

Figure 6.2.6 Geological Cross Section of Line 6 - 6'

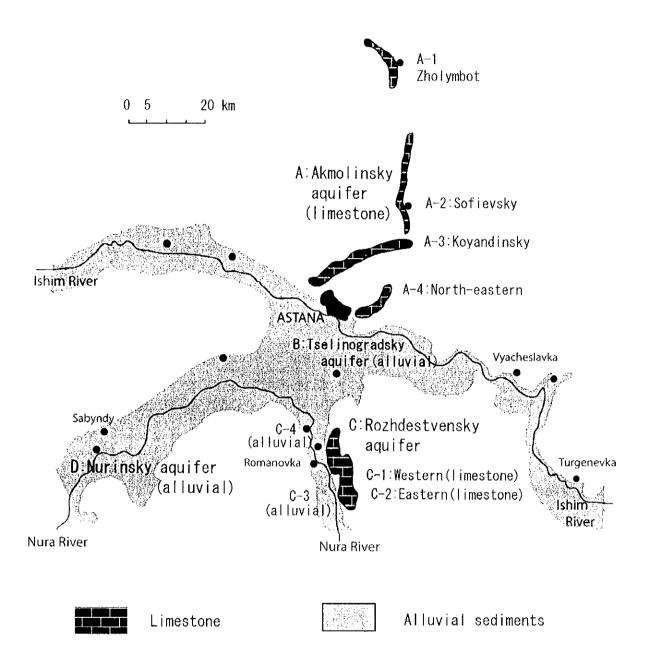


Figure 6.2.7 Groundwater Aquifers of Astana Area

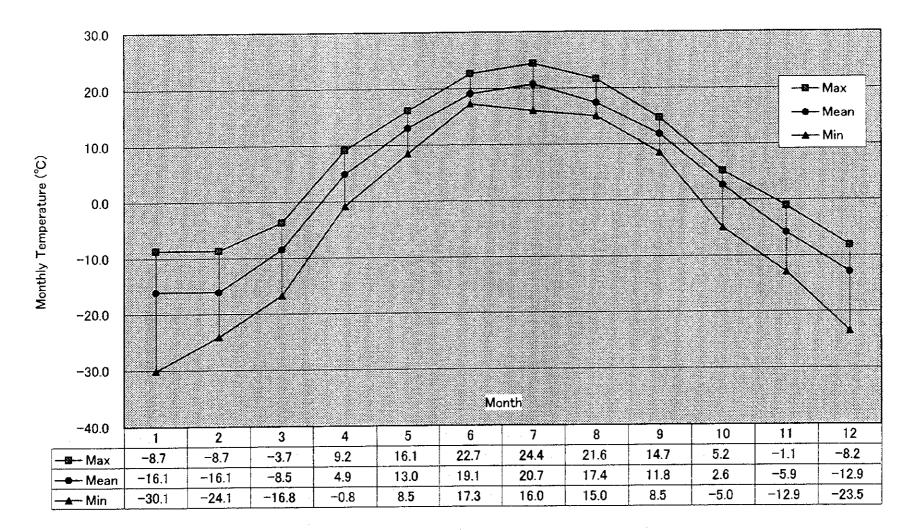


Figure 6.2.8 Monthly Air Temperature in the Period 1960-1984

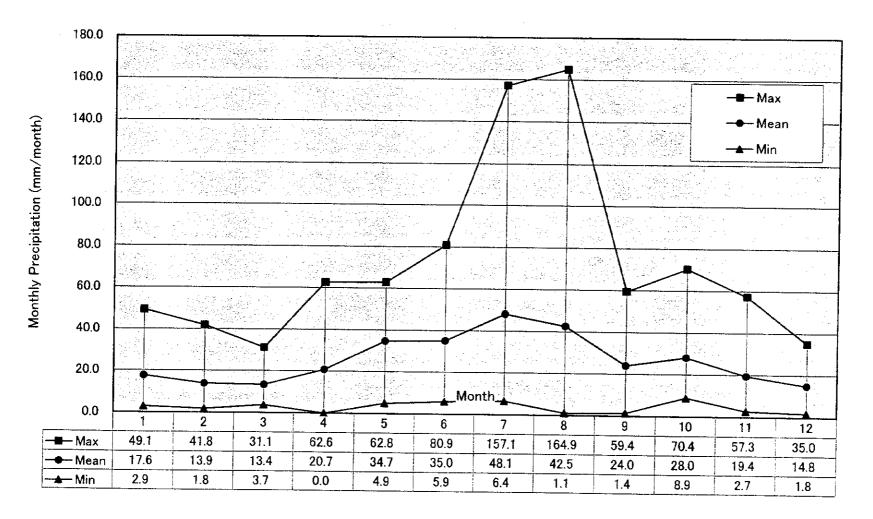


Figure 6.2.9 Monthly Precipitation in the Period 1960-1984

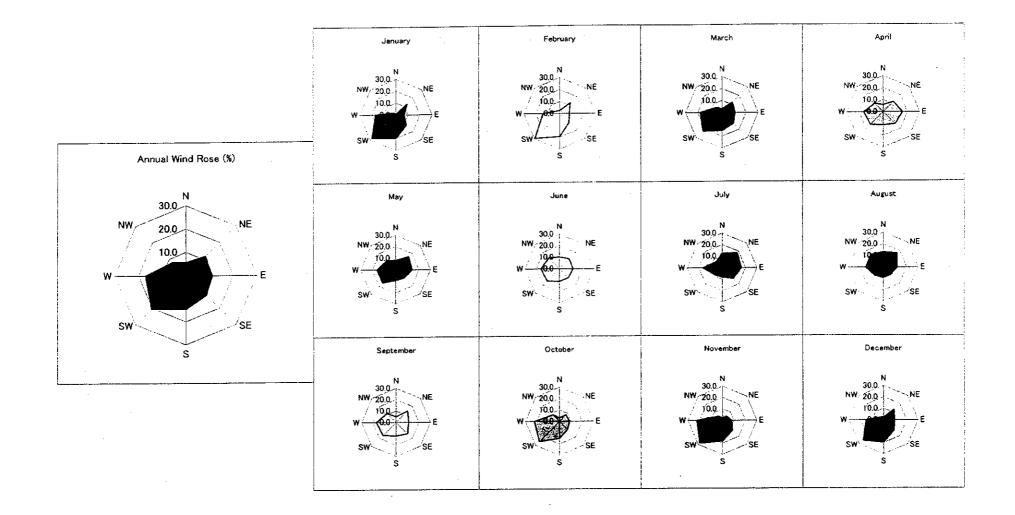


Figure 6.2.10 Wind Rose (Frequency of Wind Direction)

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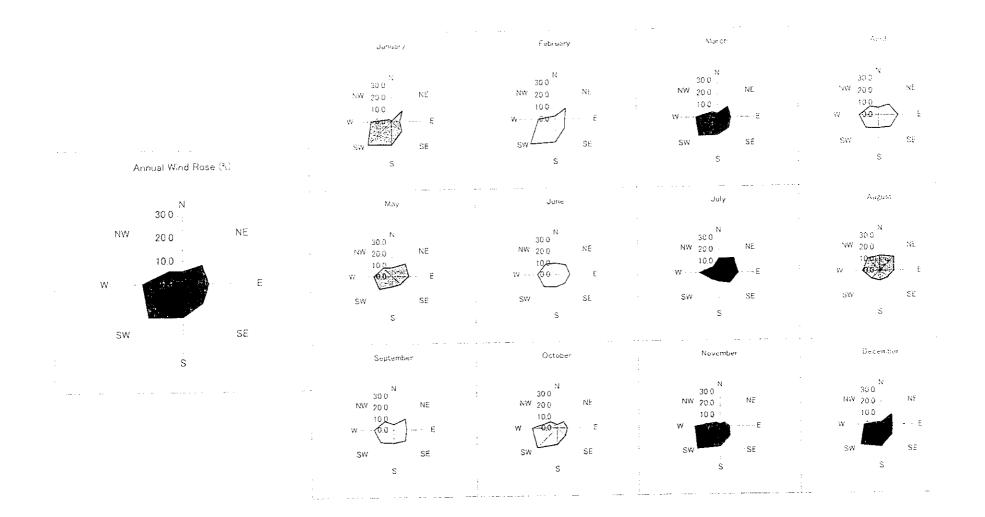


Figure 6.2.10 Wind Rose (Frequency of Wind Direction)

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CHAPTER 7 INTEGRATED IMPLEMENTATION PROGRAM AND INVESTMENT COST

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CHAPTER 7 INTEGRATED IMPLEMENTATION PROGRAM AND INVESTMENT COST¹

7.1 Basic Principle Policy for Implementation

7.1.1 Definition

(1) Sector

This *Chapter* outlines an integrated implementation program and investment cost for a number of *Projects* for the three major sectors of;

1) Urban and Architectural Development, consisting of;

the site preparation and architectural construction for residential, commercial and office development; development of roads; and development of greenery, as defined in Chapter 3 of this Report.

2) Infrastructure Development, consisting of;

the infrastructure development for utilities and public services such as water resources; water supply; sewerage; power and heat supply; gas supply; telecommunication and solid waste management, as defined in Chapter 4 of this Report.

3) Engineering Protection consisting of

flood protection and drainage, as defined in Chapter 5.

¹ Full text of Integrated Implementation Program and Invstment Cost together with all supporting tables and figures will appear in Appendix O in Volume III: Supporting Report.

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	Components of Three Sectors
Sector Component	Description
Urban and Architectural Dev	velopment
-Land Development	Land preparation, demolition, construction of buildings and
and Architecture	houses
- Transportation	Construction of roads, bridges, Light Railway Transit (LRT), provision of trolley bus, terminal, traffic management
- Greenery	City parks and greenery
Infrastructures Development	
- Water Resources	IKC-Ishim pipeline
- Water supply	Expansion and rehabilitation of existing intake, treatment plant, and distribution network
- Sewerage	Rehabilitation and expansion of existing treatment plant
- Electric Power Supply	Construction of conventional electric power and heat energy generating plant, and 110 kV transmission line and substation
- Heat Supply	Expansion of existing district heating pipelines, construction of 5 heat centers, natural gas firing combined cycle plant
- Gas Supply	Construction of city gas supply network
- Telecommunication	New local telecom. Network system, administration data communication system
- Solid Waste Management	Landfill-1 and -2 projects, Hazardous solid waste project, machinery procurement for waste collection
Engineering protection	 A set of the set of
- Storm Water drainage	Storm water drainage development and improvement
- Flood Protection	Ishim river improvement, construction of flood regulating
	reservoir
- Groundwater drainage	Underground installation of existing infrastructure pipelines

Components of Three Sectors

(2) Project

The Project, as used hereafter in this Chapter, will denote the following;

An integrated package of development activities, public or private, designed to achieve the planning goal set for each of the components in the 3 Sectors above, as divided as necessary by time or location thereof.

(3) Implementation Phase

Following the basic principles for implementation, 3-step phasing of 10-year periods of construction is adopted for the development of Astan City.

Medium Term: between the years 2001 to 2010

Long Term: between the years 2011 to 2020,

Ultimate Term: between the years 2021 to 2030

As will be discussed later in Subsection 7.4.2, sub-phases in each *Term* will be denoted *Stages*.

7.1.2 Basic Principles

The following basic principles were adopted in formulating the implementation strategies to facilitate the development targets of Astana:

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- Develop Astana City to facilitate and consolidate administrative and business functions
- Balanced and integrated implementation of urban development including architecture; infrastructure development; and engineering protection, with basically equal priority in development, although infrastructures and engineering protection are provided in advance of urban development works.
- Urban development works are implemented in the order of the central city part to suburbs.
- Avoidance of unevenly distributed investment cost over the development period of 30 years in accordance with the staged development of the city, with no sizable front load investment.

• Due consideration of the balance between development and environment.

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7.2 Description of Projects

7.2.1 Description of Overall Development Activities

The proposed Master Plan, as detailed in Chapter 3 of this Report incorporates urban development of approximately 70,000 ha of total area. This Master Plan will provide the basis on which all development activities will be provided. The main features of Master Plan are presented in full in Table 7.2.1 with subdivision into five (5) planning regions and 37 districts.

Table 7.2.2 shows the floor area required for residential, office and commercial purposes in the each district and region as summarized below.

Floor Area for Residential, Office and Commercial, Medium, Long and Ultimate Term

e fer en	terre parente to	en saren er ben i			Unit: 1,000 m2
Region	Planned Area (ha)	Development Phase	Residential Area *	Office Floor	Commercial Floor
Central	1,689	Sub-total	1,184	528	58
		Medium	406	33	10
		Long	574	289	17
	+ ·= · · · =	Ultimate	204	206	31
Northern	22,614	Sub-total	37	165	2
		Medium	37	21	1
		Long	0	77	0
		Ultimate	0	67	1
Southeastern	11,270	Sub-total	4,077	377	113
		Medium	2,489	228	49
· · · · · · · · · · · · · · · · · · ·		Long	1,588	128	29
·	· · · ·	Ultimate	0	21	35
Southern	24,399	Sub-total	3,953	2,987	271
		Medium	495	1,784	58
		Long	1,223	681	101
		Ultimate	2,235	522	112
Northwestern	9,909	Sub-total	1,785	148	41 3
		Medium	65	14	
		Long	1,296	102	22
		Ultimate	424	32	16
Total	69,881	Total	11,036	4,205	485
	1	Medium	3,492	2,080	121
		Long	4,681	1,277	169
		Ultimate	2,863	848	195

*: Assumed at 18 m², 22 m², and 25 m² per head in 2010, 2020 and 2030, respectively

7.2.2 Description of Projects in Urban and Architectural Development

- (1) Projects in Urban and Architectural Development
 - 1) Land Development and Architecture

The *Project* in Land Development and Architecture is defined here as the packages of development activities for each District defined in Clause 3.6.

The *Projects* in urban and Architectural Development are as summarized below.

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		•	Unit: number of district (pr		
Region	Planned Area (ba)	Development Phase	Residential District	Industrial District	Planning District
			(Project)	(Project)	(Project)
Central	1,689	Medium	4	0	0
		Long	4	0	0
		Ultimate	4	0	0
Northern	22,614	Medium	0	2	3
		Long	0	2	3
· · · ·		Ultimate	0	2	3
Southeastern	11,270	Medium	5	- 1	1
		Long	7	1	0
		Ultimate	7	1	1
Southern	24,399	Medium	5	0	4
		Long	6	0	3
		Ultimate	6	0	2
Northwestern	9,909	Medium	3	1	0
		Long	3	1	0
		Ultimate	3	1	0
Total	69,881		57	12	20

Projects in Urban and Architectural Development by Terms

2) Transportation

The Projects in transportation includes 1) roads, 2) road tunnel, 3) bridges, 4) trolley bus system, 5) Light Railway Transit (LRT), 6) terminal, 7) traffic management, 8) railway, and 9) airport as tabulated and profiled in Tables 7.2.3, 7.2.4 and 7.2.5 are divided into Medium, Long and Ultimate Terms respectively for implementation.

3) Greenery

The Projects for greenery are implemented included into the development of 37-district as urban and architectural development.

(2) Projects in Infrastructure Development

The project components of the infrastructure development among 1) water resources, 2) water supply, 3) sewerage, 4) electric power supply, 5) heat supply, 6) gas supply, 7) telecommunication, and 8) solid waste management as tabulated and profiled in Tables 7.2.3, 7.2.4 and 7.2.5 divided into Medium, Long and Ultimate Terms respectively to implement b its priority.

(3) Projects in Engineering Protection

The Projects for flood protection, storm water and ground water drainage under the engineering protection work are also tabulated and profiled in Tables 7.2.3, 7.2.4 and 7.2.5 divided into Medium, Long and Ultimate Terms respectively to implement by its priority.

(4) Summary of Established Projects

To meet the development goals, implementation of all the projects established above are essential.

In all 177 *Projects*, including 89 Projects for the land and architecture component of *Urban Development Sector* were identified. The phasing of *Projects* will be explained later.

The *Projects* above includes those listed in the attachment of signed minutes of discussion on development of the City of Astana in 2001 with the President of the RK No.01-10/9 dated 29th November 2000, as profiled in Tables 7.2.3, 7.2.4, and 7.2.5.

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7.3 Phasing the Development

7.3.1 Mode of Implementation

(1) Financial Resources

The state and municipal budget will be allocated in addition to foreign investment, private investments and funds of organizations, as proposed in Chapter 8 for Cost and Benefit Analysis of the New Capital Construction. Expected finance source is also indicated in the tables for an integrated implementation.

(2) Implementation Coordination

The implementation coordination of *Projects* is an integral component of the Astana development i.e. encompassing both the design stages and detail design and construction phases. It is also important to coordinate developments of Republic Government and Astana Municipality. Thus, to create clear area-wise demarcation between two governments and establish a commission as coordinating body at the Republic Government level would be required. Measures proposed in Chapter 9 of this Report will have to be seriously contemplated in all aspect, to facilitate a balanced and well-coordinated implementation of such an extremely large scale and complicated development activities as the development of Astana.

