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ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT

Terms of Reference (ToR)

Consultancy Service for Developing a National Transport Policy, National Transport Strategy, Surface Transport Bill and Civil Aviation (Amendment) Bill for Bhutan

1. Context

The transport sector serves as a vital enabler of Bhutan's socio-economic development, supporting key areas such as tourism, trade, accessibility to vital social economic services and opportunities, and the overall advancement of Bhutan's economy.

Bhutan's rapid socio-economic development, increasing urbanization, and the resulting spatial inequalities among regions, rising vehicle ownership, and vulnerability to multi-hazard shocks are placing unprecedented pressure on its transport systems. The existing Bhutan's National Transport Policy was formulated in 2006, at a time when transport needs were relatively modest. Consequently, the policy primarily addressed only the fundamental requirements and aspirations of the population at the time. However, with rapid economic growth, urbanization, and rising mobility demands, the existing policy framework has become inadequate.

**Annex 1** provides an overview of the transport sector's challenges. There is now an urgent need to develop more comprehensive, efficient, inclusive, and sustainable transport policy, strategy, and legislation to meet the evolving needs of the country. Therefore, the proposal to develop an inclusive and sustainable National Transport Policy and National Transport Strategy (NTPS), Surface Transport Bill/Act and Civil Aviation Bill/Act (together Transport Bills) to address the emerging challenges and opportunities is an initiative of the Ministry of Infrastructure and Transport (MoIT). It emerged from the necessity to have an overarching policy and strategy to guide the development and management of a safe, efficient, reliable, and socially and environmentally sustainable multimodal transport system. The scope of the proposed NTPS and the Transport Bills includes, but not limited to, civil aviation, roads, railways, waterways, ropeways/cable-based transport, non-motorized transport, Unmanned Aircraft System/Drones, end-of-life vehicle scrapping, e-mobility including Electric Vehicle (EV) battery management, amongst others.

The Accelerating Transport and Trade Connectivity in Eastern South Asia Phase 2 – Bhutan Project (ACCESS Bhutan<sup>1</sup>) is an initiative being implemented by Royal Government of Bhutan, with financial support from the World Bank. The project aims to increase the efficiency and resilience of trade, transport, and digital connectivity along selected corridors in Bhutan. This multi-phase programmatic approach is part of a broader regional effort to deepen economic integration and facilitate cross-border trade among Bangladesh, Bhutan, India, and Nepal. Besides

<sup>1</sup> <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099112724133542843/null>



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ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT



digital systems, transport and trade infrastructure, ACCESS Bhutan has high emphasis on institutional and policy strengthening. The current assignment is part of an important sub-component of the ACCESS Bhutan project to enhance/harmonize current and future transport sector initiatives for Bhutan.

## 2. Objectives of the Assignment

The overall objective of the assignment is to develop the following: (i) NTPS that promotes a safe, efficient, reliable, and environmentally sustainable multimodal transport system, and (ii) Surface Transport Bill and Civil Aviation (Amendment) Bill in alignment with the National Transport Policy. The NTPS will align with the overall economic and social aspirations of the Royal Government of Bhutan, such as Gross National Happiness, 13<sup>th</sup> Five-Year Plan, and Gelephu Mindfulness Initiative, and support key areas such as tourism, trade, accessibility to vital social economic services and opportunities, and the overall advancement of Bhutan's economy.

### 2.1. Development of the NTPS should aim to achieve the following objectives but not limited to:

- 2.1.1. Establish a long-term vision and strategic framework for the transport sector, which aligns with national aspirations, including the national social economic development plans, policies, and visions;
- 2.1.2. Promote multimodal, green, inclusive, safe and climate-resilient transport infrastructure and service solutions;
- 2.1.3. Enhance access, equity, and safety for all, including vulnerable populations;
- 2.1.4. Strengthen institutional capacity, including adaptation and leveraging AI and advanced technologies and practices;
- 2.1.5. Strengthen institutional coordination, regulatory frameworks, funding and financing mechanisms;
- 2.1.6. Provide a clear action plan for implementation, monitoring, and evaluation subsumed under the Transport Strategy; and
- 2.1.7. Develop a Policy Protocol Report capturing the entire process of the formulation of National Transport Policy.

### 2.2. Development of the NTPS should cover the following aspects but not limited to:

- 2.2.1. Connectivity: urban center – urban center, urban center – international gateways such as airports and border crossings, rural area – rural area, rural area – international gateway, rural area to urban center, and international gateways to tourist attractions;
- 2.2.2. Modes of Transport and intermodal connectivity: roads, aviation, inland waterways, railways, ropeways, public transport and non-motorized transport;



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ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT

- 2.2.3. Cross-cutting areas: vulnerable population, gender and disability-sensitive transport systems, disaster-resilient infrastructure and service provision, climate mitigation, new green financing opportunities (e.g. Green Climate Fund, SDG-linked grants), skilled workforce development, and incentives for foreign direct investment in the transport sector;
  - 2.2.4. Organization structure and human resource planning, budgeting, financing and cost recovery;
  - 2.2.5. Development of a competitive civil aviation sector; and
  - 2.2.6. Digital technologies: digital infrastructure, data, and standards, AI and analytics, digital service delivery, intelligent traffic and network management, emission monitoring, digital tools for asset management, disaster & climate resilience technologies, digital institutional and governance tools, and cyber security.
- 2.3. **The objective of the Surface Transport Bill is to establish a comprehensive legal framework to regulate, manage, and develop the surface transport in an efficient, safe, sustainable, and coordinated manner. Specifically, the Bill shall cover the following but not limited to:**
- 2.3.1. Define clear mandates and responsibilities of the Ministry, department responsible for surface transport, regulatory authority, and service providers including roles of the local government in relation to the administration and management of surface transport infrastructure;
  - 2.3.2. Establish a coordinated management system that will promote safe and efficient surface transport networks at the national and local level;
  - 2.3.3. Embed safe systems approach to inform road safety mandates, limits, standards, and systems;
  - 2.3.4. Promote adoption of digital technologies, including uniform data standards and interoperability among systems, for better asset management and service deliveries;
  - 2.3.5. Promote efficient and sustainable mobility that supports economic growth, reduce congestion, and minimize environmental impacts;
  - 2.3.6. Provide for effective regulation and oversight of passenger and freight transport service, ensuring fairness, affordability, and quality of services;
  - 2.3.7. Strengthen institutional coordination and accountability across agencies involved in planning, construction, regulation and enforcement;
  - 2.3.8. Facilitate the effective and efficient provision of utility services;
  - 2.3.9. Provide for the protection of surface transport infrastructure against damages and interference;
  - 2.3.10. Provide for the keeping of a register that records infrastructure constructed, repairs or maintenance carried out; and



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ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT

