



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

---

Project Number: 50165-002  
May 2018

## Proposed Loan and Grant Kingdom of Bhutan: Phuentsholing Township Development Project

Distribution of this document is restricted until it has been approved by the Board of Directors. Following such approval, ADB will disclose the document to the public in accordance with ADB's Public Communications Policy 2011.

Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 11 April 2018)

Currency unit	–	ngultrum (Nu)
Nu1.00	=	\$0.0154
\$1.00	=	Nu64.86

## ABBREVIATIONS

ADB	–	Asian Development Bank
CDCL	–	Construction Development Corporation Limited
DHI	–	Druk Holding and Investments Limited
EIA	–	environmental impact assessment
EIRR	–	economic internal rate of return
EMP	–	environmental management plan
ha	–	hectare
O&M	–	operation and maintenance
PAM	–	project administration manual

## NOTE

In this report, “\$” refers to United States dollars.

<b>Vice-President</b>	Wencai Zhang, Operations 1
<b>Director General</b>	Hun Kim, South Asia Department (SARD)
<b>Director</b>	Mio Oka, Environment, Natural Resources and Agriculture Division, SARD
<b>Team leader</b>	Lance Gore, Senior Water Resources Specialist, SARD
<b>Team members</b>	Vivian Castro-Wooldridge, Urban Development Specialist, SARD Christopher Damandl, Senior Counsel, Office of the General Counsel Suzanne Marsh, Water Resources Specialist, SARD Shinjini Mehta, Urban Development Specialist, SARD Jaemin Nam, Financial Management Specialist, SARD Catherine Santiago, Senior Procurement Specialist, Procurement, Portfolio and Financial Management Department Sherazade Shafiq, Financial Management Specialist, SARD Gina Sinang, Operations Assistant, SARD Dewi Utami, Principal Safeguards Specialist, SARD
<b>Peer reviewer</b>	Andrew McIntyre, Project Administration Unit Head, East Asia Department

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

## CONTENTS

	<b>Page</b>
PROJECT AT A GLANCE	
I. THE PROPOSAL	1
II. THE PROJECT	1
A. Rationale	1
B. Impact and Outcome	3
C. Outputs	4
D. Summary Cost Estimates and Financing Plan	4
E. Implementation Arrangements	5
III. DUE DILIGENCE	6
A. Technical	6
B. Economic and Financial	7
C. Governance	7
D. Poverty, Social, and Gender	8
E. Safeguards	8
F. Summary of Risk Assessment and Risk Management Plan	9
IV. ASSURANCES	10
V. RECOMMENDATION	10
APPENDIXES	
1. Design and Monitoring Framework	11
2. List of Linked Documents	14

## PROJECT AT A GLANCE

<b>1. Basic Data</b>		<b>Project Number:</b> 50165-002	
<b>Project Name</b>	Phuentsholing Township Development Project	<b>Department /Division</b>	SARD/SAER
<b>Country</b>	Bhutan	<b>Executing Agency</b>	Druk Holding and Investments Limited
<b>Borrower</b>	Kingdom of Bhutan		
<b>2. Sector</b>		<b>ADB Financing (\$ million)</b>	
✓ <b>Agriculture, natural resources and rural development</b>	<b>Subsector(s)</b> Rural flood protection		35.64
<b>Water and other urban infrastructure and services</b>	Other urban services		4.36
	Urban sanitation		4.00
	Urban sewerage		4.00
	Urban solid waste management		1.00
	Urban water supply		4.00
	<b>Total</b>		<b>53.00</b>
<b>3. Strategic Agenda</b>		<b>Climate Change Information</b>	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Adaptation (\$ million)	2.00
Environmentally sustainable growth (ESG)	Disaster risk management Global and regional transboundary environmental concerns Urban environmental improvement	Climate Change impact on the Project	High
<b>4. Drivers of Change</b>		<b>Gender Equity and Mainstreaming</b>	
Private sector development (PSD)	Promotion of private sector investment Public sector goods and services essential for private sector development	Some gender elements (SGE)	✓
<b>5. Poverty and SDG Targeting</b>		<b>Location Impact</b>	
Geographic Targeting	No	Rural	Medium
Household Targeting	No	Urban	Medium
SDG Targeting	Yes		
SDG Goals	SDG6, SDG9, SDG11		
<b>6. Risk Categorization:</b>	Complex		
<b>7. Safeguard Categorization</b>	<b>Environment: A Involuntary Resettlement: C Indigenous Peoples: C</b>		
<b>8. Financing</b>			
<b>Modality and Sources</b>		<b>Amount (\$ million)</b>	
<b>ADB</b>		<b>53.00</b>	
Sovereign Project grant: Asian Development Fund		24.26	
Sovereign Project (Concessional Loan): Ordinary capital resources		28.74	
<b>Cofinancing</b>		<b>0.00</b>	
None		0.00	
<b>Counterpart</b>		<b>10.00</b>	
Government		10.00	
<b>Total</b>		<b>63.00</b>	

## I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on (i) a proposed loan, and (ii) a proposed grant, both to the Kingdom of Bhutan for the Phuentsholing Township Development Project (the project).

