



# Project Information Document (PID)

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Concept Stage | Date Prepared/Updated: 11-Dec-2020 | Report No: PIDC29671

**BASIC INFORMATION****A. Basic Project Data**

Country Mongolia	Project ID P174007	Parent Project ID (if any)	Project Name Ulaanbaatar Sustainable Urban Transport Project (P174007)
Region EAST ASIA AND PACIFIC	Estimated Appraisal Date Mar 24, 2021	Estimated Board Date Jun 16, 2021	Practice Area (Lead) Transport
Financing Instrument Investment Project Financing	Borrower(s) Mongolia	Implementing Agency Municipality of Ulaabaatar	

**Proposed Development Objective(s)**

To build a comprehensive framework for Ulaanbaatar City to improve transport mobility for all users, and to demonstrate the congestion reduction, road safety and climate resilience improvement on select transport corridors.

**PROJECT FINANCING DATA (US\$, Millions)****SUMMARY**

<b>Total Project Cost</b>	70.00
<b>Total Financing</b>	70.00
<b>of which IBRD/IDA</b>	50.00
<b>Financing Gap</b>	0.00

**DETAILS****World Bank Group Financing**

International Bank for Reconstruction and Development (IBRD)	50.00
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**Non-World Bank Group Financing**

Counterpart Funding	20.00
Local Govts. (Prov., District, City) of Borrowing Country	20.00



Environmental and Social Risk Classification

Substantial

Concept Review Decision

Track II-The review did authorize the preparation to continue

Other Decision (as needed)

## B. Introduction and Context

### Country Context

- 1. Mongolia is a landlocked, lower-middle-income country with potential for growth thanks, in part, to its rich mineral resource endowment.** A traditionally agriculture-based economy has shifted to a mining-based economy during the past two decades, following the exploration of large mineral deposits and large flow of foreign direct investments to the mining sector. The country's economy experienced rapid yet volatile growth over the last 15 years, creating a wave of economic prosperity across the country with investments in its infrastructure and social services. However, the mining-led growth has resulted in severe macroeconomic instability and susceptible to external shocks, concentrated and enclave development, excessive capital accumulation and little innovation (The World Bank, 2019). The poverty rate (calculated using national poverty line) has dropped between 2010 and 2018 from 38% to 28% but remains high (National Statistics Office, 2020).
- 2. Realizing the drawbacks of depending heavily on the mining sector, the Government of Mongolia has started prioritizing its efforts to diversify its economy and achieve a sustainable economic growth.** The key development strategies, as set out in the Three-Pillar Development Policy of 2018 and Mongolia Sustainable Development Vision 2030, and more recently in Mongolia Vision 2050, propose to diversify Mongolia's economy and to be based primarily on agriculture, tourism and industry sectors. Infrastructure inadequacy that inhibits the competitiveness of these sectors has been highlighted in these policy documents as one of the bottlenecks to realize Mongolia's diversification agenda.
- 3. Global climate change and the ensuing increased risk of climate related disasters threatens the traditional way of living for many Mongolians living across its vast land territory raising and herding 71 million livestock.** Mongolia has a population of 3.17 million people occupying 1.55 million km<sup>2</sup> of land (National Statistics Office, 2020). It is among the least densely populated country with a density of 2 persons per km<sup>2</sup>. The rural population relies on pastoralism for livelihood. The extreme cold and long winters cause *dzuds* where many livestock die of starvation from unable to graze and from freezing. *Dzuds* have become more frequent (occurring every four to five years compared to every 10 years before) and harsher, killing more livestock. The Meteorology, Hydrology and Environmental Agency reported that 11.2 million livestock (30% of the total livestock) perished during the three winters of 1999 – 2002, and 10.3 million (23% of the total livestock) during the 2009 and 2010 winter alone.
- 4. Loss of livelihood due to *dzuds* has driven many rural Mongolians to the capital city Ulaanbaatar—the country's economic, financial, and political center—causing a massive rural-urban migration over the past two decades.** The population of Ulaanbaatar has increased from 780 thousand in 2001 to 1.45 million in 2019, an 87 percent increase,



while the national population grew only 32 percent during this time. Most of the rural migrants live in ‘ger’ areas, which are characterized by low-density settlements lacking adequate access to the basic services and infrastructure such as water, sanitation, paved roads, or formal public transport services. The built-up area of the city has increased three-fold between 1998 and 2017 from 160 km<sup>2</sup> to 537 km<sup>2</sup>, mostly in ger areas, according to the baseline study of the city’s upcoming Master Plan (Ulaanbaatar Design Institute, 2018). Ger areas now comprise 83 percent of the city’s built-up area and is home to 55 percent of its population (Ulaanbaatar Design Institute, 2018). Currently around 42 percent of the poor in Mongolia live in Ulaanbaatar (National Statistics Office, 2020). The rapid and unorganized expansion of the city and the weak fiscal capacity of the municipality has resulted in a number of urban management challenges, including inadequate public/municipal services, poor municipal asset management, and unequal access to services and infrastructure. The poor are particularly at disadvantage when it comes to the availability of essential services, including public transport, preventing them to access jobs and social services in the wider municipality (Singh, Guedes, Mulhausen, Dash, & Gadgil, 2017).

