

The Study on City Master Plan and Urban Development Program of Ulaanbaatar City (UBMPS)

FINAL REPORT / Volume 3
Project Profiles



March 2009

ALMEC Corporation
Oriental Consultants Co., Ltd.
Aero Asahi Corporation

Japan International Cooperation Agency
Ministry of Roads, Transportation,
Construction and Urban Development
Ulaanbaatar City Government

THE STUDY ON
CITY MASTER PLAN AND URBAN DEVELOPMENT
PROGRAM
OF
**ULAANBAATAR CITY
(UBMPS)**

Final Report
Volume 3: Project Profiles

March 2009

Tugrug (Tg.) 1 = 0.081 Yen
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(exchange rate of December 2008)

PREFACE

In response to a request from the Government of Mongolia, the Government of Japan decided to conduct a study on The Study on City Master Plan and Urban Development Program of Ulaanbaatar City in Mongolia and entrusted to the study to the Japan International Cooperation Agency(JICA).

JICA selected and dispatched a study team headed by Dr. Shizuo IWATA of ALMEC Corporation and consist of ALMEC Corporation, Oriental Consultants Co., Ltd. and Aero Asahi Corporation between February, 2007 and March, 2009.

The team held discussions with the officials concerned of the Government of Mongolia, and conducted field surveys at the study area. Upon returning to Japan, the team conducted further studies and prepared this final report.

I hope that this report will contribute to the promotion of this project and to the enhancement of friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of Mongolia for their close cooperation extended to the study.

March 2009

Eiji HASHIMOTO,
Deputy Vice President
Japan International Cooperation Agency

March 2009

Eiji HASHIMOTO

Deputy Vice President
Japan International Cooperation Agency
Tokyo

Subject: Letter of Transmittal

Dear Sir,

We are pleased to formally submit herewith the final report of the Study on City Master Plan and Urban Development Program of Ulaanbaatar City.

This report compiles the results of the study which was undertaken both in Mongolia and Japan from February 2007 to March 2009 by the Team comprising ALMEC Corporation, Oriental Consultants Co., Ltd., and Aero Asahi Corporation.

We owe a lot to many people for the accomplishment of this report. First, we would like to express our sincere appreciation and deep gratitude to all those who extended their extensive assistance and cooperation to the Team, in particular Ministry of Roads, Transportation, Construction and Urban Development in Mongolia and Ulaanbaatar City Government.

We also acknowledge the officials of your agency, and the Embassy of Japan in Mongolia for their support and valuable advice in the course of the Study.

We hope the report would contribute to the sustainable development of Ulaanbaatar City.

Very truly yours,

IWATA Shizuo
Team Leader
Study on City Master Plan and Urban Development Program of Ulaanbaatar City (UBMPS)

**The Study on City Master Plan and Urban Development Program
of Ulaanbaatar City (UBMPS)**

Final Report

Volume 3: Project Profiles

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Name of Organizations

CMPUA	City Maintenance and Public Utilities Agency
MECS	Ministry of Education, Culture and Science
MET	Ministry of Environment and Tourism
MFALI	Ministry of Food, Agriculture and Light Industry
MHFC	Mongolian Housing Finance Corporation
MIAT	Mongolian International Air Transportation
MJIA	Ministry of Justice and Internal Affairs
MME	Ministry of Minerals and Energy
MOF	Ministry of Finance
MOFR	Ministry of Foreign Relations
MOH	Ministry of Health
MSWL	Ministry of Social Welfare and Labor
MRTCUD	Ministry of Road, Transport, Construction and Urban Development
MSWL	Ministry of Social Welfare and Labor
MUDI	Mongolian Urban Development Institute
MUST	Mongolian University of Science and Technology
NUOM	National University of Mongolia
USUG	Ulaanbaatar Water and Sewerage Authority

This volume of Report (Vol.3: Project Profiles) compiles a development program to realize the Ulaanbaatar City Master Plan 2030. The Development program consist of a long list which indicates all projects/programs to be implemented up to the target year 2030, and a short list which highlights priority projects/programs to be materialized by an intermediate milestone, the year 2015.

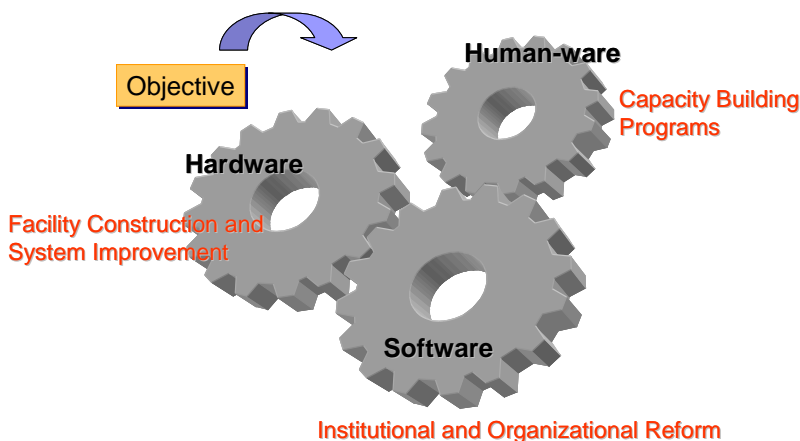
These priority projects/programs are profiled in this volume, showing basic concept, indicative cost, responsible entities, planning rationales and other information to feature them. Urgent preparatory action is expected to be taken towards the implementation of these priority projects/programs.

1. CITY DEVELOPMENT PROGRAM

1.1 General

Based on the revised City Master Plan and the proposed city planning system, a draft of the “Ulaanbaatar City Development Program,” with 2020 and 2030 as its targets periods, has been compiled. It addresses a strategic framework to achieve the city’s development goals and objectives. In the process of the formulation of the program, the close discussion and coordination with the Mongolian Side and other donors were made to make the program as the most common base for the development of Ulaanbaatar City. Nevertheless, the program as presented herewith is still subject to changes based on the further elaboration of processes and procedures.

The Ulaanbaatar City Development Program consists of three (3) components, that is hardware, software, and human capital. The hardware shall include the improvement and/or development of social and economic infrastructures. In particular, two projects are provisionally given high priority: one is transportation to enhance people’s mobility with well-functioning public transportation system, road network and comprehensive traffic management measures; and the other is a water-related program to supply fresh water to all citizens and improve the sewerage capacity against degradation of the urban environment



Meanwhile, the software component includes the improvement and/or development of legal system and financial mechanism to support efficient growth management and implement the programs proposed in the new Master Plan 2020 and 2030. The most vital and urgent issue is to prepare the supplemental institutional and administrative system in a

comprehensive legal framework for the Urban Development Law which was recently amended in May 2008. The human capital component includes capacity building program in urban planning administration of both the central and city governments. This component should be incorporated into both the hardware and software components.

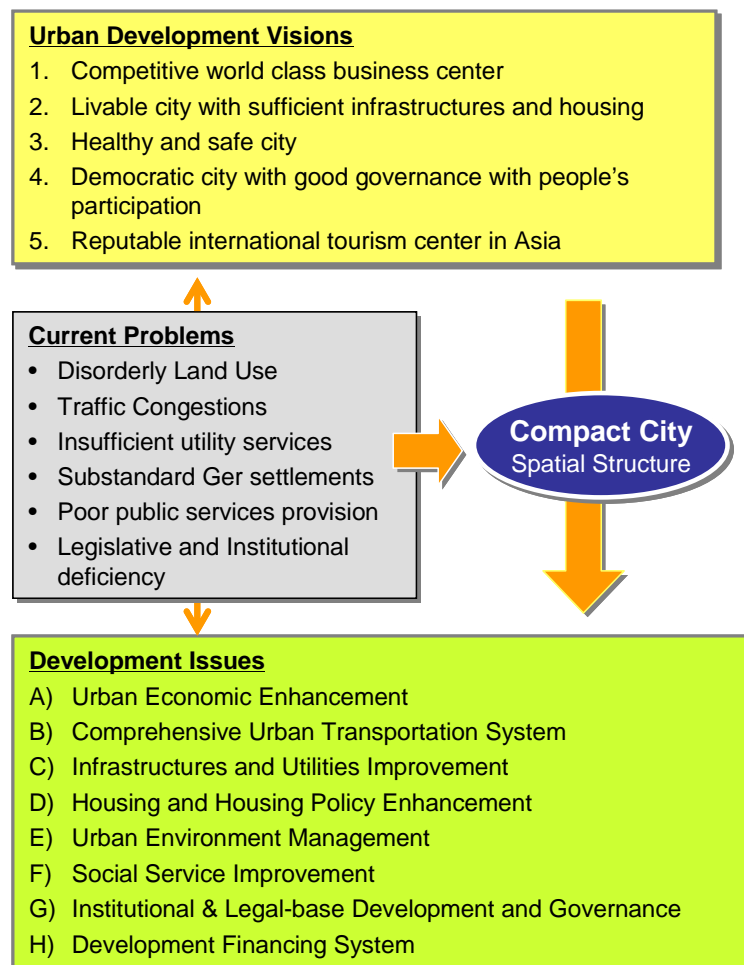
1.2 Overall Program until 2030 (Long List)

From the long-term perspective, and based on findings of current problems, development programs to be carried out for Ulaanbaatar City were considered for major sectors related to the urban planning issues such as (see Figure 1.2.1):

- Urban Economic Enhancement;
- Urban Transportation;
- Infrastructures and Utilities (Urban Water & Sanitation; Electric Power; Heating System;

- Telecommunication; Solid Waste Management);
- Housing and Housing Policy Enhancement;
- Urban Environment (Living Environment Improvement; Environmental Management; Urban Amenity & Disaster Management);
- Social Service Improvement;
- Institutional & Legal-base Development; and
- Development Financing System

Figure 1.2.1 Overall Framework for Formulating Development Programs



Source: JICA Study Team

Since development issues were identified in consideration of how to achieve the development visions, there are close interrelations between both as shown in Figure 1.2.2. One vision cannot be achieved only with the solution of one issue, but needs composite solutions through their direct and indirect effects. On the same way, one program to solve one issue often brings multiple impacts on the achievement of multiple visions.

While, there are also inter-linkages among the development issues, as shown in Figure 1.2.3 and such mutual relations should be considered to formulate development programs. None of programs cannot be standing alone, but every program has explicit and implicit impacts to others.