(3) Executing Organization

Responsible executing agencies for implementation of respective *Project* are proposed and tabulated in Tables 7.2.3, 7.2.4 and 7.2.5, and summarized below for the components of each *Sector*.

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Assumed Executing	Organizations of	f Sector/Components of Master Pl	an
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	anizations of Sector/Components of Master 1 Jan
Sector/ Component	Executing agency, expected
Urban Development	
-Land and Architecture	Republic Government/Astana Municipality/Private sector
- Transportation	Astana City/Ministry of Transport and Communication
- Greenery	Astana City/ Municipality Communal Service
· · · · ·	(Gorcommunkhoz) for urban greenery/Committee of
	Forestry, Fishery and Hunting under Ministry of
	Environmental Protection and Mineral Resources
Infrastructures Development	
- Water Resources	Astana Municipality /IKC (National state Enterprise of
	Irtysh-Karaganda Canal)
- Water supply	Astana Municipality /ASA (Gorvodokanal)
- Sewerage	Astana Municipality /ASA(Gorvodokanal)
- Electric Power Supply	Astana Municipality /AES (Astanaenergyservice)
- Heat Supply	Astana City/ AES (Astanaenergyservice)
- Gas Supply	Astana Municipality / Kaztransgas (Bulk)
- Telecommunication	Ministry of Transport and Communication
- Solid Waste Management	Astana Municipality / Gorcomunkhoz
Engineering protection	
- Storm Water drainage	Astana City/ Gorkomunkhoz
- Flood Protection	Astana City
- Groundwater Drainage	Astana City

(4) Procurement Method

The procurement method on each *Project* will depend upon its finance budget of RK, and international loan, credit or grant source. It will be broadly classified into two (2) cases; local and international.

1) Local Procurement

The law of the RK of July 16, 1997, No. 163-1, reference book (Vedomosty) of the Parliament of the RK 1997, N 17-18 Article 216, Economics and Entrepreneurship, is applied in the process of the state procurement of goods, works and services. In this Report, such procurement method will be the LCB (local competitive Bid)

The state procurement is implemented by one of the following methods

- 1) tender (open or closed),
- 2) procurement from a sole (single) source, and
- 3) selection of a supplier of proposed prices.

2) International Procurement

In the case of international procurement, the ICB (International Competitive Bid) procurement guidelines of respective financier will have to be applied.

The procurement method either LCB and ICB is conducted under the principle of fairness competition and doctrine. FIDIC²s conditions of contract will be applied for ICB basis project implementation, in principle.

The proposed procurement methods for the each *Project* are presented in the Tables 7.2.3, 7.2.4 and 7.2.5. A proposed method is provided based on the considerations of input resources plan, technical and financial aspects. The schedule, the quality and the cost are fundamental parameters to select the procurement method. These are draft proposals, following the above principle. For more definite and concrete implementation plan of specific *Projects*, further discussion will be needed at the time of their feasibility studies.

(5) Engineering and Management Consultants

For the purpose of implementing a number of different types of projects concurrently and smoothly, experienced engineering and management consultants will have to be appointed from international and national fields.

Engineering consultants will serve as the planner, designer, and/or supervisor for the implementation of each Project and execute an integrated and comprehensive management of Projects spanning over interwoven Sectors.

The role of the management consultants is to provide appropriate managerial basis for the implementation of various projects.

7.3.2 Phase of Projects

Based on the basic principles presented in Sub-section 7.1.2, phasing of Projects according to the 3 Terms were considered.

The proposed projects are presented in Tables 7.2.3, 7.2.4, and 7.2.5 separately for 2010, 2020, and 2030 as an integrated development plan, and summarized below.

² Federation Internationale Des Ingenieurs-Conseils (International Federation of Consulting Engineers)

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Number of Proposed Projects

				Unit: no
Sector	Medium Term (2010)	Long Term (2020)	Ultimate Term (2030)	Total 3 <i>Terms</i>
Urban Development				<u> </u>
-Land and Architecture	29	30	30	
- Transportation	12	9	- 9	30
- Greenery	1	1	1	3
Infrastructures Development				
- Water Resources	1	0	1	2
- Water supply	4	1	1	6
- Sewerage	2	1	1	4
- Electric Power Supply	3	2	2	7
- Heat Supply	4	1	1	6
- Gas Supply	1	1	1	3
- Telecommunication	3	(1)	1	5
- Solid Waste Management	2	5	3 .	10
Engineering protection				
- Storm Water drainage	3	1	1	5
- Flood Protection	4	1	2	7
Total	69	54	54	177

7.3.3 Implementation Schedule

The decision on the development components of *Medium, Long and Ultimate Terms* would be based on priorities, necessities and possibilities. In general, allocating development components of interrelated functions in a common area can minimize the investment cost.

The proposed overall implementation schedule on Medium, Medium, Long and Ultimate Terms is presented in Figure 7.3.1.

7.4 Implementation Program for Medium Term (2001-2010)

Medium Term pertains to the upcoming 10 years is considered herein to be of high urgency and necessity. This Section will discuss the implementation of projects in Medium Term.

7.4.1 Development Scope

(1) Urban Development

Overall, the following floor areas for the residential, office and commercial purposes are planned for construction in *Medium Term* as shown in Table 7.2.2. These floor areas include the administrative and commercial buildings and residential complex in the New City Center in District no. 13 and 14.

Floor Area Required for Residential, Office and Commercial, Medium Term

Region	Planned Area (ha)	Residential Area * 1,000 m ²	Office Floor 1,000 m ²	Commercial Floor 1,000 m ²
Central	1,689	407	33	10
Northern	22,614	0	21	1
Southeastern	11,270	2,385	228	49
Southern	24,399	471	1,784	58
Northwestern	9,909	64	14	3
Total	69,881	3,327	2,080	121

* assumed at 18 m², 22 m², and 25 m² per head in 2010, 2020 and 2030 respectively

The above estimation is based on the planning framework presented in Section 3.4 of this Report.

- Land preparation including demolition work
- Internal infrastructures within the district, not covered by the infrastructures development
 - Parks and greenery

(2)

Infrastructure Development and Engineering Protection

To meet the architectural development above, the following Projects in *Infrastructure Development* and *Engineering Protection Sectors* should be implemented in the period of *Medium Term*. The identified and proposed Projects of these sectors are presented in Table 7.1.3 and summarized below for major projects to be implemented during 2001 to 2010.

(3) Overall Projects

The following table summarizes the overall Projects in Medium Term.

Sector	No. of	Major Project or Contents
	Project	
Urban Development		
-Land Development	29	17-project at Residential District, 4-project at
and Architecture		Industrial District, and 8-project at Planning District
- Transportation	12	Roads, Trolley Bus, Bridges, LRT, Terminal, Traffic
•		Management, Airport
-Greenery	1	Parks and greenery at 24-project for Residential,
والالات المروا أوالم ممر المرار	1	Industrial and Planning District
Infrastructures Develo	pment	
- Water resources	1	IKC-Ishim Pipeline
- Water supply	4	3 rd Water Pipeline, Priority Water Supply Project in 1 st
11 2		stage
- Sewerage	2	STP Rehabilitation, Sewer Collection System
		Rehabilitation and Expansion
- Electric power	3	110/10 kV T/L and S/S, Conventional Electric Power
supply		& Heat Energy Generating Plant
- Heat energy supply	4	Repair of Heat Main & Distributions, Extension of
		Heat Pipes, Construction of Heat Pump Station No.6,
		and 3 Heat Centers
- Gas supply	1	Gas supply network
-	3	Install, Telephone on Left Bank of Ishim River, New
Telecommunication		Telecommunication Network, Administration Data
$\frac{1}{2} = \frac{1}{2} \left(\frac{1}{2} \left(\frac{1}{2} \right)^2 \right)^{-1} \left(\frac{1}{2} \left(\frac{1}{2} \left(\frac{1}{2} \right)^2 \right)^{-1} \left(\frac{1}{2} \left(\frac{1}{2$		Communication Network
- Solid Waste	2	Laudfill-1 Project, HSW Incinerator Project (1)
Engineering Protection	p	
- Storm water	3	Improvement Drainage System
drainage		
- Flood protection	4	Ishim River Improvement and Bank Protection
Total	69	· · · · · · · · · · · · · · · · · · ·

Number of Project to Implement in Medium Term

7.4.2 Implementation Schedule

In Medium Term urban development of approximately 3.5 million m^2 of residential area, 2.1 million m^2 of office and 0.12 million m^2 of commercial floor areas, will be carried out with priority. The highest priority will be given to the development of New City Center in Districts 13 and 14, which will constitute the staple element, and eventually the core of the future city of Astana.

The necessary urban development and architectural works include 1) land preparation and demolition works, 2) internal infrastructure development, and 3) on-site greenery and other miscellaneous works.

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A phasewise implementation will be necessary and divided construction stages will have to be adopted in each of the *Terms*. Some lead time (the time necessary before the commencement of work) should be allowed for preparations of financial arrangement, feasibility study, engineering design, tender and contracting due to the present maturity of the development. Thus the construction period will be classified and or grouped by the project maturity as illustrated below for *Medium Term*.

Illustration for Construction Stages in Medium Term (2001-2010)

2001 2002 2003 200				
	4 2005	2006 2007	2008	2009 2010
1 st stage			· · ·	
(lead time) (Construction	o n)		. · ·	
		۰. بر		•
		2 nd stage		
		· ·		
			· · · · · ·	3 rd stage
	· · · .			

As for urban development, an implementation schedule of the New City Center in District 13 and 14 is proposed as presented in Figure 7.4.1, which shows development activities divided into 3 stages area-wise as the highest priority project.

The following urban development, infrastructure and engineering protection projects in *Medium Term* are identified, as the 1st priority projects. Accelerated implementation will be required in 1st stage of *Medium Term* development.

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Sector	Project	Component	Implementation timing
Urban Development			
- Transportation	Road	Special road: Sp-2, sp-3	2001-2005
		Main road : Sp-1 (ring road)	2001-2005
		Primary road : P-1, p-2, p-11	2001-2005
	Trolley bus project	Catenary cables & power station	2001-2005
	Bridge	b-6, b-7, b-8, b-9, b-10, and f-4	2001-2005
· · · · · · · · · · · · · · · · · · ·	International Airport	Improvement	2001-2003
Infrastructures Devel		•	
- Water resources	IKC-Ishim Pipeline	Pump & pipeline	2000-1001
- Water supply	Priority project, 1 st stage	Intake, WTP, pipelines	2001-2007
- Sewerage	Rehabilitation & system expansion	WTP, sewers	2001-2006
- Electric supply	110/10 kV T/L and S/S	For new city center	2001-2001
······································	Electric & heat energy plant		2003-2006
- Heat supply	Repair of heat mains and network		2001-2001
	Heat pump station no.6		2000-2001
	Extension heat pipelines	For new city center	2000-2001
	Telephone install	Left bank of Ishim River	2001-2003
Telecommunication			2001-2001
	Astana new local telecom network		2003-2005
- Solid waste	Landfill-1 project	Improve existing landfill site	2001-2002
· · · · · · · · · · · · · · · · · · ·	HSW incinerator	Project (1)	2004-2004
Engineering Protecti			
- Storm water	New city center	Drainage system & network	2000-1001
drainage		· 建立、超过2000年,在1993年1月	
- Flood protection	Ishim river	River improvement & dike embankment	2001-2005
	Akbulak river	Bank reconstruction	2001-2001
- Groundwater drainage	Right bank, Ishim R.	Underground pipelines	2001-2005
	New City center	Underground drainage network	2001-2005

List of 1st Priority Project in 1st Step of Medium Term

7.4.3 Urgent Area for Feasibility Study

The Study Team recommends that feasibility studies of the projects listed in the following table should be conducted in an early stage in the range of *Medium Term* between 2001- 2010, taking into consideration of relevant development activities, implementation schedule and other relevant factors.

Region / Sector	Cost code		Project	Project scope
Transportation	20-1	Road	Main streets of city importance/Main roads (Arterial road)	Sp-1, ring road, new construction
	20-3	Road	Main streets of city importance (Primary road)	p-1, p-2, and p-11 new and improvement
	20-6	Public	Trolley bus	Reconstruction and construction of catenary cables and power station
	20-7	Bridge	Bridge	b-6, b-7, b-8, b-9and b-10, new construction
	20-8	Bridge	Bridge	f-4, new construction
	20-10	LRT	Light Railway Transit	22 km, 16 stations, new construction
Power & Heat Energy supply	80-2	Combine	Conventional Electric Power and Heat Energy Generating Plant	Generating plant in 2006, 115 MW
	80-3	Power	110 kV transmission line (T/L) and substations (S/S)	64 km T/L underground and overhead, and S/S
Telecommunication	100-2	Telecom	Astana new local telecommunication network	Switching and transmission system, etc.
	100-3	Telecom	Administrative Data communication network	Capital subcenter system, IT center etc.
Solid waste	110-1	MSW	Landfill-1	Improvement existing landfill site, construction of landfill-1 (15 ha), machinery procurement etc.

Project List Subject To Feasibility Study

7.5 Integrated Investment Cost

An investment cost for the development of the City of Astana in Medium, Long and Ultimate Terms was worked out and estimated on the basis of the economic and financial cost on the master plan level. Table 7.5.1 tabulates integrated investment costs on an economic cost basis. Thus, the economic basis integrated costs summarized below will be used for the analysis and evaluation of the cost and benefit in Chapter 8.

				Unit: US\$ million		
Region/Sector	Medium	Long	Ultimate	Total	(ratio)	
	(2001-2010)	(2011-2020)	(2021-2030)	·		
Urban Development	2,926.5	2,498.1	1,808.3	7,232.9	0.81	
Central Region	168.8	334.6	119.6	623.0		
Northern Region	8.1	38.5	25.8	72.4		
Southeastern Region	1,260.8	544.1	16.8	1,821.7		
Southern Region	1,071.6	831.5	1.148.1	3,051.2		
Northwestern Region	31.3	536.6	151.7	719.6		
Transportation	385.9	212.8	346.3	945.0		
City Greenery *			· · · · · ·		<u>l</u> itet	
Infrastructures Development	696.9	516.2	412.8	1,625.9	0.18	
Water resources	20.5	0	19.1	39.6		
Water supply	129.9	132.4	58.6	320.9		
Sewerage	87.7	94.2	58.1	240.0	1	
Power and heat energy	252.9	191.5	206.0	650.4		
Gasification	107.8	19.0	9.4	136.2		
Telecommunication	76.8	57.8	41.9	176.5		
Solid waste	21.3	21.3	19.7	62.3	<u></u>	
Engineering Protection	55.5	37.5	29.0	122.0	0.01	
Storm water drainage	38.6	10.2	2.4	51.2		
Flood protection	16.9	27.3	26.6	70.8		
Grand total	3,678.9	3,051.8		8,980.8	1.00	
(ratio)	0.41	0.34	0.25	1.00		

Summary of Economic Basis Integrated Investment Cost

* The cost includes to each district and region as the "parks and greenery" and as direct construction cost.

Conditions and assumptions on the cost estimate are:

- 1) Price level is in November 2000.
- 2) Exchange rates applied are US\$ 1.0 = K Tenge 144.0 = J Yen 108.0.
- 3) An economic basis cost consists the direct construction cost and engineering services cost.

7.6 Operation and Maintenance Cost

Annual basis operation and maintenance (O & M) cost is estimated to meet the implementation schedule of each project following the proposed construction time schedule in addition to the current O & M cost for the existing structures or facilities divided into Medium, Long and Ultimate Term respectively.

The O & M costs for the houses and buildings were assumed as a percentage of the direct construction cost as in the following;

Permanent residential	houses	: 1.0 %
Permanent residential	houses	: 1.0 %

Office and commercial buildings respectively : 0.75 %

For the infrastructure and engineering protection projects, the operation and maintenance cost was estimated either based on the referential data or the past records by percent (%) of completed project or facilities. The annual operation and maintenance expenses are estimated as summarized in the table below.

Annual Operation and Maintenance Cost

			Unit: US\$ million
Sector	То 2010	To 2020	To 2030
Urban and Architectures	34.0	60.1	83.6
Infrastructures and Engineering Protection	24.5	38.2	50.3
Total, cumulative	58.5	98.3	133.9

7.7 Replacement Cost

Replacement cost means the costs of replacing or reconstructing facilities or structures due to age. Some of facilities or structures will require replacing within the planned long or ultimate term period.

The lifetime of buildings and houses is assumed at 50 years or more, and therefore the replacement cost will not accrue within the planning horizon of 30 years. The replacements cost estimates are summarized in the table below.

