 241 – Km 243 has been invested to meet urban road standards, and thus will not be financed under the proposed Project.

38. **The project includes existing bridges to be improved through widening and strengthening in order to meet the required standards.** Studies of application of various alternatives of I-shape, T-shape and Super T pre-stressed concrete girder for superstructure have been conducted and selected for each of the proposed bridges. In addition, new bridges will be constructed along the two proposed bypasses.

39. **There are cost implications with respect to the climate strengthening measures to counter potential climate change related impacts over and above standard Vietnam design practice for national highways.** Experience clearly indicates that the proactive climate strengthening of vulnerable highway sections results in significant savings in whole-life repair and maintenance costs as well as reducing risks to access and to life. The sections of the proposed NH19 project most likely to require these additional works are: (i) An Khe Pass section from km 59 to km 67 and particularly an approximately 6.5km length where several areas of current instability indicate a significantly vulnerable area, (ii) Rolling terrain between Pleiku and the Vietnam Border where the several short sections of the current alignment are low and vulnerable to flooding, and (ii) key bridges.

40. **The An Khe Pass as well as short lengths of alignment beyond Pleiku requires specific in relation to slope protection, bridge protection and drainage**. A 6.5km section of the An Khe Pass alignment runs through steep terrain mainly on sidelong ground that is currently showing signs of instability and is consequently assessed as being vulnerable to climate impact. In addition to requiring standard geotechnical measures to stabilize existing failures there needs to additional measures in terms of drainage, and slope protection to pro-actively counter the consequence of climate threats. These measures should be focused on identified key spots such as, for example, areas of cut-to-fill and lengths of horizontal realignment requiring significant fresh cuts. The alignment in the rolling terrain beyond Pleiku currently contains short lengths of low lying carriageway in between higher ground that could be susceptible to flood. Raising the alignment 0.6m above normal flood is an option to consider as a resilience option in these cases.

C. Financial Management

41. **The assessment has concluded that the project meets the minimum Bank financial management requirements, as stipulated in OP/BP 10.00.**

42. **The Project Financial Statements will be audited by independent auditors acceptable to the Bank in accordance with TORs acceptable to the Bank.** The cost of the audit will be funded by the Project. The Audited Financial Statement will be sent to the Bank within six months after the year end. In addition, the semi-annual Interim Financial Reports (IFRs) will be prepared by the PMU2 and sent to the Bank within 45 days after the end of reporting period.

43. **Internal Audit (IA) will be carried out by the respective IA functions of the MOT.** The specific roles and responsibilities of the IA will be described in the Project FMM.

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44. **Two Segregated Designated Accounts (DA) at a commercial bank acceptable to the World Bank will be maintained by the PMU2.** The first DA will be used solely for payments for compensation of resettlement and the second DA will be used for all other eligible expenditure. The DAs will be denominated in United States Dollars (USD). The ceiling of DAs will be variable, based on a forecast of one quarter's expenditures to be financed out of the DA funds. Supporting documentation required for documenting eligible expenditures paid from the DA will be the Statement of Expenditure and supplemental statements as described in the disbursement letter. The frequency for documenting expenditures paid from the DA will be quarterly or more frequent if required. The Minimum Application Size for Reimbursements, Special Commitments and Direct Payments will be US$100,000 equivalent. Counterpart funds of US$3.7 million will be used to finance expenditures such as salaries of civil

servants seconded to work on this project, training activities, operating costs for managing the projects and monitoring/evaluating project activities.

45. **The Project will have a Disbursement Deadline Date[4] four months after the Closing Date.** This "Grace Period" is granted in order to permit the orderly project completion and closure of the Credit account via the submission of applications and supporting documentation for expenditures incurred on or before the Closing Date. Expenditures incurred between the Closing Date and the Disbursement Deadline Date are not eligible for disbursement. Eligible expenditure for IDA financing means the reasonable cost of goods, works, non-consulting services, consulting services and resettlement compensation to be financed by IDA at 100 percent, inclusive of taxes.

