

Figure O.2.7 Implementation Schedule for Transportation Sector, Phase I, II and III

Cost Code	Project	Descriptions	Unit	Q'ty	2001- 2010							2011- 2020							2021- 2030										
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
20-1	Road	Special road	km	3.76	(1st priority)							(2nd)																	
	20-1-1	sp-2 new 6-lane	km	2.51																									
	20-1-2	sp-3 new 6-lane	km	1.25																									
20-2	Road	Main Streets of City Importance / Main Roads (arterial road)	km	185.15																									
	20-2-1	a-1 to a-10 new and improvement 4-6 lane	km	91.18																									
	20-2-2	sp-1 ring road new	km	75.50																									
20-3	Road	Main Streets of City Importance (primary road)	km	83.14																									
	20-3-1	p-1 to p-11 new and improve	km	60.43																									
20-4	Road	Main Streets of regional Importance (secondary road)	km	152.54																									
	20-4-1	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 new and improve	km	137.96																									
20-5	Road	Streets and Roads of Local Importance (tertiary road)	km	77.85																									
	20-5-1	TR1 t-1,2,3, t-5,6,7,8, t-44, t-46, 47, 48, 49, 5 new	km	18.00																									
	20-5-2	TR2 t-10, 15 to 23, 25, 26, 28 to 33, 35 to 43, 45, 49, 51, 53, 54, 56 new	km	48.00																									
	20-5-3	TR3 t-34, 55, 57 new	km	11.85																									
20-6	Public	Trolley bus project improvement																											
	20-6-1	Reconstruction and construction of catenary cables	km	30																									
	20-6-2	Power station construction	place	4																									
20-7 & 8	Bridge																												
	20-7-1	b-2 to b-24 new RC 4-6 lane	set	23																									
	20-7-2	f-3, 4, 5, 6, 8, 9, 10, 12, 13, 14, 15 new RC 4-6 lane	set	11																									
20-9	Tunnel																												
	20-9-1	t-1 Road tunnel new	m	400.0																									
20-10, 11, 12	LRT	Light Railway Transit																											
	20-10-1	L-1 16-station new	km	22.0																									
	20-10-2	L-2 8-station new	km	8.0																									
	20-10-3	L-3 23-station new	km	22.0																									
20-13 to 17	Terminal																												
	20-13	T-1 Akmol station	m2	12,500																									
	20-14	T-2 Abylaikhan station	m2	3,000																									
	20-15	T-3 City park of cultural & recreation c.	m2	3,000																									
	20-16	T-4 International exhibition c. and city airport	m2	3,000																									
	20-17	T-5 Government city	m2	2,000																									
20-18	Traffic light / control center																												
	20-18	Traffic light	set	180																									
	20-19	Traffic control center	LS	1																									
20-22	Railway																												
	20-22	Railway	km	19.5																									
	20-23	Cargo yard	ha	30.0																									
	20-24	Cargo terminal	ha	3.0																									
20-25	Astana International Airport																												
	20-25-1	Improvement of Astana International Airport new terminal buildings, technical service center, runway 3,600 mx45 m etc.	LS	1																									

..... lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
 construction

Figure O.2.7 Implementation Schedule for Transportation Sector, Phase I, II and III

Cost Code	Project	Descriptions	Unit	Q'ty	2001-2010										2011-2020										2021-2030									
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
20-1	Road	Special road	km	3.76	(1st priority)										(2nd)										(3rd)									
	20-1-1	sp-2 new 6-lane	km	2.51																														
	20-1-2	sp-3 new 6-lane	km	1.25																														
20-2	Road	Main Streets of City Importance / Main Roads (arterial road)	km	185.15																														
	20-2-1	a-1 to a-10 new and improvement 4-6 lane	km	91.18	a-1 to a-10										a-2, 6, 9										a-6, 10									
	20-2-2	sp-1 ring road new	km	75.50	14 km										14 km										47.5 km									
20-3	Road	Main Streets of City Importance (primary road)	km	83.14																														
	20-3-1	p-1 to p-11 new and improve	km	60.43	p-1, 2 & p-11										others																			
20-4	Road	Main Streets of regional importance (secondary road)	km	152.54																														
	20-4-1	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 new and improve	km	137.96																														
20-5	Road	Streets and Roads of Local Importance (tertiary road)	km	77.85																														
	20-5-1	TR1 t-1, 2, 3, t-5, 6, 7, 8, t-44, t-46, 47, 48, 49, 5	km	18.00																														
	20-5-2	TR2 t-10, 15 to 23, 25, 26, 28 to 33, 35 to 43, 45, 49, 51, 53, 54, 56	km	48.00																														
	20-5-3	TR3 t-34, 55, 57	km	11.85																														
20-6	Public	Trolley bus project improvement																																
	20-6-1	Reconstruction and construction of catenary cables	km	30																														
	20-6-2	Power station construction	place	4																														
20-7 & 8	Bridge																																	
	20-7-1	b-2 to b-24 new RC 4-6 lane	set	23	b-6, 7, 8, 9, 10, 21, 22										others										others									
	20-7-2	f-3, 4, 5, 6, 8, 9, 10, 12, 13, 14, 15 new RC 4-6 lane	set	11	f-4, f-15										others										others									
20-9	Tunnel																																	
	20-9-1	t-1 Road tunnel new	m	400.0																														
20-10, 11, 12	LRT	Light Railway Transit																																
	20-10-1	L-1 16-station new	km	22.0																														
	20-10-2	L-2 8-station new	km	8.0																														
	20-10-3	L-3 23-station new	km	22.0																														
20-13 to 17	Terminal																																	
	20-13	T-1 Akmoia station	m2	12,500																														
	20-14	T-2 Abylaikhan station	m2	3,000																														
	20-15	T-3 City park of cultural & recreationl c.	m2	3,000																														
	20-16	T-4 International exhibition c. and city airport	m2	3,000																														
	20-17	T-5 Government city	m2	2,000																														
20-18	Traffic light / control center																																	
	20-18	Traffic light	set	180																														
	20-19	Traffic control center	LS	1																														
20-22	Railway																																	
	20-22	Railway	km	19.5																														
	20-23	Cargo yard	ha	30.0																														
	20-24	Cargo terminal	ha	3.0																														
20-25	Astana International Airport																																	
	20-25-1	Improvement of Astana International Airport new terminal buildings, technical service center, runway 3,600 mx45 m etc.	LS	1																														