2. The project will construct river walls and raise ground levels to protect Phuentsholing city and new township from floods and riverbank erosion. It will also develop common infrastructure on about 66 hectares (ha) of new urban land to enable the safe and sustainable expansion of human settlements and commercial activities. Finally, it will support capacity development to improve flood risk management and the delivery of urban services.<sup>1</sup>

## II. THE PROJECT

### A. Rationale

3. Bhutan, which is located entirely within the Himalayan mountain range, is increasingly experiencing water-induced disasters such as landslides, floods, and flash floods. Major cities such as Thimphu, Phuentsholing, and Paro are encroaching on scarce agricultural land and unsafe terrain, including steep hillsides and floodplains. This situation, coupled with rapid urbanization, is making it extremely difficult for Bhutan to achieve its vision of balanced and environmentally sustainable development.

4. An important focus of Bhutan's development strategy is the potential of growth centers in the south near the Indian border to boost export-oriented industrial development. The advantages of these centers compared to others elsewhere in the country include better access to transport, cheaper wage labor from India, access to cheaper raw materials, and an abundant and inexpensive power supply.<sup>2</sup> Under its Economic Development Policy, 2010, Bhutan is prioritizing infrastructure investments and improved connectivity to stimulate the development of these centers as economic hubs for trade, transport, storage, and manufacturing.<sup>3</sup> However, the centers are constrained by a dearth of adequate and suitable land for development.

5. Bhutan's Eleventh Five Year Plan, 2014–2018 identified Phuentsholing as a regional growth center that can be safely expanded through the construction of flood protection works and planned urbanization.<sup>4</sup> Located on two major trade corridors developed under the South Asia Subregional Economic Cooperation framework, Phuentsholing handles over 80% of Bhutan's trade, and is the country's largest commercial and industrial hub and main trading gateway with India. Phuentsholing is also Bhutan's second most populous city, with 25,000 residents, and is anticipated to grow by 5% per year subject to land availability. Due to housing constraints in Phuentsholing, many Bhutanese people reside on the Indian side of the border in Jaigaon.<sup>5</sup>

---

<sup>1</sup> Asian Development Bank (ADB) provided project preparatory technical assistance for preparing the Amochhu Land Development and Township Project (TA 9140-BHU), of which the Phuentsholing Township Development Project will develop the first 66 ha of 460 ha that are ultimately planned. The government requested the project's name be changed to Phuentsholing Township Development Project following loan negotiations.

<sup>2</sup> ADB. 2013. *Bhutan Transport 2040: Integrated Strategic Vision*. Manila.

<sup>3</sup> Government of Bhutan. 2010. *Economic Development Policy of the Kingdom of Bhutan*. Thimphu.

<sup>4</sup> Government of Bhutan. 2013. *Eleventh Five Year Plan, 2014–2018*. Thimphu.

<sup>5</sup> Government of Bhutan, Ministry of Works and Human Settlements. 2013. *Phuentsholing Structure Plan 2013–2028 (Vol. 01)*. Thimphu. Phuentsholing receives more inward migration from rural areas than any other city in Bhutan.

6. Land scarcity is a key growth constraint for Phuentsholing, which is physically confined by steep and unstable Himalayan foothills, the Amochhu River, and international borders. The city is significantly exposed to precipitation- and earthquake-triggered landslides, which have a high mortality rate, and has also been significantly impacted by flood damage and riverbank erosion over the past 25 years. Flash floods triggered by monsoon rains are also occurring more frequently due to dense development, the loss of natural ground cover, and climate change.<sup>6</sup> Since 2002, the Government of Bhutan has been working to mitigate Phuentsholing's land constraints and exposure to geophysical and flood hazards by constructing flood and erosion defenses along the left and right banks of the Amochhu River, and expanding the city away from the mountain slopes to areas of flat riparian land suitable for residential, commercial, institutional, and recreational uses.<sup>7</sup>

7. The Asian Development Bank (ADB) has supported Phuentsholing's development through (i) the South Asia Subregional Economic Cooperation Road Connectivity Project;<sup>8</sup> (ii) various urban infrastructure initiatives under three separate investment projects;<sup>9</sup> and (iii) a transport, trade facilitation, and logistics project.<sup>10</sup> These investments aim to enhance trade, productivity, and connectivity in the region, but do not address land and housing constraints or quality of life. The project will complement and leverage these investments to provide an incubator for economic growth. Specifically, it will develop about 66 ha of vacant riparian land immediately adjacent to the existing city along the left bank of the Amochhu River, based on the Amochhu Development Master Plan.<sup>11</sup> The project will also (i) construct river walls and common urban infrastructure, (ii) raise land, (iii) install a flood early warning system, (iv) implement a flood management plan, and (v) help the government prepare subsequent phases of development.