- 2.3.11. Provide for the provisions of non-motorized transport including bi-cycle, footpath, overbridges, subways, etc.
- 2.4. The objective of the **Civil Aviation (Amendment) Bill** is to strengthen the legal and institutional framework governing civil aviation. The Civil Aviation Act 2016 adequately covers civil aviation matters. However, the Act should align with the Civil Service Reform Act 2022 and resolve all the pending Protocol questions related to the primary legislation as per the ICAO USOAP and USAP system, wherein the regulatory functions should vest with the BCAA and policy functions with the Ministry. The objectives of the Bill are as follows but not limited to:
- 2.4.1. Update and harmonize existing provision with Civil Service Reform Act 2022, international aviation standards and obligations prescribed by the ICAO;
- 2.4.2. Clarify and expand the regulatory powers of the Authority to enhance oversight of airlines, airports, air navigation service, and aviation personnel;
- 2.4.3. Introduce stronger safety and security measures to safeguard passengers, crew, and aircraft operations against emerging risks;
- 2.4.4. Facilitate growth and modernization of the civil aviation sector by enabling private sector participation, innovation and investment;
- 2.4.5. Enhance the standard of safety and security within the civil aviation system;
- 2.4.6. Improve governance mechanisms through clearer delineation of mandates and responsibilities of the Ministry, regulatory authority, and service providers including the department responsible for air transport to perform mandates as per the Act, ICAO requirements and other international conventions;
- 2.4.7. Improve the Effective Implementation (EI) score of AIG by incorporating Primary Legislation provisions, objective and independence of aircraft accident/incident investigations;
- 2.4.8. Facilitate enhancement of the capacity to ensure efficient and effective regulation, development of the aviation sector as per the national needs and global trends;
- 2.4.9. Enable the establishment of aviation infrastructures and facilities, including digital infrastructure and data, for a competitive, safe and reliable aviation industry;
- 2.4.10. Promote consumer protection and service quality by establishing standards on passenger rights, fair practices, and dispute resolution;
- 2.4.11. Support regional and international connectivity to enhance trade and tourism; and
- 2.4.12. Resolve all the Protocol Questions in the ICAO USOAP and USAP system to improve the EI score of Primary legislation of all Areas, including LEG (Legislation), OPS (Operations), PEL (Personnel Licensing), AWO (Airworthiness), AGA (Aerodrome and Ground Aids), AIG (Accident Investigation), ANS (Air Navigations Services) and Avsec (Aviation Security).



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**

### 3. Scope of Services

The scope of this assignment includes but not limited to (i) primary and secondary data collection and analysis; (ii) policy review and analysis; (iii) strategy review and analysis; (iv) institutional, fiscal, and political economy analysis; (v) review and analysis of existing surface transport and civil aviation regulatory and legal frameworks; (vi) formulation of National Transport Policy, Policy Protocol Report, and Strategy; and (vii) stakeholder consultation.

#### 3.1. Task 1: Mobilization, inception, and information requests

Upon contract signing, the Consultant's team will mobilize and implement the following activities:

- 3.1.1. Update the proposed work plan to show specific milestone dates and deliverables for all assignment activities. This should include a Gantt chart that illustrates a critical path for activities that will occur under each assignment task;
- 3.1.2. Draft an initial list of requested information for data from specific RGoB entities; and
- 3.1.3. Compile an information collection plan that identifies institutions, databases, hyperlinks, publications, private sector sources, etc. where the Consultant will collect information.

Outputs from this activity will include: (i) a brief inception report containing an updated work plan; (ii) the Consultant's detailed information request; and (iii) an information collection plan in the form of an MS Excel table.

#### 3.2. Task 2: Integrated review of existing policies, legislations and plans

The Consultant will undertake an extensive review of the government plans, policies, strategies, laws and institutional arrangements across Bhutan's transport sector. Specific activities will include:

- 3.2.1. Review existing transport policies, Acts, Bills, Rules and Regulations that pertain to the transport sector and summarize their relevance according to different subsector functions. At a minimum, this should consider roles / responsibilities for: (i) prioritization of investments to develop and maintain infrastructure; (ii) planning and approvals; (iii) funding / budgeting / financing; and (iv) service provision.
- 3.2.2. Additionally, review and enlist key policies, regulations, strategies, and plans from other relevant sectors that rely on a well-functioning multimodal transport network. This may include but not limited to trade (domestic and cross border), tourism, critical social services to remote areas, logistics services, disaster preparedness, and nationally significant development such as the Gelephu Mindfulness City (GMC).
- 3.2.3. Review and summarize existing arrangements for regulation across various transport sub-sectors. At a minimum, this review should consider the following regulatory considerations: (i) price; (ii) rate of return; (iii) market entry and exit; (iv) combinations or divestitures of service providers / asset owners; (v) road safety legislation, standards



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**ROYAL GOVERNMENT OF BHUTAN**  
**MINISTRY OF INFRASTRUCTURE AND TRANSPORT**  
**THIMPHU: BHUTAN**  
**ACCESS BHUTAN PROJECT**

and enforcement framework; and (vi) service quality standards. The Consultant's review should also capture the means by which different public entities enforce regulations.

- 3.2.4. Assess the current state and existing development plans of all transport modes (road, ropeways/cable-based transport, railways, waterways, aviation, Drones/UAS, eVTOL/Advanced Air Mobility (AAM), non-motorized transport), from the viewpoints including, but not limited to, infrastructure condition and capacity, service coverage and reliability, the number of users (ridership), usage patterns, infrastructure quality, operational performance of transport services (e.g. travel times and speeds), use of digital technologies in asset management and service delivery, and financial and maintenance backlogs.
- 3.2.5. Summarize the reviews by each policy, regulation, strategy, and plan's goals and the intended outcomes being pursued; potential or real conflicts and/or inconsistencies between them; and the interventions being proposed as to short term, medium term and long-term actions to address bottlenecks, accommodate growth and enhance strategic competitive positions, respectively. Where necessary and practicable, meetings with relevant RGoB officials will be arranged.

The outputs from this task should include: (i) a report summarizing findings from the activities listed above (no longer than 50 pages plus annexes); (ii) an organized electronic data library with copies of all materials collected during the Consultant's analytical efforts; and (iii) a summary slide deck designed for a 30-minute presentation.

### 3.3. **Task 3: Benchmarking Bhutan's transport subsectors**

The consultant will collect and analyze data concerning different transport subsectors in Bhutan. The objective of this task is to develop an analytical summary that sizes up and sums up different aspects of Bhutan's transport subsectors. Outputs from this work will provide an analytical basis for supporting policy recommendations and developing strategies. The sources of these data will necessarily comprise primary data gathered by the Consultant to supplement publicly available and government-provided data sources. Wherever practical, the Consultant will benchmark different aspects of Bhutan's transport sub-sectors relative to other countries.

The Consultant's analysis should capture a wide range of descriptive information broken down by transport subsectors. These would include measures for: (i) quantity, quality, and performance of infrastructure provision at the subsector level; (ii) quantity, quality, and performance of service delivery (including handling services in the case of freight logistics) at the subsector level; (iii) size, composition, and structure of historical demand flows, measured by meaningful metrics as appropriate (e.g., passengers, passenger-km, tons, ton-km, available seat miles, air departures, etc.) and preferably broken down by market segments for policy making; (iv) nature and scale of government expenditures by subsector; (v) different measures for connectivity, to be defined by



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**



the Consultant, as deemed most relevant to each subsector; (vi) assessment of tariffs, quotas, restrictions, or any other economic barriers that may impact subsector demand; (vii) assessment of financing, regulatory, procedural, market-based or any other barriers that may impact subsector supply (defined as not only infrastructure provision but also service delivery); (viii) safety indicators for different subsectors (e.g. air, road, etc.); and (ix) assessment of digital technology adoption or lack of in asset management and service delivery.

For item (vii) above, the Consultant's analysis should assess the RGoB's fiscal position and capacity to fund investments in the transport sector. This should include benchmarking measures for debt, deficit, and available borrowing headroom. The Consultant's fiscal analysis should also consider measures for diverse means of supporting transport sector investments, such as capacity for increasing general tax burdens (e.g., look at comparable tax to GDP ratios). The analysis will benchmark readiness for private sector participation in the subsectors.

The outputs for this task will include: (i) organized additions to the electronic data library with copies of all datasets, reports, studies, and other inputs identified through the Consultant's work; (ii) one or more detailed spreadsheets with analysis of available quantitative data as gathered or generated by the Consultant, including the raw data themselves; (iii) an analytical summary report, no longer than 50 pages in length (plus annexes), detailing findings, implications, and recommended policy measures based on evidence derived above; and (iv) a summary slide deck designed for a 30-minute presentation.

### **3.4. Task 4: Inventory of Bhutan's key transport assets**

Building on the findings of Task 3, the Consultant will compile a basic inventory of transport infrastructure assets in Bhutan to develop a coherent view of the nature, location, and level of transport connectivity provided to specific regions, industrial clusters, demographic groups and any other policy-meaningful segments, as identified and proposed by the Consultant. This analysis should pay particularly close attention to the major gateway points where goods enter / exit Bhutan's borders.

