

# Project Administration Manual

Project Number: 47284-002

Loan and/or Grant Number(s): {LXXXX; GXXXX}

August 2016

Kingdom of Bhutan: South Asia Subregional  
Economic Cooperation Transport, Trade Facilitation  
and Logistics Project

## ABBREVIATIONS

ADB	–	Asian Development Bank
ADF	–	Asian Development Fund
APFS	–	audited project financial statements
CSC	–	construction supervision consultant
DDC	–	detail design consultant
DES	–	Department of Engineering Services
DMF	–	design and monitoring framework
DOR	–	Department of Roads
DOT	–	Department of Trade
DPA	–	Department of Public Accounts
DRC	–	Department of Revenue Customs
EFRC	–	Environmentally Friendly Road Construction
EMP	–	environmental management plan
GACAP	–	governance and anticorruption action plan
IARS	–	Imprest Account Reconciliation Statement
ICB	–	international competitive bidding
ICP	–	integrated check post
IEE	–	initial environmental examination
LCS	–	Land Custom Station
MDP	–	Mini dry port
NCB	–	national competitive bidding
MOWHS	–	Ministry of Works and Human Settlement
PAI	–	project administration instructions
PAM	–	project administration manual
PIU	–	project implementation unit
PNH	–	primary national highway
PPTA	–	project preparatory technical assistance
PT	–	Phuentsholing Thromde (Phuentsholing municipal government)
QBS	–	quality based selection
QCBS	–	quality- and cost based selection
RGOB	–	Royal Government of Bhutan
RMA	–	Royal Monetary Authority
RRP	–	Report and Recommendation of the President to the Board
SASEC	–	South Asia Subregional Economic Cooperation
SBD	–	standard bidding documents
SEWH	–	Southern East-West Highway
SOE	–	statement of expenditure
SPS	–	Safeguard Policy Statement
SPRSS	–	summary poverty reduction and social strategy
TOR	–	terms of reference

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### **Project Administration Manual Purpose and Process**

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with the policies and procedures of the government and Asian Development Bank (ADB). The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Department of Roads, Ministry of Works and Human Settlements and Phuentsholing Thromde are wholly responsible for the implementation of ADB-financed projects, as agreed jointly between the borrower and ADB, and in accordance with the policies and procedures of the government and ADB. ADB staff is responsible for supporting implementation including compliance by Department of Roads, Ministry of Works and Human Settlements and Phuentsholing Thromde of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At loan negotiations, the borrower and ADB shall agree to the PAM and ensure consistency with the financing agreement. Such agreement shall be reflected in the minutes of the loan negotiations. In the event of any discrepancy or contradiction between the PAM and the financing agreement, the provisions of the financing agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP), changes in implementation arrangements are subject to agreement and approval pursuant to relevant government and ADB administrative procedures (including the project administration instructions) and upon such approval, they will be subsequently incorporated in the PAM.



## **I. PROJECT DESCRIPTION**

### **A. Rationale, Location and Beneficiaries**

1. The project will promote regional connectivity in the Phuentsholing area with a direct road connection between the Samtse and Chhukha districts. The new road section between Phuentsholing and Chamkuna will complete the last missing 3.3-kilometer (km) link along the Phuentsholing to Samtse highway and activate the full value of the entire 58 km Southern East-West Highway (SEWH) section. It will provide the vital intra-country linkage of Samtse Dzongkhag with the rest of the country. The trade facilitation and logistics component is aimed at improving the infrastructures and services at the border crossing points by adding additional equipment to facilitate cross-border traffic and transit of goods and services, trade and commerce nationwide. These interventions are targeted to improve the working conditions and service delivery at the check points so that export and import of goods and services takes place safely and efficiently.

### **B. Impact and Outcome**

2. The impact will be improved mobility and cross-border movement of goods and passengers, aligned with Bhutan's Eleventh Five Year Plan. The outcome will be improved road connectivity and service delivery at the border crossings in Samtse and Chhukha districts.

### **C. Outputs**

3. The physical outputs will be (i) 3.3 km of national highway constructed between Phuentsholing and Chamkuna; and (ii) equipment for trade facilitation and logistics at mini dry port in Phuentsholing and the LCS in Allay procured and installed. The first output consists of a 2-lane national highway with pedestrian walkways on a 6-meter high embankment, to take into account the special environment along a river bed. The second output includes a truck x-ray scanner, hand held scanners, heavy machinery for optimized transshipment and off-loading procedures, surveillance and communication systems, and tools for detection of illegal items, which will improve the service delivery and safety in the cross-border stations.

## II. IMPLEMENTATION PLANS

### A. Project Readiness Activities

**Table 1: Project Readiness Schedule**


Indicative Activities	Months						Responsible Individual/Unit/Agency/Government
	Apr 2016	May 2016	Jun 2016	Jul 2016	Aug 2016	Sep 2016	
Advance contracting actions		X					DOR, PT
Detail Design (start)					X		DOR, PT
Establish project implementation arrangements	X						DPA, DOR, PT, DRC
ADB Board approval					X		ADB
Loan and Grant signing						X	DPA, DOR, PT, ADB
Government legal opinion provided					X		DPA, DOR, PT
Government budget inclusion					X		DPA, DOR, DES, DOT
Loan and grant effectiveness						X	

ADB = Asian Development Bank, DES = Department of Engineering Services, DOR = Department of Roads, DOT = Department of Trade, DPA = Department of Public Accounts, DRC = Department of Revenue Customs, PT = Phentsholing Thromde  
 Source: Asian Development Bank.





**B. Overall Project Implementation Plan**

**Table 2: Overall Project Implementation Plan**

Activities	2016				2017				2018				2019				2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>1. Phuentsholing-Chamkuna Road</b>																												
1.1 Detail Design (under SASEC Road Connectivity G0400)																												
1.2 Procurement civil works (under SASEC Road Connectivity G0400)																												
1.3 Phuentsholing-Chamkuna road construction works																												
1.4 Supervision and capacity development consultant services Recruitment																												
Supervision and capacity development																												
<b>2. Equipment for Trade Facilitation</b>																												
2.1. Phuentsholing Mini Dry Port Procurement																												
Installation																												
Supervision and training																												
2.2. Allay Land Custom Station Procurement																												
Installation																												
Supervision and training																												

G = Grant, SASEC = South Asia Subregional Economic Cooperation  
 Source: Asian Development Bank

Defects Liability Period   
 Detail Design Road 

### III. PROJECT MANAGEMENT ARRANGEMENTS

#### A. Project Implementation Organizations: Roles and Responsibilities

**Table 3: Project Implementation Organization**

Project Implementation Organizations	Management Roles and Responsibilities
Executing agencies Department of Roads (DOR), and Phuentsholing Thromde, municipal government (PT)	<ul style="list-style-type: none"> <li>– Responsible for day-to-day operation of each subproject through the project implementation unit (PIU)</li> <li>– Recruitment of consultants, procurement of works and equipment</li> <li>– Announcement of projects</li> <li>– Preparation and submission of necessary reports to ADB</li> <li>– Obtainment of approvals from ADB and government agencies</li> <li>– Preparation and submission of withdrawal applications to ADB through Department of Public Accounts (DPA)</li> <li>– Supervision of consultants</li> <li>– Supervision of works and equipment installation</li> </ul>
Project steering committee	<ul style="list-style-type: none"> <li>– Monitor and guide the implementation of subprojects</li> <li>– Help PIUs to ensure effective and timely implementation of subprojects</li> <li>– Build consensus on effective and efficient operations and maintenance mechanisms after completion of subprojects.</li> </ul>
ADB	Monitor and review overall implementation of the project in consultation with the executing agencies including: the project schedule; actions required in terms of environmental impacts and social safeguards, as applicable; timeliness of budgetary allocations and counterpart funding; project expenditures; progress with procurement and disbursement; statement of expenditure when applicable; compliance with particular covenants in financing agreements; and the likelihood of attaining the project's immediate development objectives.

ADB = Asian Development Bank.  
 Source: Asian Development Bank.

## B. Key Persons Involved in Implementation

### Executing Agencies

Department of Roads (DOR),  
Ministry of Works and Human  
Settlement

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Phuentsholing Thromde (PT)

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Chhukha, Phuentsholing, Bhutan

### ADB

Transport and Communications  
Division, South Asia Department  
(SATC)

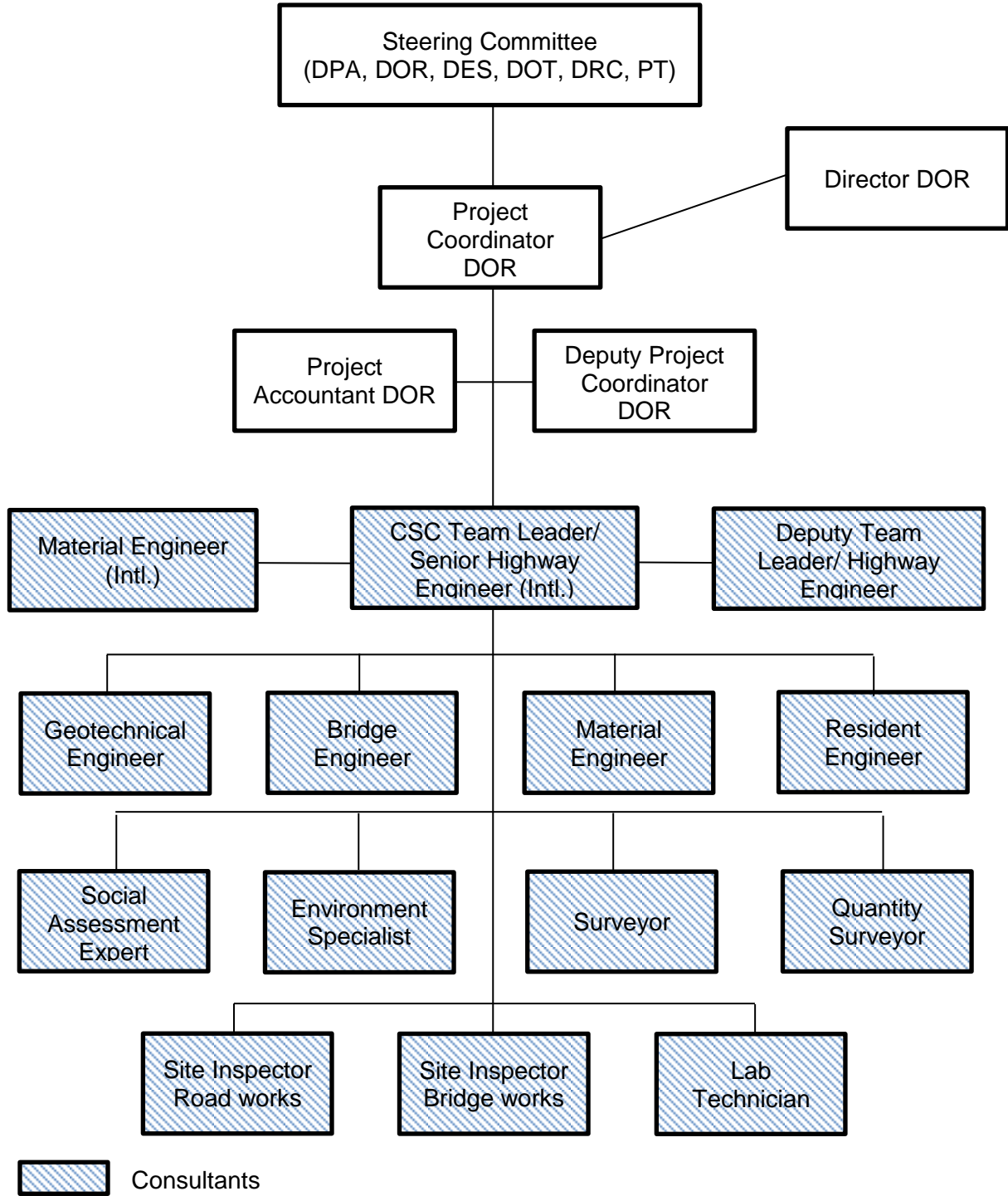
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Mission Leader

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**C. Project Organization Structure**