Summary of Replacement Cost

THE A 101 OF A 11 			Unit: US\$ thousand				
Structures/Facilities subject to replace	Life Time	То 2010	To 2020	То 2030			
	(Year)			·			
Transportation, Traffic light	15	0	3,990	2,348			
Solid waste, Waste collection vehicle	10	0	5,883	6,707			
Total		0	9,873	9,055			

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Main Report

TABLE

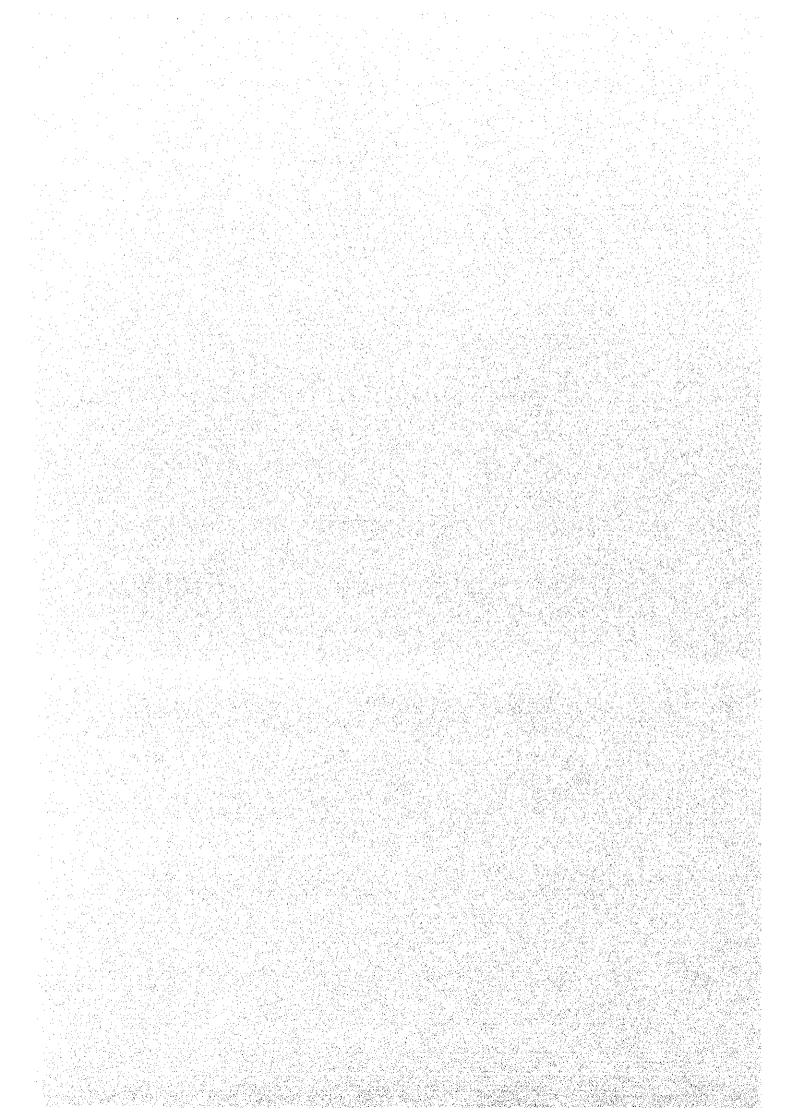


Table 7.2.1 Planned Future Land Use to the Year 2010, 2020, and 2030

(Astana City Commanded Area : approx. 71,000 ha or 710 km2)

1			Total Area	I					Developme	ent Plan by	Phase				· · · ·			
Cor	a Code	Region / District / Zoning	to 2030			Residentia	I Area			Office	Floor Area			T	Comm	rcial Area		
				2000	2010	2020	2030	Total	2000	2010	2020	2030	Total	2000	2010	2020	2030	Total
			ha	ha	ha	ha	ha	ha	1,000m2	1,000m2	1,000m2	1,000m2	1,000m2	1,000m2	1,000m2	1,000m2	1,000m2	1,000m2
10-1		anning Region	1 689		1 162	11	0	1 173		789	288	141	1 218		123	17	30	170
	10-1-1	Residential District 3	385		300	0	0	300		277	116	78	471		17	3	9	29
	10-1-2	Residential District 4A	563		325	11	0	336		386	153	58	597		77	8	11	96
		Residential District 5	357		268	0	0	268		63	10	3	76		14	3	5	22
	10-1-4	Residential District 6	384		269	0	0	269		63	9	2	74		15	3	5	23 (
10-2		Planning Region	22 614		302	0	0	302		148	77	67	292		3	0	2	5
		Northern Industrial District	- 2 146		184	0	0	184		53	22	18	93		2	0	1	3
	10-2-2	Central Industrial District	3 353		118	0	0	118		74	34	28	136		1	0	1	2
	10-2-3	Planning District I (high-tech park)	6 302		0	0	0	0		4	0	0	4		0	0	0	0
	10-2-4	Planning District II (high-tech park)	3 710		0	0	0	0		0	0	4	4		0	0	0	0
	10-2-5	Planning District III (high-tech park)	2 927		0	0	0	0		0	4	0	4		0	0	0	0
	10-2-6	Planning District IV (military academy)	4 176		0	0	0	0		. 0	0	0	0		0	0	0	0
	10-2-7	Planning District IV (services)								2	2	1	5		0	0	0	0
	10-2-8	Planning District IV (cargo center)								15	15	16	46		0	0	0	0
10-3		ern Planning Region	11 270		1 658	672	0	2 330		359	130	21	510		79	29	36	144
	10-3-1	Residential District 7	562		318	0	0	318	L	117	9	4	130		28	3	10	41
	10-3-2	Residential District 8	395		149	0	0	149		51	2	2	55		12	1	4	17
	10-3-3	Residential District 9	552		333	0	0	333		48	2	2	52		13	0	5	18
	10-3-4	Residential District 10	213	ļ	133	15	0	148		10	9	0	19		1	1	1	3
	10-3-5	Industrial District-Station 40	752	ļ	136	0	0	136		29	7	7	43		2	0	1	3
	10-3-6	Residential District 17	715	<u> </u>	349	57	0	406		98	21	4	123		22	6	9	37
	10-3-7	Residential District 18	902		0	380	0	380		0	49	1	50		0	11	3	14
	10-3-8	Residential District 19	783		0	220	0	220		0	31	1	32		0	7	2	9
	10-3-9	Planning District V	6 396		240	0	0	240		6	0	0	6	·	1	0	1	2
10-4		Planning Region	24 399		891	497	732	2 120		1 818	675	528	3 021		64	99	112	275
	10-4-1	Residential District 11	1 251	1	120	0	370	490		7	5	84	96		1	0	26	27
	10-4-2	Residential District 12	668	ļ	342	0	0	342		27	1	1	29		7	1	1	
	10-4-3	Residential District 13	942		199	0	0	199		1 225	302	138	1 665		40	60	45	145
	10-4-4	Residential District 14	1 425	<u> </u>	96	101	112	309		524	286	241	1 051		14	25	24	63
┝──┥	10-4-5	Residential District 15	820 933	 	0	250	41	291	<u>}</u> ↓	0	27	5	32	ļ	0	6	3	9
┢──┤		Residential District 16			49	146	209	404		1	34	38	73		1	7	13	21
 -	10-4-7	Planning District VI (new airport city)	1 885	<u>+</u>	0	0	0	0		28	0	0	28		0	0	0	0
 		Planning District VII (sports city)	2 792	 		··· · · .				0	5	0	5		1	0	0	1
 	10-4-9	Planning District VII (university)	3 789		85	0	0	85		0	19	13	32		0	0	0	0
┝──┥	10-4-10	Planning District VII (int. exihibition)	12 (25	·}						6	-4	8	10	L	0	0	0	0
10.5	<u>10-4-11</u>	Planning District VIII	12 686		0	0	0	0		0	0	0	0		0	0	0	0
10-5		Planning Region	9 909		498	325	20	843		61	103	33	197		13	22	16	51
┟───┤	10-5-1	Residential District 1	332	ł	100	8	20	128		7	8	9	24		1	1	5	7
	10-5-2	Residential District 2	441		281	0	0	281	 	37	17	17	71		10	4	6	20
┟───┤	10-5-3	West Industrial District	575		12	0	0	12		11	5	5	21		1	0	0	1
┢───┥	10-5-4	Residential District 4B	685		105	317	0	422		6	73	2	81		1	17	5	23
┝──┤	10-5-5	Planning District IX	7 876		0	0	0	0		0	0	0	0		0	0	0	0
		Total, each phase	69 881	11	4 511	1 505	752	6 768		3 175	1 273	790	5 238		282	167	196	645
 †		Cumulative total		1 1	4 511	6 0 1 6	6 768			3 175	4 448	5 2 3 8	004 0	<u> </u>	282	449	645	
┟╌╍╍╼┾				1					 	0 113	0-7-70	0.4 0			404	++9	045	