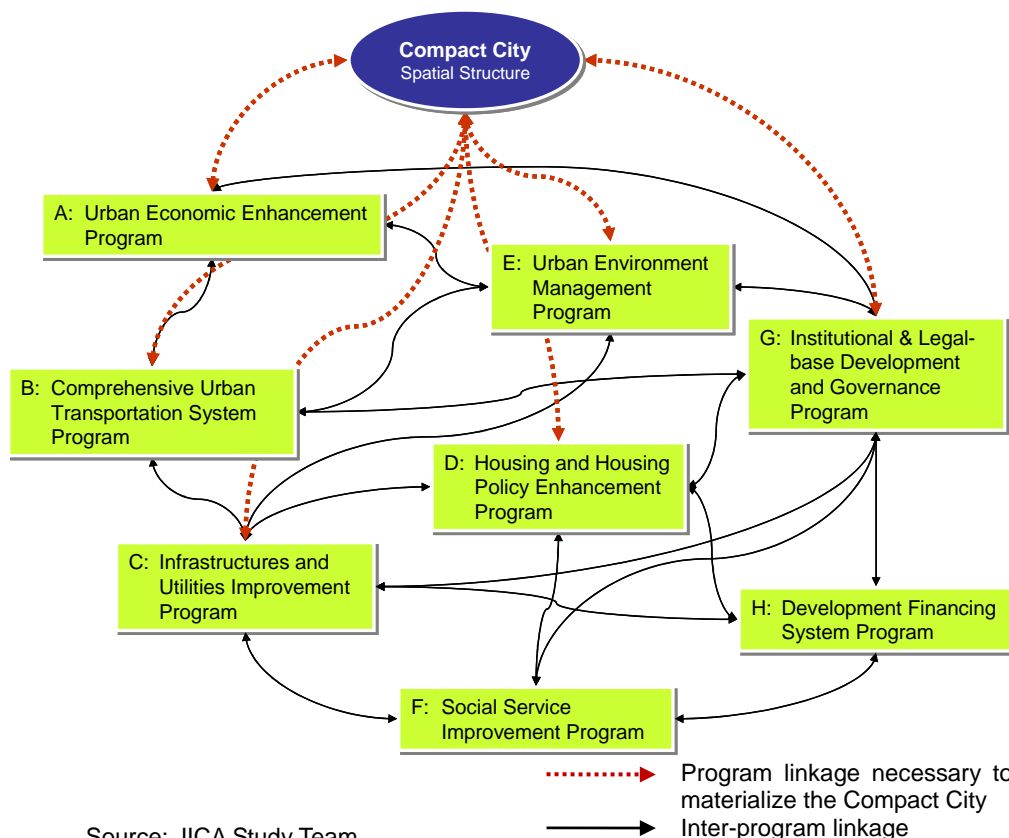
Figure 1.2.2 Inter-linkages between Development Visions and Issues

Development Issues \ Development Visions	A: Urban Economic Enhancement	B: Comprehensive Urban Transportation System	C: Infrastructures and Utilities Improvement	D: Housing and Housing Policy Enhancement	E: Urban Environment Management	F: Social Service Improvement	G: Institutional & Legal-base Development and Governance	H: Development Financing System
1. Competitive world class business center	■	■	■		■		■	■
2. Livable city with sufficient infrastructures and housing	■	■	■	■	■	■	■	■
3. Healthy and safe city		■	■	■	■	■	■	■
4. Democratic city with good governance with people's participation	■	■	■	■	■	■	■	■
5. Reputable international tourism center in Asia	■	■	■		■		■	■

Notes: ■ Direct interrelation ■ Indirect interrelation

Source: JICA Study Team

Figure 1.2.3 Mutual Relations among Development Programs



Source: JICA Study Team

A total of **115** projects/programs, which are all essential to materialize the Master Plan 2020 and 2030, have been listed for the Ulaanbaatar City Development Program, as shown in Table 1.2.1. The following attributes of each project are presented in the table:

- **Support scheme:** types of support to be required are presented: Technical Assistance (TA), Financial Assistance (FA) and/or Private Participation under a Public Private Partnership (PPP).
- **Project Priority** is represented in the time framework such as:
 - the short-term: to be completed or in service by 2015;
 - the medium-term: to be completed or in service by 2020; and
 - the long-term: to be completed or in service by 2030 and/or beyond.

Some projects have long life on a long-term perspective. The volume and intensity of inputs are represented in this timeframe by “X”.

- **Investment cost** for each project is provisionally estimated. These costs are subject to further clarification. This cost indicates initial investment costs to be prepared by the public sector, or under a PPP scheme, including the private sector. Since some projects are of cost-recovery type, the total cost of the cash flow may be different from this cost.
- **Related projects** are presented in the last column. This means that the project should be prepared, or designed, in consideration with related ones.

The total cost of the proposed **115** projects/programs accounts for **US\$9,894 million**, as shown in Table 1.2.1. This investment needs to be allocated during the time period of 23 years up to 2030.

Looking into the sector allocation of the investment cost, the largest share of 43.3% is appropriated for the transport sector, followed by the infrastructure and utilities services (20.5%), the Living Environment and Social Services Improvement (15.1%), and Housing Development (14.2%).

The transport sector requires US\$ 4,283 million, out of which about US\$ 2,249.3 million (52.5%) shall be allocated for the Public Transport System, and US\$ 1,901.1 million (44.4%) for Road Improvement. Almost equal distribution is made for both. Also important is the investment on Traffic Management. Although it shares only 3% of the transport sector, it will bring great impacts on alleviation of traffic congestion in the short-term.

The sector of Infrastructure and Utilities requires about US\$ 2,032.7 million in total, out of which US\$ 661.5 shall be allocated for Heating System Program, and US\$ 480 million, for Electric Power Supply, US\$ 440.0 million for Sewerage System and US\$ 413.0 for Water Supply System.

As for the Housing Sector, a total of US\$ 1,407 million of public investment shall be necessary, out of which US\$ 730 million is assumed to be allocated for the land development of two (2) new towns; and US\$ 410 million, for social housing development of 20,000 units which shall be initiated by the Social Housing Corporation (to be newly established) until 2020. This cost will be recovered by selling housing units, and revenues may be reinvested for additional social housing development.

For the Living Environment and Social Services Improvement, a total of US\$ 1,498.2 million will be needed up to 2030. The largest amount of public investment, or US\$ 600 million, is assumed to be appropriated for the “Rehabilitation of Degraded Apartments and Public Service Facilities”, including approximately 65,800 units. This cost shall be recovered through the payment of individual owners and private real estate agents. The revenues may be utilized for additional rehabilitation projects as a revolving fund. The second largest investment, or US\$ 230 million, should be allocated for “Enforcement of Relocation from Flood Prone Areas” which aims to move high risky settlements (about 15,000 households) to safer land areas, or new town areas. In order to uplift the level of social services, a total of US\$ 400 million of public investment is necessary to be allocated for development of a sufficient number of educational and health facilities in communities, under a planning and design norm/standard to be newly reviewed.

In order to strengthen **the institutional, legal basis, and financial structure**, a great amount of the investment is not required, but the impacts of the development will be extremely large and important. The necessary budget will be only US\$28 million, out of which US\$ 8.0 shall be used for a training program for urban planning administration and capacity building for the realization of the Master Plan, and US\$10.0 million shall be allocated to facilitate technologies and the skills of the construction sector through a capacity development program.

Table 1.2.1 Summary of Public Investment Cost (Draft)

Sector/Sub-sector		No. of Projects	Public Investment (Million US\$)	Sector Allocation (Million US\$)	Share (%)
1	Urban Economic Enhancement Program	6	645.0	645.0	6.5%
2	Urban Transportation Program (Road Projects)	17	1,901.7	4,283.0	43.3%
3	Urban Transportation Program (Public Transport Projects)	5	2,249.3		
4	Urban Transportation Program (Traffic Management Projects)	3	132.0		
5	Urban Water & Sanitation Program (Water)	7	413.0	2,032.7	20.5%
6	Urban Water & Sanitation Program (Sewerage System)	7	440.0		
7	Electric Power Program	6	480.0		
8	Heating System Program	9	661.5		
9	Solid Waste Management Program	8	38.2		
10	Housing and Housing Policy Enhancement Program	9	1,407.0	1,407.0	14.2%
11	Living Environment Improvement Program	7	722.2	1,498.2	15.1%
12	Environmental Management Program	4	10.0		
13	Urban Amenity & Disaster Management Program	6	365.0		
14	Social Service Improvement Program	4	401.0		
15	Institutional & Legal-base Development Program	10	21.5	28.0	0.3%
16	Development Financing System	7	6.5		
Total		115	9,893.9		100.0%

Source: JICA Study Team

Table 1.2.2 Classification of Program Categories and Project Code

Sector/Program	Sector Code	Sub-sector	Sub-sector Code
Urban Economic Enhancement	UED	Sub-center Development	Sc
		Business & Commercial	Bc
		Industrial	Id
		Tourism	Tm
Urban Transportation	UTR	Road	Rd
		Public Transportation	Pt
		Traffic Management	Tm
		Safety Improvement	Sf
Urban Water & Sanitation	UWS	Water Resource	Wr
		Water Supply	Ws
		Sewage System	Ss
Electric Power	EPW	Electric Supply	Es
		Electric Network	En
		Institutional Mechanism	Im
Heating System	HTS	Heating Supply	Hs
		Heating Network	Hn
		Heating Efficiency	He
		Institutional Mechanism	Im
Solid Waste Management	SWM	Garbage Collection	Gc
		Recycle system	Rs
		Institutional Mechanism	Im
Telecommunication	TCM	Capacity Enhancement	
Housing and Housing Policy Enhancement	HSG	Low-cost Housing	Lh
		Social Housing	Sh

Sector/Program	Sector Code	Sub-sector	Sub-sector Code
		Technical Standard	Ts
		Capacity Development	Cd
Living Environment Improvement	LEV	Housing Quality	Hq
		Education and Promotion	Ep
		Public Facilities	Pf
Environmental Management	EVM	Community Empowerment	Ce
		Natural Environment	Ne
		Pollution Control	Pc
Urban Amenity & Disaster Management	ADM	Environmental Assessment	Ea
		Drainage and Flooding	Df
		Green and Open Space	Go
Social Service Improvement	SSI	Education	Ed
		Health	He
Institutional & Legal-base Development	ILG	Urban Development	Ud
		Housing Standard	Hs
		Construction	Cs
Development Financing System	DFS	Financial System	Fs

Table 1.2.3 Ulaanbaatar City Development Program for UBMPS 2020 & 2030

Code	Project	Beneficiaries	Project Description 【Implementing Agencies】	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
Urban Economic Enhancement Program											
UED-Id-01	Relocation and Collectivization Project for Local Processing Industries (Industrial Park Development)	Business entrepreneurs and employees of leather processing and cashmere processing industries, etc	Financial and technical support to relocate more efficient land and infrastructure use for leather processing industry and cashmere processing industry. It is necessary that both industry associations agree with the project as a precondition.	X	X	X	XXX	XX	XX	80.0	UED-Bc-01
UED-Bc-01	Improvement of Incubation Facility Project	Small & medium scale industries and employees	Capacity expansion of current business incubation facility, and financial and technical support to tenants of the incubation facility.	X	X	X	XXX	XX	X	20.0	UED-Id-01 UED-Sc-02
UED-Sc-01	Commercial & Business Sub-centers Development	Commercial, business and service sectors and UB citizens	New urban sub-center development in association with development of the Mass Rapid Transit Systems in the major corridors of Peace Avenue. (3 sub-centers)	X	X	X	X	XX	XXX	150.0	UED-Sc-03
UED-Sc-02	Development of ICT and Knowledge Industry Center	Business entrepreneurs and employees of ICT/business process outsourcing (BPO) industries	To develop one sub-center as a center for incoming industries for Ulaanbaatar city such as the ICT industry and those involving higher education.	X	X	X	X	XXX	XX	50.0	UED-Bc-01
UED-Sc-03	Development of Underground Shopping Arcade	Commercial and service sectors, UB citizens and tourists	To develop "UB Underground Shopping Arcade" as a new urban attraction in the central district in association with development of stations of the MRT system.	X	X	X		XXX	XX	340.0	UED-Sc-01 UED-Tm-01
UED-Tm-01	Improvement of Tourism Information Provision Project	Foreign and Mongolian tourists and local tourism business entrepreneurs and employees	Relocation of current Tourism Information Center in Ulaanbaatar and improvement information provision functions to visitors. Development city circuit tour program and improvement of signage. Beautification of surroundings of tourist sites.	X	X	X	XXX	X	X	5.0	UED-Sc-03

