



# Report and Recommendation of the President to the Board of Directors

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Project Number: 52097-001  
September 2018

## Proposed Loan and Technical Assistance Grant Nepal: South Asia Subregional Economic Cooperation Highway Improvement Project

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Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 11 August 2018)

Currency unit	–	Nepalese rupee/s (NRe/NRs)
NRe1.00	=	\$0.009080
\$1.00	=	NRs110.30

## ABBREVIATIONS

ADB	–	Asian Development Bank
DOR	–	Department of Roads
EIRR	–	economic internal rate of return
EWB	–	East–West Highway
GESI	–	gender equality and social inclusiveness
km	–	kilometer
MOPIT	–	Ministry of Physical Infrastructure and Transport
PRC	–	People’s Republic of China
SAARC	–	South Asian Association for Regional Cooperation
SASEC	–	South Asia Subregional Economic Cooperation
SRN	–	strategic road network
TA	–	technical assistance

## NOTES

- (i) The fiscal year (FY) of the Government of Nepal ends on 15 July. “FY” before a calendar year denotes the year in which the fiscal year ends, e.g., FY2018 ends on 15 July 2018.
- (ii) In this report, "\$" refers to United States dollars.

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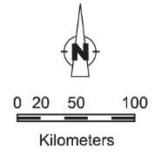
## PROJECT AT A GLANCE

<b>1. Basic Data</b>		<b>Project Number: 52097-001</b>	
<b>Project Name</b>	South Asia Subregional Economic Cooperation Highway Improvement Project	<b>Department /Division</b>	SARD/SATC
<b>Country Borrower</b>	Nepal Nepal	<b>Executing Agency</b>	Ministry of Physical Infrastructure and Transport
<b>2. Sector</b>	<b>Subsector(s)</b>	<b>ADB Financing (\$ million)</b>	
✓ <b>Transport</b>	Road transport (non-urban)		180.00
		<b>Total</b>	<b>180.00</b>
<b>3. Strategic Agenda</b>	<b>Subcomponents</b>	<b>Climate Change Information</b>	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Climate Change impact on the Project	Medium
Environmentally sustainable growth (ESG)	Global and regional transboundary environmental concerns	<b>ADB Financing</b>	
Regional integration (RCI)	Pillar 1: Cross-border infrastructure Pillar 2: Trade and investment	Adaptation (\$ million)	4.50
<b>4. Drivers of Change</b>	<b>Components</b>	<b>Gender Equity and Mainstreaming</b>	
Governance and capacity development (GCD)	Institutional development	Effective gender mainstreaming (EGM)	✓
Partnerships (PAR)	Implementation Regional organizations		
<b>5. Poverty and SDG Targeting</b>		<b>Location Impact</b>	
Geographic Targeting	No	Regional	High
Household Targeting	No		
SDG Targeting	Yes		
SDG Goals	SDG3, SDG9, SDG13		
<b>6. Risk Categorization:</b>	Low		
<b>7. Safeguard Categorization</b>	<b>Environment: B Involuntary Resettlement: B Indigenous Peoples: C</b>		
<b>8. Financing</b>			
<b>Modality and Sources</b>		<b>Amount (\$ million)</b>	
<b>ADB</b>		<b>180.00</b>	
Sovereign Project (Concessional Loan): Ordinary capital resources		180.00	
<b>Cofinancing</b>		<b>0.00</b>	
None		0.00	
<b>Counterpart</b>		<b>76.40</b>	
Government		76.40	
<b>Total</b>		<b>256.40</b>	
Note: An attached technical assistance will be financed on a grant basis by the Technical Assistance Special Fund (TASF-6) in the amount of \$750,000.			

# NEPAL

## SOUTH ASIA SUBREGIONAL ECONOMIC COOPERATION HIGHWAY IMPROVEMENT PROJECT

-  Project Road: Kanchanpur–Kamala (87 km)
  -  SASEC Roads Improvement Project (Total: 160 km)
  -  SASEC Roads Connectivity Project (Total: 187 km)
  -  Nepal East–West Highway/SAARC Road Corridor/Asian Highway
  -  National Capital
  -  District Headquarters
  -  Town/Market Center
  -  National Highway
  -  Feeder/District Road
  -  River
  -  Zonal Boundary
  -  Regional Boundary
  -  International Boundary
  - SAARC** South Asian Association for Regional Cooperation
  - SASEC** South Asia Subregional Economic Cooperation
- Boundaries are not necessarily authoritative.



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## I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan to Nepal for the South Asia Subregional Economic Cooperation (SASEC) Highway Improvement Project. The report also describes proposed technical assistance (TA) for Institutional Strengthening of Road Safety and Gender Equality, and if the Board approves the proposed loan, I, acting under the authority delegated to me by the Board, approve the TA.

2. The project will support capacity, quality, and safety improvements of the East–West Highway (EWH), which is the main domestic and international trade corridor of Nepal, and which forms part of the South Asian Association for Regional Cooperation (SAARC) corridor 4 linking Kathmandu to Dhaka and Chittagong through India.<sup>1</sup> The project will (i) rehabilitate and widen about 87 kilometers (km) of the EWH between Kanchanpur and Kamala in southeastern Nepal; (ii) improve road safety and gender equality and social inclusion (GESI) on the 1,027 km EWH; and (iii) strengthen the road safety and GESI capacity of road sector agencies. The project will promote economic growth and contribute to improving the competitiveness of Nepal’s exporting industries by enhancing the efficiency of the transport system, strengthening national and regional connectivity, and improving the safety of the road network.

