

10. DEVELOPMENT FINANCING MECHANISM

10.1 Weak Capacities of Development Funds and Municipal Financing

The total expenditure of the Government of Mongolia for the year 2006 was Tg. 1,177 billion, whereas that for the local governments combined was Tg. 96 billion. About 80% of the total expenditure of the Mongolian General Budget was current expenditure, whereas only 14% was allocated to capital expenditure. The total expenditure of the UB city government in 2006 reached Tg. 29.0 billion, out of which Tg. 18.2 billion, or 63%, was allocated for current expenditure, and Tg.10.8 billion, or 37%, for capital expenditure. Thus, the budgets to be appropriated for capital formation are limited in both the central and local governments. For the central government, the per-capita capital expenditure was Tg. 60,580, while it was Tg. 10,520 for the UB city government. **Approximately Tg. 71,000** was allocated as budget for capital expenditure per capita in total.

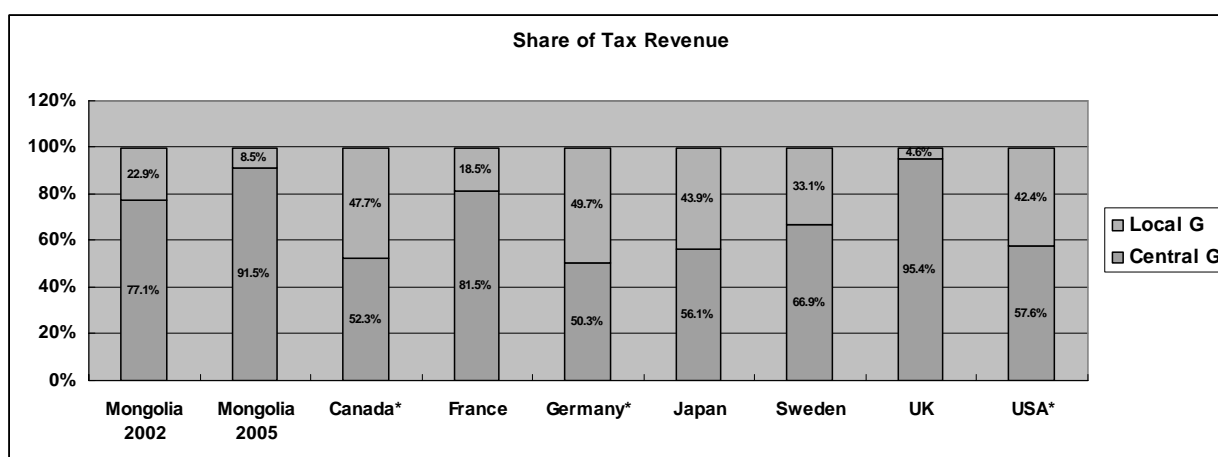
Table 10.1 Government Budgetary Structure

Item	2006 (Tg. Million)	(%)
Central Government		
Total Revenue and Grants	1,299,433	100%
Current Revenue	1,270,273	98%
Grants and Transfers	29,159	2%
Total Expenditure	1,176,659	100%
Current Expenditure	938,053	80%
Capital Expenditure	159,619	14%
Net Lending	78,987	6%
UB Local Government		
Total Revenue	40,519	100%
Current Revenue	38,098	94%
Capital and Grants Revenue	2,421	6%
Total Expenditure	29,025	100%
Current Expenditure	18,189	63%
Capital Expenditure	10,835	37%
<i>Subsidies & Transfers</i>	<i>4,141</i>	<i>14%</i>

Source: JICA Study Team

The combined share of tax revenue of the local governments in the total revenue of Mongolia is 8.5% with 91.5% going to the central government. Mongolia's tax revenue allocation system, as shown in Figure 10.1, is centralized, comparable with that of the UK. Since UB City accounts for more than half of the economic activities in Mongolia, the system could restrict the current autonomy UB City is enjoying in funding its public service provision based on potential tax revenue.

Figure 10.1 Composition of Tax Revenue between the Central and Local Governments of Various Countries



Source: Mongolian Statistical Year Book 2005 and OECD Statistics 2002

Note: Countries with * mark adopt federal government system.

The revenue size (tax and non-tax revenue) of Ulaanbaatar City in 2005 was 1.9% of its GRDP, which is far smaller than those of Fukuoka City (3.6%) and Sendai City (3.5%) both in Japan with a similar population size as UB City's. The combined property tax (12%) and personal income tax (19%) of UB City was 31% of its total revenue for 2007, as shown in Table 10.2.

Table 10.2 Municipal Revenue Sources of Ulaanbaatar City (2006 and 2007)

No	Revenue type	2006			2007 draft
		Plan	Actual (expected)	%	
	Total revenue and grants	39,858,178.5	40,518,599.4		41,321,452.8
	Total without transfer	33,861,947.8	34,522,368.7	100%	36,906,648.7
1	Personal income tax	6,036,108.4	6,653,686.9	19%	2,954,101.7
2	Property taxes	3,983,618.9	3,983,820.3	12%	5,000,613.5
3	Taxes on goods and services	3,032,000.0	3,032,000.0	9%	3,212,000.0
4	Other taxes	11,744,522.4	11,746,610.1	34%	16,137,515.4
5	Non-tax revenue	6,424,204.1	6,685,234.5	19%	6,868,468.1
6	Revenue from transfers	5,996,230.7	5,996,230.7	NA	4,414,804.1
7	Capital revenue	2,641,494.0	2,421,016.9	7%	2,733,950.0

Source: Ulaanbaatar City

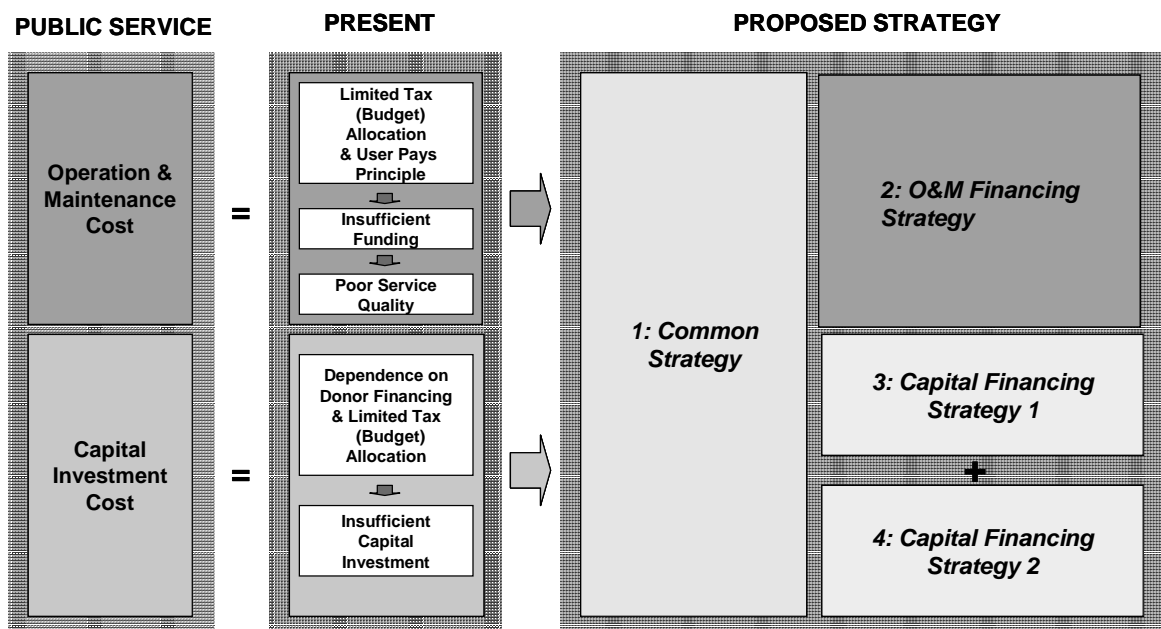
10.2 Strengthening of Municipal Financing Capacities