Code	Project	Beneficiaries	Project Description [Implementing Agencies]	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
Urban Transportation Program (Road Projects)											
UTR-Rd-01	Network Development of EW-1: Gachuurt to 22Km-post through Peace Avenue	All road users in UB	Improvement of the east-west transport corridor to strengthen mobility in Ulaanbaatar City, as well as to secure land and space for infrastructure development and urban rapid transit.	X			XXX			185.8	
UTR-Rd-02	Network Development of EW-3: from Bayanzurkh to Road to Thermal Power Station No.4 through Naryn Zam	Road users in southern area of UB	Improvement of east-west arterial road to strengthen mobility in Ulaanbaatar City, as well as to secure land and space for infrastructure development and public transport.	X			XXX			164.9	UTR-Pt-01
UTR-Rd-03	Network Development of NS-2: Eastern section of Middle Ring Road	Road users in central area of UB	Improvement of north-south arterial road to strengthen mobility in Ulaanbaatar City, as well as to secure land and space for infrastructure development and public transport.	X			XXX			37.6	
UTR-Rd-04	Network Development of NS-6: from Ikh Toyruu to Engels Street	Road users in central area of UB	Improvement of north-south arterial road to strengthen mobility in Ulaanbaatar City, as well as to secure land and space for infrastructure development and public transport.		X		XXX			12.3	On-going Japan Grant Aid Crossing
UTR-Rd-05	Network development of NS-7: from Chinggis Avenue to Ard Ayush Avenue through Ajilchin Street	Road users in central area of UB	Improvement of north-south arterial road to strengthen mobility in Ulaanbaatar City, as well as to secure land and space for infrastructure development and public transport.		X		XXX			57.5	
UTR-Rd-06	Development of Highway to Connect Ulaanbaatar City to New Airport and Zuunmod	Road users in south of UB Metropolitan area and for airport	Improvement of access to new international airport in the Khushigt valley and Zuunmod, Aimag center in Tov province.	X	X	X	XXX			90.0	On-going New Airport Project
UTR-Rd-07	Network Development of EW-2: from B. Dorj Street to Tolgoit Road through Ard Ayush Avenue	Road users in northern area of UB	Improvement of east-west arterial road to strengthen mobility in Ulaanbaatar City, as well as to secure land and space for infrastructure development and public transport.	X				XXX		86.4	UTR-Rd-01
UTR-Rd-08	Network Development of Disaster Prevention Roads	Road users in northern area of UB and residents	Prevention of housing area and roads from storm water run-off or flash floods.	X			X	XXX		109.6	UTR-Rd-07
UTR-Rd-09	Network Development of NS-3: Western dyke road of the Selbe River	Road users in central area of UB and residents	Construction of a new road along the western dike of the Selbe River to strengthen the road network in UB-CBD.	X				XXX		7.9	

Code	Project	Beneficiaries	Project Description [Implementing Agencies]	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
UTR-Rd-10	Network Development of NS-4: from Ikh Sarguul Street to Olympic Street	Road users in central area of UB	Improvement of north-south arterial road to strengthen mobility in Ulaanbaatar City, as well as to secure land and space for infrastructure development and public transport.	X	X			XXX		67.3	
UTR-Rd-11	Network Development of NS-5: (from Sukhbaatar Street to Chinggis Avenue)	All road users in UB	Improvement of the north-south transport corridor to strengthen mobility in Ulaanbaatar City, as well as to secure land and space for infrastructure development and urban rapid transit.	X				XXX		102.5	UTR-Rd-01
UTR-Rd-12	Network Development of NS-9: from Chinggis Avenue to Tolgoit Road through Songolon Road	Road users in western area of UB	Improvement of the north-south arterial road to strengthen mobility in Ulaanbaatar City, as well as to secure land and space for infrastructure development and public transport.	X	X			XXX		87.6	
UTR-Rd-13	Network Development of NS-1: from Dari Ekhiin Ovoo to Naryn Zam	Road users in eastern area of UB	Improvement of the north-south arterial road to strengthen mobility in Ulaanbaatar City, as well as to secure land and space for infrastructure development and public transport.	X	X				XXX	25.1	
UTR-Rd-14	Network Development of NS-8: from Trade Union Street to Chinggis Avenue	Road users in western area of UB	Improvement of the north-south arterial road to strengthen mobility in Ulaanbaatar City, as well as to secure land and space for infrastructure development and public transport.	X					XXX	107.3	
UTR-Rd-15	Development of Urban Expressway	All road users in UB	Development of full-control access road to secure mobility in Ulaanbaatar City.	X	X	X			XXX	500.0	
UTR-Rd-16	Development of Asian Highway No. 3	All road users in UB	Development of Asian Highway to an international standard to complete international highway network.	X					XXX	93.9	UTR-Pt-02
UTR-Rd-17	Capacity Development of Road Maintenance	All road users in UB	A comprehensive program to enhance the overall road maintenance capacity for UB city and the nation as a whole, including updating road inventories, technical improvement for betterment and upgrading works, restructuring of institutional and organizational systems. Modernization of machines and equipment for road maintenance is also facilitated.	X	X		XXX	XX	XX	166.0	

Code	Project	Beneficiaries	Project Description [Implementing Agencies]	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
Urban Transportation Program (Public Transport Projects)											
UTR-Pt-01	LRT/BRT Development of the East-West Line (Red Line: Phase 1)	Public transport passengers	Development of a mass-transit system along the main East-West Transport Corridors (27 km long), including stations s sub-centers, inter-modal facilities, workshop and related facilities/equipment.	X	X	X	XXX	XXX	X	1,107.3	UTR-Pt-03 UTR-Pt-08
UTR-Pt-02	LRT/BRT Development of the North-South Line (Blue Line: Phase 2)	Public transport passengers	Development of mass-transit system along main north-southward transport corridors serving the city of Ulaanbaatar with the North-South Transport Corridor (18 km long).	X	X	X		XX	XXX	792.0	UTR-Pt-01 UTR-Pt-03
UTR-Pt-03	Development of New Railway Bypass	Railway cargo consignors, consignees, and forwarders of rail cargo, and passengers	Development of new railway line bypassing UB in the south of Bogd Khan Mountain.	X		X			XXX	200.0	UTR-Pt-04
UTR-Pt-04	Development of Railway Depots/Terminals at Tolgoit /Tolgoit	Railway cargo consignors, consignees, and forwarders of rail cargo	Development of cargo terminal and logistic center in the suburbs of Ulaanbaatar.	X	X	X		X	XXX	80.0	UTR-Pt-02
UTR-Pt-05	Bus Service Improvement Program	Bus passengers	Improvement of Smart Bus Stops: Replace 77 bus stops with newly designed better bus stop.	X			XXX			70.0	UTR-Pt-06 UTR-Pt-07 UTR-Pt-08 UTR-Pt-09
			Bus Location Information System: Provide bus location information at bus stop and through Internet.	X	X		XXX	X			
			Installation of Transit Signal Priority System: Reduce delay of bus at signal by transit signal priority.	X			XXX				
			Bus Route and Operation Schedule Rationalization Project: Develop mechanism to review and revise bus routes and schedules and implement them.	X			XXX				
			Modernization Program of Bus Operators Fleet Renewal Program: Develop financial mechanism to introduce new bus fleets and study bus operating costs, impacts of bus fare hikes and other factors and revise bus fares.	X	X	X	XXX				

Code	Project	Beneficiaries	Project Description [Implementing Agencies]	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
Urban Transportation Program (Traffic Management Projects and Others)											
UTR-Tm-01	Traffic Congestion Reduction Program (Comprehensive Traffic Management Improvement Project)	Road users, Vehicle users and bus passengers and citizens in UB	<p>One-way System in CBD: Modify and expand one-way system around Sukhbaatar Square. Signals will be updated and intersection geometry will be modified.</p> <p>Turning Restriction along Peace Avenue: Prohibit left turn along Peace Avenue except at signalized intersections with left turn signal.</p> <p>On-street Parking Management at CBD: Designate parking and no-parking sections along streets in the CBD. Collect parking fees from on-street parking. Enforce no-parking regulation.</p> <p>Intersection Geometric and Engineering Improvement: Modify and improve intersection geometry and sidewalk at 45 selected intersections.</p>	X			XXX			30.0	UTR-Tm-03
UTR-Tm-02	Removal of Traffic Bottlenecks and Construction of Missing Links	All road users using the intersections and Shoppers and vehicle users around market.	<p>Traffic Management Improvement in & around public markets: Apply traffic engineering solutions to ease traffic congestion in public market.</p> <ul style="list-style-type: none"> Narantuul: Relocate entry and exit points and install signal. Bar's: Construct parking and pedestrian crossing. 100 Ail: Improve sidewalk and construct parking at open spaces. <p>Traffic Management Improvement</p> <ul style="list-style-type: none"> Undsen Huuli–Engels Bridge: Improve West Cross by upgrading signal and modifying geometry. Improve Seoul St – Undsen Huuli intersection. Improve sidewalk and green spaces. Peace Ave – Sukhbaatar St.: Modify intersection geometry and signal phase. Opening of Juulchin Street; and Widening of Western Section of Namy Zam. <p>Elimination of 4 Staggered Intersections.</p> <p>Construction of 4 Flyovers: at Sapporo; Bayanburd, Tuul Jin Pan, and Eastcross.</p> <p>Construction of 3 New Primary Links: Western Dike of Selbe River, Unur; Ajilchin to Chinggis.</p>	X	X		XXX	XX		82.0	UTR-Tm-03

UTR-Tm-03	Capacity Development of Traffic Management and Traffic Safety Promotion Program	General public & road users; transport-related officials & agencies	Establishment of “Mongolian National Transportation Research Center (MoNTREC)” <ul style="list-style-type: none"> • A center of knowledge and experience in traffic and transportation. • Human Resource Development: Develop training curriculum and conduct training for both road administrators and enforcers. 	X			XXX			20.0	UTR-Tm-01 UTR-Tm-02
			Establishment of a Traffic Management Coordination Committee for: <ul style="list-style-type: none"> • Coordination among the agencies concerned for better traffic management. • Education and upgrading social norms on general public and drivers, etc. 	X			XXX				
			Formulation of a Traffic safety program , including: <ul style="list-style-type: none"> • Accident analysis • Development of Road safety audit and improvement measures. Road amenity green space: Improve sidewalk and provide green spaces to make walking and NMV more attractive and pleasant.	X			XXX	XX	XX		

