

# Project Administration Manual

Project Number: 39225-034  
Loan and/or Grant Number(s): L3149, G0400  
August 2021

## Kingdom of Bhutan: South Asia Subregional Economic Cooperation Road Connectivity Project

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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 Government and Asian Development Bank (ADB) policies and procedures. 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 Government and ADB's policies and procedures. ADB staff is responsible to support 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.

## Abbreviations

ADB	=	Asian Development Bank
ADF	=	Asian Development Fund
AFS	=	audited financial statements
DES	=	Department of Engineering Services
DMF	=	design and monitoring framework
DOR	=	Department of Roads
DOT	=	Department of Trade
DPA	=	Department of Public Accounts
EARF	=	environmental assessment and review framework
EIA	=	environmental impact assessment
EMP	=	environmental management plan
ESMS	=	environmental and social management system
GACAP	=	governance and anticorruption action plan
GDP	=	gross domestic product
IARS	=	Imprest Account Reconciliation Statement
ICB	=	international competitive bidding
IEE	=	initial environmental examination
IPP	=	indigenous people plan
IPPF	=	indigenous people planning framework
LAR	=	land acquisition and resettlement
LIBOR	=	London interbank offered rate
MDP	=	Phuentsholing Mini-dry Port
NCB	=	national competitive bidding
NGOs	=	nongovernment organizations
PAI	=	project administration instructions
PAM	=	project administration manual
PAR	=	Pasakha Access Road
PBR	=	Phuentsholing Bypass Road
PIU	=	project implementation unit
PT	=	Phuentsholing Thromde (Phuentsholing municipal government)
QBS	=	quality based selection
QCBS	=	quality- and cost-based selection
RMA	=	Royal Monetary Authority
RRP	=	report and recommendation of the President to the Board
SBD	=	standard bidding documents
SOE	=	statement of expenditure
SPS	=	Safeguard Policy Statement
SPRSS	=	summary poverty reduction and social strategy
TOR	=	terms of reference

## **I. PROJECT DESCRIPTION**

### **A. Project's Rationale, Location and Beneficiaries**

1. The project will promote regional connectivity with neighboring countries through investments in road construction and land ports with custom stations, facilitating cross border trade. The project will also improve Bhutan's national road network to remote areas in the eastern part near the Indian border, providing better access to economic opportunities and social services. These facilitate efficient and safe transportation of goods within Bhutan and with neighboring countries.

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

2. The project impact will be improved cross border movement of goods between Bhutan and neighboring countries. The immediate outcome will be improved road connectivity and efficiency along the project areas in Bhutan.

### **C. Outputs**

3. The outputs will be (a) roads built and trade infrastructure established, comprising (i) 68.3 km of southern east-west highway between Nganglam and Dewathang (a new section of SEWH) and about 1.2 km access road from an Indian border<sup>1</sup> constructed at Pasakha area (PAR), (ii) a mini-dry port in Phuentsholing (MDP) and Alay land custom station (Alay LCS) and (iii) about 2.7 km of bypass road in Phuentsholing city (PBR); (b) improved road construction and maintenance capacity; and (c) eco-friendly transport promoted.

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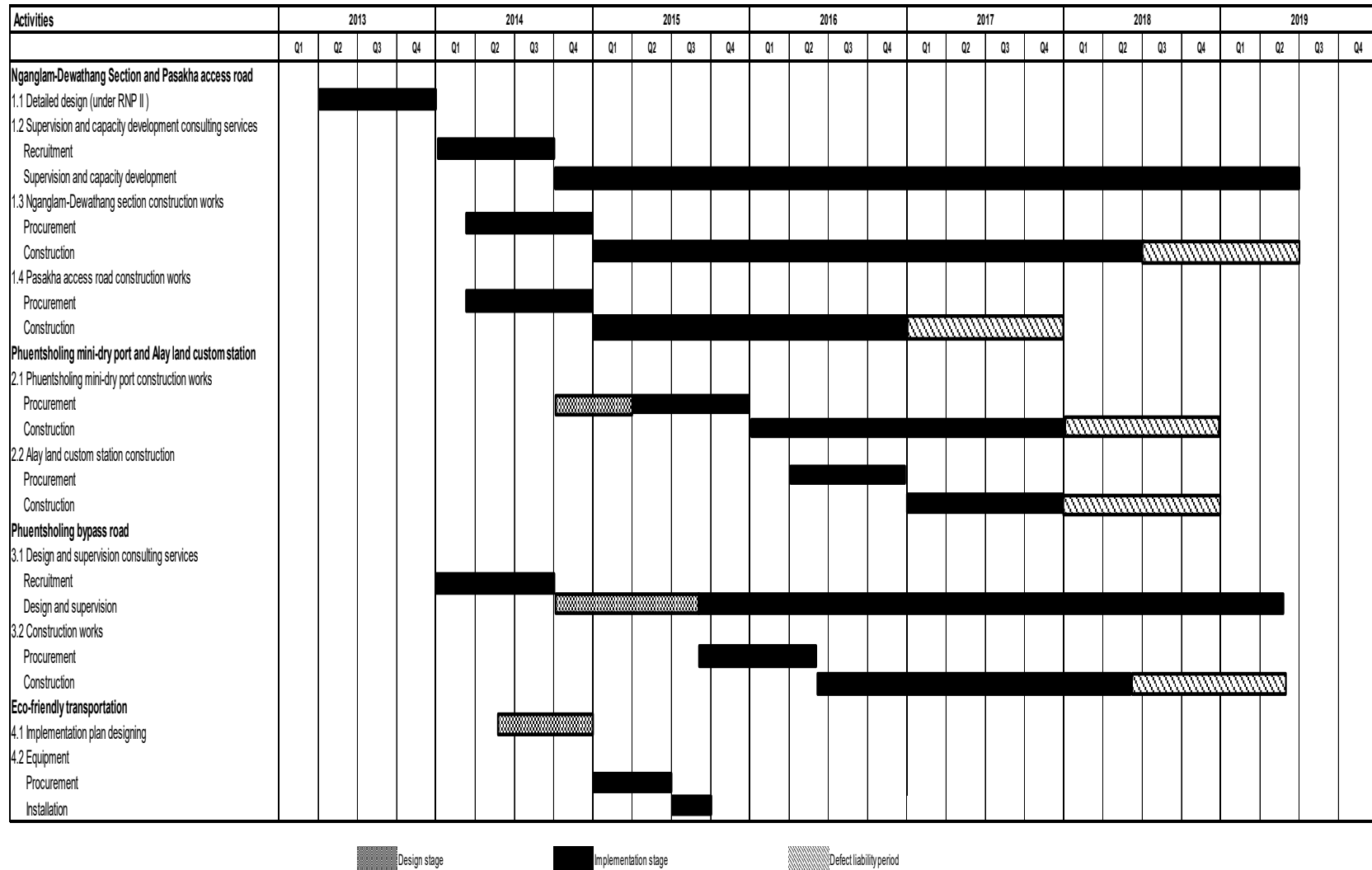
<sup>1</sup> Road section connecting to Bhutan border from India is to be supported by ADB under a SASEC road connectivity project in India.

## II. IMPLEMENTATION PLANS

### A. Project Readiness Activities

Indicative Activities	Months								Who responsible
	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014	Jun 2014	Jul 2014	Aug 2014	
Advance contracting actions		X							DOR, PT (ongoing)
Establish project implementation arrangements	X								DPA, DOR, PT, DES, DOT (ongoing)
ADB Board approval							X		ADB
Loan signing								X	DPA, DOR, PT, ADB
Government legal opinion provided								X	DPA, DOR, PT
Government budget inclusion							X		DPA, DOR, DES, DOT
Loan effectiveness								X	

## B. Overall Project Implementation Plan





### III. PROJECT MANAGEMENT ARRANGEMENTS

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

<b>Project implementation organizations</b>	<b>Management Roles and Responsibilities</b>
<ul style="list-style-type: none"><li>• Executing Agencies</li></ul>	<p>Department of Roads (DOR), Ministry of Works and Human Settlement Phuentsholing municipal government (PT)</p> <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>➤ Preparations 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>
<ul style="list-style-type: none"><li>• Project Steering Committee</li></ul>	<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>➤ Consensus building on effective and efficient operations and maintenance mechanisms after completion of subprojects.</li></ul>
<ul style="list-style-type: none"><li>• ADB</li></ul>	<ul style="list-style-type: none"><li>➤ 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 resettlement plans 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.</li></ul>

## B. Key Persons Involved in Implementation

### Executing Agencies

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

Officer's Name Tenzin  
Position Director  
Telephone +975-2-321434  
Email address [tenzin@mowhs.gov.bt](mailto:tenzin@mowhs.gov.bt)  
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Officer's Name Tshewang  
Position Project Coordinator  
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Email address [tshewang@mowhs.gov.bt](mailto:tshewang@mowhs.gov.bt)  
Office Address Dremtoem Lam, Thimphu Bhutan,  
Thimphu Bhutan

Phuentsholing Thromde (PT)

Officer's Name Lungten Jamtsho  
Position Executive Secretary  
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Email address [ljamtsho@pcc.bt](mailto:ljamtsho@pcc.bt)  
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Chukha, Phuentsholing, Bhutan

Officer's Name Bikash Sharma  
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Office Address Post Box. 02, Pelkhil Lam, District  
Chukha, Phuentsholing, Bhutan

### ADB

Transport and Communications  
Division, South Asia Department  
(SATC)

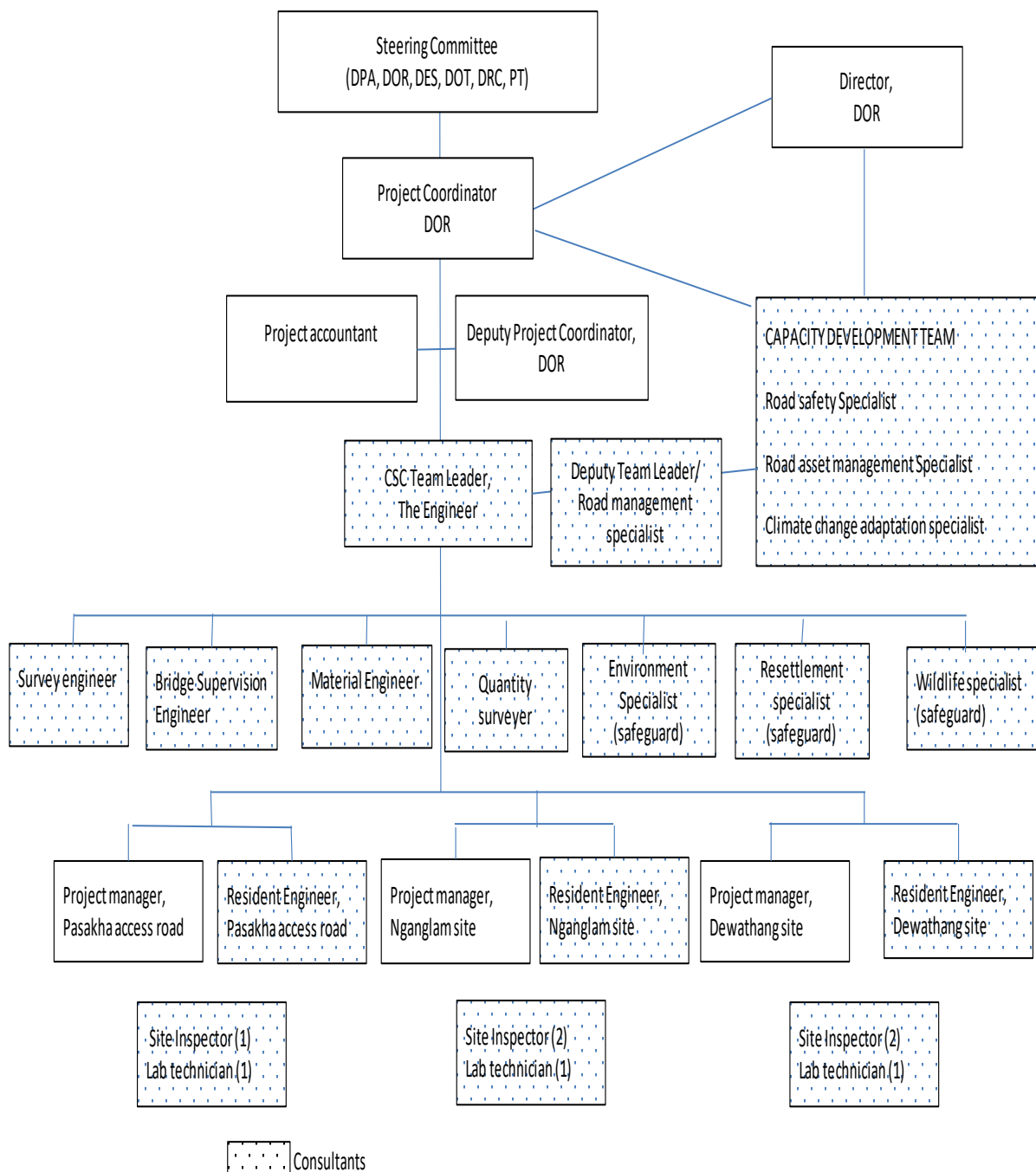
Staff Name Ravi Peri  
Position Director, SATC  
Telephone No. +632 (8632) 1772  
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Mission Leader

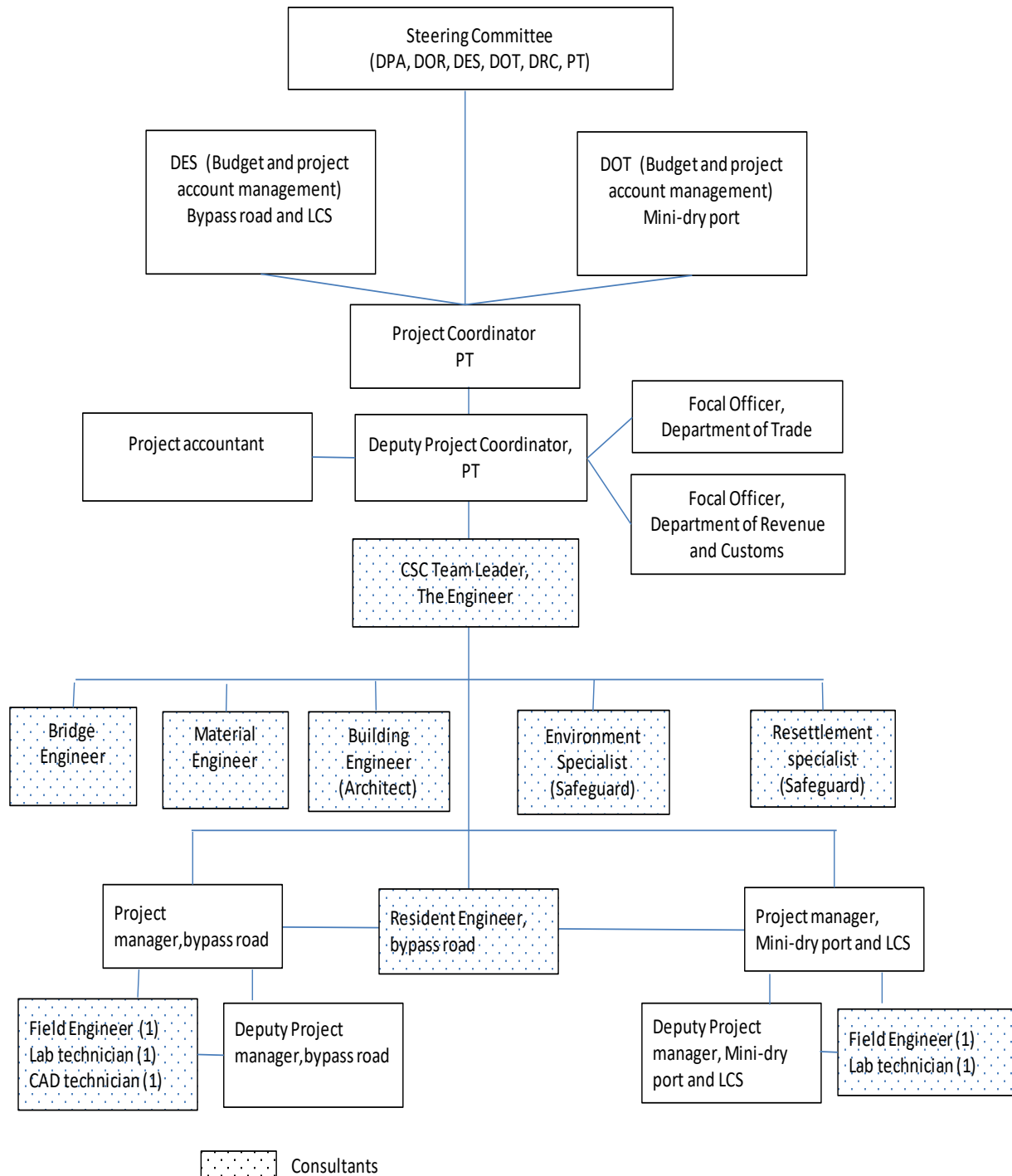
Staff Name Sn Wai Chong  
Position Transport Specialist  
Telephone No. + 632 (8632) 5346  
Email address [schong@adb.org](mailto:schong@adb.org)

## C. Project Organization Structure

### Department of Roads (Nganglam-Dewathang section and Pasakha access road)



**Phuentsholing Thromde  
(Mini-dry port, Alay Land Custom Station and Bypass road)**



#### IV. COSTS AND FINANCING

4. The project is estimated to cost \$69.00 million (Table 1)

**Table 1: Project Investment Plan**  
(\$ million)

Item	Amount <sup>a</sup>
<b>A. Base Cost<sup>b</sup></b>	
1 Roads built and trade infrastructure established	53.00
2 Improved road construction and maintenance capacity	0.70
3 Eco-friendly transport promoted	0.45
<b>Subtotal (A)</b>	<b>54.15</b>
<b>B. Contingencies<sup>c</sup></b>	14.45
<b>C. Financing Charges During Implementation<sup>d</sup></b>	0.40
<b>Total (A+B+C)</b>	<b>69.00</b>

<sup>a</sup> Includes taxes and duties of \$0.9 million to be financed from ADB loan and grant resources.