8. Beyond infrastructure investments, the project will help Bhutan improve its urban land management and municipal service delivery. Like many other local governments, which are similarly under-resourced, the Phuentsholing municipality currently lacks the capacity to implement and operate the project. Therefore, the project will help the municipal government build this capacity. Meanwhile, the government has entrusted the project's development and operation to Druk Holding and Investments Limited (DHI), a fully government-owned enterprise responsible for Bhutan's strategic income-generating entities, and its subsidiary the Construction Development Corporation Limited (CDCL).<sup>12</sup> Under this project, DHI and the CDCL are applying

<sup>6</sup> The most devastating event in recent history was Cyclone Alia, which caused loss of land and infrastructure when it occurred in 2009.

<sup>7</sup> Government of Bhutan. 2004. *Urban Development Plan, 2002–2017: Phuentsholing, Bhutan*. Thimphu.

<sup>8</sup> ADB. 2014. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Grant to the Kingdom of Bhutan for the South Asia Subregional Economic Cooperation Road Connectivity Project*. Manila. The project promotes regional connectivity through investments in road construction, a land port, and a custom station.

<sup>9</sup> ADB. 1998. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kingdom of Bhutan for the Urban Infrastructure Improvement Project*. Manila; ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Technical Assistance Grant to the Kingdom of Bhutan for the Urban Infrastructure Development Project*. Manila; ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kingdom of Bhutan for the Urban Infrastructure Project*. Manila. These projects included investments in flood protection, drainage, roads, pedestrian facilities, and social infrastructure.

<sup>10</sup> ADB. 2016. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Grant to the Kingdom of Bhutan for the South Asia Subregional Economic Cooperation Transport, Trade Facilitation, and Logistics Project*. Manila. The project promotes regional connectivity through investments in road construction, trade facilitation, and logistics equipment.

<sup>11</sup> Government of Bhutan, DHI. 2017. *Amochhu Development Master Plan*. Thimphu. The master plan is aligned with the Phuentsholing Structure Plan 2013–2028.

<sup>12</sup> This includes the Bhutan Power Corporation Limited, Bhutan Telecom Limited, the Druk Green Power Corporation Limited, and the CDCL, among others.

a new greenfield development and management modality by integrating the construction of river defenses, building plots, and common urban infrastructure, as well as establishing a ring-fenced corporate entity to deliver sustainable operation and maintenance (O&M). The project will also build the capacity of both the new township office and Phuentsholing municipality to ensure that coordination and high service standards are achieved.

9. The project is expected to provide opportunities for investment, create jobs, and relieve existing housing pressures. Integrated planning and infrastructure, and strengthening DHI institutionally will ensure the sustainability of investments in a climate- and disaster-resilient township. The project's commercial approach, support for investor outreach, and strong focus on O&M will ensure the new township's financial and operational sustainability. Moreover, expanding the municipality's tax base will help it finance its own investments and operations.

10. **Lessons.** The project design incorporates lessons from disaster risk reduction initiatives and recent greenfield urban development projects within Bhutan and the South Asian region. Lessons are incorporated primarily from (i) ADB's recently completed urban infrastructure development project, which supported the planned southern expansion of Thimphu through a participatory process; and (ii) riverfront development projects in India, such as Naya Raipur (Chhattisgarh), Sabarmati (Ahmedabad), and Lavasa (Maharashtra). Most notably, the project will incorporate the following lessons: (i) construct strong flood and erosion defenses that account for climate change projections, install flood early warning systems, and establish community-based flood management procedures; (ii) phase capital expenditure in line with planned growth instead of completing all components upfront, and develop land incrementally; and (iii) ensure a robust institutional arrangement for O&M, including the application of build-operate works packages. Positive lessons from other projects in Bhutan (footnote 9) have been applied to the project's urban components, such as the successful expansion of Thimphu to accommodate an additional 19,000 people (about 16% of the city's population) in livable urban environments without encroaching into hazardous areas.

11. **Value added by ADB's assistance.** During preparation, ADB has helped the government incorporate in the township master plan integrated urban planning principles that address the social, economic, environmental, and physical aspects of the new township. During implementation, ADB will (i) streamline coordination between the new township and Phuentsholing municipality to enhance service delivery, connectivity, and linkages with the existing city and ongoing and future multisector ADB projects; (ii) develop a sustainable and effective model for township management; (iii) ensure sustainability by embedding the project within longer term strategic plans for the wider economic area; and (iv) ensure that strong marketing machinery is in place to attract investors. The project will improve the capacity and competitiveness of the Phuentsholing urban area and complement the efforts of the ADB-supported South Asia Subregional Economic Cooperation program, which has enabled greater connectivity and facilitated trade between Bhutan and other countries in the region.