Code	Project	Beneficiaries	Project Description 【Implementing Agencies】	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
Urban Water & Sanitation Program (Water)											
UWS-Wr-01	Water Resource Protection	UB City citizen	To establish integrated watershed management including enforcement of water resource protection, conservation of water resource, development of monitoring network.	X			XX	XXX		4.0	UWS-Wr-02 UWS-Ws-02 EVM-Pc-02
UWS-Wr-02	New Water Supply Source Development	UB City citizen	To investigate new water resource area. To study possibility of surface water use. To construct a new water resource.	X	X		XXX	XX		290.0	UWS-Wr-01
UWS-Ws-01	Improvement of Water Supply Capacity	UB City citizen	To renovate old pumps to improve water intake capacity (300,000 ton/day)	X	X		XXX	XX	XX	30.0	UWS-Wr-02
UWS-Ws-02	Water Quality Monitoring and Management	UB City citizen	To establish water quality management guideline. To establish and strengthen of the inspection system. To raise incentives on water quality protection.	X			XXX			4.0	EVM-Pc-02
UWS-Ws-03	Water Supply Distribution Network Rehabilitation & Enhancement Project	UB City citizen	To expand water supply network to serve new areas. To rehabilitate old pipes to improve capacity.	X	X		XXX	XX		50.0	UWS-Ws-01
UWS-Ws-04	Water Demand Management Program	UB City citizen	To promote installation of water meters, tariff reform, and “ Save Water ” campaign to citizens to conserve water.		X		XXX	XX		10.0	UWS-Ws-01
UWS-Ws-06	Provision of Water in Ger areas	UB City citizen in Ger area	To construct water kiosks through track where water is not supplied within urbanization area		X		XXX	X		25.0	UWS-Ws-01 UWS-Ws-04

Code	Project	Beneficiaries	Project Description 【Implementing Agencies】	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
Urban Water & Sanitation Program (Sewerage System)											
UWS-Ss-01	Central Wastewater Treatment Plant (CWWTP) Capacity Enhancement	UB City citizen	To extend capacity of existing CWWTP. To develop sewage sludge treatment facility. To rehabilitate existing sewage pipelines, channels and drainage system.	X	X		XXX			120.0	UWS-Ss-02
UWS-Ss-02	New Wastewater Treatment Facility Development	UB City citizen	To develop new wastewater treatment facility (300,000 ton/day).	X	X		XX	XXX		110.0	UWS-Ss-01
UWS-Ss-03	Industrial Wastewater Facility Improvement	UB Citizen, Business sector and factory	To renovate Khargia industrial wastewater treatment facility, To develop a new industrial waste-water treatment facilities in the newly developed industrial estate.	X	X		XX	XXX		60.0	UWS-Ss-02
UWS-Ss-04	Sludge Treatment and Bio-energy Facility Development	UB City citizen	To develop sewage sludge treatment facility including bio-gas generation.	X	X		XX	XXX	XX	40.0	UWS-Ss-01 UWS-Ss-02 UWS-Ss-03
UWS-Ss-05	Rehabilitation of old pipelines of sewerage	UB City citizen	To rehabilitate old pipes to improve capacity.		X		XX	XXX		50.0	UWS-Ss-01
UWS-Ss-06	Household-based sewerage treatment	UB City citizen in Ger area	To study environmental friendly household-based system such as combined type septic tank, ECOSAN. To promote above system including establishment of financial supporting system.	X	X		XXX			40.0	-
UWS-Ss-07	Water Recycling Promotion Program	UB City citizen	To install water recycling system in wastewater treatment facilities (10,000 ton/day). To make guideline on water recycling and public awareness.	X	X		XX	XXX	XX	20.0	UWS-Ss-01 UWS-Ss-02
Electric Power Program											
EPW-Es-01	Improvement of Electric Power Capacity	UB City citizen	To renovate the existing power supply facilities.	x	X		XXX	XX		55.0	EPW-En-01
EPW-Es-02	New Power Supply System Development	UB City citizen	To study a new electric power source and develop feasible power system.	X	X	X	XXX	XX	XX	400.0	EPW-Es-01
EPW-En-01	Electric Distribution Network Enhancement	UB City citizen	To expand electric network and replace power cables to larger ones.		X	X	XX	XXX	X	6.5	EPW-Es-01 EPW-Es-02

Code	Project	Beneficiaries	Project Description 【Implementing Agencies】	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
EPW-En-02	Construction and Rehabilitation of Power Substations	UB City citizen	To construct and rehabilitate power substations.		X	X	XXX	XX	XX	14.5	EPW-En-01
EPW-En-03	Installation of Solar System to Governmental Facilities	UB City citizen	To save power by installing solar system devices, to begin with government buildings. To conduct a pilot project to introduce solar system.	X	X	X	XXX	XX		2.0	EPW-Es-02
EPW-Im-01	Electric Demand Management Program	UB City citizen	To reform the tariff structure, and promote a campaign for citizens to conserve water.		X		XXX	XX		2.0	EPW-En-03
Heating System Program											
HTS-Hs-01	New Heating Source Development	UB City citizen	To establish heating supply facilities. To study renewable energy.	X			XXX	XXX	XXX	400.0	EPW-Es-02
HTS-Hs-02	Rehabilitation of Heat-only -Boiler	UB City citizen	To prioritize old type heat-only-boiler to be rehabilitated. To rehabilitate old type heat-only-boilers	X	X		XXX	XX		-	
HTS-Hs-03	Local Cluster Heating System Development	UB City citizen in Ger area	To develop small scale local network in residential area including: • Construction of facilities. • Development of a feasible operation and maintenance mechanism.	X	X		XX	XXX		120.0	
HTS-Hn-01	Rehabilitation of Old Pipelines for Heating	UB City citizen	To renovate the old heating pipes.		X		XXX	X		80.0	HTS-Hs-02 HTS-Hn-02
HTS-Hn-02	Heating Distribution network Enhancement	UB City citizen	To expand heating network and replace pipes to larger ones.		X		XXX	X		50.0	HTS-Hn-01
HTS-He-01	Improvement of Heat-efficiency of Buildings	Building contractor, UB City Citizen	To improve heat insulation materials and construction techniques for air condition improvement of buildings.	X			XXX			2.0	
HTS-He-02	Coal Quality Improvement Project	UB City citizen in Ger area	To study feasible coal improvement technologies. To establish semi-cokes, briquette production facility. To standardize coal quality. To promote improved coal including financial supporting system.	X	X	X	XXX			6.0	HTS-Hs-01 HTS-He-01 HTS-Hn-02

Code	Project	Beneficiaries	Project Description 【Implementing Agencies】	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
HTS-He-03	Dissemination of Improved Quality Stove	UB City citizen in Ger area	To study stove improvement technology. To standardize coal quality. To promote improved coal including financial supporting system.	X	X	X	XXX			3.5	
HTS-Im-01	Heating Tariff Structure Reform	UB City citizen	To reform existing heating tariff structures to improve financial status of the heating company.	X			XXX			-	
Solid Waste Management Program											
SWM-Gc-01	Improvement of Solid Waste Dumping Sites and Enhancement of the Management	UB City citizen	To construct sanitary landfill facilities including bio-gas generation system. To establish guidelines on a monitoring and inspection system. To develop and strengthen regulation on waste dumping.	X	X		XX	XXX		5.7	
SWM-Gc-02	Construction of Solid Waste Separation Facilities	UB City citizen	To sort out recyclable waste and non-recyclable ones. To separate combustible and non-combustible waste.	X	X	X	XX	XXX		9.0	
SWM-Gc-03	Garbage Collection System Improvement	UB City citizen	To establish garbage collection network with procurement of garbage trucks and employment of necessary personnel. To study an appropriate collection fee system. To promote a campaign on the benefits of waste reduction.	X	X	X	XXX	XX	XX	15.0	
SWM-Rs-01	Solid Waste Recycling System Development	UB City citizen	To establish a feasible waste recycling system, including institutions, waste separate facilities, recycle markets, people's awareness to recycling, etc.	X	X	X	XXX	XX		-	
SWM-Rs-02	Waste-to-Energy Generation Project	UB City citizen	To establish a bio-gas power generation plan, using solid waste.	X	X	X		XX	XXX	-	
SWM-Rs-03	Coal-ash Recycling Project	UB City citizen	To study coal ash recycling technology. To establish coal ash collection network. To promote coal ash recycling.	X	X	X	XX	XXX		-	
SWM-Rs-04	Construction Waste Recycling Project	UB City citizen	To recycle construction waste including those from demolished buildings and construction works	X	X	X	XX	XXX		6.5	

Code	Project	Beneficiaries	Project Description 【Implementing Agencies】	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
SWM-Im-01	Education and campaign of solid waste management	UB City citizen	To establish guideline on education and campaign program. To provide education materials.	X			XXX			2.0	
Housing and Housing Policy Enhancement Program											
HSG-Lh-01	Guideline Development of Low-cost Housing	Building contractor, UB City Citizen in Ger area	To study and develop functional guidelines for low-cost housing supply.	X		X	XXX			-	HSG-Ts-01 HSG-Ts-02, HSG-Sh-03, LEV-Ep-01
HSG-Lh-02	New Town Development by a Public Entity	UB citizens and migrants, including all income groups.	Two new town developments (UB West:700ha; and UB South: 750ha) to be initiated by a public entity for all segments from low- to high-income groups with sufficient infrastructures and urban functions such as higher education institutes and commercial and business areas to create employment. Housing financing scheme shall be linked with this project.	X	X	X	X	XXX	XXX	730.0	HSG-Lh-01, HSG-Sh-03, HSG-Sh-01, HSG-Hq-02
HSG-Sh-01	Social Hosing Development Project (20,000 units)	UB citizens, particularly low and middle income groups and migrants	Provision of 20,000 social housing units to be constructed by Social Housing Corporation until 2020 along with new town development and in association with Ger area improvement projects.	X	X	X	XX	XXX		410.0	HSG-Lh-02, HSG-Sh-03
HSG-Sh-02	Provision of Rental Apartments	Low income households, students and single families	To provide rental apartments for residents in the short-term to meet different patterns of housing demands (10,000 units).			X	XX	XX		180.0	HSG-Lh-01, HSG-Sh-03
HSG-Sh-02	Temporary Housing Area Development for Resettled Households	Migrants, resettled households	To provide special land areas with minimum utilities and services until permanent settlements (8,000 units).	X	X	X	XXX			84.0	LEV-Ce-01, ADM-Df-01, ILG-Ud-04,
HSG-Sh-03	Reform/Restructure of Mongolian Housing Financing Company (MHFC)	Low income households, Migrants, resettled households	To enhance social housing provision and supply capacity while reforming of the financing system for low income households. To enhance the housing development fund with financial engineering methodologies such as housing bond issuance.	X			XXX			-	HSG-Lh-01, HSG-Sh-01, HSG-Sh-02