<sup>b</sup> In end 2013 price.

<sup>c</sup> Physical contingencies computed at 5% for civil works. Price contingencies computed at 1.5% on foreign exchange costs and 7.5% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>d</sup> Includes interest. Interest during construction for ADB loan(s) has been computed at 1% per annum during the grace period and 1.5% per annum thereafter.

Source: Asian Development Bank estimates.

5. The government has requested a loan in various currencies equivalent to SDR20,305,000 from ADB's Special Funds resources to help finance the project. The loan will have a 32-year term, including a grace period of 8 years, an interest rate of 1.0% per annum during the grace period and 1.5% per annum thereafter, and such other terms and conditions set forth in the draft loan and project agreements.

6. The government has also requested a grant not exceeding \$18.96 million from ADB's Special Funds resources to help finance the project. <sup>2</sup>

7. The financing plan is in Table 2.

**Table 2: Financing Plan**

Source	Amount (\$ million)	Share of Total (%)
Asian Development Bank		
Special Funds Resources (loan)	31.39	45.5
Special Funds Resources (grant)	18.96	27.5
Government	18.65	27.0
<b>Total</b>	<b>69.00</b>	<b>100.0</b>

Source: Asian Development Bank estimates.

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

## A. Detailed Cost Estimates by Expenditure Category

(US\$ Million)

Item	Total Cost (\$ million)	% of Total Base Cost
<b>A. Investment Costs</b>		
1 Works and Equipment	45.20	83.47
2 Land acquisition and resettlements	0.60	1.11
3 Consultants	6.35	11.73
a. Supervision and capacity development (DOR)	4.15	7.66
b. Design, procurement assistance and supervision (PT)	2.20	4.06
<b>Subtotal (A)</b>	<b>52.15</b>	<b>96.31</b>
<b>B. Recurrent Costs</b>		
1 Project management	2.00	3.69
<b>Subtotal (B)</b>	<b>2.00</b>	<b>3.69</b>
<b>Total Base Cost</b>	<b>54.15</b>	<b>100.00</b>
<b>C. Contingencies</b>		<b>0.00</b>
1 Physical	1.75	3.23
2 Price	12.70	23.45
<b>Subtotal (C)</b>	<b>14.45</b>	<b>26.69</b>
<b>D. Financing Charges During Implementation</b>		<b>0.00</b>
1 Interest During Implementation	0.40	0.74
<b>Subtotal (D)</b>	<b>0.40</b>	<b>0.74</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>69.00</b>	<b>127.43</b>

## B. Allocation and Withdrawal of Loan and Grant Proceeds

**Table 3: Allocation and Withdrawal of Loan Proceeds**

CATEGORY			ADB FINANCING
Number	Item	Amount Allocated (SDR) Category	Basis for Withdrawal from the Loan Account
1	Works and Equipment	17,167,000	84% of total expenditure claimed
2	Interest Charge	259,000	100% of amount due
3	Unallocated	2,879,000	
	Total	20,305,000	

**Table 4: Allocation and Withdrawal of Grant Proceeds**

CATEGORY			ADB FINANCING
Number	Item	Total Amount Allocated for ADB Financing (\$) Category	Percentage of ADB Financing from the Grant Account
1	Works and Equipment	11,010,000	81 percent of total expenditure claimed
2	Consulting Services	6,350,000	100 percent of total expenditure claimed
3	Unallocated	1,600,000	
	Total	18,960,000	

### C. Detailed Cost Estimates by Financier

Item	ADB		RGOB		Total Cost	
	Loan		Grant		Total Cost	
	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category
	{A}	{A/D}	{B}	{B/D}	{C}	{C/D}
<b>A. Investment Costs</b>						
1 Works and Equipment	26.54	58.72	11.01	24.37	7.65	16.93
a. Nganglam-Dewathang section	26.54	84.00	-	0.00	5.06	16.00
b. Pasakha access road	-	0	4.78	81.00	1.12	19.00
c. Phuentsholing mini-dry port	-	0	1.94	81.00	0.45	19.00
d. Alay land custom station	-	0	0.28	81.00	0.06	17.00
e. Phuentsholing bypass road	-	0	3.65	81.00	0.87	19.00
f. Eco-friendly transport promotion	-	0	0.36	81.00	0.09	20.00
2 Land acquisition and resettlements		0		0.00	0.60	100.00
3 Consultants	-	0	6.35	100.00	-	0.00
a. Supervision and capacity development (DOR)	-	0	4.15	100.00	-	0.00
b. Design, procurement assistance and supervision (PT)	-	0	2.20	100.00	-	0.00
<b>Subtotal (A)</b>	<b>26.54</b>	<b>50.89</b>	<b>17.36</b>	<b>0.33</b>	<b>8.25</b>	<b>15.82</b>
<b>B. Recurrent Costs</b>						
1 Project Management		0		0	2.00	1.00
<b>Subtotal (B)</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2.00</b>	<b>1.00</b>
<b>Total Base Cost</b>	<b>26.54</b>	<b>49.01</b>	<b>17.36</b>	<b>32.07</b>	<b>10.25</b>	<b>18.92</b>
<b>C. Contingencies</b>	<b>4.45</b>	<b>30.80</b>	<b>1.60</b>	<b>11.07</b>	<b>8.40</b>	<b>58.13</b>
<b>D. Financing Charges During Implementation</b>	<b>0.40</b>	<b>100</b>	<b>-</b>	<b>0</b>	<b>-</b>	<b>0.00</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>31.39</b>	<b>45.49</b>	<b>18.96</b>	<b>27.48</b>	<b>18.65</b>	<b>27.03</b>
<b>% Total Project Cost</b>		<b>45.49</b>		<b>27.48</b>		<b>27.03</b>



## D. Detailed Cost Estimates by Outputs/Components

(\$ million)

Item	Total Cost	Nganglam-Dewathang section		Pasakha Access Road		Phuentsholing Mini-Dry Port		Alay Land Custom Station		Phuentsholing Bypass Road		Eco-friendly transport promotion	
		Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category
<b>A. Investment Costs<sup>a</sup></b>													
1 Works and Equipment	45.20	31.60	69.92	5.90	13.05	2.40	5.31	0.35	0.77	4.50	9.96	0.45	1.00
2 Land acquisition and resettlements	0.60	0.40	66.67	-	0.00	-	0.00	-	0.00	0.20	33.33	-	-
3 Consultants	6.35	3.50	55.11	0.65	10.23	0.25	3.94	0.20	3.15	1.75	27.57	-	-
a. Supervision and capacity development (DOR)	4.15	3.50	84.34	0.65	15.66	-	0.00	-	0.00	-	0.00	-	-
b. Design, procurement assistance and supervision (PT)	2.20	-	0.00	-	0.00	0.25	11.36	0.20	9.09	1.75	79.55	-	-
<b>Subtotal (A)</b>	<b>52.15</b>	<b>35.50</b>	<b>68.08</b>	<b>6.55</b>	<b>12.56</b>	<b>2.65</b>	<b>5.08</b>	<b>0.55</b>	<b>1.05</b>	<b>6.45</b>	<b>12.37</b>	<b>0.45</b>	<b>0.86</b>
<b>B. Recurrent Costs</b>													
1 Project Management	2.00	1.00	50.00	0.25	12.50	0.25	12.50	0.05	2.50	0.45	22.50	-	-
<b>Subtotal (B)</b>	<b>2.00</b>	<b>1.00</b>	<b>50.00</b>	<b>0.25</b>	<b>12.50</b>	<b>0.25</b>	<b>12.50</b>	<b>0.05</b>	<b>2.50</b>	<b>0.45</b>	<b>22.50</b>	-	-
<b>Total Base Cost</b>	<b>54.15</b>	<b>36.50</b>	<b>67.41</b>	<b>6.80</b>	<b>12.56</b>	<b>2.90</b>	<b>5.36</b>	<b>0.60</b>	<b>1.10</b>	<b>6.90</b>	<b>12.74</b>	-	-
<b>C. Contingencies</b>													
1 Physical <sup>b</sup>	1.75	1.55	88.57	0.05	2.86	0.05	2.86	0.05	2.86	0.05	2.86	-	-
2 Price <sup>c</sup>	12.70	8.60	67.72	1.60	12.60	0.70	5.51	0.10	0.79	1.60	12.60	0.10	-
<b>Subtotal (C)</b>	<b>14.45</b>	<b>10.15</b>	<b>70.24</b>	<b>1.65</b>	<b>11.42</b>	<b>0.75</b>	<b>5.19</b>	<b>0.15</b>	<b>1.04</b>	<b>1.65</b>	<b>11.42</b>	<b>0.10</b>	<b>0.69</b>
<b>D. Financing Charges During Implementation<sup>d</sup></b>													
1 Interest During Implementation	0.40	0.40	100.00	-	0.00	-	0.00	-	0.00	-	0.00	-	-
<b>Subtotal (D)</b>	<b>0.40</b>	<b>0.40</b>	<b>100.00</b>	-	<b>0.00</b>	-	<b>0.00</b>	-	<b>0.00</b>	-	<b>0.00</b>	-	-
<b>Total Project Cost (A+B+C+D)</b>	<b>69.00</b>	<b>47.05</b>	<b>68.19</b>	<b>8.45</b>	<b>12.25</b>	<b>3.65</b>	<b>5.29</b>	<b>0.75</b>	<b>1.08</b>	<b>8.55</b>	<b>12.39</b>	<b>0.55</b>	<b>0.80</b>

a. In January 2014 prices.

b. Computed at 5% for works.

c. Physical contingencies computed at 5% for civil works. Price contingencies computed at 1.5% on foreign exchange costs and 7.5% on local currency costs.

d. Includes interest. Interest during construction for ADB loan(s) has been computed at 1% per annum during the grace period and 1.5% per annum thereafter.

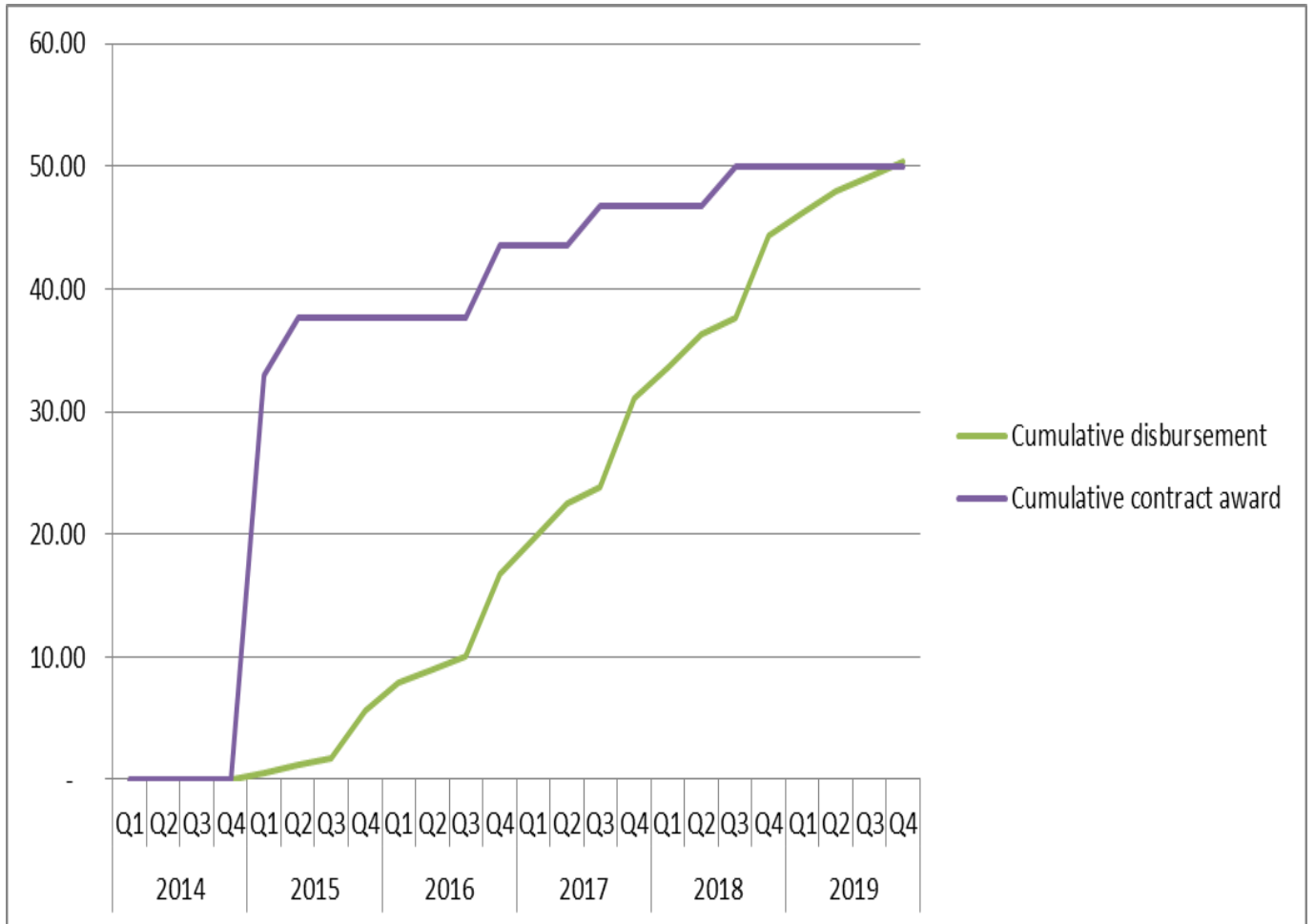
Source: Asian Development Bank estimates

## E. Detailed Cost Estimates by Year

		(\$ million)					
Item	Total Cost	2014	2015	2016	2017	2018	2019
<b>A. Investment Costs</b>							
1 Works and Equipment	45.20	0.00	3.82	10.25	13.14	12.80	5.40
2 Land acquisition and resettlements	0.60	0.18	0.18	0.09	0.09	0.06	0.00
3 Consultants	6.35	0.00	2.12	1.48	1.48	0.96	0.34
a. Supervision and capacity development (DOR)	4.15	0.00	1.44	1.03	1.03	0.62	0.00
b. Design, procurement assistance and supervision (PT)	2.20	0.00	0.67	0.45	0.45	0.34	0.34
<b>Subtotal (A)</b>	<b>52.15</b>	<b>0.18</b>	<b>6.11</b>	<b>11.82</b>	<b>14.71</b>	<b>13.82</b>	<b>5.73</b>
<b>B. Recurrent Costs</b>							
1 Project Management	2.00	0.20	0.40	0.40	0.40	0.40	0.20
<b>Subtotal (B)</b>	<b>2.00</b>	<b>0.20</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>0.20</b>
<b>Total Base Cost</b>	<b>54.15</b>	<b>0.38</b>	<b>6.51</b>	<b>12.22</b>	<b>15.11</b>	<b>14.22</b>	<b>5.93</b>
<b>C. Contingencies</b>	<b>14.45</b>	<b>0.01</b>	<b>0.81</b>	<b>2.44</b>	<b>4.14</b>	<b>4.15</b>	<b>2.64</b>
<b>D. Financing Charges During Implementation</b>	<b>0.40</b>	<b>0.00</b>	<b>0.01</b>	<b>0.06</b>	<b>0.13</b>	<b>0.21</b>	<b>0.00</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>69.00</b>	<b>0.39</b>	<b>7.33</b>	<b>14.72</b>	<b>19.38</b>	<b>18.58</b>	<b>8.58</b>
<b>% Total Project Cost</b>	<b>100.00%</b>	<b>0.57%</b>	<b>10.63%</b>	<b>21.33%</b>	<b>28.09%</b>	<b>26.93%</b>	<b>12.43%</b>