There are six (6) basic principles to be applied when financing public services under a market economy. The most important is the “**beneficiary-pay-principle**” which purports that beneficiary should pay the proportional amount of benefit from public services the beneficiary receives. Under the market economy, the government is not the sole entity which shoulders all public service cost, but the beneficiary of a service is the other entity that pays for the cost in proportion to the amount of benefits received. The six (6) basic principles are:

- Beneficiary pays in proportion to the amount of benefit of public services he/she receives;
- Tax imposition in proportion to the amount of economic value that the tax payer creates or owns;
- Matching of service cost payment and benefit in terms of both amount and time;
- Best mix of three funding sources of public funding, user charge and beneficiary charge;
- Utilization of capital markets; and,
- Facilitation of stakeholder and private sector participation.

These are examined in the line with a strategic framework that employs the three strategies of: **Common Strategy; O&M Financing Strategy and Capital Financing Strategy**, as shown in Figure 10.2.

Figure 10.2 Strategic Framework for Financing Public Services



Source: JICA Study Team

1) Common Strategy

The common strategy has four components: (1) Broaden Tax Revenue Base; (2) Matching of service cost payment and benefit in terms of both amount and time; (3) Best mix of three funding sources of public funding, user charge and beneficiary charge; and (4) Efficient Finance Management System.

(1) Broaden Tax Revenue Base

In order for UB City to have an adequate revenue size to meet its development needs in terms of infrastructure development and economic activities, it is essential to reform the current centralized revenue allocation system in which the City does not enjoy the freedom of attaining budget revenue size relative to its scale of economic activities.

Within the framework of the current fiscal system, it is recommended that the improvement and expansion of “**property-related taxation**” should be considered to broaden the current revenue base of UB City. The following measures are proposed and at the same time the registration system of property asset should be upgraded for the effective imposition of these taxes.

Application of property-related taxes: Such as “Real Estate Tax” to apartment owners and “Immovable Property (building) Tax” to detached houses and apartment owners.

Application of urban planning tax: Imposed on property owners within the urbanized zone. Revenues from this urban planning tax shall be earmarked for facility development and improvement of urban planning facilities such as roads, urban rail, bus terminals, parks, utilities, waste disposal, etc. which are designated in the UB Master Plan. In Japan, the tax rate is 0.3% of the property value (land and building) while the rate of property tax is 1.4% of the property value.

The tax rate should be determined very carefully after a thorough assessment of the affordability of households and through different income levels. It should also start at the minimal level of the tax rate.

(2) Matching Costs and Benefits

Majority of public service provision need large initial capital investments to construct facilities for the provision of services. The beneficiary should pay, through the tax payment, the cost of constructing a facility in proportion to the service the beneficiary receives.

The operation and maintenance cost of service provision may be covered through a user charge on a full cost recovery basis. In order to distribute the construction cost evenly throughout the long economic life of the facility, the service provider may borrow the construction cost in the long term to match the long economic life of the facility so that tax payments from beneficiaries in a particular period could cover the fair distributed cost of construction. This is the “matching of cost and benefit” strategy of public service provision, as illustrated in Figure 10.3. This strategy should be applied to the fiscal management of UB City.

2) Operation & Maintenance Financing Strategies

A basic strategy in financing the operation and maintenance of public service provision can be represented in the “**From Government-pay Principle to User-pays Principle**”. Figure 10.4 shows the outline of the strategy in which a shift would be facilitated from the current funding sources and inclined toward public funding (Central Government and UB City: Government pay) to an **appropriate mix** of various funding sources (Beneficiary: Community, User Charge and Private Sector) to cover the operation and maintenance cost of public service provision.

Figure 10.4 Operation and Maintenance Financing Strategies

Government-pays Principle (Present)

URBAN PUBLIC SERVICE	CONSTRUCTION						OPERATION & MAINTENANCE					
	Funding Body					Service Quality	Funding Body					Service Quality
	GOM	UB	Comm unity	User	Private		GOM	UB	Comm unity	User	Private	
1. Transport	-	○	-	-	-	C	-	△	-	○	-	D
2. Utilities	○	○	-	-	-	C	△	△	-	○	-	D
3. Social Infra/Living Environ	○	-	-	-	○	C	○	△	-	△	○	D
4. Housing	△	△	-	○	○	D	△	△	△	○	-	D
5. Urban Development	-	-	-	-	○	D	-	-	-	-	○	D



User-pays Principle (Proposed)

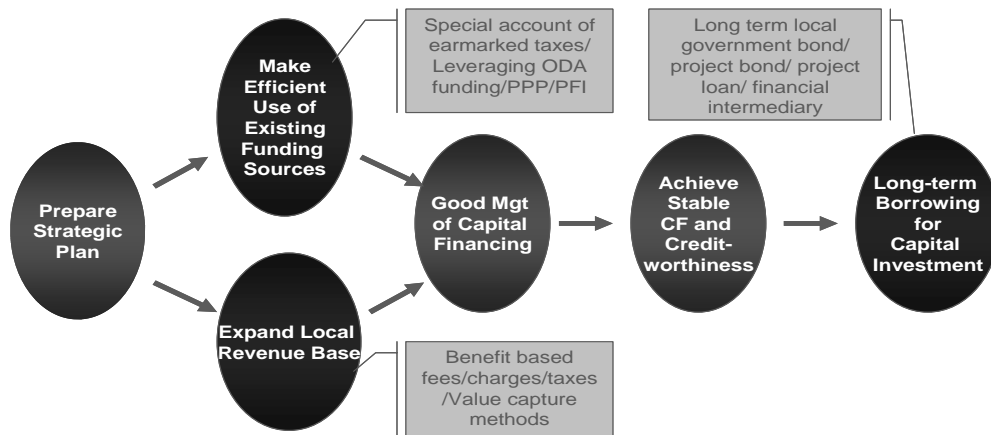
URBAN PUBLIC SERVICE	CONSTRUCTION						OPERATION & MAINTENANCE					
	Funding Body					Service Quality	Funding Body					Service Quality
	GOM	UB	Comm unity	User	Private		GOM	UB	Comm unity	User	Private	
1. Transport	○	○	-	△	○	A	△	△	-	○	○	A
2. Utilities	○	○	-	△	△	A	△	△	△	○	△	A
3. Social Infra/Living Environ	○	△	△	△	○	A	△	○	△	○	○	A
4. Housing	△	△	○	○	○	A	△	△	○	○	○	A
5. Urban Development	-	△	△	△	○	A	-	△	△	△	○	A

Source: JICA Study Team

3) Capital Financing Strategy 1

Capital financing strategy is twofold, as shown in Figure 10.5. The first step is to make efficient use of existing funding sources and to expand tax revenue base. Based on the creditworthiness of UB City, which can be gleaned from and created through the first step, the second step is to make UB City capable of borrowing long-term funds for construction from the capital market.