#### Sectoral and Institutional Context

5. **Municipality of Ulaanbaatar (MUB) has been facing challenges to meet the increasing urban transport demand from rapid urbanization.** The city’s latest Master Plan was approved in 2014 with its population projected to reach 1.4 million by 2030, which was surpassed in 2019 when the population reached 1.45 million. In addition, Ulaanbaatar has relatively high motorization rate (392 registered motor vehicles per 1000 people as of 2019) compared to its peer cities with similar income level.<sup>1</sup> In response to the drastic increase in private car ownership, from 258 thousand in 2012 to 417 thousand in 2019 (National Statistics Office, 2020), the MUB tried implementing policies to restrict car use.<sup>2</sup> Of the 2.3 million trips Ulaanbaatar citizens made per day in 2016, over half were by public transport (37.3%) or walking (15.3%), with slight increase in public transport trips but a sharp decline in walking trips compared with data in 2009; increasing share of private car trips (38.5%); and a stable percentage of trips by taxi (8.4%).<sup>3</sup>
6. **One top priority of the Government of Mongolia is to solve traffic congestion in Ulaanbaatar.**<sup>4</sup> Average travel speed in the city has halved since the 2000s to 16-20 km per hour on the main trunk roads.<sup>5</sup> The congestion issue reflects an overall dysfunctional urban mobility system in Ulaanbaatar. Rapid urbanization and growing motorization have generated increasing travel demand where origins and destinations are far apart due to low density and sprawling urban form. Poor public transport services and extremely lacking nonmotorized transport (NMT) facilities make walking and public transport even less efficient, which further encourages private car use. Due to the urban construction boom without proper land use and transport planning, Ulaanbaatar’s current 1100-kilometer-long street network is sparse, disconnected, and does not have a clear functional hierarchy causing inefficient traffic mix. Traffic

<sup>1</sup> Ulaanbaatar has a total 568,866 registered vehicles and a total number of 1.45 million population (National Statistics Office, 2020)

<sup>2</sup> The License Plate Restriction rule regulates the use of vehicles in UB based on the last digit of a vehicle’s license plate number to reduce the total number of cars on the road each day. Cars with license plate number ending with 1/6 cannot go on road in the city on Mondays, license plates ending with 2/7 on Tuesdays, 3/8 on Wednesdays etc. Therefore, only approximately 80% of the vehicles can be on UB’s roads each day of the week as a result of this rule. During the past few years, this rule has often been converted to “odd-even” numbers (only either odd or even numbers drive on each day) to cut the number of cars by 50% in response to severe congestion problems often during national holidays/start of school/special high-level visits etc.

<sup>3</sup> 2009 and 2016 Ulaanbaatar Household Travel Survey, from Sustainable Financial Strategy for Urban Transport Sector in Ulaanbaatar. World Bank, 2018

<sup>4</sup> For example, 2021-2025 Strategic Development Directions includes “Introduce multi-type, smart public transport systems, and provide hygienic and safe public transport stops”; the Government Action Plan 2020-2024 includes “Implement efficient preventative policies from road traffic accidents, crimes and violations to enhance road safety and reduce costs associated with road accidents; the Mayor’s Action Plan 2016- 2020 lists “Congestion Free Street–Stress Free City” as goal #2.5. The Master Plan 2030 Goal #2 lists “Livable city” with effective land planning, infrastructure and residential apartments – which includes the sub-goal of #2.10 Ensuring effective road network functional hierarchy; 2.10 Enabling efficient use of motor vehicles, developing urban road network, and improving the public transport system.

<sup>5</sup> <https://www.uncrd.or.jp/content/documents/7EST-B1G4-3p.pdf>



management and road safety facilities especially at junctions are ineffective, causing delays and traffic crashes, which also contribute to congestion. The streets are of overall poor quality and vulnerable to climate hazards—resulting in frequent closure of streets and causing delays and traffic congestion.