## II. THE PROJECT

### A. Rationale

3. **Context.** Nepal is landlocked and bordered to the north by the People’s Republic of China (PRC), and to the south, east, and west by India. Consequently, Nepal relies heavily on its direct neighbors for international trade—particularly India, with which it shares 19 official trading posts. In fiscal year (FY) 2017, 65% of Nepal’s imports were from India, and 13% from the PRC; India received 57% of Nepal’s exports, and the PRC 2.3%. Biratnagar, located 68 km east of Kanchanpur, is Nepal’s largest export gateway, handling 29.5% of its exports, while the port of Kolkata is the primary transit point for seaborne freight.

4. **Economic rationale.** The gross domestic product of Nepal grew at an average annual rate of 4.5% during FY2007–FY2017 and is forecast to grow at 5.9% in FY2018 and 5.5% in FY2019.<sup>2</sup> The economy of Nepal suffers from a structural lack of competitiveness—exports have alarmingly decreased at an average annual rate of 6.1% in real terms during FY2007–FY2017, while the agriculture sector still employs 69.4% of the labor force. The trade deficit is widening, as foreign remittances have sustained import growth, which increased by 21.3% annually during FY2007–FY2017.<sup>3</sup> The economy is hampered by deficient domestic and cross-border infrastructure networks, which increase transport costs and impede regional integration and trade with indirect neighbors: excluding India, trade with other SASEC and SAARC member countries accounts for just 0.8% of Nepal’s total trade.<sup>4</sup>

5. **Transport sector.** Road transport carries over 90% of passengers and goods in Nepal. The strategic road network (SRN) totals 12,494 km, 51% of which is paved, and is developed and

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<sup>1</sup> SAARC Secretariat. 2006. *SAARC Regional Multimodal Transport Study*. Kathmandu.

<sup>2</sup> Asian Development Bank (ADB). 2018. *Asian Development Outlook 2018: How Technology Affects Jobs*. Manila.

<sup>3</sup> World Bank. 2017. *Remittance Inflows to GDP for Nepal*. Washington, DC. Remittances amounted to 2.0% of the gross domestic product in FY2000 and 24.5% of the gross domestic product in FY2017.

<sup>4</sup> Government of Nepal, Department of Customs. 2018. *Nepal Foreign Trade Statistics, Fiscal Year 2016/17*. Kathmandu. SASEC members are Bangladesh, Bhutan, India, Maldives, Myanmar, Nepal, and Sri Lanka; SAARC comprises Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.

maintained by the Department of Roads (DOR) of the Ministry of Physical Infrastructure and Transport (MOPIT). The SRN provides vital linkages to major economic centers and neighboring countries, and features eight north–south and three east–west corridors, including the 1,027 km-long EWH which carries the highest traffic volumes. The local road network totals 57,600 km, 3.5% of which is paved. The road density of Nepal, at 2.5 km of road per 1,000 people, is low, and there are few alternatives to road transport.<sup>5</sup> Although projects supported by development partners are expected to increase the capacity and density of airport, railway, and inland waterway networks, road transport will continue to have a major role in the economic development of Nepal.<sup>6</sup>

6. **Road safety.** Vehicle ownership remains low, with only 0.08 vehicles per capita, but vehicle sales increased by 17.5% annually during FY2007–FY2017, and the number of registered vehicles is expected to quadruple in the next decade.<sup>7</sup> Motorcycles account for 79.7% of sales, which further increases road safety risks, particularly on deteriorated or wet pavements. The traffic fatality rate is estimated at 302 fatalities per 100,000 vehicles, one of the highest rates in Asia, and reported traffic accidents increased from 3,800 in FY2002 to 13,580 in FY2013.<sup>8</sup> The government responded by preparing a Road Safety Action Plan (2013–2020), but its effective implementation requires broader institutional support and capacity strengthening, notably through the operationalization of the road safety council.

7. **Sector road map and regional cooperation.** The development of the SRN is guided by Nepal’s National Transport Policy (2002), Priority Investment Plan (2007–2016), and MOPIT’s 5-year strategic plan.<sup>9</sup> The road sector strategy of the Fourteenth Plan (FY2017–FY2019) of the government aims to (i) expand the SRN and improve interprovincial and national connectivity; (ii) strengthen regional integration; (iii) reconstruct roads damaged by the April 2015 earthquake; (iv) provide greater access to social services and markets; (v) improve road safety and maintenance; and (vi) support the development of the agriculture, industry, energy, and tourism sectors.<sup>10</sup> The allocation for capital expenditures increased from 22.7% of the government’s budget in FY2015 to 27.1% in FY2019 to support these objectives. The road sector strategy is aligned with regional policies, including SASEC objectives of facilitating trade and improving access to national and transnational markets via development of multimodal transport systems.<sup>11</sup>

8. **Project design.** The project road carries an average annual daily traffic of 8,590 vehicles, including about 28% of heavy vehicles, and this total is forecasted to increase to 25,400 vehicles by 2033. The pavement is in fair to poor condition, and the road does not segregate slow-moving vehicles and pedestrians. Through the project, the road will be upgraded to a four-lane dual carriageway to cater to the projected increase in traffic demand, and rehabilitated with improved pavement, drainage, structures, and safety features. Service lanes in populated areas will improve safety, particularly for pedestrians, and bicycle and motorcycle users. Civil works contracts will include a performance-based maintenance period of 5 years after completion of construction. The project will support economic growth by (i) rehabilitating deteriorated road

<sup>5</sup> This compares with 12.2 km of road per 1,000 people in Bhutan, 4.1 km in India, and 5.5 km in Sri Lanka.