Figure 10.5 Capital Financing Strategy 1



Source: JICA Study Team

(1) Make Efficient Use of Existing Funding Sources

Special account of earmarked taxes and budgets: The road fund is an example of earmarking a user charge on beneficiaries for the provision of road services. The fund earmarks proceeds from vehicle registration fees or entry fees from car users entering UB City. A similar earmarking of funds should be practiced more comprehensively. One such example is the **systematic parking fee collection** to develop parking facilities in the city's CBD.

Leveraging ODA funding: One of the major funding sources for the development of infrastructure is through ODA donors' funding. However, Mongolia's current use of donor funding is fragmented and is not utilized in a concentrated manner. UB City should orchestrate the usage of potential donor funding by streamlining and coordinating various interests presented by different donors and agencies based on the recommendations made by the UBMPS.

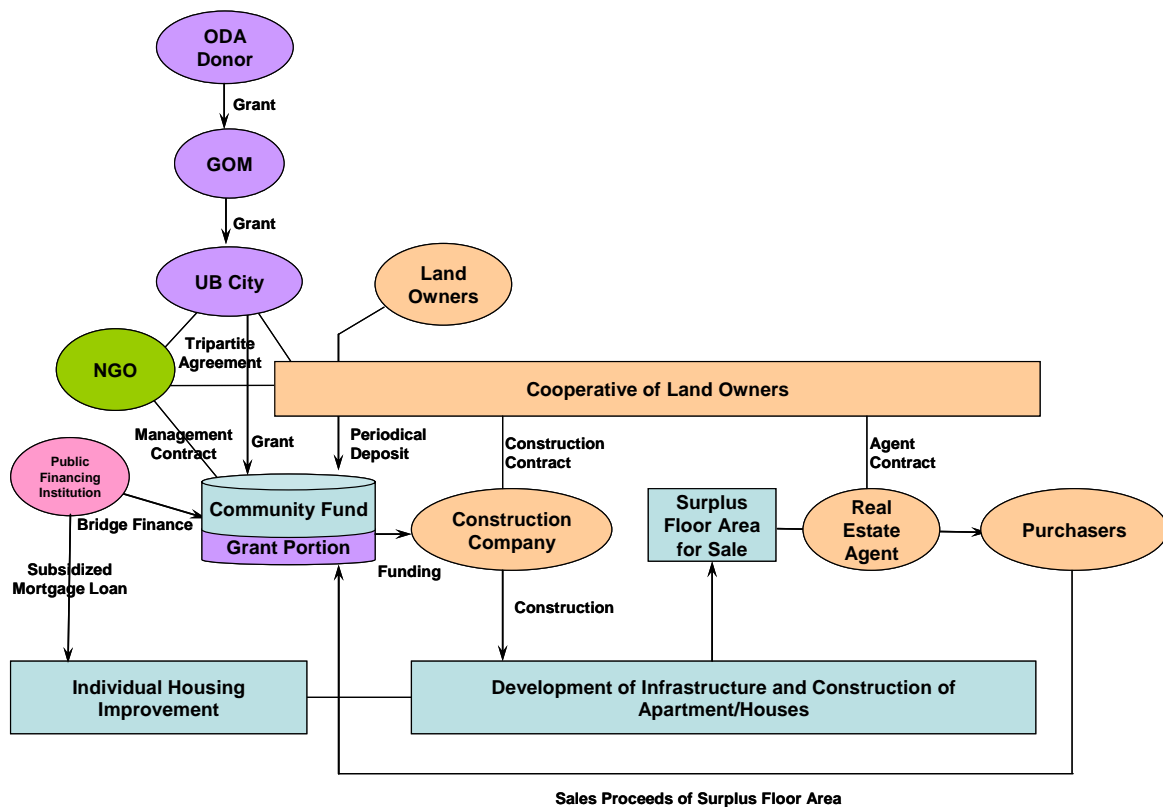
Application of "Community-based Financing System": As a part of self-help mechanism for the improvement of the Ger areas, a community fund system may be developed as illustrated in Figure 10.6. This system is characterized through the following mechanisms:

- **A community fund** will be created with funding from the Government of Mongolia on the basis of ODA grant money, or an ODA loan, to be granted to Ulaanbaatar City together with periodical saving's deposit from landowners in the community.
- **A cooperative among the landowners** will be formed as a legal implementing body of the system. A NGO that is capable of managing such funds will be the fund manager of the community fund with assistance from a commercial bank. An escrow account will preferably be used for the management of the community fund.
- **A tripartite agreement** will be signed by Ulaanbaatar City, the landowners' cooperative, and the NGO. Using the grant and the deposited savings from the landowners as its own funding³, the cooperative will borrow bridge financing from the MHFC to construct a mix of mid-rise condominium buildings and apartments to house the landowners in the community.

³ The loan to value ratio should be less than 80%, in other words, more than 20% of the own funding will be required.

- **Surplus floor area**, or apartment units, shall be created in the development and sold to the market to supplement investments for necessary infrastructure provision and community facilities. It will also form as a repayment of the bridge financing from public financing institutions.
- **Subsidized mortgage loans** shall be provided to middle- and lower-income households who wish to buy apartment units, as well as households who wish to move into the community.

Figure 10.6 Proposed Community-based Financing System



Source: JICA Study Team

(2) Expand Local Revenue Sources

The value capture method should be widely applied to ensnare funding for beneficiaries of positive economic influence generated by the construction of large infrastructures. Facilitation of the value capture methods should be carried out in the following manner:

- **Development Charge:** Charges on infrastructure costs and development permit.
- **Developer Contribution:** Sharing on cost of roads, utilities, park, school, hospital, community facilities, and other infrastructures.
- **Betterment Charge:** To compensate for the improved value accrued to the property owners through the provision of public facilities.
- **Infrastructure Service Fund:** In-lieu-payment of necessary infrastructure provision.

With a variety of funding sources, a sectoral financing framework for infrastructure development and their operation and maintenance is depicted in Table 10.3.

Table 10.3 Sectoral Financing Framework for Infrastructure Development and O&M

PUBLIC SERVICE		FUNDING SOURCES							
		CONSTRUCTION				OPERATION & MAINTENANCE			
		Tax	Donor	Value Capture	Private	Tax	Donor	User Charge	Private
1. Transport	1) Bus	○	○	-	○	△	-	○	○
	2) MRT	○	○	△	○	△	-	○	△
	4) Road	○	○	△	△	○	-	-	△
	3) Toll Road	○	○	△	△	-	-	○	○
2. Utilities	1) Power	○	○	-	△	△	-	○	△
	2) Heating	○	○	△	△	△	△	○	△
	3) Water Supply	○	○	△	△	△	△	○	△
	4) Sewerage	○	○	△	-	△	△	○	△
	5) Solid Waste	○	○	-	△	△	△	○	△
3. Social Infra/Living Environ	1) Public School	○	○	△	-	○	-	-	-
	2) Public Hospital	○	○	-	-	○	-	△	-
	3) Community Facilities	○	○	△	△	○	△	△	△
	4) Park	○	○	△	△	○	-	△	△
4. Housing	1) Middle-Income	△	△	△	○	△	△	○	△
	2) Low-Income	○	○	○	△	○	△	○	△
5. Urban Development		△	△	△	○	△	-	△	○

Notes: ○ Major Funding Source; △ Minor Funding Source/Subsidy; - Not applicable; Shaded: to be facilitated

Source: JICA Study Team

4) Capital Financing Strategy 2

(1) Issuance of City Bond and Long-term Loans in the Capital Market

The second step is to make UB City capable to borrow long-term from capital markets on the basis of its own **creditworthiness** by means of long term municipal bonds, project bonds, project loans, and so on. The City should ultimately acquire its own credit rating from relevant credit agencies to widen and increase its potential for raising funds from the capital market.