- 7. Ulaanbaatar is one of most polluted capital cities in the world.**<sup>6</sup> In 2019, the city's PM<sub>2.5</sub> level was higher than WHO safe level<sup>7</sup> for seven months of the year. Although the transport sector's footprint on Ulaanbaatar's air pollution is dwarfed by the city's power sector,<sup>8</sup> the transport sector contributes significantly to important pollutants, e.g. approximately 20-30% of the annual average PM<sub>10</sub>.<sup>9</sup> The root causes of the air pollution issue from transport include the large size and age of the vehicles in circulation, exacerbated by traffic congestion and poor road pavement condition as discussed previously. The vehicle fleet in the city is old and mostly second-hand, predominantly from South Korea (56% of nationally imported trucks) and Japan (93% of nationally imported personal vehicles) (National Statistics Office, 2020). Latest data show that 74% of the car fleet registered in Ulaanbaatar was over 10 years old and over 94% older than 7 years (National Statistics Office, 2020). In terms of buses, 60% of the current bus fleet is over 10 years old. Ulaanbaatar retired 211 buses at the end of 2019 and purchased 200 new buses. But another 12% of the current bus fleet will retire by end of 2020 and 60% by 2022 (Transport Department of the Capital City, 2019).
- 8. The increase in road crashes is damaging the economic competitiveness of the city.** Road traffic crashes saw drastic increase since the 2000s due to rapid urbanization, growing motorization, and deteriorating road conditions. It was reported that a total of 5,464 road traffic crashes happened in 2007 (9 deaths per 100,000 population) (EPOS Health Management, 2011) while 2019 reported a whopping 21,874 road traffic crashes (8.5 deaths per 100,000 population) in Ulaanbaatar (Transport Police Agency, 2019). Road traffic crashes in Ulaanbaatar make up 87% of total crashes happening in Mongolia (Transport Police Agency, 2019). Mongolia has recently enacted new road traffic rules and implemented a broad range of campaigns to promote safer road users, which has yielded positive results of reducing road crash fatalities in Ulaanbaatar (Transport Police Agency, 2019). Nevertheless, the cost of road crashes remains high for Mongolia, which is estimated as 5.5 percent of the national GDP, with most fatalities and injuries (84 percent) occur in the economically productive age groups (15–64 years)<sup>10</sup>. Since road safety falls under the responsibility of the Transport Police, most efforts have been focused on enforcement (revision of traffic regulations, equipment for traffic police) and education (campaigns to reduce speed, improve use of seat belts, and safe driving behavior). Very few actions have been taken to improve transport infrastructure, as there is no institutional set-up, financial resources, or technical capacity for crash data collection and analysis, road safety impact assessments, road safety audits, or network safety management to design or implement targeted interventions.
- 9. The public transport (PT) sector is struggling with service provision and financial sustainability.** The city's low density, sprawling land use, sparse road network and congestion pose challenges to efficient public transport provision: while it is costly to cover low-demand peripheral areas, it is also inefficient to operate high-frequency services through heavily congested corridors in the center area. Ulaanbaatar currently has no rail-based mass transit or Bus Rapid Transit (BRT) services, but only conventional buses. The total fleet of 1196 buses includes 20 articulated buses, 1105 standard buses, 50 trolley buses, and 21 small-size buses, operated by two state-owned operating

<sup>6</sup> Ulaanbaatar has been listed as the 5<sup>th</sup> most polluted capital city in the world in 2018, measured by the annual average PM<sub>2.5</sub>, see: <https://www.nationalgeographic.com/environment/2019/03/mongolia-air-pollution/>.

<sup>7</sup> Air quality guideline is an annual mean concentration guideline for particulate matter from the World Health Organization. The guideline stipulates that PM<sub>2.5</sub> not exceed 10 µg/m<sup>3</sup> annual mean, or 25 µg/m<sup>3</sup> 24-hour mean.

<sup>8</sup> The main source of UB's pollution is from household stoves fired by raw coal, which is the primary source of heat during winter months. There were 130 thousand registered stoves in ger areas as of 2014 (Air Quality Agency; [www.agaar.mn](http://www.agaar.mn))

<sup>9</sup> Ditto.

