ANNEX

SCOPE OF WORK
FOR
THE STUDY ON THE MASTER PLAN
FOR
THE DEVELOPMENT OF THE CITY OF ASTANA
IN
THE REPUBLIC OF KAZAKHSTAN

AGREED UPON BETWEEN
MINISTRY OF FOREIGN AFFAIRS,
AGENCY FOR STRATEGIC PLANNING AND REFORMS,
CAPITAL DEVELOPMENT CORPORATION AND THE CITY OF ASTANA
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

Astana
5 October 1999

E. A. Idrissov
Ministry of Foreign Affairs

E. A. Utembayev
Agency for Strategic Planning and Reforms

Yukihisa Sakurada
The Preparatory Study Team
Japan International Cooperation Agency

B. T. Orazov
Capital Development Corporation

A. R. Dzhaksibekov
City of Astana

I. INTRODUCTION

In response to the request of the Government of the Republic of Kazakhstan (hereinafter referred to as "the Government of Kazakhstan"), the Government of Japan has decided to conduct "the Study on the Master Plan for the Development of the City of Astana " (hereinafter referred to as "the Study"), in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of the Government of Kazakhstan.

The present document sets forth the scope of work with regard to the Study.

II. OBJECTIVES OF THE STUDY

The objectives of the Study are:

(1) to formulate a master plan for the development of Astana City to the year 2030 in order to support its function as a new national capital and to improve the quality of life of the residents,

(2) to conduct feasibility study for the priority project proposed under the master plan, and

(3) to strengthen the institutional capacity of both central and municipal governments through technology transfer to counterpart personnel in the course of the Study.

III. STUDY AREA

The Study area shall cover Astana City of approximately 250 square kilometers.

IV. SCOPE OF THE STUDY

In order to achieve the objectives mentioned above, the Study shall cover the following items. It should be noted that the details of each item would be determined during the Study based upon data availability.

1. Current conditions of Astana City shall be assessed as follows.

(1) Collection and review of existing information on socio-economic conditions, land use patterns, natural conditions, environmental features, and urban infrastructure facilities

(2) Review of related plans and the implementation status of the capital development

(3) Review of organizational set-up, regulatory framework, and funding mechanism for the

capital development

2. Following issues and potential related to the capital development shall be identified.
   (1) Natural conditions including geographical and geological features
   (2) Urban problems in the built-up area located on the right bank of the Isim River
   (3) Potential for new development on the left bank of the Isim River
   (4) Target for the capital development set by the Government of Kazakhstan including population growth
   (5) Organizational capabilities, laws and regulations, and financing for the capital development

3. A planning framework to the year 2030 shall be established. The planning framework shall be realistic, and based on future projection of demographic, economic, social, environmental, land use and financial conditions.

4. A short- and long-term development scenarios shall be prepared as follows.
   (1) Clarification of long-term development objectives to 2030
   (2) Identification of short-term development needs
   (3) Preparation of alternative scenarios satisfying both long-term objectives and short-term needs
   (4) Assessment of social, financial and environmental impacts of each scenario
   (5) Selection of the most suitable development scenario

5. A master plan for the development of Astana City which comprises the following components shall be prepared.
   (1) Key concepts and approach
   (2) Land use
   (3) Provision and improvement of urban infrastructure facilities and municipal services
   (4) Capital region development
   (5) District plan for the Government Center, the Business Center and the Embassy City
   (6) Schedule for the phased implementation and cost estimates by phase
   (7) Organizational, regulatory and funding arrangements for the implementation of the master plan

6. Feasibility study for the selected priority project proposed under the master plan shall be conducted as follows.
   (1) Establishment of criteria to prioritize the projects

(2) Selection of the priority project

(3) Feasibility study to assess the technical, financial and economic viability and environmental and social soundness of the selected priority project

V. STUDY SCHEDULE

The Study shall be implemented in accordance with the attached tentative Study schedule shown in APPENDIX. The schedule, including report submission date stated in the next clause (VI), is tentative and subject to be modified when both parties agree upon and any necessity that arises during the course of the Study.

VI. REPORTS

JICA shall prepare and submit the following reports in English and Russian to the Government of Kazakhstan. In case any contradiction arised in writing, the English text shall prevail.