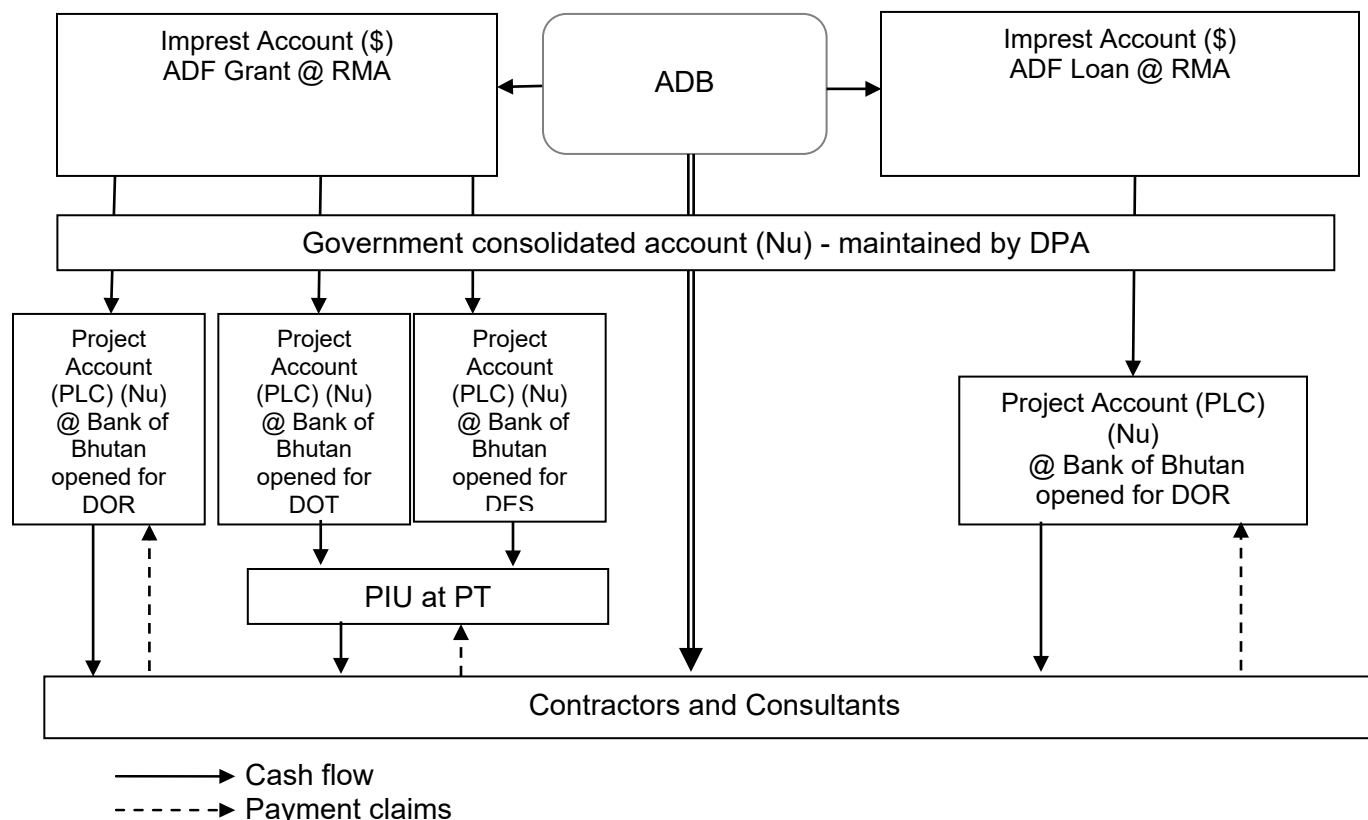
### F. Contract and Disbursement S-curve

8. The following graph shows contract awards and disbursement over the life of the project, and annually based on the contract awards and disbursement projections.



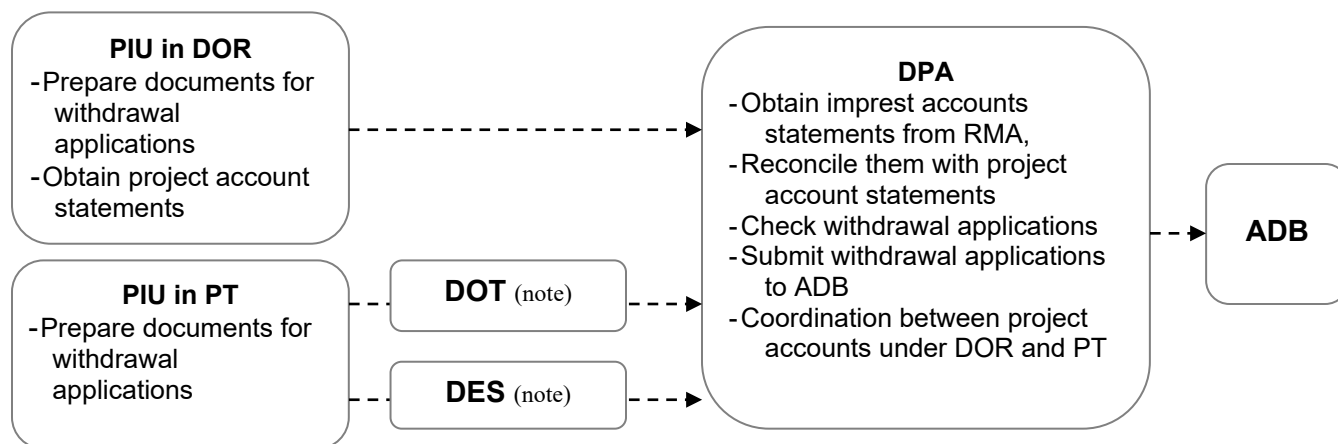
## G. Fund Flow Diagram

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



All foreign currency payments will be made through direct payment procedure from ADB.  
All local currency payments will be made through the imprest accounts opened at Royal Monetary Authority (RMA).

## Flow chart for withdrawal applications preparations



Note: DES and DOT will (i) review the submitted documents and (ii) obtain project account statements and submit them to DPA.

## **V. FINANCIAL MANAGEMENT**

### **A. Financial Management Assessment**

10. Financial management assessment for Department of Roads (DOR) of the Ministry of Works and Human Settlements and Phuentsholing Municipal Government (PT) has been conducted in accordance with ADB Financial Management and Analysis of Projects with a focus on fund flows, internal controls, budgeting, staffing and audit arrangements. The assessment concludes that the financial management systems of DOR and PT are fairly satisfactory which is guided by the Financial Rules and Regulations 2001 as provided in the Financial Manual 2001 of the Government. The Financial Manual 2001 is assessed as robust in light of international practices and standards. As pointed out in the Public Financial Management Accountability Assessment (PFMAA) undertaken jointly by the government, the World Bank, and Danida in 2009, weakness was found in the internal audit system at country level. External audit system was assessed as robust with Royal Audit Authority (RAA) conduct regular audits to government agencies in accordance with international practices and standards. To warrant the robustness of the financial management of the project accounts, DOR and PT ensure that appropriate internal audits will be conducted for the financial statements of the project. Audited Project Financial Statements for previous projects under DOR and PT<sup>3</sup> have been submitted on time without serious audit observations on financial management or internal control. From lessons learnt during the implementation of previous ADB funded projects, the assessment identified weaknesses in the preparations of withdrawal applications as delays have been seen in ADB funded multi IAs projects so far. This shall be mitigated by arranging fund flow structure so as to clarify the role of executing agencies as responsible agents for usage of project account proceeds, active involvement of Ministry of Finance in disbursement process and hand-on supports of ADB through the Resident Mission established in 2013.

### **B. Disbursement**

11. The Loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (July 2012, as amended from time to time),<sup>4</sup> and detailed arrangements agreed upon between the Government and ADB.

12. Pursuant to ADB's Safeguard Policy Statement (2009) (SPS),<sup>5</sup> 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. All financial institutions will ensure that their investments are in compliance with applicable national laws and regulations and will apply the prohibited investment activities list (Appendix 5) to subprojects financed by ADB.

13. 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 and withdrawal applications. Department of Roads, Department of Engineering Services (DES) and Department of Trade (DOT) are responsible to review the prepared withdrawal applications, obtain account statements of project accounts and submit

<sup>3</sup> Since PT acted as IA for previous ADB funded projects with Department of Engineering Services of Ministry of Works and Human Settlement as EA, APFSs were submitted to ADB through EA.

<sup>4</sup> Available at: <http://www.adb.org/sites/default/files/loan-disbursement-handbook.pdf>

<sup>5</sup> Available at: <http://www.adb.org/Documents/Policies/Safeguards/Safeguard-Policy-Statement-June2009.pdf>

them to DPA. DPA will be responsible for obtaining account statements of imprest account and submitting withdrawal applications to ADB.

14. One imprest account each for loan and grant proceeds will be opened in Royal Monetary Authority (RMA). One project account (also called sub-account) will be opened under the imprest account for loan proceeds, which will be administered by DOR to be used for Nganglam-Dewothang section subproject to be executed by DOR. Three project accounts (sub-accounts) will be opened under the imprest account for grant proceeds, and will be administered by DOR, DES and DOT. The project account (sub-account) for DOR will be used for Pasakha access road subproject and consulting services for DOR, that for DES will be used for Phuentsholing bypass road and Alay land custom station subprojects and consulting services for PT. The project account (sub-account) for DOT will be used for mini-dry port subproject. These project accounts (sub-accounts) will receive ADB fund and RGOB counterpart fund through DPA and pool the funds, following Bhutan country system, which is well established and robust. The maximum ceiling of the imprest accounts for both grant and loan proceeds will not at any time exceed 10% of the respective financing amount. The maximum ceiling of each sub-account will be equivalent to \$2.5 million. The request for advance to the imprest account should be accompanied by an Estimate of Expenditure Sheet<sup>6</sup> setting out the estimated expenditures for the forthcoming six (6) months of project implementation, and submission of evidence satisfactory to ADB that the imprest account has been duly opened. For every liquidation and replenishment request of the imprest account, the borrower will furnish to ADB (a) Statement of Account (Bank Statement) where the imprest account is maintained, and (b) the Imprest Account Reconciliation Statement (IARS) reconciling the above mentioned bank statement against the EAs' records.<sup>7</sup>

15. The statement of expenditure (SOE) procedure will be used for liquidation and replenishment of advances provided to the imprest account and reimbursement of eligible expenditures not exceeding \$100,000 equivalent per individual payment. SOE records should be maintained and made readily available for review by ADB's disbursement and review mission or upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit.

16. Before the submission of the first withdrawal application, DPA should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is US\$100,000, unless otherwise approved by ADB. Individual payments below this amount should generally be paid from the imprest accounts or sub-accounts, or by the EA/IA and subsequently claimed to ADB through reimbursement. ADB reserves the right not to accept WAs below the minimum amount. 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.

17. Government counterpart funds will be provided to each PIU under DOR and PT from DPA through DOR, DES and DOT and be kept in project accounts of respective PIUs.

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<sup>6</sup> Available in Appendix 10B of the *Loan Disbursement Handbook*.

<sup>7</sup> Follow the format provided in Appendix 10C of the *Loan Disbursement Handbook*.

### **C. Accounting**

18. DOR and PT will maintain separate project financial statements and records by funding source for all expenditures incurred on the Project. Project financial statements will follow 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**

19. 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 within 6 months of the end of the fiscal year by the executing agency. 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; (iii) the level of compliance for each financial covenant contained in the legal agreements for the project; (iv) use of the imprest fund procedure; and (v) the use of the statement of expenditure procedure certifying to the eligibility of those expenditures claimed under SOE procedures, and proper use of the SOE and imprest procedures in accordance with ADB's Loan Disbursement Handbook and the project documents. A management letter shall also be provided. The Government, DOR, DES, DOT and PT have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited accounts. ADB reserves the right to require a change in the project auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required 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 statements to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

20. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011).<sup>8</sup> After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 30 days. The management letter will not be disclosed.

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<sup>8</sup> Available from <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

## VI. PROCUREMENT AND CONSULTING SERVICES

### A. Advance Contracting

21. All advance contracting will be undertaken in conformity with ADB's *Procurement Guidelines* (March 2013, as amended from time to time) (ADB's *Procurement Guidelines*)<sup>9</sup> and ADB's *Guidelines on the Use of Consultants* (2013, as amended from time to time) (ADB's *Guidelines on the Use of Consultants*).<sup>10</sup> The issuance of invitations to bid under advance contracting will be subject to ADB approval. The borrower, DOR and PT have been advised that approval of advance contracting does not commit ADB to finance the Project.

22. **Advance contracting.** Advance contracting of civil works, and consulting services, i.e. tendering and bid evaluations for civil work packages and recruitment of consultants, will be conducted by DOR and PT.

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

23. All procurement of goods and works will be undertaken in accordance with ADB's *Procurement Guidelines*.

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

25. When and if any national competitive bidding (NCB) is proposed, the use of Bhutan's Procurement Rules & Regulations 2009, issued by the Royal Government of Bhutan, Ministry of Finance, together with ADB issued Bhutan NCB Annex shall be used.

26. An 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages and national competitive bidding guidelines is in Section C.

27. All consultants will be recruited according to ADB's *Guidelines on the Use of Consultants*.<sup>11</sup> The terms of reference for all consulting services are detailed in Section D.

28. An estimated 1,026 person-months (187 international, 839 national) of consulting services are required to (i) facilitate project management and implementation, and (ii) strengthen the institutional and operational capacity of the executing agency. Consulting firms will be engaged using the quality- and cost-based selection (QCBS) method with a quality: cost ratio of 90:10.

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<sup>9</sup> Available at: <http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf>

<sup>10</sup> Available at: <http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf>

<sup>11</sup> Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: <http://www.adb.org/documents/handbooks/project-implementation/>



### **C. Procurement Plan**

29. The procurement plan, prepared in accordance with the country-specific template, is in Attachment A, describing all procurement of good and works to be undertaken for the Project.

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

30. The terms of reference for consulting services are provided in Attachment B-1 and B-2.

## VII. SAFEGUARDS

### A. Environment

31. **Categorization.** The project is classified as category A in accordance with ADB's Safeguard Policy Statement (2009) (SPS)<sup>12</sup> as one of the five subprojects, the Nganglam - Dewathang section of SEWH (a new section of SEWH) is category A. The remaining four subprojects: Pasakha Access Road (PAR), Phuentsholing Bypass Road (PBR), Land Customs Station (Alay LCS) and Phuentsholing Mini Dry Port (MDP) are category B. An Environmental Impact Assessment (EIA) report has been prepared for a new section of SEWH and three Initial Environment Examination (IEE) reports have been prepared for the remaining four subprojects including one combined IEE for the PAR and Alay LCS.

32. **Implementation of Environmental Management Plan (EMP).** DOR and PT will ensure that all environment safeguard requirements under the project will be implemented as required by the EIA for the highway and IEE's for PAR and Alay LCS, PBR and MDP. The EMP with detailed budget estimates are given in EIA report for the new section of SEWH and IEE for the PAR. An EMP has also been prepared for the PBR, MDP and Alay LCS. However the detailed designs of PBR and Alay LCS are yet to be prepared, hence the EMPs will be updated by the design consultant in accordance with the detailed design. Since a design and build contract package is to be adopted for the procurement of MDP works, the contract agreement with the contractor for the subproject must include clauses for updating the EMP during the design stage by the contractor and proper implementation of the EMP during construction. For the new section of SEWH and PAR, necessary clauses on environment safeguards will be included in the main text of the contract documents and the EMP matrix from the final EIA and IEE reports will be attached to the bidding documents. The contractors will be required to include the costs for implementing the environmental clauses and EMP in their bids.