(2) Establishment of a “UB Infrastructure Financing Corporation”

Establishment of a financing intermediary that specializes in financing infrastructure development could allow UB City to have an efficient vehicle to tap the Central Government’s financial resources (through revenues from the mining sector), multilateral and bilateral financial institutions, and ultimately from the domestic and foreign capital markets.

Although it may need central government guarantee in the beginning phase, it will be worthwhile for UB City to examine the possibility of establishing the **UB Infrastructure Financing Corporation (UBIFC)** which will play a role as a financing intermediary in initiating infrastructure projects by public service entities as well as the UB City government. In the long run, it could be able to borrow long-term funds from capital markets or leverage its equity capital based on its own creditworthiness.

5) Summary of Proposed Measures

The proposed measures are summarized in Figure 10.7.

Figure 10.7 Summary of Proposed Strategies for Financing Capacity Enhancement

<p>Common Strategy</p> <ol style="list-style-type: none"> 1. Broaden Tax Revenue Base <ul style="list-style-type: none"> □ Improvement and expansion of property related taxation □ Introduction of Urban Planning Tax 2. Efficient Finance Management System 3. Matching of service cost payment and benefit <ul style="list-style-type: none"> □ Beneficiaries-Pay-Principle based on Value Capture Mechanism 4. Best-mix of three funding sources = public funding, user charge and beneficiary charge 	<p>O&M Financing Strategy</p> <ul style="list-style-type: none"> ● Stakeholder participation <ul style="list-style-type: none"> □ Community-based housing and public service provision ● Private sector participation <ul style="list-style-type: none"> □ Introduction of Public Private Partnership (PPP)
	<p>Capital Financing Strategy 1</p> <ul style="list-style-type: none"> ● Efficient Use of Existing Funding Sources <ul style="list-style-type: none"> □ Special account of earmarked taxes and budgets □ Leveraging ODA funding □ Application of Community Financing and PPP
	<p>Capital Financing Strategy 2</p> <ul style="list-style-type: none"> ● Long-term Municipal Bond, Project Bond & Loan ● Establishment of Financial Intermediary <ul style="list-style-type: none"> □ UB Infrastructure Financing Corporation

Source: JICA Study Team

11. IMPROVEMENT OF INSTITUTIONAL AND LEGAL FRAMEWORK

11.1 Planning Issues

Since 2002 the Government of Mongolia has built a legal framework for urban development and land management. However, the entire legal framework is still so weak that it does not cover the necessary administration for urban growth management. Major legal systems related to urban planning are available in three (3) laws; Urban Development Law, Housing Law, and Land Law. The three laws should be mutually coherent and integrated, as conceptualized in Figure 11.1.

Figure 11.1 Legal Integration of Three Urban Planning Laws



Source: JICA Study Team

In addition, new regulations and/or guidelines should be created to meet current requirements on urban development and the improvement of the *ger* areas. The following elements should be employed to enhance the general legal function:

- To review the **Urban Development Law** as a tool of development “control” and “promotion”, as well as stipulate and address requirements of the following:
 - Legal functions of the Master Plan and governmental responsibilities;
 - Zoning system; and
 - Development guidelines.
- To review **Housing Law** for the establishment of a “**Social Housing Corporation**” and

the enlargement of a “**Housing Development Fund**” in tandem with the following:

- Housing guidelines and standards; and
- Realization of the Housing Development Fund.
- Review of the Land Law and “Law on Allocation of Land to Mongolian Citizens for Ownership” for appropriate land management and land value assessment systems, based on the need to rationalize the following items:
 - Land registration system;
 - Newly amended ownership allowance: 700m²/HH to 700m²/person, and
 - Land use permission.
- To build **new laws** to guide the requisite urban development and Ger area improvement through the following items:
 - Land Readjustment Law;
 - Urban Redevelopment Law;
 - New Town Development Law; and
 - Land Compulsory Expropriation Law.

11.2 Enhancement of the Urban Development Law

(1) Amended Urban Development Law

Although the Urban Development Law was enacted in 1998, it has not been effectively enforced in a proper legal environment to regulate urban development issues under a market driven economy. Because of this fact, the Urban Development Law was amended and approved by the Parliament in June 2008. The amended law is expected to provide legal teeth for the effective management of urban development and land use in urban areas.

The amended law stipulates a “**Zoning System**” in the master plan, as well as the legal objectives and responsibilities of master plans and approval procedures on urban development plans and projects, the documentation of the master plan and other related plans, etc. Out of these articles, the most important is the Zoning System which shall regulate appropriate land use and help manage housing and facility development. Although this system needs to be inherently associated with administrative enforcement and monitoring, any effective and concrete measures on these aspects have yet to be stipulated.

(2) Sub-regulations and Administrative Procedures for Execution of the Urban Development Law

Sub-procedures, rules of administrative operation, enforcement regulations and ordinances have not been definitely established under the Law yet, and these issues are still being formulated. It will also employ extensive research and include discussion on such issues as: codes and criteria for zoning system, basic planning process for city master plans, integrated standards and formats for urban development documents, guidelines for city design and landscape, Ger area redevelopment planning, and other related regulations in order to establish appropriate legal environment in the conduct of urban development and administrative interventions on the construction sector.

Such an integrated regulatory framework is crucial in the building and development of modern Mongolian cities. They should also be explored for suitability and for the uniqueness of this country, with professional advice and reference from the experiences of developed countries.

Another important legal aspect is the regulation of **physical and spatial limits** on building and land use with respect to designated zones. This regulation, which is popular in progressive countries, will determine the environmental quality, spatial structure and the economic efficiency of land use. Useful indicators for regulation are as follows:

- Floor area ratio (FAR = total floor area of the building/land area);
- Building coverage ratio (BCR = building area/land area);
- Building height limit; and/or,
- Building setback (requirement of distance from the right of way to the building surface line).

11.3 Legal System to Realize Housing Policies

The Housing Law of Mongolia regulates the planning and design aspects of housing facilities based on living standards and the maintenance of apartments. It also stipulates the setting up of the "**Housing Development Fund (HDF)**" and the guidelines for using it.

The Central Government has enacted some basic regulations related to housing and apartment development as described in the "Housing Privatization Law" and the "Law on the Property of Shared-ownership of Residential Buildings and Legal Status of the Condominium Association". However, many relevant laws and regulations still have to be established or amended to suit current socio-economic conditions and realities.