1. Inception Report summarizing the approach and implementation schedule of the Study
   Thirty (30) copies in Russian and ten (10) copies in English
   Within one (1) month after the commencement of the Study
2. Progress Report summarizing the current conditions of Astana City and identifying the priority project for the feasibility study
   Thirty (30) copies in English
   Within three (3) months after the commencement of the Study
3. Interim Report summarizing the development issues and potential, planning framework, development scenario and progress of the feasibility study
   Thirty (30) copies in Russian and ten (10) copies in English
   Within ten (10) months after the commencement of the Study
4. Draft Final Report summarizing the overall study results including the master plan and feasibility study
   Thirty (30) copies in Russian and ten (10) copies in English
   Within sixteen (16) months after the commencement of the Study
   The Government of Kazakhstan will provide JICA with its comments within one (1) month after the receipt of the Draft Final Report.
6. Final Report
   Fifty (50) copies in Russian and twenty (20) copies in English
   Within one (1) month after the receipt of the comments on the Draft Final Report

VII. UNDERTAKING OF THE GOVERNMENT OF KAZAKHSTAN

1. To facilitate smooth conduct of the Study, the Government of Kazakhstan shall take the following necessary measures in accordance with laws and regulations in force in Kazakhstan:

(1) to secure the safety of the Japanese Study team;

(2) to permit the members of the Japanese Study team to enter, leave and sojourn in Kazakhstan for the duration of their assignment therein and exempt them from foreign registration requirements and consular fees;

(3) to exempt the members of the Japanese Study team from taxes, duties, fees and any other charges on equipment, machinery and other materials brought into and out of Kazakhstan for the conduct of the Study;

(4) to exempt the members of the Japanese Study team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Japanese Study team for their services in connection with implementation of the Study;

(5) to provide necessary facilities to the Japanese Study team for remittance as well as utilization of the funds introduced into from Japan in connection with the implementation of the Study;

(6) to secure permission for entry into private properties and restricted areas for the implementation of the Study;

(7) to secure permission for the Japanese Study team to take all data and documents related to the Study out of Kazakhstan to Japan; and

(8) to provide the medical services as needed. Its expenses will be chargeable on the members of the Japanese Study team.

2. The Government of Kazakhstan shall bear claims, if any arises, against the members of the Japanese Study team resulting from, occurring in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of Japanese Study team.

3. The Capital Development Corporation (hereinafter referred to as "the CDC") and the City of Astana shall be the executing agencies of the Study and also as coordinating bodies in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

4. The CDC and the City of Astana shall provide, at their own expense, the Japanese Study team with the followings, in cooperation with other organizations concerned:

(1) available data and information related to the Study,

(2) counterpart personnel,

(3) suitable office space with necessary equipment in Astana,

(4) credentials or identification cards, and

(5) appropriate number of vehicles with drivers.

VIII. UNDERTAKING OF JICA

For the implementation of the Study, JICA shall take the following measures:

(1) to dispatch, at its own expense, the Study team to Kazakhstan; and

(2) to pursue technology transfer to the Kazakhstan counterpart personnel in the course of the Study.

IX. CONSULTATION

The CDC, the City of Astana and JICA shall consult with each other in respect of any matter that may arise from or in connection with the Study.

APPENDIX

TENTATIVE STUDY SCHEDULE

Items/Year	1st Year									2nd Year								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Working in Kazakhstan	=======				==========						==========					==		
Working in Japan	==			====					======						===			===
Report	△ IC/R		△ PG/R								△ IT/R					△ DF/R		△ F/R

Note: IC/R : Inception Report
PG/R : Progress Report
IT/R : Interim Report
DF/R : Draft Final Report
F/R : Final Report

MINUTES OF MEETING
ON
SCOPE OF WORK
FOR
THE STUDY ON THE MASTER PLAN
FOR
THE DEVELOPMENT OF THE CITY OF ASTANA
IN
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AGREED UPON BETWEEN
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CAPITAL DEVELOPMENT CORPORATION AND THE CITY OF ASTANA
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Astana
5 October 1999

E. A. Idrissov
Ministry of Foreign Affairs

E. A. Utembayev
Agency for Strategic Planning and Reforms

Yukihisa Sakurada
The Preparatory Study Team
Japan International Cooperation Agency

B. T. Orazov
Capital Development Corporation

A. R. Dzhaksibekov
City of Astana

The Japanese Preparatory Study Team (hereinafter referred to as "the Preparatory Team"), organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") headed by Mr. Yukihisa Sakurada (Managing Director, Social Development Study Department, JICA) visited the Republic of Kazakhstan from 23 September to 7 October 1999 to discuss and agree with the Government of the Republic of Kazakhstan (hereinafter referred to as "the Government of Kazakhstan") to the scope of "the Study on the Master Plan for the Development of the City of Astana" (hereinafter referred to as "the Study").