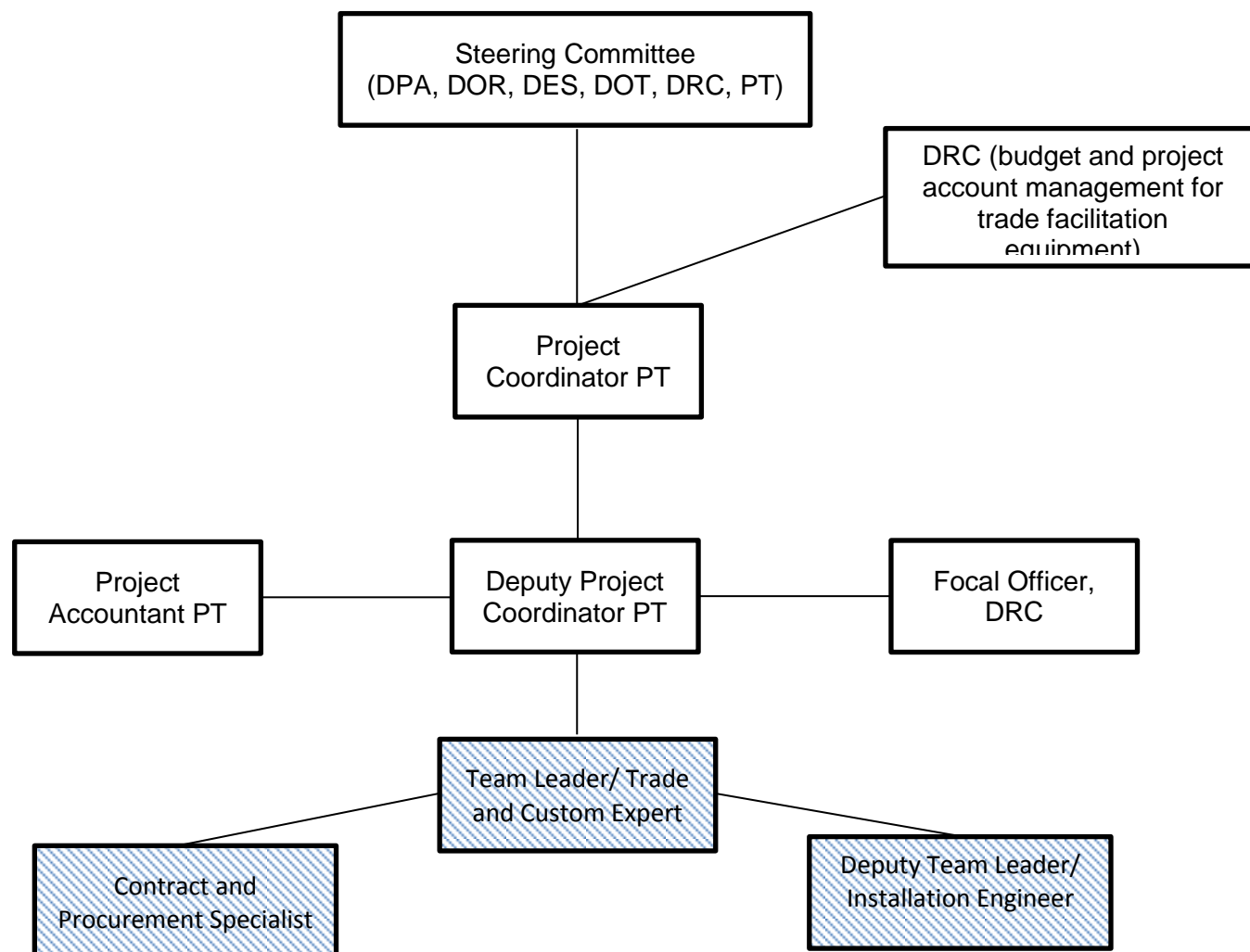
**4. Department of Roads**  
(Phuentsholing – Chamkuna road construction)



ADB = Asian Development Bank, DES = Department of Engineering Services, DOR = Department of Roads, DOT = Department of Trade, DPA = Department of Public Accounts, DRC = Department of Revenue Customs, PT = Phuentsholing Thromde  
Source: Asian Development Bank.

## 5. Phuentsholing Thromde

(Trade Facilitation Equipment in Mini Dry Port and Land Custom Station)



Consultants

6. The PT project implementation organization is identical with the current project management unit implementing the SASEC Road Connectivity Project for the mini dry port in Phuentsholing and the land custom station in Allay, both under G0400.<sup>1</sup>

ADB = Asian Development Bank, DES = Department of Engineering Services, DOR = Department of Roads, DOT = Department of Trade, DPA = Department of Public Accounts, DRC = Department of Revenue Customs, PT = Phuentsholing Thromde

Source: Asian Development Bank.

<sup>1</sup> ADB. 2014. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Grant to the Kingdom of Bhutan for the South Asia Subregional Economic Cooperation Road Connectivity Project*. Manila.

#### IV. COSTS AND FINANCING

7. The project is estimated to cost \$23.07 million (Table 4).

**Table 4: Project Investment Plan**  
(\$ million)

Item	Amount <sup>a</sup>
<b>A. Base Cost<sup>b</sup></b>	
1. Construction of national highway section	15.57
2. Procurement and installation of equipment for trade facilitation	4.84
<b>Subtotal (A)</b>	<b>20.41</b>
<b>B. Contingencies<sup>c</sup></b>	<b>2.48</b>
<b>C. Financing Charges During Implementation<sup>d</sup></b>	<b>0.18</b>
<b>Total (A+B+C)</b>	<b>23.07</b>

<sup>a</sup> Includes taxes and duties of \$369,000 to be financed by the Government of Bhutan as an exemption.

<sup>b</sup> In April 2016 prices, escalated from July 2015 prices.

<sup>c</sup> Physical contingencies computed at 10.0% for civil works. Price contingencies computed at 1.5% on foreign exchange costs and 6.0% 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 capitalized interest during construction, computed for the Asian Development Bank loan at 1.0% per annum during the grace period and 1.5% per annum thereafter.

Source: Asian Development Bank estimates.

6. The government has requested a loan in various currencies equivalent to SDR10.466 million, and a grant not exceeding \$5 million from Asian Development Bank's (ADB) Special Funds resources to help finance the project.<sup>2</sup> The loan will have a 32-year term, including a grace period of 8 years, an interest rate of 1.0% per annum during the grace period and 1.5% per annum thereafter, and such other terms and conditions set forth in the draft financing and project agreement.

7. The financing plan is in Table 5.

**Table 5: Financing Plan**

Source	Amount (\$ million)	Share of Total (%)
Asian Development Bank		
Special Funds resources (loan)	14.61	63.3
Special Funds resources (grant)	5.00	21.7
Government	3.46	15.0
<b>Total</b>	<b>23.07</b>	<b>100.0</b>

Source: Asian Development Bank estimates.

#### A. Cost Estimates Preparation and Revisions

8. The cost estimates were prepared by ADB with information for the investment costs extracted from the consultants' project preparatory technical assistance (PPTA) final draft

<sup>2</sup> A country's eligibility for Asian Development Fund grants under the revised grant framework is determined by its risk of debt distress. The latest sustainability analysis determined that Bhutan had a moderate risk of debt distress and was therefore eligible to receive 50% of its Asian Development Fund allocation as grants.

report.<sup>3</sup> The PPTA cost estimates were based on July 2015 prices and are escalated to April 2016 prices.

## B. Key Assumptions

9. The following key assumptions underpin the cost estimates and financing plan:

- (i) Exchange rate: Nu67.010 = \$1.00 (as of 16 May 2016).
- (ii) Price contingencies based on expected cumulative inflation over the implementation period are as follows:

**Table 6: Escalation Rates for Price Contingency Calculation**  
(%)

Item	2016	2017	2018	2019	2020	2021	Average
Foreign rate of price inflation	1.5	2.90	4.50	6.00	7.60	9.20	5.30
Domestic rate of price inflation	4.0	9.20	15.21	21.54	28.23	35.28	14.57

Source: Asian Development Bank.

<sup>3</sup> The Asian Development Bank (ADB) provides project preparatory technical assistance for SASEC Transport, Trade Facilitation and Logistics Project (TA-8708).

**A. Detailed Cost Estimates by Expenditure Category**

<b>Item</b>	<b>Total Cost (\$ million)</b>	<b>% of Total Base Cost</b>
<b>A. Investment Costs <sup>a</sup></b>		
1 Civil Works - National highway	13.29	57.6
2 Procurement and installation of equipment for trade facilitation <sup>b</sup>	4.84	21.0
3 Consulting Services- construction supervision for road	2.18	9.5
<b>Subtotal (A)</b>	<b>20.31</b>	<b>88.0</b>
<b>B. Recurrent Costs</b>		
1 Project Management	0.10	0.4
<b>Subtotal (B)</b>	<b>0.10</b>	<b>0.4</b>
<b>Total Base Cost</b>	<b>20.41</b>	<b>88.5</b>
<b>C. Contingencies</b>		
1 Physical Contingencies	1.44	6.2
2 Price Contingencies	1.04	4.5
<b>Subtotal (C)</b>	<b>2.48</b>	<b>10.8</b>
<b>D. Financing Charges During Implementation</b>		
1 Interest during Construction (IDC)	0.18	0.8
<b>Subtotal (D)</b>	<b>0.18</b>	<b>0.8</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>23.07</b>	<b>100.0</b>

<sup>a</sup> Includes taxes and duties of \$369,212 financed by RGOB as an exemption.

<sup>b</sup> Exempted from taxes and duties

Note: Numbers may not sum precisely because of rounding.

Source: Asian Development Bank.



**B. Allocation and Withdrawal of Loan/Grant Proceeds**

**Allocation and Withdrawal of Loan Proceeds  
(SDR million)**

No.	Item	Allocation from ADB financing	Percentage
1	Civil Works - National highway	7.937	85.0% of total expenditure claimed
2	Consulting Services- construction supervision for road	1.261	85.0% of total expenditure claimed
3	Interest charge	0.129	100.0% of amount due
4	Unallocated	1.139	
	<b>Total</b>	<b>10.466</b>	

Source: Asian Development Bank estimates.

**Allocation and Withdrawal of Grant Proceeds  
(\$ million)**

No.	Item	Allocation from ADB financing	Percentage
1	Equipment for trade facilitation	4.84	100.0% of total expenditure claimed
2	Unallocated	0.16	
	<b>Total</b>	<b>5.00</b>	

Source: Asian Development Bank estimates.

### C. Detailed Cost Estimates by Financier

	Item	ADB Loan		ADB Grant		RGOB		Total
		Amount <sup>a</sup> (\$ million)	%	Amount <sup>a</sup> (\$ million)	%	Amount <sup>a</sup> (\$ million)	%	Amount <sup>a</sup> (\$ million)
<b>A.</b>	<b>Investment Cost<sup>b</sup></b>							
1	Construction of national highway section	11.08	85	-	0	1.95	15	13.03
2	Procurement and installation of equipment for trade facilitation <sup>c</sup>	-	0	4.84	100	-	0	4.84
3	Construction supervision for road	1.76	85	-	0	0.31	15	2.08
	<b>Subtotal (A)</b>	<b>12.84</b>	<b>64</b>	<b>4.84</b>	<b>24</b>	<b>2.27</b>	<b>11</b>	<b>19.94</b>
<b>B.</b>	<b>Recurrent Costs</b>							
1	Project Management	-	0	-	0	0.10	100	0.10
	<b>Subtotal (B)</b>	<b>-</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>0.10</b>	<b>100</b>	<b>0.10</b>
	<b>Total Base Cost</b>	<b>12.84</b>	<b>64</b>	<b>4.84</b>	<b>24</b>	<b>2.36</b>	<b>12</b>	<b>20.04</b>
<b>C.</b>	<b>Taxes and Duties</b>							
1	Taxes and Duties	-	0	-	0	0.37	100	0.37
	<b>Subtotal (C)</b>	<b>-</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>0.37</b>	<b>100</b>	<b>0.37</b>
<b>D.</b>	<b>Contingencies<sup>d</sup></b>							
1	Physical Contingencies	0.99	69	-	0	0.45	31	1.44
2	Price Contingencies	0.60	58	0.16	16	0.28	27	1.04
	<b>Subtotal (D)</b>	<b>1.59</b>	<b>64</b>	<b>0.16</b>	<b>7</b>	<b>0.73</b>	<b>29</b>	<b>2.48</b>
<b>E.</b>	<b>Financing Charges During Implementation<sup>e</sup></b>							
1	Interest Charges	0.18	100	-	-	-	-	0.18
	<b>Subtotal (E)</b>	<b>0.18</b>	<b>100</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0.18</b>
	<b>Total (A+B+C+D)</b>	<b>14.61</b>	<b>63.3</b>	<b>5.00</b>	<b>21.7</b>	<b>3.46</b>	<b>15.0</b>	<b>23.07</b>

<sup>a</sup> In April 2016 prices; exchange rate of \$1 = Nu67.010 is used.

<sup>b</sup> Excluding taxes and duties of \$369,212 financed from RGOB as an exemption.

<sup>c</sup> Exempted from taxes and duties.

<sup>d</sup> Physical contingencies computed at 10% for civil works; and 0% for procurement of trade facilitation equipment. Price contingencies computed at 1.5% on foreign exchange costs and 6.0% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>e</sup> Includes capitalized interest during construction, computed for ADB loan at 1% per annum during the grace period and 1.5% per annum thereafter.

ADB = Asian Development bank, Nu = Ngultrum, RGOB = Royal Government of Bhutan

Source: Asian Development Bank estimates.

#### D. Detailed Cost Estimates by Outputs/Components

(\$ million)

Item	Total	National highway constructed	% of Cost Category	Equipment installed	% of Cost Category
<b>A. Investment Costs <sup>a</sup></b>					
1 Construction of national highway section	13.29	13.29	100.0	-	0.0
2 Equipment for trade facilitation installed	4.84	-	0.0	4.84	100.0
3 Construction supervision for road	2.18	2.18	100.0	-	0.0
<b>Subtotal (A)</b>	<b>20.31</b>	<b>15.47</b>	<b>76.2</b>	<b>4.84</b>	<b>23.8</b>
<b>B. Recurrent Costs</b>	-				
1 Project Management	0.10	0.10	100.0	-	0.0
<b>Subtotal (B)</b>	<b>0.10</b>	<b>0.10</b>	<b>100.0</b>	-	<b>0.0</b>
<b>Total Base Cost</b>	<b>20.41</b>	<b>15.57</b>	<b>76.3</b>	<b>4.84</b>	<b>23.7</b>
<b>C. Contingencies</b>	-				
1 Physical Contingencies	1.44	1.44	100.0	-	0.0
2 Price Contingencies	1.04	0.88	84.3	0.16	15.7
<b>Subtotal (C)</b>	<b>2.48</b>	<b>2.32</b>	<b>93.4</b>	<b>0.16</b>	<b>6.6</b>
<b>D. Financing Charges During Implementation</b>	-				
1 Interest during Construction (IDC)	0.18	0.18	100.0	-	0.0
<b>Subtotal (D)</b>	<b>0.18</b>	<b>0.18</b>	<b>100.0</b>	-	<b>0.0</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>23.07</b>	<b>18.07</b>	<b>78.3</b>	<b>5.00</b>	<b>21.7</b>

<sup>a</sup> Includes taxes and duties of \$369,212 financed from RGOB as an exemption.

Source: Asian Development Bank estimates

Notes:

April 2016 prices

Physical contingencies computed at 10% for road civil works.

Price contingencies computed at 1.5% on foreign exchange costs and 6% on local currency costs

Numbers may not sum precisely because of rounding off.