Code	Project	Beneficiaries	Project Description [Implementing Agencies]	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
HSG-Ts-01	Reform of “Building Code” and Construction Supervision System	Building contractors and UB City citizens	To reform the existing building code and update modern standards to apply present building structure and materials, in consideration of “ <i>anti-earthquake</i> ” structures. To introduce design and supervision system to monitor and improve construction process.	X			XXX			-	HSG-Lh-01 HSG-Ts-02 LEV-Hq-01 LEV-Ep-01
HSG-Ts-02	Improvement of Heat efficiency of Housing Buildings	Building contractor, UB City Citizen	To improve heat insulation material and construction techniques for air condition improvement of buildings.	X		X	XXX			3.0	HSG-Lh-01 HSG-Ts-01 LEV-Hq-02 LEV-Ep-01
HSG-Cd-01	Management guideline of apartments	UB City Citizen in apartment area	To strengthen and enhance capacity and activities of apartment management bodies to maintain and improve buildings, facilities and communities.	X			X			-	HSG-Sh-02 LEV-Hq-01
Living Environment Improvement Program											
LEV-Hq-01	Rehabilitation of Old Apartments	UB City Citizen in apartment area	To rehabilitate degraded apartments and facilities (65,800 units up to 2030)		X	X	XX	XX	XX	600.0	HSG-Ts-01, HSG-Cd-01
LEV-Hq-02	Promotion of New Technologies for Energy-saving and Eco-housing Development	UB City citizen in Ger area	To study appropriate technology for Eco-house. To promote Eco-house system. To establish financial supporting system for installing Eco-house system.	X		X	XX	XXX	XX	20.0	HSG-Lh-02, HSG-Ts-02
LEV-Ep-01	Raising Awareness of Environmental and Living Condition Improvement	UB City citizen	To provide guideline of education and public awareness raising for environmental protection.	X			XXX			2.0	HSG-Lh-01, HSG-Ts-01, HSG-Ts-02
LEV-Pf-01	Community & City Parks and Open Space Development	Children, UB City citizen	To plan community parks and open space in land readjustment plan and urban redevelopment plan To share land plots to secure community park and open spaces (a total of 200 ha)	X	X		XX	X	X	40.0	ADM-Go-01
LEV-Pf-02	Promotion of Community-based School Facilities	Children, UB City citizen	To plan multiple usage and rules of schools for neighborhood	X			XX	X	X	50.0	HSG-Ep-01, SSI-Ed-01, SSI-Ed-02, ADM-Df-03

Code	Project	Beneficiaries	Project Description 【Implementing Agencies】	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
LEV-Ce-01	Establishment of Support to Community-based Organizations for Environmental Improvement and Social Activities	UB City citizen in Ger area	To activate community activities based on CBO for living condition improvement.	X			XXX	XX	XX	10	LEV-Ep-01, LEV-Pf-01, DFS-Fs-02
LEV-Ce-02	Establishment of A Participatory Land and Immovable Asset Assessment System	UB City citizen in Ger area	To formulate an agreeable system for land and immovable assets value assessment to facilitate Community-driven Ger area improvement activities	X			XXX	X	X	0.2	LEV-Ep-01, LEV-Pf-01, DFS-Fs-02
Environmental Management Program											
EVM-Ne-01	Development of Forest Protection Management and Monitoring System	Government staff in charge of forest protection management	To clarify and classify land degraded areas on natural environmental conditions. To provide and promote guidelines for natural environmental protection. To regulate land use in the designated protection areas. To establish and strengthen a monitoring system with enforcement power against illegal use.	X			XXX	XX	X	4.0	
EVM-Pc-01	Development of Air Quality Management and Monitoring System	Government staff in charge of air quality management	To develop emission standard enforcement. To establish and strengthen air quality monitoring system with power on enforcement against violators.	X			XXX	XX	X	3.0	
EVM-Pc-02	Development of Water Quality Management and Monitoring System	Government staff in charge of water quality management	To develop discharged water standard enforcement. To establish and strengthen water quality monitoring system with enforcement power against violations	X			XXX	XX	X	2.0	
EVM-Ea-01	Capacity Development on Management of the EIA System	Government staff in charge of EIA	To coordinate among Ministry of Natural and Environment, other government bodies and private sector. To promote necessity of environmental assessment. To increase number of inspectors for EIA inspector.	X			XX	XX	XX	1.0	

Code	Project	Beneficiaries	Project Description [Implementing Agencies]	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
Urban Amenity & Disaster Management Program											
ADM-Df-01	Enforcement of Relocation from Flood Prone Areas	UB City citizen	<p>To examine and prepare a hazard map indicating flood prone risky areas and environmentally vulnerable areas.</p> <p>To prepare regulations to prohibit human settlements in high risky areas.</p> <p>To prepare a resettlement plan to relocate residents in high risky areas (15,000 units).</p>	X	X		XXX	XX	X	200.0	
ADM-Df-02	Rehabilitation of Storm Water Drainage Canals and the Entire System	UB City citizen	<p>To rehabilitate and extend storm water drainage canals and the entire system.</p> <p>To facilitate drainage canal protection from waste dumping.</p> <p>To construct disaster prevention roads.</p> <p>To construct and rehabilitate flood dams, reservoirs and/or dykes.</p> <p>To establish underground reservoir under road.</p>	X	X		XXX	XX	X	60.0	UTR-Rd-08
ADM-Df-03	Promotion Program of “Community-based Preparedness” against Disaster	UB City citizen	<p>To provide a hazard map, indicating flood prone areas</p> <p>To develop a <i>community-based evacuation manual</i>, including an information dissemination system, locations of evacuation route and places, stocking of basic commodities and rehabilitation assistance in case of occurrence of disaster such as flood and earthquake.</p> <p>To provide awareness of the importance of the community-based preparedness against disasters.</p> <p>To prepare regulations and/or a legal enforcement system against human settlements and economic activities in disaster-risky areas.</p> <p>To develop a <i>flood warning system</i>.</p>	X			XXX			3.0	

Code	Project	Beneficiaries	Project Description [Implementing Agencies]	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
ADM-Df-04	Road Improvement and Emergency Vehicles Procurement Program	UB City citizen in Ger area	To improve road network and widen roads for emergency vehicles in the Ger areas. To reform and strengthen regulations on land use and maintain adequate roads and open space.	X	X		XX	XX	XX	60.0	
ADM-Go-01	City Parks and Green Network Development Project	UB City citizen	To facilitate development of city parks, community parks, green areas and open space to be reserved. To develop a green network in UB City with these parks and green areas, based on the Master Plan. To monitor Land Use Zoning with enforcement against illegal construction and development activities. To regulate green area development by construction permission, development permission, etc.	X			XXX	XX		40.0	
ADM-Go-02	Promotion of a Campaign for "Greening Buildings and Streets"	UB City citizen	To study appropriate greening technique to meet UB's natural climate and environment. To promote green building and street techniques. To establish a financial support system.	X	X	X	XX	XXX	XX	2.0	
Social Service Improvement Program											
SSI-Ed-01	Development of Planning Standard and Guidelines of Educational Facilities	UB City citizen	To develop planning standards and guidelines for educational facilities under a catchment service area concept.	X			XXX			0.5	HSG-Ts-01 LEV-Df-02 SSI-Ed-02
SSI-Ed-02	Acceleration Program for Pre-school and School Facility Development	Students	To facilitate construction of pre-schools and other schools to meet development guidelines (100 places for 6,000 pupils).		X		XX	XX	XX	200.0	HSG-Ts-01 SSI-Ed-01 LEV-Pf-02
SSI-He-01	Development of Planning Standard and Guidelines of Health Care Facilities	UB City citizen	To develop planning standards and guidelines for health care facilities under a catchment service area concept.	X			XX			0.5	HSG-Ts-01 SSI-He-02
SSI-He-02	Acceleration Program for Health Care Facility Development	Patients and UB City Citizens	To facilitate construction of clinics, hospitals and/or medical service facilities to meet the development guidelines above (120 primary Health Center).		X		XX	XX	XX	200.0	SSI-He-01

Code	Project	Beneficiaries	Project Description 【Implementing Agencies】	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
Institutional & Legal-base Development Program											
ILG-Ud-01	Legal Enhancement of Urban Planning and Urban Development-related administration	MRTCUD, UB City	To assist the MRTCUD in reviewing existing laws: urban development laws, housing laws, and land law. And in the making of new laws on urban development: land readjustment, urban redevelopment, new town development, land compulsory expropriation, etc..	X			XXX			1.5	
ILG-Ud-02	Introduction of Property Assessment Land Valuation Systems	MRTCUD, UB City	To establish a new land valuation standards and introduce a declared land value system.	X			XXX			3.0	
ILG-Ud-03	Training Program for Urban Planning Administration and Capacity Building for Realizing the UB Master Plan 2030	MRTCUD, UB City, NGOs, and Related Agencies	To provide practical training for Urban Growth Management mechanisms applicable for the market economy. To provide basic knowledge of legal framework and guidelines related to urban planning administration and enforcement. To provide practical system's training on land readjustment project, urban redevelopment project, new town development project, community development. To provide appropriate and rational norms on permission and the monitoring of construction administration and land development activities.	X			XXX	XX	XX	8.0	
ILD-Ud-04	Development of Resettlement Policy and Plan	UB City citizen, UB City	To define clear resettlement conditions and enforcement measures including support measures. To develop a resettlement plan prioritizing resettlement areas and its implementation measures.	X			XX	XX		-	HSG-Sh-02, ADM-Df-01
ILD-Ud-05	Development of “Neighborhood Area Development Plan (NADEP)” for Ger Area Improvement	UB City citizen, UB City	To formulate the community and public service development guidelines under a neighborhood unit concept To facilitate a community-driven activities for public service provision in cooperation with UB City government.	X			XXX	XX		-	HSG-Sh-02, ADM-Df-01

Code	Project	Beneficiaries	Project Description [Implementing Agencies]	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
ILD-Ud-06	Establishment of an Institutional System of Land Readjustment (Land Pooling) System	UB City citizen, UB City	To formulate institutional guidelines encouraging a Community-driven Ger Area improvement Projects based on a concept of "Land Readjustment" though Pilot Projects."	X			XXX	XX		-	HSG-Sh-02, ADM-Df-01
ILG-Hs-01	Institutional Development for Social Housing Policies and Programs	MRTCUD, MSWL, UB City, MOF, Bank of Mongolia, MHFC	To assist related ministries and agencies in establishing: <ul style="list-style-type: none"> • Housing Development Financing Institution (HDFI); • Social Housing Corporation (SHC); and, • Community Organizations Development Institute (CODI). 	X			XXX	XX		1.0	
ILG-Hs-02	Financial Capacity Building Related to Social Housing Development	MRTCUD, MOF, Bank of Mongolia	To develop a framework on Financial Resources for Housing Development Fund to be utilized for social housing for low income households.	X			XXX			2.0	
ILG-Hs-03	Facilitation of a Self-Help Housing Construction System	MRTCUD, UB City, Building Material Manufacturer's Association and other construction-related business sector	To develop a self-help housing construction system for poor households. To facilitate R & D activities in the universities for affordable and energy-efficient construction materials. To provide a number of model houses to replace the Ger settlements.	X	X	X	XXX	XX	XX	6.0	
ILG-Cs-01	Business Development Policy to Strengthen the Construction-related Sector	MRTCUD, MOF, National Railway, Building Material Manufacturer's Association	To establish basic policies fostering the construction business sector in Mongolia. To encourage the production of basic construction materials such as cement & iron through the provision of incentives for the investment. To provide vocational education programs for the construction sector.	X	X	X	XXX	xx		10.0-	