Planning	Area	District	Агеа	Floor Are	a, Requires	2010	2020	2030	notes
Region	ha		ha	total	1,000 m2	1,000 m2	1,000 m2	1,000 m2	
Whole Astana	69,881			residential	11,036	3,492	4,681	2,863	
THOIL ASIANA	07,001			office	4,205	2,080	1,277	848	
				commercial	485	121	169	195	
Central	1,689	Total	1,689	residential	1,184	406	574	204	
		· · · · · · · · · · · · · · · · · · ·	+	office commercial	528	33 10	289	206	
		Residential district 3	385	residential	350		146	204	
				office	194	ř – – – – – – – – – – – – – – – – – – –	iišl	78	
			+	commercial	12	0	3	9	•••••
		Residentail district 4A	563	residential	336	183	153	0	
		· · · · · · · · · · · · · · · · · · ·	•	office	244	33	153		
		Residential district 5	357	commercial residential	26 278	6	8 154	12	
				office	79	0		68	
			1	commercial	i íó l	2	3		
		Residential district 6	384	residential	220	99	121	0	
				office	11	0	9	2	
				commercial	10	2	3	5	
la méli a ma	33 214	Total	33 217						
lorthern	22,614		22,014	residential office	37 165	37	77	67	
			+ .	commercial	2		0		
		North industrial district	2.146	residential	ōl	i i	Ŏ		
	<u> </u>		1	office	40	0	22	. 18	·
			· · · ·	commercial	1	0	0		
		Central industrial district	3,353	residential	37	37	0	0	
		· · · · · · · · · · · · · · · · · · ·	<u> </u>	office commercial	62	0	34	28	· ·
		Planning district I (high-tech)	6 302	residential			0		
	·	radding district r (ingr-teen)	0,502	office	4	4	ŏ	ŏl	·
				commercial	- - 		ŏ	0	
~~~~		Planning district II (high-tech)	3,710	residential	0	0	0	. 0	
				office	4	0	0	4	
			5.007	commercial	0	0	0	0	
		Planning district III (high-tech)	2,927	residential office		0	0	0	
				commercial	<del>-</del>	ŏl			
·		Planning district IV (military academy	<u> </u>	residential	l - őt	őt	ŏ		
				office	0	0	0	0	
				commercial	0	0	0	0	
		Planning district IV (services)	?	residential	. 0	0	0	0	
	ļ		· · · · · ·	office	6	2	2	2	
		Planning district IV (cargo center9	h	commercial residential	0	- 0	0		
		Franking district IV (cargo centers	1.	office	45	15	15		
				commercial		i	ŏ	ŏ	
		· · · · · · · · · · · · · · · · · · ·	1.		<b> </b>				
Southeastern	11,270	Total	11,270	residential	4,077	2,489	1,588	0	
			<u> </u>	office	377	228	128 29	21	
	ļ			commercial	683	49 617		35	
	<u> </u>	Residential district 7	202	office	54		9	4	
	· · · ·	h		commercial	23		3		
	<u> </u>	Residential district 8	395	residential	0	0	0	0	
			1	office	0		0	0	
	[			commercial	6			4	
- <u></u>	Į	Residential district 9	552	residential	477	477	0	2	
	<u> </u>		+	office commercial	52	48			
	+	Residential district 10	213	residential	194		114	ŏ	
	+			office	20	10	9		
	1		1	commercial	3			1	
	1	Industria district, station 40	752	residential	347		166	0	
				office	. 39		7	7	
	ļ		+	commercial	1 297		0 223	1	
		Residential district 17	+ /15	residential office	1,287	1,064	223	4	<del>.</del>
	<u> </u>		+ .	commercial	37				
	┥────	Residential district 18	902	residential	625		625	ó	
	<u> </u>		1	office	51		49	2	
	1 .		1	commercial	14	0		3	
	<u> </u>	Residential district 19	- 783	residential	394		394	0	
				office	32	0	31	1	
	4	Disputing district V	6 102	commercial residential	70	0	7	2	
	+	Planning district V		office	6		0	0	
	1	I a manufacture de la companya de la	1	commercial	ř	i i	Ŭ	Ŭ	

### Table 7.2.2 (1/2) Floor Area, Required for Residential, Office , and Commercial in Phase I, II, and III

Planning	Area	District	Area	Floor Are	ea, Requires	2010	2020	2030	notes
Region	ha		ha	total	1,000 m2	1,000 m2	1,000 m2	1,000 m2	notes
		•	+		1,000 112	1,000 m2	1,000 mil	1,000 112	
Southern	24,399	Total	24.399	residential	3,953	495	1,223	2,235	
			+	office	2,987	1,784	681	522	
			+	commercial	271	58	101	112	
		Residential district 11	1,251	residential	1,288	42	69	1,177	
			1	office	90	0	6	84	
				commercial	27	0	1	26	
		Residential district 12	668	residential	65	65	0	0	
				office	2	0	1	1	
	-			commercial	. 5	3	1	1	
		Residential district 13	942	residential	159	159	0	0	
				office	1,665	1,225	303	137	
				commercial	145	40	60	45	
		Residential district 14	1,425	residential	1,027	176	374	477	
				office	1,050	524	286	240	
			1	commercial	63	14	25	24	· · · · · · · · · · · · · · · · · · ·
		Residential district 15	820	residential	403	0	340	63	
		· · · ·		office	32	0	27	5	
		Devidence of the last of the	011	commercial	9	0	6	3	••••••
		Residential district 16	4 933	residential office	966	8	440	518	
					73	1	34	38	<del></del>
		Planning district VI (airmost)	1 994	commercial residential	21	0	8	13	
		Planning district VI (airport)	1,000	office	28	28	0	0	
		· · · · · · · · · · · · · · · · · · ·		commercial	28	28	0	0	
	···	Planning district VII (sports)	2	residential	0	0	0	0	
		rianning district vir (sports)	- I ^I	office	5	0	5	0	
		· · ·		commercial	Ó	0	ŏ	ŏ	
		Planning district VII (university)	3 789	residential	45	45	Ŏ	Ŏ	
		<u> </u>		office	32	0	19	13	
				commercial	1	1	0	0	
		Planning district VII (exhibition c.)	?	residential	0	0	0	0	
			1	office	10	6	0	4	
				commercial	0	0	0	0	
		Planning district VIII	12,686	residential	0	0	0	0	
				office	0	0	0	0	
			1. A. A. A.	commercial	0	0	0	0	
Northwestern	9,909	Total		residential	1,785	65	1,296	424	
				office	148	14	102	32	
				commercial	41	3	22	16	<u> </u>
· · ·		Residential district 1		residential office	212	0	<u>99</u> 8	113	
		· · · · · · · · · · · · · · · · · · ·	·		6	0		8	
		Peridential district 3	AA1	commercial residential	577	0	266	311	
		Residential district 2	441	office	33	0	16	17	
			+	commercial	12	2	4		
		West industrial district		residential	0	0			
		megt mensular gischet		office	18	8	5	5	
				commercial	0		ō	ō	
		Residential district 4B		residential	996	65	931	ŏ	
				office	81	6	73	2	
				commercial	23	i	17	5	
		Planning district IX		residential	0	0	0	0	
		1 IMANING 0150104 174		office	0	0	0	0	
			+	commercial	ō	Ŏ	ŏ	0	

## Table 7.2.2 (2/2) Floor Area, Required for Residential, Office, and Commercial in Phase I, II, and III

tivyg de lo.	No.	Development Scope	Project's Abbreviation for Townscape & Architectures	unit	Q'ty	al Implementation Priority <1	b1 Implementation Schedule <2	cl Procurament method	dl Finance source expected	el Executing Agency	fi Maturity of Project<3
URBAI	DEVELO	MENT		ha	69 881 1 689						
10-1	[Central pla 110-1-1 R	uning region Lendential district 3	TAPC-1	ha	385				· · · ·		
	11012 18	endential district 4A	TAPC-7 TAPC-3	ha ha	563 357						
	10-1-4	endential district 6	TAPC-4	ha	384						
10.2	Noribers Ø	launing region		ha	22 614						
	10-2-1	forthern industrial district	TAPN-I TAPN-7	ha ha	2 146						
	10-2-2 0	contral industrial district Innaing, destrict [] (high-teck park) Innaing district [] (high-teck park) Innaing district []] (high-teck park) Innaing district [] (high-teck park) Innaing district [] ( (estrices) Innaing district [] ((estrices) Innaing district [] ((estrices))	TAPN-3	ha j	<u>6302</u> 3710						
	10-2-4	Tanning district II (high-teck park)	TAPN-4 TAPN-5	ha ha	2 927						
	10-2-6	lanning district IV (multary academy)	TAPN-6 TAPN-7	ha ha	1 176						
	10-2-7	Tanning district IV (services) Tanning district IV (cargo center)	TAPN-8	ha							
				ha	11 270						
10-3	10-3-1 18	rn plauning region Rendential district 7	TAPSE-1	ha	<u>562</u> 395			· · · · · · · · · · · · · · · · · · ·			
	10-3-2	Residential district 8	TAPSE-2 TAPSE-3	ha ha	552						
	110-3-4 []	Residential district 10	TAPSE-4 TAPSE-5	ha ha	213						
	1 10-1 6 1	ndustrial district-Station 40	TAPSE-6	ha	715						
	10-3-7	Residential district 18 Residential district 19	TAPSE-7 TAPSE-8	ha ha	902 783			1			
	10-3-9	Planning district V	TAPSE-9	ha	6 3 96			<u> </u>	<u> </u>		
10.4	Southern	Izaning region		ha	24 199			1			
10-4	10-4-1	Residential district 11 Residential district 12	TAPS-1 TAPS-2	ha	1 251 668			<u> </u>			
			TAPS-1	ha	942		2001-2010 2001-2010	ICB/LCB			
_	110.4.4	Residential durinct 14	TAPS-I TAPS-5	ha	1 425 820	<u>+</u>	1001-1010				
	10-4-8	Residential district 15 Residential district 16	TAPS-6 TAPS-7	ha ha	933 1885		<u> </u>	+	+		
	10-4-7	Planning district VI Planning district VII	TAPS-8	ha				ļ			
	10-4-9	Planning district VII	TAPS-9 TAPS-10	ha ha	789		<u>t</u>	<u>t</u>	<u>t</u>		
	10-4-10	Planning district VII Planning district VIII	TAPS-II	ha	12 686			l		ł	L · -
14.7				ha	9 909		<u> </u>	<u>t</u>			
10-5	10-5-1	planning region Rendential district 1	TAPNW-1 TAPNW-2	ha	332						
	10-5-2	Residential district 1 West industrial district	TAPNW-3	hé	575						
	10-3-4	Residential district 1	TAPNW-4 TAPNW-5	<u>ha</u>	685 7 876		+				
		Planning district IX			<b>İ</b>				<u> </u>		· · · · · · · · · · · · · · · · · · ·
INFR	ASTRUCTO	RES AND ENGINEERING PROTEC	TION		l	1					
	Transpor	lation			Į		2001-2005	LCB	to be arranged	Astana City	D
20-	1 Special ros 20-1-1	10-7, new		km	2,31						<b>{ _</b>
	20.1.2	sp-3, new ets of City Importance/Main Roads (Art	enal mad)	km			2001-2005	LCB	to be arranged	Astana City	D
20-	1 20 2 1	a-1 to a-10, new and improve		km km	91,18 14,00				+		A
70.	20-2-2	sp-1 (King Road), new				I	2001-2005	LCB	to be arranged	Astana City	<u> </u>
20	20-1-1	p-1, p-2, p-4, p-6, p-7, p-8, p-10, p-11,	new and improve	km	26,77	2	2004-2007	LCB	to be arranged	Astana City	<u> </u>
20-	4 Main Stre 20-1-1	s-1 to s-4, s-6, s-7, s-11 to s-20, s-19, s-	20, s-22 to s-27, s-29	km	41,29						
20-		new and improve d Roads of Local Importance (Terbary i			<u>t</u>	2	2004-2007	LUB	to be arranged	Astana City	- P.
1	20-5-1	TRI, 2-lane, new		km	19,75	<u> </u>	2001-2005	ICB -	Int. soft loan	Artana City	С
20-	6 Trolley B 20-6-1	Reconstruction and construction of cat	enary cables	km	30.0	(reconst)					
20	20-6-2 7 Bridge	Power station construction		sta.			2001-2005	LCB	to be arranged	Astana City_	P
	20.7.1	(b-2 to b-24) b-6 to b-10, b-21, b-22, new		piace	e 7,0	2	2004-2007	LCB	to be arranged	Astana City	<u> </u>
20-	-8 Bridge 20-8-1	(f-3 to f-15) f-4 and f-15, new		plac	e 2,0		2008-2010	ІСВ	Lut, soft loan	Astana City	D
20.	10 ILRT	LRT, 16 stations, new		km	22.0	· · · · · ·					
20-	13 Terminal			m2	2 700.0	2	2004-2007	LCB	to be arranged		
1 20-	20-13-1 18 Traffic m	T-1, T-3, and T-5				3	2008-2010	- ICB	to be arranged	Astana City	D
	20-18-1	Traffic light, new Traffic control center		set LS		<u></u>		-			
20-	25 Aimort			LS			2001-2003	ICB	JBIC, Japan	AIA	A
	20-25-T	unprove Astana international airport			· · · · · ·						+
1-6		esources [IKC-Islum Pipeline Project				<u>                                     </u>	2000-2001	LCB	State/City	AkimaVIKC	A
1.0	10-1-1	Installation of pressure pipeline embed	icd, steel, DI.4 m	krit krit						1	1
T	10.12	Installation of non-pressure pipeline en Pump station w/substations	moeaea, KU, DJ,2 M	no	. 2.	0	1			_	+
1	10-1-1	Pump station w/substations Watre pump, 7 mNs at existing P/S of Watre pump, 7 mNs at existing P/S of	IKC	9el 9el		0			1		1
+		water pamp, 1.2 mors at 175 of pipea			·						1
0 10-	Water S	apply 3rd Water Pipeline Project (No.01-10 Construction of 3rd water pipe line, 1	/9 Project List No. 22)		1		2000-2001	LCB	Republican / Socio-economi	ASA	
1.	40-1-1	Construction of Ard water pipe line, I	lane,D1,000, steel	b	n <u>50</u> .	U			develop. fund		1
- 10-	2	Construction of Water Supply Networ (No.01-10/9 Project List No. 35)	rks Project				2001-2005	LCB	Socio-economi develop, fund	e ASA	
Ţ	110-2-1			[ L	<u>к — т</u>	0					
10		Reconstruction of Water Supply Networks (No.01-1079 project List No. 37)	vorks				2001-2005	LCB	Socio-economi development		<u> </u>
	40-3-1	(No.01-10/9 project List No. 37) Water supply pump station		<u> </u>		.0 0.			fund		
1-	40-3-2		306	L		<u>,0</u>	2004-2007	ICB	JBIC, Japan	ASA	<u> </u>
110	40.1	Water supply - Priority Project, 1st st Intake facilities at Vyachslavsky rese	rvoir, 200,000 m vday		5	,0 ,0					-
1-					<u><u>s</u> 1</u>	.0					
1-		Water distribution, replacement 99 E new 75 km (D150-1,800 mm)									1
Ŧ	40.4.	4 Indivisual water meter			1						
50 - 7	Sewera	Reconstruction of sewerage pump size		L	<del>s  </del>	.0	included to prot	ect no. 50-3 to 50	5-10)	1	-
	0-1					.0 - 1					
	0-1	Construction of Sewega Pond (No.0) Sewerage Treatment Plant Rehability	ELCON				2004-2007	ect no. 50-3 to 50	JBIC Japan	ASA	c
	50:1				2		2004-2007		JBIC, Japan	ASA -	c
13	0-4 50-4-	Sewer Collection System reliabilitation Sewer Collection System reliabilitation Sewer pipes, D300-1.500 mm				.0					1
1	50.4.	Pump station     Sewerage Collection System Expansi     Sewer pipes, D100-1,500 mm	on (1)	T	3	<u>,0</u>	2004-2007	ICB	JBIC, Japan	ASA	<u> </u>
15	0-3	Sewerage Conection System Expluse	<u></u>		<u>s</u> –	1,0					<u> </u>
-+-		2 Pump station			5	19					

## Table 7.2.3 (1/2) Integrated Implementation Plan for Development of the City of Astana, Medium Term in Phase I (2001-2010)

Costung	Τ	Project's				2010	-, muanan	- concurri	43C I (2001-)	-010)
Code No,	No.	Development Scope Abbreviation for	មករំ	i Q'iy	al Implementation	61	ol	di .	e1	n
		Townscape & Architectures			Implementation Priority <1	1 1	Procurement			Maturity of
60	Storm V	Vater Drainage [Construction of Treatment Station		1	r normy ct	Schedule <2	method	expected	Agency	Project<1
	1			1	+	2001-2001	LCB	Artalia city	Astana city	В
60	<del>4</del>	Project for Stormwater Druinage Development and Improvement [Dutrict No. 1, 2, 3, 4A, 5, 6, 7, 8, 9, 10, 11, 12, 13, 17,		+	T	2001-2010	LCB	Astana city	Astana city	D
—	- 60-7-1	central ind., north and, west uid, and station 40) Construction of drainage pipelines		1	1	4	-			4
1	60-2-2	Construction of draitage parameters Construction of treatment stations Construction of treatment station	교			+				1
60	60-2-3	Construction of treatment station Project for Stormwater Drange Development in New City	다	<u> </u>		2001-2001	<b></b>	+		1
		Conter			<u> </u>	2001-2001	LCB	Astana city	Adana city	A
		Construction of stormwater drainage system		<u> </u>	·}	7000-2001	LCB	Socio-economic	Astana city	to be clarified
		(No. 01-10/9 Project hat No. 34) Construction of dramage network				1	1	develop. fund	T	1
		(No. 01-10/9 Project list No. 15)		1		2001-2001	LCB	Socio-economic develop, fund	Astana city	to be clarified
		Construction of treatment station for stormwater drainage system (No. 01-10/9 Project List No. 40)	-	╂	·{!	2000-2001	LCB	Socio-economic development	Artana city	to be charined
70	Flood Pr	election						fund	1	<u></u>
70-1		lishum Raver Improvement Works	-	1	1 - 1	2001-2001	LCB	Socio-economic	Artana city	
	70-1-1	(No. 01-10/9 Project List No. 33) Dredging & channel formation, section from the estuary of	km	4.0	<u> </u>			development fund	1	<u> </u>
- 70-2	l	Ak-Bulak river to complex of governmental buildings Reconstruction of lature River Embankment	_					1	<u> </u>	ł
	70-2-1	(No. 01-10/9 Project List No. 57)			<u></u>	2001-2001	LCB	Socio-economic development	Astana city	to be clarified
70-3		Embaukment (section 4 & 3) Reconstruction of Bank of Ak-Bulak River, 2nd stage	13	1,0	+	2001-2001	LCB	Fund Socio-aconcense	Astana city	to be clarified
<u> </u>	70-3-1	(No. 01-10/9 Project List No. 59) Recombraction of Bank of Ak-Bulak River	LS	1.0	T			development	Constant a City	to be clarified
70-4		Ishim River inprovement, L=3.0 km (Sany-Alka street to configures of Sarybulak River)		····	2	2001-2005	LCB	fund Socio-economic	Astana city	D