<sup>10</sup> World Bank (2019): Guide for Road Safety Opportunities and Challenges: Low- and Middle-Income Countries Country Profiles



companies (30% of the total fleet) and 16 other private bus operators (70% of the total fleet)<sup>11</sup> (Transport Department of Capital City, 2019). The bus system serves 840,000 passengers per day, approximately 68 passengers per hour per bus (World Bank, 2018b), with an average bus speed of 23.1 km per hour (Transport Department of the Capital City, 2019)<sup>12</sup>. While requiring high subsidies from city budget, the public transport sector of Ulaanbaatar is struggling to provide adequate services. Subsidies for bus operation represented 15% of the total MUB budget in 2020, covering 57% of the total operation costs while the farebox revenue recovers the rest 43%.<sup>13</sup> The burden of subsidies is sometimes much higher as the city is taking the revenue risk. On one hand, citizens are not satisfied with the route coverage, frequency, reliability, or comfort; on the other hand, the PT sector is underfunded with bus operators running an aging fleet with little profit for making improvement. This unsustainable financial situation stems from inefficient route design and service plan, low fleet productivity due to traffic congestion, lack of bus priority, an ineffective and inflexible fare policy, high levels of fare evasion caused by inefficient allocation of incentives, and the suboptimal contract with bus operators (World Bank, 2018b).

**10. The Ulaanbaatar's urban mobility system is disrupted by more frequent and severe natural hazards.** Urban flooding, storms surges, and severe winter events like *dzuds* are expected to have the strongest impact on the urban environment and transport infrastructure in Ulaanbaatar.<sup>14</sup> Besides changing temperature and precipitation patterns due to climate change, the construction boom in the city, the rapid expansion of ger areas, and the lack of flood prevention facilities have resulted in drastic increase in flooding risks in the city. The infrastructure including existing flooding facilities has been deteriorating while maintenance has been lagged and insufficient. Flooding and icing of roads and sidewalks seriously inhibit the mobility of the residents, cause safety issues, contribute to traffic congestion, and damage economic productivity. More frequent flooding of roads during the summer and freezing of the road asphalt during the winter also result in more rapid deterioration of road pavement. Climate vulnerability is exacerbated by weak planning and management capacity at the local level, with inadequate early warning systems, and lack of an enabling legal environment as well as technical capacity.

**11. The shortcomings of Ulaanbaatar's street network and urban transport system have been underscored and exacerbated by the COVID-19 pandemic.** The need for social distancing calls for a reallocation of road space to accommodate more trips on foot, bicycles and to release pressure on PT (with higher service frequency and more waiting area at stations). Due to the inadequate conditions for pedestrians, cyclists and PT users, a shift to private car trips has already been observed in Ulaanbaatar. This increases the pressure along vital corridors and makes access to critical destinations such as hospitals more challenging. Road space for NMT and PT access needs to be rethought to prevent further deterioration of the city's already high levels of traffic congestion and air pollution, and further increase in safety risks for vulnerable road users. Since the disruption created by COVID-19 has significantly changed people's perception of NMT, there is an opportunity to improve the currently inadequate conditions for cyclists and pedestrians. Currently, the absence of up-to-date travel activity data makes it difficult to respond to the impact of COVID-19 on travel demand and requires new innovative approaches for data collection to improve urban planning.

**12. The urban transport sector challenges described above hurt the vulnerable and low-income population disproportionately more.** Average commute time of Ulaanbaatar residents was estimated to be 37 minutes, which is relatively long given its total population and the size (World Bank, 2015). For those who do not own private vehicles, commuting takes on average almost twice as long by public transport than by car due to remoteness of bus stations

<sup>11</sup> [https://transport.ub.gov.mn/en/?page\\_id=937](https://transport.ub.gov.mn/en/?page_id=937)

<sup>12</sup> The average speed is calculated based on speed of all buses in operation, during the month of June 2019.

<sup>13</sup> Farebox recovery ratio is estimated as 43% for the first 7 months of 2019 (Transport Department of the Capital City, 2019), but only is only around 30% for the surveyed bus operators in the TA study conducted by the Bank team in 2017.

<sup>14</sup> Data from <https://thinkhazard.org/en/>



and the need for frequent transfers to reach the destination (World Bank, 2015). The low-income population living on the periphery in ger areas has very poor accessibility and mobility options. Only 10 percent of the roads in the ger area are paved. Unpaved roads are particularly difficult to navigate and can become impassible in harsh weather conditions. Low density, difficult landscapes, and poor-quality unpaved roads in these peripheral areas make formal bus service provision extremely challenging. Transport costs for low income families residing in the periphery areas can be prohibitive—adding up to 25 to 35% of the average household income in the ger area (World Bank, 2015). Among the 131 road crash fatalities in 2019 happening in Ulaanbaatar<sup>15</sup>, 67% were pedestrians, the most vulnerable road users (Transport Police Agency, 2019).