Code	Project	Beneficiaries	Project Description [Implementing Agencies]	Support Scheme			Priority			Cost (mil. US\$)	Related Projects
				TA	FA	PPP	S ~2015	M ~2020	L ~2030		
Development Financing System											
DFS-Fs-01	Financial Basis Enhancement Program of UB City Government	UB City and UB Citizens	<p>Property-related Taxation: To examine the possibility of imposing a “property related tax” on property owners and to formulate an imposition system.</p> <p>Urban planning taxation: To examine the possibility of imposing an “urban planning tax” on property owners and to formulate an imposition system.</p> <p>Fiscal management system: To formulate an efficient fiscal management system to improve the City’s credit worthiness and allow it the ability to borrow on a long term basis from capital markets.</p>	X			XXX	XX		2.0	DFS-Fs-05 DFS-Fs-06 DFS-Fs-07 DFS-Fs-08 DF-Fs-09
DFS-Fs-02	Formulation of Community-based Financing System	Ger Area residents, UB City residents in general	To formulate a community fund system for improvement of the Ger areas and the redevelopment of built-up areas.	X		X	XXX	XX		-	DFS-Fs-07
DFS-Fs-05	Formulation of Value Capture Methods for UB City	UB City, General tax payers	To formulate various value capture methods imposed on beneficiaries of infrastructure development such as mass rapid transit, expressway, and integrated urban corridor, including the application of Transfer of Development Right (TDR).	X		X	XX	XXX	XX		DFS-Fs-01 DFS-Fs-08 DF-Fs-09
DFS-Fs-06	Exploration of Long-term City Bond Issuance by UB City	UB City, General tax payers	To examine the feasibility of bond issuance by UB City for capital financing of infrastructure projects.	X			X	XXX			DFS-Fs-01 DFS-Fs-07
DFS-Fs-07	Establishment of the “UB Infrastructure Financing Public Corporation”	UB City, General tax payers	To examine the feasibility of establishing a UB Infrastructure Financing Public Corporation that shall specialize in financing infrastructure development in UB City. Possible fund sources: 1) mining revenues; 2) bonds; 3) pension funds, and 4) external donors’ funds.	X			XX	XXX		1.5	DFS-Fs-01 DFS-Fs-02 DFS-Fs-05 DFS-Fs-06
DFS-Fs-08	Comprehensive Policy Reform of “Public Service Tariff Structure”	UB City residents and all public service providers and managers	<p>To examine thoroughly existing public service tariff structures (water, heating, power, sewage, solid waste disposal, etc) and come up with an adequate subsidy system in consideration of:</p> <ul style="list-style-type: none"> • Full or partial cost recovery structures under the market mechanism; and, • Public Service Privatization. 	X			XXX			1.0	DFS-Fs-01 DFS-Fs-05
DF-Fs-09	Preparation of Implementation Framework for PPP-based Public Service and Urban Development Projects	UB City, General tax payers, private sector	To formulate an appropriate and applicable implementation framework on a Public Private Partnership (PPP) public service and urban development projects, including institutional and legal frameworks and procurement procedures.	X			XXX	XXX	XXX	2.0	

2. Priority Projects (Short-List)

2.1 Short-term Development Targets

An intermediate milestone in the short-term toward the final goal in 2030 was considered to be the year 2015. General targets in the short-term are twofold: (a) to make steady steps toward the final goals; and (b) to establish a fundamental institutional mechanism to ensure a sustainable and balanced growth with the implantation of the Master Plan. Attainments to be realized by 2015 are envisaged as follows:

- (1) Officially approved “Ulaanbaatar City Master Plan 2030” functions well as guidelines of the rational and transparent administration for issuance of permissions of land registration building construction, development projects and environmental management.
- (2) Some of laws, regulations and institutional systems necessary for urban planning and land use management have been built as effective and workable administrative tools.
- (3) Ulaanbaatar City has a responsible urban planning section to facilitate citizens’ participation in improvement of living conditions in Ger areas and pursue the Public Private Partnership (PPP) to accelerate development and provision of infrastructures, urban utilities and public services.
- (4) Steady steps to solve chronic and crucial urban problems in Ulaanbaatar City have been made by implementing the Master Plan 2030. In particular, there are noteworthy progress in the following four (4) sectors:
 - With the implementation of the short-term program addressed in the Master Plan, traffic congestion is somewhat alleviated. A notable change appears in the modernized traffic control system, with which traffic flows are rectified, thereby resulting in safe transport in the city. In addition, new mass transit system (Ulaanbaatar Rapid Transit: URT) is under construction along Peace Avenue, and development activities at/around the station areas appear active.
 - The water supply system has been improved in Ger areas in particular along with living environmental improvement projects. One of the most important projects in the water sector, which is the development of new water resources, is steadily carried out in association with the progress of afforestation in the comprehensive water-shed conservation program.
 - Social Housing Cooperation functions to provide low-income households with affordable housing units and rental houses under a Comprehensive Social Housing Program which includes housing financial supports. The housing market efficiently and stably works, as the construction industry have been encouraged with a strong government policy.
 - Environmental projects are going-on with a few donors supports. Among them, it is

noted that the Central Waste Water Treatment Plant have been rehabilitated and expanded in its treatment capacity, and that cluster systems for industrial waste water treatment to serve the designated industrial zones are being developed. In addition, a people's movement for 3Rs (reduction, recycling, reuse) is proactive.

- (5) Some practical models for improvement of Ger areas, which are based on a “community-driven approach”, have been built and a number of projects using the models are being carried out in collaboration with communities and Ulaanbaatar City.

Priority projects need to contribute to attainment the status as described above.

2.2 Sector Priority Concept

The proposed projects have been identified for respective planning issues or eight (8) sector categories such as:

- Urban Economic Enhancement
- Urban Transportation
- Infrastructures and Utilities
- Housing and Housing Policy Enhancement
- Urban Environment
- Social Service Improvement
- Institutional & Legal-base Development and Governance
- Development Financing System

Since the city is a composite urban agglomeration, all sectors are equally important and mutually related with each other. Therefore, sector priority will not be considered. Instead, a priority concept is envisaged as follows, taking into account the most crucial subsectors for respective planning issues:

Table 2.2.1 Concept of Sector Priority

Code	Planning Issue Sector	Highest Priority Subsectors
UED	Urban Economic Enhancement	<ul style="list-style-type: none"> • Industrial Relocation and Collectivization • Tourism Sector Enhancement • Sub-center Development
UTR	Urban Transportation	<ul style="list-style-type: none"> • Road Traffic Bottlenecks Alleviation and Traffic Management • Public Transport System Improvement
IFR	Infrastructures and Utilities	<ul style="list-style-type: none"> • Water-related Utilities (Water Supply and Sewerage) • Energy Supply Management System
HSG	Housing and Housing Policy Enhancement	<ul style="list-style-type: none"> • Ger Area Improvement • Social Housing Development
UEM	Urban Environment	<ul style="list-style-type: none"> • Air Pollution Mitigation • Disaster Management • Urban Amenity Improvement
SSI	Social Service Improvement	<ul style="list-style-type: none"> • Education and Health Care Facilities Development in Communities
ILG	Institutional & Legal-base Development and Governance	<ul style="list-style-type: none"> • Development of Urban Planning-related Acts • Capacity Development in Urban Planning and Development Management
DFS	Development Financing System	<ul style="list-style-type: none"> • Enhancement of Municipal Financing Capacity • Housing Financing Mechanism for Lower Income Households

Source: JICA Study Team

2.3 Criteria of Prioritization

The prioritization process is important to envision a rational phased development under limited budgets and capacities. In general, the most crucial criterion is economic feasibility of the investment, based on a cost/benefit analysis. However, it is not easy to economically evaluate all projects over different sectors. Instead, an implicit evaluation is carried out based on five (5) criteria, as follows:

- Coherence with Visions;
- Urgency;
- Necessity (needs);
- Implicit Feasibility; and
- Social Acceptance.

Coherence with Visions: Although all proposed projects must be relevant to the visions for Ulaanbaatar City, which were envisaged in the first stage of the planning process, the more relevant projects to achieve the visions should be given higher priority.

Urgency: Needless to say, projects that are expected to contribute to more urgent issues should be given higher priority.

Necessity: All proposed projects are considered based on the needs of Ulaanbaatar citizens which were identified through the household surveys and a series of technical

working group meetings and community consultation meetings. However, projects that can more widely and more greatly respond to people's needs may be given a higher priority.

Implicit Feasibility: Technical and institutional feasibilities need to be considered for prioritization, because these factors are closely related to the implementability and sustainability of a project. This criterion is not necessarily tangible but implicit.

Social Acceptance: Projects which are accepted by all may be given a higher priority. However, there are projects that are highly necessary for society, but are not welcome by the public. The restructuring of tariff structures for public services, such as bus fares or electric bills, is a case in point. Priority shall be considered in balancing both sides of these needs.

Each project proposed in the long list (Table 1.2.3) was evaluated through a **scoring method**, referring to these five (5) criteria, as shown in Table 2.4.1. Projects that are the most relevant to the respective criteria are given the highest score, **3**. On the contrary, those whose impacts are not necessarily expected are given the lowest score, **1**. In cases where neither 3, nor 1, is given a middle score, **2**, applied. Thus, each project has a total score when summed up. However, the score of "Urgency" is counted double in consideration of the importance of the time factor in the priority.

2.4 Priority Programs/Projects

Priority projects were selected, taking into account the total score derived from the scoring method as well as the sector priority concept. A total of **50** projects, as summarized in Table 2.4.2, are proposed to be urgently implemented. For the 50 projects, the investment cost will total US\$2,700 million, or 27% of the total cost estimated for all projects/programs.

Strategic budget is expected to be appropriated to commence the preparation of these projects by the Mongolian Government and Ulaanbaatar City Government as soon as practicable. These priority programs/projects are to be accomplished until, or be in service, by **the target year 2015**. The donor community is also expected to support in initiating the project implementation in close collaboration with the government.