Category	Amount of the Credit Allocated (US$)			Percentage of Expenditures to be Financed (inclusive of Taxes)
	IDA Blend Terms	IDA Hard Terms	Total	
(1) Goods, works, non-consulting services, and consulting services under the Project	9,500,000	123,500,000	133,000,000	100%
(2) Resettlement Compensation	0	17,000,000	17,000,000	100%
TOTAL AMOUNT	**9,500,000**	**140,500,000**	**150,000,000**	-

D. Procurement

46. **Applicable Procurement Procedures**. For contracts financed in whole or in part by the IDA Credit, procurement would be carried out in accordance with the World Bank's "Procurement Regulations for IPF Borrowers: Procurement in Investment Project Financing" (hereinafter referred to as "Procurement Regulations") dated July 1, 2016; and the provisions stipulated in the Financing Agreement. Under the proposed project World Bank planning and tracking system, Systematic Tracking of Exchanges in Procurement (STEP), will be used to prepare, clear and update Procurement Plans and conduct all procurement transactions for the Project. Accordingly, all the procurement activities under the proposed project will be entered into, tracked and monitored online through the system.

47. **Procurement Capacity and Risk Assessment.** Procurement Capacity and Risk Assessment (PCRA) for PMU2 was conducted during various project preparation missions. It found that PMU2 has certain experience in conducting procurement in accordance with the Vietnam public procurement law and regulations and in implementing a number of ODA funded projects including projects financed by the World Bank, and JICA. PMU2 has well established organizational structure and relatively adequate number of staff to implement the project. However, it also revealed a number of risks that could adversely influence the project implementation if not mitigated, including following key risks: (i) despite having some experience with Bank projects, there are still some gaps concerning knowledge and experience of carrying out procurement activities in accordance with the Bank's Procurement Regulations, rules and procedures particularly with respect to the new possibilities afforded by the Procurement Framework; (ii) Lack of practical guidance on the steps of procurement process, in particular,

[4] Final date on which World Bank will accept applications for withdrawal from the Recipient or documentation on the use of Credit proceeds already advanced by the World Bank.

the PMU2 has not had a manual to guide its staff carrying out the Bank procurement procedures step by step; (iii) Potential preference to use national procurement rules and procedures when there is difference with the Bank's Procurement Regulations; (iv) Potential fraud/corruption and collusive practices; and (v) Inadequate contract management capacity causing implementation delays and/or leading to contractual disputes. In order to mitigate the above identified risks and strengthen the procurement capacity of PMU2, the following measures have been established and agreed with PMU2 to be implemented during project implementation: (i) Providing procurement training for PMU2's staff, including initial training during project preparation and in-depth procurement trainings during project implementation; (ii) Preparing and adopting a project operation manual (POM), including a detailed chapter on procurement; (iii) Assigning qualified staff to ensure the procurement plans that have been developed are implemented, monitored and updated in a proper and timely manner; (iv) Signing and executing a Transparency and Ethics Statement by all members of bid/proposal evaluation committee when carrying out their duties; (v) Providing appropriate training on contract management and hands-on support to PMU2 staff during contract execution; and (vi) Carrying out regular implementation support missions and conduct annual procurement post review.

48. **Procurement Strategy.** Based on the project requirements, operational context, economic aspects, technical solutions and market analysis, a Project Procurement Strategy Document (PPSD) has been developed for the project by the PMU2 with the support from the Bank team. The PPSD identifies the following types of activities (a) Works contracts for the construction of road and bridges, road maintenance, and traffic safety system etc. (approx. US$100 million), and (b) consultancy services for detailed design of works and preparation of bidding documents, construction supervision, environmental impacts monitoring, auditing, etc. (approx. US$15 million). For the procurement of civil works, the estimated cost per package is ranges from US$14 million to US$23 million. The PPSD showed that there are a lot of potential contractors in the country for this type of works (nature and size) and international firms have shown very limited interest in contracts estimated to cost less than US$20 million, an open competition approaching the national market was found to be the most suitable choice. Nevertheless, foreign contractors are still allowed to participate if they wish to do so. For contracts with an estimated cost above US$20 million, there would be open competition which approaches the international market. For the consulting services including civil works design, construction supervision, auditing and etc. the estimated cost per package is ranges from US$0.3 to US$5 million with major assignments being the detailed design and construction supervision (estimated US$1.5 million and US$5 million, respectively).