The Consultant's inventory should include descriptive metrics for assets / transport systems such as: (i) primary and secondary highways; (ii) airports; (iii) logistics facilities; (iv) urban transport systems including: urban roads, organized / informal urban bus and taxi systems in major cities; (v) ropeways, (vi) rural transport networks, and (vii) digital assets, such as data platforms, ITS infrastructure, etc. In the case of networks of smaller value assets (e.g. rural roads, urban taxis, bus networks, etc.) the Consultant's analysis may consider aggregated statistics by geographical area.

The Consultant will develop maps summarizing the locations of major transport infrastructure at levels of detail sufficient for illustrating: (i) key bottlenecks in the national physical network that impacts on trade / logistics; (ii) basic origin / destination concepts (e.g., areas of production and transport routes to nearest land ports); and (iii) apparent gaps in access to transport services.

Where available, the Consultant should also include (i) proposed alignments / locations for concept stage infrastructure (e.g., rail links, waterways, and ropeways) and (ii) digital technologies for improving asset management and service delivery. The consultant will use the assets register



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**



to undertake a conceptual level financial assessment of Bhutan's national transport networks, with the intent to provide approximate estimates for annual budgets needed to maintain the national transport network in steady state condition, and to contrast this with actual maintenance coverage. The Consultant will include a gender and inclusion assessment in the transport sector, identifying challenges and constraints the vulnerable people face. Based on the assessment, the Consultant will propose inclusive transport infrastructure and services, including digital infrastructure and services, for women, children, elderly, and persons with disabilities.

Outputs from this task should include: (i) a spreadsheet-based assets register; (ii) maps as outlined above (hard and soft copy format); (iii) a summary report detailing findings from the activities outlined above; and (iv) a summary slide deck designed for a 30-minute presentation.

### 3.5. Task 5: Stakeholder engagement

The Consultant will map and summarize roles, responsibilities, and levels of influence of public institutions in the transport sector. At a minimum, this should include: (i) summarized budgets and actual expenditures over the previous 5 years; and (ii) first instance accountability within the hierarchy of government institutions.

The Consultant will identify and summarize key stakeholders in the transport development, including private sector, industry groups, civil society representing transport users, and vulnerable groups, defining their roles, interests, influence, engagement modalities, and other important aspects for their engagement.

The Consultant will develop and implement a stakeholder engagement plan, with clear objectives, methods of communication (e.g. workshops, websites, accessibility to information, feedback loops etc.), to ensure inclusive participation and feedback.

The consultant will survey transport sector stakeholders to gather their feedback on current strengths or critical limitations that exist across Bhutan's transport sector. The survey can be a combination of (a) structured face-to-face interviews with stakeholders for depth, and (b) online/paper-based surveys for scope and the ability to generalize from findings. At a minimum, the Consultant's survey work should cover the following stakeholders:

- 3.5.1. Firms with major shipping and logistics concerns including respondents across different: (i) industries and cargo types; (ii) firm sizes; (iii) geographical locations; (iv) dominant shipping modes; (v) international / domestic focus; and (vi) ownership structures (e.g. privately held, publicly listed, government owned, etc.). This selection should cover the bulk of flow for major commodities;
- 3.5.2. Urban and inter-urban passenger transport stakeholders including: (i) operating companies of public transport, including long-distance bus services, taxi companies and their trade groups/associations; (ii) trade groups/associations with critical stakes in urban accessibility; and (iii) planning authorities; and



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**

3.5.3. Agencies / firms engaged in developing, owning, or operating Bhutan's national transport infrastructure.

Surveys should cover issues of infrastructure provision, service delivery, institutional considerations, key needs and bottlenecks, and key constraints as perceived by stakeholders, and should have a horizon ample enough to cover expected growth over the next 5-10 years. Prior to conducting surveys, the Consultant will provide draft survey instruments for RGoB review and comments.

The Consultant will be expected to utilize survey findings and historical data to produce demand forecasts at the subsector level and for key market segments as defined above.

Outputs from this task will include: (i) a stakeholder mapping report; (ii) electronic copies of survey result databases; (iii) spreadsheets containing demand forecasting analysis; (iv) a summary report detailing survey findings; and (v) a summary slide deck designed for a 30-minute presentation.

**3.6. Task 6: Demand-supply balance analysis**

Task 6 will present implications of the demand and supply analysis, and the supply-demand balance and demand forecasts. The objective of this Task is to identify areas where significant imbalance may exist between capacity (current and planned, for both infrastructure provision and service delivery) and demand (current and forecast) at key passenger and freight corridors, key urban areas, and key gateways across all subsectors. The analysis will identify areas of both over- and under-capacity and will utilize (and properly justify) the most adequate metrics to measure supply and demand depending on the market and geographic segmentation used in the proceeding tasks. The analysis should anticipate future capacity bottlenecks and an integrated view of system capacity needs.

The supply-demand analysis should include the development of a simplified network flow model that can (a) indicate future network capacity needs by providing flow visibility to/from major nodes and gateways, and (b) illustrate the needs and requirements to be able to match capacity with demand over time.

Outputs from this task should include (i) a report detailing the findings of the supply-demand balance analysis; (ii) a spreadsheet model showing all supporting calculations and results as presented in the summary report; and (iii) a summary slide deck reflecting the report's main messages and key findings, which should be designed for a 30-minute presentation.

**3.7. Task 7: Identification of system-wide bottlenecks and Key Performance Indicators**

The consultant will synthesize findings from all analyses and survey work above into a detailed brief on key "bottlenecks" and potential solutions across Bhutan's transport sector. For each bottleneck or challenge identified, the consultant will develop proposed initiatives that policy makers could use to achieve better outcomes. The inventory of bottlenecks should distinguish between physical, institutional, financial and regulatory bottlenecks and the root causes of their



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**

emergence. Furthermore, the Consultant will develop a “suite” or dashboard of Key Performance Indicators (KPIs), such as crashes, fatalities from crashes on the road, data, that can be used by national-level policy makers in the management of transport sector performance. In the context of particular bottlenecks, the KPI analysis should indicate the perceived performance gap between desired outcome and actual outcome for which reason the performance gap is deemed to exist and be considered a bottleneck. The performance gap and the desired outcome is as much as possible to be quantified as an indicator of performance to be monitored into the future. Along the same dimensions, the requirements for the accommodation of expected growth are to be specified. The scope of initiatives identified in the Consultant’s reports should include (i) major institutional, legal, regulatory, or policy reforms; and (ii) major infrastructure investments, including digital infrastructure; or combinations thereof, as much as feasible, based on the initiatives already listed in the plans from various agencies and development authorities.

All recommended KPIs in the dashboard should be fleshed out as to (a) their rationale, (b) recommended measuring method (e.g., surveys, interviews, audits, etc.), (c) recommended responsible party to measure and manage it, (d) recommended and well justified target (e.g., based on international benchmarks) and recommended timeframe, and (e) recommended periodicity of measurement.

Outputs from this task will include: (i) a written synthesis report; (ii) a spreadsheet based KPI dashboard; and (iii) a summary slide deck designed for a 30-minute presentation.

**3.8. Task 8: Formulation of National Transport Policy and Policy Protocol Report**

Based on findings above, the Consultant will develop the vision, mission, policy objectives, and policy measures as a National Transport Policy. The Consultant will organize 3 rounds of stakeholder consultations in a format acceptable to the RGoB before finalizing the National Transport Policy. The Consultant will maintain a comprehensive record of the entire process of formulating the National Transport Policy. This should include details of all meetings, stakeholder consultations, and workshops conducted, lists of participants and minutes or Records of Discussions.

Outputs from this task will include: (i) a National Transport Policy; (ii) a Policy Protocol Report; and (iii) a summary slide deck designed for a 30-minute presentation.