<sup>6</sup> The railway network is small (59 km). During 2011–2016, (i) international air travel increased by 5.4% annually, from 2.70 million to 3.51 million passengers, but capacity constraints at the only international airport in Kathmandu impede growth; and (ii) domestic air travel increased by 2.0% annually, from 1.59 million to 1.76 million passengers.

<sup>7</sup> Vehicle ownership in India is about 0.42 vehicles per capita, and 0.80 vehicles per capita in the United States.

<sup>8</sup> World Health Organization. 2015. *Global Status Report on Road Safety 2015*. Geneva; and Government of Nepal, Nepal Police, Traffic Directorate. 2015. *Accidents Statistics*. Kathmandu. This compares with 1,134 fatalities per 100,000 vehicles in Bangladesh, 186 in Bhutan, 118 in India, 71 in Sri Lanka, and 66 globally.

<sup>9</sup> Government of Nepal, DOR. 2007. *Sector Wide Road Programme & Priority Investment Plan 2007–2016*. Kathmandu; and Government of Nepal, MOPIT. 2016. *Strategic Plan for 2016–2021*. Kathmandu.

<sup>10</sup> Government of Nepal, National Planning Commission. 2016. *Fourteenth Plan, FY2017–2019*. Kathmandu.

<sup>11</sup> SASEC Secretariat. 2016. *Operational Plan 2016–2025*. Manila.

assets; (ii) enhancing national and regional connectivity; (iii) providing greater access to services, markets, and employment opportunities; (iv) supporting the development of the agriculture, industry, energy, and tourism sectors; (v) improving road safety; and (vi) easing traffic congestion.

9. **ADB's interventions.** The project is consistent with the objectives set out in the country partnership strategy, and is included in the Asian Development Bank (ADB) country operations business plan for Nepal, 2018–2020 and SASEC's operational plan 2016–2025.<sup>12</sup> ADB has provided ongoing assistance for the development of the strategic road sector through (i) a project approved in 2016 for \$186.8 million for the rehabilitation and upgrading of 114 km of the EWH to the west of Narayanghat,<sup>13</sup> (ii) three projects approved during 2010–2015 for a total of \$324 million for the reconstruction of other major roads of the SRN, and (iii) a project preparatory facility approved in 2010 for \$12 million.<sup>14</sup> The project incorporates lessons from previous projects, notably related to procurement, project readiness, land acquisition, and sustainability.<sup>15</sup> ADB's assistance is expected to continue beyond the project, and a consulting services package will be provided under the loan to prepare the detailed design for the remaining sections of the EWH to the east of Narayanghat, proposed for subsequent projects.

10. **Value added by ADB assistance.** ADB's value addition includes improved road design for climate change adaptation, and improved road safety and maintenance planning capacity. The attached TA will strengthen the road safety and GESI capacity of MOPIT and DOR at policy, management, and operational levels, and improve the facilities and project readiness of the Project Directorate (ADB) of DOR. The national road safety policy will be reviewed, and a road safety assessment conducted for the 1,027 km-long EWH corridor. Civil works and equipment packages provided under the loan will help mitigate road accident blackspots.

## B. Impacts and Outcome

11. The project is aligned with the following impacts: (i) transport connectivity within Nepal and with neighboring countries improved (footnote 10), and (ii) physical connectivity and multimodal linkages for land-based transport along major trade routes enhanced (footnote 11). The project outcome will be: efficiency and safety of the road transport system improved.<sup>16</sup>

## C. Outputs

12. **Output 1: Road network upgraded and maintained.** The loan will rehabilitate and upgrade about 87 km of road between Kanchanpur and Kamala on the EWH to a four-lane standard, and include a 5-year performance-based maintenance period following construction.

<sup>12</sup> ADB. 2017. *Country Operations Business Plan: Nepal, 2018–2020*. Manila; and ADB. 2013. *Country Partnership Strategy: Nepal, 2013–2017*. Manila. The country partnership strategy for 2020–2024 is under preparation.

<sup>13</sup> ADB. [Nepal. South Asia Subregional Economic Cooperation Road Connectivity Project](#). The project is experiencing implementation delays, as the largest civil works packages (\$180 million) are being retendered. The construction of a feeder road of the EWH (\$17 million) is on track.

<sup>14</sup> ADB. [Nepal. South Asia Subregional Economic Cooperation Road Connectivity Project](#); ADB. [Nepal. Earthquake Emergency Assistance Project](#); ADB. [Nepal. Subregional Transport Enhancement Project](#); and ADB. [Nepal. Transport Project Preparatory Facility](#).

<sup>15</sup> The proposed project features two large civil works packages of about \$107 million and \$119 million to attract experienced international contractors and improve quality of civil works, while smaller civil works packages for road safety improvements will support the improvement of the capacity of the domestic contracting industry. The detailed design of the project road was supported by a project preparatory facility to minimize implementation delays, and the project does not require land acquisition. To improve the sustainability of the project after construction, ADB provided technical assistance to DOR to design performance-based maintenance contracts.