## **B. Impact and Outcome**

12. The project is aligned with the following impacts: (i) balanced and sustainable development of human settlements ensured (footnote 4); and (ii) smart growth principles applied in planning and development to promote Phuentsholing's cultural and social vibrancy (footnote 5). The project will have the following outcome: Phuentsholing's urban area protected from floods and expanded with improved amenities and services.<sup>13</sup>

---

<sup>13</sup> The design and monitoring framework is in Appendix 1.

## C. Outputs

13. **Output 1: Flood and erosion protection measures installed.** The riverbank protection works will protect Phuentsholing from flooding and erosion. Specifically, the project will (i) construct 4 kilometers of erosion-resilient river walls to protect against a 100-year probable flood, (ii) raise ground levels behind the new walls to reclaim at least 66 ha of flood-protected land for urban development, and (iii) establish and operationalize a flood early warning system and flood management plan in consultation with the community.

14. **Output 2: Municipal infrastructure constructed.** The project will provide serviced plots of land by constructing common urban infrastructure comprising (i) about 10 kilometers of roads with footpaths, landscaping, and streetlights, which are planned in consultation with women; (ii) modern drinking water supply and distribution systems, and wastewater collection and treatment systems that service the new township and adjoining areas; (iii) a resource recovery system for managing solid waste in both the new and old townships; and (iv) power distribution and telecommunication systems throughout the new township. The plots will be leased to residential and commercial investors as prescribed by the Amochhu Development Master Plan, which emphasizes principles of sustainable urban design such as maximum walkability, greenery, and open spaces.

15. **Output 3: Township management systems installed.** The project will (i) establish asset management systems, (ii) build the capacity of township staff to ensure sustainable and effective urban management, and (iii) initiate investor promotion activities.

## D. Summary Cost Estimates and Financing Plan

16. The project is estimated to cost \$63 million (Table 1). Detailed cost estimates by expenditure category and by financier are included in the project administration manual (PAM).<sup>14</sup>

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

Item	Amount <sup>a</sup>
<b>A. Base Cost<sup>b</sup></b>	
1. Output 1: Flood and erosion protection measures installed	33.24
2. Output 2: Municipal infrastructure constructed	11.90
3. Output 3: Township management systems installed	2.74
<b>Subtotal (A)</b>	<b>47.88</b>
<b>B. Contingencies<sup>c</sup></b>	<b>14.07</b>
<b>C. Financial Charges During Implementation<sup>d</sup></b>	<b>1.05</b>
<b>Total (A+B+C)</b>	<b>63.00</b>

<sup>a</sup> Includes taxes and duties of \$0.13 million. Such amount does not represent an excessive share of the project cost. The Government of Bhutan will finance taxes and duties of \$0.13 million in the form of cash contribution. The government will also exempt import duties on civil works contracts to be financed by the project; the value of this exemption is estimated to be \$2.43 million.

<sup>b</sup> In March 2017 prices.

<sup>c</sup> Physical contingencies computed at 10% for civil works and equipment. Price contingencies computed, on average, at 0.3%–1.5% on foreign exchange costs and 4.0%–5.0% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>d</sup> Includes interest and commitment charges. Interest during construction for the concessional OCR loan has been computed at the applicable interest rate during the grace period (1.0% per year).

Source: Asian Development Bank.

<sup>14</sup> Project Administration Manual (accessible from the list of linked documents in Appendix 2).

17. The government has requested (i) a concessional loan of \$28.74 million from ADB's ordinary capital resources, and (ii) a grant not exceeding \$24.26 million from ADB's Special Funds resources (the Asian Development Fund) to help finance the project. The loan will have a 32-year term, including a grace period of 8 years; an interest rate of 1.0% per year during the grace period and 1.5% per year thereafter; and such other terms and conditions set forth in the draft loan and project agreements. The government will provide the loan proceeds to DHI as a subsidiary loan. The subsidiary loan will have a 32-year term, including a grace period of 8 years, and an interest rate of 1.00% per year during the grace period and 2.55% thereafter. The grant will be provided as a grant to DHI.

18. The summary financing plan is in Table 2. ADB will finance the expenditures in relation to civil works and consulting services.

**Table 2: Summary Financing Plan**

<b>Source</b>	<b>Amount (\$ million)</b>	<b>Share of Total (%)</b>
Asian Development Bank <sup>a</sup>	53.00	84.1
Ordinary capital resources (concessional loan)	28.74	45.6
Special Funds resources (ADF grant)	24.26	38.5
Government of Bhutan	10.00	15.9
<b>Total</b>	<b>63.00</b>	<b>100.0</b>

<sup>a</sup> The Disaster Risk Reduction Fund will finance \$6.07 million equivalent of the concessional loan and \$6.07 million of the ADF grant.

ADF = Asian Development Fund.

Source: Asian Development Bank.