**13. The MUB lacks institutional capacity to efficiently allocate its limited financial resources to the growing infrastructure investment needs.** It was estimated that a capital investment of more than USD 20 billion is needed to reach the long-term goals in the Ulaanbaatar Master Plan until 2030 (World Bank, 2018a). However, Ulaanbaatar reported total revenues of, inclusive of intergovernmental transfers, ranged between USD 195 million in 2016 and 300 million in 2019.<sup>16</sup> The lack of funding permeates to every aspect of the urban transport sector, and the effects of the financial constraints is further worsened with inefficient planning and management practices. The public transport sector is highly dependent on municipal subsidies, whilst not being able to ensure enough profit margins for bus operators to improve its fleet, operations and services. The city's street network is quickly deteriorating with lags in repair and maintenance, resulting in costly rehabilitation and reconstruction. With the support from the World Bank, the city has just started to build an inventory of its transport infrastructure assets, develop strategies towards long- and medium-term asset management as well as tools to effectively prioritize its investment (World Bank, 2020).

**14. Without a cohesive vision or comprehensive strategy for urban transport, the MUB has been implementing piecemeal urban transport initiatives and programs over the past decade.** Investment decisions have been scattered among poorly coordinated and unsolicited projects with financial assistance from bilateral and international partners. The Asian Development Bank (ADB) has the largest presence among other International Financial Institutions (IFIs) in terms of providing financial assistance to Mongolia in the transport sector. ADB's portfolio includes a multi-tranche investment program for the construction of a BRT system for Ulaanbaatar. The Japanese International Cooperation Agency (JICA) financed the construction of a road, a flyover and a prefeasibility study for a light rail. The European Bank of Reconstruction and Development (EBRD) has actively provided financing for construction of road sections and pre-feasibility study on Bus Fund for the upgrade of Ulaanbaatar's public transport fleet. The multitude of interventions from various development partners have been implemented with little coordination and overall vision to improve Ulaanbaatar's urban transport system in a comprehensive manner.

#### Relationship to CPF

**15.** The Project is well aligned with the objectives and pillars of both the currently effective FY2013-17 World Bank Group Country Partnership Framework (CPF) and the draft CPF for FY19-24. The FY2013-17 CPF is based on three pillars: (i) enhancing Mongolia's capacity to manage the mining economy sustainably and transparently, (ii) building a sustained and diversified basis for economic growth and employment in urban and rural areas, and (iii) addressing vulnerabilities through improved access to services and better service delivery, safety net provision, and improved disaster risk management. The draft FY2019 – 24 CPF has three focuses: (i) improving governance, (ii) increasing competitiveness, and (iii) strengthening human development and resilience. The proposed Ulaanbaatar Resilient Urban Mobility Project aims to help alleviate the urban transport infrastructure bottleneck of accessing jobs, economic opportunities and public services in its capital city Ulaanbaatar for the most vulnerable population living in the peripheral areas of the city. This is planned to be achieved through more resilient and sustainable transport sector governance, planning and

<sup>15</sup> At the national level, road fatalities were 561 as of 2019.

<sup>16</sup> Source: Budget Amendments 2016 – 2019.



safe urban transport service provision. The enhancement of the transport infrastructure in the political, economic and financial capital of Mongolia will not only improve the lives of its residents, particularly the vulnerable population, it will also enhance the competitiveness of the city, and overall the economic competitiveness of the country, on the international arena to attract more investment and global collaboration. Therefore, the project will contribute to (ii) and (iii) of CPF FY2013-17; and (i), (ii) and (iii) of draft CPF FY2019-24.

### C. Proposed Development Objective(s)

16. To build a comprehensive framework for Ulaanbaatar City to improve transport mobility for all users, and to demonstrate the congestion reduction, road safety and climate resilience improvement on select transport corridors.

Key Results (From PCN)

17. The project's results framework will be finalized during project preparation. The achievement of the PDO will be measured by the following set of proposed indicators:

#### ***Comprehensive framework to improve transport mobility for all users***

- 1) number of key strategies/plans the city adopts in the following four areas: (a) sustainable urban mobility strategy, (b) transport infrastructure asset management and planning; (c) road safety, and (d) public transport reform

#### ***Demonstrate congestion reduction, road safety, and climate resilience improvement on select transport corridors***

- 2) Peak-hour journey time (or variation) by buses and cars on selected transport corridors
- 3) Number of fatalities and serious injuries from road traffic crashes on selected transport corridors, segregated by four road user types (vehicle occupants, motorcyclists, pedestrians and bicyclists) and gender
- 4) Number of days per year that any portion of the selected transport corridors is not passable due to flooding
- 5) Public engagement efforts to collect issues, satisfaction level, and suggestions on walking and biking environment at different stages of activities implementation (***citizen engagement indicator***)

### D. Concept Description

18. The piecemeal urban transport interventions, unsolicited project proposals, and uncoordinated donor programs have resulted in inefficient (sometimes wasteful) investments that have had little effect on the city's traffic congestion, air pollution, road safety and quality of public transport services. Addressing UB's multi-faceted urban transport problems will require a comprehensive program that can build a well-functioning and integrated urban transport system. Over the last six years, the World Bank team and MUB officials have been working on a series of technical assistance program. Outputs of this ongoing collaboration include completion of a detailed sector diagnostics, and development of sector strategies with specific recommendations for improving capital investment planning, transport infrastructure asset management, public transport financial sustainability, bus management system, passenger information system, mass transit deployment, road safety, and climate resilience.