<sup>16</sup> The design and monitoring framework is in Appendix 1.

13. **Output 2: Planning and management for road safety strengthened.** The loan will finance (i) civil works and equipment packages for road safety mitigation measures on the 1,027 km-long EWH; (ii) safety improvements for the project road, particularly for pedestrians, and bicycle and motorcycle users; and (iii) a road safety awareness campaign. The attached TA will support (i) the preparation of a national road safety policy and action plan, (ii) the strengthening of the road safety council, (iii) a road safety assessment for the EWH, and (iv) the implementation of the GESI guidelines of MOPIT.<sup>17</sup>

14. **Output 3: Facilities and project readiness of the Project Directorate (ADB) improved.** The loan will finance (i) the preparation of detailed engineering design for pipeline road projects along the EWH, and (ii) the construction of a modern office for the Project Directorate (ADB) of DOR. The attached TA will support a prefeasibility study and the preparation of design standards for service areas along the EWH.

#### D. Summary Cost Estimates and Financing Plan

15. The project is estimated to cost \$256.4 million (Table 1). Detailed cost estimates by expenditure category and financier are in the project administration manual (PAM).<sup>18</sup>

**Table 1: Summary Cost Estimates**  
(\$ million)

Item	Amount <sup>a</sup>
<b>A. Base Cost<sup>b</sup></b>	
1. Road network upgraded and maintained	196.24
2. Planning and management for road safety strengthened	15.82
3. Facilities and project readiness of the Project Directorate (ADB) improved	7.52
<b>Subtotal (A)</b>	<b>219.58</b>
<b>B. Contingencies<sup>c</sup></b>	<b>31.97</b>
<b>C. Financial Charges During Implementation<sup>d</sup></b>	<b>4.85</b>
<b>Total (A+B+C)</b>	<b>256.40</b>

ADB = Asian Development Bank.

<sup>a</sup> Includes taxes and duties of \$23.8 million. Such amount does not represent an excessive share of the project cost. The government and ADB will finance taxes and duties for civil works and for road safety works and equipment, with ADB financing \$16.5 million, and the government financing \$7.3 million by cash contribution.

<sup>b</sup> In mid-2018 prices as of 11 August 2018.

<sup>c</sup> Physical contingencies computed at 10% for civil works and consulting services. Price contingencies computed at an average of 3.7% on foreign exchange costs and 11.8% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>d</sup> Includes interest during construction calculated on the annual basis of 1.0% of the disbursed balance.

Source: Asian Development Bank estimates.

16. The government has requested a concessional loan of \$180.0 million from ADB's ordinary capital resources to help finance the project. The loan will have a 32-year term, including a grace period of 8 years; an interest rate of 1.0% per year during the grace period and 1.5% per year thereafter; and such other terms and conditions set forth in the draft loan agreement. The summary financing plan is in Table 2. ADB will finance expenditures in relation to investment costs, including civil works, road safety, consulting services, contingencies, and financing charges during implementation, for a total of 70.2% of the project cost.

<sup>17</sup> Government of Nepal, MOPIT. 2017. *Gender Equality and Social Inclusion Operational Guidelines*. Kathmandu.

<sup>18</sup> Project Administration Manual (accessible from the list of linked documents in Appendix 2).

**Table 2: Summary Financing Plan**

<b>Source</b>	<b>Amount (\$ million)</b>	<b>Share of Total (%)</b>
Asian Development Bank		
Ordinary capital resources (concessional loan)	180.00	70.20
Government of Nepal	76.40	29.80
<b>Total</b>	<b>256.40</b>	<b>100.00</b>

Source: Asian Development Bank estimates.

17. **Climate change adaptation and disaster risk reduction.** Climate adaptation is estimated to cost about \$6.3 million. ADB will finance 71.4% (\$4.5 million) of adaptation costs.<sup>19</sup>

### E. Implementation Arrangements

18. The project will be implemented by the Project Directorate (ADB) of DOR, which handles ongoing ADB projects. Implementation arrangements are summarized in Table 3 and detailed in the PAM (footnote 18).

**Table 3: Implementation Arrangements**

<b>Aspects</b>	<b>Arrangements</b>		
Implementation period	December 2018–December 2023		
Estimated completion date	31 December 2023		
Estimated loan closing date	30 June 2024		
<b>Management</b>			
(i) Executing agency	Ministry of Physical Infrastructure and Transport		
(ii) Implementing agency	Department of Roads		
(iii) Implementation unit	Project Directorate (ADB), Kathmandu, and two project site offices (20 staff)		
Procurement	Open competitive bidding	2 contracts for Kanchanpur–Kamala Road	\$190.0 million
		Up to 3 contracts for safety improvements	\$12.0 million
		1 contract for Project Directorate building	\$3.0 million
Consulting services	QCBS (CSC) 90:10	147 person-months (international), 1,300 person-months (national)	\$7.6 million
		306 person-months (national)	\$1.0 million
	QCBS (PPC) 90:10	90 person-months (international), 421 person-months (national)	\$6.0 million
	NGO (HIV)	100 person-months (national)	\$0.3 million
	Individual consultants	16 person-months (international), 240 person-months (national)	\$1.0 million
Advance contracting	For procurement of works and recruitment of consultants.		
Disbursement	The loan proceeds will be disbursed following ADB's <i>Loan Disbursement Handbook</i> (2017, as amended from time to time) and detailed arrangements agreed between the government and ADB.		