33. The EMP is a plan for implementation and monitoring of environmental mitigation and enhancement measures during project construction and operation. Specific measures with details on location, time and responsible agency for implementation and monitoring is given in the EMP. Mitigation measures for implementation during the construction stage is implemented by the contractor and during operation stage by DOR and PT through PIU. The Environmental Specialist in the consulting services for both the DOR and PT subprojects will support DOR and PT to guide and monitor implementation of EMPs by contractors including climate adaptation activities. The Wildlife Specialist in the consulting services for the new section of SEWH subproject will provide technical advice and act as an external monitor for the wildlife related activities as given in the EMP particularly when construction takes place in the sensitive areas as documented in the EIA report. An Environmental Focal Person (EFP) will be appointed in each of the three Project offices under DOR and the PIU under PT. Similarly, an EFP will be appointed at the site level under the consulting services for conducting day to day monitoring of EMP implementation. An EFP will also be appointed by the contractor for each contract package to ensure proper implementation of the EMP. The Environmental Specialists and Wildlife Specialist in the consulting services along with all the EFP's will work closely together.

34. The EMP includes collection of baseline data on air and noise quality during the pre-construction stage. The Environmental Specialist in the consulting services will be responsible for procuring the monitoring equipment and organizing training on operation of the equipment by

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<sup>12</sup> Available at: <http://www.adb.org/Documents/Policies/Safeguards/Safeguard-Policy-Statement-June2009.pdf>

the supplier for the EFP under the PIUs, consulting services and contractors before the start of construction works. The Environmental Specialist in the consulting services will be responsible for baseline data collection on air, noise, and water quality before construction works begin, during construction and during early stages of operation as given in the EMP. After the construction works are over, the monitoring equipment will be handed over to DOR and PT for use by the EFP for other projects. An initial coordination cum training workshop will be organized by DOR and PT with technical support from consulting services and ADB as necessary.

35. All required clearances such as the environmental clearance and forestry clearance must be obtained by the PIUs before start of construction works for all project components.

## **B. Involuntary Resettlement**

36. **Categorization.** The project is classified as category A in accordance with ADB's Safeguard Policy Statement (2009) (SPS) as one of the five subcomponents, the new section of SEWH subproject is category A. PBR is category B, and PAR, Alay LCS and MDP are category C. Two resettlement plans and one land acquisition due diligence report have been prepared.

37. **General conditions.** Details of compensation rates for the loss of land and structures, shifting assistance, income restoration assistance, and additional support provisions for the vulnerable groups are provided in the resettlement plans. Meaningful consultation and information disclosure during the preparation of RPs with the project displaced persons including land acquisition and compensation process and to general public through the ADB website were undertaken. If during implementation of the project, any modification or additional land requirement or involuntary resettlement impacts are identified, a related RP will be prepared or updated in accordance with the applicable laws referred to in the RP, and prior approval of the ADB will be obtained before any further implementation of the relevant section of the subproject.

38. DOR and PT through PIUs will (i) implement the subprojects in accordance with the resettlement plans prepared; (ii) provide semi-annual progress reports on the implementation of the resettlement plans; (iii) ensure that all displaced persons should be paid compensation and assistance prior to the commencement of the civil works and in accordance with the RPs, (iv) ensure that the land should be made free of encumbrances and obstructions from the related section required to be handed over to the civil works contractor for and prior to commencement of construction thereof in accordance with the work schedule under the related civil works contract, and (v) establish efficient grievance redressal mechanism in accordance with the related RP to assist affected persons to resolve grievances and complaints if any in a timely manner.

39. **Nganglam-Dewathang section of SEWH.** A RP has been prepared for this subproject in accordance to ADB SPS, Land Act of Bhutan amended in 2007, Land Compensation Rates 2009 (PAVA), Cash Compensation Rates for fruit trees 2009, Department of National Properties, Ministry of Finance, Cash Compensation Rate for Private Forest trees 2010, Department of National Properties, Cash Compensation Rate for Fodder trees, Department of Livestock Animal Nutrition Division, National Center for Animal Nutrition, Bumthang and Bhutan Scheduled Rates (BSR 2012) for the affected structures. Land acquisition will be implemented by the PIU. Internal monitoring will be undertaken by DOR and external monitoring will be undertaken by the supervision consultant.

**The Pasakha Access Road (PAR).** 0.04 acres of private land will be acquired affecting 1 household and 2 structures (1 main, and 1 secondary). The implementation arrangement is similar to the Nganglam-Dewathang section as mentioned in para 39.

40. **Phuentsholing Bypass Road (PBR).** A RP has been prepared for this subproject. One household will be affected by land acquisition. PT has initiated discussions with the affected household regarding donating the required land. Land acquisition will be implemented by the PIU. Internal monitoring will be undertaken by PT and external monitoring will be undertaken by the supervision consultant who will document the negotiation and settlement process and ensure that the donation was done under free will after meaningful consultation and done without coercion.

41. **Phuentsholing Mini-Dry Port (MDP).** A due diligence report was prepared for this subproject. Land acquisition affecting two title holders was initiated in 2003 prior to ADB involvement. The land acquisition is still ongoing. Civil works shall not commence until the land becomes free of encumbrance.

42. **Impact on indigenous peoples.** The project is categorized as “C” per ADB SPS. No impact was identified during project preparation stage.

### **C. Grievance Redress Mechanism (GRM)**

43. A grievance redress mechanism will be 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. 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 Geog Officials. The affected person or party may also skip step 1 and directly file written grievance to the GRC. All grievances which cannot be address 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.

#### **D. Monitoring and Reporting**

44. Implementation of the EMP, RP and social mitigation measures will be monitored by PIUs with the support of consulting services. The purpose of monitoring implementation of the RP will be to evaluate and report whether resettlement goals have been achieved. For environment safeguards records on implementation of the mitigation measures on site will be maintained by the contractor. Based on these records and spot checks of at least once a month by PIUs and consultants, monitoring reports will be compiled by the Environmental Specialists in consulting services on a semi-annual basis. For the Nganglam-Dewathang section of SEWH, the Wildlife Specialist in the consulting services will also compile reports on a semi-annual basis. These reports will be reviewed and approved by DOR and PT respectively and forwarded to ADB for disclosure on the ADB website. If there are any changes in the design or alignment, the EMP and RP of the respective subproject will be updated to account for any additional or new impacts. Further, the need for revising the EIA or IEE report will also be reviewed and confirmed in discussion with ADB.

## VIII. GENDER AND SOCIAL DIMENSIONS

45. **Poverty reduction and social impact.** Remoteness and isolation are the major causes of poverty in Bhutan. The new section of SEWH subproject will have direct benefits for the local population (poor and vulnerable groups and households headed by women). The subproject will provide improved access to five villages that are currently not connected by a paved road passable by motor vehicles. The subproject is expected to improve the quality of life and bring new economic opportunities to the remote areas of the country through (i) easier access to external markets, (ii) increased local retailing opportunities, and (iii) easier access to health care centers and education facilities. The income-generation activities of the population of the immediate and wider project influence area are expected to increase through sales of local produce at the road side. As a result, the subproject will significantly reduce the poverty level and improve the quality of life in the two beneficiary districts of Pema Gatshel, and Samdrup Jongkhar.

46. **Gender.** Design features have been formulated in order to: (i) maximize women's access to project benefits; (ii) minimize social vulnerability; and (iii) mitigate risk of health and social issues related with highway project.

47. Design features for the project are the following. For the mini-dry port, women only facilities will be provided. For the new section of SEWH subproject, soft shoulders will be constructed to provide walk way for pedestrians, small rest areas and platforms for selling local produces will be designed and constructed at suitable locations after consulting with the local communities, and DOR will employ at least 50% women for maintenance of the highway post-construction. Capacity building will also be provided to DOR and PT in mainstreaming gender-friendly design into future projects.

48. For civil works contracts, provisions are in the bidding documents for the contractors to ensure that all civil works will comply with all applicable labor laws; not employ child labor for construction and maintenance activities; encourage employment of the poor, particularly women; and not differentiate wages between men and women, particularly for work of equal value. The monitoring will be undertaken by the supervision consultants.

49. **HIV/AIDS and Human Trafficking.** DOR and PT will ensure that all civil works contractors (1) carry out awareness programs for labor on the risks of sexually transmitted diseases/ AIDS and human trafficking, and (2) disseminate information at worksites on the risks of sexually transmitted diseases and HIV/AIDS as part of health and safety measures for those employed during construction. Contracts for all subprojects will include specific clauses on these undertakings, and compliance will be strictly monitored by DOR and PT. For project affected communities, DOR and PT will coordinate the delivery of awareness programs in HIV/AIDS, and human trafficking with assistance from the government line agencies. DOR and PT will sign a MoU with the line agencies to ensure targeted delivery of awareness raising activities. Per the design and monitoring framework (DMF), at least 2 awareness raising activities will be delivered in each village along Nganglam-Dewathang section of SEWH. The Resettlement and Social Development Specialist in the consulting services will monitor the implementation.

50. **Labor.** Men and women will be paid equally for equal work. Provisions are in the bidding documents for the contractors to ensure that all the civil works comply with core labor standards (e.g. no child labor; no bonded labor; no work discrimination regardless of gender, race, and ethnicity; and freedom of association and collective bargaining). DOR and PT shall

cooperate with the relevant government agency to monitor the implementation of this clause. The Resettlement and Social Development Specialist will monitor the implementation.

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

### A. Project Design and Monitoring Framework

51. Project Design and Monitoring Framework is in Attachment C.

### B. Monitoring

52. **Project performance monitoring:** DOR and PT, in consultation with ADB, will develop within 3 months of the effective date of 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>

53. **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 covenants to assess whether they are still relevant or need to be changed, or waived due to changing circumstances.

54. **Safeguards monitoring:** Compliance with safeguard requirements will be monitored by PIUs under DOR and PT with the supports 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 EIA, IEE, EMPs and RPs. Compliance of the project with these documents will be reviewed by ADB review missions.

55. **Gender, Labor, and social dimensions monitoring:** Compliance will be monitored by the supervision consultant, who is supervised by DOR and PT.

### C. Evaluation

56. 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 in 2017. 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 submit project completion reports respectively to ADB.<sup>14</sup>

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<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>



#### **D. Reporting**

57. 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 next 12 months; and (iii) a project completion report within 3 months of physical completion of the project components under DOR or PT respectively. To ensure the Project continue to be both viable and sustainable, project accounts and the executing agency AFSs, together with the associated auditor's report, should be adequately reviewed.

#### **E. Stakeholder Communication Strategy**

58. DOR and PT will ensure that completed RPs and resettlement monitoring reports are made available to affected people and are submitted to ADB for posting on its Web site.

59. DOR and PT will ensure that EIA, IEEs and environmental monitoring reports are made available to affected people and are submitted to ADB for posting on its Web site.

## **X. ANTICORRUPTION POLICY**

60. 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/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>

61. To support these efforts, relevant provisions are included in the financing agreement, loan/grant regulations and the bidding documents for the Project.

## **XI. ACCOUNTABILITY MECHANISM**

62. 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 a good faith effort 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>

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

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

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

## **XII. RECORD OF PAM CHANGES**

- 63. "Draft" was removed from the cover page.
- 64. "Key Persons Involved in Implementation" has been updated.



## PROCUREMENT PLAN

### Basic Data

<b>Project Name:</b> SASEC Road Connectivity Project	
<b>Project Number:</b> 39225	<b>Approval Number:</b>
<b>Country:</b> BHUTAN	<b>Executing Agency:</b> Department of Roads(DOR), Phuentsholing Thromde(PT)
<b>Project Financing Amount:</b> <b>ADB Financing:</b> \$50.35 million <b>Non-ADB Financing:</b>	<b>Implementing Agency:</b> Department of Roads(DOR), Phuentsholing Thromde(PT)
<b>Date of First Procurement Plan:</b> 26 May 2014	<b>Date of this Procurement Plan:</b> 26 May 2014

### 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 (ICB) for Works	Above \$1,000,000	
International Competitive Bidding for Goods	Above \$500,000	
National Competitive Bidding (NCB) for Works	Beneath that stated for ICB, Works	
National Competitive Bidding for Goods	Beneath that stated for ICB, Goods	
Shopping for Works	Below \$100,000	
Shopping for Goods	Below \$100,000	

Consulting Services	
Method	Comments
Quality and Cost Based Selection (QCBS)	

#### 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
1	Nganglam-Deothang 0-43 km (ND01)	\$18.45 million	ICB	Prior	1S2E	Q1 2014	EA/IA: DOR  No PQ, Large Works
2	Nganglam-Deothang 43-68 km (ND02)	\$13.15 million	ICB	Prior	1S2E	Q1 2014	EA/IA: DOR  No PQ, Large

							Works
3	Pasakha access road (PA01)	\$5.90 million	ICB	Prior	1S2E	Q1 2014	EA/IA: DOR No PQ, Large Works
4	Phuentsholing mini-dry port	\$2.40 million	ICB	Prior	1S2E	Q2 2015	EA/IA: PT No PQ, Design Build

### 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
1	Supervision and capacity development consultant (DOR)	\$ 4.15 million	QCBS	Prior	Q1 2014	Full	EA/IA: DOR International 90:10
2	Design, procurement assistance and supervision consultant (PT)	\$ 2.20 million	QCBS	Prior	Q1 2014	Full	EA/IA: PT International 90:10

### 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 groups 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
Nil								

Consulting Services								
Package Number	General Description	Estimated Value	Number of Contracts	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
Nil								

## 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
5	Phuentsholing Bypass road	\$4.50 million	1	ICB	Prior	1S2E	EA/IA: PT
6	Alay Land Custom Station	\$0.35 million	1	NCB	Prior	1S2E	EA/IA: PT
7	Eco-friendly transportation	\$0.45 million	1	ICB	Prior	1S2E	EA/IA: DOR

Consulting Services							
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitment Method	Review (Prior / Post)	Type of Proposal	Comments
Nil							

## C. List of Awarded and On-going, and Completed Contracts

The following tables list the awarded and on-going contracts, and completed contracts.

### 1. Awarded and Ongoing Contracts

Package Number	General Description	Estimated Value	Contract Value	Procurement Method	Advertisement Date (quarter/ year)	Date of ADB Approval of Contract Award	Comments
Nil							

Package Number	General Description	Estimated Value	Contract Value	Recruitment Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award	Comments

## 2. Completed Contracts

Goods and Works								
Package Number	General Description	Estimated Value	Contract Value	Procurement Method	Advertisement Date (quarter/ year)	Date of ADB Approval of Contract Award	Date of Completion	Comments
Nil								

Consulting Services								
Package Number	General Description	Estimated Value	Contract Value	Recruitment Method	Advertisement Date (quarter/ year)	Date of ADB Approval of Contract Award	Date of Completion	Comments
Nil								

### D. Non-ADB Financing

The following table lists goods, works and consulting services contracts over the life of the project, financed by Non-ADB sources.

Goods and Works				
General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Comments
Nil				

Consulting Services				
General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitment Method	Comments
Nil				



## **E. 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.

### **2. 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.

### **3. 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.

### **4. 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.

### **5. 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 Guide to Pre-Qualification.

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

### **6. Eligibility of Bidders**

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

## **7. 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.

## **8. Procurement Process**

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

## **9. 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.

## **10. Bidding Documents**

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

## **11. 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.

## **12. 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.

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

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

## **14. 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.

## **15. 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 ROAD CONNECTIVITY

### A. Background:

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 Sub-regional Economic Cooperation (SASEC) Road Connectivity Project (the Project). The Department of Roads (DoR) under the Ministry of Works and Human Settlement (MoWHS) is the designated authority within the Royal Government of Bhutan in charge of implementing the project. The Project comprise of the following:

- i) Construction of 68.30 km of south east-west highway between Nganglam and Deothang and
- ii) Construction of about 1.2 km of access road to Pasakha industrial area (Pasakha access road).

The roads would be constructed to Primary National Highway (PNH) RNPII standard, in line with Environmental Friendly Road Construction (EFRC) guidelines and practices. This project would improve rural access and connectivity contributing to economic growth and would be part of Southern East – West Highways (SEWH) providing alternative to the existing East-West Highway via Bumthang.