49. **Although the market research demonstrates that there are a significant number of potential consultants in the country for this type of services given the nature of the civil works that needs to take into account the factors of safety and climate resilience, the participation of reputable and qualified international consultants will be beneficial to the project implementation therefore the project will be approaching the international market.** For civil works contracts which approach the national market, the harmonized model bidding documents agreed with the Bank will be used. For all other procurements the Bank's Standard Procurement Documents shall be used. The PPSD also indicates a number of potential risks that may affect the success of the procurement process including (i) frequent changes and overlap in the policy regime of Vietnam; (ii) inflation leading to increase of the investment cost; (iii) high rate of PMU2's procurement staff turnover; (iv) weak financial capacity of many bidders; and (v) desire of the bidders to win the contract at any cost that may negatively affect the quality of works and implementation progress. A number of risk mitigation measures as well as allocation of risks to the party that is in best position to take the risks are also proposed in the PPSD.

50. **Procurement Plan**. Based on the PPSD, the initial procurement plan for the project was prepared by the

PMU2 and agreed by the Bank at negotiation. For the civil works contracts, Request for Bids (RFB) is the method to be used. Regarding goods procurement, there are a number of small goods contracts under the project that will be procured using RFB method details of this are in the procurement plan. For efficiency, contracts with a cost estimate of less than US$200,000 and US$100,000 for works and goods respectively will be procured using RFQ. For consulting services, QCBS, QBS, FBS, LCS with the most appropriate market approach will be used. The Procurement Plan will be updated at least annually (in real time) by the PMU2 to (a) reflect project implementation; (b) accommodate changes that should be made; and (c) add new packages as needed for the project. All procurement plans, their updates or modifications shall be subject to Bank's prior review and no-objection. Details for the procurement arrangements are provided in the Project Operations Manual. The project Procurement Plan identifies the risk for each activity and prior review of these activities is set based on the performance and risk rating. Contracts not subject to prior review will be subject to post review. The Bank will carry out procurement post reviews on an annual basis with an initial sampling rate of 20 percent, which will be adjusted periodically during project implementation based on the performance of the project.

E. Social (including Safeguards)

51. **Operational Policy 4.12 on involuntary resettlement has been triggered as project will acquire about 200 ha of land** for both (i) widening of existing alignment and (ii) two proposed bypasses leading to loss of livelihood / sources of livelihood and will also displace households. The two bypasses are expected to be newly constructed to avoid urban populated areas. These bypasses run through agricultural fields, plantation forest and residential areas. The land acquisition will impact over 1,000 households (about 5,000 project affected persons) of which 91 households will be relocated. Project will also impact 290 business establishments, and about 20 graves of Bahnar people. Out of the over 1,000 project affected households, 60 belongs to ethnic minority. Project will also temporarily impact around 9,800 m^2 of agricultural land and 3,800 m^2 of public land.

52. **In order to mitigate adverse social impacts, the project has prepared Resettlement Action Plans based on results of social impact assessment of the entire project corridor.** The RAP includes key information on project impacts, the mitigation and compensation measures to be applied to redress the unavoidable adverse effects of project activities on local people; entitlement matrix for affected people; livelihood restoration measure for severely affected households; arrangement of RAP implementation; mechanism for information disclosure, consultation and participation; grievance redress mechanism; monitoring mechanism; and cost estimate for RAP implementation.