.....	lead time	(financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
————	construction	

Figure O.2.8 Implementation Schedule for Water Resources Sector, Phase I, II and III

[illegible]

..... lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
 _____ construction

Figure O.2.8 Implementation Schedule for Water Resources Sector, Phase I, II and III

[illegible]

..... lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
 ————— construction

Figure O.2.9 Implementation Schedule for Water Supply Sector, Phase I, II and III

Cost Code	Project	Descriptions	Unit	Q'ty	2001- 2010										2011- 2020										2021- 2030									
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
					(1st priority)					(2nd)					(3rd)																			
40-1	3rd Water Pipeline Project (No. 01-10/9 Project List No. 22)		km	50																														
	40-1-1	Construction of 3rd water pipeline, 1-lane, steel, D1.0 m	km																															
40-2	Construction of water Supply Network Project (No. 01-10/9 Project List No. 35)																																	
	40-2-1	Water supply networks	LS	1																														
40-3	Reconstruction of water Supply Networks (to check project no.40-4, same?) (No. 01-10/9 Project List No. 37)																																	
	40-3-1	Water supply pump station	LS	1																														
	40-3-2	Water treatment plant	LS	1																														
40-4	Water supply -priority project, 1st stage (The feasibility study has been carried out by JICA in 2000 -2001)																																	
	40-4-1	Intake facilities at Vyachslavsky reservoir, 200,000 m3/day	LS	1																														
	40-4-2	Water treatment plant, 100,000 m3/day	LS	1																														
	40-4-3	Water distribution, replacement 99 km (D100-500 mm), new 75 km (D150-1,800 mm)	LS	1																														
	40-4-4	Individual water meter	pcs.	65,500																														
40-5	Water supply -priority project, 2nd stage																																	
	40-5-1	Intake facilities at Vyachslavsky reservoir, 150,000 m3/day for civil works, and 75,000 m3/day for mech. & elect. Works	LS	1																														
	40-5-2	Raw water transmission pipeline (4th), new D1,400 mm	km	66																														
	40-5-3	Water treatment plant, 120,000 m3/day	LS	1																														
	40-5-4	Water distribution pipelines, new (D500-1,400 mm),	km	50																														
40-6	Water supply -priority project, 3rd stage																																	
	40-6-1	Intake facilities, 75,000 m3/day for mech. and elect. works	LS	1																														
	40-6-2	Water treatment plant, 100,000 m3/day	LS	1																														
	40-5-4	Water distribution pipelines, new (D300-600 mm),	km	40																														

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

construction

Figure O.2.9 Implementation Schedule for Water Supply Sector, Phase I, II and III

Cost Code	Project	Descriptions	Unit	Q'ty	2001-2010										2011-2020										2021-2030									
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
					(1st priority)					(2nd)					(3rd)																			
40-1	3rd Water Pipeline Project (No. 01-10/9 Project List No. 22)																																	
	40-1-1	Construction of 3rd water pipeline, 1-lane, steel, D1.0 m	km	50																														
40-2	Construction of water Supply Network Project (No. 01-10/9 Project List No. 35)																																	
	40-2-1	Water supply networks	LS	1																														
40-3	Reconstruction of water Supply Networks (to check project no.40-4. same?) (No. 01-10/9 Project List No. 37)																																	
	40-3-1	Water supply pump station	LS	1																														
	40-3-2	Water treatment plant	LS	1																														
40-4	Water supply -priority project, 1st stage (The feasibility study has been carried out by JICA in 2000 -2001)																																	
	40-4-1	Intake facilities at Vyachslavsky reservoir, 200,000 m3/day	LS	1																														
	40-4-2	Water treatment plant, 100,000 m3/day	LS	1																														
	40-4-3	Water distribution, replacement 99 km (D100-500 mm), new 75 km (D150-1,800 mm)	LS	1																														
	40-4-4	Individual water meter	pcs.	65,500																														
40-5	Water supply -priority project, 2nd stage																																	
	40-5-1	Intake facilities at Vyachslavsky reservoir, 150,000 m3/day for civil works, and 75,000 m3/day for mech. & elect. Works	LS	1																														
	40-5-2	Raw water transmission pipeline (4th), new D1,400 mm	km	66																														
	40-5-3	Water treatment plant, 120,000 m3/day	LS	1																														
	40-5-4	Water distribution pipelines, new (D500-1,400 mm),	km	50																														
40-6	Water supply -priority project, 3rd stage																																	
	40-6-1	Intake facilities, 75,000 m3/day for mech. and elect. works	LS	1																														
	40-6-2	Water treatment plant, 100,000 m3/day	LS	1																														
	40-5-4	Water distribution pipelines, new (D300-600 mm),	km	40																														
		..... lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)																															
		..... construction																															

Figure O.2.10 Implementation Schedule for Sewerage Sector, Phase I, II and III

Cost	Project	Descriptions	Unit	Q'ty	2001- 2010							2011- 2020							2021- 2030																	
Code					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
					(1st priority)							(2nd)																								
50-1		Reconstruction of sewerage pump station (No. 01-10/9 Project List no. 37)	LS	1																																
50-2		Construction of sewerage pond (No. 01-10/9 Project List no. 63)	LS	1																																
50-3		Sewerage Treatment Plant Rehabilitation																																		
	50-3-1	Rehabilitation capacity, 136,000 m3/day	LS	1																																
50-4		Sewerage collection System Rehabilitation																																		
	50-4-1	Sewer pipes, D300-1,500 mm	LS	1																																
	50-4-2	Pump station	LS	1																																
50-5		Sewerage Collection System Expansion																																		
	50-5-1	Sewer pipes, D300-1,500 mm	LS	1																																
	50-5-2	Pump station	LS	1																																
50-6		Sewerage Treatment Plant Expansion (
	50-6-1	Expansion capacity, 40,000 m3/day	LS	1																																
50-7		Sewerage Collection System Expansion (2)																																		
	50-7-1	Sewer pipes, D300-1,500 mm	LS	1																																
	50-7-2	Pump station	LS	1																																
50-8		Sewerage Treatment Plant Expansion (2)																																		
	50-8-1	Expansion capacity, 42,000 m3/day	LS	1																																
50-9		Sewerage Treatment Plant Rehabilitation																																		
	50-9-1	Rehabilitation capacity, 136,000 m3/day	LS	1																																
50-10		Sewerage Collection System Expansion (3)																																		
	50-10-1	Sewer pipes, D300-1,500 mm	LS	1																																
	50-10-2	Pump station	LS	1																																

..... lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
 ————— construction

Figure O.2.10 Implementation Schedule for Sewerage Sector, Phase I, II and III

Cost Code	Project	Descriptions	Unit	Q'ty	2001-2010										2011-2020										2021-2030									
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
					(1st priority)			(2nd)			(3rd)																							
50-1		Reconstruction of sewerage pump station (No. 01-10/9 Project List no. 37)	LS	1	■																													
50-2		Construction of sewerage pond (No. 01-10/9 Project List no. 63)	LS	1	■																													
50-3		Sewerage Treatment Plant Rehabilitation																																
	50-3-1	Rehabilitation capacity, 136,000 m3/day	LS	1	■	■	■	■	■	■	■	■	■	■																				
50-4		Sewerage collection System Rehabilitation																																
	50-4-1	Sewer pipes, D300-1,500 mm	LS	1	■	■	■	■	■	■	■	■	■	■																				
	50-4-2	Pump station	LS	1	■	■	■	■	■	■	■	■	■	■																				
50-5		Sewerage Collection System Expansion																																
	50-5-1	Sewer pipes, D300-1,500 mm	LS	1	■	■	■	■	■	■	■	■	■	■																				
	50-5-2	Pump station	LS	1	■	■	■	■	■	■	■	■	■	■																				
50-6		Sewerage Treatment Plant Expansion (
	50-6-1	Expansion capacity, 40,000 m3/day	LS	1									■	■	■	■	■	■	■	■	■	■	■	■										
50-7		Sewerage Collection System Expansion (2)																																
	50-7-1	Sewer pipes, D300-1,500 mm	LS	1									■	■	■	■	■	■	■	■	■	■	■	■										
	50-7-2	Pump station	LS	1									■	■	■	■	■	■	■	■	■	■	■	■										
50-8		Sewerage Treatment Plant Expansion (2)																																
	50-8-1	Expansion capacity, 42,000 m3/day	LS	1																		■	■	■	■	■	■	■	■	■	■	■	■	■
50-9		Sewerage Treatment Plant Rehabilitation																																
	50-9-1	Rehabilitation capacity, 136,000 m3/day	LS	1																		■	■	■	■	■	■	■	■	■	■	■	■	■
50-10		Sewerage Collection System Expansion (3)																																
	50-10-1	Sewer pipes, D300-1,500 mm	LS	1																		■	■	■	■	■	■	■	■	■	■	■	■	■
	50-10-2	Pump station	LS	1																		■	■	■	■	■	■	■	■	■	■	■	■	■

■■■■■ lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
 ■■■■■ construction

Figure O.2.11 Implementation Schedule for Storm Water Drainage Sector, Phase I, II and III

[illegible]

..... lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
construction

Figure O.2.11 Implementation Schedule for Storm Water Drainage Sector, Phase I, II and III

Cost Code	Project	Descriptions	Unit	Q'ty	2001-2010										2011-2020										2021-2030									
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
					(1st priority)			(2nd)			(3rd)																							
60-1	Project for Stormwater Drainage Development and Improvement (District No. 1, 2, 3, 4A, 5, 6, 7, 8, 9, 10, 11, 12, 13, 17, central ind., north ind., west ind., and station 40)																																	
60-1-1	Construction of drainage pipelines	LS	1		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
60-1-2	Construction of drainage pump stations	LS	1		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
60-1-3	Construction of treatment station	LS	1		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
60-2	Project for Stormwater Drainage Development (District No. 4B, 14, 15, 16, 17, 18, 19, central ind., station 40)																																	
60-2-1	Construction of drainage pipelines	LS	1									.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
60-2-2	Construction of drainage pump stations	LS	1									.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
60-2-3	Construction of treatment station	LS	1									.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
60-3	Project for Stormwater Drainage Development (District No. 11, 14, 15, 16)																																	
60-3-1	Construction of drainage pipelines	LS	1																			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
60-3-2	Construction of drainage pump stations	LS	1																			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
60-3-3	Construction of treatment station	LS	1																			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

..... lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
 _____ construction

Figure O.2.12 Implementation Schedule for Flood Protection Sector, Phase I, II and III

Cost Code	Project	Descriptions	Unit	Q'ty	2001- 2010							2011- 2020							2021- 2030									
					1	2	3	4	5	6	7	11	12	13	14	15	16	17	21	22	23	24	25	26	27	28	29	30
					(1st priority)							(2nd)																
70-1	Ishim River improvement Works (No. 01-10/9 Project List No. 33)																											
	70-1-1	Dredging and channel formation, section from the estuary of Ak-Bulak river to complex of government buildings	km	4.0																								
70-2	Reconstruction of Ishim River Embankment (No. 01-10/9 Project list no. 57)																											
	70-2-1	Embankment (section, 4 & 5)	LS	1.0																								
70-3	Reconstruction of Bank of Ak-Bulak River, 2nd stage (No. 01-10/9 Project list no. 59)																											
	70-3-1	Reconstruction of Bank of Ak-Bulak River	LS	1.0																								
70-4	Ishim River Improvement, L=3 km (Sary alka street to confluence Saru-Bulak river)																											
	70-4-1	Excavation (open cut and dredging)	LS	1.0																								
	70-4-2	Embankment	LS	1.0																								
	70-4-3	Construction of weir	LS	1.0																								
	70-4-4	Related structures	LS	1.0																								
70-5	Ishim River Improvement, L=3 km (new city center to 2nd ring road, Saru-Bulak river to 2nd ring road)																											
	70-5-1	Excavation (open cut and dredging)	LS	1.0																								
	70-5-2	Embankment	LS	1.0																								
	70-5-3	Construction of weir	LS	1.0																								
	70-5-4	Related structures	LS	1.0																								
70-6	Ishim River Improvement (2nd ring road to 3rd ring road)																											
	70-6-1	Excavation (open cut and dredging)	LS	1.0																								
	70-6-2	Embankment	LS	1.0																								
	70-5-3	Related structures	LS	1.0																								
70-7	Construction of Flood Regulating Reservoir																											
	70-6-1	Embankment for dike	LS	1.0																								
	70-6-2	Flood control gate	LS	1.0																								
	70-5-3	Related structures	LS	1.0																								

..... lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
 ————— construction

Figure O.2.12 Implementation Schedule for Flood Protection Sector, Phase I, II and III

Cost Code	Project	Descriptions	Unit	Q'ty	2001- 2010										2011- 2020										2021- 2030									
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
					(1st priority)			(2nd)			(3rd)																							
70-1	Ishim River improvement Works (No. 01-10/9 Project List No. 33)																																	
	70-1-1	Dredging and channel formation, section from the estuary of Ak-Bulak river to complex of government buildings	km	4.0																														
70-2	Reconstruction of Ishim River Embankment (No. 01-10/9 Project list no. 57)																																	
	70-2-1	Embankment (section, 4 & 5)	LS	1.0																														
70-3	Reconstruction of Bank of Ak-Bulak River, 2nd stage (No. 01-10/9 Project list no. 59)																																	
	70-3-1	Reconstruction of Bank of Ak-Bulak River	LS	1.0																														
70-4	Ishim River Improvement, L=3 km (Sary alka street to confluence Saru-Bulak river)																																	
	70-4-1	Excavation (open cut and dredging)	LS	1.0																														
	70-4-2	Embankment	LS	1.0																														
	70-4-3	Construction of weir	LS	1.0																														
	70-4-4	Related structures	LS	1.0																														
70-5	Ishim River Improvement, L=3 km (new city center to 2nd ring road, Saru-Bulak river to 2nd ring road)																																	
	70-5-1	Excavation (open cut and dredging)	LS	1.0																														
	70-5-2	Embankment	LS	1.0																														
	70-5-3	Construction of weir	LS	1.0																														
	70-5-4	Related structures	LS	1.0																														
70-6	Ishim River Improvement (2nd ring road to 3rd ring road)																																	
	70-6-1	Excavation (open cut and dredging)	LS	1.0																														
	70-6-2	Embankment	LS	1.0																														
	70-5-3	Related structures	LS	1.0																														
70-7	Construction of Flood Regulating Reservoir																																	
	70-6-1	Embankment for dike	LS	1.0																														
	70-6-2	Flood control gate	LS	1.0																														
	70-5-3	Related structures	LS	1.0																														

..... lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
 ————— construction

Figure O.2.13 Implementation Schedule for Power and Heat Energy Sector, Phase I, II and III

Cost Code	Project	Descriptions	Unit	Q'ty	2001-2010										2011-2020										2021-2030									
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
					(1st priority)					(2nd)																								
80-1	110/10 kV Substation and Power Transmission Line project	(Development of power supply system of Astana city upto 2007, 1st stage)																																
		(No. 01-10/9 Project List no. 32), involves to project no. 80-3 below																																
80-1-1	Construction of 110 kV transmission line from airport to left bank of Ishim River (new city center)		LS	1.0																														
80-1-2	Construction of 110/10kV substation "left bank"		LS	1.0																														
80-2	Conventional Electric Power and Heat Energy Generating Plant Project																																	
80-2-1	Power and heat energy generating plant in 2006		MW	115.0																														
80-3	Project for 110 kV Transmission Line and Substations																																	
80-3-1	Construction of 110 kV transmission line, underground & overhead (included 80-1-1 above, TETs-2 airport switching substation)		km	61.4																														
80-3-2	Construction and extension of substations		place	3.0																														
80-4	Repair and restoration of abandoned heat mains and distribution networks of the city (No. 01-10/9 Project list No. 38)																																	
80-4-1	Repair, restoration of abandoned heat mains & distribution networks		LS	1.0																														
80-5	Construction of Heat Station No.6 (No. 01-10/9 Project list No. 41)		LS	1.0																														
80-5-1	Heat pump station no.6																																	
80-6	Project for Extension of Existing District Heating Pipelines to New City Center and New development Area the Right Bank of Ishim River																																	
80-6-1	Extension to new city center		LS	1.0																														
80-6-2	Extension to new development area, right bank of Ishim river		LS	1.0																														
80-7	Project for Construction of 3 Heat Centers																																	
80-7-1	Heat center, HC-1, HC-2, HC-3		place	3.0																														
80-7-2	Related pipelines on the left bank of Ishim river		LS	1.0																														
80-8	Construction of 110 kV Transmission Line and substations																																	
80-8-1	Transmission lines		km	40.5																														
80-8-2	Substation		place	2.0																														
80-9	Natural Gas and Heat Energy																																	
80-9-1	Combined cycle plant		MW	150.0																														
80-9-2	Natural gas pipelines		LS	1.0																														
80-10	Construction 3 Heat Centers and Related Pipelines, left Bank of Ishim River																																	
80-10-1	Heat center, HC-4, HC-5, HC-6		place	3.0																														
80-10-2	Pipelines		LS	1.0																														
80-11	Construction of 110 kV Transmission Line and Substation																																	
80-11-1	Transmission line		km	12.7																														
80-11-2	Substation including extension		place	1.0																														
80-12	Natural Gas Firing Gasturbine Combined Cycle Plant																																	
80-12-1	Gas turbine combined cycle plant		MW	200.0																														
80-12-2	Natural gas pipelines		LS	1.0																														
80-13	Construction of One Heat center, Extension of Four (4) Heat Centers and Related Pipelines on the left bank of Ishim River																																	
80-13-1	Hot water boilers		set	19.0																														
80-13-2	Buildings		place	1.0																														
80-13-3	Pipelines		LS	1.0																														

..... lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
 ————— construction

Figure O.2.13 Implementation Schedule for Power and Heat Energy Sector, Phase I, II and III

			2001-2010										2011-2020										2021-2030											
Cost	Project	Descriptions	Unit	Q'ty	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Code					(1st priority)			(2nd)			(3rd)																							
80-1	110/10 kV Substation and Power Transmission Line project (Development of power supply system of Astana city upto 2007, 1st stage) (No. 01-10/9 Project List no. 32), involves to project no. 80-3 below																																	
80-1-1	Construction of 110 kV transmission line from airport to left bank of Ishim River (new city center)	LS	1.0																															
80-1-2	Construction of 110/10kV substation "left bank"	LS	1.0																															
80-2	Conventional Electric Power and Heat Energy Generating Plant Project																																	
80-2-1	Power and heat energy generating plant in 2006	MW	115.0																															
80-3	Project for 110 kV Transmission Line and Substations																																	
80-3-1	Construction of 110 kV transmission line, underground & overhead (included 80-1-1 above, TETs-2 airport switching substation)	km	61.4																															
80-3-2	Construction and extension of substations	place	3.0																															
80-4	Repair and restoration of abandoned heat mains and distribution networks of the city (No. 01-10/9 Project list No. 38)																																	
80-4-1	Repair, restoration of abandoned heat mains & distribution networks	LS	1.0																															
80-5	Construction of Heat Station No.6 (No. 01-10/9 Project list No. 41)		LS	1.0																														
80-5-1	Heat pump station no.6																																	
80-6	Project for Extension of Existing District Heating Pipelines to New City Center and New development Area the Right Bank of Ishim River																																	
80-6-1	Extension to new city center	LS	1.0																															
80-6-2	Extension to new development area, right bank of Ishim river	LS	1.0																															
80-7	Project for Construction of 3 Heat Centers																																	
80-7-1	Heat center, HC-1, HC-2, HC-3	place	3.0																															
80-7-2	Related pipelines on the left bank of Ishim river	LS	1.0																															
80-8	Construction of 110 kV Transmission Line and substations																																	
80-8-1	Transmission lines	km	40.5																															
80-8-2	Substation	place	2.0																															
80-9	Natural Gas and Heat Energy																																	
80-9-1	Combined cycle plant	MW	150.0																															
80-9-2	Natural gas pipelines	LS	1.0																															
80-10	Construction 3 Heat Centers and Related Pipelines, left Bank of Ishim River																																	
80-10-1	Heat center, HC-4, HC-5, HC-6	place	3.0																															
80-10-2	Pipelines	LS	1.0																															
80-11	Construction of 110 kV Transmission Line and Substation																																	
80-11-1	Transmission line	km	12.7																															
80-11-2	Substation including extension	place	1.0																															
80-12	Natural Gas Firing Gasturbine Combined Cycle Plant																																	
80-12-1	Gas turbine combined cycle plant	MW	200.0																															
80-12-2	Natural gas pipelines	LS	1.0																															
80-13	Construction of One Heat center, Extension of Four (4) Heat Centers and Related Pipelines on the left bank of Ishim River																																	
80-13-1	Hot water boilers	set	19.0																															
80-13-2	Buildings	place	1.0																															
80-13-3	Pipelines	LS	1.0																															

..... lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
 _____ construction

Figure O.2.14 Implementation Schedule for Gas Supply Sector, Phase I, II and III

Cost	Project	Descriptions	Unit	Q'ty	2001- 2010							2011- 2020							2021 - 2030															
Code					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
					(1st priority)							(2nd)																						
90-1	Astana City Gas Supply Network Project																																	
	90-1-1	Establishment of gas supply company	LS	1.0	.....	.....	.....	.....	.....	.....	.....																
	90-1-2	Construction of high pressure network	LS	1.0		.....	.....	.....	.....	.....	.....																	
	90-1-3	Construction of low pressure network	LS	1.0		.....	.....	.....	.....	.....	.....																	
	90-1-4	Construction of supporting facilities	LS	1.0		.....	.....	.....	.....	.....	.....																	
90-2	Gas supply Network Expansion Project (1)																																	
	90-2-1	Construction of high pressure network	LS	1.0												.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	90-2-2	Construction of low pressure network	LS	1.0												.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	90-2-3	Construction of supporting facilities	LS	1.0												.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
90-3	Gas supply Network Expansion Project (1)																																	
	90-3-1	Construction of high pressure network	LS	1.0																														
	90-3-2	Construction of low pressure network	LS	1.0																														
	90-3-3	Construction of supporting facilities	LS	1.0																														

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

—— construction

Figure O.2.14 Implementation Schedule for Gas Supply Sector, Phase I, II and III

Cost	Project	Descriptions	Unit	Q'ty	2001-2010										2011-2020										2021-2030									
Code					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
					(1st priority)			(2nd)			(3rd)																							
90-1	Astana City Gas Supply Network Project																																	
	90-1-1	Establishment of gas supply company	LS	1.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
	90-1-2	Construction of high pressure network	LS	1.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
	90-1-3	Construction of low pressure network	LS	1.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
	90-1-4	Construction of supporting facilities	LS	1.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
90-2	Gas supply Network Expansion Project (1)																																	
	90-2-1	Construction of high pressure network	LS	1.0												.....	.....	.....	.....	.....	.....	.....	.....	.....	
	90-2-2	Construction of low pressure network	LS	1.0												.....	.....	.....	.....	.....	.....	.....	.....	.....	
	90-2-3	Construction of supporting facilities	LS	1.0												.....	.....	.....	.....	.....	.....	.....	.....	.....	
90-3	Gas supply Network Expansion Project (1)																																	
	90-3-1	Construction of high pressure network	LS	1.0																		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	90-3-2	Construction of low pressure network	LS	1.0																		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	90-3-3	Construction of supporting facilities	LS	1.0																		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

..... lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
 ——— construction

Figure O.2.15 Implementation Schedule for Telecommunication Sector, Phase I, II and III

Cost Code	Project	Descriptions	Unit	Qty	2001- 2010										2011- 2020										2021- 2030									
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
					(1st priority)					(2nd)																								
100-1		Installation of Telephone on the left bank of Ishim River																																
		(No. 01-10-/9 Project list No. 36)																																
	100-1-1	Installation of telephones	LS	1.0																														
100-2		Astana New Local Telecommunication Network Project (1) 61,200 lines																																
	100-2-1	Switching system	system	3.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
	100-2-2	Transmission system (STM-16-ADM)	system	3.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
	100-2-3	Digital loop carrier equipment	system	3.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
	100-2-4	Outside plant	set	3.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
	100-2-5	Power supply system	set	3.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
	100-2-6	Buildings	set	3.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
	100-2-7	Training	LS	1.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
100-2		Astana New Local Telecommunication Network Project (2) 143,000 lines																																
	100-2-1	Switching system	system	3.0											.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	100-2-2	Transmission system (STM-16-ADM)	system	1.0											.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	100-2-3	Digital loop carrier equipment	system	1.0											.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	100-2-4	Outside plant	set	3.0											.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	100-2-5	Power supply system	set	3.0											.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	100-2-6	Buildings	set	3.0											.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	100-2-7	Training	LS	1.0											.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
100-2		Astana New Local Telecommunication Network Project, Expansion 202,000 lines																																
	100-2-1	Switching system	LS	1.0																					.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	100-2-2	Transmission system (STM-16-ADM)	LS	1.0																					.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	100-2-3	Digital loop carrier equipment	LS	1.0																					.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	100-2-4	Outside plant	LS	1.0																					.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	100-2-5	Power supply system	LS	1.0																					.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	100-2-6	Buildings	LS	1.0																					.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	100-2-7	Training	LS	1.0																					.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
100-3		Administration Data Communication Network project																																
	100-3-1	Capital sub-center system	LS	1.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										
	100-3-2	IT center system	LS	1.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....										

..... lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
 _____ construction

Figure O.2.15 Implementation Schedule for Telecommunication Sector, Phase I, II and III

Cost	Project	Descriptions	Unit	Q'ty	2001- 2010										2011- 2020										2021- 2030									
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Code					(1st priority)			(2nd)			(3rd)																							
100-1	Installation of Telephone on the left bank of Ishim River (No. 01-10-/9 Project list No. 36)																																	
	100-1-1	Installation of telephones	LS	1.0																														
100-2	Astana New Local Telecommunication Network Project (1) 61,200 lines																																	
	100-2-1	Switching system	system	3.0	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	
	100-2-2	Transmission system (STM-16-ADM)	system	3.0	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	
	100-2-3	Digital loop carrier equipment	system	3.0	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	
	100-2-4	Outside plant	set	3.0	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	
	100-2-5	Power supply system	set	3.0	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	
	100-2-6	Buildings	set	3.0	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	
	100-2-7	Training	LS	1.0	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	
100-2	Astana New Local Telecommunication Network Project (2) 143,000 lines																																	
	100-2-1	Switching system	system	3.0											■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■		
	100-2-2	Transmission system (STM-16-ADM)	system	1.0											■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■		
	100-2-3	Digital loop carrier equipment	system	1.0											■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■		
	100-2-4	Outside plant	set	3.0											■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■		
	100-2-5	Power supply system	set	3.0											■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■		
	100-2-6	Buildings	set	3.0											■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■		
	100-2-7	Training	LS	1.0											■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■		
100-2	Astana New Local Telecommunication Network Project, Expansion 202,000 lines																																	
	100-2-1	Switching system	LS	1.0																						■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	
	100-2-2	Transmission system (STM-16-ADM)	LS	1.0																						■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	
	100-2-3	Digital loop carrier equipment	LS	1.0																						■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	
	100-2-4	Outside plant	LS	1.0																						■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	
	100-2-5	Power supply system	LS	1.0																						■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	
	100-2-6	Buildings	LS	1.0																						■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	
	100-2-7	Training	LS	1.0																						■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	
100-3	Administration Data Communication Network project																																	
	100-3-1	Capital sub-center system	LS	1.0	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■		
	100-3-2	IT center system	LS	1.0	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■		

..... lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
 _____ construction

Figure O.2.16 Implementation Schedule for Solid Waste Sector, Phase I, II and III

Cost	Project	Descriptions	Unit	Q'ty	2001- 2010							2011- 2020							2021- 2030															
Code					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
					(1st priority)							(2nd)																						
110-1	Landfill-1 Project																																	
	110-1-1	Improvement of existing landfill site	LS	1.0	.....																												
	110-1-2	Construction of landfill-1 (15 ha, civil works)	ha	15.0	.....																												
	110-1-3	Machinery for landfill-1	LS	1.0	.....																												
	110-1-4	Machinery for waste collection and transportation	set	100.0	.....																												
	110-1-5	Machinery for city cleaning	LS	1.0	.....																												
	110-1-6	Endorological center	LS	1.0	.....																												
110-2	Hazardous HSW (Hospital Solid Waste) Incinerator Project (1)																																	
	110-2-1	Construction of HSW incinerator	LS	1.0	.....																												
110-1	Landfill-2 Project (Phase 1)																																	
	110-1-1	Construction of landfill-2 (18.3 ha, civil works)	ha	18.3																														
	110-1-2	Machinery for landfill-2 (Phase 1)	LS	1.0																														
110-2	Hazardous HSW (Hospital Solid Waste) Incinerator Project (2)																																	
	110-2-1	Construction of HSW incinerator	LS	1.0																														
110-3	Waste Collection Vehicle (1)																																	
	110-3-1	Procurement, machinery for waste collection & transportati	set	18.0																														
110-4	Pilot Scale MSW (Municipal Solid Waste) Treatment Project																																	
	110-4-1	Construction of MSW intermediate treatment plant	set	1.0																														
110-5	New City Center Recycling Center project																																	
	110-5-1	Construction of recycling center	m2	400.0																														
110-1	Landfill-2 Project (Phase 2)																																	
	110-1-1	Construction of landfill-2 (46 ha, civil works)	ha	46.0																														
	110-1-2	Machinery for landfill-2 (Phase 2)	LS	1.0																														
110-6	Municipal Solid Waste (MSW) Transfer Station																																	
	110-6-1	Construction of MSW transfer station	place	1.0																														