19. Climate adaptation is estimated to cost \$2.0 million. ADB will finance 92% of adaptation costs.

## **E. Implementation Arrangements**

20. The implementation arrangements are summarized in Table 3 and described in detail in the PAM.

**Table 3: Implementation Arrangements**

<b>Aspects</b>	<b>Arrangements</b>		
Implementation period	July 2018–June 2025		
Estimated completion date	30 June 2025		
Loan closing date	31 December 2025		
<b>Management</b>			
(i) Oversight body	Project advisory committee DHI chief executive officer (chair) DHI, the CDCL, the Ministry of Works and Human Settlements, the Department of Roads, the National Environment Commission, Phuentsholing municipality (members)		
(ii) Executing agency	DHI, a wholly-owned holding company of the Government of Bhutan. It was established in 2007 to hold and manage the government's existing and future investments for the long-term benefit of Bhutan.		
(iii) Implementing agency	The CDCL, a wholly-owned subsidiary of DHI. It is responsible for preparing and implementing construction projects throughout Bhutan, including this project.		
(iv) Implementation units	Project management unit, Thimphu, 9 staff members Project implementation unit, Phuentsholing, 23 staff members		
Procurement	International competitive bidding	3 works contracts	\$47.20 million

Aspects	Arrangements		
Consulting services	Quality- and cost-based selection	357 person-months	\$8.11 million
	Individual consultant selection	14 person-months	\$0.45 million
Retroactive financing and advance contracting	Advance contracting and retroactive financing of civil works and consulting services. Retroactive financing will be considered for eligible expenditures not exceeding 20% of the loan and grant amounts incurred prior to effectiveness, but not earlier than 12 months before the loan and grant agreements are signed.		
Disbursement	The loan and grant proceeds will be disbursed in accordance with ADB's <i>Loan Disbursement Handbook</i> (2017, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.		

ADB = Asian Development Bank, CDCL = Construction Development Corporation Limited, DHI = Druk Holding and Investments Limited.

Source: ADB.

### III. DUE DILIGENCE

#### A. Technical

21. **Riverbank protection and embankment works.** The river walls were designed following a thorough evaluation of hydrologic, hydraulic, and sediment transport conditions to assess probable flood levels, the projected impact of climate change, sedimentation, and scour. Two widely accepted methods—flood frequency analysis and synthetic unit hydrograph analysis—were used to derive the design flood estimate for the Amochhu River at Phuentsholing. Flood events were simulated using one- and two-dimensional computer models, with sensitivity testing of various parameters to confirm the designs. Physical modelling of the ultimate development scenario will be undertaken during project implementation. The walls have a 100-year flood design standard and 1-meter freeboard between the design flood levels and building platform levels. This is a normal standard of protection for urban areas adjacent to major rivers. The impact of climate change on future flood magnitudes may reduce the freeboard by up to 33%, which is acceptable. Cross-drainage structures have been designed to convey 50-year floods from local catchments, including an allowance for climate change. The foundation design of the walls accounts for scour, and any accumulation of sedimentation will be managed during O&M. Additional erosion control measures, such as installation of spurs, will be considered using the physical model. A flood early warning system and management plan will be established under the project to ensure residents' safety during all flood events.

22. **Urban planning and municipal infrastructure.** An urban master plan and development control regulations was prepared for the new urban area and is consistent with the project's vision and appropriate for the country's context. The plan and regulations will ensure that the new township is livable, vibrant, inclusive, affordable, sustainable, and safe. The plan and regulations also guided the design of common urban infrastructure to be installed under the project, including local roads, drainage, footpaths, parks, treated water supply and distribution systems, sewerage collection and treatment systems, telecommunication facilities, and electricity distribution systems. The works contract for constructing the common urban infrastructure will include 5 years of O&M to augment the CDCL's capacity to operate the new township while transferring skills. The designs incorporate hard and soft linkages with the existing city. For example, the water supply and sewerage treatment systems will service existing built up areas adjacent to the new township, solid waste management facilities will be shared, and traffic management studies are planned to mitigate or avoid traffic congestion.

23. **Sustainable township management systems.** The project will establish a township management office within the project area and will strengthen the CDCL's ability to manage,

operate, and maintain the new township effectively and sustainably. This includes installing supervisory control and data acquisition technology to operate the water supply and sanitation facilities, and introducing modern asset management, customer service, and financial management systems. The project will also help market the new township to potential international and national commercial investors, and provide transaction advisory services. Capacity-building activities will benefit both new township and Phuentsholing municipality staff.

## **B. Economic and Financial**

24. **Economic analysis.** Increased land value accounts for about 76% of total project benefits, with reduced flood damage to infrastructure and increased benefits from water and power supply accounting for the remaining 24%. Given several uncertainties related to the project, a risk modeling framework was used to estimate the value of the project benefits. The economic analysis indicates that the project is economically viable, with a mean economic internal rate of return (EIRR) of 11.3%. The project's economic feasibility is not sensitive to unfavorable changes in investment costs and economic benefits; the EIRR only drops below the economic opportunity cost of capital of 9% if investment costs increase by 30% or benefits decrease by 22%. The project's EIRR is far less sensitive to changes in management and O&M costs. The poverty impact ratio was estimated at 5.2%. It is assumed that occupants of residential housing—including social housing reserved for the poor—will value the new land they occupy at higher lease rates than would be payable to the government, primarily because the quality of urban infrastructure and services will be much better than can be found elsewhere in Bhutan.