53. **The impact of labor influx during construction has been analyzed in consultations with local communities and PMU2**. Based on information available during project preparation, the labor related risks are moderate as labor camps are deemed to be isolated from cities, the construction camp sites will not limited size given the volume of works to be performed, and the labor may be primarily of local nature. Mitigation measures include detailed social related requirements in safeguard documentation to ensure that worker health plans are in place and implemented, as well as a detailed procedure for grievance and complaints.

54. **An Ethnic Minority Development Plan (EMDP) has been prepared for the Gia Lai Province, where Ethnic Minority people are affected.** EMDP for Gia Lai was prepared in line with World Bank Operational Policy 4.10 on Indigenous Peoples. The EMDP has been prepared based on based on the results of the social assessment (SA) carried out in the project areas as well as free, prior and informed consultations with the EM groups. The EMDP ensures that: (a) ethnic minority receives culturally appropriate social and economic benefits; (b) potential

adverse and positive impact on EMs are identified, adverse impacts are avoided, minimized, mitigated, and compensated; and c) the development process fosters full respect for the dignity, human rights and cultural uniqueness of EMs in the project's affected areas, and takes into account their development needs and aspirations. Affected EM peoples have indicated their broad support for project implementation given the potential benefits the project brings to them.

55. **As for citizen engagement, series of consultations were carried out in August, November, December 2016 and January 2017**. Apart from community consultations, meetings were held with the Provincial Departments, the District People's Committees, Leaders and members of affected commune officials, district compensation and Boards of Compensation and Land Acquisition, key district Departments of Environmental and Natural Resources, Agriculture and Rural Development, Industry and Commerce, and Department of Labor, Invalids and Social affairs, etc. The Results Framework captures, details and monitors the share of citizens from the impacted communes who participated in consultations, with a breakdown for women.

56. **A three tier grievance mechanism has been proposed in the project**. In the first tier of GRM, aggrieved PAP may submit their complaint – either in written or verbal, to the office of the Ward/Commune People's Committee (W/C PC). W/C PC will receive the complaints and will notify the W/C PC leaders of the complaint. The Chairman of the W/C PC will meet the complainant in person and will solve it within 15 days following the receipt of the complaint. After 15 days since the submission of the complaints, if the aggrieved person does not have any response from the W/C PC, or if the aggrieved person is not satisfied with the decision taken on his/her complaint, the PAP may take the case, either in written or verbal, to the Reception Unit of City/District People's Committee. The City/District People's Committee will have 30 days since the date of receipt of the complaint to resolve the case. The City/District People's Committee will register all the complaints submitted and will inform the District Board for Compensation and Land Acquisition of the City/District PC's resolution/assessment results.

57**. As part of social assessment, the project also carried out gender analysis.** As part of RAP and EMDP implementation, the gender actions include (i) participation of women throughout project cycle; (ii) information dissemination specifically for women; (iii) reducing intra-household gender disparity through livelihood options; (iv) women safety and empowerment, and (v) participation of women in extension/vocational trainings. During monitoring of RAP and EMDP implementation, the key indicators of gender actions will be monitored and reflected in internal and external monitoring reports.

58. **Social due diligence was carried out for the two BOT sections completed prior to the Project and NH1-North of Quy Nhon City Bypass under construction, both of which were not financed by the Bank.** The two BOT sections (75 km in total) had been completed prior to the identification of the Project, but there are remaining relocations to be completed. During implementation support, the Bank will monitor and ensure that displaced households will be paid assistance for the relocation. The NH1-North of Quy Nhon City Bypass is not considered as a linked project. It originates at the NH19 and NH1 junction, but serves a different purpose than the proposed project, linking the intersection to the north of Qui Nhon City, not Qui Nhon Port. The PDO can be achieved without this Bypass.