### B. Objectives:

The objective of the proposed Consultancy services is to assist Project Management Team, Department of Roads, Ministry of Works and Human Settlement in implementing the project as follows:

- i) To conduct comprehensive supervision of project implementation activities carried out by the civil work Contractors ensuring complete compliance with the drawings, technical specifications and various stipulations contained in the Contract Documents.
- ii) To ensure high standards of quality assurance in the execution of work and completion of the works within stipulated time.
- iii) To assist Project Management Team in taking remedial actions to avoid slippages, cost over runs, delays by the civil works Contractor, etc.
- iv) To ensure safety during construction and adherence to all requirements under the Environment Management Plan (EMP) prescribed under the Contract.
- v) To train and 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.
- vi) To ensure the implementation of resettlement plans and the social and relevant gender features included in the design of the project, including monitoring of HIV and human trafficking community awareness activities, as well as compliance of core labor standards by civil works contractors.

### **C. Scope of Services:**

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.

The Consultant's responsibilities shall include, but not 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 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 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 variation orders, extensions of time, claims, and other matters that may come from Contractors;
- xv) negotiating with the Contractors and recommending to Project Management the rates for any unscheduled items of work that may arise;
- xvi) advising the Project Management 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 Environmental Friendly Road Construction 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 or on-site advise and training 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 training to DoR and Dzongkhag officials on ADB social safeguard requirements and Resettlement Plan (RP) implementation;
  - xxi) conducting monitoring visits to ensure proper implementation of EMP and RP;
  - xxii) updating EMP and RP based on changing field conditions and accordingly inform relevant agencies and field staffs;
  - xxiii) prepare semi-annual monitoring reports on implementation of safeguards for review and approval by DOR and further submission to ADB for disclosure on the ADB website
  - xxiv) undertaking project performance management system in the format acceptable to the Client and the ADB;
  - xxv) assisting in preparing a consolidated project completion report in a format provided by ADB after the completion of Contract works;
  - xxvi) checking and certifying as-built drawings for the works prepared by the Contractors;
  - xxvii) providing the Client with complete records such as inception, monthly, quarterly, completion reports, etc.;
  - xxviii) conducting on-site training where required for DoR field staff on Quality Assurance and Contract Administration;
  - xxix) monitoring the implementation of climate change adaptation measures during the construction stage and advising DoR and the Contractor of the remedial measures as necessary;
  - xxx) conducting training for DoR staff on climate change adaptation measures and its implementation methods for road construction and maintenance works. This training should be in principle based on the consultant's assessment of existing design standards in Bhutan, but new design standards for the country should be introduced such as incorporation of future projected climate conditions into the road designs;
  - xxxi) introduce/ incorporate new design principles for climate change resilient road and bridges;
  - xxxii) conducting 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;
  - xxxiii) conducting training for DoR staff on road asset management. This should involve intensive consultations with DoR staff on suitable inventory management scheme including the customization of existing road asset management system in DoR. The Consultant should work out a a road asset management system (RAMS) appropriate to the capacity of DOR ,including customization of existing RAMS or development of a simple-to-use software program, suitable for the project and for one existing highway segment. The Consultant should also assess the performance of the current performance-based contracts and examine the applicability to the project roads. The road asset management system and the maintenance scheme developed should be replicable to other roads;
  - xxxiv) conducting training for DoR staff on improving integration of social and gender mainstreaming features into future project design;
  - 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 comments would be included in the Quarterly Progress reports and the Project completion report; and

- xxxvi) the financial proposal shall include provisional sum as specified for capacity development training (ex-country) for DoR engineers to get exposure to newer technologies, procurement of survey equipment, software and utility vehicles.

#### **D. Reports and Documents:**

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.

<b>Sl. No.</b>	<b>Report</b>	<b>Frequency</b>	<b>Due Date</b>	<b>No. of Copies</b>	<b>No. of CDs</b>
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.	Road asset management report and Toolkit	One Time	Within 12 months after commencement of service	5	1
6.	Climate adaptation design, construction and maintenance Manual	One Time	Within 12 months after commencement of service	5	1
7.	Consultant's Work Completion Report	One Time	Within 15 days after completion of services	10	5

##### **i) 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.

ii) 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, social and resettlement 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(s) and the recommendations for corrective measures. The reports shall also contain the performance data for Contractor's plant and equipment.

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.

iii) 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.

iv) 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. design, pre-construction, construction and maintenance stages. This should be based on the findings of actual needs of DoR through the discussions and training 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. Capacity assessment method of the staff of the understanding level of the manual and the impact of training program should be included in the manual.

v) Road Asset Management Report and Toolkit:

The international Road Asset Management Specialist and the national Road Management Specialist will report to the Chief Engineer of Maintenance Division of DOR.

The Consultant shall develop an appropriate road asset management system and a set of toolkit during the assignments. This report should summarize the findings of actual needs of DoR through discussions and trainings during the assignments. The report should include at least (i) a proposed visual-survey based data collection program, (ii) an assessment of the effectiveness of different maintenance options, (iii) a decision model to select road maintenance options based on the collected information, (iv) different scenario of budget proposal and the resulted network performance, (v) options to integrate the emergency maintenance into the road asset management system, and (vi) capacity assessment method of the staff in implementing road asset management and the impact of training program. The toolkit should include spreadsheet template for inventory database, decision model, budget estimation, and monthly and annual report templates. The report and toolkit shall be prepared during the first 12 months of construction works to be used for follow-up trainings of DoR staff during the consulting services. The consultant should assist the maintenance division in organizing data collection, and preparing annual



report of maintenance division and budget proposals.

vi) Climate Change Adaptation Manual:

The Consultant shall develop an appropriate climate change adaptation manual for DoR to incorporate climate change adaptation measures into the designs of newly constructed roads and maintenance works of the existing roads. This should be based on the existing guidelines for design of road and bridges in Bhutan as well as applicable international best practices. The Consultant shall prepare the manual during the first 12 months of construction works to be used for follow-up trainings of DoR staff during the consulting services. Capacity assessment method of the staff of the understanding level of the manual and the impact of training program should be included in the manual.

vii) 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.

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:**

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.	Senior Highway Engineer/ Team Leader	1	45	45
A 2.	Bridge Supervision Engineer	1	24	24
A 3.	Material Engineer	1	36	36
A 4.	Road Safety Specialist	1	6	6
A 5.	Road Asset Management Specialist	1	6	6
A 6.	Climate Change Specialist (Adaptation)	1	6	6
<b>B. National Position</b>				
B 1.	Road Management Specialist/Deputy Team Leader	1	42	42
B 2.	Resident Engineers	3	46+40+28	114

Sl. No.	Position/ Expertise	Nos.	Person-months	Total person-months
B 3.	Quantity Surveyor	1	42	42
B 4.	Environmental Specialist	1	20	20
B 5.	Wildlife Specialist	1	14	14
B 6.	Resettlement and Social Development Specialist	1	12	12

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

B 7.	Site Inspectors (Field Engineers)	5	2*45+2*39+1*27	195
B 8.	Survey Engineer	1	20	20
B 9.	Laboratory Technicians	3	42+36+24	102

**F. Qualification and Experience Requirements of Experts:**

Qualifications and experience requirements for Experts are as below.

**Key Personnel:**

**A 1. Senior Highway Engineer/ Team Leader**

a) Qualification	Minimum: Bachelor's degree in civil engineering.
b) Total Professional Experience	20 years minimum
c) Project-related Experience	<ul style="list-style-type: none"> <li>- Minimum 10years experience as Team Leader/Project Manager in supervision or contract administration of highway or road construction contracts, preferably having managed multiple 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	With substantial experience in Himalayan mountainous condition/ Bhutan.

**A 2. Bridge Supervision Engineer:**

a) Qualification	Minimum: Bachelor's degree in civil engineering.
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) Overseas/ Country Experience	With substantial experience in Himalayan mountainous condition/ Bhutan.

**A 3. Material Engineer:**

a) Qualification	Minimum: Bachelor's degree in civil engineering.
b) Total Professional Experience	15 years minimum
c) Project-related Experience	Minimum 8years experience Material Engineering or as Asst. Material Engineering in highway construction projects with various experiences in material testing, mixes such as GSB, WMM, Bituminous mixes, concrete mixes, etc.
d) Overseas/ Country Experience	With substantial experience in Himalayan mountainous condition/ Bhutan.

**A 4. Road Safety Specialist:**

a) Qualification	Minimum: Bachelor's degree in civil engineering/ relevant field.
b) Total Professional Experience	10 years minimum
c) Project-related Experience	<ul style="list-style-type: none"> <li>- Minimum 5 years experience as Road Safety Specialist.</li> <li>- Conversant with iRAP model</li> </ul>

**A 5. Road Asset Management Specialist:**

b) Qualification	Minimum: Bachelor's degree in civil engineering/ relevant field.
c) Total Professional Experience	10 years minimum
d) Project-related Experience	<p>Minimum 5years experience as Road Asset Management Specialist, including experiences in developing road asset management systems in developing countries.</p> <p>Working experience in mountainous countries/areas is a plus.</p>

**A 6. Climate Change Specialist (Adaptation):**

a) Qualification	Minimum: Bachelor's degree in civil engineering/ relevant field.
b) Total Professional Experience	10 years minimum
c) Project-related Experience	Minimum 5 years experience as Climate Change Adaption Specialist.

**B 1. Road Management Specialist/Deputy Team Leader:**

a) Qualification	Minimum: Bachelor's degree in civil engineering/ relevant field.
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	Experiences in working for technical assistance projects of international organizations/agencies on road asset management and/road safety aspects.

## **B 2. Resident Engineer:**

a) Qualification	Minimum: Diploma in Civil Engineering
b) Total Professional Experience	Minimum of 10 years for Diploma holder or 5 years for Bachelor degree holder.
c) Project-related Experience	<ul style="list-style-type: none"> <li>- Minimum 5 years experience as Project Manager/ Asst. Project Manager in supervision or contract administration of highway or road construction contracts, preferably having managed multiple contracts.</li> <li>- Sound knowledge of International/RGoB competitive bidding procedures.</li> <li>- Good knowledge and experiences of EFRC practices, bridge construction works and material testing.</li> <li>- Preferably with substantial experience in Himalayan mountainous condition/ Bhutan</li> </ul>

## **B 3. Quantity Surveyor**

a) Qualification	Minimum: Bachelor's degree in civil engineering
b) Total Professional Experience	15 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>

## **B 4. Environment Specialist:**

a) Qualification	Minimum: Bachelor's degree in Environmental Science/ Natural Resources Management/ Engineering, hydrology or its related disciplines.
b) Total Professional Experience	5 years minimum
c) Project-related Experience	Minimum 5years' experience in environmental mitigation measures for road works, environment management and bio-engineering techniques particularly in respect of slope stabilization and protection, including hydrological calculations and climate adaptation.

**B 5. Wildlife Specialist**

a) Qualification	Minimum: Bachelor's degree in Forest and Wildlife Management or its related disciplines. Membership of professional institutions.
b) Total Professional Experience	10 years minimum
c) Project-related Experience	Minimum five years as Wildlife expert with experience of management of flora and fauna of Himalayan ecosystems. Familiarity with Wildlife rules and regulation of Bhutan.  Hands-on experience of wildlife mitigation measures in a highway project.

**B 6. Resettlement and 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 5years experience in designing or implementing social components of developmental projects in Bhutan preferably with work experience in transport sector funded by an external donor.

**Non-Key Personnel****B 7. Site Inspectors (Field Engineers)**

a) Qualification	Minimum: Diploma in Civil Engineering
b) Total Professional Experience	5 years minimum
6 Project-related Experience	<ul style="list-style-type: none"> <li>- Minimum 5 years' experience in highway or road construction contracts, preferably having good knowledge and experiences of EFRC practices.</li> <li>- Preferably with substantial experience in Himalayan mountainous condition/ Bhutan.</li> </ul>

**B 8. Survey Engineer**

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	8 years minimum for degree holder. 10 years minimum for diploma holder.

c) Project-related Experience	Minimum five years as Surveyor/Assistant Surveyor/Survey Engineer on highway projects of similar nature (preferably more than 2 projects of similar nature costing over US\$ 20 million each).
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#### **B 9. Lab Technicians:**

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 Himalayan mountainous condition/ Bhutan

#### **Tasks and Responsibilities of Experts:**

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:**

##### **A 1. 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 or 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

##### **A 2. Bridge Supervision Engineer**

- Responsible for overall supervision of all the bridge 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, APC and Team Leader

### **A 3. 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 Project Coordinator, APC and Team Leader

### **A 4. Road Safety Specialist**

- Review road designs on safety aspects and suggest measures if adequate safety is not incorporated in the design
- Prepare manual and standards on road safety aspects as to incorporate them during construction period
- Conduct road safety audits during pre-construction and construction stages
- Supervise and advise Contractors on all aspects of safety measures.
- Provide trainings to DoR engineers and Contractors on all road safety aspects
- Develop detailed plans of road safety awareness campaign along the project road (appropriate users' behaviors, community-based monitoring mechanisms etc.) to be conducted by DOR in cooperation with local communities, based on international best practices and in good consultation with DOR.
- Develop capacity assessment method of the staff of the understanding level of the road safety audit manual and the impact assessment method of training program.
- Maintaining records, correspondence and diaries
- Report to Team Leader and work in close coordination with Project Management Team

### **A 5. Road Asset Management Specialist**

- Prepare a report for road asset management in DOR as described in para (v) of section 4: Road Asset Management Report and Toolkit in this TOR
- Develop a set of toolkits for road asset management suitable for the project and for one existing highway segments as described in para (v) of section 4: Road Asset Management Report and Toolkit in this TOR
- Develop detailed plans of road asset management awareness campaign (routine maintenance by communities, road users' manner etc.) along the project road to be conducted by DOR in cooperation with local communities, based on international best practices and in good consultation with DOR.
- Carry out series of consultations and discussions with DoR engineers both at HQ and field level including field visits to existing roads before developing road asset management system.
- Assess the performance of the current performance-based contracts and examine the applicability to the project roads.
- Develop a capacity assessment method of the staff in implementing road asset

- management and an impact assessment method of training program
- Provide trainings to DoR engineers on road asset management system including the usage of related software programs and recommended maintenance scheme including applicability of performance-based contracts.
- Report to Team Leader and work in close coordination with Project Management Team

#### **A 6. Climate Change Specialist (Adaptation)**

- Review the climate change study prepared for the Nganglam – Deothang road and climate change resilient design incorporated in detail design.
- Prepare manual/report to incorporate climate change adaptation measures based on relevant international best practices into the designs of newly constructed roads and maintenance works of the existing roads.
- Provide trainings to DoR engineers on the aspect of climate change resilient designs, other practical measures based on relevant international best practices during construction and maintenance.
- Develop capacity assessment method of the staff of the understanding level of the climate change adaptation manual and the impact assessment method of training program.
- Coordinate and recommend institutions for training DoR engineers on climate change resilient design of road infrastructures.
- Provide necessary guidance to the national Environmental Specialist on monitoring implementation of adaptation measures during construction.
- Report to Team Leader and work in close coordination with Project Management Team.

#### **B 1. Road Management Specialist/Deputy Team Leader**

- Act as deputy team leader to manage the consulting services.
- Support the International Road Safety Specialist and Road Asset Management Specialist in training relevant DOR staff on capacity development activities on 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 Maintain 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 of road safety and road asset management activities 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 implementation of road safety measures for the project and for better road asset management planning.
- Report progress and issues during the implementation to team leader on a regular basis.

## **B2. Resident Engineer**

- Provide technical management and supervision of all Construction Works
- Manage and coordinate all works of the site inspectors and other experts
- Respond to all technical issues of Contractors
- Carry out field design for un-designed portion of rocky cliff
- Undertake quality control and verification of measurement bills
- Provide backstopping to the Site Inspectors
- Provide interpretation of the Technical Specification where necessary
- Advice on work deviations (modifications and additional works)
- Advice 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
- 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 Team Leader.