Table 2.4.1 Scoring Priority Evaluation for Proposed Projects

(1/5)

Sector	Code	Project	Criteria for Priority ¹⁾					Total Weighted Score	Environ'tl Impact ²⁾	Schedule		
			Coherence with Visions	Urgency	Needs	Feasibility	Social Acceptance			Short -2015	Medium -2020	Long -2030
UED: Urban Economic Enhancement	Id-01	Relocation and Collectivization Project for Local Processing Industries (Industrial Park Development)	1	1	2	2	2	9	P			
	Bc-01	Improvement of Incubation Facility Project	3	3	3	3	2	17	-			
	Sc-01	Commercial & Business Sub-centers Development	3	1	2	2	2	11	n			
	Sc-02	Development of ICT and Knowledge Industry Center	3	2	3	3	3	16	-			
	Sc-03	Development of Underground Shopping Arcade	3	1	3	2	3	13	n			
	Tm-01	Improvement of Tourism Information Provision Project	3	3	3	3	3	18	-			
UTR: Urban Transportation (Road)	Rd-01	Network Development of EW-1 (from Gachuurt to 22Km-post through Peace Avenue)	2	3	2	2	2	14	n			
	Rd-02	Network Development of EW-3 (Bayanzurkh to Road to Thermal Power Station No.4 through Naryn Zam)	2	3	2	2	2	14	n			
	Rd-03	Network Development of NS-2 (Eastern section of Middle Ring Road)	2	3	2	2	2	14	n			
	Rd-04	Network Development of NS-6 (from Ikh Toyruu to Engels Street)	2	3	2	2	2	14	n			
	Rd-05	Network development of NS-7 (from Chinggis Avenue to Ard Ayush Avenue through Ajilchin Street)	2	3	2	2	2	14	n			
	Rd-06	Development of Highway to Connect Ulaanbaatar City to New Airport and Zuumod	3	3	3	2	2	16	N			
	Rd-07	Network Development of EW-2 (from B. Dorj Street to Tolgoit Road through Ard Ayush Avenue)	2	1	2	2	2	10	n			
	Rd-08	Network Development of Disaster Prevention Roads	2	1	2	2	2	10	P			
	Rd-09	Network Development of NS-3 (Western dyke road of the Selbe River)	2	1	2	2	2	10	n			
	Rd-10	Network Development of NS-4 (from Ikh Sarguul Street to Olympic Street)	2	1	2	2	2	10	n			
	Rd-11	Network Development of NS-5 (from Sukhbaatar Street to Chinggis Avenue)	2	1	2	2	2	10	n			
	Rd-12	Network Development of NS-9 (from Chinggis Avenue to Tolgoit Road through Songolon Road)	2	1	2	2	2	10	n			
	Rd-13	Network Development of NS-1 (from Dari Ekhiin Ovoo to Naryn Zam)	2	1	2	2	2	10	n			
	Rd-14	Network Development of NS-8 (from Trade Union Street to Chinggis Avenue)	2	1	2	2	2	10	n			
	Rd-15	Development of Urban Expressway	2	1	2	3	2	11	N			
	Rd-16	Development of Asian Highway No. 3	2	1	2	2	2	10	N			
	Rd-17	Capacity Development of Road Maintenance	3	3	3	3	3	18	P			

Notes: 1) Decision of Scoring:

- 3 Most relevant and/or suitable
- 2 Moderately relevant and/or suitable
- 1 Fairly relevant and/or suitable

2) Environmental Impact:

- PP Greatly positive impact or improved
- P Positive impact or improved
- None
- n Slightly negative impact anticipated
- N Negative impact anticipated
- NN Crucially negative impact anticipated

3) Those written in bold letters with shaded cell stand for selected "Priority Projects/Programs"

Sector	Code	Project	Criteria for Priority ¹⁾						Environ'tl Impact ²⁾	Schedule		
			Coherence with Visions	Urgency	Needs	Feasibility	Social Acceptance	Total Weighted Score		Short ~2015	Medium ~2020	Long ~2030
UTR: Urban Transportation (Public Transport)	Pt-01	LRT/BRT Development of the East-West Line (Phase 1)	3	3	3	2	3	17	PP			
	Pt-02	LRT/BRT Development of North-South Line (Phase 2)	3	1	2	2	2	11	PP			
	Pt-03	Development of New Railway Bypass	2	1	3	2	2	11	P			
	Pt-04	Development of Railway Depots/Terminals at Tolgoit /Tolgoit	3	2	2	3	3	15	P			
	Pt-05	Bus Service Improvement Program	3	3	3	3	3	18	-			
UTR: Urban Transportation (Traffic Management and Others)	Tm-01	Traffic Congestion Reduction Program (Comprehensive Traffic Management Improvement Project)	3	3	3	3	3	18	PP			
	Tm-02	Removal of Traffic Bottlenecks and Construction of Missing Links	3	3	3	3	3	18	P			
	Tm-03	Capacity Development of Traffic Management and Traffic Safety Promotion Program	3	3	3	3	3	18	P			
UWS: Urban Water & Sanitation (Water)	Wr-01	Water Resource Protection	3	3	3	2	2	16	PP			
	Wr-02	New Water Supply Source Development	3	3	3	3	3	18	n			
	Ws-01	Improvement of Water Supply Capacity	3	3	3	3	3	18	n			
	Ws-02	Water Quality Monitoring and Management	3	2	2	2	3	14	-			
	Ws-03	Water Supply Distribution Network Rehabilitation & Enhancement Project	3	2	2	3	3	15	P			
	Ws-04	Water Demand Management Program	2	3	3	3	2	16	-			
	Ws-05	Provision of Water in Ger areas	2	3	3	2	3	16	P			
UWS: Urban Water & Sanitation (Sewerage System)	Ss-01	Central Wastewater Treatment Plant (CWWTP) Capacity Enhancement	2	3	3	2	3	16	PP			
	Ss-02	New Wastewater Treatment Facility Development	2	2	3	1	2	12	P			
	Ss-03	Industrial Wastewater Facility Improvement	2	3	3	1	2	14	PP			
	Ss-04	Sludge Treatment and Bio-energy Facility Development	1	2	2	2	2	11	P			
	Ss-05	Rehabilitation of old pipelines of sewerage	2	3	3	2	3	16	PP			
	Ss-06	Household-based sewerage treatment	2	2	3	2	3	14	P			
	Ss-07	Water Recycling Promotion Program	3	1	2	2	2	11	PP			

Notes: 1) Decision of Scoring:
 3 Most relevant and/or suitable
 2 Moderately relevant and/or suitable
 1 Fairly relevant and/or suitable

2) Environmental Impact:
 PP Greatly positive impact or improved
 P Positive impact or improved
 - None
 n Slightly negative impact anticipated
 N Negative impact anticipated
 NN Crucially negative impact anticipated

3) Those written in bold letters with shaded cell stand for selected "Priority Projects/Programs"

(3/5)

Sector	Code	Project	Criteria for Priority ¹⁾						Environ ^t Impact ²⁾	Schedule		
			Coherence with Visions	Urgency	Needs	Feasibility	Social Acceptance	Total Weighted Score		Short ~2015	Medium ~2020	Long ~2030
EPW: Electric Power	Es-01	Improvement of Electric Power Capacity	2	3	3	3	2	16	-			
	Es-02	New Power Supply System Development	3	3	3	3	2	17	NN			
	En-01	Electric Distribution Network Enhancement	2	2	3	2	3	14	-			
	En-02	Construction and Rehabilitation of Power Substations	2	2	2	3	3	14	-			
	En-03	Installation of Solar System to Governmental Facilities	3	1	2	2	3	12	P			
	Im-01	Electric Demand Management Program	2	3	3	3	2	16	-			
HTS: Heating System	Hs-01	New Heating Source Development	2	2	3	1	3	13	NN			
	Hs-02	Rehabilitation of Heat-only -Boiler	2	3	2	2	2	14	P			
	Hs-03	Local Cluster Heating System Development	2	1	3	2	2	11	P			
	Hn-01	Rehabilitation of Old Pipelines for Heating	2	3	3	2	3	16	P			
	Hn-02	Heating Distribution network Enhancement	2	2	3	2	3	14	P			
	He-01	Improvement of Heat-efficiency of Buildings	2	1	3	2	2	11	PP			
	He-02	Coal Quality Improvement Project	2	3	3	1	3	15	P			
	He-03	Dissemination of Improved Quality Stove	2	3	3	1	2	14	P			
	Im-01	Heating Tariff Structure Reform	2	3	3	3	1	15	-			
SWM: Solid Waste Management	Gc-01	Improvement of Solid Waste Dumping Sites and Enhancement of Management	2	2	3	2	2	13	P			
	Gc-02	Construction of Solid Waste Separation Facilities	2	2	3	2	2	13	P			
	Gc-03	Garbage Collection System Improvement	2	3	3	3	3	17	-			
	Rs-01	Solid Waste Recycling System Development	2	2	3	3	3	15	P			
	Rs-02	Waste-to-Energy Generation Project	2	1	2	2	2	10	P			
	Rs-03	Coal-ash Recycling Project	2	2	2	1	1	10	-			
	Rs-04	Construction Waste Recycling Project	2	1	2	3	2	11	P			
	Im-01	Education and campaign of solid waste management	2	2	3	3	3	15	PP			

Notes: 1) Decision of Scoring: 3 Most relevant and/or suitable
2 Moderately relevant and/or suitable
1 Fairly relevant and/or suitable

2) Environmental Impact: PP Greatly positive impact or improved
P Positive impact or improved
- None
n Slightly negative impact anticipated
N Negative impact anticipated
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3) Those written in bold letters with shaded cell stand for selected "Priority Projects/Programs"

Sector	Code	Project	Criteria for Priority ¹⁾					Total Weighted Score	Environ't'l Impact ²⁾	Schedule		
			Coherence with Visions	Urgency	Needs	Feasibility	Social Acceptance			Short ~2015	Medium ~2020	Long ~2030
HSG: Housing and Housing Policy Enhancement	Lh-01	Guideline Development of Low-cost Housing	2	3	3	3	3	17	-			
	Lh-02	New Town Development by a Public Entity	3	1	3	2	2	12	N			
	Sh-01	Social Housing Development Project (20,000 units)	2	2	3	3	3	15	-			
	Sh-02	Provision of Rental Apartments	2	2	3	2	3	14	-			
	Sh-02	Temporary Housing Area Development for Resettled Households	2	3	3	1	2	14	n			
	Sh-03	Reform/Restructure of Mongolian Housing Financing Company (MHFC)	3	2	3	3	3	16	-			
	Ts-01	Reform of "Building Code" and Construction Supervision System	1	3	3	1	2	13	-			
	Ts-02	Improvement of Heat efficiency of Housing Buildings	3	2	3	1	2	13	P			
	Cd-01	Management Guideline of Apartments	2	2	2	2	2	12	-			
LEV: Living Environment Improvement	Hq-01	Rehabilitation of Old Apartments	3	2	3	3	2	15	P			
	Hq-02	Promotion of New Technologies for Energy-saving and Eco-housing Development	2	1	2	2	2	10	PP			
	Ep-01	Raising Awareness of Environmental and Living Condition Improvement	3	3	3	3	3	18	P			
	Pf-01	Community & City Parks and Open Space Development	3	2	3	2	3	15	P			
	Pf-02	Promotion of Community-based School Facilities	2	2	2	2	3	13	-			
	Ce-01	Establishment of Support to Community-based Organizations for Environmental Improvement and Social Activities	2	3	3	3	3	17	-			
	Ce-02	Establishment of Participatory Land and Immovable Asset Assessment System	2	3	3	2	1	14	-			
EVM: Environmental Management	Ne-01	Development of Forest Protection Management and Monitoring System	3	2	3	2	2	14	PP			
	Pc-01	Development of Air Quality Management and Monitoring System	3	3	3	2	3	17	PP			
	Pc-02	Development of Water Quality Management and Monitoring System	3	2	3	2	3	15	P			
	Ea-01	Capacity Development on Management of the EIA System	3	3	2	2	2	15	-			
ANM: Urban Amenity & Disaster Management	Df-01	Enforcement of Relocation from Flood Prone Areas	2	2	3	1	1	11	n			
	Df-02	Rehabilitation of Storm Water Drainage Canals and the Entire System	2	2	3	1	2	12	P			
	Df-03	Promotion Program of "Community-based Preparedness" against Disaster	2	3	2	1	2	13	P			
	Df-04	Road Improvement and Emergency Vehicles Procurement Program	2	2	3	2	3	14	-			