F. Environment (including Safeguards)

59. **The project triggers the environmental safeguard policies on Environmental Assessment (OP/BP 4.01), Natural Habitats (OP/BP4.04) and Physical Cultural Resources (OP/BP 4.11), and has been classified as**

Environmental Category B. PMU2 has prepared an Environmental and Social Impact Assessment (ESIA) which includes an Environmental and Social Management Plan (ESMP) in accordance with Vietnam government environmental management regulations and the Bank safeguards policies. The ESIA/ESMP have been reviewed by the Bank and found to be satisfactory.

60. **The ESIA concluded that the project is expected to bring about significant positive socio-environmental impacts during operation phase.** These include improving traffic safety on the existing NH19, improving connectivity between the Quy Nhon Sea Port with the Provinces in the Central Highland which contributes to socio-economic development in the region, and create short-term temporary jobs and incomes for the local people.

61. **Adequate mitigation measures and environmental monitoring programs have been developed and are presented in the ESMP.** Some mitigation measures would be applied during the feasibility study and detailed engineering proposals, such as designing separating lanes for motorbikes and other two-wheeled vehicles, slope protection with bioengineering method, installation of traffic safety signboards and directions, provide underpass or access roads where the designed road surface level is significantly different from existing ground level etc. The Project would reserve a budget for mine clearance which would be carried out before construction commencement. The ESMP also includes Environmental Codes of Practices (ECOP) and site-specific mitigation measures, these will be incorporated into bidding and construction contract documents.

62. **The ESMP has also clearly set out the environmental responsibilities of the Project's key stakeholders.** PMU2 will appoint at least one staff to be responsible for environmental and aspects of the Project. The contractors are required to implement the mitigation measures specified in construction bidding and contractual documents. In addition, the ESMP also requires the contractors to prepare site-specific Environmental and Social Management Plans and submit to PMU2/Construction Supervision Consultant (CSC) for review and approval prior to construction commencement. The construction supervisors will play key roles in environmental monitoring and supervision during construction phase while an independent monitoring consultants would also be engaged to carry out some capacity building activities and verify project's environmental compliance. The TOR of the Construction Supervision Consultant also includes the provisions of training on HIV/Aids for project staff and workers including PMU2, CSC team and the contractors' workers.

63. **During the preparation of environmental safeguards documents, consultations with related stakeholders on the ESIA, ESMP were conducted in project communes**. Relevant feedback from the consultations have been incorporated into the ESIA and ESMP. Two RAPs and an EMDP have been prepared and will be implemented in order to manage the potential impacts related to land acquisition and affected ethnic minority households. The key contents of the two RAPs and EMDPs were summarized in the ESIA. The RAP for Gia Lai, the EMDP for Gia Lai, and the ESIA have been officially disclosed on April 20, 2017. The RAP for Binh Dinh has been officially disclosed on May 19, 2017.

H. World Bank Grievance Redress

64. **Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS).** The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been

brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit: *http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service*. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework
COUNTRY : Vietnam
Central Highlands Connectivity Improvement Project

Project Development Objectives

To improve the connectivity, safety and climate-resilience of the National Highway 19.

Project Development Objective Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Annual average daily traffic (AADT)		Number	4950.00	6600.00	Baseline, and then annual traffic counts made at the 5 points of the road, as indicated.	The data is collected by manual and annual traffic counts conducted by the local authorities under the guidance of PMU2. The five sections for the traffic counts are defined vis a vis chainage of NH19 as follows: (1) average of counts at km20 and km 49+550, (2) average of counts at km76 and km90+900, (3) counts at km124+720, (4) average counts at km142+040, km135, and km157, and (5)	The traffic count responsibility falls under PMU2, who will, in partnership with local authorities, hire a consultant to perform the annual traffic count as detailed in the methodology of the Results Framework.

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
						average counts at km180 and km197+300. The methodology involves trained observers who gather traffic data that cannot be efficiently obtained through automated counts in Vietnam. The equipment used is tally sheet. The unit is Passenger Car Unit (PCU). The data to measure is AADT, which is the average calculated over a year of the number of vehicles passing a point in a given counting section each day (usually expressed in vehicles per day). It simply represents the vehicle flow over a road section on an average day of the year. Short term traffic counts will be performed, with a collection data period of 7 days where data are recorded in hourly intervals.	