	70-4-1	(CACHYROOM (Open Cik and dreaging)		1,0	<u> </u>			development fund	Į	<b>_</b>
	70-4-1	Embaskment Construction of weir	-15	1,0 1,0			[		<b> </b>	
1-	70-4-4	Related structures	21	1,0	1			<u>t</u>	<u> </u>	<u> </u>
80	Electric	ower and Heat Emergy	<u> </u>	<u>+</u>	<u> </u>					
80-1	(Electric	H10/10 kV Substation and Power Transmission Line Project				2001-2001	LCB	5000.0000		
		(Development of Power supply System of Artans City up to 2007 Int stage)	1-	<b></b>	L	2001-2001		Socio-economic development	Astana city	C
1	1	(No. 01-1009 Project List No. 32) Construction of 110 kV transmission has from airport to left	1		<u> </u>			fund		
	80-1-1	Construction of 110 kV transmission line from airport to left [bank of Jaham River (New City Center)		1,0						
80-2	80-1-2	besk of lahim River (New City Center) Construction of 110/10 kV substation "Left Bank" Conventional Electric Power and Heat Energy Generating	15	1,0						
		Project			!	2003-2006	ICB	hit, soft loan	AES	D
80-3	80-2-1	Power and heat energy generating plant in 2006 Project for 110 kV Transmission Line and Substations	TMW	115,0						
	80-3-1	Construction of 110 kV transmission ane Construction and extension of substations	km	61,4						
	1		place	3,0						
80-4	(fleat ene	Repair and Restoration of abondoned heat mains and			· · · · · · · · · · · · · · · · · · ·	2001-2001	LCB	Socio-economic	Astana city	to be clarified
		distribution activories of the City (No. 01-10/9 Project List No. 38)						development	Aurana city	to be churined
1	80-4-1	Repair and Restoration of heat mains and distribution	LS	1,0				fund		
80-5		actworks Construction of heat pump station No.6			T	2000-2001	LCB	to be arranged	Astana city	to be clarified
	80-5-1	(No. 01-10/9 Project List No. 41) Heat pump station No.6	LS	1,0						
80-6		Project for Extension of Existing District Heating Pipelines to New City Center and New Developin Area on the Right Bank			1	2001-2003	LCB	Socio-economic	Astana city	c
		of Islam river	1					development fund		
	80-6-1	Extension to new city center Extension to new develop, area on the right bank of I. River	13	1,0 1,0						
80-7	1	Extension to new develop, area on the right bank of I. River Project for Three (3) Heat Centers Heat centers, HC-1, HC-2, and HC-3	place	3,0	2	2008-2010	тсв	Int. soft loan	AES	D
1		Related pipelines on the left bank of Ishim River	LS	1,0					· · · · · · · · · · · · · · · · · · ·	
0	Gas Supp	y	+							
90-1	1	Artana City Gas Sminly Network Project	<del>.</del>	1.0	1	2006-2010	ІСВ	Int. soft loui	Astana city	D
+	90-1-2	Establishment of Gas Supply Company Construction of hugh pressure network Construction of low pressure network		1.01						
1		Construction of low pressure network Construction of supporting facilities		1,0						
0	Telecomm	unication		· · · · ·						
1001		Installation Project of Telephones on the Left Bank of Islam River (No. 01-10/9 Project List No. 36)	1			2001-2001	to be clarified	to be arranged	Muurtry of	to be clarified
	1	ANNUM ALTON (AD. VITIN'S FIDJECT LAST (NO. 30)	LS	1,0					Communication	
1	100-1-1	Installation of telephones	~ ~ ~		2	2003-2005	Turn key	lint, soft loan	Munistry of	с
100-2	100-1-1	Astana New Local Telecommunication Network Project (1)	tts +	10						
100-2	100-1-1 100-2-1 100-2-2	Astana New Local Teleconstituteation Network Project (1) Switching system Transmission system (STM-16-ADM)		1.0					Transport and Communication	
100-2	100-2-1 100-2-2 100-2-3 100-2-3	Astana New Local Telecommunucation Network Project (1) Switching system Transmission system (STM-16-ADM) Digital Loop Camer Equipment Orbitade Davi		1,0 1,0 1,0						
100-2	100-2-1 100-2-1 100-2-2 100-2-3 100-2-4 100-2-5	Astana New Local Teleconsininucation Network Project (1) Switching system Transmission system (STM-16-ADM) Digital Loop Camer Equipment Ortacke plant Power supply system Buldmar		1,0 1,0 1,0 1,0						
	100-2-1 100-2-1 100-2-2 100-2-3 100-2-4 100-2-5	Astana New Local Teleconsininucation Network Project (1) Switching system Transmission system (STM-16-ADM) Digital Loop Camer Equipment Ortacke plant Power supply system Buldmar		1,0 1,0 1,0					Communication	
100-3	100-2-1 100-2-2 100-2-3 100-2-3 100-2-3 100-2-4 100-2-5 100-2-7	Astana New Local Telecommunucation Network Project (1) Swelching system Transmission system (STM-16-ADM) Digital Loop Camer Equipment Oritade plant Power supply system Endenge Transieg Administration Data Communication Network Project (1) Network	<u> </u>	1,0 1,0 1,0 1,0 1,0		2004-2006	Turn key	Int. soft loan	Communication Munistry of	D
	100-2-1 100-2-2 100-2-3 100-2-3 100-2-3 100-2-4 100-2-5 100-2-7	Astana New Local Telecommunucation Network Project (1) Swelching system Transmission system (STM-16-ADM) Digital Loop Camer Equipment Oritade plant Power supply system Endenge Transieg Administration Data Communication Network Project (1) Network		1,0 1,0 1,0 1,0 1,0 1,0			Turn key		Communication Musstry of Transport and	D
100-3	100-1-1 100-2-1 100-2-2 100-2-3 100-2-3 100-2-4 100-2-4 100-2-6 100-2-7	Astana New Local Teleconstitutuication Network Project (1) Switching system Transmission system (STM-16-ADXI) Digital Loop Carrier Equipment Outside plant Prover supply system Antidage Transig Administration Dela Communication Network Project (IP Network) Capital subscripter system (IP Center system		1,0 1,0 1,0 1,0 1,0	3		Turn key		Communication Munistry of	D
100-3	100-1-1 100-2-1 100-2-2 100-2-3 100-2-3 100-2-5 100-2-5 100-2-5 100-2-7 100-2-7 100-3-1 100-3-1 100-3-2	Astana New Local Teleconstitutucation Network Project (1) Switching system (STM-16-ADM) Dagital Loop Carrier Equipment Outside plant Power supply system Enddages Transistration Dela Communication Network Project (1) Network) Capital subscenter system 11 Center system a Capital Subscenter system		1,0 1,0 1,0 1,0 1,0 1,0	, ,		Tum key ICB		Communication Musstry of Transport and	D B
100-3 100-3	100-1-1 100-2-1 100-2-2 100-2-3 100-2-4 100-2-4 100-2-4 100-2-6 100-2-6 100-2-7 100-3-2 100-3-2 Solid Wes	Astana New Local Telecommunucation Network Project (1) Swelching system Transmission system (STM-16-ADM) Definit Loop Carner Equipment Ontacke plant Ontacke plant Power supply system Endidings Transig Administration Definit Communication Network Project (P Network) Capital subscentfer system If Center system Capital subscentfer system I Center system Capital - Project manufal - Project		1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0	3	2004-2008		fnit, soft loan	Communication Munistry of Transport and Communication	
100-3 100-1	100-1-1 100-2-2 100-2-3 100-2-3 100-2-3 100-2-3 100-2-3 100-2-3 100-2-3 100-2-7 100-2-7 100-3-1 100-3-1 100-3-1 100-3-1 100-1-1 110-1-3	Astana New Local Telecommunucation Network Project (1) Swelching system Transmission system (STM-16-ADM) Definit Loop Carner Equipment Ontacke plant Ontacke plant Power supply system Endings Transis Administration Definit Communication Network Project (P Network) Capital subscentfer system If Center system Capital subscentfer system I Center system Capital Subscentfer system I Center system Capital Subscentfer system I Center System Capital Subscentfer system I Center System Construction of Earliffer (15 ha, civil work) Machinery Endelfill, 1		1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0		2004-2008		fnit, soft loan	Communication Munistry of Transport and Communication	
100-3 100-3	100-1-1 100-2-2 100-2-3 100-2-3 100-2-3 100-2-3 100-2-3 100-2-3 100-2-3 100-2-7 100-2-7 100-3-1 100-3-1 100-3-1 100-3-1 100-1-1 110-1-3	Astana New Local Telecommunucation Network Project (1) Swelching system Transmission system (STM-16-ADM) Definit Loop Carner Equipment Ontacke plant Ontacke plant Power supply system Endings Transis Administration Definit Communication Network Project (P Network) Capital subscentfer system If Center system Capital subscentfer system I Center system Capital Subscentfer system I Center system Capital Subscentfer system I Center System Capital Subscentfer system I Center System Construction of Earliffer (15 ha, civil work) Machinery Endelfill, 1		1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0		2004-2008		fnit, soft loan	Communication Munistry of Transport and Communication	
100-3	100-1-1 100-2-1 100-2-3 100-2-3 100-2-3 100-2-3 100-2-3 100-2-4 100-2-7 100-3-1 100-3-1 100-3-1 100-3-1 110-1-3 110-1-3 110-1-5 110-1-6	Astana New Local Teleconstitutuestoru Network Project (1) Swichung system Transmission system (STM-16-ADX1) Datale plon Datale plon France plon France plon Childrage Childrage Childrage Childrage Childrage Childrage Childrage Construction Data Communication Network Project (IP Network) Capital subscenter system IT Center system Construction of Isadial-1 Machinery for waste collection and transportation Machinery for orget Cenange DataCological center Iteration DataCological center Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration Iteration		1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0		2004-2008	ІСВ	Int. soft loan Spanish ODA	Communication Munistry of Transport and Communication Gereommunichoz	B
100.3	100-1-1 100-2-1 100-2-3 100-2-3 100-2-3 100-2-3 100-2-3 100-2-4 100-2-7 100-3-1 100-3-1 100-3-1 100-3-1 110-1-3 110-1-3 110-1-5 110-1-6	Astana New Local Telecommunucation Network Project (1) Swelching system Transmission system (STM-16-ADM) Definit Loop Carner Equipment Ontacke plant Ontacke plant Power supply system Endings Transis Administration Definit Communication Network Project (P Network) Capital subscentfer system If Center system Capital subscentfer system I Center system Capital Subscentfer system I Center system Capital Subscentfer system I Center System Capital Subscentfer system I Center System Construction of Earliffer (15 ha, civil work) Machinery Endelfill, 1		1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0		2004-2008		fnit, soft loan	Communication Munistry of Transport and Communication	

## Table 7.2.3 (2/2) Integrated Implementation Plan for Development of the City of Astana, Medium Term in Phase I (2001-2010)

nole; <1 e; implementation priority within the each phase of medium, long, and ultimate implementation schledule means proposed construction period, no accounted th eleval time such as feasibility study, engineering derign, Project maturity as of the end of year 2000 by the following classification A under construction B under engineering design C under feasibility study D under master plan

<2 <3

HHSW MSW NCC NRW Hospital Hazardous Solid Waste

Municipal solid Waste New City Center

Int. soft loan International soft loan

- ICB LCB JBIC AES ASA AIA
- New City Center Non Revenue Water International Competitive Bid Local Competitive Bid Japan Bank for International Cooperation

Astanaenergyservice Gorvodokanal

Astana International Airport

## Table 7.2.4 (1/2) Integrated Implementation Plan for Development of the City of Astana, Long Term in Phase II (2011-2020)

Code				Project's		T	L	2020				
No.		No.	Development Scope	Abreviation for Townscape &	unit	Q.th.	<u>al</u>	bl	¢l	41	cl	fi
				Architectures			Implementation Priority <1	Implementation Schedule <2	Procurement method	Finance source expected	Excepting Agency	Maturity of
		DEVELO			ha	69 881					(16040)	Project <3
	10-1	Central p 10-1-1	lanning region Residential district 3	TAPC-I	ha	1 689	ļ					
		10-1-2	Residential district 4A	TAPC-2	ha ha	385						
·		10-1-3	Residential district 5	TAPC-3	ha	357	<u> </u>				<b></b>	+
		10-1-1	Residential district 6	TAPC-I	ha	384						+
-+	0-2	10-2-1	planaing region Northern industrial district	TAPN-I	ha	22 614	ļ					
-+-	_	10-2-2	Central industrial district	TAPN-2	ha ha	2 146	ł	··· ···				<b> </b>
		10-2-3	Planning district I (high-teck park)	TAPN-3	ha i	6 302	· · · · · ·				· · · · · · · · · · · · · · · · · · ·	<u> </u>
_		10-2-4	Planning district II (high-teck park)	TAPN-4	ka	3 710						
		10-2-5	Planning district III (high-teck park) Planning district IV (military academy)	TAPN-3	ha	2 927						
		10-2-7	Planning district IV (minically academy)	TAPN-6 TAPN-7	ha ha	4 176	·					<u> </u>
		10-2-8	Planning district IV (cargo center)	TAPN-8	ha	1	<u> </u>				· · · · ·	
			I									1.
-+-!	0-3		era planning region		ha	11 270						
+-		10-3-1	Residential district 7 Residential district 8	TAPSE-1 TAPSE-2	<u>ha</u>	<u> </u>						L
		10-3-3	Residential district 9	TAPSE-3		552						
		10-3-4	Residential district 10	TAPSE-4	ha	213						<u> </u>
		10-3-5	Industrial district-Station 40	TAPSE-5	ha	752						
		10-3-6	Residential district 17 Residential district 18	TAPSE-6	ha	715						
+		10-3-7 10-3-8	Residential district 18	TAPSE-7 TAPSE-1	ha ha	902 783						
-		10-3-9	Planning district V	TAPSE-9	ha	6 396				······· <b>·</b>		
						1						
	0-4		planning region		ha	24 399						
		10-4-1	Residential district 11 Residential district 12	TAPS-1 TAPS-2	<u>ha</u>	1 251						
	-	10-4-3	Residential district 12	TAPS-J	ha ha	<u>668</u> 942				· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
		10-4-4	Residential district 14	TAPS-4	ha	1 425						
		10-4-5	Residential district 15	TAPS-5	ha	\$20					·· ·	
		10-4-6	Residential district 16	TAPS-6	ha	933						
		10-4-7	Planning district VI	TAPS-7	ha	1 885						
		10-4-8	Planning district VII Planning district VII	TAPS-# TAPS-9	ha ha	3 789						
	{	10-4-10	Planning district VII	TAPS-10		3 /87					· · · · ·	
		10-4-11	Planning district VIII	TAPS-11	ha	12 686						
	_											
	<del>U-5</del>		planning region Residential district 1	TAPNW-1	ha	9 909						
+	-	10-5-2	Residential district 1	TAPNW-2	ha ha	332 441					·	· · ·
	- 1	10-5-3	West industrial district	TAPNW-3	ba	375				· · · ·		
	-1	10-5-4	Residential district 1	TAPNW-4	ha	685						
		10-5-5	Planning district IX	TAPNW-5								
1.010					ha	7 \$76						
	DA 02	TRUCTU			ha	7 \$76			······································			
0	RAS	TRUCTU	RES AND ENGINEERING PROTECTION		ha	7 \$76						
<b>v</b> 1		TRUCTUI Transport				7 876						
		Transport Main Stree	ntion 15 of City importance / Main Roads (Arterial 1	N		7 876		2011-2015	LCB	to be arranged	Astana City	
	0-2	Transport Main Stree 20-2-1	ntion ts of City importance / Main Roads (Arterial a a-1 to a-10, new and improve	N	km	58,66		2011-2015	LCB	to be arranged	Astana City	D
20	0-2	Transport Main Stree 20-2-1 20-2-1	ntion ts of City impertance / Main Roads (Arterial i a-1 to a-10, new and improve sp-1 (Ring Road), new	N	·							
20	0-2	Transport Main Stree 20-2-1 20-2-1 Main Stree	ntion ss of City, importance / Main Roads (Arterial a-1 to a-10, new and inprove ss of City, Importance (Primary road) ts of City, Importance (Primary road)	n rcad)	km km	58.66 14.00	I 	2011-2015		to be arranged	Astana City Astana City	D
20	0- <u>2</u> 0-3	Transport Main Stree 20-2-1 20-2-1 Main Stree 20-3-1	ntion ts of City impertance / Main Roads (Arterial i a-1 to a-10, new and improve sp-1 (Ring Road), new	n rcad)	km	58,66	    2	2011-2015	LCB	to be arranged	Astana City	D