19. The outcomes of these TAs have culminated with the identification of a **Sustainable Urban Transport for Ulaanbaatar (SUTU) Program**, which is proposed to be financed under this proposed project. The SUTU Program is designed to strengthen the policy, institutional, and financing framework governing the provision of urban transport services and includes a multi-year investment program aimed at achieving improved accessibility and mobility of the city's residents. The SUTU Program will help MUB move from its piecemeal and fragmented approach to addressing the root causes of the urban transport issues discussed above in a comprehensive manner, including: (1) lack of a comprehensive strategy & weak planning and management capacity; (2) sparse and disconnected street network; (3) inefficient public transport services & poor pedestrian facilities; and (4) lagging traffic management & road safety considerations. SUTU Program will help MUB develop a comprehensive strategy and an action plan for the sustainable



development of Ulaanbaatar’s urban transport, with concrete and achievable target outcomes and indicators to track the progress towards those outcomes.

20. Because SUTU is a multi-faceted program involving multiple agencies and sector issues, GoM and MUB will need to be committed in the long-term and significant financial and institutional resources are required. Secondly, the implementation of the program will require flexibility and adaptation. As such, the proposed project includes a *Framework* of the SUTU program to help MUB to identify, prioritize, sequence, prepare and implement activities regardless of funding sources. The *Framework* defines the project components and candidate activities, and a multi-criteria selection methodology to identify the details of the candidate activities to be financed. These selection criteria and methodologies are developed from analytical works and will be documented in the Project’s Operations Manual (POM). During project preparation, a pool of potential activities will be identified. During implementation, responsible MUB agencies with the support of the Bank team will use the *Framework* and selection criteria to select and implement the priority activities from the pool on a rolling basis, until all the loan amount is fully utilized.
21. Using the Framework approach has several advantages over identifying all project activities during project preparation. First, it provides MUB and the Bank flexibility in activity selection and implementation sequencing depending on government’s changing priorities, fiscal space, and implementation capacity. This will simplify the procedure and significantly reduce the transaction costs to adapt to changing and unforeseen circumstances, and thus avoid the bureaucratic burden of project restructuring and government approval during implementation. In addition, the Framework approach focuses on building capacity of the MUB and its relevant agencies in planning, designing, implementing, and managing urban transport activities, which would be gradually institutionalized to enhance client ownership, sustainability, and long-term impact.
22. The proposed **SUTU Program** includes the following three components:

**Component 1: Building effective institution for transport planning and management (est. total cost: US\$ 6 million, IBRD loan: US\$ 5 million)**

23. This component aims to help the MUB develop a sustainable and agile institutional framework guided by a cohesive vision and comprehensive strategy for urban transport development. This component will help the MUB carry out reforms in the transport infrastructure planning and management, operation, and service provision—resulting in an effective system to be sustained beyond the proposed project’s life. The studies, tools, and capacity built under this component will also help identify the activities and facilitate the implementation of the other project components.
24. This component includes strategic studies and capacity building activities in several key thematic areas, filling the gaps identified by previous TAs: (a) vision & strategy; (b) transport infrastructure asset management; (c) road safety using the *Safe System* approach, from building crash data platform to evidence-based measures for safe users, safe speeds, safe roads, and safe vehicles, linking with investment prioritization in (b) and the implementation of measures in selected corridors and ITS activities proposed in Component 2; and (d) public transport reform. This component will build on existing institutions of MUB, with the governor and mayor’s office as main counterpart.
25. Candidate activities include (with priority activities ready to be implemented shown with a ✓):

**1.1 Strategic studies:**

**(a) vision & strategy**



- A sustainable and resilient urban mobility strategy for Ulaanbaatar, including institutional, financial, and technical recommendations and action plans. This strategy will be supported by travel demand management, accessibility and congestion analyses.
- Parking management policy and plan

**(b) transport infrastructure asset management**

- ✓ Transport Asset Management Plan (TAMP) and tools for investment prioritization (using innovative technologies) mainstreaming road functional hierarchy and criticality analysis, climate resilience, and road safety considerations, with emphasis on maintenance, operation, and monitoring