Description: Annual average daily traffic as defined in the economic analysis and in the Results Framework. This includes the light vehicles, buses, trucks and motorcycles. As the road conditions will improve, the Corridor will accommodate more traffic as its volume to capacity ratio will increase. The indicator reflects the increase in traffic

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
and will allow to calculate the volume to capacity ratio.							
Name: Average travel time on the NH19 Corridor		Hours	6.00	5.00	Baseline, annually, and then at the end of the project, at the completion of the civil works.	The floating car technique will be used as travel time collection method and consists of a vehicle that is specifically dispatched to drive with the traffic stream for the express purpose of data collection. Data collection personnel within the test vehicle control the speed of the vehicle according to set driving guidelines. A passenger in the test vehicle will manually record travel times at designated checkpoints using a clipboard and stopwatch, i.e. at the measure point as described in the Results Framework: : (1)km20 and km 49+550, (2) km76 and km90+900, (3) km124+720, (4) km142+040, km135, and km157, and (5) km180 and km197+300. The test will be performed during a period of 7 days, alternating morning, evening and peak	PMU2 will be responsible for the collection, in partnership with the local authorities as well as the Police as necessary. PMU2 will hire an adequate consultant to perform the floating car technique test.

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
						hours.	
Description: This indicator consists in the average travel time on the entire extended NH19 corridor, from Quy Nhon Port to the border with Cambodia, using a light vehicle under normal speed and traffic conditions. As the road condition will improve, as well as the safety and journey conditions, the travel time will decrease.							
Name: Number of kilometers of International Road Assessment Program (iRAP) 3-star rating or above for both cars and motorcycles on the NH19 Corridor		Kilometers	75.00	228.00	Baseline and at the completion of the civil works.	The IRAP scoring needs to reach 3 star or more for both cars and motorcycles. The IRAP methodology test will be performed through a drive-through inspection that involve at least two people: one driving a vehicle and a passenger recording road infrastructure elements as they travel using a RAP Inspection Device (RAPID). This type of inspection is technical and requires inspectors to hold iRAP accreditation. The inspection will involve a continuous record of road infrastructure elements, and the video-based inspection will record video images at 5-10 metre intervals. The Star	PMU2 will hire consultants who hold iRAP accreditation to perform the iRAP.

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
						Ratings will be based on 100 metre long sections of road. At the completion of each type of inspection, the consultant will produce a detailed condition report that summarizes many roadway characteristics for the inspected network, and produce a final report that explains how many kilometers of road are 3 star or above.	
Description: This indicator measures the number of kilometers of the entire Nh19 from Quy Nhon Port to the border with Cambodia that is 3 star iRAP or above. The IRAP scoring needs to reach 3 star or more for both the cars and the motorcycles. The measurement requires to perform an iRAP along the Corridor to show the improvement of the safety conditions along the corridor. iRaP is the International Road Assessment Programme and provides a simple and objective measure of the level of safety provided by a road's design through star rating. Star Ratings involve an inspection of road infrastructure elements that are known to have an impact on the likelihood of a crash and its severity. Between 1 and 5-stars are awarded depending on the level of safety which is 'built-in' to the road, 5 stars being the safest.							
Name: Kilometers of roads that are upgraded in compliance with climate/disaster resilient design standards		Number	0.00	20.00	Baseline, and at the end of the civil works.	A situational analysis exists and includes 20 hazard areas which are subject to landslides and/or climate change related disasters. Some of these hazard areas will be treated by the proposed project, based on availability of	PMU2 is responsible for the listing and mapping of the hazard areas and monitor the number of kilometers that will be improved accordingly.

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
						financing, estimated costs of the works, and priority of the areas. The methodology consists in counting the number of kilometers of roads, at these key locations/hazard areas, or elsewhere along the proposed project scope, which have been subject to civil works towards the improvement of the resilience of the area.	
Description: The indicator is the number of kilometers of roads which have been subject to civil works towards the improvement of the resilience of the area.							