**3.9. Task 9: Formulation of National Transport Strategy**

The Consultant will develop a National Transport Strategy, including a phased action plan (short, medium, long-term) with probable project costs, priority areas, timelines, indicators and identify lead agencies and Monitoring and Evaluation (M&E) Systems. The Consultant will organize minimum 1 round of stakeholder consultation in a format acceptable to the RGoB before finalizing the National Transport Strategy.

Outputs from this task will include: (i) a National Transport Strategy; and (ii) a summary slide deck designed for a 30-minute presentation.



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**

**3.10. Task 10: Drafting of Surface Transport Bill**

While there are Road Act 2013 and Road Safety and Transport Authority Act 1999, but this Act does not have a legal framework on surface transport other than road transport (cable-based transport, railways, waterways and non-motorized transport). The Consultant will prepare a Surface Transport Bill, which should be the amalgamation of the two Acts, and encompass a legal framework for all modes of surface transport with clear development and regulatory functions. The Surface Transport Bill should provide the overarching legal framework for the regulation, development, and management of all modes of surface transport in the country, will apply safe systems approach, and include use of digital technologies for asset management and service delivery and possible establishment of an arm's length autonomous commercial entity tasked with operating and maintaining transport assets. Annex 3 includes key considerations for drafting the Surface Transport Bill.

Outputs from this task will include: (i) a Surface Transport Bill; and (ii) a summary slide deck designed for a 30-minute presentation.

**3.11. Task 11: Drafting of Civil Aviation (Amendment) Bill**

The Civil Aviation (Amendment) Bill shall update and strengthen the existing Civil Aviation Act 2016 to align with the Civil Service Reform Act 2022 and resolve all the pending Protocol questions related to the primary legislation as per the ICAO USOAP and USAP system, address emerging challenges in aviation sectors, including adoption of emerging technologies, and define the mandates of BCAA and with the Ministry, including the possible establishment of an arm's length autonomous commercial entity tasked with operating and managing Bhutan's civil aviation services. Annex 4 includes key considerations for drafting the Civil Aviation (Amendment) Bill.

Outputs from this task will include: (i) a Civil Aviation (Amendment) Bill; and (ii) a summary slide deck designed for a 30-minute presentation.

**4. Duration of Assignment**

The Consultant will carry out the activities listed in the form of Lump Sum contract over a period of twelve (12) months from the award of the contract. The expected commencement date for the services is August 2026.

**5. Deliverables for National Transport Policy, Transport Strategy and Policy Protocol Report**

The Consultant shall complete the tasks within 12 months from the date of contract signing.



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**

Deliverables	Contents	Due Date After Commencement
Inception report	Refer to Task 1 outputs	0.5 month
Summary report of review of existing plans, laws, and policies	Refer to Task 2 outputs	1 month
Benchmarking report	Refer to Task 3 outputs	2 months
Summary report of inventory	Refer to Task 4 outputs	3 months
Stakeholder and survey report	Refer to Task 5 outputs	3 months
Supply-demand report	Refer to Task 6 outputs	5 months
Key challenges, solutions, and KPI report	Refer to Task 7 outputs	6 months
1 <sup>st</sup> round of stakeholder consultation	Refer to Task 8 outputs	7 months
1st Draft Policy		
2nd round of Stakeholder consultation		
2nd Draft Policy		
3rd round of Stakeholder consultation		
3rd Draft Policy		
Final Draft National Transport Policy Document & Policy Protocol Report		12 months
National Transport Strategy	Refer to Task 9 outputs	10 months
Stakeholder consultation for Transport Strategy		
Finalize Strategy		12 months

**6. Deliverables for Bills**

The drafting of the Surface transport Bill and Civil Aviation Bill will commence (in parallel) after the submission of the first draft National Transport Policy document to MoIT. The duration of drafting the Surface Transport Bill and Civil Aviation Bill is seven (7) months.

Deliverables	Contents	Due Date After Commencement
Commencement	Commencement	2 <sup>nd</sup> month of policy formulation
First Draft Bills	<ul style="list-style-type: none"> <li>Drafting of the first draft Bills (Surface Transport and Civil Aviation)</li> </ul>	2 <sup>nd</sup> - 5 <sup>th</sup> month of policy formulation



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**

Deliverables	Contents	Due Date After Commencement
	<ul style="list-style-type: none"> <li>Presentation and submission of the first draft Bills to MoIT</li> </ul>	
Stakeholder Consultation	<ul style="list-style-type: none"> <li>Submit record of consultations with relevant agencies</li> <li>Incorporate feedback into revised draft.</li> <li>Submit an updated version (2nd draft) reflecting consultation outcomes.</li> </ul>	6 <sup>th</sup> – 8 <sup>th</sup> Month
Final Bill	<ul style="list-style-type: none"> <li>A final Bill, accompanied by explanatory note/rationale and summary of stakeholder consultations.</li> </ul>	8 <sup>th</sup> Month

## 7. Staffing Requirements

To achieve the objectives of consultant services under this Terms of Reference and in accordance with the scope of works as stated, the requirement of following professional and staff with anticipated person months has been estimated.

SL No	Personnel	Total Person Months
	<b>Key Staff</b>	
1	Team Leader/Transport Policy Specialist (International)	7
2	Transport Planning Specialist (International)	6
3	Transport Planning Specialist (National)	6
4	Civil Aviation Policy & Regulatory Oversight Expert (International)	5
5	Civil Aviation Planner (International)	5
6	Legal Specialist (National)	6
	<b>Non-Key Staff</b>	
7	Ropeway Specialist (International)	3
8	Railway Specialist (International)	3
9	Waterway Specialist (International)	3
10	Flight Operations Specialist (International)	3
11	Aerodrome Specialist (International)	3
12	Air Navigation Specialist (International)	4
13	Aviation Security Specialist (International)	3
14	Airworthiness Specialist (International)	3
15	Drone Specialist (International)	3



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ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT



16	Aviation Lawyer (International)	3
17	Gender and Social Specialist (National)	3
18	Road Safety Specialist (International)	3
<b>Total Man-Months</b>		<b>72.00</b>

It is expected that the work to be completed will be done through a firm(s) with demonstrated international, South Asia, and Bhutan expertise and significant experience in transport policy development, infrastructure planning, and sub-sector analysis and a proven track record of working in South Asia, with a deep understanding of regional transport dynamics. The consulting team should include the following key experts.

The consultant may propose alternative staffing arrangements and person months in their technical proposal provided that the quality of tasks performed is not compromised and provided that all the reporting obligations are covered. The consultant may propose additional experts as necessary and reasonable to complete the work. All personnel should be included in the financial proposal.

## 8. Qualifications and Experience of Professional Staff

The required qualification and experience of the key and non-key professional staff in the team are detailed as follows. All key staff are expected to speak and write English fluently. While some anticipated responsibilities are also included below for some key staff positions, these lists are not all-inclusive and it is the responsibility of the CONSULTANT to effectively manage its team to ensure that all items required in the scope for each task are completed.