ADB = Asian Development Bank; CSC = construction supervision consultant; NGO = nongovernment organization; PPC = project preparatory consultant; QCBS = quality- and cost-based selection; RSIC = road safety implementation consultant.

Source: Asian Development Bank.

### III. ATTACHED TECHNICAL ASSISTANCE

19. The transaction TA for Institutional Strengthening of Road Safety and Gender Equality will support the implementation of four outputs:

<sup>19</sup> Climate Change Assessment (accessible from the list of linked documents in Appendix 2).

- (i) road safety policy and action plan developed, including a review of the current institutional and legal framework for road safety; strengthening of the operation of the National Road Safety Council; preparation of a gender-inclusive road safety policy, strategy for 2021–2030, and investment plan for 2021–2023; and recommendations for a road safety assessment framework;<sup>20</sup>
- (ii) road safety of the EWH improved, including a road safety assessment for the 1,027 km-long EWH corridor, the identification of safety blackspots, and a feasibility study for service areas along the EWH (civil works packages are provided under the loan to mitigate safety blackspots on the EWH);
- (iii) road safety awareness increased, including the preparation of an interagency coordination plan, road safety campaign material, and a pilot campaign; and
- (iv) GESI guidelines implemented, including support to promulgate the GESI operational guidelines in MOPIT.<sup>21</sup>

20. The TA is estimated to cost \$825,000, of which \$750,000 will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-6).<sup>22</sup> The government will provide counterpart support in the form of counterpart staff, data, maps, and other in-kind contributions.

#### IV. DUE DILIGENCE

##### A. Technical

21. Engineering designs of the project road were prepared by DOR in accordance with Asian Highway Class 1 standard, and aimed to improve road safety and geometry, avoid land acquisition, and minimize social and environmental impacts. The project road will be widened from two to four lanes, and the completed road will have a design speed of 100 km per hour, dual carriageways separated by a 3.0 meters median, 3.0 meters shoulders on both sides, and new pavements. The project will integrate safe and socially inclusive design features, such as 42 km of footpaths, 69 km of service lanes segregating slow-moving vehicles, 46 disabled-friendly pedestrian crossings, 92 sheltered bus stops, and reflective lane markers.

22. The project road is in a tropical climate zone with moderate to high rainfall, and in a seismic area with comparatively lower risk than other areas of Nepal. Increased temperatures are the main climate risk in southeastern Nepal, with temperatures forecast to increase by an average of 1.2°C–1.7°C during 2019–2050. Engineering designs also integrate climate adaptation measures to minimize climate change risks, including bioengineering techniques, and increased embankment and bridge heights, and increased cross-drainage specifications.

##### B. Economic and Financial

23. **Economic viability.** The economic evaluation of the project was conducted in accordance with ADB guidelines by comparing life cycle economic costs and benefits in with- and without-project scenarios, using a 9.0% discount rate and the economic internal rate of return (EIRR) as decision criteria.<sup>23</sup> The highway development model 4 (HDM-4) was used to estimate road agency and road user costs based on input data on traffic; road geometry; pavement condition; and maintenance, improvement, and operating costs. Project benefits include savings associated with

<sup>20</sup> Such as international road assessment program (iRAP) or other data- or evidence-based framework.

<sup>21</sup> Government of Nepal, MOPIT. 2017. *Gender Equality and Social Inclusion Operational Guidelines*. Kathmandu.

<sup>22</sup> Attached Technical Assistance Report (accessible from the list of linked documents in Appendix 2).

<sup>23</sup> ADB. 2017. *Guidelines for the Economic Analysis of Projects*. Manila.

(i) vehicle operating costs, (ii) travel time, and (iii) road accidents (unquantified). Project disbenefits include a net increase in carbon dioxide emissions. The EIRR of the project is estimated at 13.4%. Sensitivity analysis demonstrated the robustness of the economic viability of the project under adverse changes in costs and benefits, with an EIRR of 11.3% under the most sensitive scenario involving a 10% increase in capital costs and 10% decrease in benefits.

24. **Financial sustainability.** The project is not revenue-generating. The Roads Board of Nepal funds maintenance from allocations of the Ministry of Finance and from toll revenues. The annual budget for the maintenance of the SRN increased from NRs2.61 billion in FY2012 to NRs5.50 billion in FY2019 in nominal terms, equal to an annual growth of 4.7% in real terms. The average annual incremental recurrent costs of the project are estimated at 1.1% of the maintenance budget of DOR, and it is thus reasonable to expect that the budget allocation of DOR will be able to meet the incremental maintenance costs of the project, particularly as the EWH is the main trade corridor of Nepal. Civil works contracts include 5 years of performance-based maintenance after construction; this will promote maintenance in the initial operating phase. The project management unit will also engage a consultant to strengthen road asset management. The project will thus improve DOR's asset management capacity, and promote private sector participation in the maintenance of the project road with the supervision of DOR.

### C. Governance

25. **Institutional capacity.** The 2015 Constitution introduced three tiers of government. Associated legal, institutional, financial, and administrative procedures are still being finalized, but highways will remain a federal responsibility, under MOPIT and DOR. The Project Directorate (ADB) of DOR, which handles project management for ADB strategic road sector projects, has good technical capacity and significant experience implementing ADB projects. Its project director reports to the director general of DOR, who in turn reports to the Secretary of MOPIT. The capacity of DOR will be strengthened by consulting service contracts for detailed design and construction supervision, which include training in design, contract management, and quality assurance.