**(c) road safety**

- ✓ A Road Traffic Crash Data Platform (e.g. deployment of the World Bank crash data analysis tool *Data for Road Incident Visualization Evaluation and Reporting*, i.e. DRIVER) leading to the identification and prioritization of remedial measures comprising engineering, education and enforcement activities
- ✓ A Speed Management Plan leading to more appropriate speeds on the road network, and identification of traffic calming measures

**(d) public transport reform**

- Policy and institutional framework for private sector participation in Ulaanbaatar’s urban transport sector, including the restructuring of PT sector operation, fare and operator contract structures.
- Smart integrated PT system towards Mobility-as-a-Service (MaaS) including bus network design and route planning, on-demand transit services, and integration with new mobility technologies

**1.2 Capacity building and implementation support**

- ✓ Project management and implementation support, including Project Management Unit (PMU) support, technical designs, environmental and social studies, public consultation and engagement, monitoring and evaluation
- Capacity building activities that will support the implementation of the above strategies: workshops, trainings, conferences, study tours for government departments and technical staff

**Component 2: Integrated Corridors (est. total cost: US\$ 45 million, IBRD loan: US\$ 35 million)**

**26.** This component targets Ulaanbaatar’s sparse and disconnected street network, aiming to increase the efficiency of the existing road space to benefit all users and to reduce congestion, and to improve climate resilience and road safety of these corridors. The integrated corridor concept focuses on enabling a street network with a functional road hierarchy (FRH)<sup>17</sup>, and providing PT and NMT priority on selected corridors using a complete street concept.<sup>18</sup> The MUB will utilize evidence-based transport infrastructure asset management practices and tools to select the priority road sections and intersections, together with adjacent streets feeding into the corridor and impacting it, and design

<sup>17</sup> A Functional Road Hierarchy (FRH) is a way of defining roads by their functions rather than their physical characteristics or their operating characteristics or their design standards. Functions can be broadly categorized into environmental, access, local traffic, through traffic. Most roads perform many functions and they are often not clear cut. Roads are not just for moving vehicles and for all road users a balance needs to be achieved between traffic capacity; environment; speed; safety; convenience; and comfort. The Master Plan of 2030 lists ‘Effectively defining the functional hierarchy of UB’s roads’ as Goal #2.10 within the Priority Directions.

<sup>18</sup> Complete Streets are streets with safe and continuous footpaths, segregated cycle tracks, safe pedestrian crossings with refuges, uniform carriageway and organized on-street parking. These streets prioritize safety, convenience, and comfort of all users regardless of their age, ability, or mode of transportation. By promoting NMT, complete streets help in achieving the sustainability and livability goals of the city (ITDP, 2019).



interventions, building on the methodology and recommendations of previous and further TA analytical works included in Component 1.1 (b) transport infrastructure asset management and (c) road safety. Specifically, infrastructure improvement in Component 2.1 as well as the ITS in Component 2.2 will utilize road safety inspection results (previous TA), conflict analysis and crash data analysis in Component 1.1 (c), and focuses on intersections, curb and sidewalk, NMT lane, traffic signs and marking, traffic signals, and access to PT stations to improve safety especially for vulnerable groups such as pedestrians, women, children, and elderly. While the TAMP in Component 1.1 addresses important management and maintenance issues of relevant transport assets, corridor-specific infrastructure design in Component 2.1 will also incorporate improvement to drainage and pavement to reduce risk of being flooded or disrupted by icing.

27. The main government counterparts (implementing entities) will be the Road Development Department (RDD) of the MUB, the Transport Police, and the Traffic Control Center (TCC).

28. Specific interventions on the selected priority corridor could include (with priority activities ready to be implemented shown with a ✓):

### **2.1 Corridor-specific infrastructure investments**

- ✓ Type 1: **Repair** of selected priority road sections and installation of additional traffic engineering facilities such as markings, traffic signals, traffic signs, barriers, guardrails
- ✓ Type 2: **Reconfiguration** of select street cross sections to allocate more space to sidewalk, bus priority lanes and bus stops, bike lanes, and intersection channelization involving civil works
- Type 3: **Reconstruction** of corridor to improve network connectivity and serving ger areas—may need land acquisition to widen the existing roadway

### **2.2 Intelligent Transport Systems (ITS)**

- Upgrade of centralized systems such as Area Traffic Control and traffic control center
- Upgrade of on-street ITS equipment such as e-police, traffic signals and cameras.