## E. Detailed Cost Estimates by Year

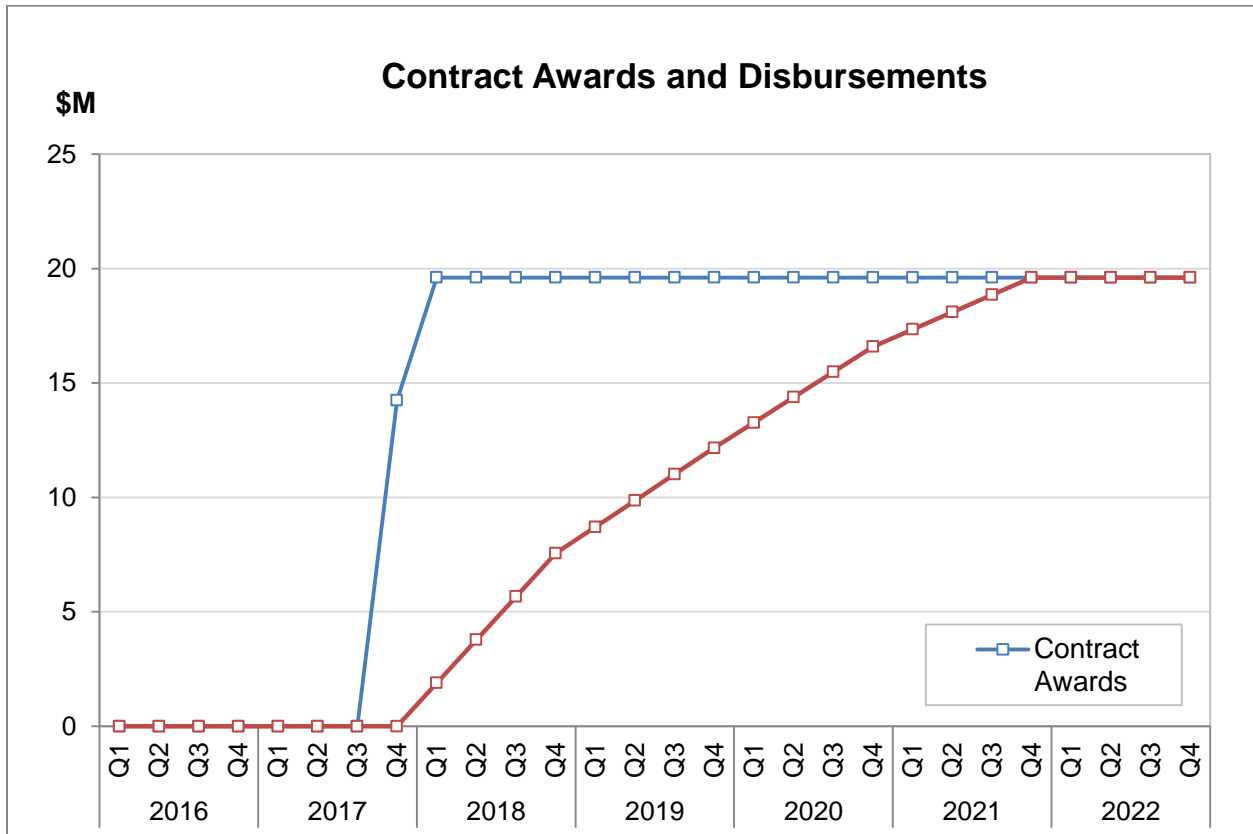
(\$ million)

Item	Total Cost	2017	2018	2019	2020	2021	2022
<b>A. Investment Costs</b>							
1 National highway constructed	13.03	-	2.61	3.91	3.91	2.61	-
2 Equipment for trade facilitation installed	4.84	-	4.59	0.24	-	-	-
3 Construction supervision for road	2.08	-	0.42	0.62	0.62	0.42	-
<b>Subtotal (A)</b>	<b>19.94</b>	-	<b>7.62</b>	<b>4.77</b>	<b>4.53</b>	<b>3.02</b>	-
<b>B. Recurrent Costs</b>							
1 Project Management	0.10	-	0.02	0.02	0.02	0.02	-
<b>Subtotal (B)</b>	<b>0.10</b>	-	<b>0.02</b>	<b>0.02</b>	<b>0.02</b>	<b>0.02</b>	-
<b>Total Base Cost</b>	<b>20.04</b>	-	<b>7.64</b>	<b>4.80</b>	<b>4.56</b>	<b>3.05</b>	-
<b>C. Taxes and Duties</b>							
1 Taxes and Duties	0.37	-	0.07	0.11	0.11	0.07	-
<b>Subtotal (C)</b>	<b>0.37</b>	-	0.07	0.11	0.11	0.07	-
<b>D. Contingencies</b>							
1 Physical Contingencies	1.44	-	0.29	0.43	0.43	0.29	-
2 Price Contingencies	1.04	-	0.26	0.24	0.30	0.25	-
<b>Subtotal (D)</b>	<b>2.48</b>	-	<b>0.54</b>	<b>0.67</b>	<b>0.73</b>	<b>0.54</b>	-
<b>E. Financing Charges During Implementation</b>							
1 Interest Charges	0.18	-	0.01	0.04	0.06	0.07	-
<b>Subtotal (E)</b>	<b>0.18</b>	-	<b>0.01</b>	<b>0.04</b>	<b>0.06</b>	<b>0.07</b>	-
<b>Total Project Cost (A+B+C)</b>	<b>23.07</b>	-	<b>8.27</b>	<b>5.61</b>	<b>5.46</b>	<b>3.73</b>	-
<b>% of Total Project Cost</b>	<b>100.0</b>	<b>0.0</b>	<b>35.9</b>	<b>24.3</b>	<b>23.6</b>	<b>16.2</b>	<b>0.0</b>

Source: Asian Development Bank estimates.

**F. Contract and Disbursement S-Curve**

10. Graph shows quarterly contract awards and disbursement projections over the life of the project. The S-curve is only for ADB financing.

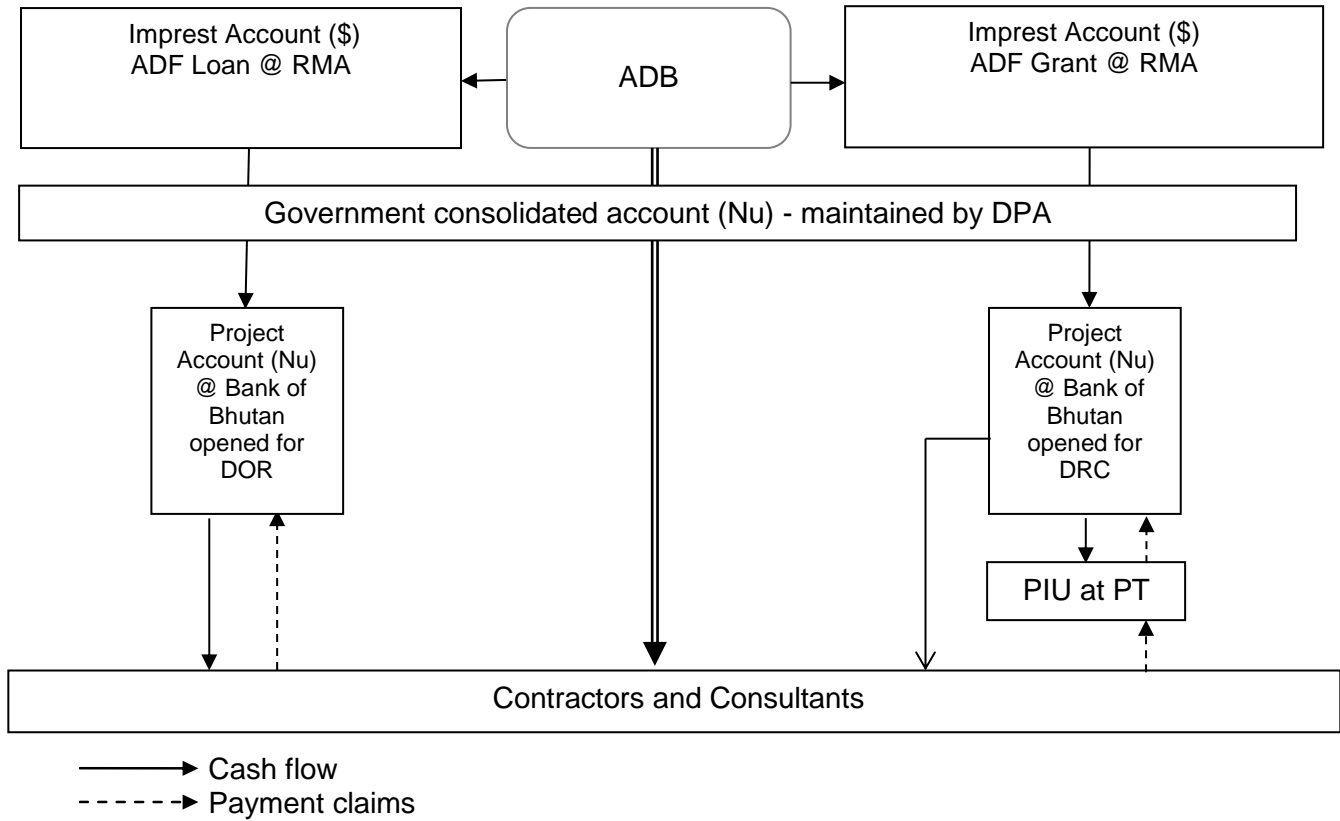


Q = quarter

Source: Asian Development Bank estimates.

**G. Fund Flow Diagram**

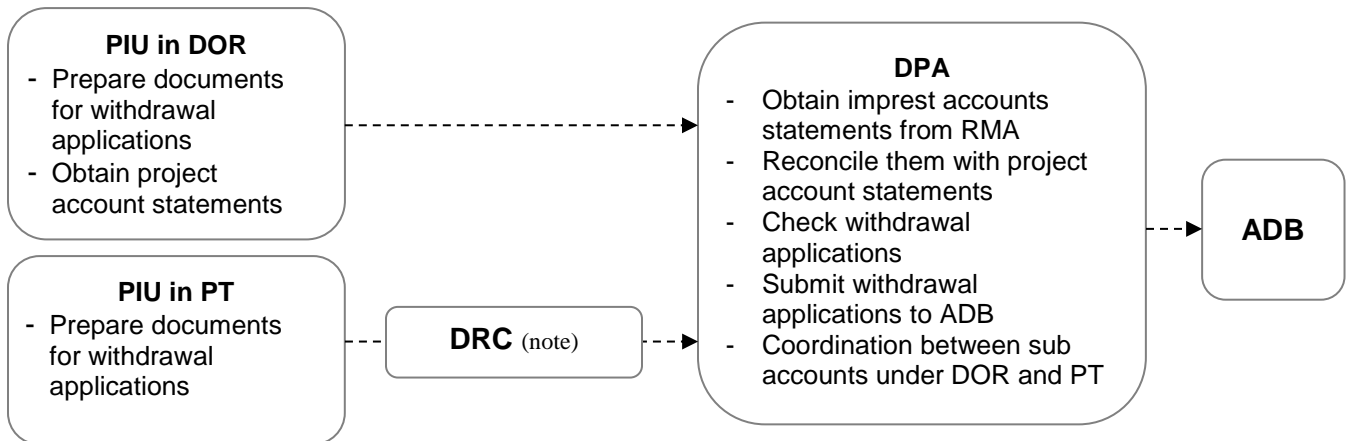
11. The following diagram shows how the funds will flow from ADB, and the government to implement the project activities.



12. Foreign currency payments can be made with direct payment procedure from ADB. All local currency payments will be made through the imprest account opened at RMA.

13. DRC will (i) review the submitted documents and (ii) obtain sub account statements and submit them to DPA.

**Flow chart for withdrawal applications preparations**



## V. FINANCIAL MANAGEMENT

### A. Financial Management Assessment

14. Financial management assessment (FMA) for Department of Roads (DOR) of the Ministry of Works and Human Settlements and Phuentsholing Municipal Government (PT) was conducted in March 2014 in accordance with ADB's Guidelines for the *Financial Management and Analysis of Projects* and updated in April 2016.<sup>4</sup> The FMA focuses on fund flows, internal controls, internal and external audit arrangements, staffing and information systems. The assessment draws from lessons learnt during the implementation of previous ADB-funded projects and included reviewing documents, interviewing counterparts in the PIUs, and discussing issues with stakeholders. Update on the financial management action plans for the ongoing SASEC Road Connectivity Project (G-0400 and L-3149) was discussed and issues were identified together with counterparts. The updated assessment concludes that the financial management systems of DOR and PT are satisfactory and that the overall risk is **Moderate**. DOR is guided by the Financial Rules and Regulations 2001 of the Government, which is assessed as robust in light of international practices and standards.

15. Audited project financial statements for previous and ongoing projects under DOR and PT have been submitted on time without serious audit observations on financial management or internal control. Based on the assessment, the key financial management risks identified are (i) weak Department of Revenue Customs (DRC) capacity and (iii) inadequate counterpart funds. A financial management action plan is given in Table 7 below:

**Table 7: Financial Management Action Plan**

Key Risk	Risk Mitigating Activity	Timeline	Responsible Entity
Inadequate counterpart funds	Ensure budget allocation of counterpart funds by loan effectiveness. Agreement by MoF to exempt taxes and duties on imported equipment	Before loan effectiveness	MoF
Weak capacity at DRC for ADB funded project implementation	PT, which is under the DES, will implement the trade equipment component of the project, as they have more experience in ADB funded projects (G-0400)	Before loan effectiveness	PT

ADB = Asian Development Bank, DES = Department of Engineering Services, DRC = Department of Revenue Customs, G = Grant, MoF = Ministry of Finance, PT = Phuentsholing Thromde  
Source: Asian Development Bank.