26. **Financial management.** The financial management risk is *moderate*, as DOR has adequate capacity in accounting and ADB disbursement procedures. All transactions are recorded by government accounting systems, reflected in the government accounts, and subject to statutory audit by the comptroller. The project management unit prepares annual project financial statements for development partner projects, which are subject to audit by the Nepal Office of the Auditor General. Improvements are required in internal audit, accounting systems, and staff understanding of ADB policies and procedures. The project will engage a full-time financial expert to conduct internal checks and controls, and improve the integration of project accounting with DOR's financial management information systems.

27. **Procurement.** Procurement and consultant recruitment will be conducted in accordance with the ADB Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time). The amended Public Procurement Act (2017) and Public Procurement Regulations (2017) of Nepal are generally acceptable to ADB and encompass best international procurement practices. Department of Roads has significant experience with ADB's procurement requirements, and the project procurement risk is *moderate*. All consulting firms will be using the quality- and cost-based selection method with a quality-cost ratio of 90:10. Advance actions for the recruitment of construction supervision consultants started in May 2018, and for the recruitment of detailed design consultants in July 2018. Invitation for bids for the civil works packages of the project road was published in September 2018.

28. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government and MOPIT. The specific policy requirements and supplementary measures are described in the PAM.

#### D. Poverty, Social, and Gender

29. **Poverty.** The direct area of influence of the project includes 522,206 residents living in 12 municipalities crossed by the project road in two districts. About 36.5% of residents live below the national poverty standard line, above the national average of 25.2%. The major income sources are remittances (47%), trade (20%), agriculture (13%), and services (9%). Access to modern sanitation (48%) and piped water (10%) remains limited. The project is expected to improve access to economic opportunities and social services, reduce intraregional disparities, and create an estimated 4.43 million person-days of skilled and unskilled employment during construction.

30. **Gender.** The project is categorized *effective gender mainstreaming*. A poverty and social analysis assessed the socioeconomic characteristics of 2,479 women. The mobility of women in the project area is primarily limited to visiting nearby markets, district health and administrative services, and relatives. Walking is the predominant mode of transport, while buses are also used by about 70% of women and biking is popular among schoolgirls. Gender benefits of the project include improved public transport accessibility, improved access to services and markets, improved safety of the urban environment, and specific activities included in a gender action plan: (i) pedestrian-friendly design features for the project road, (ii) gender-friendly features for the design of service areas along the EWH, (iii) a pilot capacity-building program for women's groups in the project area, (iv) gender targets in construction activities and tree plantation, (v) gender targets in the awareness campaigns conducted under the project, and (vi) implementation of the GESI operational guidelines.<sup>24</sup> Gender, social development, livelihood restoration, and road safety awareness experts will be hired to implement the gender action plan.

31. **HIV/AIDS and human trafficking.** The prevalence of HIV/AIDS in Nepal is low, with a rate of 0.2% in the population aged 15–49.<sup>25</sup> About 28 cases of HIV/AIDS were recorded in the districts affected by the project. Human trafficking is an important problem in Nepal, with an estimated 5,957 cases of abducted persons in FY2016 (80% involving women and children). While the project will facilitate cross-border movements of people and require an important labor force, it will widen an existing corridor and is thus not expected to contribute to a significant increase in HIV/AIDS and human trafficking. The GESI action plan includes the recruitment of a specialized nongovernment organization to conduct an HIV/AIDS and human trafficking prevention awareness campaign along the road corridor. The contractors will further conduct HIV/AIDS awareness sessions and provide voluntary testing and guidance to their workforce.

#### E. Safeguards

32. In compliance with ADB's Safeguard Policy Statement (2009), the project's safeguard categories are as follows.<sup>26</sup>

33. **Environment (category B).** The project road will be constructed in the existing right-of-way and does not pass through or near protected areas. The environmental impacts of the project road and the Project Directorate (ADB) building are not expected to be significant and irreversible,

<sup>24</sup> Gender Action Plan (accessible from the list of linked documents in Appendix 2).

<sup>25</sup> Government of Nepal, Ministry of Health and Education. 2014. *Country Progress Report on HIV/AIDS*. Kathmandu.

<sup>26</sup> ADB. [Safeguard Categories](#).



and will be mainly restricted to the construction stage. Other anticipated impacts involve dust, noise, exhaust, construction and domestic waste, water contamination, occupational health and safety, erosion, siltation, traffic congestion during construction, and air pollution during operation. Initial environmental examinations for the two subprojects were disclosed on the ADB website in July 2018, and include environmental management plans providing mandatory mitigation measures to be implemented by contractors. Concerns voiced by affected persons and stakeholders during project preparation were incorporated in the design, and a grievance redress mechanism will alleviate concerns during implementation. About 5,600 trees will need to be removed and a compensatory afforestation program will be implemented, with a ratio of 25 saplings planted for each felled tree.