## **B 3. 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.

## **B 4. Environmental Specialist**

- Support DOR to ensure proper implementation of all environment safeguard requirements under all works packages
- Update the Environment Management Plan as and when necessary
- Collect baseline data during pre-construction stage as necessary in accordance with the EIA and IEE report prepared for the two project components
- Oversee planning and implementation of environmental mitigation measures as well as climate adaptation measures
- Organize training workshops and provide onsite technical advice to the contractor as necessary
- Prepare the semi-annual monitoring report on implementation of the EMP including implementation of climate adaptation measures for review and approval by DOR and further submission to ADB for disclosure
- Support the International Climate Change Specialist in training relevant DOR staff on incorporation of climate adaptation measures in road design
- Report to Team Leader and work in close coordination with Project Management Team

**B 5. Wildlife Specialist**

- Review the EIA and IEE report prepared for the two project components to understand the wildlife related issues and activities proposed under the project
- Study the details of Wildlife including flora and fauna of the project construction area and update the wildlife conservation/mitigation related activities in the detailed EMP as necessary
- Provide technical advice to contractors on implementation of the wildlife conservation related activities in the EMP
- Monitor movement and behavior of wildlife species during construction and in consultation with local forestry and wildlife officials make adjustments to the mitigation/enhancement activities as given in the EMP where necessary
- Monitor the effectiveness of the wildlife mitigation and enhancement measures during operation for at least two years
- Prepare annual monitoring reports to document wildlife related experiences and measures taken during construction as well as operation stage

**B 6. Resettlement and Social Development Specialist**

- Verify compensation and assistance for all persons affected by the project in accordance to RP;
- Provide support to DoR to update resettlement plan, if necessary;
- Conducting training to DOR officials on how better to integrate gender design features into future projects;
- Coordinate awareness building sessions for project affected communities 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, report and advise on social issues, including gender, HIV/AIDS, human trafficking and core labor standards due to project implementation;
- Prepare the semi-annual monitoring report on social safeguard for review and approval by DoR and further submission to ADB for disclosure
- Report to Team Leader and work in close coordination with Project Management Team

**Non-Key Personnel:****B 7. Site Inspectors**

- Undertake overall site management of one Construction package
- Supervise and guide the contractor
- Assist the Project Manager
- 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 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 Project Management Team, experts and specialists
- Report to and take instruction from Resident Engineer and Project Manager/Engineer.

#### **B 8. Survey Engineer**

- Scrutinize topographic survey data, if any, in the contract drawings and associate and scrutinize the contractors 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

#### **B 9. 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 out by the Consulting Firm:**

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

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 three Project Managers/Engineers. The Project Coordinator, Assistant Project Coordinator and Financial Controller shall be for the entire projects whereas; the Project Managers/ Engineers would be assigned each specific project sites with Consultant's Resident Engineers as counterpart engineers 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 Managers/ Engineers, Resident Engineers and Site Inspectors shall be built in the civil work contract package.
- vi) Utility vehicles (four-wheeled drive) – Total 5 Nos. with drivers (2Nos will be shared within PCU & Consultant's in main Project office, 3Nos will be used in 3 site Project offices within PMU & RE and
- vii) 5 bikes for Site Inspectors.

#### **I. Support Services & Facilities to be arranged by the Consulting Firm:**

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

- i) Main Project Office in a central location (Samdrup Jongkhar)
- 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.

#### **J. Consultant's Proposal submission**

These TOR are prepared to address the construction supervision and capacity development package in a general way. The shortlisted consultants are advised to inspect the project sites and acquaint themselves with the ground realities. The consultants are also advised to go through the bidding documents of the construction packages which will be put to tender by the Employer before submission of the proposal and include the provisions required thereof meeting the contract requirements.

**DRAFT TERMS OF REFERENCE  
CONSULTING SERVICES FOR DETAILED DESIGN, PROCUREMENT ASSISTANCE AND  
CONSTRUCTION SUPERVISION**

**A. Objectives**

1. The Project is intended to construct (i) about 2.7km of bypass road in Phuentsholing, Bhutan (ii) Mini-Dry Port at Phuentsholing and (iii) a Land Custom Station on Pasakha access road (Allay (Pekarshing) LCS). The Consultant prepares the detailed design and bidding documents for bypass road and Allay (Pekarshing) LCS and finalizes the basic designs for mini-dry port with preparation of bidding document under Design Built Contract. The Consultant will assist Phuentsholing Thromde (PT) on procurement activities under international competitive bidding (ICB) procedures, using a single stage, two-envelope system and assist PT during the construction stages of all 3 packages.

**B. Scope of Services**

2. For the purpose of detail designing, the Consultant are advised to refer detail report on above three packages prepared by Project Preparatory Consultant. The design shall be based on the data collected by the project Preparatory consultant.

**Bypass road component and Allay (Pekarshing) LCS components**

**a. Detailed Design and Bid Documents**

3. The Consultant shall prepare detailed design and bidding documents for bypass road component and Allay (Pekarshing) Land Custom Station component. The Consultant's responsibilities will include, but not limited to, the following:

- (i) Review all available data relating to traffic, axle loads, and pavement strength.
- (ii) Determine the strength of the existing pavement either by use of deflection beam testing or by other equivalent methods proposed by the consultant and agreed by PT.
- (iii) Carry out engineering topographic surveys, including horizontal and vertical alignment and cross sections. Establish horizontal control point, benchmarks, and reference beacons as required to prepare detailed engineering design to enable construction quantities to be calculated with reasonable accuracy (5%).
- (iv) Prepare designs based on the typical pavement sections, applying sound engineering practice and giving due regards to environmental aspects as indicated in EIA.
- (v) Establish the thickness and composition of the pavement by trial pits and sampling, and the subgrade strengths by Dynamic Cone Penetration (DCP) testing and/or in situ California Bearing Ratio (CBR).
- (vi) Investigate, test, and define sources of construction materials.
- (vii) Check existing drainage systems for signs of deficiencies and design new appropriate drainage structure as necessary.
- (viii) Conduct detailed geological mapping at 1:1,000 with contour intervals at 2 m, sub-surface drilling at selected locations for major landslides indicated in the

feasibility study report, and collect samples of mechanical properties of soils as necessary.

- (ix) Assess the requirement for slope protection measures adjacent to the road, and design any necessary remedial works in accordance with EFRC method.
- (x) Determine present traffic levels and axle loads by means of counts and load surveys; check seasonal traffic variations based on historic data; and update these variations during the design period.
- (xi) Produce estimates of past, present, and future pavement loading.
- (xii) Determine the thickness of pavement required on the basis of a 10-year design life.
- (xiii) Define any necessary ancillary works such as shoulder raising and rehabilitation.
- (xiv) Assess the sources of natural construction materials (e.g., quarry sites), carry out suitability tests, and prepare a materials report for the contractors' information;
- (xv) Locate suitable areas for disposing of surplus spoil.
- (xvi) Undertake the road safety audit and incorporate the recommendations as appropriate.
- (xvii) Carrying out the sub-soil investigation and laboratory tests;
- (xviii) Prepare the sub-soil investigation report giving details and recommendations regarding safe bearing capacities for foundations and design parameters for bridge and finalize the best design suitable for the project.
- (xix) Review the IEE prepared for the two project components and undertake further studies and site visits as recommended in the IEE in collaboration with relevant government agencies such as the National Environment Commission, Nature Conservation Division and the Department of Forests. Accordingly update the IEE and EMP as appropriate, incorporating necessary technical specifications with design and contract documentation.
- (xx) Review engineering design, ensuring all necessary mitigation measures as proposed in the revised EMP are taken, and provide training to PMU/PIU officials of PT on ADB safeguard requirements. Ensure that the revised EMP is included in the bid documents.
- (xxi) Update the resettlement plans based on the final alignment and design, including the census survey as required, and provide training to PMU/PIU officials of PT on ADB safeguard requirements.
- (xxii) Prepare engineering technical specifications for each work item, taking into account relevant specifications in use in the country and elsewhere for similar works.
- (xxiii) Produce a comprehensive engineer's estimate for the cost of works in each contract.
- (xxiv) Produce complete detail drawings for tender and contract documentation suitable for procurement under international competitive bidding methods, using a single-stage two-envelope system, in accordance with ADB's *Guidelines for Procurement*.

#### **b. Procurement Assistance**

4. Prior to finalizing the bid document for the civil works contract packages, the consultants will:

- (i) Develop and agree with PT on the bidding documents and qualifications and evaluation criteria and assist PT in obtaining approval from ADB.

- (ii) Assist PT issue approved bid documents to eligible contractors, and assist PT in the prebid meetings, answer contractor queries, and issue bid addenda as necessary.

5. Following submission of bids by the bidders, the consultants will assist PT:

- (i) Carry out qualification evaluation of the bidders without opening the financial bids, and recommend qualified contractors.
- (ii) Evaluate the financial proposal of the qualified contractors.
- (iii) Undertake contract negotiations and in preparation and signing of final contract documents with successful bidders.
- (iv) Obtaining necessary approvals from ADB and other agencies.

**c. Construction supervision**

6. As the engineer's representative, the consultant's nominated 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 engineer's representative, with the exception of the following, which will be retained and exercised by the employer's representative, generally on the advice of the engineer's representative:

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

7. The Consultant's responsibilities will include but not 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 control programs of the contractors;
- v) inspecting and testing all materials and 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 employer's representative 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 PT in preparing withdrawal applications for contractor payments;
- xiii) periodically checking the remaining quantities, and undertaking constant monitoring of each contract's costs;
- xiv) reviewing and recommending to PT variation orders, extensions of time, claims,

- and other matters that may come from each contractor;
- xv) negotiating with each contractor and recommending to PT the rates for any unscheduled items of work that may arise;
  - xvi) advising the employer's representative on all matters relating to the execution of the works; and assisting the representative with 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 general training on Environmental Friendly Road Construction principles and methods for key officials of PT and key people of the selected contractors;
  - xix) providing on-the-job or on-site advise and training to site contractors where necessary (such as when there are changes in site contractors or when EMP is not being followed properly) to ensure proper implementation of the EMP.
  - xx) conducting training to PT officials on ADB social safeguard requirements and RP implementation;
  - xxi) conducting training to PT officials on how better to integrate gender design features into future projects;
  - xxii) conducting monitoring visits to ensure proper implementation of EMP and RP, and providing training of ADB safeguard requirements to PT and Dzhongkhag officials.
  - xxiii) updating EMP and RP based on changing field conditions and accordingly inform relevant field staff
  - xxiv) Monitor, report, and advise on social issues, including relevant gender components, HIV/AIDS, human trafficking and core labor standards during project implementation
  - xxv) prepare semi-annual monitoring reports on implementation of environment and social safeguards for review and approval by PT and further submission to ADB for disclosure on the ADB website
  - xxvi) undertaking project performance management system in the format acceptable by the employer and ADB;
  - xxvii) at the completion of the contracts, assisting in preparing a consolidated project completion report in a format provided by ADB;
  - xxviii) checking and certifying as-built drawings for the works prepared by the contractors;
  - xxix) inspecting the works at appropriate intervals during the defects liability period and certifying the defects liability certificate for issuance by the employer's representative;
  - xxx) providing the employer with complete records, and inception, monthly, and completion reports; and
  - xxxii) assisting the employer to provide on-site training where required for PT field staff on quality assurance and contract administration.



### **Mini Dry Port component**

#### **a. Preliminary design and bidding document**

8. The Consultant shall prepare preliminary design and bidding document for this component to be procured as design built contract under international competitive bidding procedure using a single stage two envelope system.
9. Consultant responsibility includes, but not limited to:
- (i) Review all available data relating to mini dry port.
  - (ii) Carrying out the sub-soil investigation and laboratory tests;
  - (iii) Prepare the sub-soil investigation report giving details and recommendations regarding safe bearing capacities for foundations and design parameters for construction works, to be attached to bidding documents.
  - (iv) Prepare preliminary designs applying sound engineering practice.
  - (v) Investigate, test, and define sources of construction materials.
  - (vi) Assess the sources of natural construction materials, carry out suitability tests, and prepare a materials report for the contractors' information.
  - (vii) Prepare engineering technical specifications for each work item, taking into account relevant specifications in use in the country and elsewhere for similar works;
  - (viii) Ensure that design is socially sound and includes gender-specific facilities where appropriate.
  - (ix) Include necessary requirements of updating safeguard documents (such as EMP) in the contract documents and implementing all safeguard requirements based on recommendations given in the safeguard reports prepared under the feasibility study.
  - (x) Produce a comprehensive engineer's estimate for the cost of work including costs for implementing the EMP.
  - (xi) Produce preliminary drawings for tender and contract documents suitable for procurement of a design built contract under international competitive bidding methods, using a single-stage two-envelope system, in accordance with ADB's *Guidelines for Procurement*.

#### **b. Procurement assistance**

10. Prior to finalizing the bid document for the civil works contract package, the consultants will:
- (i) Develop and agree with PT on the bidding documents and qualifications and evaluation criteria and assist PT in obtaining approval from ADB.
  - (ii) Assist PT issue approved bid documents for international bidding, and assist PT in the prebid meetings, answer contractor queries, and issue bid addenda as necessary.
11. Following submission of bids by the bidders, the consultant will assist PT:
- (i) Carry out qualification evaluation of the bidders without opening the financial bids, and recommend technically qualified bidders.
  - (ii) Evaluate the financial proposal of the technically qualified bidders.

- (iii) Under take contract negotiations and in preparation and signing of final contract documents with successful bidder.
- (iv) Obtaining necessary approvals from ADB and other agencies.

**c. Construction supervision**

12. The Consultant will perform as an independent third party professional advisor to advise on the design offered by the design and build contractors and supervise construction works to ascertain compliance with the owner's project requirement. The Consultant shall make valuations for the purpose of determining interim payments as per the relevant provisions of the civil works contract.

13. Services of the Consultant include, but not limited to, the following during the construction of mini dry port and Alay LCS.

- (i) Conduct contract administration of the Design & Build Contract;
- (ii) Supervise design progress;
- (iii) Approve material, construction engineering and construction schedule as well as implementation of quality control;
- (iv) Conduct construction supervision and monitor the quality of work and progress;
- (v) Ensure compliance with the environmental and social safeguards requirements of civil works contracts,
- (vi) Monitor, report, and advise on social issues, including relevant gender components, HIV/AIDS, human trafficking and core labor standards during project implementation;
- (vii) prepare semi-annual monitoring reports on implementation of environment and social safeguards for review and approval by PT and further submission to ADB for disclosure on the ADB website
- (viii) Report any findings to the Client and submit necessary reports;

**C. Outputs: Reporting requirements**

14. The consultant will submit reports in five copies to PT. The required reports are:

- (i) an inception report, giving initial findings and the work program for the balance of the assignment, to be submitted one month after services commence;
- (ii) monthly and quarterly progress reports, giving brief details of the work carried out during the previous month or quarter, the problems encountered or anticipated, together with the steps taken or recommendations for their correction, and financial and physical progress to date;
- (iii) bidding documents for design and build procurement of civil works; and
- (iv) bid evaluation reports for each procurement stage.
- (v) Project completion report in compliance with ADB requirements, which should include but not limited to; detailed data and information on all aspects of project gathered and measured during the project implementation and those on project performance monitoring indicators.

## D. Experts Required

15. The following experts are required for the services. International consultants are encouraged to associate with national consultants on all phases of the project.