20	0-2 D-3	Transport Main Stree 20-2-1 20-2-1 Main Stree 20-3-1 Main Stree 20-4-1	ntion ts of City importance / Main Roads (Arterial i a-1 to a-10, new and insprove tsp-1 (Ring Road), new ts of City Importance (Primary road) p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new to of Regional Importance (Secondary road) s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to	N read) and improve	km km	58.66 14.00			LCB			
20	0-2 D-3 0-4	Transport Main Stree 20-2-1 20-2-1 Main Stree 20-3-1 Main Stree 20-4-1	ation sof City, importance / Main Roads (Arterial a-1 to a-10, new and inprove sp-1 (Ring Road), new sof City, Importance (Primary road) [p_1, 0-2, p-4, p-6, p-7, p-10, p-10, p-11, new sof Regional Importance (Secondary road) s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and improve	N read) and improve	km km km	58,66 14,00 36,19	2	2011-2015 2014-2017	LCB LCB	to be arranged to be arranged	Astana City Astana City	D
20	0-2 0-3 0-4 0-5	Transport Main Stree 20-2-1 20-2-1 Main Stree 20-3-1 Main Stree 20-4-1 Streets and	ntion sof City importance / Main Roads (Arterial i sof City importance / Main Roads (Arterial i sof City Importance (Primary road) [p_1.0.2, p-4, p-5, p-7, p-8, p-10, p-11, new ts of Regional Importance (Secondary road) [s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and improve Roads of Local Importance (Textiary road)	N read) and improve	km km km	58,66 14.00 36,19 74,57		2011-2015	LCB LCB	to be arranged	Astana City	D
20	0-2 0-3 0-4	Transport Main Stree 20-2-1 20-2-1 Main Stree 20-3-1 Main Stree 20-4-1	ation sof City, importance / Main Roads (Arterial a-1 to a-10, new and inprove sp-1 (Ring Road), new sof City, Importance (Primary road) [p_1, 0-2, p-4, p-6, p-7, p-10, p-10, p-11, new sof Regional Importance (Secondary road) s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and improve	N read) and improve	km km km	58,66 14,00 36,19	2	2011-2013 2014-2017 2014-2017	LCB LCB LCB	to be arranged to be arranged to be arranged	Astana City Astana City Astana City	D D D
20 20 20 20 20	0-2 0-3 0-4 0-5	Transport Main Stree 20-2-1 20-2-1 Main Stree 20-3-1 Main Stree 20-4-1 Streets and 20-5-1 Bridge 20-7-1	ntion stor (City, importance / Main Roads (Arterial / a-1 to a-10, new and improve sp-1 (Ring Road), new ts of City Importance (Primary road) [p_1 0-2, p-4, p-6, p-7, p-10, p-11, new ts of Regional importance (Secondary road) s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and imporve Roads of Local Importance (Textiary road) TR2, 2-bare, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new	N read) and improve	km km km	58,66 14.00 36,19 74,57	2	2011-2015 2014-2017	LCB LCB LCB	to be arranged to be arranged	Astana City Astana City	D
20 20 20 20 20	0-2 0-3 0-4 0-5 0-5	Transport Main Stree 20-2-1 20-2-1 Main Stree 20-3-1 Main Stree 20-4-1 Streets and 20-5-1 Bridge 20-7-1 Bridge	ntion st of City importance / Main Roads (Arterial i a-1 to a-10, new and improve sp-1 (Ring Road), new sp-1 (Ring Road), new st of City Importance (Primary road) [p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new sof Regional Importance (Secondary road) [s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22, s- new and improve Roads of Local Importance (Testiary road) TR2, 2-lane, new (h-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (f-3 to f-15)	N read) and improve	km km km km km km	58,66 14,00 36,19 74,57 48,00 9,9	2	2011-2013 2014-2017 2014-2017	LCB LCB LCB LCB	to be arranged to be arranged to be arranged	Astana City Astana City Astana City	D D D
20 20 20 20 20 20	0-2 0-3 0-4 0-5 0-7	Transport Main Stree 20-2-1 Main Stree 20-3-1 Main Stree 20-3-1 Streets and 20-5-1 Bridge 20-7-1 Bridge 20-7-1	ation           sof City, importance / Main Roads (Arterial a-1 to a-10, new and improve sp-1 (Ring Road), new           sof City, importance (Primary road)           p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new           sof City, importance (Secondary road)           p-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and importance           Roads of Local importance (Testiary road)           TR2, 2-tame, new           (h-2 to b-24)           b-3, 5, 11, 12, 13, 14, 16, 19, 24, new           (f-3 to f-15)           f-2, 5, 8, 9, 10 and 13, new	N read) and improve	km km km km km km	58.66 14.00 36,19 74,57 48.00	2	2011-2015 2014-2017 2014-2017 2011-2015 2014-2017	LCB LCB LCB LCB LCB	to be arranged to be arranged to be arranged to be arranged to be arranged	Astana City Astana City Astana City Astana City Astana City Astana City	D D D D D
20 20 20 20 20 20 20	0-2 0-3 0-4 0-5 3-7 1-R	Transport Main Stree 20-2-1 20-2-1 Main Stree 20-3-1 Main Stree 20-3-1 Streets and 20-5-1 Bridge 20-7-1 Bridge 20-7-1 Bridge 20-8-1 LRT 20-11-1	ntion st of City importance / Main Roads (Arterial i a-1 to a-10, new and improve sp-1 (Ring Road), new sp-1 (Ring Road), new st of City Importance (Primary road) [p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new sof Regional Importance (Secondary road) [s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22, s- new and improve Roads of Local Importance (Testiary road) TR2, 2-lane, new (h-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (f-3 to f-15)	N read) and improve	km km km km km km	58,66 14,00 36,19 74,57 48,00 9,9	2	2011-2015 2014-2017 2014-2017 2011-2017 2011-2015	LCB LCB LCB LCB LCB	to be arranged to be arranged to be arranged to be arranged	Astana City Astana City Astana City Astana City	D D D D
20 20 20 20 20 20 20 20 20	0-2 0-3 0-4 0-5 0-5 0-5 0-7 0-8 0-8	Transport           Main Stree           20-2-1           Main Stree           20-3-1           Main Stree           20-4-1           Streets and           20-5-1           Bridge           20-7-1	ation sto City, importance / Main Roads (Artorial a-1 to a-10, new and improve sp-1 (Ring Road), new st of City, Importance (Primary road) p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new st of Regional Importance (Secondary road) s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and improve Roads of Local Importance (Totiary road) TR2, 2-lame, new (f-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (f-3 to f-15) f-2, 5, 8, 9, 10 and 13, new Light Railway Transit LRT, R stations, new	N read) and improve	km km km km km place	58.66 14.00 36.19 74.57 48.00 9.0 6.0 8.0	2	2011-2015 2014-2017 2014-2017 2011-2015 2014-2017	LCB LCB LCB LCB LCB LCB LCB	to be arranged to be arranged to be arranged to be arranged to be arranged to be arranged	Astana City Astana City Astana City Astana City Astana City Astana City	D D D D D
20 20 20 20 20 20 20 20 20 20 20 20	0-2 0-3 0-4 0-5 0-5 1-11 1-13	Transport Main Stree 20-2-1 20-2-1 20-2-1 20-3-1 Main Stree 20-3-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8ridge 20-5-1 8 20-5-1 8 20-5-1 8 20-5-1 8 20-5-1 20-5-1 8 20-5-1 8 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-1 20-5-10	ation stor sof City, importance / Main Roads (Arterial a-1 to a-10, new and inprove sp-1 (Ring Road), new ts of City, Importance (Primary road) [p_1 0-2, p-4, p-6, p-7, p-10, p-11, new ts of Regional (inportance (Secondary road) s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and improve Roads of Local Importance (Textiary road) TR2, 2-large, new (f-3 to f-15) (f-2, s) s, 9, 10 and 13, new Light Railway Transit LRT, K stations, new T-4, new	N read) and improve	km km km km km place	58.66 14.00 36,19 74,57 48,00 9,0 6,0	2 2 1 2 3 2 2 2	2011-2015 2014-2017 2014-2017 2014-2017 2014-2017 2014-2017 2014-2017	LCB LCB LCB LCB LCB LCB LCB LCB LCB	to be arranged to be arranged to be arranged to be arranged to be arranged to be arranged	Astana City Astana City Astana City Astana City Astana City Astana City Astana City Astana City	D D D D D D D D D
20 20 20 20 20 20 20 20 20 20 20	0-2 0-3 0-4 0-5 0-5 1-11 1-13 1-13	Transport Main Stree 20-2-1 20-2-1 Main Stree 20-3-1 Main Stree 20-4-1 Streets and 20-5-1 Bridge 20-7-1 Bridge 20-7-1 Bridge 20-7-1 Rridge 20-7-1 Torminal 20-11-1 Terminal 20-13-1 Traffic M	ation store stor City importance / Main Roads (Arterial a-1 to a-10, new and improve sp-1 (Ring Road), new sto City Importance (Frimary road) [p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new sto C Regional Importance (Secondary road) s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and improve Roads of Local Importance (Testiary road) TR2, 2-lane, new (b-2 to b-24) b-3, s, 11, 12, 13, 14, 16, 19, 24, new (f-3 to f-15) f-2, s, s, 9, 10 and 13, new Light Railway Transis LRT, R stations, new 1-4, new negotient	N read) and improve	km km km km place place km an2	58.66 14.00 36,19 74,57 48,00 9,9 6,0 8,0 8,0	2 2 1 2 3	2011-2015 2014-2017 2014-2017 2011-2015 2014-2017 2014-2017 2018-2020	LCB LCB LCB LCB LCB LCB LCB LCB LCB	to be arranged to be arranged to be arranged to be arranged to be arranged to be arranged	Astana City Astana City Astana City Astana City Astana City Astana City Astana City	D D D D D D
20 20 20 20 20 20 20 20 20 20 20	0-2 0-3 0-4 0-5 0-7 0-7 0-7 0-7 0-8 1-13 0-14 1-13	Transport Main Stree 20-2-1 20-2-1 Main Stree 20-3-1 Main Stree 20-4-1 Streets and 20-5-1 Bridge 20-7-1 Bridge 20-7-1 Bridge 20-8-1 LRT 20-11-1 Terminsl 20-13-1 Traffic Ma 20-18-1	ntion sto City, importance / Main Roads (Artorial a-1 to a-10, new and improve sp-1 (Ring Road), new so City, Importance (Primary road) p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new so City, Importance (Secondary road) s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and improve Roads of Local Importance (Testiary road) TR2, 2-lame, new (f-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (f-3 to f-15) f-2, 5, 8, 9, 10 and 13, new Light Railway Transit LRT, R stations, new T-4, new nagement T-4, new	N read) and improve	km km km km place place place sct	58.66 14.00 36.19 74.57 48.00 9.0 6.0 8.0 3.000,0 245.0	2 2 1 2 3 2 2 2	2011-2015 2014-2017 2014-2017 2014-2017 2014-2017 2014-2017 2014-2017	LCB LCB LCB LCB LCB LCB LCB LCB LCB	to be arranged to be arranged to be arranged to be arranged to be arranged to be arranged	Astana City Astana City Astana City Astana City Astana City Astana City Astana City Astana City	D D D D D D D D D
20 20 20 20 20 20 20 20 20 20 20 20 20	0-2 	Transport Main Sitee 20-2-1 20-2-1 Main Sitee 20-3-1 Streets and 20-4-1 Streets and 20-5-1 Bridge 20-5-1 Bridge 20-5-1 Bridge 20-5-1 Bridge 20-5-1 Trents 20-11-1 Terminal 20-11-1 Traffic Ma 20-11-2	ation store stor City importance / Main Roads (Arterial a-1 to a-10, new and improve sp-1 (Ring Road), new sto City Importance (Frimary road) ip-1, 0-2, p-4, p-6, p-7, .p-8, p-10, p-11, new sto C Regional Importance (Secondary road) s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and improve Roads of Local Importance (Testiary road) TR2, 2-lane, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-3, to f-15) f-2, 5, 8, 9, 10 and 13, new Light Railway Transis LRT, R stations, new T-4, new traffic Light, new Traffic Control conter, new	N read) and improve	km km km km place place km an2	58.66 14.00 36,19 74,57 48,00 9,9 6,0 8,0 8,0	2 2 1 2 3 2 2 2	2011-2015 2014-2017 2014-2017 2014-2017 2014-2017 2014-2017 2014-2017	LCB LCB LCB LCB LCB LCB LCB LCB LCB	to be arranged to be arranged to be arranged to be arranged to be arranged to be arranged	Astana City Astana City Astana City Astana City Astana City Astana City Astana City Astana City	D D D D D D D
200 200 200 200 200 200 200 200 200	0-2 	Transport Main Stree 20-2-1 20-2-1 Main Stree 20-3-1 Main Stree 20-4-1 Streets and 20-5-1 Bridge 20-7-1 Bridge 20-7-1 Bridge 20-8-1 LRT 20-11-1 Terminsl 20-13-1 Traffic Ma 20-18-1	ation store stor City importance / Main Roads (Arterial a-1 to a-10, new and improve sp-1 (Ring Road), new sto City Importance (Frimary road) ip-1, 0-2, p-4, p-6, p-7, .p-8, p-10, p-11, new sto C Regional Importance (Secondary road) s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and improve Roads of Local Importance (Testiary road) TR2, 2-lane, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-3, to f-15) f-2, 5, 8, 9, 10 and 13, new Light Railway Transis LRT, R stations, new T-4, new traffic Light, new Traffic Control conter, new	N read) and improve	km km km km place place place sct	58.66 14.00 36.19 74.57 48.00 9.0 6.0 8.0 3.000,0 245.0	2 2 1 2 3 2 2 2	2011-2015 2014-2017 2014-2017 2014-2017 2014-2017 2014-2017 2014-2017	LCB LCB LCB LCB LCB LCB LCB LCB LCB	to be arranged to be arranged to be arranged to be arranged to be arranged to be arranged	Astana City Astana City Astana City Astana City Astana City Astana City Astana City Astana City Astana City	D D D D D D D
20 20 20 20 20 20 20 20 20 20 20 20 20 2	0-2 D-3 D-4 D-5 S-7 D-5 S-7 D-7 D-7 D-7 D-7 D-7 D-7 D-7 D-7 D-7 D	Transport Main Stree 20-2-1 20-2-1 Main Stree 20-3-1 Main Stree 20-3-1 Streets and 20-3-1 Bridge 20-7-1 Bridge 20-7-1 Bridge 20-7-1 LRT 20-11-1 Traffic Ma 20-13-1 Traffic Ma 20-13-1 Yater Ref	ation stor City, importance / Main Roads (Arterial a-1 to a-10, new and improve sp-1 (Ring Road), new so City, Importance (Primary road) [p_1, 0-2, p-4, p-6, p-7, p-10, p-11, new so City, Importance (Secondary road) s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and improve Roads of Local Importance (Testiary road) TR2, 2-brea, new (f-3 to f-13) [f-2, 5, 8, 9, 10 and 13, new Light Railway Transit LR7, R stations, new T-4, new usgement Traffic light, new Traffic control conter, new sequence	N read) and improve	km km km km place place place sct	58.66 14.00 36.19 74.57 48.00 9.0 6.0 8.0 3.000,0 245.0	2 2 1 2 3 3 2 3 3 (nons)	2011-2015 2014-2017 2014-2017 2011-2015 2014-2017 2014-2017 2014-2017 2014-2017	LCB LCB LCB LCB LCB LCB ICB ICB ICB	to be arranged to be arranged	Astana City Astana City Astana City Astana City Astana City Astana City Astana City Astana City Astana City	D D D D D D D D D D D
20 20 20 20 20 20 20 20 20 20 20 20 20	0-2 0-3 0-4 0-5 5-7 1-1 1-13 1-13 1-13	Transport Main Sitee 20-2-1 20-2-1 Main Sitee 20-3-1 Streets and 20-4-1 Streets and 20-5-1 Bridge 20-5-1 Bridge 20-5-1 Bridge 20-5-1 Bridge 20-5-1 Trents 20-11-1 Terminal 20-11-1 Traffic Ma 20-11-2	ation store stor City impertance / Main Roads (Arterial a-1 to a-10, new and improve sp-1 (Ring Road), new sto City (Propertance (Primary road) [p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new sto C Regional Importance (Secondary road) s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and improve Roads of Local Importance (Testiary road) TR2, 2-lane, new (b-2 to b-24) b-3, s, 11, 12, 13, 14, 16, 19, 24, new (f-3 to f-15) f-2, s, 8, 9, 10 and 13, new Light Railway Transit LRT, R stations, new T-4, new roagement Traffic light, new Traffic light, new Traffic control conter, new	N read) and improve	km km km km place place place sct	58.66 14.00 36.19 74.57 48.00 9.0 6.0 8.0 3.000,0 245.0	2 2 2 2 3 2 3 3 3	2011-2015 2014-2017 2014-2017 2014-2017 2014-2017 2014-2017 2014-2017	LCB LCB LCB LCB LCB LCB ICB ICB ICB	to be arranged to be arranged to be arranged to be arranged to be arranged to be arranged	Astana City Astana City Astana City Astana City Astana City Astana City Astana City Astana City Astana City	D D D D D D D