34. **Involuntary resettlement (category B).** The project requires no land acquisition and has moderate resettlement impacts. Of 479 affected households (2,492 persons), 25 households (130 persons) will be significantly affected, and will have to rebuild their residence or commercial structure outside the corridor of impact. Project impacts will otherwise be mostly minor on 454 non-titled households (2,362 persons), including 205 households (43%) that need to relocate moveable commercial kiosks. Only 25% of surveyed affected households are vulnerable. Other impacts include partial impacts to commercial structures (43%) and impacts on fruit trees (15%); 125 community structures will have to be rebuilt, including tube wells and other government structures (52%), resting places (30%), and temples (18%).

35. A resettlement plan was prepared for the project road and disclosed on the ADB website in June 2018.<sup>27</sup> The entitlement matrix provided under the resettlement plan includes mitigation measures and resettlement assistance commensurate with the project impacts; incorporates lessons from previous projects; and provides compensation at replacement cost for structures and trees, shifting and reconstruction assistance, and shifting and loss of income allowance for moveable kiosks. It also includes special measures for significantly affected households that must rebuild their commercial structure or residence, including (i) financial assistance for temporary loss of income and subsistence allowance, and (ii) additional financial assistance and skill enhancement training for vulnerable households. Due diligence for the resettlement impacts of the Project Directorate (ADB) office was carried out and disclosed on the ADB website.

36. **Indigenous peoples (category C).** The project road does not cross traditional customary or tribal lands. The social impact assessment established that only 45 indigenous households are directly affected by the project, representing 10% of affected households; their socioeconomic characteristics are similar to those of the wider society, and they are well integrated, will not be impacted differently, and will benefit equally from the project.

37. **Implementation.** Implementation of the environmental safeguards and resettlement plan will be overseen by DOR. The Project Directorate (ADB) will be supported by resettlement and environment specialists in guiding and reviewing the implementation of safeguard plans and documentation. The construction supervision consultant will include a team of environmental, gender, resettlement, social experts, and field mobilizers to assist DOR in implementing and monitoring safeguard and GESI activities. Contractors will be required to have environmental, health, and safety officers to ensure the environmental management plan is properly implemented. The government will finance and implement environmental and resettlement activities. Detailed implementation arrangements are in the PAM.

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<sup>27</sup> Resettlement Plan (accessible from the list of linked documents in Appendix 2).

**F. Summary of Risk Assessment and Risk Management Plan**

38. Significant risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.<sup>28</sup> The integrated benefits and impacts are expected to outweigh the costs.

**Table 4: Summary of Risks and Mitigating Measures**

<b>Risks</b>	<b>Mitigation Measures</b>
Behavioral change towards road safety may extend beyond the project timeline	The project will carry out a broad range of activities to address institutional and management gaps, including the preparation of a national road safety policy, strategy and action plan, and the strengthening of the road safety council. The project will also conduct a survey to assess the behavior of road users towards road safety, prepare road safety awareness campaign materials, and carry out awareness campaigns to contribute to behavioral change.
High turnover of project management staff may lower the priority given to road safety	The government and the Asian Development Bank have agreed on a specific loan category allocation to ensure that the recommendations identified during road safety audits of the East–West Highway are effectively implemented by the Department of Roads.
Inadequate maintenance may affect road utilization in the long term	The pavement of the project road has been designed for 20-year durability. Civil works contracts include 1-year of defect liability and 5-year of performance-based maintenance under the responsibility of the contractors. The project will also monitor the periodic maintenance backlog to mitigate financial sustainability risks.

Source: Asian Development Bank.

**V. ASSURANCES AND CONDITIONS**

39. The government and MOPIT have assured ADB that implementation of the project shall conform to all applicable ADB policies, including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the PAM and loan documents.

40. The government and MOPIT have agreed with ADB on certain covenants for the project, which are set forth in the draft loan agreement.

**VI. RECOMMENDATION**

41. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan of \$180,000,000 to Nepal for the South Asia Subregional Economic Cooperation Highway Improvement Project, from ADB’s ordinary capital resources, in concessional terms, with an interest charge at the rate of 1.0% per year during the grace period and 1.5% per year thereafter; for a term of 32 years, including a grace period of 8 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan agreement presented to the Board.