16. The internal control and risk assessment is shown in Table 8 below. The assessment on fund flow, accounting and reporting, internal control, external and internal audit is described in the following paragraphs.

<sup>4</sup> ADB. 2009. Financial Due Diligence: A Methodology Note.

**Table 8: FM Internal Control and Risk Assessment**

<b>Risk</b>	<b>Assessment</b>	<b>Risk Assessment</b>	<b>Risk-Mitigation Measures</b>
<b>Control Risks</b>			
Entity-Specific Risks	L	DOR's implementation capacity is high, based on the experience to execute ongoing/previous ADB funded projects.	Implementation capacity will be further strengthened for DOR and PT, by hand-on supports of ADB through the Bhutan Resident Mission.
	M	DRC does not have prior experience, but PT's implementation capacity is medium. It has experienced implementing ADB funded projects as an IA and EA for ADB or other donor funded projects.	As government agencies, DOR and PT's financial management is guided by the Financial Rules and Regulations 2001, which is being further strengthened by the ADB.
Fund Flow	M	DOR will manage project accounts. Reconciliation of project accounts with Imprest account at RMA is the key to accelerate disbursement process.	To avoid delay in preparing withdrawal applications, the reconciliation of sub accounts with Imprest accounts at RMA will be handled by DPA.
Internal Controls	M	As government agencies, DOR and PT's financial management is guided by the Financial Rules and Regulations 2001	Not applicable
Internal Audit	M	Internal audit will be conducted by the Internal Audit Services Section in MOWHS for DOR.	Not applicable
External Audit	L	DOR is subject to RAA audit Project financial statements are also audited by RAA. APFS under G-0174 were unqualified and received on time. APFS under G-0400 and L-3149 are not yet due	Not applicable
Accounting and Reporting	L	Cash based double entry in line with Financial Rules and Regulations, with annual financial statements prepared and regular progress reporting	Not applicable
Management Information System	L	All Government departments uses web based nationwide government system called Public Expenditure Management System (PEMS) where all reports are generated. However for specific report for donor projects, excel is used.	Not applicable
<b>Overall Inherent Risk</b>	<b>M</b>		

H = High, S = Substantial, M = Moderate, L = Low.

ADB = Asian Development Bank, APFS = audited project financial statements, DOR = Department of Roads, DPA = Department of Public Accounts, DRC = Department of Revenue Customs, EA = executing agency, G = grant, IA = implementing agency, MOWHS = Ministry of Works and Human Settlement, PT = Phuentsholing Thromde, RMA = Royal Monetary Authority

Source: Asian Development Bank.



## B. Disbursement

### 1. Disbursement Arrangements for ADB Funds

17. The loan and grant proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time), and detailed arrangements agreed upon between the government and ADB. Online training for project staff on disbursement policies and procedures is available.<sup>5</sup> Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

18. Imprest fund procedures will be used for disbursement of local currency payments. Direct payment by ADB will be made for foreign currency payments. Project coordinators of PIUs under DOR and PT will be responsible for (i) preparing disbursement projections, (ii) requesting budgetary allocations for counterpart funds, (iii) collecting supporting documents, and (iv) preparing withdrawal applications. DOR and DRC are responsible for reviewing the prepared withdrawal applications, obtaining project account statements, and submitting them to DPA. DPA will be responsible for obtaining account statements of imprest account and submitting withdrawal applications to ADB.

19. One imprest account each for loan and grant proceeds will be opened in the Royal Monetary Authority (RMA). One project sub-account will be opened under the imprest account for loan proceeds, which will be administered by DOR and used for the Phuentsholing–Chamkuna road component. A second project sub-account will be opened under the imprest account for grant proceeds, and will be administered by DRC for the trade facilitation equipment. These two sub-accounts will be for the exclusive use of the project, and receive and pool funds from ADB and RGOB through DPA, following Bhutan's country system, which is well-established and robust.

20. The total outstanding advance to the imprest accounts should not exceed the estimate of ADB's share of expenditures to be paid through the imprest accounts for the forthcoming 6 months. The DOR and PT may request initial and additional advances to the imprest accounts based on an estimate of expenditure sheet setting out the estimated expenditures to be financed through the account for the forthcoming 6 months.<sup>6</sup> Supporting documents should be submitted to ADB or retained by the borrower in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time) when liquidating or replenishing the imprest accounts.

21. **Statement of expenditure procedure.**<sup>7</sup> The SOE procedure may be used for reimbursement of eligible expenditures or liquidation of advances to the imprest account(s). Supporting documents and records for the expenditures claimed under the SOE should be maintained and made readily available for review by ADB's disbursement and review missions, upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit.

22. Before the submission of the first withdrawal application, the borrower should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the government, together with the authenticated specimen signatures

<sup>5</sup> Disbursement eLearning. [http://wpqr4.adb.org/disbursement\\_elearning](http://wpqr4.adb.org/disbursement_elearning)

<sup>6</sup> ADB. 2015. *Loan Disbursement Handbook*. Appendix 10B.

<sup>7</sup> SOE forms are available in Appendix 9B and 9C of ADB's *Loan Disbursement Handbook* (2015, as amended from time to time).

of each authorized person. The minimum value per withdrawal application is set in accordance with ADB's Loan Disbursement Handbook. Individual payments below this amount should be paid through the imprest fund procedure, unless otherwise accepted by ADB.

23. Withdrawal applications and supporting documents will demonstrate, among other things, that the goods, and/or services were produced in or from ADB members, and are eligible for ADB financing.

## **2. Disbursement Arrangements for Counterpart Fund**

24. Government counterpart funds will be provided to each PIU under DOR and PT, from DPA through DOR and DRC, and kept in project accounts of respective PIUs. Respective PIUs will prepare the disbursement projections and transmit to the government, to earmark the required funds for budgeting purposes.

### **C. Accounting**

25. The DOR and PT will maintain, or cause to be maintained, separate books and records by funding source for all expenditures incurred on the project following international accounting principles and practices, or those of the government as acceptable to ADB, and will be audited annually in accordance with sound auditing standards by auditors acceptable to ADB.

### **D. Auditing and Public Disclosure**

26. DPA will cause the detailed project financial statements to be audited in accordance with International Standards on Auditing and the Government's audit regulations by an independent auditor acceptable to ADB. The audited project financial statements, together with the auditors' report and management letter, will be submitted in the English language to ADB by the executing agency within 6 months of the end of the fiscal year. The annual audit report will include a separate audit opinion, which will cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether loan and grant proceeds were used only for the purposes of the project or not; and (iii) the level of compliance for each financial covenant contained in the legal agreements for the project, if any. A management letter shall also be provided.

27. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

28. The government, DOR, DRC and PT have been made aware of ADB's approach to delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements.<sup>8</sup> ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

29. Public disclosure of the audited project financial statements, including the auditor's opinion on the project financial statements, will be guided by ADB's Public Communications Policy 2011.<sup>9</sup> After the review, ADB will disclose the audited project financial statements and the opinion of the auditors on the project financial statements no later than 14 days of ADB's confirmation of their acceptability by posting them on ADB's website. The management letter will not be disclosed.<sup>10</sup>

## VI. PROCUREMENT AND CONSULTING SERVICES

### A. Advance Contracting and Retroactive Financing

30. There will be no retroactive financing under this loan. Some advance contracting for the engineering designs and the preparation of bidding documents for both project components are being conducted through existing consultancy contracts under the ongoing SASEC Road Connectivity Project (G0400).

### B. Procurement of Goods, Works, and Consulting Services

31. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines (2015, as amended from time to time).

32. International competitive bidding procedures will be used for civil works contracts estimated to cost \$3,000,000 or more, and supply contracts valued at \$1,000,000 or higher. Shopping will be used for procurement of works and equipment worth less than \$100,000.

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<sup>8</sup> ADB's approach and procedures regarding delayed submission of audited project financial statements:

- (i) When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (a) the audit documents are overdue; and (b) if they are not received within the next 6 months, requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.
- (ii) When audited project financial statements are not received within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters. ADB will (a) inform the executing agency of ADB's actions; and (b) advise that the loan may be suspended if the audit documents are not received within the next 6 months.
- (iii) When audited project financial statements are not received within 12 months after the due date, ADB may suspend the loan.

<sup>9</sup> Public Communications Policy: <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

<sup>10</sup> This type of information would generally fall under public communications policy exceptions to disclosure. ADB. 2011. *Public Communications Policy*. Paragraph 97(iv) and/or 97(v).

33. When and if any national competitive bidding (NCB) is proposed, ADB and the government will review the public procurement laws of the central and state governments to ensure consistency with ADB's Procurement Guidelines (2015, as amended from time to time), before the start of any procurement.

34. All consultants will be recruited according to ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The terms of reference for all consulting services are detailed in Section D.

35. An estimated 347 person-months (27 international, 320 national) of consulting services are required to facilitate project management and implementation for the Phuentsholing to Chamkuna Road. Consulting firms will be engaged using the quality- and cost-based selection (QCBS) method with a standard quality–cost ratio of 90:10.

### **C. Procurement Plan**

36. The procurement plan, prepared in accordance with the country-specific template prepared by the Operations Services and Financial Management Department<sup>11</sup>, is in Attachment A, describing all procurement of good and works to be undertaken for the Project.

### **D. Consultant's Terms of Reference**

37. The terms of reference for consulting services are provided in Attachment B.

## **VII. SAFEGUARDS**

### **A. Environmental Safeguards**

38. In accordance with requirements of the ADB Safeguards Policy Statement (SPS) (2009), the road project component has been categorized as environment category B having no anticipated attributable significant, long term or irreversible environmental impacts. The trade facilitation component, being limited to procurement of equipment and training of personnel, is classified as environmental category B. Therefore, an initial environmental examination (IEE) report including an environmental management plan (EMP) has been prepared for the road component.

39. Environmental clearance from the National Environment Commission and no-objection clearance from Phuentsholing Thromde will be obtained by DOR before start of construction works. Permits, certificates, and no-objection letters, for regulated activities such as soil borrowing, sand and stone quarrying, use of explosives, installation and operation of hot mix plants and crushers, will be obtained by the contractor before the implementation of the respective construction activity.

40. The EMP for the embankment road has been prepared and forms part of the bidding documents to address all anticipated environmental impacts from the project implementation. The EMP includes monitoring of environment quality parameters (air quality and noise levels) and checking the effectiveness of the EMP. In addition to collecting monitoring data, physical monitoring activities will be carried out by the CSC.

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<sup>11</sup> Procurement plan template: <https://estar.adb.org/eStar/docDownload.action?id=%7B2AF94682-B82E-4329-A5EF-B093EF9615B2%7D&objectStoreName=ADB>

41. The responsibilities of respective parties and agencies on implementing environmental safeguards are given below:

- (i) **DOR.** Ensure that all environment safeguard requirements as stated in the IEE, EMP, and loan covenants for the project are complied with; submit semi-annual environmental monitoring reports as necessary to ADB for disclosure on the ADB website.
- (ii) **Environmental Specialist, PMU.** Compliance monitoring of the requirements of the IEE and EMP; preparation of semi-annual environmental monitoring reports for the project based on monthly and quarterly monitoring reports prepared at the site level; monthly monitoring and random spot checks of site level implementation of the EMP; review and approval of monthly/quarterly environmental monitoring checklists or reports; in instances of new or unanticipated environmental impact, immediately inform ADB and agree on a decision for the need to update the IEE and/or EMP.
- (iii) **Environmental Specialist, CSC.** Conduct site induction training; review and recommend for approval environmental sub-plans (e.g. borrow area management, waste disposal, traffic, camp-layout); routine monthly compliance inspection and monitoring; random spot checks; assess the completeness and effectivity of measures; provide technical advice; provide on-the-job training to the contractor to enable effective implementation of the EMP; conduct “with cause” inspection focusing on pending non-compliance; ensure immediate return to compliant status by the Contractor; updating the EMP as necessary together and in consultation with the contractor; preparation of monitoring and inspection checklists/reporting formats to be completed on a monthly basis by the contractor; submit the completed checklists/reports to the Environmental Specialist, PMU; prepare semi-annual environmental monitoring reports and submit to the PMU for their review and further submission to ADB for disclosure on the ADB website; provide necessary technical support to the DOR PMU; Immediately alert the PMU in instances of new or unanticipated environmental impact and provide recommendations on whether the IEE and/or EMP needs to be updated.
- (iv) **Contractor:** Appoint an environmental focal person (EFP); implement the EMP; conduct daily onsite monitoring; report monthly to CSC; submit monthly self-monitoring reports; recommend to CSC updating of the EMP when necessary.

42. An orientation cum training workshop will be carried out by the CSC environmental specialist and/or ADB experts during the pre-construction stage and further during construction stages for DOR staff, other CSC staff, and the contractors.

**Table 9: Environmental Management Periodic Outputs, Deliverables, and Milestones during Construction Phase**

Activity	Responsibility	Outputs	Deliverable to ADB	Period
Appointment of Contractor EFP	Contractor and CSC	Appointment letter submitted to DOR-PMU through CSC	Included in annual monitoring report	At least 45 days before start of construction
Site Induction Training of	CSC	Training materials and training	Included in annual monitoring report	At least 30 days before start of

Activity	Responsibility	Outputs	Deliverable to ADB	Period
Contractors		proceedings		construction
Monthly				
I) Environmental self-monitoring report	Contractor	Completed checklist submitted to PMU and CSCU	Key findings Included in semi-annual monitoring report	Monthly starting from commencement date
II) Site inspection report	CSC-DOR	Inspection summary report submitted to PMU		
III) Site Inspection	PMU <sup>12</sup>	Inspection report		
Quarterly				
i) Compliance monitoring report	CSC-DOR CSC-PT	Environmental Monitoring report submitted to PMU	Key findings included in semi-annual monitoring report	3 months after commencement date
ii) Site Inspection	PMU	Inspection report		
Semi-annual				
i) Refresher training on EMP	CSC	Training proceedings submitted to PMU	Semi-annual environmental monitoring report submitted for disclosure on the ADB website	Starting from Project Effectiveness date
ii) Environmental monitoring report		Semi-annual environmental monitoring report submitted to PMU for review and approval		
Annual				
i) Integrated (Road and Trade Facilitation) Annual Monitoring report	CSC-DOR (lead) CSC-PT	Submitted to PMU	Submitted to ADB for review and disclosure on ADB and PWD website	No later than 13 months after commencement
ii) Site Inspection	PMU	Inspection report		

ADB = Asian Development Bank, CSC = Construction Supervision Consultant, EFP = environmental focal person, CSC-PT = Construction Supervision Consultant - Phuentsholing Thromde, DOR = Department of Roads, PMU = project management unit, PT = Phuentsholing Thromde

Source: Asian Development Bank.