The Preparatory Team exchanged views and held a series of discussions with representatives of the Capital Development Corporation (hereinafter referred to as "the CDC") and other organizations concerned. The list of people met by the Preparatory Team is in Appendix.

Both sides have agreed to the Scope of Work for the Study. Minutes of Meeting sets forth major issues associated with the implementation of the Scope of Work.

1. LANGUAGE

The Scope of Work and the Minutes of Meeting were prepared in English and Russian. In case any contradiction arised in interpretation, the English text shall prevail.

2. DISTRICT PLAN

The CDC strongly requested the Preparatory Team to prepare the following three district plans under the Study:

(1) Government Center,
(2) Business Center, and
(3) Embassy City.

The Preparatory Team understood the importance and needs for the district plans for these areas. It was agreed that a basic plan to describe the layout of major infrastructure and buildings at 1:2,000 will be prepared for the Government Center. On the other hand, as detailed development plans are not available for the Business Center and Embassy City, basic concepts which indicate principles for the district development at 1:5,000 - 10,000 will be prepared for these two areas.

3. FEASIBILITY STUDY

The CDC also made a strong request to the Preparatory Team to include the following four feasibility studies in the Study:

(1) Construction of purification facilities in Astana City in order to improve the quality of the water resources,
(2) Improvement of water provision and drinking water supply system in Astana,
(3) Modernization of Heat and Power Station in Astana, and
(4) Development of telecommunication network in Astana City.
The Preparatory Team explained the CDC that only one of the above proposals could be considered due to the limited budget allocated for the Study. After various discussions, it was agreed that this matter would be further determined by the time of the submission of the Progress Report. In selecting a component for feasibility study, the level of urgency, results of the studies which the CDC is currently conducting, and possible funding source for the ensuing project will be considered.

4. COOPERATION AND COORDINATION

It was confirmed that the Study will be conducted jointly by the Study Team and Kazakh counterpart personnel. Close cooperation and coordination between them should be ensured to facilitate efficient implementation of the Study and achieve fruitful Study results.

5. TECHNOLOGY TRANSFER

(1) The CDC requested the Preparatory Team training programs in Japan for the Kazakh counterpart personnel. The Preparatory Team explained the CDC that only one person could be invited for counterpart training each year and indicated possibility of group training courses aside from counterpart training. The Preparatory Team promised the CDC to convey CDC's request to the JICA headquarters to consider training in Japan for as many counterpart personnel as possible.
(2) Both sides agreed to hold two seminars under the Study, one for the presentation of the Interim Report and the other for the Draft Final Report. Details of the seminars will be determined in the course of the Study.

6. COUNTERPART PERSONNEL

The Preparatory Team requested the CDC to appoint counterpart personnel for the Study Team. The CDC agreed to prepare and submit JICA, by the commencement of the Study, a list of counterpart personnel based on the list of experties necessary for the Study which will be prepared by JICA.

7. STEERING COMMITTEE

The CDC indicated that it would organize a steering committee for the Study. Members of the steering committee would include representatives of government organizations related to the development of Astana. The CDC will submit a list of the steering committee members to JICA prior to the commencement of the Study.

8. REPORTS

(1) In principle the CDC agreed to disclose the main report and summary of the Final Report. Any confidential information according to the laws and regulations in force in Kazakhstan will be included in a separate volume, which will not be disclosed.

(2) All the report except the Progress Report will be prepared in English and Russian as indicated in the Scope of Work. However, regarding the Draft Final Report and the Final Report, the main report and summary will be prepared in both languages while other documents such as data sets, maps and drawings will be only in English.

9. DATA, INFORMATION AND MAPS

The CDC promised to the Preparatory Team to do its best to provide the Study Team with existing data, information and maps related to the Study. However, if any difficulty arises on this matter, the CDC and JICA will discuss to seek a suitable solution.