The establishment of new public institutions for housing finance and development in order to ensure housing improvement for vulnerable citizens is expected. The following legal measures are especially desired to be used for working groups involving MRTCUD, UB City, and other concerned agencies:

- Law on **Housing Development Financing Institution** (HDFI)
- Law on **Community Organizations Development Institute** (CODI)
- Law on **Social Housing Corporation** (SHC)

The financial resources of "Housing Development Fund" (HDF) stipulated in the Housing Law is not sufficient to meet the present housing needs, and new financial resources have to be incorporated into HDF. To this end, the following resources are expected to be introduced for housing finance and development along with the necessary legal amendments on financial arrangements.

- Mongolian Development Fund
- National Pension Fund
- Housing Development Mutual Fund

11.4 Legalization of Development-Related Laws

Besides the Urban Development Law and Housing Law Mongolia has the following major law relative to the land and housing development.

- Construction Law
- Land Law
- Environmental Protection Law / Environmental Impact Assessment Law

“**Construction Law**” regulates all aspects of development, engineering drawings, activities related to the development of the construction material industry, the norms and standards of construction works, and the normative technological and engineering criteria. It prescribes the rules of maintenance in construction sites and of technical supervision and safety of the compounds. However, currently the Construction Law is not applied in Ger areas. Therefore, some measures that will control construction and urban development activities in those areas have to be introduced.

“**Land Law**” stipulates the extent of land tenure, such as “ownership”, “possession” and “using right of land.” The land ownership of Mongolian people was approved in 2002 through the “Law of Allocation of lands to Mongolian Citizens for Ownership”. More uniquely, there is a land fee decision system for land possession using the “Law of Mongolia on Land Fee.” It should also be noted that there is no land value assessment system which is an essential element that facilitates market-driven urban development. A rational system for land value assessment has to be introduced in such a way that economically rational land use is facilitated in line with the urban development law and land use regulations.

Another planning issue is that the newly amended land ownership allowance from 700 m² per household to 700 m² per capita in 2008 will affect the efficiency of housing land use and make the improvement of Ger areas difficult. As it is obvious that within the current urban area, no sufficient land remains to respond to requirements under the new allowance of land ownership, urbanization will tend to be expanded outward, thereby leading to an inefficient urban structure against the concept of “Compact City.”

“**Environmental Protection Law**” and “**Environmental Assessment Law**” prescribe basic policies for preserving the urban and natural environments and the technical standards for the environment impact assessment. These laws have to be operated together with urban growth management and the review of the surveillance system.

11.5 New Legal Framework for Urban Planning Projects

The existing legal system in Mongolia is inadequate for promoting land, housing and commercial development projects which have been included in the Master Plan. The absence of a legal framework for project implementation is one of the major obstacles in the promotion of projects in a proper manner by private investors.

A regulatory framework for development projects should be established, such as: a “Land Readjustment Law”, “Urban Redevelopment Law”, and a “New Town Development Law”. Table 11.1 shows the expected legal framework in land and housing development that should be further studied, taking into account the financial burden of the public sector, the acceleration of private participation in public services, the creation of new financial sources, and the improvement of the investment environment for the private sector.

Table 11.1 Legal Framework to be Studied for Land and Housing Development

Legal Framework	Existing Legal System	New Legal System	Legal Objectives
Law for city planning and development	Urban Development Law	To be revised	Effective use of the private sector for land and housing development, through the introduction of a new city planning system such as strict zoning, growth management, legal district plan, urban facilities, and new development permit system.
Law for Land Development	-	Community Development Networking System	Introduction of land and Infrastructure development system which is simple and easy to understand for citizens, with no heavy financial burden on the public sector.
		Land Readjustment Law	
		New Town Development Law	Large-scale supply of housing and workplaces by enabling compulsory land expropriation or purchase in advance.
		Land Compulsory Expropriation Law	To vest public sector with land compulsory expropriation rights inside the boundary of the authorized city planning projects.
Law for Housing Development	Housing Law	To be revised	Enhancement of financial resources and establishment of implementation body for affordable housings for low income class people.
Law for Urban Redevelopment	-	Urban Redevelopment Law	Institutionalization of a mechanism to improve, renewal and redevelop old and disorderly housing and/or commercial areas with sufficient transportation network, infrastructure and utilities.
Law for Land Ownership	Land Law; Law of Allocation of Land to Mongolian Citizens for Ownership	To be revised	Improvement of the land-use management system to be linked with the “Zoning System” designated in the Master Plan, and introduction of a land value assessment system.

Source: JICA Study Team

12. CITY DEVELOPMENT PROGRAM

12.1 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 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.

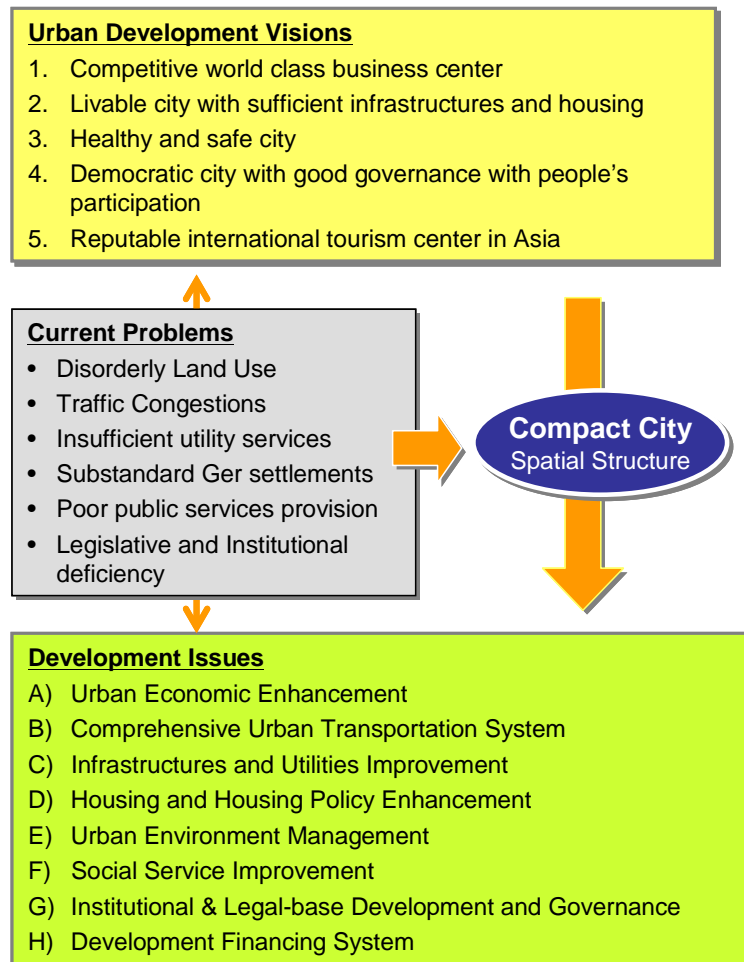
12.2 Overall Program until 2030 (Long List)

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 12.1):

- Urban Economic Enhancement
- Urban Transportation
- Infrastructures and Utilities (Urban Water & Sanitation; Electric Power; Heating System; 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 12.1 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 12.2. 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.

There are also inter-linkages among the development issues, as shown in Figure 12.3 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.