### 8.1. Key Experts

#### 8.1.1. Team Leader/Transport Policy Specialist (International)

- Post-graduate degree in economics, public administration, political science, public policy, or related fields
- 15+ years' experience in transport policy formulation, transport strategy development, and transport sector regulation with at least one experience in one country other than his/her country of nationality.
- Practical knowledge of all transport modes and multimodal integration, including knowledge of sectoral strategies, regulatory frameworks, and international benchmarks
- Experience in analyzing complex policy issues using evidence and quantitative methods, guiding the development of policies and strategies, setting objectives, identifying priorities, and designing policies and strategies based on feasibility and impact



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**

- Strong skills in communicating with and influencing a wide range of stakeholders, including government officials, civil society, private sector, and international partners. This includes managing public consultations and ensuring buy-in from all relevant actors.
- Experience in managing multi-disciplinary teams for project delivery within time and budget
- Experience with multilateral institutions is an advantage

**8.1.2. Transport Planning Specialist (International)**

- Post-graduate degree in transport planning, civil engineering, urban planning, economics, or a related field
- 15+ years' experience in strategic planning of multimodal transport network, including road, rail, air, waterway, ropeway, sustainable transport (such as e-mobility) and non-motorized transport systems and their integration for intermodal connectivity with at least one experience in one country other than his/her own country of nationality.
- Experience in transport data collection and analysis, network analysis, travel demand modeling, forecasting for both passenger and freight flows at national and regional levels, economic analysis, and cost-benefit analysis
- Experience in developing long-term transport master plans, investment plans, and aligning transport infrastructure and service delivery with national and regional goals
- Practical knowledge of pricing, regulation, and competition across transport modes
- Knowledge of environmental and social impact assessment, climate adaptation, and mitigation strategies for transport systems.

**8.1.3. Transport Planning Specialist (National)**

- Post-graduate degree in Transport Planning, Transport Engineering or related fields
- 15+ years' experience in transport planning in Bhutan
- A national transport policy expert familiar with the workings of RGoB administrative systems, RGoB entities, inter-ministerial coordination, regional dynamics, transport related policies and regulations, and the legal and institutional frameworks that underpin transport policy development
- Experience in identifying policy needs, evaluating risks and policy options, formulating policies and strategies, and designing and implementing monitoring and evaluation frameworks to track policy implementation and outcomes
- Experience in complex, multi-stakeholder consultation processes for policy and strategy formulation



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ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT

- Excellent oral and written communication skills, including the ability to draft clear policy documents, reports, and presentations
- Able to communicate in Dzongkha language.

**8.1.4. Civil Aviation Policy & Regulatory Oversight Expert (International)**

- Post-graduate degree in civil aviation, aeronautical engineering, transport policy, public administration, law, economics, or a closely related field.
- Minimum 20 years of professional experience in the civil aviation sector, including leadership positions in a national technical aviation regulator and aviation policy-making bodies, with at least one experience in one country other than his/her own country of nationality.
- Proven international regulatory experience with ICAO SARPs and audit mechanisms (USOAP and/or USAP) and remediation mechanisms; EASA regulatory frameworks or equivalent international regimes
- Demonstrated knowledge and experience in master planning and strategy setting where constituent disciplines in the sector converge
- Experience in the South Asia region is a significant advantage.
- Leadership-level involvement in international aviation governance matters, including management of remediation of safety non-compliances, bilateral or multilateral negotiations with foreign civil aviation authorities or international organizations
- Demonstrated experience operating at ministerial, cabinet, or board level, including advising senior government leadership on aviation policy, regulatory reform, institutional design, and international compliance matters.
- Excellent drafting, analytical, and communication skills, with proven ability to lead high-level stakeholder consultations and produce policy notes, regulatory proposals, and legislative inputs suitable for government decision-making.

**8.1.5. Civil Aviation Planner (International)**

- Graduate degree in transport planning, civil or aeronautical engineering, economics, or similar
- Minimum 15 years of professional experience in aviation planning and analysis, including work at national, regional, or multi-airport system level for civil aviation authorities, airport authorities/operators, government agencies, or international consulting firms, with at least one experience in one country other than his/her own country of nationality.
- Demonstrated experience in aviation demand analysis and forecasting, including passenger, cargo, and aircraft movement forecasts, scenario development, and assessment of demand drivers and uncertainties.



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**

- Experience in the preparation or review of aviation master plans, national or regional aviation strategies, or long-term investment programs, with a clear understanding of how planning outputs inform policy, regulatory, and financing decisions.
- Familiarity with international aviation planning standards and guidance
- Ability to apply quantitative and analytical tools for planning purposes
- Experience working in developing or emerging market contexts, and in multi-stakeholder environments involving government agencies, regulators, airport operators, and service providers. Exposure to the South Asia region is highly desirable
- Strong analytical, drafting, and communication skills, with proven ability to prepare high-quality planning reports, technical notes, and presentation materials, and to support stakeholder consultations and technical discussions with government counterparts.

**8.1.6. Legal Specialist (National)**

- Bachelor's Degree in Law (LLB)
- 10 years' experience in drafting laws and legislation
- Able to communicate in Dzongkha language

**8.2. Non-Key Experts**

**8.2.1. Ropeway Specialist (International)**

- Bachelor's degree in civil engineering or a related field
- 15+ years' experience in ropeway system design, including ropeway technologies (aerial tramways, gondolas, chairlifts, etc.), route alignment, station design, and integration with other modes of transport, with at least one experience in one country other than his/her country of nationality.
- Experience in ropeway engineering, including mechanical, structural, and electrical engineering principles specific to ropeways
- Knowledge of international safety standards and best practices for ropeway construction and operation
- Knowledge of ropeway system operations, including scheduling, dispatch, and emergency procedures.
- Knowledge of preventive and corrective maintenance of ropeway infrastructure and rolling stock
- Knowledge of training program designs for ropeway technical staff, including licensing requirements, inspection, and compliance.

**8.2.2. Railway Specialist (International)**

- Post-graduate degree in railway engineering, economics, or a related field



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**ROYAL GOVERNMENT OF BHUTAN**  
**MINISTRY OF INFRASTRUCTURE AND TRANSPORT**  
**THIMPHU: BHUTAN**  
**ACCESS BHUTAN PROJECT**

- 15+ years' experience in passenger and freight rail planning, design, operation, and maintenance, with at least one experience in one country other than his/her country of nationality.
- Experience in integrating railways into multimodal transport networks and ensuring intermodal consistency in policy and regulation
- Knowledge of passenger and freight rail operations, including scheduling, traffic planning, and operational management systems
- Knowledge of climate and disaster resilience in railway design and operations, including adaptation of standards and emergency protocols
- Knowledge of international railway safety standards, including accident prevention and risk management.

**8.2.3. Waterway Specialist (International)**

- Post-graduate degree in civil engineering, economics, or a related field
- 15+ years' experience in waterway planning and management, with at least one relevant experience in one country other than his/her country of nationality.
- Expertise in the planning, design, construction, and maintenance of waterway infrastructure, including navigation channels, locks, terminals, and ports
- Knowledge of waterway classification systems and the technical requirements for different classes of waterways (e.g., channel depth, width, navigational aids, and vessel size compatibility)
- Knowledge of hydrological engineering, dredging, sediment management, and water level regulation to ensure navigability
- Knowledge of vessel types, design, operation, maintenance, vessel registration, and vessel safety and environmental standards.

**8.2.4. Flight Operations Specialist (International)**

- Post-graduate degree in civil aviation or similar
- 15+ years' experience as Flight Operations inspector; current or previous holder of ATPL License. Knowledge in relevant ICAO Annexes, with at least one relevant experience in one country other than his/her country of nationality.
- Demonstrated knowledge and on-the-job experience in Personnel Licensing (PEL) standards and implementation
- Experience in ICAO USOAP system and drafting aviation regulations and guideline materials in line with ICAO Standards
- Experience in aircraft accident/incident investigations with good knowledge about investigation procedures and ICAO annex 13 standards.



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**

- Should Know EASA rules and regulation framework
- South Asia experience is required.

**8.2.5. Aerodrome Specialist (International)**

- Degree in Civil engineering or equivalent
- Minimum of 10 years experiences in international aerodrome related fields. Knowledge in ICAO Annexes and Docs related to AGA, with at least one experience in one country other than his/her country of nationality.
- Experience in ICAO USOAP system and drafting aviation regulations and guideline materials in line with ICAO Standards
- Experience in identifying civil aviation policy needs and formulating policies and strategies.
- Experience in drafting civil aviation bills, and rules and regulations.