### **2.3 Smart Parking Management System**

- Development and operationalization of a smart parking management system, including the procurement of hardware and development of software

## **Component 3: Sustainable Public Transport System (est. total cost: US\$ 19 million, IBRD loan: US\$ 10 million)**

29. This component aims to help the MUB transform the PT sector by improving quality of service, expanding access to previously unserved population groups, facilitating integration with other modes, making it more attractive to owners of private vehicles and thus improving its efficiency. The main government counterpart is the Public Transport Agency (PTA) of MUB. Building on the previous TA works such as Sustainable Financial Strategy for Public Transport Sector in Ulaanbaatar and the studies carried out in Component 1.1 d) public transport reform, this component focuses on public sector interventions that would while enable private sector participation while improving service quality to users. Specific investments in sustainable and integrated public transport include:

- Bus fleet upgrading



- PT transfer stations, terminals (including charging facilities)
- Integrated bus management and e-ticketing solutions
- On-demand transit service

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

- 30.** The program is designed to improve systematic planning, infrastructure investments and management of urban transport system in Ulaanbaatar (UB). The investments are anticipated to bring overall environmental benefits with improved drainage and climate adaption on critical corridors, reduced GHG emission from urban transport and improved safety of urban transport system in the city.
- 31.** The environmental risk of the Project is proposed to be Substantial at concept stage given the undetermined subproject activities and limited capacity of the Borrower, as elaborated below: a) The project-associated risks and impacts will be largely site-specific and will mainly occur only during construction since works under the project will mainly involve rehabilitation and/or improvements of existing rights of way (ROW) and other small-scaled construction activities (e.g., PT transfer stations/terminals). Nevertheless, road subprojects and their locations are largely undetermined at this point. b) Potential environmental risks and impacts mainly relate to construction nuisance that can be managed through implementation of engineering measures and good construction site management. Site-specific risks and impacts of some road improvement works will be screened, assessed and managed in site-specific ESIA/ESMPs to be prepared during project implementation when the locations of these roads are known, and detailed designs are prepared. c) Based on recent engagement of the World Bank with the Municipality of Ulaanbaatar, overall E&S capacity of the borrower is considered to be low. A detailed assessment of the implementation capacity of each implementation agency will be conducted during project preparation, and necessary measures will be taken to strengthen the Borrower’s E&S management capacity as needed to support project preparation and implementation. This risk rating will be re-visited and adjusted, where needed, during project preparation as more information becomes available.
- 32.** The social risks are Substantial. The project has the potential to create or exacerbate a range of social risks such as exclusion of vulnerable people in project prioritization and decision-making processes, as well as specific risks associated with land acquisition, business impacts and livelihoods. Although no land acquisition will be required (or permitted) for Type 1 and Type 2 physical investments, land acquisition can be expected to be relevant to Type 3 physical investments which are larger in scale. Notwithstanding that Type 1&2 project activities will not need land acquisition, parts of the road corridor in UB accommodate informal businesses which operate on a permanent or seasonal basis; these and potentially other activities have the potential to be affected by the project and also to be complicated to manage. Type 3 activities are likely to have more significant risks including land acquisition and potential impacts (and benefits) on vulnerable groups which will bring social and project delivery risks. Potential increased risk of gender based violence (GBV) due to labor influx is considered moderate due to the nature of project where the labor-force will be small and all activities will be located in the UB city areas removing the risks associated with construction camps and remoteness. If the project only proposed Type 1 & 2 activities, the Social Risk Rating



would be Moderate; the Substantial risk rating is proposed due to the risks associated with Type 3 activities which will be assessed via the studies proposed during early implementation under Component 1.

- 33.** It is proposed that an ESMF and RPF be prepared by the client prior to appraisal to address the overall project activities (physical and analytical) against requirements of the ESF and the ESSs. This ESMF and RPF will include social and environmental assessments at a framework level for Type 1 or Type 2 projects which are anticipated to be commenced in Year 1 or 2 of the project including sub-project criteria and exclusions (e.g. no land acquisition) for these early works. The social assessment included in the ESMF will also define additional assessment work to be undertaken during project preparation. The instruments will establish specific E&S management approaches for each type of physical investment over the medium to long term as well as document critical matters for consideration in the range of analytical work under Component 1. In addition, a generic ESMP will be developed as part of the ESMF to provide guidance on E&S mitigation strategies for road repair, maintenance and reconstruction works proposed under the project.
- 34.** Criteria established during project design will be documented in the ESMF and RPF and used to identify which sub-projects can be funded by the project. Importantly, they will also establish criteria for when sub-projects may be considered to be 'Associated Facilities' such as road sections or other investments which would not be viable in the absence of the Bank supported project. Approaches and requirements for management of E&S risks of Associated Facilities will be established. For chosen sites/corridors, subsequent ESAs/ESMPs will be prepared, disclosed, reviewed by the Bank and incorporated into bidding documentation for these activities.

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**APPROVAL**

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