## B. Social Safeguards

43. **Involuntary resettlement.** The project is categorized as “C” for involuntary resettlement as per ADB SPS. The social due diligence was based on the feasibility study and does not show any impact on private property. There will be provisions in the civil works contract to ensure that

<sup>12</sup> PMU site inspections are meant to provide site information to guide the review of reports prepared by the CSC and demonstrate enforcement presence to serve as deterrence for non-compliance of the contractor

during implementation (i) any temporary impact on land should be restored to pre-project conditions and (ii) any permanent impact on land or crops should be assessed and pre-approved by the CSC before any start of work and the social expert will recommend some mitigation measures that comply with SPS.

44. **Indigenous people.** There are no indigenous people in the project area. The civil works under the additional financing will not affect indigenous persons and the project is categorized as "C" for indigenous peoples.

45. **Prohibited investment activities.** Pursuant to ADB's SPS, ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the SPS.

### C. Grievance Redress Mechanism (GRM)

46. The same grievance redress mechanism established in South Asia Subregional Economic Cooperation Road Connectivity Project will be utilized by the project for practical purposes.

47. A grievance redress mechanism is already established to receive and facilitate the resolution of concerns, complaints and grievances of affected people and relevant agencies on the social and environmental performance of the project in a time bound and transparent manner.

48. The project specific GRM is not intended to bypass the government's own redress process, rather it is intended to address project-affected people's concerns and complaints promptly, making it readily accessible to all segments of affected persons and is scaled to the risks and impacts of the project. While the affected person or party may submit their complaints concerning the project to any relevant agency, the steps recommended for the GRM are:

- Step 1: If any affected person or party faces grievances related to environment, land acquisition or resettlements, he/she can approach the contractor, construction supervision consultants or site staff of DOR and PT directly at the site level.
- Step 2: If grievances are not addressed at the site level, the affected person or party can lodge a written grievance to the grievance redress committee (GRC) comprising of Sector Heads of the Dzongkhag Administration as well as Gewog Officials. The affected person or party may also skip step 1 and directly file a written grievance to the GRC. All grievances which cannot be addressed at the site level should be forwarded to the grievance redress committee within 15 days from the receipt of complaint. The committee must respond within 15 days. Further, the GRC will treat grievances of both male and female affected persons equally and address them fairly.
- Step 3: If the affected person or party is not satisfied with the decision or he/she receives no response within 15 days of registering the grievance, he/she can approach the DOR and finally, can appeal to the Royal Government of Bhutan or His Majesty the King.

## VIII. GENDER AND SOCIAL DIMENSIONS

49. **Gender consultation and participation.** In addition to government stakeholders, a total of 67 people were consulted and 602 surveyed during project preparation. Overall, they are supportive of the project. Consultations will continue to take place during implementation to ensure concerns and views are taken into account. Women are expected to benefit equally from the project, as they are important road users and active in road maintenance activities. The project is categorized as “some gender elements” (SGE) and includes the following gender mainstreaming activities: (i) the inclusion of pedestrian and gender-friendly design features such as pedestrian walkways, benches and signage; (ii) conducting trainings to DOR officials on how better to integrate gender design features into future projects, conducting on-the-job training for DoR staff on improving integration of social and gender mainstreaming features into future project design; and (iii) ensuring that at least 50% of beneficiaries of HIV/AIDS and human trafficking community awareness activities (see paragraph 44 below) are women. The monitoring of gender mainstreaming activities and impacts and benefits on women will be monitored by the CSC social development specialist and reported on in the annual safeguards monitoring report.

50. **HIV and AIDS.** In addition to HIV/AIDS prevention measures conducted by migrant labor recruiting agencies, the EA will ensure that (i) the contractor carries out awareness programs for labor on the risks of sexually transmitted diseases, HIV/AIDS and human trafficking; and (ii) HIV/AIDS and human trafficking awareness campaigns are carried out in the communities in the project influence area, including in Phuentsholing. These will be organized with the support of the social development specialist of the CSC and the competent government authorities. Contracts for the project will include specific clauses on these undertakings, and compliance will be monitored and reported in the annual safeguards monitoring report.

51. **Health.** DOR shall ensure that contractors provide adequately for the health and safety of construction workers and further ensure that bidding documents include measures on how contractors will address this and provide awareness raising to its workers on health and safety. This will be monitored by DOR and the supervision consultant and reported in the annual safeguards monitoring report.

52. **Labor.** DOR shall ensure that (i) civil works contractors comply with all applicable labor laws and regulations; (ii) do not employ child or forced labor, (iii) pay equal wages for equal work; and (iv) do not discriminate. Specific clauses ensuring these will be included in bidding and contracting documents. The construction supervision consultants will monitor compliance to the provisions.

## IX. PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION

### A. Project Design and Monitoring Framework

53. The project design and monitoring framework is in Attachment C.

### B. Monitoring

54. **Project performance monitoring.** DOR and PT, in consultation with ADB, will develop within 3 months of the effective date of the Financing Agreement, a project performance monitoring system. The project performance monitoring system will monitor and evaluate the



impacts, outcomes, outputs and activities in relation to the targets and milestones set for the project. Disaggregated baseline data for output and outcome indicators gathered during project processing will be updated and reported quarterly through the quarterly progress reports prepared by DOR and PT. These quarterly reports will provide information necessary to update ADB's project performance reporting system.<sup>13</sup>

55. **Compliance monitoring.** Compliance with covenants will be monitored through ADB's project administration missions – including project inception mission to discuss and confirm the timetable for compliance with the loan covenants; project review missions to review the borrower's compliance with particular loan covenants and, where there is any noncompliance or delay, discuss proposed remedial measures with the Government; and midterm review mission if necessary to review relevance of the covenants and whether it needs to be changed or waived due to changing circumstances.

56. **Safeguards monitoring.** Compliance with safeguard requirements will be monitored by PMUs under DOR and PT with the support of the supervision consultants. DOR and PT shall ensure compliance with the ADB's Safeguard Policy Statement, Government's rules and regulations and all the related documents agreed upon with ADB such as IEE and EMPs. Compliance of the project with these documents will be reviewed by ADB review missions.

57. **Gender and social dimensions monitoring.** Social dimensions of the project will be monitored by the social expert from the supervision consultant. This will include compliance with ADB's SPS, progress in the implementation of the key project gender features as described in para 49, HIV/AIDS and human trafficking awareness campaign and compliance with core labor standards. Monitoring results will be included in the annual safeguards monitoring report.

### C. Evaluation

58. ADB will field regular missions to discuss progress of the subprojects and any changes to implementation arrangements or remedial measures required to be undertaken towards achieving the overall project objectives. A midterm review of the project will be undertaken after 50% of the construction period has elapsed. The review will focus on institutional, administrative, organizational, technical, environmental, and social aspects of the project. Within 3 months of physical completion of the project components, DOR and PT will each submit project completion reports to ADB.<sup>14</sup>

### D. Reporting

59. The DOR and PT will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, and (d) updated implementation plan for the next 12 months; and (iii) a project completion report within 6 months of physical completion of the project. To ensure that projects will continue to be both viable and sustainable, project accounts and the executing agency audited financial statements together with the associated auditor's report, should be adequately reviewed.

<sup>13</sup> ADB's project performance reporting system is available at <http://www.adb.org/Documents/Slideshows/PPMS/default.asp?p=evaltool>

<sup>14</sup> Project completion report format is available at: <http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar>

## **E. Stakeholder Communication Strategy**

60. The DOR and PT will ensure that IEE and semi-annual safeguards monitoring reports are made available locally and submitted to ADB for posting on its website. During project construction, continuous consultation will be carried out with the local public, affected parties and other relevant stakeholders, as necessary, and through the GRM.

## **X. ANTICORRUPTION POLICY**

61. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.<sup>15</sup> All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants, and other service providers. Individuals and/or entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.<sup>16</sup>

62. To support these efforts, relevant provisions are included in the financing agreement and the bidding documents for the project.

## **XI. ACCOUNTABILITY MECHANISM**

63. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make an effort in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.<sup>17</sup>

## **XII. RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL**

64. To be inserted as and when any changes are necessary and agreed by both sides

Rev.	Date	Description of Revisions
0	7 July 2016	Draft Project Administration Manual
1		
2		
3		

<sup>15</sup> Anticorruption Policy: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>

<sup>16</sup> ADB's Integrity Office web site: <http://www.adb.org/integrity/unit.asp>

<sup>17</sup> Accountability Mechanism. <http://www.adb.org/Accountability-Mechanism/default.asp>.

## **VII. ATTACHMENTS**

Attachment A: Procurement Plan  
Attachment B: Outline Terms of Reference for Consulting Services  
Attachment C: Project Design and Monitoring Framework

## PROCUREMENT PLAN

### Basic Data

<b>Project Name:</b> South Asia Subregional Economic Cooperation Transport, Trade Facilitation and Logistics Project	
<b>Project Number:</b> 47284-002	<b>Approval Number:</b>
<b>Country:</b> Bhutan	<b>Executing Agency:</b> Department of Roads, Phuentsholing Thromde
<b>Project Procurement Classification:</b> Category B	<b>Implementing Agency:</b> Department of Roads Phuentsholing Thromde
<b>Project Procurement Risk:</b> Low	
<b>Project Financing Amount:</b> US\$ 23,070,000 <b>ADB Financing:</b> US\$ 19,610,000 <b>Cofinancing (ADB Administered):</b> <b>Non-ADB Financing:</b> US\$ 3,460,000	<b>Project Closing Date:</b> 31 December 2022
<b>Date of First Procurement Plan:</b> 6 July 2016	<b>Date of this Procurement Plan:</b> 6 July 2016

### A. Methods, Thresholds, Review and 18-Month Procurement Plan

#### 1. Procurement and Consulting Methods and Thresholds

Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works		
Method	Threshold	Comments
International Competitive Bidding for Goods	US\$ 1,000,000 and Above	
National Competitive Bidding for Goods	Between US\$ 100,001 and US\$ 999,999	
Shopping for Goods	Up to US\$ 100,000	
International Competitive Bidding for Works	US\$ 3,000,000 and Above	
National Competitive Bidding for Works	Between US\$ 100,001 and US\$ 2,999,999	
Shopping for Works	Up to US\$ 100,000	

Consulting Services	
Method	Comments
Consultant's Qualification Selection for Consulting Firm	
Fixed Budget Selection for Consulting Firm	
Least-Cost Selection for Consulting Firm	
Quality- and Cost-Based Selection for Consulting Firm	
Quality-Based Selection for Consulting Firm	

#### 2. Goods and Works Contracts Estimated to Cost \$1 Million or More

The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Procurement Method	Review (Prior/ Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
001	Phuentsholing to Chamkuna road, 0.0-3.3 km	13,290,000.00	ICB	Prior	1S2E	Q2 / 2017	Prequalification of Bidders: N

Package Number	General Description	Estimated Value	Procurement Method	Review (Prior/ Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
							Domestic Preference Applicable: N  Bidding Document: Large Works
002	Truck and cargo x-ray scanner - fixed gantry type	3,000,000.00	ICB	Prior	1S2E	Q3 / 2017	Prequalification of Bidders: N  Domestic Preference Applicable: N  Bidding Document: Goods

### 3. Consulting Services Contracts Estimated to Cost \$100,000 or More

The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Recruitment Method	Review (Prior/ Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
003	Construction Supervision Consultant	2,180,000.00	QCBS	Prior	Q4 / 2016	FTP	Assignment: International  Quality-Cost Ratio: 90:10  Comments: EA/IA: Department of Roads

### 4. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

The following table lists smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

Goods and Works								
Package Number	General Description	Estimated Value	Number of Contracts	Procurement Method	Review (Prior/ Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
004	1 Laden container lifter	400,000.00	1	NCB	Post	1S2E	Q3 / 2017	Pre-qualification of Bidders: N

Goods and Works								
Package Number	General Description	Estimated Value	Number of Contracts	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
	and Reach Stacker							Domestic Preference Applicable: N  Bidding Document: Goods  Comments: EA/IA: Phuentsholing Thromde
005	4 Hand-held scanners for narcotics, chemical reagents, toxic chemicals & explosives	120,000.00	1	NCB	Post	1S2E	Q3 / 2017	Prequalification of Bidders: N  Domestic Preference Applicable: N  Bidding Document: Goods  Comments: EA/IA: Phuentsholing Thromde
006	2 Transceiver radio communication system (MDP and LCS)	160,000.00	1	NCB	Post	1S2E	Q3 / 2017	Prequalification of Bidders: N  Domestic Preference Applicable: N  Bidding Document: Goods  Comments: EA/IA: Phuentsholing Thromde
007	2 CCTV security systems (MDP and LCS)	180,000.00	1	NCB	Post	1S2E	Q3 / 2017	Prequalification of Bidders: N  Domestic Preference Applicable: N  Bidding Document: Goods

Goods and Works								
Package Number	General Description	Estimated Value	Number of Contracts	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
								Comments: EA/IA: Phuentsholing Thromde

Consulting Services								
Package Number	General Description	Estimated Value	Number of Contracts	Recruitment Method	Review (Prior/Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
None								

### B. Indicative List of Packages Required Under the Project

The following table provides an indicative list of goods, works and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the current period).