<b>Table 2: Staffing</b>	
<b>Position/Expertise</b>	<b>Person-months</b>
<b>International Expert</b>	
Team Leader (Sr. Highway Engineer)	34
Bridge/Structure Engineer	30
<b>National Expert (Key Experts)</b>	
Resident Engineer	32
Building Engineer	21
Geotechnical Engineer	04
Materials Engineer	26
Quantity Surveyor	40
Survey Engineer	17
Environmental Specialist	12
Resettlement and Social Development Specialist	12
<b>National Expert (Non-key Experts)</b>	
CADD Technician	24
Lab Technician (2)	43
Field Engineers (2)	49

**Table 3: Position based tasks/responsibility assignments**

### Key Experts:

Sl.No.	Position	Tasks/Responsibilities
A 1.	Team Leader / Senior Highway Engineer	<ul style="list-style-type: none"> <li>Assist the Employer in contract administration and management of the Project and Civil Work Contract</li> <li>Interpret the Technical Specifications and Contract Documents</li> <li>Obtain related approvals from concerned authorities for any redesign of road realignment, modifications and redesign of bridges.</li> <li>Review the contractors securities being in approved format</li> <li>Ensure receipt of requisite insurances as per contract requirement</li> <li>Review documentations and advance actions for handing over of site and advise on issuing notice to set the commencement date.</li> <li>Ensure contractor effects and implements Quality Assurance System</li> <li>Issue approval to the contractors detailed work programme,</li> </ul>

Sl.No.	Position	Tasks/Responsibilities
		<ul style="list-style-type: none"> <li>• Suggest modifications, if any, and ensure contractor compliance with the Program</li> <li>• Issue approval to the Contractor's Superintendence Personnel with modifications, if any.</li> <li>• Scrutinize contractors' mobilization of equipment in accordance with the contractors program.</li> <li>• Scrutinize and approve contractor's construction methods statement.</li> <li>• Issue finalized or revised "Good for Construction drawings" and additional detailed drawings required for the execution of the work.</li> <li>• Issue to contractor amended alignment plan and profile drawings based on review of tender drawings and updated topographic surveys.</li> <li>• Issue bridge details and modified drawings wherever required due to change in founding level, as a result of change in founding strata or any other reason at the time of execution.</li> <li>• Approve contractors working drawings based on setting out details.</li> <li>• Approve setting out data for the Works finalized as a result of ground verification and survey</li> <li>• Monitor supervision of all works and ensure proper supervision as per contract requirement.</li> <li>• Monitor closely and regularly the progress of work and advise the contractor about corrective measures.</li> <li>• Monitor status of contractor's equipment, plant, machinery installations, housing and medical facilities.</li> <li>• Direct and/or advise contractor to avoid and/or reduce the risk in case of any emergency.</li> <li>• Advise contractor in all matters covering safety and care of work, environmental aspects and labour welfare.</li> <li>• Review the test results / certificate of all construction material and/or sources of materials to ensure quality.</li> <li>• Review mix designs proposed by the Contractors Verify and recommend, if in order, contractors requests for advance and interim payment certificate.</li> <li>• Assist Client in arranging relocation of services</li> <li>• Maintain a permanent record of all payments made to the contractor.</li> <li>• Prepare monthly reports Prepare Financial</li> </ul>

Sl.No.	Position	Tasks/Responsibilities
		<p>Statement.</p> <ul style="list-style-type: none"> <li>• Approve “as built” drawings.</li> <li>• Inspect the works on completion of each milestone before accepting the work and report to the PMU/PIU.</li> <li>• Inspect Works at appropriate intervals during Defect Notification Period and advise the PMU/PIU.</li> <li>• Ensure the contractor Implements and maintains the environmental monitoring in compliant with the Environmental Management Plans.</li> <li>• Review designs, drawings for the road works.</li> <li>• Suggest modifications, if required as per actual site conditions.</li> <li>• Carry out design of any realignment, redesign/modifications of the roadwork components, if necessary, as per site conditions.</li> <li>• Review horizontal and vertical alignment for the road based on review of tender drawings and topographic survey carried out by the contractor including amending the alignment plan and profile based on updated topographic surveys</li> </ul>
A 2.	Bridge/Structure engineer	<ul style="list-style-type: none"> <li>• Review designs, drawings for the bridge works</li> <li>• Suggest modifications, if required as per actual site conditions</li> <li>• Carry out any additional design of bridges or other details</li> <li>• Check and modify design and drawings, if required due to change in founding level, or any other reason as a result of scrutiny of geotechnical data.</li> <li>• Scrutinize contractors working drawings for temporary works for structure</li> <li>• Carry out Supervision of all bridge works and CD works as per approved methods statements.</li> <li>• Examine Contractors preparation and completed position of work as per “Request for Inspection” and advise contractor promptly.</li> <li>• Monitor closely and regularly the progress of work on bridges / CD works and report to the TL.</li> <li>• Supervise the Contractor in all matters concerning safety and care of the works.</li> <li>• Witness sampling and testing being carried out by the Staff of Contractor particularly of bridge and CD works components.</li> </ul>

Sl.No.	Position	Tasks/Responsibilities
B 1.	Resident Engineer	<ul style="list-style-type: none"> <li>• Assist in management of the Project and contract administration</li> <li>• Assist in Interpretation of the Technical Specifications and Contract Documents</li> <li>• Review designs, drawings, BOQ Provisions and Specifications</li> <li>• Conduct road safety audit during construction and preopening of road</li> <li>• Assist review compliance of documentation and advance actions for handing over site and advise on setting the commencement date</li> <li>• Assist TL to ensure contractors Quality Control Assurance System</li> <li>• Scrutiny Contractors detailed work program</li> <li>• Scrutinize Contractors Work Program</li> <li>• Scrutinize and/or review Contractor's Superintendence, Personnel and report to TL, on modifications, if any.</li> <li>• Scrutinize contractor's mobilization of equipment, in accordance with the contractor programme.</li> <li>• Scrutinize contractors construction methods statement and report to TL for its being compliant to technical requirement, project implementation schedule, environmental aspects, safety of works, personnel and general public.</li> <li>• Review horizontal and vertical alignments and follow up action based on report of Sr. Highway Design Engineer.</li> <li>• Finalize / review "Good for Construction Drawings", prepare additional detailed drawings, if required, based on contractors survey and setting out.</li> <li>• Scrutinize contractors working drawings based on survey setting out details.</li> <li>• Scrutiny, checking and verification of setting out data</li> <li>• Carry out supervision of all works as per approved methods statement.</li> <li>• Examine Contractors preparation and the completed position of work as per "request for inspection" and promptly advise the contractor.</li> <li>• Monitor closely and regularly the progress of work and report to the TL.</li> <li>• Carry out regular inspection of Contractors equipment, plant, machinery, installations, housing and medical facilities.</li> </ul>

Sl.No.	Position	Tasks/Responsibilities
		<ul style="list-style-type: none"> <li>• Direct contractor to carry out works, as may be necessary to avoid or to reduce the risk in case of any emergency.</li> <li>• Supervise the contractor in all matters concerning safety of works, labor, workmen and environmental aspects and labor welfare.</li> <li>• Witness sampling and testing being carried out by staff of the Contractor and undertake additional audit tests to ensure quality Monitor and review the test results / certificates for all construction material and/or resources of materials and report to TL.</li> <li>• Monitor and review the mix designs proposed by the Contractor.</li> <li>• Examine the requests for advances and monthly statements of contractors and examine interim payment certificates.</li> <li>• Assist PT in arranging relocation of services including all correspondence, meetings and preparation of details.</li> <li>• Maintain a permanent record of all measurements for the works /quantities to be paid for and of all payment made.</li> <li>• Prepare monthly reports.</li> <li>• Review “as-built” drawings prepared by the Contractor and maintain record of tests of all data and records.</li> <li>• Maintain a day to day diary recording all events relevant to the work.</li> </ul>
B 2.	Building Engineer	<ul style="list-style-type: none"> <li>• Review the building drawing.</li> <li>• Inspect the Lay-out plan and setting out details as prepared by Contractor.</li> <li>• Witness the tests conducted by Contractor on building material.</li> <li>• Inspect the specifications of the supply-items of building materials and ensure the materials are of the desired standard.</li> <li>• Assist TL and Resident Engineer in all matter related to building matter.</li> <li>• Keep a constant vigil on supply chain arrangements of material.</li> <li>• Advising and recommending TL and RE to arrive at on-site decision during construction.</li> </ul>
B 3.	Geotechnical Engineer	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Check founding strata for structures during</li> </ul>

Sl.No.	Position	Tasks/Responsibilities
		execution and verify geotechnical reports prepared by the project preparation consultant and data received from contractor.
B 4.	Materials Engineer	<ul style="list-style-type: none"> <li>• Assist TL and RE to finalize sampling methods and criteria and acceptance criteria for quality control and assurance.</li> <li>• Examine Contractors preparation and completed portion of work as per "Request for Inspection" and advise Contractor promptly.</li> <li>• Monitor closely and regularly the progress on materials procurement and quality and report to the RE.</li> <li>• Carry out inspection of Contractor's lab equipment and report to RE.</li> <li>• Ensure and witness sampling and testing being carried out by staff of the Contractors and undertake additional tasks as necessary to ensure quality of works.</li> <li>• Scrutinize test results/certification of all construction materials and/or sources of materials and undertake additional tests if necessary and report to RE.</li> <li>• Scrutinize mix design proposed by the Contractor.</li> <li>• Maintain a Permanent record of all tests carried out for monitoring the quality of works.</li> <li>• Approval of Borrow Areas and quarries.</li> </ul>
B 5.	Quantity Surveyor	<ul style="list-style-type: none"> <li>• Measure quantities of work, record measurements and verify BoQ items / Work quantities executed in the contractors monthly statement.</li> <li>• Verify and examine interim payment certificates received from contractors.</li> <li>• Maintain a permanent record of all measurement for the work quantities.</li> </ul>
B 6.	Survey Engineer	<ul style="list-style-type: none"> <li>• Scrutinize topographic survey data, if any, in the contract drawings and associate and scrutinize the contractors updated topographic survey data.</li> <li>• Monitor survey and setting out operations and verify data and details. Carry out detailed checking and verification of setting out data.</li> </ul>
B 7.	Environmental Specialist	<ul style="list-style-type: none"> <li>• Review and update the IEE and EMP as necessary,</li> <li>• Supervise implementation of the EMP including collection of baseline environmental data as given in the IEE.</li> <li>• Monitor compliance with the Environmental Management Plan.</li> </ul>



Sl.No.	Position	Tasks/Responsibilities
		<ul style="list-style-type: none"> <li>Assist PIU in ensuring implementation of all environmental safeguard requirements</li> <li>Prepare semi-annual monitoring reports for review and approval by PT and further submission to ADB for disclosure</li> </ul>
B 8.	Resettlement and Social Development Specialist	<ul style="list-style-type: none"> <li>Support the PIU of PT in matters relating to land acquisition and resettlement</li> <li>Update resettlement plan when necessary.</li> <li>Monitor the implementation of resettlement plan</li> <li>Provide expert advice in all matters relating to land acquisition and resettlement</li> <li>Monitor, report, and advise on social issues, including relevant gender components, HIV/AIDS, human trafficking and core labor standards due to project implementation</li> <li>Prepare semi-annual monitoring reports for review and approval by PT and future submission to ADB for disclosure</li> <li>Organize and coordinate gender awareness training for PT</li> </ul>

#### Non-Key Experts:

B 9.	CADD Technician (2)	<ul style="list-style-type: none"> <li>Assist TL and Resident Engineer on all matters relating to computer-aided designs productions.</li> <li>Prepare drawings, if required, as per execution requirement.</li> </ul>
B 10.	Lab Technician (2)	<ul style="list-style-type: none"> <li>Assist Resident Engineer and Material Engineer on all matters relating to construction material testing.</li> <li>Keeping test report's record for technical audit.</li> </ul>
B 11.	Field Engineers (2)	<ul style="list-style-type: none"> <li>Assist TL and Resident Engineer on all matters at site relating to road and bridge works.</li> <li>Assist TL, Resident Engineer and Building Engineer on all matter relating to building works.</li> </ul>

15. The above position-based tasks and responsibilities are only indicative, and the consultant needs to propose its own working arrangements, based on the overall requirements in these TOR.

#### E. Qualifications and experiences requirements

16. Qualification and experience requirements for experts are as suggested below. The detailed requirements and importance (in terms of weighting) of each requirement are shown in the Evaluation Sheets included in Appendix to the Data Sheet.

**Key Experts:****Team Leader / Senior Highway Engineer (International Position)**

a) Qualifications	Minimum: Bachelor's degree in civil engineering.
b) Total Professional Experience	20 years minimum
c) Project-related Experience	Minimum five years as Team Leader/Resident Engineer/Project Manager in supervision or contract administration of large highway or road and bridge construction contracts (at least 2 contracts each costing over US\$ 30 million administered under FIDIC or similar contract conditions), preferably managing multiple contracts.
d) Overseas/Country Experience	With 5-years' experience in developing countries.

**Bridge/Structure Engineer (International Position)**

a) Qualifications	Minimum: Bachelor's degree in civil engineering
b) Total Professional Experience	20 years minimum
c) Project-related Experience	Minimum ten years of supervising as Bridge Engineer in large highway/bridge projects (at least 2 highway/bridge projects costing over US\$ 20 million each). Should have experience of bridge design of length 30 meter.  Must have experience with bridge/structure design software.
d) Overseas/Country Experience	With 5-years' experience in developing countries.

**Resident Engineer (National Position)**

a) Qualification	Minimum: Bachelor's degree in civil engineering
b) Total Professional Experience	15 years minimum
c) Project-related Experience	Minimum five years as Senior Highway Engineer / Resident Engineer/ Assistant Resident Engineer/Highway Engineer in supervision or contract administration of large highway or road and bridge construction contracts (Preferably more than 2 contracts each costing over US\$ 25 million administered under FIDIC contract condition.

**Building Engineer (National Position)**

a) Qualification	Minimum: Bachelor's degree in civil engineering
b) Total Professional Experience	15 years minimum
c) Project-related Experience	Minimum Seven years as Building Engineer in construction supervision of public utility building. (Preferably more than 2 contracts each costing over US\$ 10 million administered.  Experience of building design of minimum 2 public buildings. Familiarity with relevant international and Indian standards.

**Geotechnical Engineer (National Position)**

a) Qualification	Minimum: Bachelor's degree in civil engineering
b) Total Professional Experience	15 years minimum
c) Project-related Experience	Minimum 10 years as Geotechnical/Foundation Design Engineer, of which 5 years on highway projects (Preferably more than 2 projects of similar nature costing over US\$ 10 million each).  Familiarity with relevant international and Indian standards.

**Material Engineer (National Position)**

a) Qualification	Minimum: Bachelor's degree in civil engineering
b) Total Professional Experience	15 years minimum
c) Project-related Experience	Minimum six years as Materials Engineer/ Assistant Materials Engineer and with experience of various testing procedures, designs of various mixes like GSB, WMM, Bituminous mixes, Concrete Mixes, etc. (Preferably more than 2 highway/bridge projects costing over US\$ 20 million each).

**Quantity Surveyor (National Position)**

a) Qualification	Minimum: Bachelor's degree in civil engineering
b) Total Professional Experience	15 years minimum
c) Project-related Experience	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

	<p>contract conditions).</p> <p>Familiarity with international and Indian design standards.</p> <p>Hands-on experience in using various quantity-estimation software.</p>
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### **Survey Engineer (National Position)**

a) Qualification	Minimum: Diploma in civil engineering
b) Total Professional Experience	8 years minimum for degree holder. 10 years minimum for diploma holder.
c) Project-related Experience	Minimum five years as Surveyor/Assistant Surveyor/Survey Engineer on highway projects of similar nature (Preferably more than 2 projects of similar nature costing over US\$ 20 million each).

### **Environmental Specialist (National Position)**

a) Qualification	Minimum: Bachelor's degree in environmental engineering, civil engineering or other related fields.
b) Total Professional Experience	7 years minimum
c) Project-related Experience	<p>Minimum four years as Environment Specialist/Environment Engineer in large highway or road construction projects (Preferably more than 2 projects funded by international funding agencies such as ADB, World Bank, etc.)</p> <p>Required to be conversant with the requirements of the international funding agencies for environmental safeguards and familiar with preparation and execution of environmental management plans as per the requirements of ADB.</p>

### **Resettlement and Social Development Specialist (National Position)**

a) Qualification	Minimum: Bachelor's degree in civil engineering, sociology, or other relevant fields.
b) Total Professional Experience	7 years minimum
c) Project-related Experience	Minimum four years as Resettlement Specialist/Resettlement and Rehabilitation (R&R) Specialist/Social Development Specialist dealing with land acquisition and/or R&R in large highway or road construction projects (Preferably more than 2 projects, funded by international funding agencies such as

	ADB, World Bank, etc.)  Conversant with the requirements of the international funding agencies for social safeguards, and familiar with preparation and implementation of R&R plans as per the requirements of ADB.
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## **Non-Key Experts:**

### **CADD Technician (National Position)**

a) Qualification	Minimum: Diploma in civil engineering or computer science, computer engineering, or other relevant fields.
b) Total Professional Experience	5 years minimum
c) Project-related Experience	Minimum three years in computer-aided design of major highway projects.

### **Lab Technician (National Position)**

a) Qualification	Minimum: Diploma in civil engineering
b) Total Professional Experience	5 years minimum
c) Project-related Experience	Minimum three years in testing construction materials. Must have executed two highway/bridge /building project as lab technician.

### **Field Engineer (2) (National Position)**

a) Qualification	Minimum: Diploma in civil engineering
b) Total Professional Experience	5 years minimum for degree holder. 8 years minimum for diploma holder.
c) Project-related Experience	Minimum three years in construction/supervision of road/bridge projects and building project.

## **F. Staffing schedule**

17. The total implementation period for the consulting services will consist of (i) detailed design of bypass road and Allay (Pekarshing) LCS of 11 months, construction period of bypass road of 30 months, construction period of Allay (Pekarshing) LCS of 16 months and design and build contract period of mini dry port of 20 months, (ii) defects liability period of 12 months for

each civil works contract. The Consultant will require intermittent input during the defect liability period. These activities will be implemented simultaneously, thus the total period of consulting services will be 56 months.