Intermediate Results Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Roads rehabilitated, Non-rural		Kilometers	0.00	153.00	Baseline, then 6 month progress report / collection, then at the end of the civil works.	The data source consists in the progress reports of the contractor who will be in charge of the civil works. The contractor will monitor the number of kilometers of	PMU2 will be responsible for collecting the data from the contractor and monitor progress.

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
						road rehabilitated and provide such information as works progress. 1 kilometer rehabilitated equals 1 km of road delivered and completed, and equals 1 km of road ready to be operated/opened for traffic.	
Description: Kilometers of all non-rural roads reopened to motorized traffic, rehabilitated, or upgraded under the project. Non-rural roads are roads functionally classified in various countries as Trunk or Primary, Secondary or Link roads, or sometimes Tertiary roads. Typically, non-rural roads connect urban centers/towns/settlements of more than 5,000 inhabitants to each other or to higher classes of road, market towns and urban centers. Urban roads are included in non-rural roads.							
Name: Share of citizens from affected communes who participated in consultations		Percentage	0.00	70.00	Baseline, then during Appraisal, then at the start of the civil works (end of consultations).	The data source is the consultants who are in charge of the safeguards elements and the RAP related consultations in the affected communes. The selection of communes will be based on types and degrees of impacts. Apart from mixed groups, the consultants will hold separate consultation with (i) men and women to identify gender issues; and (ii) ethnic minority	PMU2 will facilitate the consultations and be responsible for the provision of the data.

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
						community to identify their issues for preparation of documents. For every consultation, the consultants will prepare minutes of the meeting and will collect signature of each participant, and the number of households. The calculation for the indicator will be done by comparing the number of households who participated in consultations with the number of households from affected communes.	
Share of women from affected communes who participated in consultations		Percentage	0.00	20.00	Same as main indicator.	Same at main indicator, but only for women.	Same as main indicator.
Description: This indicator measures the Citizen Engagement level during the project related consultations. It measures the share of citizens living in the affected communes who participated in consultations, through the collection of the number of households who have been consulted during project preparation.							
Name: Manual for motorcycle lane design and specifications		Yes/No	N	Y	Baseline, and then at the end of the project.	The data source consists in the development and availability of the report, to be produced by the road	PMU2 is responsible for the collection of the final report to be produced by the consultants, and the

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
						safety consultant(s).	diffusion of the report to the stakeholders.
Description: This indicator measures the development and availability of a manual for the design of motorcycle lanes and the related specifications, so that the approach is harmonized through Vietnam.							
Name: Guidelines for resilient road design and standards		Yes/No	N	Y	Baseline, and then at the end of the project.	The data source consists in the development, availability and diffusion of the report, when produced by the consultants.	PMU2 is responsible for the collection of the report to be produced by the consultants, and its diffusion.
Description: This indicator measures the development and availability of the guidelines for the design of resilient roads and the related standard in Vietnam, with the objective to harmonize the approach through Vietnam.							

Target Values

Project Development Objective Indicators

Indicator Name	Baseline	End Target
Annual average daily traffic (AADT)	4950.00	6600.00
Average travel time on the NH19 Corridor	6.00	5.00
Number of kilometers of International Road Assessment Program (iRAP) 3-star rating or above for both cars and motorcycles on the NH19 Corridor	75.00	228.00
Kilometers of roads that are upgraded in compliance with climate/disaster resilient design standards	0.00	20.00

Intermediate Results Indicators

Indicator Name	Baseline	End Target
Roads rehabilitated, Non-rural	0.00	153.00
Share of citizens from affected communes who participated in consultations	0.00	70.00
Share of women from affected communes who participated in consultations	0.00	20.00
Manual for motorcycle lane design and specifications	N	Y
Guidelines for resilient road design and standards	N	Y

ANNEX 1: PROJECT MAP