Goods and Works							
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Review (Prior/Post)	Bidding Procedure	Comments
008	3 Electric forklift trucks (2 MDP, 1 LCS)	60,000.00	1	SHOPPING	Post		Comments: EA/IA: Phuentsholing Thromde
009	1 Electric reach truck (MDP)	35,000.00	1	SHOPPING	Post		Comments: EA/IA: Phuentsholing Thromde
010	2 Manual hand stacker	4,000.00	1	SHOPPING	Post		Comments: EA/IA: Phuentsholing Thromde
011	50 Customs rummage kits	2,500.00	1	SHOPPING	Post		Comments: EA/IA: Phuentsholing Thromde
012	6 Drug testing kits	900.00	1	SHOPPING	Post		Comments: EA/IA: Phuentsholing Thromde
013	70 Safety protective wear (vest, hat, boots)	700.00	1	SHOPPING	Post		Comments: EA/IA: Phuentsholing Thromde

Consulting Services							
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitment Method	Review (Prior/Post)	Type of Proposal	Comments
None							

## **C. National Competitive Bidding**

### **1. General**

The procedures to be followed for national competitive bidding shall be the open tendering/bidding method set forth in the Procurement Rules and Regulations 2009 issued by the Ministry of Finance of the Royal Government of Bhutan with the clarifications and modifications described in the following paragraphs domestic Preference

No preference of any kind shall be given to domestic bidders or for works of domestically manufactured goods. Clause 1.1.2.2 of the [Procurement Rules and Regulations 2009](#) shall not apply.

### **2. Registration**

Foreign suppliers and contractors from ADB member countries shall be allowed to apply for pre-qualification and to bid, without national registration, licensing and other government authorizations, leaving compliance with these requirements until after notice of award and before signing of contract.

Where registration is required prior to award of contract, bidders: (i) shall be allowed a reasonable time to complete the registration process; and (ii) shall not be denied registration for reasons unrelated to their capability and resources to successfully perform the contract, which shall be verified through post-qualification.

### **3. Exclusion of Bidders / National Sanctions List**

Exclusion of bidders for reasons cited in paragraph 2.1.4.1 of the BPM, including inclusion on national sanctions lists may be applied only with prior approval of ADB. Rejection of bids on account of "past poor performance" of bidders shall also be subject to ADB's prior approval.

### **4. Qualifications**

Post qualification shall be used unless prequalification is explicitly provided for in the loan agreement/procurement plan.

If prequalification is undertaken, the prequalification criteria shall be based on ADB's User's Guide to Prequalification of Bidders.

From the date of advertisement, a minimum period of 28 days shall be allowed for the preparation and submission of prequalification applications.

### **5. Eligibility of Bidders**

The eligibility of bidders shall be as defined under Eligibility provisions of ADB's Procurement Guidelines ("Guidelines") (March 2013, as amended from time to time), accordingly, no bidder or potential bidder should be declared ineligible for reasons other than those stated the Guidelines.



## **6. Procurement Thresholds and Procurement Methods**

In cases of conflict between the thresholds as prescribed in Clause 4.1 of the BPM and the Procurement Plan, the lower threshold shall prevail. The procurement methods specified on the Procurement Plan shall be followed.

## **7. Procurement Process**

One envelope open bidding process shall be used unless two stage process is explicitly provided for in the loan agreement/procurement plan.

## **8. Advertising**

Bidding of contracts estimated at \$500,000 or more for goods and related services or \$1,000,000 or more for civil works shall be advertised on ADB's website via the posting of the Procurement Plan.

## **9. Bidding Documents**

Procuring entities shall use standard bidding documents acceptable to ADB for the Procurement of Goods, Works and related Services.

## **10. Packaging**

Slicing or splitting of contracts within a package shall not be used to change the contract sizes and the corresponding methods of procurement indicated in the loan agreement/procurement plan.

## **11. Bid Security and Performance Security**

Where required, bid security (earnest money), retention money (or security deposit) and performance security (or performance guarantee) shall be in the form of a demand draft, certified check, letter of credit, or bank guarantee from a reputable bank.

The terms and conditions of bid security as well as retention money and performance security shall be clearly specified in the forms provided and/or conditions of contract in terms of periods of validity and grounds for forfeiture, or release of the bank guarantees, or refund of the cash security deposits.

## **12. Rejection of All Bids and Re-bidding**

Bids shall not be rejected and new bids solicited without the ADB's prior concurrence.

## **13. Low Bids and Unbalanced Bids**

Bids shall not be rejected solely because the bid price seriously lower or unbalanced. The bidder whose bid is determined to be the lowest evaluated substantially responsive bid may be required by the Executing Agency/Implementing Agency (EA/IA) to provide a higher performance security to a level sufficient to protect the EA/IA against financial loss in the event of default of the successful bidder under the Contract.

**14. Disclosure of Decision on Contract Awards**

At the same time that notification on award of contract is given to the successful bidder, the results of bid evaluation shall be published in a local newspaper, or a well-known freely accessible website identifying the bid and lot numbers and providing information on (i) name of each Bidder who submitted a Bid, (ii) bid prices as read out at bid opening; (iii) name of bidders whose bids were rejected and the reasons for their rejection, and (iv) name of the winning Bidder, and the price it offered, as well as duration and summary scope of the contract awarded. The executing agency/implementing agency/contracting authority shall respond in writing to unsuccessful bidders who seek explanations on the grounds on which their bids are not selected.

**TERMS OF REFERENCE  
FOR CONSULTING SERVICES FOR CONSTRUCTION SUPERVISION  
& CAPACITY DEVELOPMENT OF  
SASEC TRANSPORT, TRADE FACILITATION AND LOGISTICS PROJECT**

**A. Background**

1. Royal Government of Bhutan (RGOB) applied for a loan and a grant to Asian Development Bank (ADB) to finance a part of the cost of South Asian Subregional Economic Cooperation (SASEC) Transport, Trade Facilitation and Logistics Project (the project). The Department of Roads (DOR) under the Ministry of Works and Human Settlement (MOWHS) is the designated authority within the RGOB in charge of implementing the project. The project comprises the following:

2. **Construction of 3.30 km road section between Phuentsholing and Chamkuna.** The road will complete the last section of the Phuentsholing - Samtse highway and provides the vital intra-country linkage of Samtse Dzongkhag with the rest of the country. The road would be constructed to Primary National Highway (PNH) standard, in line with Environmental Friendly Road Construction (EFRC) guidelines and practices. The proposed alignment is located along the Amochu River and will be partly constructed on the river bed. This project would improve rural access and connectivity contributing to economic growth and would be part of Southern East–West Highway (SEWH), providing a new alternative to the diversion route via India (NH31).

**B. Objectives**

3. The objective of the proposed consultancy services is to assist the Project Management Team, DOR, and MOWHS in implementing the project as follows:

- i) Conduct comprehensive supervision of project implementation activities carried out by the civil works contractor ensuring complete compliance with the drawings, technical specifications and various stipulations contained in the contract documents.
- ii) Ensure high standards of quality assurance in the execution of work and completion of the works within stipulated time.
- iii) Assist Project Management Team in taking remedial actions to avoid deviations, cost over runs, delays by the civil works contractor, etc.
- iv) Ensure safety during construction and adherence to all requirements under the environment management plan (EMP) prescribed under the contract.
- v) Organize the HIV/AIDS and human trafficking community awareness activities;
- vi) Ensure and monitor the implementation of social and relevant gender features included in the design of the project (i.e. inclusion of pedestrian and gender-friendly design features in civil works such as walkways, benches and signage and ensure that 40% of community awareness participants are women);
- vii) Monitor and report on the contractors' HIV/AIDS sensitization to its labor force, as well as compliance of core labor standards by civil works contractors.
- viii) Monitor the project's compliance with ADB involuntary resettlement safeguards.

- ix) Conduct on-the-job training to develop capacity of DOR engineers in designing and implementing adequate road safety measures, road asset management and climate change adaptation measures for the project and other roads under DOR.

**C. Scope of Services**

4. As the Client's representative, the Consultant's nominated Senior Highway Engineer/Team Leader will supervise and administer the civil works contract and ensure that the works are constructed in accordance with the drawings, technical specifications and contract conditions. The Consultant will have all of those powers defined as being the Client's representative, with the exception of the following, which will be retained and exercised by the Client:

- i) issuing the order to commence the works;
- ii) approving variation orders that have financial implications;
- iii) approving significant variations in quantity;
- iv) approval of design drawings;
- v) approving subletting of any part of the works; and
- vi) approving time extensions.

5. The Consultant's responsibilities shall include, but not be limited to the following:

- i) approving the contractor's work program, method statements, material sources, etc.;
- ii) preparing and issuing reports as defined subsequently;
- iii) approving and/or issuing working drawings, approving the setting out of the works, and giving instructions to the Contractor;
- iv) reviewing the Quality Assurance Plans and Programs of the Contractor;
- v) inspecting and testing all the materials and the works to ensure compliance with specifications and giving immediate notice to the Contractor in the event that such materials and works fail to comply with the specifications;
- vi) accepting or rejecting any part or parts of the completed works;
- vii) making measurements and keeping measurement records;
- viii) maintaining records, correspondence, and diaries;
- ix) certifying work volume and interim certificates for progress payments;
- x) assisting the Project Management Team with the maintenance of consolidated project accounts, and with preparation of financial statements and withdrawal applications for submission to ADB;
- xi) certifying completion of part or all of the works;
- xii) assisting the Project Management Team in preparing withdrawal applications;
- xiii) periodically checking the remaining quantities, and undertaking constant monitoring of each contract costs;
- xiv) reviewing and recommending to the Project Management Team variation orders, extensions of time, claims, and other matters that may come from Contractors;
- xv) negotiating with the contractors and recommending to Project Management Team the rates for any unscheduled items of work that may arise;
- xvi) advising the Project Management Team on all matters relating to the execution of the works; and assisting it in processing the contractor's possible claims;
- xvii) ensuring compliance with the environmental and social safeguards requirements

- of civil works contracts, and providing information to ADB on those processes in the monthly progress reports;
- xviii) conducting trainings on EFRC principles and methods for all members of the SASEC Project Management Team, other DOR field staff and key personnel of the selected contractors;
  - xix) providing on-the-job training or on-site advice to contractors where necessary (such as when there are changes in personnel of contractors or when EMP is not being followed properly) to ensure proper implementation of the EMP;
  - xx) conducting monitoring visits to ensure proper implementation of EMP;
  - xxi) updating EMP based on changing field conditions and accordingly inform relevant agencies and field staff;
  - xxii) conducting trainings to DOR officials on how better to integrate gender design features into future projects;
  - xxiii) coordinating and conducting HIV/AIDS and human trafficking awareness campaigns in the communities in the project area of influence, ensuring that 40% of beneficiaries are women;
  - xxiv) encouraging and monitoring the participation of women in road maintenance activities;
  - xxv) prepare annual monitoring reports on the implementation of safeguards and other social activities for review and approval by DOR and further submission to ADB for disclosure on the ADB website
  - xxvi) undertaking project performance management system in the format acceptable to the Client and the ADB;
  - xxvii) assisting in preparing a consolidated project completion report in a format provided by ADB after the completion of contract works;
  - xxviii) checking and certifying as-built drawings for the works prepared by the Contractors;
  - xxix) providing the Client with complete records such as inception, monthly, quarterly, completion reports, etc.;
  - xxx) conducting on-site training where required for DOR field staff on quality assurance and contract administration;
  - xxxi) monitoring the implementation of climate change adaptation measures during the construction stage and advising DOR and the Contractor of the remedial measures as necessary;
  - xxxii) introduce/ incorporate new design principles for climate change resilient road and bridges;
  - xxxiii) conducting on-the-job training for DOR staff on road safety aspects during construction, operations and maintenance periods through demonstration of engineering mitigation measures. Road safety audits should be conducted for the project as well as for other ongoing and completed roads projects;
  - xxxiv) conducting on-the-job training for DOR staff on improving integration of social and gender mainstreaming features into future project design; and
  - xxxv) develop and operate a quantitative and qualitative project performance monitoring system (PPMS) in consultation with ADB and DOR to monitor and evaluate the performance of the project in relation to its goals, purposes and outputs. Baseline values should be established by the Consultant in accordance with the target indicators in the design and monitoring framework of the project. The values for these indicators would be measured at necessary agreed frequency during the project. Measured values of these indicators, together with relevant comment would be included in the quarterly progress reports and the project completion report.

**D. Reports and Documents**

6. The Consultant shall prepare and submit the reports and documents as listed below to the Client on the format prepared by the Consultant and approved by the Client.

SI. No.	Report	Frequency	Due Date	No. of Hard Copies	No. of CDs
1.	Inception Report	One Time	Within 30 days after commencement of services.	5	1
2.	Progress Report Monthly & Quarterly	Every month and every three months	10 <sup>th</sup> of month following the reporting month/quarter	5	1
3.	Construction Supervision Manual	One Time	60 days after commencement of services	5	1
4.	Road safety audit Manual	One Time	Within 12 months after commencement of service	5	1
5.	Consultant's Work Completion Report	One Time	Within 15 days after completion of services	10	5

7. **Inception Report.** The inception report shall contain the details of all meetings held with the Client and any initial meetings held with the Contractor and decisions taken therein, review of construction Contract documents including specifications, the resources mobilized by the Consultant as well as the Contractor and the Consultant's perception of the management/supervision of the project and capacity development needs for road safety, road asset management and climate change adaptation measures. The report shall also include the master work program and resources mobilization plan for the project prepared by the Contractors and approved by Client.