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

—— construction

Figure O.2.16 Implementation Schedule for Solid Waste Sector, Phase I, II and III

Cost	Project	Descriptions	Unit	Q'ty	2001- 2010										2011- 2020										2021- 2030										
Code					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
					(1st priority)					(2nd)			(3rd)																						
110-1	Landfill-1 Project																																		
	110-1-1	Improvement of existing landfill site	LS	1.0	■	■	■																												
	110-1-2	Construction of landfill-1 (15 ha, civil works)	ha	15.0	■	■	■																												
	110-1-3	Machinery for landfill-1	LS	1.0	■	■	■																												
	110-1-4	Machinery for waste collection and transportation	set	100.0	■	■	■																												
	110-1-5	Machinery for city cleaning	LS	1.0	■	■	■																												
	110-1-6	Dendrological center	LS	1.0	■	■	■																												
110-2	Hazardous HSW (Hospital Solid Waste) Incinerator Project (1)																																		
	110-2-1	Construction of HSW incinerator	LS	1.0	■	■	■	■	■	■																									
110-1	Landfill-2 Project (Phase 1)																																		
	110-1-1	Construction of landfill-2 (18.3 ha, civil works)	ha	18.3										■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
	110-1-2	Machinery for landfill-2 (Phase 1)	LS	1.0										■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
110-2	Hazardous HSW (Hospital Solid Waste) Incinerator Project (2)																																		
	110-2-1	Construction of HSW incinerator	LS	1.0																	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
110-3	Waste Collection Vehicle (1)																																		
	110-3-1	Procurement, machinery for waste collection & transportation	set	18.0																	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
110-4	Pilot Scale MSW (Municipal Solid Waste) Treatment Project																																		
	110-4-1	Construction of MSW intermediate treatment plant	set	1.0																	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
110-5	New City Center Recycling Center project																																		
	110-5-1	Construction of recycling center	m2	400.0																	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
110-1	Landfill-2 Project (Phase 2)																																		
	110-1-1	Construction of landfill-2 (46 ha, civil works)	ha	46.0																	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
	110-1-2	Machinery for landfill-2 (Phase 2)	LS	1.0																	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
110-6	Municipal Solid Waste (MSW) Transfer Station																																		
	110-6-1	Construction of MSW transfer station	place	1.0																								■	■	■	■	■	■	■	■

■■■■■ lead time (financial arrangement, feasibility study, basic design, tender design, tendering, contracting etc.)
 ■■■■■ construction

Figure O.3.1 Implementation Schedule for New City Center at Residential District 13 and 14, Phase I, II, and III

No.	Name or User of Building	Type	No. of story	Unit	Q'ty (floor area)	Phase I (2001-2010)										Phase II (2011-2020)										Phase III (2021-2030)									
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
I	Government Area																																		
1	Residence for President	RC	4	m2	20,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
2	President's Administration	RC	17	m2	40,500	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
3	Parliament	RC	17	m2	63,500	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
4	National Security Committee	RC	7	m2	30,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
5	Supreme Court	RC	7	m2	40,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
6	Cabinet of Ministers	RC	7	m2	30,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
7	Ministry of Interior Affairs	RC	7	m2	30,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
8	Ministry of State Revenue	RC	7	m2	20,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
9	Ministry of External Affairs	RC	12	m2	12,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
10	Ministry of Culture, Information and Public Accord	RC	7	m2	20,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
11	Ministry of Science and High Education	RC	7	m2	30,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
12	Ministry of Health Care, Education and Sports	RC	7	m2	30,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
13	Ministry of Energy, Industry, Trade and Environmental Protection, R.K	RC	7	m2	38,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
14	Ministry of Labor and Social Security, Ministry of Agriculture, Agency of R.K	RC	7	m2	40,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
15	Ministry of Defense	RC	7	m2	20,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
16	Ministry of Justice	RC	7	m2	20,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
17	General Prosecutor Office	RC	7	m2	15,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
18	SME (Small & Medium Entrepreneur	RC	14	m2	130,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
19	Ministry of Transport, Communication and Tourism	S	40	m2	40,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
20	Universal Hall	RC	4	m2	66,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
21	National Library	RC	6	m2	400,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
22	Service Facility (Commercial Building and Apartment)	RC	3	m2	56,525	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
	Total			m2	1,191,525	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
II	Business Area including Commercial Area																																		
1	Business District 13			m2	901,475	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
2	Business District 14			m2	1,088,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
3	World Trade Center			m2	150,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
4	Commercial District 13			m2	145,747	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
	Total			m2	2,285,222	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Legends:

Structure type of building:
 S : Steel structure type
 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

Figure O.3.1 Implementation Schedule for New City Center at Residential District 13 and 14, Phase I, II, and III