Notes: 1) Decision of Scoring: 3 Most relevant and/or suitable
 2 Moderately relevant and/or suitable
 1 Fairly relevant and/or suitable

2) Environmental Impact: PP Greatly positive impact or improved
 P Positive impact or improved
 - None
 n Slightly negative impact anticipated
 N Negative impact anticipated
 NN Crucially negative impact anticipated

3) Those written in bold letters with shaded cell stand for selected "Priority Projects/Programs"

(5/5)

Sector	Code	Project	Criteria for Priority ¹⁾						Environ'tl Impact ²⁾	Schedule		
			Coherence with Visions	Urgency	Needs	Feasibility	Social Acceptance	Total Weighted Score		Short ~2015	Medium ~2020	Long ~2030
ANM: Urban Amenity & Disaster Management (cont'd)	Go-01	City Parks and Green Network Development Project	3	2	3	2	3	15	P			
	Go-02	Promotion of a Campaign for "Greening Buildings and Streets"	3	1	3	2	3	13	PP			
SSI: Social Service Improvement	Ed-01	Development of Planning Standard and Guidelines of Educational Facilities	2	3	3	3	3	17	-			
	Ed-02	Acceleration Program for Pre-school and School Facility Development	2	2	2	2	3	13	-			
	He-01	Development of Planning Standard and Guidelines of Health Care Facilities	2	3	3	3	3	17	-			
	He-02	Acceleration Program for Health Care Facility Development	2	2	3	2	3	14	-			
ILG: Institutional & Legal-base Development	Ud-01	Legal Enhancement of Urban Planning and Urban Development-related administration	3	3	3	2	2	16	-			
	Ud-02	Introduction of Property Assessment Land Valuation Systems	3	3	3	2	2	16	-			
	Ud-03	Training Program for Urban Planning Administration and Capacity Building for Realizing the UB Master Plan 2030	3	3	3	3	3	18	-			
	Ud-04	Development of Resettlement Policy and Plan	2	1	2	2	2	10	-			
	Ud-05	Development of "Neighborhood Area Development Plan (NADEP)" for Ger area improvement	2	3	3	2	2	15	P			
	Ud-06	Establishment of Institutional System for Land Readjustment/ Land Pooling (by Implementing of Pilot Projects)	2	3	3	2	2	15	-			
	Hs-01	Institutional Development for Social Housing Policies and Programs	3	3	3	2	3	17	-			
	Hs-02	Financial Capacity Building Related to Social Housing Development	3	3	3	2	3	17	-			
	Hs-03	Facilitation of a Self-Help Housing Construction System	1	1	2	2	2	9	-			
	Cs-01	Business Development Policy to Strengthen the Construction-related Sector	2	2	3	3	2	14	-			
DFS: Development Financing System	Fs-01	Financial Basis Enhancement Program of UB City Government	1	2	3	2	2	12	-			
	Fs-02	Formulation of Community-based Financing System	1	3	3	2	3	15	-			
	Fs-03	Formulation of Value Capture Methods for UB City	1	2	3	3	1	12	-			
	Fs-04	Exploration of Long-term City Bond Issuance by UB City	3	2	2	2	2	13	-			
	Fs-05	Establishment of the "UB Infrastructure Financing Public Corporation"	2	2	3	3	2	14	-			
	Fs-06	Comprehensive Policy Reform of "Public Service Tariff Structure"	2	3	3	3	1	15	-			
	Fs-07	Preparation of Implementation Framework for PPP-based Public Service and Urban Development Projects	3	3	3	3	3	18	-			

Notes: 1) Decision of Scoring: 3 Most relevant and/or suitable
2 Moderately relevant and/or suitable
1 Fairly relevant and/or suitable

2) Environmental Impact: PP Greatly positive impact or improved
P Positive impact or improved
- None
n Slightly negative impact anticipated
N Negative impact anticipated
NN Crucially negative impact anticipated

3) Those written in bold letters with shaded cell stand for selected "Priority Projects/Programs"

Table 2.4.2 Summary of the Priority Programs/Projects

(1/2)

Sector	Code	Project	Executing Schedule			Cost Estimate (US\$ mill.)
			Short ~2015	Medium	Long ~2030	
UED: Urban Economic Enhancement	Bc-01	Improvement of Incubation Facility Project	■	■	■	20.0
	Sc-02	Development of ICT and Knowledge Industry Center	■	■	■	50.0
	Tm-01	Improvement of Tourism Information Provision Project	■	■	■	5.0
UTR: Urban Transportation (Road)	Rd-01	Network Development of EW-1 (from Gachuurt to 22Km-post through Peace Avenue)	■	■	■	185.8
	Rd-02	Network Development of EW-3 (Bayanzurkh to Road to Thermal Power Station No.4 through Naryn Zam)	■	■	■	164.9
	Rd-03	Network Development of NS-2 (Eastern section of Middle Ring Road)	■	■	■	37.6
	Rd-04	Network Development of NS-6 (from Ikh Toyruu to Engels Street)	■	■	■	12.3
	Rd-05	Network development of NS-7 (from Chinggis Avenue to Ard Ayush Avenue through Ajilchin Street)	■	■	■	57.5
	Rd-06	Development of Highway to Connect Ulaanbaatar City to New Airport and Zuumod	■	■	■	90.0
	Rd-17	Capacity Development of Road Maintenance	■	■	■	166.0
UTR: Urban Transportation (Public Transport)	Pt-01	LRT/BRT Development of the East-West Line (Phase 1)	■	■	■	300.0
	Pt-05	Bus Service Improvement Program	■	■	■	70.0
UTR: Urban Transportation (Traffic Management and Others)	Tm-01	Traffic Congestion Reduction Program (Comprehensive Traffic Management Improvement Project)	■	■	■	30.0
	Tm-02	Removal of Traffic Bottlenecks and Construction of Missing Links	■	■	■	82.0
	Tm-03	Capacity Development of Traffic Management and Traffic Safety Promotion Program	■	■	■	20.0
UWS: Urban Water & Sanitation (Water)	Wr-02	New Water Supply Source Development	■	■	■	290.0
	Ws-01	Improvement of Water Supply Capacity	■	■	■	30.0
	Ws-04	Water Demand Management Program	■	■	■	10.0
UWS: Urban Water & Sanitation (Sewerage System)	Ss-01	Central Wastewater Treatment Plant (CWWTP) Capacity Enhancement	■	■	■	120.0
	Ss-03	Industrial Wastewater Facility Improvement	■	■	■	30.0
	Ss-05	Rehabilitation of old pipelines of sewerage	■	■	■	30.0
	Ss-06	Household-based sewerage treatment	■	■	■	40.0
EPW: Electric Power	Es-02	New Power Supply System Development	■	■	■	250.0
HTS: Heating System	Hs-01	New Heating Source Development	■	■	■	100.0
	Hs-02	Rehabilitation of Heat-only -Boiler	■	■	■	0.0
	Hn-02	Heating Distribution network Enhancement	■	■	■	40.0
	He-02	Coal Quality Improvement Project	■	■	■	6.0

(2/2)

Sector	Code	Project	Executing Schedule			Cost Estimate (US\$ mill.)
			Short ~2015	Medium	Long ~2030	
SWM: Solid Waste Management	Gc-01	Improvement of Solid Waste Dumping Sites and Enhancement of Management	■	■		5.7
	Gc-03	Garbage Collection System Improvement	■	■	■	10.0
	Rs-01	Solid Waste Recycling System Development	■	■		0.0
HSG: Housing and Housing Policy Enhancement	Sh-01	Social Housing Development Project (20,000 units)	■	■		150.0
	Sh-02	Temporary Housing Area Development for Resettled Households	■			84.0
	Sh-03	Reform/Restructure of Mongolian Housing Financing Company (MHFC)	■			0.0
LEV: Living Environment Improvement	Ep-01	Raising Awareness of Environmental and Living Condition Improvement	■			2.0
	Ce-01	Establishment of Support to Community-based Organizations for Environmental Improvement and Social Activities	■	■	■	10.0
	Ce-02	Establishment of Participatory Land and Immovable Asset Assessment System	■			0.2
EVM: Environmental Management	Ne-01	Development of Forest Protection Management and Monitoring System	■	■		4.0
	Pc-01	Development of Air Quality Management and Monitoring System	■	■		3.0
	Pc-02	Development of Water Quality Management and Monitoring System	■	■		2.0
ANM: Urban Amenity & Disaster Management	Df-01	Enforcement of Relocation from Flood Prone Areas	■	■	■	50.0
	Go-01	City Parks and Green Network Development Project	■	■		30.0
SSI: Social Service Improvement	Ed-01	Development of Planning Standard and Guidelines of Educational Facilities	■			0.5
	Ed-02	Acceleration Program for Pre-school and School Facility Development	■	■	■	50.0
	He-01	Development of Planning Standard and Guidelines of Health Care Facilities	■			0.5
	He-02	Acceleration Program for Health Care Facility Development	■	■	■	50.0
ILG: Institutional & Legal-base Development	Ud-01	Legal Enhancement of Urban Planning and Urban Development-related administration	■			1.5
	Ud-03	Training Program for Urban Planning Administration and Capacity Building for Realizing the UB Master Plan 2030	■	■	■	4.0
	Ud-05	Development of "Neighborhood Area Development Plan (NADEP)" for Ger Area Improvement	■	■		0.0
	Hs-01	Institutional Development for Social Housing Policies and Programs	■	■		1.0
	Hs-02	Financial Capacity Building Related to Social Housing Development	■			2.0
DFS: Development Financing System	Fs-02	Formulation of Community-based Financing System	■	■		0.0
	Fs-06	Comprehensive Policy Reform of "Public Service Tariff Structure"	■			1.0
	Fs-07	Preparation of Implementation Framework for PPP-based Public Service and Urban Development Projects	■	■	■	1.0
Total						2,700

Source: JICA Study Team