Takehiko Nakao  
President

11 September 2018

<sup>28</sup> Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

## DESIGN AND MONITORING FRAMEWORK

<b>Impacts the Project is Aligned with</b>			
(i) transport connectivity within Nepal and with neighboring countries improved (Fourteenth Plan FY2017–2019), <sup>a</sup> and (ii) physical connectivity and multimodal linkages for land-based transport along major trade routes enhanced (SASEC Operational Plan 2016–2025) <sup>b</sup>			
<b>Results Chain</b>	<b>Performance Indicators with Targets and Baselines</b>	<b>Data Sources and Reporting</b>	<b>Risks</b>
<b>Outcome</b> Efficiency and safety of the road transport system improved	By 2024: a. Average travel time on the project road reduced by 33% (2018 baseline: 1.45 minutes per km) b. Average daily vehicle-km along the project road increased by 33% (2018 baseline: 747,000 vehicle-km) c. Total road fatalities per 100,000 vehicle-km travelled along the project road reduced by 20% (2018 baseline: to be determined)	a–b. Post-implementation measurement and survey by DOR  c. Project performance monitoring system and annual traffic accident reports from the Traffic Police Division	Behavioral change towards road safety may extend beyond the project timeline.
<b>Outputs</b> 1. Road network upgraded and maintained	By 2023: 1a. 87 km of roads upgraded to four lanes and designed to 100 km per hour standard (2018 baseline: 0) 1b. 5-year performance-based road maintenance contracts implemented (2018 baseline: not applicable)	1a. PCR and monitoring reports by DOR 1b. Post-implementation survey by DOR	High turnover of project management staff may lower the priority given to road safety
2. Planning and management for road safety strengthened	By 2023: 2a. Gender-inclusive national road safety policy, action plan and investment program developed (2018 baseline: not applicable) 2b. Key positions of the national road safety council filled (2018 baseline: 0 positions filled) 2c. Road safety assessment for 1,027 km of national highway completed, with over 20 accident blackspots eliminated (2018 baseline: 0 km assessed) 2d. 140 road safety features and 42 km of footpaths friendly to elderly people, women, children, and people with disabilities installed at appropriate locations on project road <sup>c</sup> (2018 baseline: 0) 2e. At least 50 schools (50% of students and 75% of teachers) and 1,000 community members (including 40% women) reported improved road safety awareness (2018 baseline: not applicable)	2a–b. Annual report of MOPIT  2c–d. Post-implementation survey by DOR  2e–f. PCR and monitoring reports by DOR	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	2f. 100 managers, engineers, and staff of MOPIT trained on gender equality and social inclusion operational guidelines (2018 baseline: 0)		
3. Facilities and project readiness of the Project Directorate (ADB) improved	<p>By 2023:</p> <p>3a. Project Directorate (ADB) office reconstructed and modernized (2018 baseline: not applicable)</p> <p>3b. Feasibility and detailed design studies prepared for about 104 bridges and 247 km of road along the EWH (2018 baseline: 0)</p> <p>3c. Prefeasibility study and standard designs prepared for over 20 service areas to be identified along the EWH, with inclusive features for elderly people, women, children, and people with disabilities (2018 baseline: 0)<sup>d</sup></p>	<p>3a. Annual report of MOPIT</p> <p>3b–c. PCR and monitoring reports by DOR</p>	
<p><b>Key Activities with Milestones</b></p> <p><b>1. Road network upgraded and maintained</b></p> <p>1.1 Award contract and mobilize construction supervision consultant by Q1 2019.</p> <p>1.2 Award contracts for the upgrade of 87 km of road by Q1 2019.</p> <p>1.3 Complete construction of 87 km of road by Q1 2022.</p> <p>1.4 Start implementation of performance-based maintenance contracts by Q1 2023.</p> <p><b>2. Planning and management for road safety strengthened</b></p> <p>2.1 Recruit technical assistance consultants by Q2 2019.</p> <p>2.2 Conduct road safety assessment and identify improvement measures by Q3 2020.</p> <p>2.3 Complete implementation of road safety improvement measures by Q4 2021.</p> <p>2.4 Initiate gender action plan and consultation and awareness-raising sessions with local communities, including women’s association groups, by Q1 2019.</p> <p><b>3. Facilities and project readiness of Project Directorate (ADB) improved</b></p> <p>3.1 Award contracts for the construction of the Project Directorate (ADB) office by Q3 2019.</p> <p>3.2 Award contract and mobilize project preparatory consultant by Q2 2019.</p>			
<p><b>Project Management Activities</b></p> <p>Ensure counterpart fund availability by Q3 2018.</p> <p>Establish project implementation units under the Project Directorate (ADB) by Q4 2018.</p>			
<p><b>Inputs</b></p> <p>Asian Development Bank: \$180 million (loan)</p> <p>Technical Assistance Special Fund (TASF-6): \$0.75 million (grant)</p> <p>Government of Nepal: \$76.4 million</p>			
<p><b>Assumptions for Partner Financing</b></p> <p>Not applicable</p>			

ADB = Asian Development Bank; DOR = Department of Roads; EWH = East–West Highway; km = kilometer; MOPIT = Ministry of Physical Infrastructure and Transport; PCR = project completion report; Q = quarter.

<sup>a</sup> Government of Nepal, National Planning Commission. 2016. *Fourteenth Plan, FY2017–2019*. Kathmandu.

<sup>b</sup> South Asia Subregional Economic Cooperation. 2016 *Operational Plan 2016–2025*. Manila.

<sup>c</sup> Features include footpaths, bus stops, shelters, marked pedestrian crossings and walkways, and safety signage.

<sup>d</sup> Service areas are roadside areas and may notably comprise restrooms, gas station, parking, shelter, restaurant, convenience store, or visitor information center facilities.

Source: Asian Development Bank.

**LIST OF LINKED DOCUMENTS**

<http://www.adb.org/Documents/RRPs/?id=52097-001-3>

1. Loan Agreement
2. Sector Assessment (Summary): Transport (Road Transport [Nonurban])
3. Project Administration Manual
4. Contribution to the ADB Results Framework
5. Development Coordination
6. Economic and Financial Analysis
7. Country Economic Indicators
8. Summary Poverty Reduction and Social Strategy
9. Risk Assessment and Risk Management Plan
10. Attached Technical Assistance Report: Institutional Strengthening of Road Safety and Gender Equality
11. Climate Change Assessment
12. Gender Action Plan: Gender Equality and Social Inclusion Action Plan
13. Initial Environmental Examination: Kanchanpur–Kamala Road
14. Initial Environmental Examination: ADB Project Directorate Office Building Subproject
15. Resettlement Plan: Kanchanpur–Kamala Road

**Supplementary Documents**

16. Resettlement Due Diligence Report
17. Regional Cooperation and Integration