No.	Name or User of Building	Type	No. of story	Unit	Q'ty (floor area)	Phase I (2001-2010)										Phase II (2011-2020)										Phase III (2021-2030)										
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
I	Government Area																																			
1	Residence for President	RC	4	m2	20,000	■	■	■	■																											
2	President's Administration	RC	17	m2	40,500	■	■	■	■	■																										
3	Parliament	RC	17	m2	63,500	■	■	■	■	■																										
4	National Security Committee	RC	7	m2	30,000								■	■	■	■																				
5	Supreme Court	RC	7	m2	40,000								■	■	■	■																				
6	Cabinet of Ministers	RC	7	m2	30,000								■	■	■	■																				
7	Ministry of Interior Affairs	RC	7	m2	30,000								■	■	■	■																				
8	Ministry of State Revenue	RC	7	m2	20,000								■	■	■	■																				
9	Ministry of External Affairs	RC	12	m2	12,000	■	■	■	■																											
10	Ministry of Culture, Information and Public Accord	RC	7	m2	20,000								■	■	■	■																				
11	Ministry of Science and High Education	RC	7	m2	30,000								■	■	■	■																				
12	Ministry of Health Care, Education and Sports	RC	7	m2	30,000								■	■	■	■																				
13	Ministry of Energy, Industry, Trade and Environmental Protection, R.K	RC	7	m2	38,000								■	■	■	■																				
14	Ministry of Labor and Social Security, Ministry of Agriculture, Agency of R.K	RC	7	m2	40,000								■	■	■	■																				
15	Ministry of Defense	RC	7	m2	20,000	■	■	■	■																											
16	Ministry of Justice	RC	7	m2	20,000											■	■																			
17	General Prosecutor Office	RC	7	m2	15,000											■	■																			
18	SME (Small & Medium Entrepreneur	RC	14	m2	130,000	■	■	■	■	■	■	■	■	■	■	■																				
19	Ministry of Transport, Communication and Tourism	S	40	m2	40,000	■	■	■	■																											
20	Universal Hall	RC	4	m2	66,000								■	■	■	■																				
21	National Library	RC	6	m2	400,000								■	■	■	■																				
22	Service Facility (Commercial Building and Apartment)	RC	3	m2	56,525								■	■	■	■	(1)																			
	Total			m2	1,191,525																															
II	Business Area including Commercial Area																																			
1	Business District 13			m2	901,475	■	■	■	■	■	■	■	■	■	■	■	(1)																			
2	Business District 14			m2	1,088,000	■	■	■	■	■	■	■	■	■	■	■	(1)																			
3	World Trade Center			m2	150,000	■	■	■	■	■	■	■	■	■	■	■																				
4	Commercial District 13			m2	145,747	■	■	■	■	■	■	■	■	■	■	■	(1)																			
	Total			m2	2,285,222																															

Legends:

Structure type of building:

S : Steel structure type

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

Figure O.4.1 Estimate Flow of Investment Cost for Development of the City of Astana

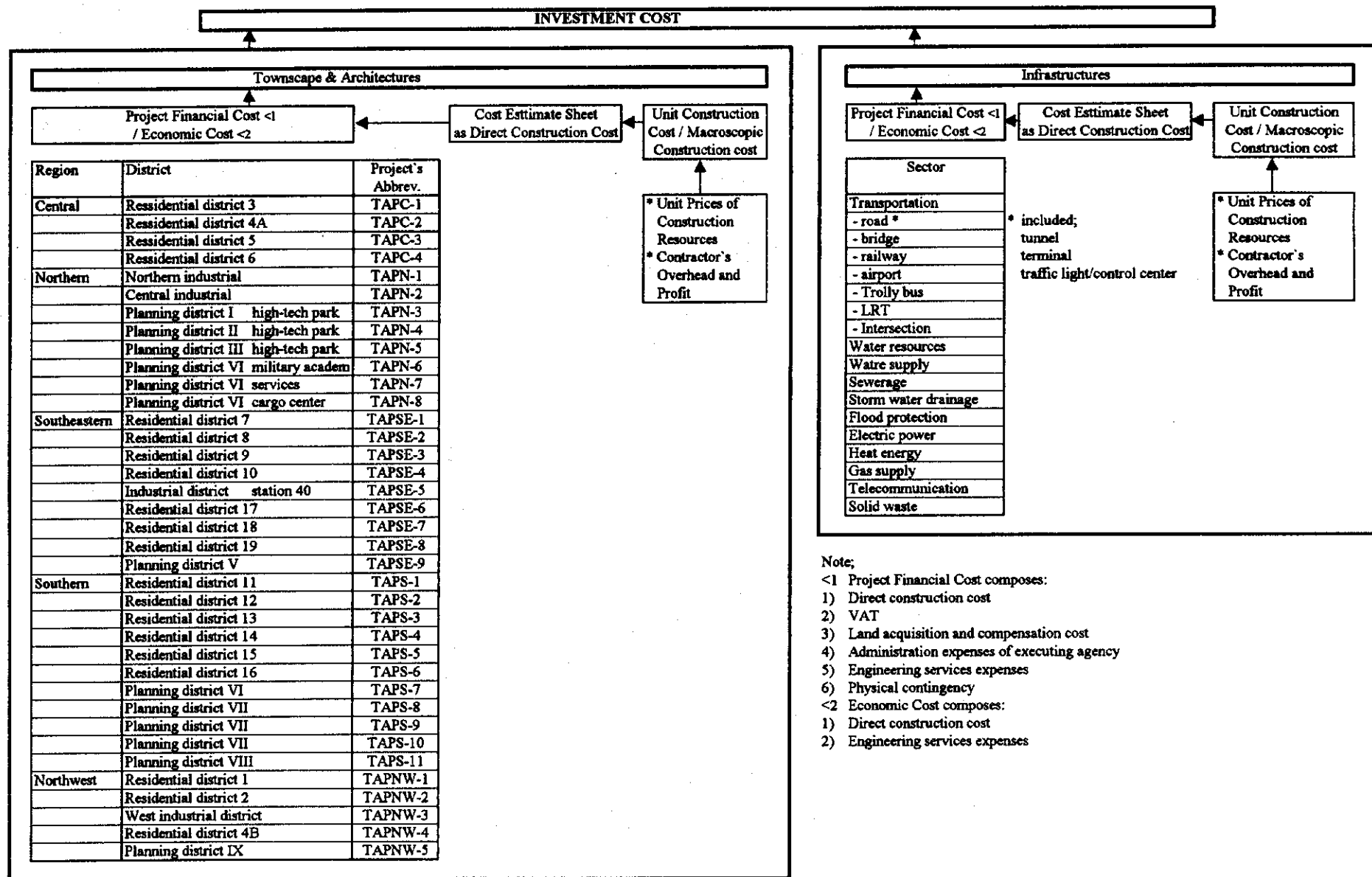


Figure O.4.1 Estimate Flow of Investment Cost for Development of the City of Astana