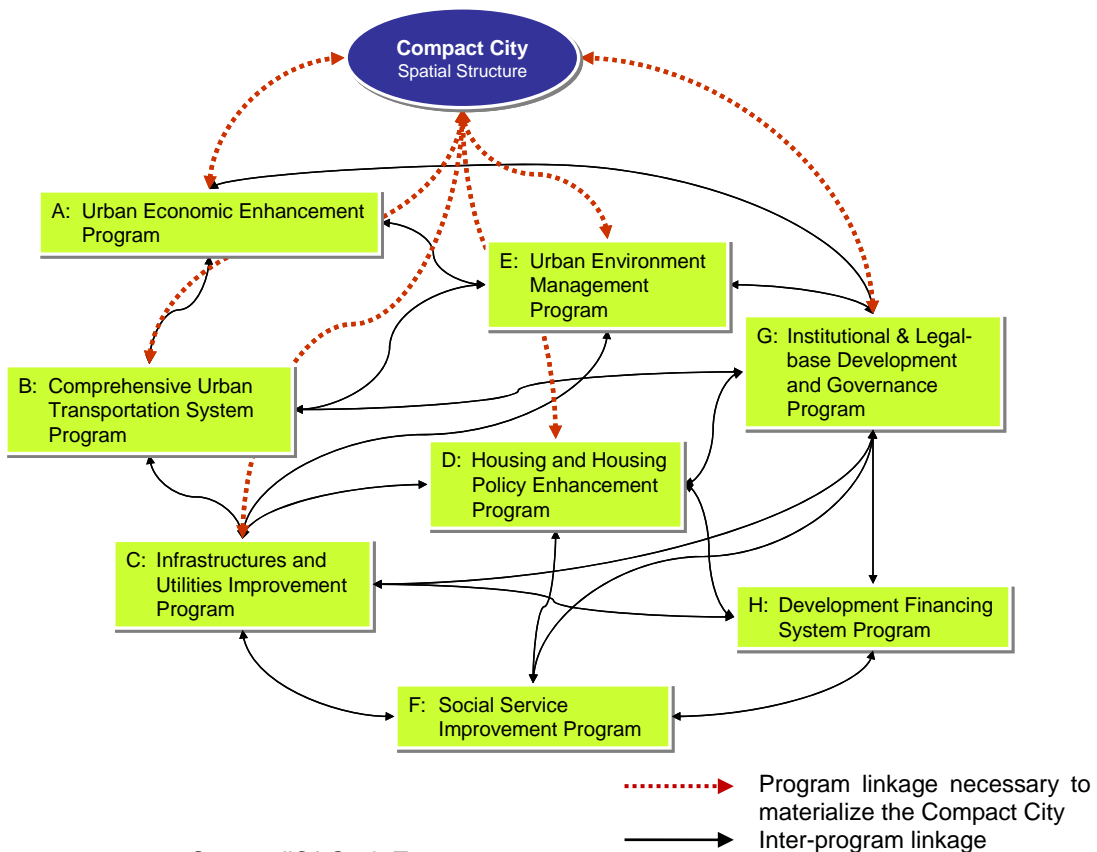
Figure 12.2 Inter-linkages between Development Visions and Issues

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 12.3 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 12.3. 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 12.1. 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 Public 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 12.1 Summary of Project Investment Costs

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 12.2 Program Categories and Project Codes

Sector/Program	Sector Code	Sub-sector	Sub-sector Code	Sector/Program	Sector Code	Sub-sector	Sub-sector Code
Urban Economic Enhancement	UED	Sub-center Development	Sc	Living Environment Improvement	LEV	Technical Standard	Ts
		Business & Commercial	Bc			Capacity Development	Cd
		Industrial	Id			Housing Quality	Hq
		Tourism	Tm			Education and Promotion	Ep
Urban Transportation	UTR	Road	Rd	Environmental Management	EVM	Public Facilities	Pf
		Public Transportation	Pt			Community Empowerment	Ce
		Traffic Management	Tm			Natural Environment	Ne
		Safety Improvement	Sf	Pollution Control	Pc		
Urban Water & Sanitation	UWS	Water Resource	Wr	Urban Amenity & Disaster Management	ADM	Environmental Assessment	Ea
		Water Supply	Ws			Drainage and Flooding	Df
		Sewage System	Ss			Green and Open Space	Go
Electric Power	EPW	Electric Supply	Es	Social Service Improvement	SSI	Education	Ed
		Electric Network	En			Health	He
		Institutional Mechanism	Im	Institutional & Legal-base Development	ILG	Urban Development	Ud
Heating System	HTS	Heating Supply	Hs			Housing Standard	Hs
		Heating Network	Hn			Construction	Cs
		Heating Efficiency	He	Development Financing System	DFS	Financial System	Fs
		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				

Table 12.3 Proposed Ulaanbaatar City Development Program for UBMPs 2020 and 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

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-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	
UTR-Rd-10	Network Development of NS-4: from Ikh Surguul 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 Sonsolon 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			
			Installment 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. Elimination of 4 Staggered Intersections. <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-lm-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 Housing 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	To examine and prepare a hazard map indicating flood prone risky areas and environmentally vulnerable areas. To prepare regulations to prohibit human settlements in high risky areas. To prepare a resettlement plan to relocate residents in high risky areas (15,000 units).	X	X		XXX	XX	X	200.0	
ADM-Df-02	Rehabilitation of Storm Water Drainage Canals and the Entire System	UB City citizen	To rehabilitate and extend storm water drainage canals and the entire system. To facilitate drainage canal protection from waste dumping. To construct disaster prevention roads. To construct and rehabilitate flood dams, reservoirs and/or dykes. To establish underground reservoir under road.	X	X		XXX	XX	X	60.0	UTR-Rd-08
ADM-Df-03	Promotion Program of “Community-based Preparedness” against Disaster	UB City citizen	To provide a hazard map, indicating flood prone areas 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. To provide awareness of the importance of the community-based preparedness against disasters. To prepare regulations and/or a legal enforcement system against human settlements and economic activities in disaster-risky areas. To develop a <i>flood warning system</i>.	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	

12.3 Priority Projects (Short-List) and Profiles

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) Sector Priority Concept

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

Table 12.4 Concept of Priority Subsectors for Planning Issues

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-relayed 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

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 interview survey 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 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 12.3) was evaluated through a **scoring method**, referring to these five (5) criteria, as shown in Table 12.5. 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.

4) Selection of 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 12.6, 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 12.5 Priority Scoring Evaluation for Proposed Projects

(1/5)

Sector	Code	Project	Criteria for Priority ¹⁾						Environ ^t l Impact ²⁾	Schedule		
			Coherence with Visions	Urgency	Needs	Feasibility	Social Acceptance	Total Weighted Score		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"

(2/5)

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
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			

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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
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			

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(4/5)

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
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
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1 Fairly relevant and/or suitable

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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⁾						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
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Table 12.6 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

12.4 Financial Affordability Assessment

The total cost of the proposed **115** projects/programs accounts for **US\$9,894 million**, as shown in Table 12.1. This investment needs to be allocated during the time period of 23 years up to 2030.

As of 2007, it is estimated that the central government spends approximately Tg. 70,000 per capita for the capital expenditures, while Ulaanbaatar City spends Tg.12,000 per capita for its capital expenditures, as well. In total, Tg.82,000 (or US\$70) is being appropriated for capital investment. Since it is forecasted that GRDP per capita in 2030 will increase by about 3 times as much as those in 2007, it can be safely said that the per capita expenditures for capital investment will be 3 times; at least through the government sector's budget increase along with the economic growth. The affordable expenditures of the governments will at least be Tg.246,000 (US\$210) per capita. The future population in 2030 will be 1,740 thousand, an increase from the 1,030 thousand in 2007.