18. The consultant's team would be mobilized progressively in accordance with the progress of each activity in consultation with the Client. The Consultant shall propose the appropriate sequence of implementation of these activities from economy and efficiency perspectives with due consideration of expediting the project implementation.

19. After award of the contract for consulting services, the Client expects all the proposed key personnel to be available during implementation of the Contract as per the agreed staffing schedule. The Client will not consider substitutions during contract implementation except under exceptional circumstances. In case of such replacements, the Consultant will ensure that there is a reasonable overlap between the staff to be replaced and the replacement wherever feasible/possible.

#### **G. Documents to be provided**

20. All available studies, reports, and data relevant to the project, including the ADB technical assistance report, maps, previous traffic counts, etc. regarding the project will be provided to the Consultant.

#### **H. Facilities**

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 equipment procured by the consultant for the performance of his services will remain the property of the Government. Any equipment temporarily imported for the proposed services during the duration of the project and then re-exported will be exempted from import duties or taxes. This will also apply to the personal effects of the consultant's personnel.

22. The Consultant should note that the following items will be provided from the Client.

- (i) Basic laboratory and measurement facilities. Laboratory equipment will include, at minimum, aggregate sieves, Atterberg Limit apparatus, Dynamic Cone Penetrometer, sand cone density test apparatus, aggregate crushing value and water absorption.

23. The Consultant should also note that the following items will not be provided for the use of the Consultant and must be included in its financial proposal:

- (i) Main Project office in a central location, accessories and its maintenance;
- (ii) Residential accommodation and its maintenance for the staff;
- (iii) Vehicles with drivers, maintained and operated for the personnel; and
- (iv) Office equipment, computers, printers, plain paper copies and all ancillary devices, and all things necessary for the operation of an efficient Project and site office.

24. Each contractor awarded a contract package will provide the following facilities to the consultant at the project site:

- (i) suitable office space at the project site.

- (ii) Use of Contractor's laboratory.

**I. Consultant's Proposal submission**

25. These TOR are prepared to address the design, procurement assistance and 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

<b>Design Summary</b>	<b>Performance Targets and Indicators with Baselines</b>	<b>Data Sources and Reporting Mechanisms</b>	<b>Assumptions and Risks</b>
<b>Impact</b>  Cross-border movement of goods between Bhutan and its neighboring countries improved.	By 2022:  Cross-border cargo volume facilitated reaches 6.0 billion tons per year from 4.6 billion tons in 2012  Trade volume in goods increases by 20% from 2012 level of \$1.66 billion (\$0.59 billion in exports and \$1.07 billion in imports)	For all indicators:  Department of Revenue and Customs statistics	<b>Assumptions</b>  Free trade agreement with India continues.  Reform measures promoted under the SASEC Trade Facilitation Program are implemented successfully and on a timely basis.
<b>Outcome</b>  Road connectivity and transport efficiency in the project areas in Bhutan improved	By 2019:  Average travel time between Nganglam and Dewathang reduced by 80% from 12 hours in 2013  Average travel time to Pasakha industrial area from Jaigaon junction reduced by 90% from 100 minutes in 2013  Average daily vehicle-kilometers in the first full year of operation reaches 380 for new Pasakha access road, 30,000 for new Nganglam–Dewathang road section, and 3,000 for new Phuentsholing bypass road  Annual fatality rate along the project roads remains less than 5 per 10,000 vehicles.  All residents in 5 newly connected villages become aware of the issues of HIV/AIDS, human trafficking, and health and hygiene standards.	For all indicators:  Post-implementation measurement by DOR and Phuentsholing Thromde	<b>Assumption</b>  The government continues to provide adequate funds for routine and periodic maintenance for existing roads.  <b>Risk</b> Access road on India's side of the border to connect to Pasakha will not be constructed in time.



<b>Design Summary</b>	<b>Performance Targets and Indicators with Baselines</b>	<b>Data Sources and Reporting Mechanisms</b>	<b>Assumptions and Risks</b>
<b>Outputs</b>	By 2019:	For all indicators:	<b>Assumption</b>
1. Roads built and trade infrastructure established	68.3 km of the Southern East–West Highway between Nganglam and Dewathang and about 1.2 km of access road between Pasakha industrial estate and India constructed  A mini dry port constructed in Phuentsholing and land custom station at Alay established  About 2.7 km of bypass road constructed in Phuentsholing City	Monitoring reports and PCR by DOR and Phuentsholing Thromde.	The government releases counterpart funds on time.
2. Road construction and maintenance capacity improved	By 2019:  Manuals and tool kits for road safety, road asset management, and climate-resilient design and maintenance of roads developed and adopted  Road maintenance plans and budgets prepared, using the road asset management system  Number of DOR staff members with certified skills in road safety, road asset management, and climate-resilient design and maintenance of roads reaches 30 (Baseline: fewer than 5 in 2013)	For all indicators:  Monitoring reports and PCR by DOR  Pre- and post-evaluation of training participants by DOR	
3. Eco-friendly transport promoted	By 2015:  Pilot scheme for promotion of clean-energy vehicles completed	Midterm report on 11th five-year plan by the government	

<b>Activities with Milestones</b>	<b>Inputs</b>
<b>1. Roads built and trade infrastructure established</b> 1.1. Nganglam–Dewathang section of Southern East–West Highway and Pasakha access road constructed 1.1.1 Mobilize supervision and capacity development consultant by October 2014 1.1.2 Award civil works contract by December 2014 1.1.3 Commence construction by January 2015 1.1.4 Conduct awareness campaigns on HIV/AIDS, human trafficking, and health and hygiene standards in five newly connected villages at least twice by December 2018.  1.2. Mini dry port in Phuentsholing and land custom station at Alay constructed 1.2.1 Complete bidding documents by April 2015 1.2.2 Award work contract for mini dry port by December 2015 1.2.3 Commence construction of mini dry port by January 2016 1.2.4 Award work contract for Alay land custom station by December 2016 1.2.5 Commence construction of land custom station at Alay by January 2017	<b>Loan</b> <b>ADB: \$31.39 million</b>  <b>Grant</b> <b>ADB: \$18.96 million</b>  <b>Government:</b> <b>\$18.65 million</b>

<p>1.3. Bypass road in Phuentsholing City constructed</p> <p>1.3.1 Mobilize design and supervision consultant by October 2014</p> <p>1.3.2 Complete detailed design and bidding documents by August 2015</p> <p>1.3.3 Award civil works contract by May 2016</p> <p>1.3.4 Commence civil works by June 2016</p> <p><b>2. Road construction and maintenance capacity improved</b></p> <p>2.1 Develop manuals and tool kits for road safety, road asset management, and climate-resilient design and maintenance of roads by December 2016.</p> <p>2.2 Start using road asset management system for maintenance planning and budgeting by December 2017.</p> <p>2.3 Conduct training programs on road safety, road asset management, and climate-resilient design and maintenance for at least 50 participants from DOR by June 2018.</p> <p><b>3. Eco-friendly transport promoted</b></p> <p>3.1 Finalize the implementation plan and design of the pilot scheme for clean-energy vehicles promotion by December 2014</p> <p>3.2 Start a pilot scheme for clean-energy vehicles promotion by July 2015.</p>	
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Source: Asian Development Bank



## STATEMENT OF AUDIT NEEDS TEMPLATE<sup>18</sup>

### A. BACKGROUND

1. The ADB and the Royal Government of Bhutan (RGoB) have entered into a Financing Agreement whereby, ADB shall provide \$50.35 million for the purpose of financing SASEC Road Connectivity Project in Bhutan. The RGoB shall contribute \$18.65 *million* against this funding. This will be carried out through the Department of Roads (DOR) and Phuentsholing Thromde (PT). DOR and PT shall maintain separate books of account, including all items of expenditure financed out of the proceeds of the financing agreement.

### B. PROJECT DEVELOPMENT OBJECTIVES

2. The Project is designed to promote regional connectivity with neighboring countries through the investment in the road construction and land ports with custom stations, facilitating cross border trade. The project will also improve the national road network in Bhutan to remote areas in the eastern part of Bhutan near Indian border providing better access to economic opportunities and social services. It will improve efficiency of road transportation and cross border trade.

The project outputs will be:

- (i) improved land transport and trade infrastructure, comprising (a) 68km of southern east-west highway between Nganglam - Dewathang section and a direct access road from Indian border to Pasakha industrial area (Pasakha access road), (b) a mini-dry port in Phuentsholing city and a land custom station at Alay (Alay land custom station) and (c) a bypass road in Phuentsholing city
- (ii) improved road construction and maintenance capacity.

### C. FINANCIAL REPORTING AND AUDIT REQUIREMENTS

3. DOR and PT will prepare special purpose SASEC Road Connectivity Project financial statements on a cash basis, in accordance with the Bhutan Accounting Standards. This shall not be construed to refer to the financial statements of DOR and PT as a whole.

4. The audit of the project financial statements shall be carried out by the Royal Audit Authority (RAA) of Bhutan in accordance with the RGoB Auditing Standards<sup>19</sup> as supplemented by this Statement of Audit needs. The auditor will review that the funds received from all sources and expenditures incurred during the reporting period are as per agreed terms and conditions. This will include all expenditure to the extent that it relates to the activities of DOR and PT supporting this Project.

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<sup>18</sup> This template has been prepared primarily for Project Lending to government departments and ministries. Statement of Audit Needs for Programs, Additional Financing, MFF, RBLs, FI Loans, or State Owned Enterprises using the accrual basis of accounting will need to be further tailored

<sup>19</sup> RAA has adopted its auditing standards which is adapted from the International Organization of Supreme Audit Institutions (INTOSAI) Auditing Standards in 2009. Prior to this, RAA used the Bhutan General Auditing Rules and Regulations 1989 (GAAR).

5. DOR and PT will submit to ADB audited project financial statements as of 30 June of each year, within 6 months of the end of the fiscal year in English. A complete set of audited project financial statements includes:

- (i) Audit Opinion on the Project Financial Statements in accordance with International Standard on Auditing (ISA) 800, International Standards for Supreme Audit Institutions (ISSAI) 1800 or national equivalent
- (ii) Audit Opinion on Specific Donor Requirements<sup>20</sup> (in accordance with ISAE 3000 or national equivalent)
- (iii) Project Financial Statements and Statement of Budget vs. Actual along with complete notes to the financial statements including necessary break downs and details, summary of accounting policies and descriptive explanatory notes
- (iv) Management Letter (*see paragraph F below*)

6. To ensure the timely submission of audited project financial statements, DOR and PT will formally request the RAA to include SASEC Road Connectivity Project audits in their yearly work plan. To support timely submission, unaudited project financial statements should be submitted to the RAA for audit within 3 months of the end of the fiscal year.

#### **D. SPECIFIC AUDIT NEEDS**

7. The audit would cover the entire Project, i.e. covering all sources and application of funds, including the ADB, co-financiers and the RGoB. The Financing Arrangement as currently agreed with ADB, includes Direct Payments (DPs) by ADB to suppliers. The Project Coordinators shall provide all pertinent information to the Auditors including preservation and use of resources procured and its reflection in the project accounts, so as to facilitate comprehensive audit coverage. The audits should be carried out annually from commencement of the project. The audit for the first year should also cover transactions, which occurred from the commencement of the project, i.e. till the end of the fiscal year.

8. The auditor will provide assurance as to whether the project financial statements present a true and fair view of the receipts and expenditures, or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework.

9. In addition, ADB will also require an assessment by the auditors of compliance with provisions of the financing agreement with ADB, especially those relating to accounting and financial matters. Positive assurance should be provided in accordance with International Standard on Assurance Engagement-3000 or national equivalent. An audit opinion shall be provided that will inter alia include verification that:

- (i) All funds, including counterpart funds, have been used in accordance with the conditions of the loan agreements, with due regard to economy and efficiency, and only for the purposes for which the funds were provided;
- (ii) With respect to SOEs, (a) adequate supporting documentation has been maintained to support claims to the Asian Development Bank for reimbursement of expenditures incurred, and (b) except for ineligible expenditures as detailed in the audit observations, if any, appended to this audit report, expenditures are

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<sup>20</sup> This may be combined with (i) above or given separately

eligible for financing under the Loan Agreement;

- (iii) The Imprest Account gives a true and fair view of the receipts collected and payments made during the year ended [insert date], and these receipts and payments support the Imprest Account Liquidation/ replenishments during the year.

10. ADB may also require that the auditors should advise a calendar for discussion/review of audit observations (particularly any serious matters) through tripartite meetings and review meetings to facilitate executive follow-up on audit observations and recommendations. Moreover, ADB would need a review of actions taken on the recommendations presented in the previous audit report on the progress made.

## **E. PROJECT FINANCIAL STATEMENTS (PFSs)**

11. Project Financial statements shall be prepared on a cash basis of accounting in accordance with RGoB accounting policies. These should include:

- (i) Sources and Consolidated Uses of Funds showing the funds received and expended from ADB and RGoB for SASEC Road Connectivity Project, as well as imprest account balance for the current year, prior year and cumulative year to date.
- (ii) Statement of Budget vs. Actual showing expenditure for the current year and cumulative year to date
- (iii) Detailed notes to the financial statements including explanatory notes, breakdown of expenditure, reconciliation of reimbursements, Details of expenditure by Currency/Method of Funding/Output Component, Statement of Imprest Account, and Accounting Policies
- (iv) Annexure to the APFS shall include the (a) Statement of Expenditure (b) Imprest Account Ledger (c) Imprest Account Reconciliation Statements (d) Reconciliation Statement of Reimbursable Fund (e) Disbursement Details (f) Photocopy of the Imprest Account Bank Statement and (g) Bank voucher for unspent balances.

12. Project Financial Statements shall provide sufficient level of detail to identify types of expenditures as identified in the allocation Table of the Financing Agreement; namely works and consulting services.

13. Template financial statements shall be provided to DOR and PT during implementation to ensure maximum alignment with the Cash Basis IPSAS as well as conformity with Bhutan Accounting Standards. This is relevant since under ADB's revised Public Disclosure Policy 2011, Project Financial Statements shall be disclosed on ADB's website. Please note that any financial statement template is a working draft, which may require adjustment based on the actual activities of the project as well as the Chart of Accounts in use.

## **F. MANAGEMENT LETTER**

14. In addition to the audit report, ADB will require a separate management letter.

15. The management letter should specifically:

- (i) Give comments and observations on the notes to the accounts, accounting records, systems, and internal controls that were examined during the course of the audit;
- (ii) Identify specific deficiencies and areas of weakness in systems and internal controls and make recommendations for their improvement including [IA] response to the identified deficiencies;
- (iii) Communicate matters that have come to attention during the audit which might have a significant impact on the implementation of the Project;
- (iv) Bring to RGoB and ADB attention to any other matters that the auditor considers pertinent, and
- (v) Follow-up audit recommendations made in preceding years

16. Serious issues, which affect the auditor's opinion as to whether the financial statements give a true and fair view, should be referred to in the audit opinion. Management Letter should include only those issues which do not affect the fairness of the financial statements.

## **G. GENERAL**

17. Review missions and normal program supervision will monitor compliance with financial reporting and auditing requirements and will follow up with concerned parties, including the external auditor.

18. ADB has made DOR and PT aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited financial statements<sup>21</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 required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed.

19. ADB retains the right to verify or have audited (i) the project, (ii) the validity of certifications of DOR and PT for each withdrawal application, and (iii) that ADB's financing is used in accordance with ADB's policies and procedures.

20. In case an external auditor needs to be commissioned for a supplementary audit, the auditor should be given access to all legal documents, correspondences, and any other information associated with the commission and deemed necessary by the auditor. Confirmation should also be obtained of amounts disbursed and outstanding with ADB and the Government, etc.

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<sup>21</sup> ADB Policy on delayed submission of audited project financial statements:

- When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (i) the audit documents are overdue; and (ii) if they are not received within the next six 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.
- When audited project financial statements are not received within six 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 reimbursements, and issuance of new commitment letters. ADB will (i) inform the executing agency of ADB's actions; and (ii) advise that the loan may be suspended if the audit documents are not received within the next six months.
- When audited project financial statements are not received within 12 months after the due date, ADB may suspend the loan.

## H. PUBLIC DISCLOSURE

21. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011)<sup>22</sup>. After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 30 days upon date of their receipt by posting them on ADB's website. The Audit Management Letter and entity level financial statements will not be disclosed.

*Note: This is a statement of audit needs for ADB and does not in any way intend to limit the scope of the statutory audit.*

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<sup>22</sup> Available from <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>