**8.2.6. Air Navigation Specialist (International)**

- Bachelor's Degree in Air Traffic Management (ATM) or related ANS fields
- Minimum 10 years of operational experience in the Air Navigation Services (ANS) field and 5 years of experience in Civil Aviation Regulatory functions, with at least one experience in one country other than his/her country of nationality.
- Experience in identifying civil aviation policy needs and formulating policies and strategies.
- Experience in drafting civil aviation bills, and rules and regulations.
- Knowledge in ICAO annexes, Documents, Guideline materials and the ICAO USOAP system.

**8.2.7. Aviation Security Specialist (International)**

- Bachelor's Degree in Aviation Security fields
- Minimum 10 years of operational experience in the Aviation Security field and 5 years of experience in Civil Aviation Regulatory functions, with at least one experience in one country other than his/her country of nationality.
- Experience in identifying civil aviation policy needs and formulating policies and strategies.
- Experience in drafting civil aviation bills, and rules and regulations.
- Knowledge in ICAO annexes, Documents and the ICAO USAP system.

**8.2.8. Airworthiness Specialist (International)**

- Bachelor's degree in Aeronautical/Aerospace Engineering, Mechanical Engineering, or a related discipline. A Master's degree in Aviation Management, Aviation Safety, or Engineering is highly desirable.
- At least 15 years of experience with a minimum of 10 years in regulatory authority roles, having significant responsibilities in airworthiness oversight, certification, and continuing



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**

airworthiness management, with at least one experience in one country other than his/her country of nationality.

- Demonstrated expertise in EASA Part-21, Part-M, Part-145, and Part-66 regulations or regulations comparable to those standards, with proven application in both industry and regulatory contexts.
- Strong knowledge of ICAO Annex 1(AML-related aspects), Annex 7, Annex 8, Annex 16, and related SARPs, including experience in aligning national regulations with international standards.
- Possession of an Aircraft Maintenance Engineer License (AMEL) will be considered an added advantage.
- Hands-on experience in aircraft certification, continuing airworthiness, and safety oversight processes, including audits, surveillance, and compliance monitoring and USOAP audits.
- Prior involvement in the development of aviation policies, strategies, or regulatory frameworks at the national or regional level in the area of Airworthiness.
- Proven experience in training and mentoring airworthiness inspectors, engineers, and technical personnel.
- Strong analytical ability, excellent communication, stakeholder engagement, and report-writing skills.

**8.2.9. Drone Specialist (International)**

- Post-graduate degree in electrical engineering or related fields
- 15+ years' experience in drone operations and piloting, familiar with the various drone types (fixed-wing, rotary, hybrid), with at least one experience in one country other than his/her country of nationality.
- Experience in designing safe and efficient flight plans, conducting airspace and ground risk assessments, and complying with regulatory requirements
- Experience in using drones for mapping, orthomosaic generation, 3D modeling, and terrain/volumetric surveys
- Knowledge of integrating and operating various sensors (e.g., high-resolution cameras, LiDAR, thermal, multispectral) for infrastructure inspection, environmental monitoring, and asset management
- Experience in processing and analyzing drone-acquired data for actionable insights, including the use of GIS and AI-powered analytics
- Knowledge of drone fleet operation and maintenance
- Knowledge of the logistical requirements for deploying drones, especially in remote or challenging environments

**8.2.10. Aviation Lawyer (International)**



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ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT

- Aviation Law degree, 15+ years' post-graduate experience, with at least one relevant experience in one country other than his/her country of nationality.
- Minimum 10–15 years of relevant professional experience in aviation law, air transport regulation, or closely related legal and regulatory fields.
- Demonstrated experience advising government ministries, civil aviation authorities (CAAs), or aviation regulators on legal, regulatory, or policy matters.
- Proven track record in drafting, reviewing, or reforming aviation legislation, regulations, and policy instruments, including civil aviation acts, secondary regulations, or regulatory frameworks.
- Proven experience with aviation legal frameworks, including but not limited to ICAO conventions, Standards and Recommended Practices (SARPs), bilateral and multilateral air services agreements, and related instruments. Demonstrated exposure to ICAO's USOAP CMA cycle.
- Previous exposure to South Asia is highly desirable.

**8.2.11. Gender and Social Specialist (National)**

- Bachelor's degree in Gender and social related field
- 10 years of relevant work experience in gender and social fields.
- Able to communicate in Dzongkha language

**8.2.12. Road Safety Specialist (International)**

- Bachelor's Degree in relevant field
- 10 years of relevant work experience in road safety, with at least one relevant experience in one country other than his/her country of nationality.

In addition to the above listed key experts as minimum requirements, the successful bidder is expected to demonstrate strong transport sub-sectors' and cross-cutting subjects' depth and breadth to complete the Assignment in good quality and on time. For example, the successful bidder is expected to demonstrate strong competencies in transport economics, ITS, road safety, resilient infrastructure, disaster preparedness, etc.

**9. Reporting and Coordination**

The consultancy firm will report to the Ministry of Infrastructure and Transport (MoIT) as follows:

- 9.1. **Policy and Planning Division (PPD), MoIT** - for National Transport Policy, Transport Strategy and Policy Protocol Report.
- 9.2. **Legal Division, MoIT** - for Surface Transport Bill and Civil Aviation Bill

Regular progress updates and draft reports will be submitted to the PPD and the Legal Division of MoIT.



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**

**10. Obligations of the Client**

- 10.1. Provide all relevant data, reports, and access to stakeholders.
- 10.2. Facilitate meetings, workshops, and consultations as required.

**11. Consultants' Obligations**

- 11.1. Ensure all deliverables are of high quality and submitted on time.
- 11.2. Maintain confidentiality and professional standards.
- 11.3. Arrange for all necessary logistics, including travel and accommodation.

**12. Key Stakeholders to be Consulted (but not limited to)**

- 12.1. Relevant Ministries and Local Governments (including Thromdes/Municipalities)
- 12.2. Department of Surface Transport
- 12.3. Department of Air Transport
- 12.4. Department of Human Settlement
- 12.5. Department of Infrastructure Development
- 12.6. Department of Trade (Ministry of Industries, Commerce & Employment, MOICE)
- 12.7. Department of Revenue & Customs (Ministry of Finance)
- 12.8. Department of Tourism
- 12.9. Department of Agriculture
- 12.10. Department of Law and Order
- 12.11. Department of Culture
- 12.12. Royal Bhutan Army
- 12.13. Royal Bhutan Police
- 12.14. Bhutan Civil Aviation Authority
- 12.15. Bhutan Construction and Transport Authority
- 12.16. National Center for Hydrology and Meteorology (NCHM)
- 12.17. Druk Holding and Investments
- 12.18. GovTech
- 12.19. Aero TECH Bhutan
- 12.20. Druk Air, Bhutan Airlines/Tashi Air, Drone Service Providers, Bhutan Air Services, Heli Bhutan Pvt. Limited
- 12.21. City Bus Service Office
- 12.22. Bus Operators, Taxi Association
- 12.23. CSOs and communities (including marginalized groups) e.g., Association of Bhutanese Cottage, Small, and Medium Industry Association (ABC SMI)
- 12.24. International partners
- 12.25. Private sector/industry groups



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**ROYAL GOVERNMENT OF BHUTAN**  
**MINISTRY OF INFRASTRUCTURE AND TRANSPORT**  
**THIMPHU: BHUTAN**  
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**13. Selection Procedure**

The Consultant will be selected following the Quality and Cost-Based Selection (QCBS) method as set forth in the World Bank Procurement Regulations for IPF Borrowers, September 2023.



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ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT

**Annex-I: Sectoral Challenges**

The following is an overview of the major challenges that the proposed National Transport Policy, National Transport Strategy, and Transport Bills need to address. The list of challenges is not exhaustive.