25. **Financial analysis.** The project's financial sustainability was assessed in accordance with ADB's Guidelines for the Financial Management and Analysis of Projects (2005). The project's cash inflows mainly comprise revenues generated from the lease of newly developed land, which the government will promote to investors with new financial and regulatory incentives. Revenue will also include water supply, wastewater treatment, and solid waste management service charges. Although the project will not fully recover its capital costs, it will generate enough cashflow to pay for O&M and its debt service obligations, since a portion of the capital costs is grant-financed. Expected financial internal rate of return of 4.3% is slightly lower than the weighted average cost of capital of 4.5%, mainly due to the opportunity cost of ADB grants.

## **C. Governance**

26. **Financial management.** A financial management assessment of DHI and the CDCL was carried out in accordance with ADB's Guidelines for the Financial Management and Analysis of Projects.<sup>15</sup> The project's overall risk assessment is *low*. The CDCL will assign a suitably qualified full-time project accountant to be trained in ADB's disbursement procedures. Further, the Royal Audit Authority of Bhutan, an independent and nonpartisan institution authorized to audit government agencies, will audit the CDCL's financial statements annually in accordance with international auditing standards. An integrity due diligence of DHI and the CDCL yielded satisfactory results.

27. **Procurement.** The procurement of goods and works will follow ADB's Procurement Guidelines (2015, as amended from time to time), and all consultants will be recruited following ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). A procurement capacity assessment concluded that the project's overall procurement risk is

---

<sup>15</sup> Financial Management Assessment (accessible from the list of linked documents in Appendix 2).

moderate.<sup>16</sup> Procurement specialists will help the CDCL prepare and evaluate bids. Funds will be allocated under the project to provide procurement training to the implementing agency and local contractors.

28. **Anticorruption.** ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government, DHI, and the CDCL. The specific policy requirements and supplementary measures are described in the PAM (footnote 14). The Anti-Corruption Commission of Bhutan, the constitutional anticorruption agency, is empowered to investigate any project irregularities. The CDCL will follow government rules and procedures for all expenses and revenue items, and will establish both a project website to ensure transparency and a system for handling complaints related to contracts and procurement.

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

29. The erosion and annual flooding experienced by the existing municipality disproportionately affects the poor, who lack the resources to cope and recover quickly. By addressing this problem, the project is expected to boost the economy, create more and better employment opportunities in the longer term, and help alleviate poverty. Moreover, adding housing stock to the new township will relieve pressure in the existing municipality by making housing more affordable. Therefore, the project will directly benefit vulnerable local inhabitants in several ways. The second project output includes the development of recreation areas, pedestrian safety features such as streetlights, public toilets, road markings, ramps, and footpaths. Women and women's organizations will be encouraged to participate in public planning meetings associated with the project, especially those related to the development of municipal infrastructure and the flood early warning system. The civil works contracts will include labor provisions to ensure that women and men receive equal pay for equal work, and that HIV awareness campaigns are conducted for laborers and local communities. A summary poverty reduction and social strategy has been prepared.<sup>17</sup>

#### **E. Safeguards**

30. In compliance with ADB's Safeguard Policy Statement (2009), the project's safeguard categories are as follows.<sup>18</sup>

31. **Environment (category A).** The project is not expected to have any significant environmental impact. However, due to its location on Bhutan's border with India and upstream of India's Jaldapara National Park, the project has been classified as category A for the environment, and an environmental impact assessment (EIA) study was prepared.<sup>19</sup> The EIA's scope covers the full extent of the government's ultimate plan to develop 460 ha of new urban land along both banks of the Amochhu River under their Amochhu Land Development and Township Project, although the current project area is limited to 66 ha on the left bank. The EIA found that most impacts occur during construction due to river bed levelling, the transportation of construction materials and equipment, and the construction of urban facilities. These impacts are temporary, local, and reversible. Mitigation measures have been proposed, and an environmental management plan (EMP) has been prepared and will be strictly implemented throughout the construction period. Nonetheless, the project may impact aquatic ecology due to river bed

---

<sup>16</sup> Procurement Capacity Assessment (accessible from the list of linked documents in Appendix 2).

<sup>17</sup> Summary Poverty Reduction and Social Strategy (accessible from the list of linked documents in Appendix 2).

<sup>18</sup> ADB. Safeguard Categories. <https://www.adb.org/site/safeguards/safeguard-categories>.