Based on the above assumptions, the affordable line of the government expenditures will be computed at approximately **US\$5,030 million** over the coming 23 years. This is a trend scenario, which means that no financial reforms will be carried out in future. Given the maximum effort to strengthen the financial capacity based on the measures proposed in the Master Plan, this affordable level will be greatly uplifted.

Moreover, large-scale projects such as the development of the LRT system will be supported by international donors with long-term soft loans as well as involvement of the private sector under a **PPP** (Public Private Partnership) scheme.

Other large-scale projects, that require huge initial investments, are the underground shopping arcade, the expressway, the electric power generation project, New Town Development, social housing project and so on. These projects are cost-recovery types, which means that total cash flows will not require as much funds as estimated in the project list.

Taking into account these factors, it can be said that the proposed Master Plans for 2020 and 2030 are practicable and implementable in terms of budgetary affordability.

13. ACTIONS FOR IMPLEMENTATION OF THE MASTER PLAN

13.1 General

Necessary actions should be taken for the realization of the Master Plan, which includes legal and institutional processes by such agencies as Ministry of Road, Transport, Construction and Urban Development, and the Ulaanbaatar City Government.

- (a) **Institutionalization of the Newly Revised Master Plan of Ulaanbaatar City:** Although this Study was carried out in a highly comprehensive and technical manner, it has not been conducted in accordance with the institutionalized processes stipulated in the Urban Development Law. But since this Study presents a number of recommendations and proposals that will revise the current Master Plan 2020, the Ulaanbaatar City government has acted on these recommendations to prepare a new Ulaanbaatar Master Plan for the target year 2030 with technical and financial support from the national government.
- (b) **Organizational Restructuring:** The administrative and technical capacities of “city planning” are too weak to cope with actual development management needs in Ulaanbaatar City. The public entity technically responsible for Urban Planning is the Urban Planning, Research and Design Institute (UPRDI), an important organization for city planning administration. However, UPRDI is an external organ with financial constraints, always facing difficulties in staffing and working capacities. A well-functional organizational system on urban planning administration should be structured; otherwise, Ulaanbaatar City will not be able to properly perform urban growth management and actually implement the designed Master Plan.
- (c) **Formulation of District Plans with a Hierarchical Planning Structures:** The Ulaanbaatar Master Plan shall provide a general framework for spatial structure and land use, as well as orientations on social and economic infrastructures. Based on the framework delineated by the Master Plan, local or “District Plans”, shall be formulated based on local realities. District Plans should present more detailed land use and spatial structures in proper consultation with community leaders and relevant stakeholders. This planning process should be initiated and facilitated by the Ulaanbaatar City in accordance with the Urban Development Law.
- (d) **Donors Coordination:** The common concerns of many donors are on urban development, environmental improvement, and the uplifting of social services such as education and health. The improvement of the Ger areas is a focal agendum in the donor community. Since technical and financial support from the donor community is

an indispensable part of turning Ulaanbaatar City into a more livable and competitive city, a well-coordinated assistance among donors is highly required.

Among the four (4) actions cited above, two key actions are briefly examined herein: (a) Institutionalization of the Newly Revised Master Plan of Ulaanbaatar City; and (b) Organizational Restructuring.

13.2 Institutionalization Process for Revision and Approval of the New Master Plan

As mentioned above, the most important action is to facilitate the institutionalization process of a new Ulaanbaatar Master Plan, based on this JICA Study. The official procedure in the formulation of a new, or a revised, master plan, in compliance with the Urban Development Law, is as follows:

- First, Based on Article 9, the Mayor of Ulaanbaatar City shall organize and initiate action leading to the revision and reform of the Master Plan. For this purpose, a working team (or Task force) shall be organized, headed by the Chief Architect (Article 10).
- The working team shall be organized with representatives from the relevant authorities of Ulaanbaatar City. This includes the economic and social affairs-related authorities; urban development-related authorities, such as Construction and Urban Development Department, Urban Policy Department, Land Management Department and Transportation Department, Road Department, and other concerned agencies or departments.
- Due to the important mandate given to the ministry, in accordance with Articles 7 and 18, MRTCUD shall dispatch qualified officials and technically proficient personnel to the working team.
- At the same time, based on Article 15, the Central Government shall arrange a budget to cover financial requirements for the working team. Ulaanbaatar City should also prepare a special budget to support comprehensive planning activities.
- The working team shall start by reviewing this JICA UBMPS in a manner where the planning will coincide with the requirements in Article 12. For this technical work, technical sub-groups may be organized with full involvement of academic experts. In the review process, public participation should be facilitated based on the elements of Article 17.
- The revised documents of the New Master Plan shall be approved by the parliament. Before that, projects and programs incorporated in the Master Plan shall be approved by the Citizens Representatives Khurals, based on Article 8. This will be a crucial but time-consuming part of the process.

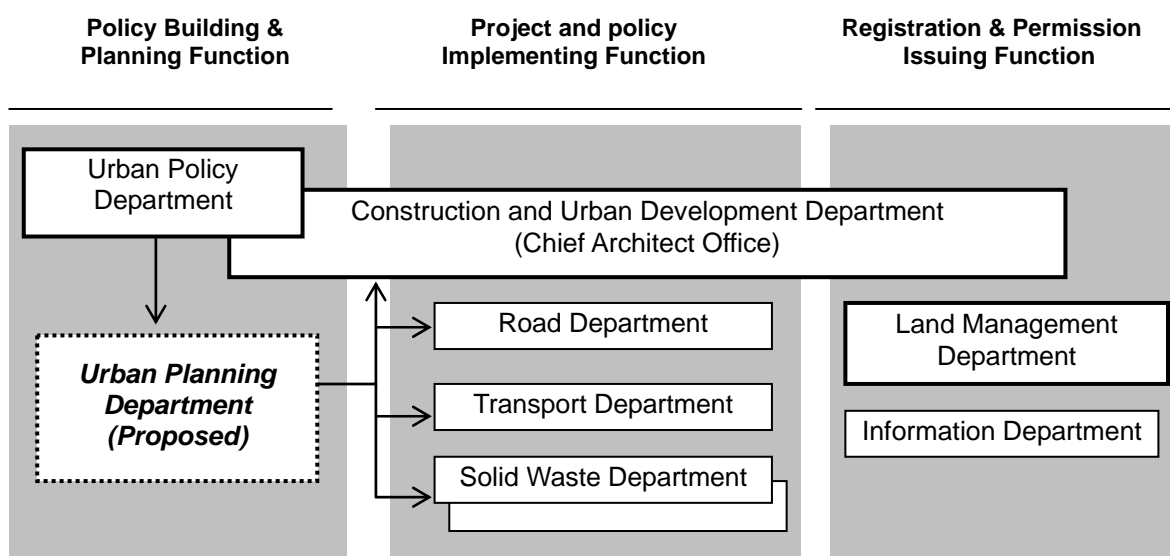
13.3 Organizational Restructuring for Urban Planning Administration

The establishment of an empowered organization is essential to realize the targets of the Master Plan. The city government is required to conduct excellent management and opera-

tion actions of the overall urban development project based on the Master Plan. To this end, a more functional organizational system should be established, with the following measures:

- **The Mayor**, and other high-ranking decision-makers, shall take strong leadership with a clear grasp and vision of the future development of Ulaanbaatar.
- **Line agencies** related to urban planning should be further strengthened. There are three functions on the administrative system: One is the policy building & planning function represented by the Urban Policy Department, since the physical and spatial planning capacity is generally weak. Another is the project and policy implementing function, represented by the sector department. The third is the registration and permission function rendered by Land Management Department. The most powerful authority is the Construction and Urban Development Department, headed by the Chief Architect, which covers the three functions in accordance with the Urban Development Law.
- In the administrative structure, the policy building and planning function needs to be further strengthened. Urban Policy Department's mandate is to study and formulate overall policy for development, but does not cover physical and spatial development policies. A new organization, provisionally called "**Urban Planning Department**," which is independently responsible for the implementing, monitoring, revising and managing the City Mater Plan, is recommended for establishment, as shown in Figure 13.1. This department shall function as the base office of Deputy Mayor (newly assigned in December 2008) who is in charge of urban development policy.