**1. Overall Transport Sector Challenges**

**Transport service delivery remains weak, characterized by limited connectivity between cities and rural areas and an overreliance on roads as the sole dependable mode.** The mountainous terrain and dispersed settlements exacerbate last-mile gaps, leaving many communities without fair, inclusive access to essential services. With alternative, greener modes, such as ropeways and other cable-based systems, railways, and waterways, largely absent or underdeveloped and not yet integrated into transport network planning, development, and management, the system is highly vulnerable to disruptions. Seasonal rains and natural disasters regularly interrupt road links, while border congestion and logistical inefficiencies raise costs, diminish reliability, and undermine competitiveness. Road safety is an increasing concern, compounded by challenging road alignments and poorly maintained vehicles. Although the economy depends significantly on tourism, the country lacks high-quality, sustainable transport services tailored to visitors. Meanwhile, emerging technologies like drones remain underutilized for logistics, performance surveillance, and emergency response, representing a missed opportunity to strengthen resilience and connectivity.

**Limited access to transport infrastructure and services exacerbates spatial inequality, leaving many regions with insufficient mobility options and, consequently, limited access to vital social and economic services and opportunities—ultimately constraining development.** These gaps are compounded by a lack of inclusivity in transport design and delivery, particularly for persons with disabilities, remote and hard-to-reach populations, children, and the elderly, who face disproportionate barriers to safe, affordable, and reliable mobility.

**Urban congestion is a growing challenge due to rising vehicle numbers, limited public transport options, and infrastructure that hasn't kept pace with demand.** The problem is compounded by insufficient traffic management, especially ineffective or absent parking policies in urban areas, and limited support for greener and non-motorized transport modes. The absence of a vehicle scrapping policy further keeps older, less efficient vehicles on the road, worsening congestion, emissions, and safety risks.

**Environmental degradation from transport is a growing concern.** In Bhutan, the transport sector accounting for 45% of energy-related emissions and 7.6% of total GHG emissions (NEC, 2011). Recent analyses highlight rapid motorization and emphasize the need to accelerate low-emission mobility, particularly public transport and EVs, through enabling policies, infrastructure,



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ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT

and incentives<sup>2</sup>. Common barriers to EV adoption include high upfront vehicle costs, insufficient charging infrastructure, lack of planning, such as planning for battery management, and limited public incentives.

**The transport sector lacks comprehensive, long-term, and integrated policy and strategy, supported by effective governance structures, regulations, and institutional frameworks.**

Although transport-related agencies were consolidated under the MoIT following the civil service reform, coordination challenges continue to persist during planning, budgeting, and implementation, both across departments and authorities, as well as between central and local governments. Technical and institutional capacities are limited, including shortages of expertise in alternative surface transport, inadequate human resources, weak uptake of innovative technologies such as AI, and insufficient capacity to monitor safety, standards, and environmental compliance. Planning is poorly integrated across land use, development, and service provision, resulting in few modal options and heavy dependence on a small number of corridors and a single dominant entry point, which creates significant vulnerability for trade and supply chains. Regulatory gaps persist for emerging modes, notably drones in the absence of a UTM system. These systemic issues are compounded by large funding and financing needs amid constrained resources and limited financial management skills, and by weak alignment of infrastructure development with Gross National Happiness (GNH) goals.

**Bhutan's current transport policies show broad alignment with its tourism and trade priorities, but the connections are often more aspirational than fully realized.** On the tourism side, policies emphasize eco-friendly mobility through electric vehicles, buses, and ropeways, consistent with the “high value, low volume” approach, yet actual infrastructure and digital systems to support visitor flows remain limited and fragmented. For trade, the policy rightly prioritizes cross-border road connectivity with India and regional frameworks like BBIN, but dependence on a single mode, namely roads, leaves the system vulnerable to congestion, weather disruptions, and rising freight costs. Progress on multimodal options, integrated digital platforms, and institutional capacity has been slow, with implementation lagging Bhutan's stated ambitions.

**Bhutan will benefit from a proactive approach to policy making.** For example, with the emergence of diverse aviation activities in Bhutan, such as private aircraft registrations by foreign nationals, non-commercial operations, unmanned traffic management (UTM), and others, it has become increasingly evident that the country currently lacks comprehensive policies to support such developments. Instead of repeatedly seeking policy directives from the MoIT, there is now a need to establish holistic policies that can provide overarching guidance to the Bhutan Civil Aviation Authority (BCAA). This will enable BCAA to be adequately prepared with the necessary regulations, requirements, and technical expertise to certify and oversee all feasible aviation activities in Bhutan effectively.

<sup>2</sup> The World Bank. 2024. Bhutan Country Environmental Analysis: Taking the Green Growth Agenda Further © World Bank.



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ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT

**Bhutan's adoption of digital technology in the transport sector is nascent.** The country has made visible strides in electric mobility, with policies supporting EV adoption and pilot charging infrastructure. However, current deployments of digital tools are modest while integrated platforms such as nationwide ITS, digital twins, and mobility data hubs are still in planning. Overall, Bhutan has strong policy direction, renewable hydropower advantages, and international support, but scaling up is limited by high costs, technical capacity gaps, and challenging mountainous geography.

## 2. Civil Aviation Sector Challenges

**The civil aviation sector lacks clear Strategy, action plan, and roadmap in civil aviation.** With the projected increase in aviation activity in the next decade, Bhutan Civil Aviation Authority (BCAA) needs to develop a well-defined strategy, action plan, and roadmap to attract foreign investment in the civil aviation sector, thereby facilitating the required modernization, upgrades, and expansion.

**The civil aviation sector faces significant professional capacity and retention challenges, including a shortage of adequately trained and experienced professionals and the absence of clear policies to retain qualified personnel.** There is no coherent strategy to prioritize recruitment of Bhutanese professionals over foreign hires illustrated by the recurring practice of employing expatriate first officers instead of providing opportunities to locally trained CPL holders or setting structured tenure limits to foster local talent. Additionally, the country lacks a clear plan to establish an aviation training institute to develop domestic expertise across key specialties such as flight crew, aircraft maintenance engineers, air traffic controllers, aviation legal, and quality and safety experts.

**There is an urgent need to improve effective implementation of Protocols Question in ICAO USOAP and USAP system.** Bhutan currently has an EI (Effective Implementation) score less than the Global average in many of the audit areas. However, with a clear policy, strategy, action plan, road map and bill amendment, it will help BCAA to work towards achieving some set goals to improve Bhutan EI score in ICAO USOAP (Universal Safety Oversight Audit Program) and USAP (Universal Security Audit Program) system.

**There is a lack of clarity on provision of aviation related services,** including Ground Handling services, Engineering and Maintenance Service, Catering services, Airport operation, Air Navigation Services, Aviation Security, and Aviation legal service.

**Bhutan's aviation policy framework needs clearer, better-coordinated strategies, particularly for designating restricted and prohibited areas where cultural and military considerations intersect, as current gaps and weak interagency coordination hinder implementation.**

**Bhutan's aviation policy relies on assumptions that need evidence-based review.** There has been no comprehensive assessment of aircraft import age limits or allowable operational lifespans, underscoring the need for detailed studies and impact assessments to safeguard safety, efficiency,



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ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT

and competitiveness. In addition, the 80% Bhutanese substantial ownership requirement for foreign airline operators may deter investment and competition; a thorough review is warranted to weigh national interests against industry growth and international best practices, and to consider potential revisions.

**Bhutan's aviation sector has notable policy and regulatory gaps.** Despite the country's carbon-negative status, there is no formal guidance for measures like Sustainable Aviation Fuel or carbon offset programs aligned with national principles. Coordination is fragmented, with no cohesive policy or strategy among government agencies and aviation service providers to meet national goals, establish a centralized emergency preparedness center, or provide aviation insurance guidelines. Additionally, there are no clear policies protecting passengers' rights and air carrier liability, nor policies promoting gender equality in the aviation field.

### 3. Conclusion

If these issues remain unaddressed, Bhutan risks undermining its GNH goals, missing the targeted economic growth rate, increasing socio-economic inequities, worsening its environmental footprint, and missing opportunities for innovation and regional integration.