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20 20 20 20 20 20 20 20 20 20 20 20 20 2	0-2 0-3 0-4 0-4 0-5 10-7 10-7 10-7 10-7 10-7 10-7 10-7 10-7	Transport Main Sitec 20-2-1 20-2-1 Main Sitec 20-3-1 Streets and 20-3-1 Streets and 20-3-1 Bridge 20-3-1 Bridge 20-3-1 Bridge 20-3-1 Bridge 20-3-1 Bridge 20-3-1 Bridge 20-3-1 LRT 20-11-1 Terminal 20-11-1 Terminal 20-11-1 Terminal 20-11-1 Terminal 20-11-1 Terminal 20-11-1 U-13-1 U-13-1 20-11-1 U-13-1 20-11-1 U-13-1 20-11-1 U-13-1 20-11-1 U-13-1 20-11-1 U-13-1 20-11-1 U-13-1 20-11-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-13-1 U-1	ation sto City, importance / Main Roads (Arterial a-1 to a-10, new and improve sp-1 (Ring Road), new sp City, Importance (Primary road) p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new sp City, Importance (Secondary road) p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new so City, Importance (Secondary road) p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new sp City, p-4, p-6, p-7, p-8, p-10, p-11, new 1, 0-2, to 5-24, p-6, p-7, p-8, p-10, p-11, new 1, 12, 2-4, new, new 1, 12, 2-4, new, new 1, 12, 2-4, new, new 1, 12, 13, 14, 16, 19, 24, new (1-3, 16, 15) 1-2, 5, 8, 9, 10 and 13, new Light Railway Transit LRT, 8 stations, new Traffic control contor, new sources mly Water transmission pipeline (40), new Ray water transmission pipeline (40), new Ray water transmission pipeline (40), new Ray water transmission pipeline (40), new 1, 20, 000 m3/day	N read) and improve 31-27, 3-29 21-27, 3	km km km km km place place place km km LS km LS km	58,66 14,00 36,19 74,57 48,00 9,0 6,0 8,0 3,000,0 245,0 1,0 1,0 1,0 50,0 9,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0	2 2 1 2 3 3 2 3 3 (nons)	2011-2015 2014-2017 2014-2017 2011-2015 2014-2017 2014-2017 2014-2017 2014-2017	LCB LCB LCB LCB LCB LCB LCB LCB LCB LCB	to be arranged to be arranged	Astana City Astana City Astana City Astana City Astana City Astana City Astana City Astana City Astana City	D D D D D D D D D D D D D D D D D D D
21 20 20 20 20 20 20 20 20 20 20 20 20 20	0-2 0-3 0-4 0-4 0-4 0-5 0-7 0-7 0-7	Transport Main Sitee 20-2-1 20-2-1 Main Sitee 20-3-1 Main Sitee 20-3-1 Siteets and 20-4-1 Siteets and 20-5-1 Bridge 20-5-1 Bridge 20-5-1 Bridge 20-5-1 Terminsl 20-13-1 Traffic Ma 20-13-1 Traffic Ma 20-13-1 Traffic Ma 20-13-1 Traffic Ma 20-13-1 Streets and 20-13-1 Streets and 20-13-1 St	ation sto City, importance / Main Roads (Arterial a-1 to a-10, new and improve sp-1 (Ring Road), new sp City, Importance (Primary road) p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new sp City, Importance (Secondary road) p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new sp City, Importance (Secondary road) p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new sp City, Importance (Secondary road) p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new sp City, Importance (Secondary road) Tral, 2-law, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, 5, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) (b-2 to b-2	N read) and improve 31-27, 3-29 21-27, 3	km km km km km place place km km al2 sct LS km LS km LS km	58.66 14.00 36.19 74.57 48.00 9.0 9.0 6.0 8.0 3.000,0 245.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	2 2 1 2 3 2 3 3 (nons) 1	2011-2015 2014-2017 2014-2017 2011-2015 2014-2017 2014-2017 2018-2020 2014-2017 2018-2020	LCB LCB LCB LCB LCB ICB ICB ICB ICB	to be arranged to be arranged	Astana City Astana City Astana City Astana City Astana City Astana City Astana City Astana City Astana City Astana City	
20 20 20 20 20 20 20 20 20 20 20 20 20 2	0-2 D-3 D-4 D-5 D-5 D-5 D-7 D-7 D-7	Transport           Main Sitee           20-2-1           20-3-1           Main Sitee           20-4-1           Streets and           20-5-1           Bridge           20-4-1           Streets and           20-5-1           Bridge           20-7-1           Bridge           20-11-1           20-11-1           20-11-1           20-11-2           20-11-1           20-11-1           20-11-1           20-11-1           20-11-1           20-11-1           20-11-1           20-11-1           20-11-1           20-11-1           20-11-1           20-11-1 </td <td>ation stor City impertance / Main Roads (Arterial 1 a-1 to a-10, new and improve fap-1 (Ring Road), new st of City Impertance (Primary road) [p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new st of Regional Importance (Secondary road) s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and improve Roads of Local Importance (Testiary road) TR2, 2-lane, new (b-2 to b-24) b-3, s, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, s, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, s, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, s, 10, 20, 13, new Light Railway Transit LRT, R stations, new Traffic light, new Traffic light, new Traffic control conter, new Surrest ply Water trastment plant, 120,000 m3/day Water trastment plant, 120,000 m3/day Water distribution, new D500-1,4100 mm</td> <td>N read) and improve 31-27, 3-29 21-27, 3</td> <td>km km km km km place place place km km LS km LS km</td> <td>58,66 14,00 36,19 74,57 48,00 9,0 6,0 8,0 3,000,0 245,0 1,0 1,0 1,0 50,0 9,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0</td> <td>2 2 1 2 3 3 (nons) 1 1</td> <td>2011-2015 2014-2017 2014-2017 2011-2015 2014-2017 2014-2017 2014-2017 2014-2017 2014-2017 2014-2013 2010-2013 2010-2013</td> <td>LCB LCB LCB LCB LCB ICB ICB ICB ICB</td> <td>to be arranged to be arranged</td> <td>Astana City Astana City</td> <td></td>	ation stor City impertance / Main Roads (Arterial 1 a-1 to a-10, new and improve fap-1 (Ring Road), new st of City Impertance (Primary road) [p-1, 0-2, p-4, p-6, p-7, p-8, p-10, p-11, new st of Regional Importance (Secondary road) s-1 to s-4, s-6, s-7, s-11 to s-20, s-22, s-22 to new and improve Roads of Local Importance (Testiary road) TR2, 2-lane, new (b-2 to b-24) b-3, s, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, s, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, s, 11, 12, 13, 14, 16, 19, 24, new (b-2 to b-24) b-3, s, 10, 20, 13, new Light Railway Transit LRT, R stations, new Traffic light, new Traffic light, new Traffic control conter, new Surrest ply Water trastment plant, 120,000 m3/day Water trastment plant, 120,000 m3/day Water distribution, new D500-1,4100 mm	N read) and improve 31-27, 3-29 21-27, 3	km km km km km place place place km km LS km LS km	58,66 14,00 36,19 74,57 48,00 9,0 6,0 8,0 3,000,0 245,0 1,0 1,0 1,0 50,0 9,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0	2 2 1 2 3 3 (nons) 1 1	2011-2015 2014-2017 2014-2017 2011-2015 2014-2017 2014-2017 2014-2017 2014-2017 2014-2017 2014-2013 2010-2013 2010-2013	LCB LCB LCB LCB LCB ICB ICB ICB ICB	to be arranged to be arranged	Astana City Astana City	

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Costi			Project's		r	I	2020				
Cod		No.	Development Scope Abreviation for	r unit	Q'ty	al	el	n			
No		rw0.	Томпясаре 4		1 4 9	Implementation	6 Implementation	Procurement	di Finance source	Executing	Maturity of
110			Architectures			Priority <1	Schodule <2	method	expected	Agency	Project <3
io 1		Starm Wa	ter Drainage					1	1		1
-	60-2	34.04 04 17.0	Project for the Stormwater Drainage Development			· · · · · · · · · · · · · · · · · · ·	2010-2015	LCB	Astana city	Asiana city	D
	0011		(District No. 4B, 14, 15, 16, 17, 18, 19, central ind., station 40	))							
		60-2-1	Construction of pipelines	LS	1,0						
-		60-2-2	Construction of pump station	LS	1.0			1			
		60-2-3	Construction of treatment station	LS	1.0		· · · · · · · · · · · · · · · · · · ·	1			
70		Flood Frei	tection					1			
	70-5		Ishim River Improvement			1	2010-2015	LC8	Astana city	Astana city	D
			(New City Center to 2nd ring road, Sarybulak River to 2nd								
			ring road)					I			
		70-5-1	Excavation (open cut and dredging)	LS	1,0						
		70-5-2	Embankment	LS	1,0			I			
		70-5-3	Construction of weir	LS	1.0						
-1		70-5-4	Related structures	LS	1,0			[			
-1											
\$0		Electric Pe	ower and Heat Energy								
-1		(Electric po									L
	\$0-9		Natural Gas Firing Combined Cycle Plant			1	2008-2011	ICB	int. soft loan	AES	D
		80-9-1	Combined cycle plant	MW	150,0						L
1		10-9-2	Mandatory spare parts	LS	1,0						<u>.</u>
		10-9-3	Natural gas pipelines	LS	1,0						
_	80-8		Construction of 110 kV Transmission Line & Substations			2	2011-2019	ĻCB	Socio-conomic	Astana city	Q
		40-8-1	Transmission line	km	40,5				development fund		· .
		80-8-2	Substation	place	2,0					· · · · · · · · · · · · · · · · · · ·	
	60-10		Construction of Three (3) Heat Centers and Related Pipelines			3 .	2017-2019	ICB	Int. soft koan	AES	D
			on the Left Bank of Ishim River					h			
		80-10-1	Heat center, HC-4, HC-5, and HC-6	place	3,0						
		10-10-2	Pipelines	LS	1.0						
90		Gas Suppl	7								
	90-2		Gas Supply Network Expansion Project (1)				2014-2017	ICB	to be arranged	Astana city	D
		90-2-1	Expansion of high pressure network	LS	1,0						
		90-2-2	Expansion of low pressure network	LS	1,0						
		90-2-3	Expansion of supplying facilities	LS	1,0		·				
							· · ·	· · ·		· · · · ·	
100		Telecomm				L					·
	100-2		Astana New local Telecommunication Network (2)			l	2010-2013	Turn key	Int, sift loan	Ministry of	D
		100-1-1	Switching system	LS	1,0					Transport and	
		100-1-2	Transmission system (STM-16-ADM)	LS	1,0					Communication	
		100-1-3	Digital Loop Carrier Equipment	LS	1,0			Ļ			
		100-1-4	Outside plant	LS	1.0						
			Power supply system	LS	1,0						L
			Buildings	LS	1,0				ļ		
-			Training	LS	1.0						L
-		<u> </u>						1			
110		Solid Was	ie								
	110-1		Landfill-2 Project (plase1)			1	2011-2012	LCB	State budget	Gorkommunkho2	D
		110-1-1	Construction of landfill-2 (18.3 ha, civil work)	LS	1.0				ļ		ļ
			Machinery for landfill-2	LS	1,0						
		1	HHSW Incinerator Project (2)			2	2019-2019	ICB	Int. soft ioan	Astana City	D
	110-2	1		LS	1.0						·
	110-2	110-2-1	Construction of HHSW Incinerator	L				1 100			
	110-2	1	Waste Collection Vehicle			<u> </u>	2014-2015	ICB	Int. soft kaan	Gorkommunkhoz	D
		1	Waste Collection Vehicle			<u> </u>					
		1		n		2	2014-2015	ICB ICB	Int. soft kan Int. soft kan	Gorkommunkhoz Astana City	D D
	110-3	1	Waste Collection Vehicle Procurement, machinery for waste collection and transportatio Pilot Scale MSW Treatment Plant project Construction of MSW Intermediate Treatment Plant		1,0		2015-2016	1CB	Int soft loan	Astana City	p
	110-3	110-3-11	Waste Collection Vehicle Procurement, machinery for waste collection and transportatio Pilot Scale MSW Treatment Plant project	n LS	1,0	2 2 2					
	110-3 110-4	110-3-11	Waste Collection Vehicle Procurement, machinery for waste collection and transportatio Pilot Scale MSW Treatment Plant project Construction of MSW Intermediate Treatment Plant	n			2015-2016	1CB	Int soft loan	Astana City	p

#### Table 7.2.4 (2/2) Integrated Implementation Plan for Development of the City of Astana, Long Term in Phase II (2011-2020)

note: Inplementation priority within the each phase of medium, long, and ultimate Implementation schliedule means proposed construction period, no accounted th clead time such as feasibility study, engineering design, lender, contarcting etc. Project maturity as of the end of year 2000 by the following classification

A B

under construction under construction under engineering design under feasibility study under master plan

C D

Abbreviation	
Int soft loan	International soft loan
HHSW	Hospital Hazardous Solid Waste
MSW	Municipal solid Waste
NCC	New City Center
NRW	Non Revenue Water
ICB	International Competitive Bid
LCB	Local Competitive Bid
JBIC	Japan Bank for International Cooperation
AES	Astanaenergy service
ASA	Gonvodokanal

Asiana International Airport AIA

lostin	1.0			Project's				2030				
Code		No.	Development Scope	Abbreviation f	unit	O'ty	al	bl	cl	41	el	I II
No.		1.0		Townscape &		• • •	Implementation	Implementation	Procurement	Finance source	Executing	Maturity o
				Architectures			Priority <1	Schedule <2	method	expected	Agency	Project <
0	URBAN	DEVELO	MENT		ha	69 881						
-	10-1	Central pla	nning region		ha	1 689						
- 1		10-1-1	Residential district 3	TAPC-L	ha	385			I			
		10-1-2	Residential district 4A	TAPC-2	ha	563			l			
		10-[-]	Residential district 5	TAPC-3	2	337						
		10-1-4	Residential district 6	TAPC-4	ha	344			L			
1		1										<b>_</b>
T	10-2	Northern	slanning region		ha	22 614			Ļ			
Т		10-2-1	Northern industrial district	TAPN-I	ha	2 [46						
T		10-2-2	Contral industrial district	TAPN-2	ha	3 3 5 3						
			Planning district I (high-tock park)	TAPN-3	ha	6 302						
1			Planning district If (high-teck park)	TAPNA	ha	3 710						
		10-2-3	Planning district III (high-teck park)	TAPN-5	ha	2 927						
		10-2-6	Planning district IV (military academy)	TAPN-6	2	4 176						
		10-2-7	Planning district IV (services)	TAPN-7	ha							
		10-2-8	Planning district IV (cargo center)	TAPN-8	ha							<b>.</b>
	10-3	Southcaste	rn planning region		11	11 270						<b></b>
		10-3-1	Residential district 7	TAPSE-1	2	562			L			
		10-3-2	Residential district #	TAPSE-2	ha	395						
		10-3-3	Residential district 9	TAPSE-3	2	552						
_		10-3-4	Residential district 10	TAPSE-4	2	213			L			
		10-3-5	Industrial district-Station 40	TAPSE-3	ha	752						
		10-3-6	Residential district 17	TAPSE-6	ha	715						
-		10-3-7	Residential district [1	TAPSE-7	ha	902						
		10-3-8	Residential district 19	TAPSE-4	[ ha	713			1			
		10-3-9	Planning district V	TAPSE-9	12	6 396						
	10-4	Southern	planning region		ha	24 399		I				
		10-4-1	Residential district 11	TAPS-I	ha	1 251						
T		10-4-2	Residential district 12	TAPS-2	ha	668		<u>i</u>				
		10-4-3	Residential district 13	TÁPS-3	ha	942		]				
		10-4-4	Residential district 14	TAPS-4	ha	1 425						
		10-4-5	Residential district 15	TAPS-5	ha	820						
		10-4-6	Residential district 16	TAPS-6	ha	933	l				· · ·	·
		10-4-7	Planning district VI	TAPS-7	ha	1 885	1		1		1	<b>_</b>
		10-4-8	Planning district VII	TAPS-4	62						L	
		10-4-9	Planning district VII	TAPS-9	l ha	3 769		L		<b></b>		1
		10-4-10	Planning district VII	TAPS-10	ha	1		L	L		·	1
		10-4-11	Planning district VIII	TAPS-II	ha	12 646			· ·			
		1				1	ļ		L			+
	10-5		planning region		14	9 909	l		I	1		+
		10-5-1	Residential district 1	TAPNW-I	ha	332		· · · · · · · · · · · · · · · · · · ·	<b>_</b>	1 · · · -		
		10-5-2	Residential district 1	TAPNW-2	<u></u>	441		ļ	L	<u> </u>		
		10-5-3	West industrial district	TAPNW-3	ha	575	ļ	L	I	Į		+
		10-5-4	Residential district 1	TAPNW-4	ha	685	L	L	· · · · · · · · · · · · · · · · · · ·	·		4
-		10-5-5	Planning district IX	TAPNW-5	ha	7 8 76		L	····			

## Table 7.2.5 (1/2) Integrated Implementation Plan for Development of the City of Astana, Ultimate Term in Phase III (2021-2030)

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## Table 7.2.5 (2/2) Integrated Implementation Plan for Development of the City of Astana, Ultimate Term in Phase III (2021-2030)

051 Coc	ing de	No.	Projec Development Scope Abbre		unit	Q'ty	al	2030 bi	cl	d 1	el	T fi
N	٥.	1	Towns	scape &			Implementation	Implementation	Procurement	Finance source	Executing	Maturity of