Figure 13.1 Enhancement of Urban Planning Administration in Ulaanbaatar City

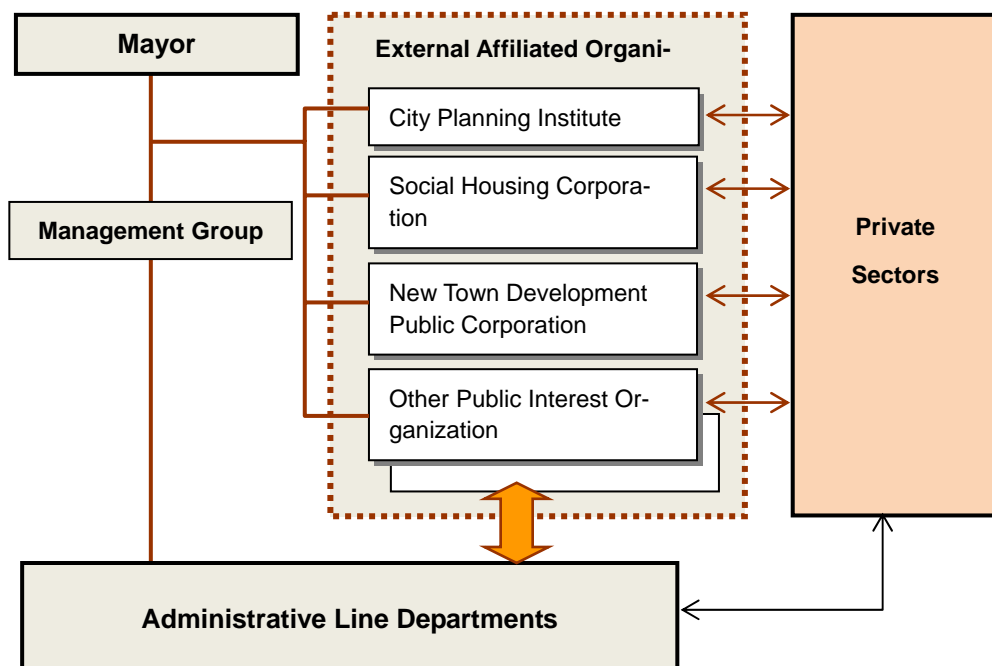


Source: JICA Study Team

- **Affiliated organizations**, which are responsible for planning and project implementations of specific strategic projects and programs, also should be established, or reorganized, as the Mayor's control organs, this is conceptualized in Figure 13.2.

- Establishment of “**City Planning Institute**”, which can be reorganized by strengthening the Urban Planning, Research and Design Institute (UPRDI) in terms of financial and staff capacities. The City Planning Institute shall have various functions, among which are the following: 1) Prepare the city master planning; 2) Provide technical and professional support in the formulation of the District Plans; 3) Conduct research for master planning and continuous monitoring of urban development; 4) Verify related policies and laws; 5) Review and develop the organizational environment in conformity with the dynamic change of the city; 6) Supervise works and duties related to urban development projects; and 7) Compile statistical and mapping data/information. Financially, the current operation cost of the institute may be managed through investment profits born from a special fund to be allocated from Mongolian Development Fund.
- Establishment of “**Social Housing Corporation**” as an independent public Corporation to provide affordable housings for low income class groups and to manage and operate comprehensive policies and planning in relation to the social housings, including the effective participation of the private sector. Rental housing provision is also part of this corporation’s task. The MHFC deserves to be functionally converted into a Social Housing Corporation.
- Establishment of “**New Town Development Corporation**” as an independent public corporation that will take responsibility for the construction of infrasrturcures (roads, utilities, parks and recreational facilities) and the preparation of locations for new town project, as well as new housing area development. This organization may carry out joint venture projects with the private sector, but should take the initiative in project implementation through strong management roles. The financial source will come from Mongolian Developemnt Fund, National Pension Fund, bond issuance, and/or the new financial organization FILP (**Fiscal Investment & Loans Program**).

Figure 13.2 Organizational Framework with External Affiliated Entities



Source: JICA Study Team

14. STEP FORWARD

A number of substantial arguments, proposals, and ideas were involved in this draft plan. Among these were the terms of enhancement for the legal and financial system in the urban planning administration as well as land use and zoning, new town development, and new urban transport systems with two public transit corridors under a compact city concept.

In order to realize these concepts and strategies, the Study shows that a total of 115 projects/programs in the “Development Program” should be implemented up to the target year 2030, which cover almost all important sectors with a total cost of US\$9,894 million. The result of the priority evaluation showed that a total of 50 projects are considered as urgent action projects which means that they are recommended for commencement as soon as practicable. These projects hopefully should be completed by 2015.

The study outcomes are all subject to further elaboration and/or clarification among the relevant agencies and stakeholders. The most important action that should be taken soon after, or along with, the clarification process is that based on this Study, Ulaanbaatar City should commence revising the existing UBMP-2020 and prepare the “New Ulaanbaatar City Master Plan 2030” in accordance with the Urban Development Law. This act of institutionalization is extremely important in turning Ulaanbaatar City into a well-governed, modern city where a fair and normative system ensures an orderly land use and development under a functional growth management mechanism.

Donors are all welcome to join the above process and to support Ulaanbaatar City to become more competitive, livable, environmentally sustainable, financially bankable and governed well.

On the other hand, model projects for Ger area improvement are still being planned in **Dambadarjaa** and **Unur**, with strong involvement of all stakeholders such as district and Khoroo governments and the community residents. Through these model projects, a community-driven Ger area improvement mechanism is being explored through a simple but ideal form of land readjustment. These project need to be technically and financially supported by JICA, other donors such as UN-HABITAT and NGOs as well as the Ulaanbaatar City government.

The Study Team was often asked a question why the existing Master Plan 2020 cannot be materialized and what faults are existing, despite that the master plan has been approved by the Government. Even though the master plan is well-designed and technically correct, the plan could never be realized, given three (3) conditions, i.e., (a) legal and institutional systems to ensure the implementation; (b) government commitment for budgeting toward the implementation; and (c) strong support and advocacy of the general

public and stakeholders.

The JICA Study Team really hopes that this report will be fully utilized to guide such an institutional process of the Central Government as well as the Ulaanbaatar City Government towards establishment of the proudly prosperous city, Ulaanbaatar.