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**

**Annex-II: Development Aspects Related to Civil Aviation**

1. Achieve and maintain the highest standards of aviation safety through rigorous regulation, continuous monitoring, accident/incident investigations and adoption of international best practices (e.g., ICAO standards).
2. Protect passengers, crew, aircraft, and aviation infrastructure from acts of unlawful interference through effective intelligence, screening procedures, and cybersecurity measures.
3. Establish a strong, independent, and well-funded regulatory authority to oversee and enforce safety and security standards.
4. Ensure affordable and convenient air connectivity within the country and to key international markets to facilitate trade and tourism, and encourage Foreign Direct Investment
5. Foster a competitive aviation market that benefits consumers through lower fares, better service, and more choices. This includes encouraging the growth of both full-service and low-cost carriers.
6. Stimulate job creation not just within airlines but across the entire aviation ecosystem (airports, maintenance, cargo, catering, tourism).
7. Make air travel accessible to a larger segment of the population through market competition, efficient operations, and rational taxation on aviation fuel and tickets.
8. Establish a strong and clear charter of passenger rights that addresses issues like delays, cancellations, denied boarding, and lost baggage, ensuring fair treatment.
9. Mandate high standards of customer service, accessibility for persons with reduced mobility, and transparency in pricing
10. Bhutan being a carbon-negative country, should commit to reducing the aviation sector's environmental footprint by promoting fuel-efficient technologies, sustainable aviation fuels (SAFs), optimized air traffic management to reduce emissions, and noise abatement procedures and align with international goals (like ICAO's CORSIA scheme) and invest in research and development.
11. Encourage the adoption of technologies like biometrics (for seamless travel), Artificial Intelligence (for predictive maintenance and customer service), and data analytics to improve efficiency across the sector.
12. Plan and develop airport infrastructure (runways, Taxiway, Apron, terminals, cargo facilities) that is efficient, scalable, and capable of handling future growth in traffic.
13. Modernize air navigation infrastructure to increase airspace capacity, reduce delays, and enhance safety and efficiency e.g., implementing SBAS (Satellite-Based Augmentation System), GBAS (Ground-Based Augmentation System), ATM (Air Traffic Management) systems, etc.



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**ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT**



**Annex-III: Key considerations for drafting the Surface Transport Bill**

1. Define roles and responsibilities
  - 1.1. Establish clear institutional mandates of the Ministry, Department of Surface Transport, Regulatory Authority, Traffic Management Division and Local government in relation to surface transport.
  - 1.2. Establish clear responsibilities of the Bhutan Construction and Transport Authority in registration of vehicles, machinery and equipment.
2. Development and maintenance of Surface Transport infrastructures
  - 2.1. Outline planning, financing, construction, and maintenance of surface transport infrastructure with clear roles and responsibilities.
  - 2.2. Set provision for road safety standards, enforcement mechanism, offences, and penalties for non-compliance.
  - 2.3. Adopt emerging technologies for better asset management and service delivery.
3. Regulatory framework for transport infrastructure
  - 3.1. Outline the surface transport regulatory framework.
  - 3.2. Ensuring standard, safety audits, and monitoring of surface transport infrastructure.
  - 3.3. Provide provision for penalties, offenses, and enforcement measures for violation of transport laws.
4. Non-motorized transport
  - 4.1. Provide a framework for non-motorized transport like bicycle, footbridge, etc..
  - 4.2. Vehicle Registration and regulation
  - 4.3. Provide a framework for licensing, vehicle registration, inspection, and emission control.
  - 4.4. Regulating passenger transport, freight transport, and taxis, including setting of fare regulations and service quality.
  - 4.5. Provide framework for regulation of transport
  - 4.6. Define responsibilities of accident investigation, data management, and preventive measures.
  - 4.7. Empower relevant authorities to carry out inspection, monitoring, and enforcement.
  - 4.8. Safety
  - 4.9. Establish a framework for safety and its enforcement for both infrastructure and transport.
5. Dispute Resolution and appeals
  - 5.1. Establish mechanism for grievance redressal, dispute resolution, and appeals related to surface transport, including transport service and enforcement actions
  - 5.2. Rule-making power



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ROYAL GOVERNMENT OF BHUTAN  
MINISTRY OF INFRASTRUCTURE AND TRANSPORT  
THIMPHU: BHUTAN  
ACCESS BHUTAN PROJECT



- 5.3. Define the scope of delegated legislation, standards, and guidelines for safe, efficient, and sustainable surface transport.

Other scope as per the Policy, Road Act and Road Safety and Transport Act

**Annex-IV: Key considerations for drafting the Civil Aviation (Amendment) Bill**

1. Define roles and responsibilities

- 1.1. Strengthen the roles and mandates of the Ministry, BCAA, and other aviation stakeholders. Improve governance mechanisms through clearer delineation of mandates and responsibilities of the Ministry, regulatory authority, and service providers including the department responsible for air transport to perform mandates as per the Act, ICAO requirements and other international conventions.
- 1.2. Provide for improved coordination mechanisms between the BCAA, air navigation service provided, airlines and airport operators.

2. Update and harmonize existing provisions

- 2.1. Harmonize the existing provisions with Civil Service Reform Act 2022, international aviation standards and obligations prescribed by the ICAO.
- 2.2. Resolve the Protocol Questions of the ICAO USOAP and USAP system to improve the EI score of Primary legislation of all Areas, including LEG, OPS, PEL, AWO, AGA, AIG, ANS and AVSEC.

3. Development of airport, airstrip, helipad, and other developments

- 3.1. Provide responsibilities for development of airport, airstrip, helipad, etc.
- 3.2. Set standards and requirements for the development.
- 3.3. Enable the establishment of aviation infrastructures and facilities for a competitive, safe and reliable aviation industry.
- 3.4. Facilitate growth and modernization of the civil aviation sector by enabling private sector participation, innovation and investment.
- 3.5. Facilitate enhancement of the capacity to ensure efficient and effective regulation, development of the aviation sector as per the national needs and global trends.
- 3.6. Explore use of sustainable aviation fuel (SAF)

4. Regulatory framework

- 4.1. Strengthen the regulatory framework

5. Safety and security



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**ROYAL GOVERNMENT OF BHUTAN**  
**MINISTRY OF INFRASTRUCTURE AND TRANSPORT**  
**THIMPHU: BHUTAN**  
**ACCESS BHUTAN PROJECT**

- 5.1. Enhance the standard of safety and security within the civil aviation system.
- 5.2. Introduce stronger safety and security measures to safeguard passengers, crew, and aircraft operations against emerging risks.
6. Licensing and certification
  - 6.1. Provide licensing of personnel, and certification of aircraft, aerodromes, and service providers
  - 6.2. Ensure regulatory independence and transparency in licensing, certification, and monitoring.
7. Air navigation and airspace management
  - 7.1. Provide a legal framework for safe, efficient, and sustainable air navigation services.
  - 7.2. Provide for use of new technologies, e.g., drones, UAVs, etc.
8. Aircraft Accident and Incident
  - 8.1. Improve the Effective Implementation (EI) score of AIG by incorporating clear provisions concerning the investigation of aircraft accidents and incidents in line with ICAO standards and resolve all the Protocol Questions in the ICAO USOAP system to improve the EI score of Primary legislation in AIG area.
9. Consumer rights and service standards
  - 9.1. Introduce provision for passenger protection, compensation, and grievance redressal mechanism.
10. Enforcement and dispute resolutions
  - 10.1. Strengthen provision on offences, penalties and enforcement power of the Authority.
  - 10.2. Establish a mechanism for dispute resolution, settlement and appeal on aviation-related conflicts.
11. International collaboration
  - 11.1. Support regional and international connectivity to enhance trade and tourism.

Other scope as per the Policy and harmonize the Civil Aviation Act 2016.