8. **Progress Reports.** The monthly progress report shall contain details of all meetings, decisions taken therein, mobilization of resources (consultant and the contractors), physical and financial progress and the projected progress of works for the forthcoming periods and implementation of environment and social safeguard requirements. It shall also include details of actions taken for capacity development assignments on road safety, road asset management and climate change adaptation measures. The reports shall clearly bring out the delays, if any, reasons for such delay and the recommendations for corrective measures. The reports shall also contain the performance data for Contractor's plant and equipment.

9. The quarterly progress report shall summarize the overall progress for the quarter and highlight the main issues and the action being proposed to address those issues.

10. **Construction Supervision Manual.** The Construction Supervision Manual is a guideline for administration, supervision and management of the project and the construction contracts to be implemented. It will serve as a guide and reference to the various staff in the

management and supervision of the project in discharging their duties in a smooth and systematic manner.

11. **Road Safety Audit Manual.** The Consultant shall develop an appropriate road safety audit manual for designing roads with appropriate road safety considerations by DoR and for conducting road safety audits at each stage of road development, i.e. pre-construction, construction and maintenance stages. This should be based on the findings of actual needs of DoR through the discussions during the assignments. The Consultant shall prepare the manual during the first 12 months of construction works to be used for follow-up trainings for DOR staff during the consulting services.

12. **Consultant's Work Completion Report.** The Consultant shall prepare a comprehensive final completion report of the construction contract packages after completion of all civil works packages. The report shall incorporate summaries of the methods of construction, the construction supervision performed, reference to as-built drawings of the construction, problems encountered and solutions undertaken thereon and recommendations for future projects of similar nature to be undertaken by DoR. The report shall also summarize the details of actions taken for capacity development assignments on road safety, road asset management and climate change adaptation measures, assessment of DoR's current capacity and recommendations on future capacity development on these aspects.

13. The Consultant shall attach the self-appraisal report to the Final Report in compliance with ADB requirements for project completion report of executing agencies, including detailed data and information gathered and recorded during the project implementation and those on PPMS indicators.

#### E. Project Personnel

14. The input for key personnel in person-months is provided in the table below:

Sl. No.	Position/ Expertise	Nos.	Person-months	Total person-months
<b>A. International Position</b>				
A 1.	Team Leader/Senior Highway Engineer	1	15	15
A 2.	Material Engineer	1	12	12
<b>B. National Position</b>				
B 1.	Deputy Team Leader/Highway Engineer	1	48	48
B 2.	Bridge Engineer	1	24	24
B 3.	Geotechnical Engineer	1	24	24
B 4.	Material Engineer	1	24	24
B 5.	Resident Engineer	1	24	24
B 6.	Quantity Surveyor	1	24	24
B 7.	Environment Specialist	1	16	16
B 8.	Social Development Specialist	1	8	8

Input of Non-key personnel in person-months is provided in the table below:

B 9.	Site Inspector – road	1	36	36
B 10.	Site Inspector – bridge	1	36	36

B 11.	Surveyor	1	20	20
B 12.	Laboratory Technician	1	36	36

## F. Qualification and Experience Requirements of Experts

15. Qualifications and experience requirements for experts are as below.

### Key Personnel:

#### A1. Senior Highway Engineer/ Team Leader

a) Qualification	Minimum: Bachelor's degree in civil engineering. Preferable: Post graduate degree in civil engineering or its related disciplines.
b) Total Professional Experience	20 years minimum
c) Project-related Experience	<ul style="list-style-type: none"> <li>- Minimum 10 years' experience as Team Leader/Project Manager in supervision or contract administration of highway or road construction contracts.</li> <li>- Sound knowledge of International/RGOB competitive bidding procedures.</li> <li>- Good knowledge and experiences of EFRC practices</li> </ul>
d) Overseas/ Country Experience	Must have international experience. Preferably with substantial experience in Himalayan mountainous condition/ Bhutan.

#### A2. Materials Engineer

a) Qualification	Minimum: Bachelor's degree in civil engineering. Preferable: Post graduate degree in civil engineering or its related disciplines.
b) Total Professional Experience	15 years minimum
c) Project-related Experience	Minimum 10 years' experience in Materials Engineering or as Asst. Material Engineer in highway construction projects with various experiences in material testing, mixes such as GSB, WMM, Bituminous mixes, concrete mixes, etc.
d) Overseas/ Country Experience	Must have international experience. Preferably with substantial experience in Himalayan mountainous condition/ Bhutan.

#### B1. Highway Engineer/ Deputy Team Leader

a) Qualification	Minimum: Bachelor's degree in civil engineering/ relevant field. Preferable: Post graduate degree in civil engineering or its related disciplines.
b) Total Professional Experience	10 years minimum
c) Project-related Experience	Minimum 5 years' experience in the areas of road construction, road asset management and road safety.



d) Experience in working with international org./ agencies	Experience in working for technical assistance projects of international organizations/agencies on road asset management and road safety aspects are preferable.
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**B2. Bridge Engineer**

a) Qualification	Minimum: Bachelor's degree in civil engineering. Preferable: Post graduate degree in civil engineering or its related disciplines.
b) Total Professional Experience	15 years minimum
c) Project-related Experience	Minimum experience as supervision Engineer in construction supervision of at least 5 permanent concrete or steel highway bridges or flyovers.
d) Experience in working with international org./ agencies	Experience in working for technical assistance projects of international organizations/agencies are preferable. Preferably with substantial experience in Himalayan mountainous condition/ Bhutan.

**B3. Geotechnical Engineer**

a) Qualification	Minimum: Bachelor's degree in civil engineering.
b) Total Professional Experience	15 years minimum
c) Project-related Experience	Minimum 10 years' experience in Geotechnical/Foundations Design Engineering, including 5 years on highway projects (preferably more than 2 projects of similar nature costing over \$10 million each) Familiarity with relevant international and national standards.
d) Experience in working with international org./ agencies	Experience in working for technical assistance projects of international organizations/agencies on road projects are preferable. Preferably with substantial experience in Himalayan mountainous condition/ Bhutan.

**B4. Material Engineer**

a) Qualification	Minimum: Bachelor's degree in civil engineering. Preferable: Post graduate degree in civil engineering or its related disciplines.
b) Total Professional Experience	15 years minimum
c) Project-related Experience	Minimum 10 years' experience in Material Engineering or as Asst. Material Engineer in highway construction projects with various experiences in material testing, mixes such as GSB, WMM, Bituminous mixes, concrete mixes, etc.
d) Experience in working with international organizations/ agencies	Preferably with substantial experience in Himalayan mountainous condition/ Bhutan.

**B5. Resident Engineer**

a) Qualification	Minimum: Diploma in Civil Engineering
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b) Total Professional Experience	Minimum of 10 years for Diploma holder or 5 years for Bachelor degree holder.
c) Project-related Experience	<p>Minimum 5 years' experience as Project Manager/ Asst. Project Manager in supervision or contract administration of highway or road construction contracts.</p> <p>Sound knowledge of International/RGOB competitive bidding procedures.</p> <p>Good knowledge and experiences of EFRC practices, bridge construction works and material testing.</p> <p>Preferably with substantial experience in Himalayan mountainous condition/ Bhutan</p>
d) Experience in working with international organizations/ agencies	Preferable.

### B6. Quantity Surveyor

a) Qualification	<p>Minimum: Bachelor's degree in civil engineering</p> <p>Preferable: Post graduate degree in civil engineering or its related fields. Membership of professional institutions.</p>
b) Total Professional Experience	10 years minimum
c) Project-related Experience	<p>Minimum five years as quantity surveyor/assistant quantity surveyor (preferably more than 2 projects of similar nature costing over US\$ 10 million each administered under FIDIC contract conditions).</p> <p>Familiarity with international and Indian design standards.</p> <p>Hands-on experience in using various quantity- estimation software.</p>
d) Experience in working with international organizations/ agencies	Preferable.

### B7. Environment Specialist

a) Qualification	Minimum: Master's degree in Environmental Science/ Natural Resources Management/ Engineering, hydrology or its related disciplines.
b) Total Professional Experience	10 years minimum
c) Project-related Experience	Minimum 5 years' experience in environmental mitigation measures for road works, environment management, river training and bio-engineering techniques particularly in respect of slope stabilization and protection, including hydrological calculations and climate adaptation.
d) Experience in working with international organizations/ agencies	Preferable. Preferably with substantial experience in Himalayan mountainous condition/ Bhutan.

**B8. Social Development Specialist**

a) Qualification	Minimum: Bachelor's degree in Economics or Sociology or its related disciplines.
b) Total Professional Experience	5 years minimum
c) Project-related Experience	Minimum 5 years' experience in designing or implementing social components of developmental projects in Bhutan preferably with work experience in transport sector funded by an external donor.
d) Experience in working with international organizations/ agencies	Preferable.

**Non-Key Personnel:****B9. Site Inspector – Road**

a) Qualification	Minimum: Diploma in Civil Engineering
b) Total Professional Experience	5 years minimum
c) Project-related Experience	Minimum five years' experience in highway or road construction projects, preferably having good knowledge and experience of EFRC practices. Preferably with substantial experience in Himalayan mountainous condition/Bhutan.

**B10. Site Inspector – Bridge**

a) Qualification	Minimum: Diploma in Civil Engineering
b) Total Professional Experience	8 years minimum
c) Project-related Experience	Minimum five years' experience in bridge construction projects. Preferably with substantial experience in Himalayan mountainous condition/Bhutan.

**B11. Surveyor**

a) Qualification	Minimum: Diploma in Civil Engineering Preferable: Bachelor's degree in civil engineering or its related fields. Membership of professional institutions.
b) Total Professional Experience	10 years minimum
c) Project-related Experience	8 years minimum for degree holder. 10 years minimum for diploma holder.

d) Experience in working with international org./ agencies	Minimum five years as Surveyor/Assistant Surveyor/Survey Engineer on highway projects of similar nature (preferably projects of similar nature costing over US\$ 10 million).
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**B12. Laboratory Technician**

a) Qualification	Minimum: Diploma in Civil Engineering/relevant field
b) Total Professional Experience	5 years minimum
c) Project-related Experience	Minimum 3 years' experience in highway or road construction contracts. Preferably with substantial experience in HimAllayan mountainous condition/ Bhutan.
d) Experience in working with international organizations/ agencies	Preferable.

**Tasks and Responsibilities of Experts:**

16. The position-based job responsibilities are only indicative. The Consultant needs to propose its own working arrangements, based on the overall requirements of TOR.

**Key Personnel:****A1. Senior Highway Engineer/Team Leader**

- Responsible for contract management and the overall assignment of supervision Consultant
- Responsible for quality control and overall activities of team members
- Review engineering design for completeness and consistency
- Advice on overall project planning and logistics
- Coordinate the input of Consultants
- Review and edit draft reports produced by Consultants
- Ensure full compliance with EFRC practices
- Provide instruction and training, in particular with regard to EFRC and Contract Administration
- Report to the Project Coordinator

**A2. Material Engineer**

- Undertake overall management of quality control related to Construction Work packages
- Provide protocols for material testing; assist with test formats, procedures of quality control tests required by the project
- Overall quality control and quality administration/ assurance
- Verify and approve the quality control test reports
- Verify and approve material test certificates
- Provide technical backstopping on designs, technical standards and specifications
- Undertake test check of construction material samples

- Specify and monitor quality assurance plans and quality control tests being conducted in all packages
- Work in close coordination with Project Engineers, REs and SIs
- Report to and take instruction from the Team Leader

**B1. Highway Engineer/ Deputy Team Leader**

- Act as deputy team leader to manage the consulting services.
- Support the International Highway Engineer in training relevant DOR staff on capacity development activities on road design, road construction, road maintenance, road safety and road asset management, including drafting manuals and developing a road asset management system;
- Conduct small scale training sessions regularly based on the inputs from international consultants, including manuals and road asset management system. Main target of the training is DOR staff, and staff in other ministries and Thromde engaged in road projects will also be invited to join the training;
- Assist the Maintenance Division in a visual-survey based data collection program and provide technical advice on road safety and road asset management to DOR staff. Key issues identified during the survey should be incorporated in the manuals and road asset management system to be prepared/developed by international consultants;
- Assist the Maintenance Division in preparing its budget proposal and annual report.
- Conduct annually the capacity assessment of the staff in implementing road asset management and of the understanding level of road safety audit manual and climate change adaptation manual. Apply the impact assessment method of training program developed by the international road asset management specialist, road safety specialist and climate change specialist (adaptation);
- Facilitate awareness campaigns on road safety and road asset management issues based on the plans developed by international consultants and support DOR to conduct the campaigns in cooperation with local communities.
- Act as a focal point during the absence of international consultants from Bhutan. Play coordination roles between DOR staff and international consultants and provide appropriate advice and inputs for better project implementation
- Report progress and issues during the implementation to team leader and to the Project Coordinator on a regular basis.

**B2. Bridge Engineer**

- Responsible for overall supervision of all the bridge and culverts works
- Review bridge design drawings for completeness or consistency before commencement of Contract works.
- Carry out measurements and review billings for bridge works
- Construction progress monitoring and evaluation
- Material testing and certification of quality
- Review and approve shop/fabrication drawings, construction methodology, temporary works, staging, etc.
- Ensure safety working procedures and enforce them
- Overall quality control and quality administration/ assurance

- Preparation of as-built drawings and a comprehensive Final Completion Report
- Work in close coordination with Project Manager/Engineers, REs and SIs
- Report to and take instruction from the Project Coordinator and Team Leader

**B3. Geotechnical Engineer**

- Check and review geotechnical reports for structures as per Project Report and verification at site and report to the Bridge Engineer on this aspect to review design of bridges.
- Check founding strata for structures during execution and verify geotechnical reports prepared by the project preparation consultant and data received from contractor.
- Respond to all technical issues of Contractors
- Undertake quality control and verification of measurement bills
- Provide interpretation of the Technical Specification where necessary
- Advice on work deviations (modifications and additional works)
- Advice on claims, disputes and contract interpretation
- Monitor progress of work through field visits
- Ensure smooth implementation of all project activities and provide support required to supervising engineers
- Prepare and review progress monthly/quarterly reports
- Work in close coordination with the Project Management Team, experts and specialists
- Report to and take instruction from the Team Leader/Deputy Team Leader.