<sup>19</sup> The EIA has also been prepared in accordance with Bhutan's Environmental Assessment Act 2000.

levelling during construction and operation. The EMP includes a mitigation measure to avoid species disruption by maintaining some natural river flows during the river bed levelling activities; if environmental monitoring finds a decline in any important fish species, replenishment will be undertaken. The EIA also confirmed that elephants occasionally roam along the right bank. The project will finance a more detailed study of elephant behavior and movement patterns to develop appropriate mitigation measures to reduce impacts on their habitat if the right bank is eventually developed. During the EIA's preparation, two public consultations were carried out and the study findings were disclosed. The EIA report was disclosed through ADB's website on 29 May 2017.<sup>20</sup>

32. The implementing agency has adequate capacity to manage the potential impacts. The environmental officer will be responsible for addressing overall environmental concerns related to the project. The project implementation unit will oversee the overall implementation of the EIA's recommendations and the EMP, and will be assisted by the environment specialist under the project implementation consultants. The contractors will have an environment and safeguard specialist who will manage environmental impacts related to construction. The project will also engage an external monitoring expert to monitor compliance with environmental safeguards independently. The project grievance redress mechanism will be used to resolve complaints in a timely and systematic manner.

33. **Involuntary resettlement and indigenous peoples (category C).** As the entire 66 ha area to be developed for flood defenses and the new township is under government control, no households face resettlement, and no private structures will be affected. A poverty and social assessment found no indigenous people, as described in ADB's Safeguard Policy Statement, living near or affected by the project.

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

34. Significant risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.<sup>21</sup>

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

Risks	Mitigation Measures
Lower than expected demand for leasable land	The grant financing will be on-granted to DHI, and favorable on-lending terms will apply to the loan financing amount. These measures will enable DHI to offer competitive lease rates. The project also will appoint a reputable firm to help DHI attract investors and provide transaction advisory services.
Disasters triggered by natural hazards and extreme weather conditions lead to implementation delays.	There are no plausible mitigation measures to manage disasters triggered by natural hazards that may prevent or delay implementation. Otherwise, delays in the project are not expected, and at least 30% of packages are expected to be under contracting before the ADB Board consideration date.

ADB = Asian Development Bank, DHI = Druk Holding and Investments Limited.  
Source: ADB.

<sup>20</sup> Amochhu Land Development and Township Project: Environmental Impact Assessment (accessible from the list of linked documents in Appendix 2).

<sup>21</sup> Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

#### IV. ASSURANCES

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

36. The government, DHI, and the CDCL have agreed with ADB on certain covenants for the project, which are set forth in the draft loan, grant, and project agreements.

#### V. RECOMMENDATION

37. I am satisfied that the proposed loan and grant would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve

- (i) the loan of \$28,740,000 to the Kingdom of Bhutan for the Phuentsholing Township Development Project, from ADB's ordinary capital resources, in concessional terms, with an interest charge at the rate of 1.0% per year during the grace period and 1.5% per year thereafter; for a term of 32 years, including a grace period of 8 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board; and
- (ii) the grant not exceeding \$24,260,000 to the Kingdom of Bhutan from ADB's Special Funds resources (Asian Development Fund), for the Phuentsholing Township Development Project, on terms and conditions that are substantially in accordance with those set forth in the draft grant and project agreements presented to the Board.