	INFRAS	I STRUCTUR	Archit	lectures			Priority <1	Schedule <2	method	expected	Agency	Project <
0	<b></b>	1				· · · · · · · · · · · · · · · · · · ·				·	·	
	20-2	Transports Main Street	s of City importance/Main Roads (Arterial road)				l	2021-2025	LCB	to be arranged	Astana City	D
		20-2-1	a-6 and a-10, new and improve sp-1, ring road, new		km km	6,24						
	20-4	Main Street	s of Regional importance (Secondary road)		1		2	2024-2027	LCB	to be arranged	Astana City	D
_	20-5	20-4-1 Streets and	s-9, s-37, s-41 to s-46, new and improve Roads of Local Importance (Tertiary road)		km	22,10	2	2024-2027	1			
_		20-5-1	TR3, 2-lane, new		km (	11,85	4		LCB	to be arranged	Astana City	<u> </u>
	20-7		(b-2 to b-24) b-2, b-4, b-15, b-17, b-18, new		NACC	5,0	1	2021-2025	LCB	to be arranged	Astana City	0
		Bridge	(f-3 to f-15)		T		2	2024-2027	LCB	to be arranged	Astana City	Б
	20-9		f-6, f-12 and f-14, new Road tunnel	f®	slace	3,0	2	2024-2027	LCB	to be arranged	Astana City	
_		20-9-1 LRT	t-1 road tunnel, new Light Railway Transit		m	400,0						1
		20-12-1	LRT, 23 stations, new		kra	22,0	]	2028-2030	IC9	to be arranged	Aslana City	D
	20-13	Terminal 20-13-1	T+2, Abylaikhan station, new		m2	3 000,0	2	2024-2027	LCB	to be arranged	Astana City	D
		Traffic Mar	agement				3	2028-2030	icb	to be arranged	Astana City	
		20-14-1	Traffic light, new Traffic control center, new		set LS	35.0 1,0						
						.,					<u>+</u>	
0	30-2	Water Rese	IKC-Ishim Pipeline, 2nd Stage				!	2024-2025	ICB	to be arranged	Akimat/IKC	D
		30-2-1 30-2-2	Water pipeline, steel pipe, D1,400 mm Water pipeline, RC pipe, D1,200 mm		kin .	9,6			ļ			
_		30-2-2 30-2-3	Water pipeline, RC pipe, D1,200 mm Water pump, 3.5 m3/s		kim set	6.8 2.0			<u> </u>			ļ
0		Water Sup										<u> </u>
<u> </u>	40-6		Water Supply - 3rd Stage				<u> </u>	2018-2020	ICB	to be arranged	ASA	c
-	-	40-6-1	Intake facilities, 75,000 m3/day, M&E Water treatment plant, 100,000 m3/day		LS LS	1.0						
		40-1-3	Water distribution, new, D300-600 mm		km	40.0			<u>t</u>			
0		Sewerage										
	50-8	50-8-1	Sewerage Treatment Plant Expansion (2)				<u> </u>	2021-2025	ICB	to be arranged	ASA	D
-	50-9		Expansion capacity, 42,000 m3/day Sewerage Treatment Plant Rehabilitation		2	1,0	·····	2021-2025	ІСВ	to be arranged	ASA	D
_	50-10	50-9-1	Rehabilitation capacity, 136,000 m3/day Sewerage Collection System Expansion (3)		LS	1,0						
-1		50-10-1	Sewer pipes, D300-1,500 mm		us	1.0	<u> </u>	2021-2025	LCB	to be arranged	ASA	<u>p</u>
		50-10-2	pump station		يا	1.0						
0		Storm Wate			_							
-	60-3		Project for Stormwater Drainage Developmennt District No. 11, 14, 15, 16)					2020-2025	LCB	Astana city	Astana city	D
		60-3-1	Construction of pipelines		S	1.0						
		60-3-2 60-3-3	Construction of drainage pump station Construction of treatmont station		s	1.0						
0		Flood Prote			_							
•	70-6		shim River Improvement (2nd ring road to 3rd ring roa		-	N	1	2020-2023	LCB	Astana city	Astana city	<u>Б</u>
		70-6-1	Excavation (open cut and dredging) Embankment		S	1.0						· · · ·
		70-6-3	Related structures		S	1.0		·	······································	······		
·	70-7	70-7-1	Construction of Flood Regulating Reservoir Embankment for dike		s	1,0 :		2020-2025	LCB	Astana city	Astana city	D
_	I	70-7-2	foud control gate		s	0.1						
- 1		1	Related structures		S	1.0						
•	80-12	Electric Pov	er and Heat Energy									
		80-12-1 0	Vatural Gas Firing Gasturbine Combined Cycle Plant Jas turbine combined cycle plant	M	nv –	200,0	!	2018-2021	ICB	Int, soft loan	AES	D
-	80-11	80-12-2	Natural gas pipe lines Construction of 110 kV Transmission Line and Substat	1	S	1.0		31/33 3030				
1		80-11-1	10 kV transmission line	k	m	12.7	2	2023-2029		Socio economic development	Astana city	D
+	x0-13	#0-11-2	ubstation including extension Construction of One (1) Heat center, Extension of Four	(4)	ace:	1,0	1	2027-2029		fund Int. soft loan	AES	D
1			leat Centers and Related Pipelines on the Left Bank of	···						ins. son ioan	163	
-+			shim River let water beilers		<del>ल</del> -	19,0						
4			Juildings	pł	acc.	0						
	I				.\$	1.0						
)	90-2	Gas Supply	as Supply Network Expansion Project (2)					2020-2024		ta hu armou d	Arton	····
		90-2-1	xpansion of highpressure network		.s	1.0	<u>`</u>	24211-2424	ICB	to be arranged	Aslana city	D
			xpansion of low pressure actwork xpansion of supplying facilities		S S	L.Q.   U						
+			<u>A set a </u>		1							
		<u></u>		- L			1	2020-2023	Turn key	list. soft loan	Ministry of	D
0	100-2	Telecommu								and a second second	Transport and	
0	100-2	100-1-1	stana New local Telecommunication Network (3) witching system	L	<u>s</u>	1.0						
0	100-2	100-1-1 \$ 100-1-2 1	Istana New Jocal Telecommunication Network (3) witching system ransmission system (STM-16-ADN)	1	S	1.0 1.0					Communication	
0	100-2	100-1-1 100-1-2 100-1-3 100-1-3 100-1-4	Lstana New local Telecommunication Network (3) writching system Transmission system (STM-16-ADN1) Ngital Loop Carrier Equipment Quiside plant		\$ 5 5	1.0			······································		Communication	
0	100-2	100-1-1 100-1-2 100-1-3 100-1-3 100-1-4 108-1-5	Stana New Jocal Telecommunication Network (3) witching system ransmission system (STM-16-ADRI) bigital Loop Carrier Equipment Justice plant ower supply system		\$ 5 5	1.0 1.0 1.0 1.0					Communication	
0	100-2	100-1-1 100-1-2 100-1-3 100-1-3 100-1-4	LSIANA New Jocal Telecommunication Network (3) witching system Transmission system (STM-16-ADAI) Ngital Loop Carrier Equipment Juside plant Ower supply system Kuldings		\$ 5 5	1.0					Communication	
0	100-2	00-1-1 5   00-1-2 1   00-1-2 1   00-1-3 1   00-1-3 1   00-1-7 1   00-1-7 1	LSIANA New Jocal Telecommunication Network (3) witching system Transmission system (STM-16-ADAI) Ngital Loop Carrier Equipment Juside plant Ower supply system Kuldings		\$ \$ \$ \$ \$	1.0 1.0 1.0 1.0 1.0					Communication	
0	100-2	100-1-1 100-1-2 100-1-3 100-1-3 100-1-3 100-1-5 100-1-5 100-1-7 100-1-7 Selid Waste	Sana New Jocal Telecommunication Network (3) witching system (rammission system (STM-16-ADR)) Netical Loop Carrier Equipment Duside plant ower supply system suddings raming andfill-2 Project (plass: 2)		\$ \$ \$ \$ \$	1.0 1.0 1.0 1.0 1.0 1.0		<u>2018-5020</u>	LCB	State budget	Communication Gorkommunkhoz	
0	100-2	100-1-1 5 100-1-2 1 100-1-3 1 100-1-3 1 100-1-4 1 100-1-5 1 100-1-7 1 Selid Waste	Stana New Jocal Telecommunication Network (3) witching system (ransmission system (STM-16-ADRI) bigital Loop Carrier Equipment ower supply system kutdings raining andfill-2 Project (please 2) omstruction of Isrufill-2 (46 ha, civil work)		\$ 5 5 5 5 5 5 5 5	1.0 1.0 1.0 1.0 1.0 1.0 1.0		2019-2020	LCB	State budget		D
0	100-2	100-1-1 100-1-2 100-1-3 100-1-3 100-1-3 100-1-5 100-1-5 100-1-7 Selid Waste 110-1-1 100-1-2 100-1-2 100-1-2 100-1-2 100-1-2 100-1-2 100-1-2 100-1-2 100-1-2 100-1-2 100-1-2 100-1-2 100-1-2 100-1-2 100-1-2 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-3 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7 100-1-7	Sana New Jocal Telecommunication Network (3) witching system (rammission system (STM-16-ADR)) Netical Loop Carrier Equipment Duside plant ower supply system suddings raming andfill-2 Project (plass: 2)		\$ \$ \$ \$ \$	1.0 1.0 1.0 1.0 1.0 1.0		2019-2020 2024-2025		State budget		D

aote <1 <2

Implementation priority within the each phase of medium, long, and ultimate Implementation schlwäule means proposed construction period, no accounted the lead time such as feasibility study, engineering design, tender, contarcting etc. Project maturity: as of the end of year 2000 by the following classification A under construction B under construction C under feasibility study. D under master plan

<3

Int. soft loan HHSW MSW NCC NRW ICB LCB LCB JBIC AES ASA AIA

onal Cooperation

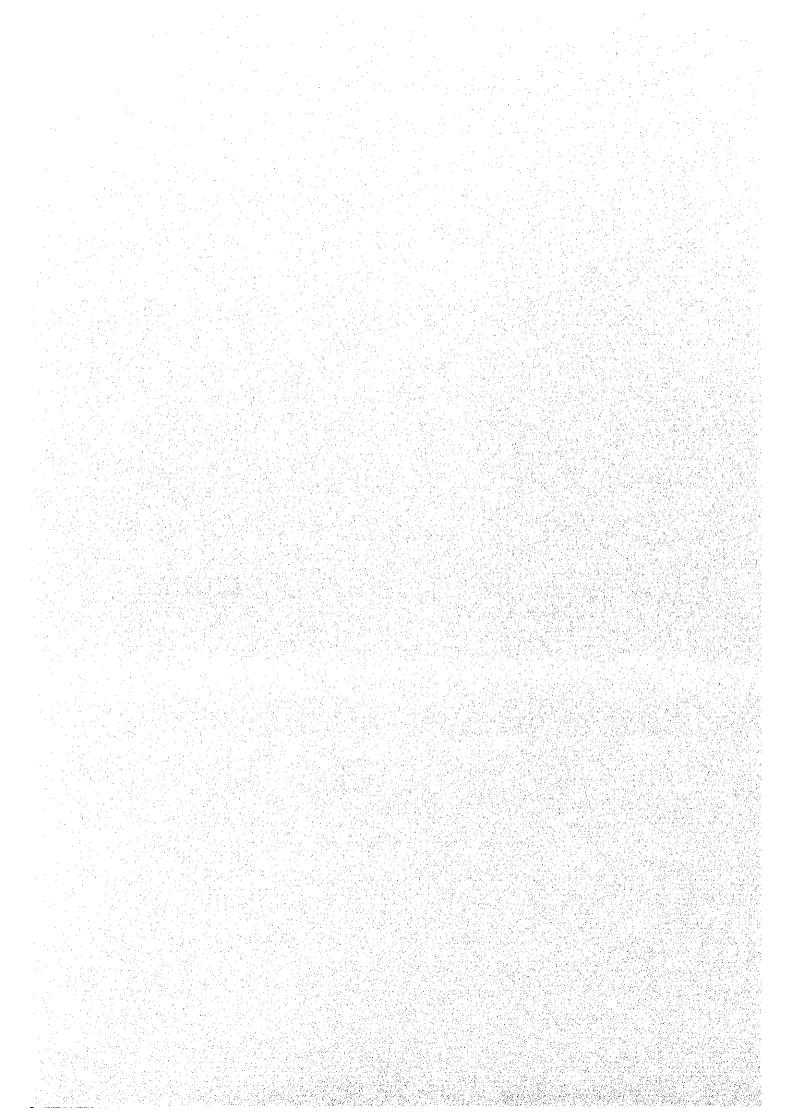
International soft loan Hospital Hazardous Solid Waste Municipal solid Waste New City Center Non Revenue Water International Competitive Bid Local Competitive Bid Japan Bank for International Coop Astanaemergservice Gorvodokanal Astana International Airport

					JS\$ 1.0=Tenge 144		8.0	บเ	nit:million	
				Integrat	ted Economic Cost	<u>(US\$)</u>			Total	
Code No.		Region / Sector	Phase I		Phase II		Phase III		2001-2030	
			2001-2010		2011-2020		2021-2030			
10	Urban	Development	2 951,8	0,80	2 582,2	0,82	2 017,7	0,83	7 553,3	0,8
	10-1	Central Planning Region	168,8		330,2		162,8		661,8	
	10-2	Northern Planning Region	17,4		29,2		26,8		73,4	
	10-3	Southeastern Planning Region	1 285,6		582,2		16,1		1 883,9	
	10-4	Southern Planning Region	1 077,4		847,4		1 286,7		3 211,5	
	10-5	Northwest Planning Region	22,2		580,4		179,0		781,6	
	City Gr	eenery*								
20	Transpo	ortation	380,4		212,8		346,3		939,5	
	Infrast	ructures Development	686,4	0,19	514,4	0,16	389,4	0,16	1 590,5	0,1
30	Water F	Resources	20,5		0,0		0,0		20,5	
40	Water S	Supply	114,1		132,4		58,6		305,1	
50	Sewera		88,9		94,2		58,1		241,2	
80	Power a	and Heat Energy	257,0		191,5		206,0		654,5	
90	Gasific	ation	107,8		19,0		9,4		136,2	
100	Telecor	nmunication	76,8		56,0		40,2		173,0	
110	Solid W	/aste	21,3		21,3		17,1		59,7	
	Engine	ering Protection	55,5	0,02	37,3	0,01	29,0	0,01	121,8	0,0
60		vater Drainage	38,6		10,2		2,4		51,2	
70	Flood N	Aitigation	16,9		27,1		26,6		70,6	
200	Grand	total	3 693,7	1,00	3 133,9	0,99	2 436,1	0,99	9 265,7	1,0
	L		0,40	<b>i</b>	0.34	<b>i</b>	0,26	. 1	1,00	

### Table 7.5.1 Economic Basis Integrated Investment Cost for Development, Phase I. II. and III

Main Report

**FIGURE** 



Cost				Phase 1 (2001-2010)	Phase II (2011-2020)	Phase III (2021-2030)
ode	Implementation Items	Unit	Qʻty	1 2 3 4 5 6 7 8 9 10 1 1 2 3 4 5 1 6 7 1 10 1 1 1 1 1 1	12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29
10	Townscape and Architectures		69 881			
10-1	Central planning region	ha	1 689			
10-2	Northern planning region	ha	22 614			
10-3	Southeastern planning region	ha	11 270			
10-4	Southern planning region	ha	24 399			
10-5	Northwest planning region	ha	9 909			
	Infrastructures and Engineering P	retection				
20	Transportation	LS	1			
10	Water resources	LS	1			
0	Water supply	LS	1			
i0	Sewarage	LS	1			
0	Stormwater drainage	LS	. 1			
0	Flood protection	LS	1			
10	Power & heat energy	LS	1			
0	Gasification	LS	]			
00	Telecommunication	LS	1			
10	Solidwaste	LS	1			

#### Figure 7.3.1 Overall Implementation Schedule for the Development, Phase I, II, and III

construction

: 1st priority group

: 2 nd priority group : 3rd priority group

Figure 7.4.1

## Implementation Schedule for New City Center at District 13 and 14 in Townscape and Architectures, Phase I, II, and III

.

			T I LA L	0.4	T	_	Pho	se í (	2001	-2016	0)			1		Phas	se II (	201	1-20.	20)				I		Pha	se II	I (202	21-2	030)		<u></u>
No. Name or User of Building	Туре		Unit	Q'ty (floor area)	h	2	3		5	6	7 8	19	10	11	12	13	14	15	16	17	18	19	: 20	21	22	23	24	25	26	27	28	<u>29  </u>
		story	<u>├──</u>	(noor area)	1 <u></u>				100		Sec.			1	1	1									$z_{q^2}$							
Government Area				20 000		<u> </u>	-				Gardel -		_	1	1			lst	oriori	ty g	roup		1	Í	n e.					<u> </u>		
1 Residence for President	RC	4	<u>m2</u>	40 500			1000				i.			1	-										•							
2 President's Administration	RC	17	<u>m2</u>	63 500			-				(in )				1.12			2nd	prior	ity s	group	)	i –							1		
3 Perliament	RC	17	<u>m2</u>			-	1						1		1						1											
4 National Security Committee	RC	7	m2	30 000	1.00	<u> </u>		<b>}</b> ─		81.8 2020-5	Galar I	3-	+		1.	1		3rd	nrior	itv g	Joup		1		1.	1					}	
5 Supreme Court	RC	7	2	40 000	200	-							<u> </u>		+	<u>}</u>					1	[			:•••	1						
6 Cabinet of Ministers	RC	7	m2	30 000	1948° 1948° -		<u> </u>			_990	a, ser	_		÷	1							i s	1.2			ŕ –				· ·	1	
7 Ministry of Interior Affairs	RC	7	m2	30 000	<u> </u>		<u> </u>	-					-	-	+	+							1			1						ъ.
8 Ministry of State Revenue	RC	7	_m2_	20 000	-	ļ.	<u>+</u>	<u> </u> -			के मुख्य		_		+							<u> </u>	1			<u>†</u>						
9 Ministry of External Affairs	RC	12	m2	12 000	1.	-	÷.	<u>                                      </u>	1.0 0	<u></u>	100					<u> </u>						<u> </u>				<u> </u>		<u></u>				
10 Ministry of Culture, Information and	RC	7	m2	20 000	1.00	<u>  .</u>	1 1									·																$ \rightarrow $
Public Accord		Γ			<u></u>	<u> </u>	1	1.1	1.0	10.5						<u> </u>	·									1	· ·	<u>├</u> ¦				
11 Ministry of Science and High Education	RC	7	m2	30 000		<u> </u>	1				<u>.</u>		·	4		<u> </u>							╬┿┯		<del>ا</del> نب	÷				$\vdash$		
12 Ministry of Health Care, Education	RC	7	m2	30 000	1.1									-			<u> </u>		<u> </u>	خبنا			<u>.</u>			<u> </u>				÷+		اجسم
and Sports	-		1				1	1	$q_{i,n}^{(1)} \in \mathbb{R}$	1057						L	į									+	<u> </u>			+		
13 Ministry of Energy and Mineral Resuorces	RC	7	m2	38 000		1			- 10 S							1		<u>.</u>	ļ	÷	<u> </u>		+			<u>+</u> -		<b> </b>				
and Environmental Protection, R.K			m2		1.	]	1	1	ь.	1.5				1_			Ì	<u> </u>	ļ		<u> </u>		<u> </u>		ļ	<u> </u>						<b></b>
14 Ministry of Labor and Social Security,	RC	7	m2	40 000	1	1			1.1.2				i			<u> </u>	<u>.</u>								ļ			<u> </u>				انـــــــــــــــــــــــــــــــــــــ
Ministry of Agriculture, Agency of R.K.					2	1	1				8.6°   1					· <u>j</u>				1.0		· · ·			ļ	<u> </u>						,
	RC	7	m2	20 000					1.1					1		<u> </u>	i	İ	1.		1.2	L			]. ].	<u> </u>		<u></u>		L I		<b>با</b>
15 Ministry of Defense	RC	7	m2	20 000			, ,			<							1					<u> </u> .	<u> </u>		ļ		l					<u>ا</u> ـــــا
16 Ministry of Justice	RC	7	m2	15 000				1.							ļ		1 .				l	<u>,</u>	1.		<u>.</u>	<u> </u>	·	; i				<u>با</u>
17 General Prosecutor Office	RC	14	m2	130 000		1	+						_			<u>†                                    </u>	1	1	1	1					۱. 	1	1.	<u> </u>				L
18 SME (Small & Medium Entrepreneur Ship)			m2	40 000		1_	1	1			7					1			1	1	1	1			[	1						· · ·
19 Ministry of Transport and Communication	S	40	$\frac{m_2}{m_2}$	66 000		1		-			r Brit	_		1-		Í.	<u> </u>	<u> </u>	†			1				1						
20 Universal Hall	RC	4		400 000		<u> </u>							<u>F</u> ====		- <u>i</u>	1		i .		1	<u> </u>		1.		[	1	1				1	
21 National Library	RC	6	m2			+	+	<u></u>			$\overline{\mathbf{m}}$		Ţ				7		(2)	†	1	1—	1.		Ì	1	!					
22 Service Facility (Commercial Building	RC	3	<u>m2</u>	56 525		<u></u>	+	<b></b>			11				1		1		μ <u></u>			1-	-	1.1	1					1		<u> </u>
and Apartment)			m2		-		- <u> </u>	+		ایک مشکنه م						+	+		+	┢┅┿╍┅┷	1	····	+			1	1	1		1.		
Total			2	1 191 525				<u>.</u>		ł							1.	+	1	1.	-	t i	- · ·	-	<u> </u>	+	1	1		<u> </u>		
		<u> </u>						-	-	्राज्यकृत्व स्टब्स्ट्राइट			<u> </u>	+		+			+			<u> </u>			i.	1	<u>†</u>	<u> </u>	!			1
I Business Area including Commercial					-	ļ		<del>ا ر</del>	4						- <del></del>	+	i	<u> </u>		-	-	+	+		<u>.</u>	+		1	j			<u> </u>
Area						Ļ											<u> </u>	1	ł	m		<u> </u>	100			1.	;	<u> </u>	<u> </u>	+		
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Legends;

Structure type of building:

: Steel structure type S

RC : Reinforced Concrete structure type SRC : Steel Reinforced Concrete type

Implementation:

• • • lead time (financial arrangement, feasibility study, basic design, detailed design, tendering, contracting etc.)

construction