**B4. Materials Engineer**

- Undertake overall management of quality control related to Construction Work packages
- Provide protocols for material testing; assist with test formats, procedures of quality control tests required by the project
- Overall quality control and quality administration/ assurance
- Verify and approve the quality control test reports
- Verify and approve material test certificates
- Provide technical backstopping on designs, technical standards and specifications
- Undertake test check of construction material samples
- Specify and monitor quality assurance plans and quality control tests being conducted in all packages
- Work in close coordination with International Materials Engineer, Resident Engineers and Site Inspectors
- Report to and take instruction from the Team Leader/Deputy Team Leader

**B5. Resident Engineer**

- Provide technical management and supervision of all Construction Works
- Manage and coordinate all works of other experts
- Undertake overall site management of the package
- Respond to all technical issues of contractors
- Supervise and guide the contractor

- Assist the Project Manager
- Carry out field design for undesigned portions
- Undertake quality control and verification of measurement bills
- Provide interpretation of the Technical Specification where necessary
- Advise on work deviations (modifications and additional works)
- Advise on claims, disputes and contract interpretation
- Plan and prepare work schedules and procurement plans in consultation with Project Coordinator
- Monitor progress of work through field visits
- Ensure smooth implementation of all project activities and provide support required to supervising engineers
- Ensure environment compliance
- Oversee implementation of quality assurance plans and quality control tests
- Maintain all books of accounts and prepare cash flow requirements
- Conduct weekly meeting
- Conduct joint measurement
- Prepare and review monthly/quarterly progress reports
- Report to and take instructions from Deputy Team Leader, Bridge Supervision expert, Geotechnical and Material Engineering expert
- Ensure progress of Construction works
- Check work quality
- Provide daily supervision of Construction works
- Work in close coordination with the Project Management Team, experts and specialists
- Report to and take instruction from Team Leader.

**B6. Quantity Surveyor**

- Measure quantities of work, record measurements and verify BoQ items / Work quantities executed in the contractors monthly statement.
- Verify and examine interim payment certificates received from contractors.
- Maintain a permanent record of all measurement for the work quantities.

**B7. Environmental Specialist**

- Review, monitor, and advise the Contractor on needed revisions on the EMP and EMoP as part of the engineering design
- Conduct environmental site induction training to all contractors and PMU to ensure understanding of the EMP and domestic environmental laws and regulations requirements particularly on the required clearances and permits,<sup>18</sup> training on occupational and community health and safety, timely mobilization of the Contractor's EFP, and review of sub-plans required in the EMP and advise the PIU on adequacy
- Guide the Contractor on the preparation of the Contractor's Environmental Management Implementation Plan

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<sup>18</sup> Site induction training includes but is not limited to: i) discussion and review of EMP and EMoP detailing how specific environmental risks associated with their Scope of Work will be managed legal compliance, inspection and audits, and progress tracking and reporting; ii) environmental training and awareness needs shall be determined and documented via a training needs analysis prior to commencement; iii) Health and Safety Awareness Course, which details general environmental awareness and specific performance requirements expected on site; and iv) GRM.

- Ensure contractors secure necessary permits and clearances
- Conduct at least monthly site inspections and random spot checks
- Prepare environmental monitoring report template for contractor's monthly self-monitoring reports
- Design quarterly and semi-annual compliance assessment checklist and report formats for PMU and ADB review
- Prepare semi-annual environmental monitoring reports required by the ADB for public disclosure
- Preparing summary monthly, quarterly, and semi-annual monitoring reports based on the monthly environmental self-monitoring reports prepared by the Contractor's Environment Focal Person (EFP) for the review and guidance of the PMU
- Advise the Contractor through the PMU on how to comply with requirements to address non-compliances
- Support the International Climate Change Specialist in training relevant DOR staff on incorporation of climate adaptation measures in road design
- Report apparent unanticipated impacts, recommend mitigation measures to be implemented by the PMU and whether it is necessary to update the IEE report

#### **B8. Social Development Specialist**

- Conducting training to DOR officials on how better to integrate gender design features into future projects;
- Coordinate awareness building sessions for communities located in the influence area of the project in gender-mainstreaming, HIV/AIDS, and human trafficking;
- Assess needs of facilities or signage to be provided along the project road, such as benches, rest spaces or zebra crossings to make the project roads more user-friendly especially for women, elders and children and propose to DOR for incorporation into the project.
- Monitor women's participation in road maintenance activities
- Monitor, report and advise on social issues, including unanticipated involuntary resettlement impacts, gender, HIV/AIDS, human trafficking and core labor standards due to project implementation;
- Provide inputs on the implementation of social activities to the annual safeguards monitoring report for review and approval by DoR and further submission to ADB for disclosure
- Report to Team Leader/Deputy Team Leader and work in close coordination with Project Management Team

#### **Non-Key Personnel:**

#### **B9. Site Inspector – road**

- Undertake overall site management
- Supervise and guide the contractor
- Assist other Engineers
- Ensure environment compliance
- Oversee implementation of quality assurance plans and quality control tests
- Provide technical backstopping to Contractors



- Maintain all books of accounts and prepare cash flow requirements
- Conduct weekly meetings
- Conduct joint measurement
- Assist the Project Engineer in bill verification
- Report to and take instructions from Senior Civil Engineer, Bridge Supervision expert, Geotechnical and Material Engineering expert and Project Engineer
- Undertake site measurement
- Provide daily supervision of Construction works
- Check work quality
- Ensure progress of Construction works
- Work in close coordination with the experts and specialists
- Report to and take instruction from Resident Engineer and Team Leader.

**B10. Site Inspector – bridge**

- Undertake overall site management
- Supervise and guide the contractor
- Assist other Engineers
- Ensure environment compliance
- Oversee implementation of quality assurance plans and quality control tests
- Provide technical backstopping to Contractors
- Maintain all books of accounts and prepare cash flow requirements
- Conduct weekly meetings
- Conduct joint measurement
- Assist the Project Engineer in bill verification
- Report to and take instructions from Senior Civil Engineer, Bridge Supervision expert, Geotechnical and Material Engineering expert and Project Engineer
- Undertake site measurement
- Provide daily supervision of Construction works
- Check work quality
- Ensure progress of Construction works
- Work in close coordination with the experts and specialists
- Report to and take instruction from Resident Engineer and Team Leader.

**B11. Survey Engineer**

- Scrutinize topographic survey data, if any, in the contract drawings and associate and scrutinize the contractor updated topographic survey data.
- Monitor survey and setting out operations and verify data and details
- Carry out detailed checking and verification of setting out data

**B12. Laboratory Technician**

- Assist Resident Engineer and Material Engineer on all matters relating to construction material testing.
- Keeping test report's record for technical audit.

**G. Laboratory test to be confirmed by the Consulting Firm**

17. Almost all the basic field equipment shall be built in the works contract. Some major laboratory testing facilities would be set up at site by Contractors or hired from nearby service providers. Although the Contractor would carry out the required test as per Technical Specifications and standard practices, the Consulting firm need to confirm the following test carried out by Contractors;

- i) Sieve Analysis (Fine and Course)
- ii) Liquid Limit/Plastic Limit
- iii) Proctor Test
- iv) CBR
- v) Specific test and bulk density
- vi) Field density
- vii) Slump Test
- viii) Compression test
- ix) Flakiness test
- x) Penetration test
- xi) Softening test
- xii) Specific gravity and water absorption
- xiii) Marshall test
- xiv) Tensile strength test
- xv) Mix designs and trial mixes and
- xvi) Any other tests required as per ToR and technical specifications

#### **H. Additional Services**

18. The Consultant shall, if so required by the Client, provide any additional service at rates or on man-month rates as per the contract, or as mutually agreed upon, as a variation order.

#### **I. Support Services & Facilities to be provided by the Client**

19. The following services and facilities would be provided by the Client:

- i) Assist the consultants in monitoring the construction works, verification of contract bills, conduct monthly meetings, etc. The Project Management Team from the Client shall comprise of Project Coordinator, Assistant Project Coordinator, Financial Controller and one Project Manager/Engineer. The Project Coordinator, Assistant Project Coordinator and Financial Controller shall be for the entire projects whereas; the Project Manager/Engineer will be assigned to the project site with Consultant's Resident Engineers as counterpart engineer of the Client.
- ii) All the available studies, reports and data, design drawings, etc. relevant to the project will be provided by the Client.
- iii) Assist the Consulting firm to process for visa, work permits & special route permits for foreign nationals.
- iv) The establishment of field laboratory including supply of equipment, operation and maintenance shall be built-in the civil contract works.
- v) The site office for Project Manager/Engineer, Resident Engineers and Site Inspectors shall be built in the civil work contract package.

- vi) Utility vehicles (four-wheeled drive) – Total 2 Nos with drivers will be shared within PCU & Consultant's in main Project office

**J. Support Services & Facilities to be arranged by the Consulting Firm**

20. The consulting firm shall arrange the following as part of the supervision consultancy contract:

- i) Main Project Office in Phuentsholing
- ii) Computer or laptops facilities.
- iii) Adequate internet and e-mail facilities.
- iv) Monthly operating expenses for Xerox, Telephone, Fax and email.
- v) Safety equipment for the consulting engineer.
- vi) Maintenance of vehicle/fuel cost and other operating expenses
- vii) The consultant is required to detail what additional facilities are required.

21. The consultant is required to detail what additional facilities he requires in the performance of his work on this Project, and specify their cost in his financial proposal. All vehicles and equipment procured by the consultant for the performance of his services will remain the property of the government.

**K. Consultant's Proposal Submission**

22. This TOR is prepared to address the construction supervision package in a general way. The shortlisted consultants are advised to inspect the project sites and acquaint themselves with the ground realities.

## DESIGN AND MONITORING FRAMEWORK

Impact the Project is Aligned with			
Mobility and cross-border movement of goods and passengers improved (Eleventh Five Year Plan, 2013–2018) <sup>a</sup>			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
<p><b>Outcome</b></p> <p>Road connectivity and service delivery at the border crossings in Samtse and Chhukha districts improved</p>	<p>By 2022</p> <p>a. Average travel distance between Phuentsholing and Samtse reduced to 58 km (2016 baseline: 78 km through India)</p> <p>b. The Samtse–Phuentsholing national highway achieves 54,752 average daily vehicle-km and the Chamkuna–Phuentsholing highway section achieves 9,405 average daily vehicle-km in the first full year of operation (2016 baseline: 0 vehicle-km)</p> <p>By 2020</p> <p>c. Custom processes improved/enhanced:</p> <p>(i) Systematic custom inspections performed to detect illegal items and prevent importation of duty-unpaid goods; (ii) time-saving, safe transshipment, and off-load procedures carried out; (iii) average physical truck inspection time reduced to less than 5 minutes; and (iv) container off-loading time reduced to 3 minutes (2016 baseline: NA)</p>	<p>a.- c. Post-implementation measurement by the DOR</p>	<p>a. Other sections of the national highway between Phuentsholing and Samtse are not passable due to landslides or other natural disasters</p> <p>b. Free trade agreement with India is discontinued</p> <p>c. Completion of civil works at installation sites under another project is delayed<sup>1</sup></p>
<p><b>Outputs</b></p> <p>1. National highway between Phuentsholing and Chamkuna constructed</p>	<p>By 2021</p> <p>1. 3.3 km of national highway constructed between Phuentsholing and Chamkuna (2016 baseline: 0.0 km)</p>	<p>1. Construction supervision consultant's report</p>	<p>1. Slow work execution due to exceptional weather conditions</p>

<sup>1</sup> ADB. 2014. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Grant to the Kingdom of Bhutan for the South Asia Subregional Economic Cooperation Road Connectivity Project*. Manila.

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
2. Equipment for trade facilitation and logistics at MDP in Phuentsholing and the LCS in Allay procured and installed	By 2019 2. Gantry truck X-ray scanner, handheld scanners, container lifter, forklift trucks, and communication and safety equipment procured and installed (2016 baseline: NA)	2. Post-implementation measurement by the DRC	2. Delayed installation progress due to incomplete infrastructure
<p><b>Key Activities with Milestones</b></p> <p><b>Output 1: National highway between Phuentsholing and Chamkuna constructed</b></p> <p>1.1 Advertise bid documents by Q2 2017 1.2 Mobilize construction supervision consultant and award civil works contract by Q4 2017 1.3 Complete construction by 31 December 2021</p> <p><b>Output 2: Equipment for trade facilitation and logistics in mini dry port in Phuentsholing and the LCS in Allay procured and installed</b></p> <p>2.1 Complete bidding documents for equipment by Q2 2017 2.2 Award contracts for major equipment at the Phuentsholing MDP and the Allay LCS by Q1 2018 2.3 Complete installation of equipment (in line with completed infrastructure for the MDP and the LCS) by Q1 2019</p> <p><b>Project Management Activities</b></p> <p>Project implementation units in the DOR and Phuentsholing Thromde operational by Q3 2016 Counterpart funds available by Q3 2016</p>			
<p><b>Inputs</b></p> <p>ADB: \$14.61 million (loan) ADB: \$5.00 million (grant) Government: \$3.46 million</p>			
<p><b>Assumptions for Partner Financing</b></p> <p>NA</p>			

ADB = Asian Development Bank, DOR = Department of Roads, DRC = Department of Revenue and Customs, km = kilometer, LCS = land custom station, MDP = mini dry port, NA = not applicable, Q = quarter.

<sup>a</sup> Government of Bhutan, Gross National Happiness Commission. 2013. *Eleventh Five Year Plan, 2013–2018, Volume I: Main Document*. Thimphu.

Source: Asian Development Bank.