Takehiko Nakao  
President

14 May 2018

### DESIGN AND MONITORING FRAMEWORK

<b>Impacts the Project is Aligned with</b>			
<p>a. Balanced and sustainable development of human settlements ensured (Eleventh Five Year Plan, 2014–2018)<sup>a</sup></p> <p>b. Smart growth principles applied in planning and development (Phuentsholing Structure Plan 2013–2028)<sup>b</sup></p>			
<b>Results Chain</b>	<b>Performance Indicators with Targets and Baselines</b>	<b>Data Sources and Reporting</b>	<b>Risks</b>
<p><b>Outcome</b> Phuentsholing’s urban area protected from floods and expanded with improved amenities and services</p>	<p>By 2026:</p> <p>a. Phuentsholing and reclaimed land protected from 100-year flood events in the Amochhu River (2018 baseline: Phuentsholing is protected from mean annual floods)</p> <p>b. At least 10% of fully serviced plots tendered for development (2018 baseline: NA)</p>	<p>a. Hydrology report at project completion</p> <p>b. Annual reports of DHI and the CDCL</p>	<p>Lower than expected demand for leasable land</p>
<p><b>Outputs</b> 1. Flood and erosion protection measures installed</p>	<p>By 2025:</p> <p>1a. 4 km of climate- and erosion-resilient river walls constructed to protect against 100-year probable flood (2018 baseline: 0)</p> <p>1b. At least 66 ha of land reclaimed (2018 baseline: 0)</p> <p>1c. A flood early warning system and community-based flood management plan established and operational (2018 baseline: NA)</p>	<p>1a–c. Annual project progress reports</p>	<p>Disasters triggered by natural hazards and extreme weather conditions lead to implementation delays.</p>
<p>2. Municipal infrastructure constructed</p>	<p>2a. 10 km of roads with footpaths, landscaping, and streetlights planned with at least 30% female participation (2018 baseline: 0)</p> <p>2b. Water treatment plant with a capacity of 4 MLD constructed (2018 baseline: none)</p> <p>2c. 12 km of new primary and secondary water mains constructed (2018 baseline: 0)</p> <p>2d. 9 km of new sewer mains and 9 km of new storm drains constructed (2018 baseline: 0)</p>	<p>2a–i. Annual project progress reports</p>	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	<p>2e. A sewerage treatment plant with a capacity of 3 MLD constructed (2018 baseline: 0)</p> <p>2f. A resource recovery system for solid waste management installed (2018 baseline: 0)</p> <p>2g. A 630 KVA grid substation constructed (2018 baseline: 0)</p> <p>2h. 16 circuit-km of 415-volt power distribution lines installed (2018 baseline: 0)</p> <p>2i. 11 circuit-km of telecommunication transmission cables installed (2018 baseline: 0)</p>		
3. Township management systems installed	<p>3a. At least 80% of township management staff reported improved knowledge of modern urban management (2018 baseline: NA)</p> <p>3b. An asset management system established with 100% of project infrastructure and facilities geocoded in a database (2018 baseline: NA)</p> <p>3c. At least 10 potential investors attended investor outreach campaigns (2018 baseline: NA)</p>	3a–c. Annual project progress reports	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
<b>Key Activities with Milestones</b>			
<p><b>1. Flood and erosion protection measures installed</b></p> <p>1.1 Award works contract for constructing river walls and land reclamation (June 2018)</p> <p>1.2 Award contract for flood early warning system (March 2020)</p> <p>1.3 Operationalize flood management plan (December 2021)</p> <p>1.4 Complete and commission all facilities (June 2022)</p> <p><b>2. Municipal infrastructure constructed</b></p> <p>2.1 Award works contract for constructing roads, water supply, and sanitation systems (June 2021)</p> <p>2.2 Complete and commission all facilities (June 2024)</p> <p>2.3 Procure O&amp;M equipment (March 2025)</p> <p>2.4 Complete first year of 5-year operation contract (June 2025)</p> <p><b>3. Township management systems installed</b></p> <p>3.1 Recruit urban management advisor (March 2022)</p> <p>3.2 Recruit investment promotion advisor (September 2022)</p> <p>3.3 Recruit sustainable township management capacity development consultant (December 2022)</p> <p>3.4 Initiate activities to build the capacity of township management staff (January 2023)</p> <p>3.5 Recruit investor promotion and transaction advisory services consultant (June 2023)</p> <p>3.6 Initiate investor promotion activities (July 2023)</p> <p>3.7 Establish GIS database for built infrastructure (September 2024)</p>			
<b>Project Management Activities</b>			
<p>Mobilize project implementation consultant (June 2018)</p> <p>ADB undertakes biannual review missions</p>			
<b>Inputs</b>			
<p>ADB: \$28.74 million (concessional OCR loan) and \$24.26 million (ADF grant)</p> <p>Government: \$10 million</p>			
<b>Assumptions for Partner Financing</b>			
NA			

ADB = Asian Development Bank, ADF = Asian Development Fund, CDCL = Construction Development Corporation Limited, DHI = Druk Holding and Investments Limited, GIS = geographic information system, ha = hectare, km = kilometer, KVA = kilovolt-ampere, MLD = million liters per day, NA = not applicable, OCR = ordinary capital resources, O&M = operation and maintenance.

<sup>a</sup> Government of Bhutan. 2013. *Eleventh Five Year Plan, 2014–2018*. Thimphu.

<sup>b</sup> Government of Bhutan, Ministry of Works and Human Settlements. 2013. *Phuentsholing Structure Plan 2013–2028 (Vol. 01)*. Thimphu.

Source: ADB.

### **LIST OF LINKED DOCUMENTS**

<http://www.adb.org/Documents/RRPs/?id=50165-002-3>

1. Loan Agreement
2. Grant Agreement
3. Project Agreement: Druk Holding and Investments Limited
4. Project Agreement: Construction Development Corporation Limited
5. Sector Assessment (Summary): Multisector (Agriculture, Natural Resources, Rural Development; and Water and Other Urban Infrastructure and Services)
6. Project Administration Manual
7. Contribution to the ADB Results Framework
8. Development Coordination
9. Financial Analysis
10. Economic Analysis
11. Country Economic Indicators
12. Summary Poverty Reduction and Social Strategy
13. Environmental Impact Assessment
14. Risk Assessment and Risk Management Plan

### **Supplementary Documents**

15. Financial Management Assessment
16. Procurement Capacity Assessment
17. Project Climate Risk Assessment and Management
18. Disaster and Climate Risk and Vulnerability Assessment
19. Economic Assessment
20. Detailed Financial Analysis and Evaluation
21. Poverty and Social Assessment
22. Technical Due Diligence (River Engineering, Urban Planning, and Urban Infrastructure)