10. VEHICLES

The CDC promised to provide the Study Team with at least three chauffeur driven cars.

Appendix

Attendants List

B.D. UTEMURATOV	Assistant to the President Administration of the President
E.A. IDRISSOV	First Vice Minister, Ministry of Foreign Affairs
V. P. ZVERKOV	Head, International Economic Cooperation Department Ministry of Foreign Affairs
E. A. UTEMBAYEV	Chairman, Agency on Strategic Planning and Reforms
Tomikazu INAGAKI	Senior Advisor (JICA Expert), Agency on Strategic Planning and Reforms
P.K. CHODIEV	Chairman, Capital Development Corporation
B. T. ORAZOV	General Director, Capital Development Corporation
A. R. DZHAKSYBEKOV	Mayor, Astana City Administration
F. H. GALIMOV	First Deputy Mayor, Astana City Administration
B. F. DOSMAGAMBETOV	Head, Department of Architecture Astana City Administration
Atsushi SUDA	Second Secretary, Embassy of Japan in Republic of Kazakhstan
Yukihisa SAKURADA	Leader, JICA Preparatory Study Team
Katsuro NAGAI	Member, JICA Preparatory Study Team
Eri HONDA	Member, JICA Preparatory Study Team
Jitsuya ISHIGURO	Member, JICA Preparatory Study Team
Mamoru OSADA	Member, JICA Preparatory Study Team
Toshiaki ARISAWA	Member, JICA Preparatory Study Team
Hayao TESHIMA	Member, JICA Preparatory Study Team
Kumiko IKAWA	Interpreter, JICA Preparatory Study Team

Minutes of Meeting
For
the Inception Report Meeting
for
the Study on the Master Plan for the Development of City of Astana
in
the Republic of Kazakhstan

Agreed Upon
Amongst
The Ministry of Foreign Affairs,
The Capital Development Corporation,
The City of Astana,
And
Japan International Cooperation Agency

Astana,
9th February, 2000

Adilbek DZHAKSYBEKOV
Mayor, Municipality
Of Astana City

Kenjiro IZUMI,
Vice President,
JICA

V. ZVERKOV,
Director of External
Economic Relations Dpt.
Ministry of Foreign Affairs

Dr. Kisho KUROKAWA,
Team Leader,
JICA Study Team

Patokh CHODIEV
Chairman, Board of Directors,
Capital Development Corporation

The Japanese Study Team (hereinafter called "the Study Team") for the Master Plan for the Development of City of Astana in the Republic of Kazakhstan (hereinafter called "the Study"), organized by the Japan International Cooperation Agency (hereinafter called "JICA"), headed by Dr. Kisho KUROKAWA, Team Leader, together with the JICA Advisory Team, headed by Mr. Kenjiro IZUMI, Vice President of JICA, visited Kazakhstan from 7th of February to 10th of February, 2000, to discuss the contents of the Inception Report for the Study.

The discussion concerning the Inception report was held in the afternoon of 8th of February, 2000, at the Astana City Hall Conference Room, attended by representatives of concerned organizations and agencies. The following are the items agreed upon by the concerned parties as represented by the undersigned.

1. The Kazakhstan side understood and basically agreed with the objectives, approaches and methodologies of the Study.

2. The Kazakh side expressed their request to take into consideration the existing master plans, to which the Study Team responded positively, so as not to waste the efforts put into the previous work.

3. The Kazakh side expressed their hope to accelerate the progress of the Study and shorten the period necessary for the selection of the urgent project for F/S. Meanwhile, the Study Team shall take into consideration the four (4) pre-F/S reports worked out previously by the CDC.

4. The Kazakh side shall request all the related agencies and organizations to make all the data and information related to the formulation of the master plans be made available to the Study team as much as possible, and as soon as possible.

5. The CDC requested the Study Team to include a study on the forestation around Astana in the Study. The Study Team replied that they would convey the request to the JICA Headquarters in Tokyo for

consideration.

This Minutes of Meeting is prepared in English and Russian. In case an contradition arised in interpretation, the English text shall prevail.

Annex

List of A-ttendants

Tokseitov R.	First Vice Minister of State Revenues
Andryushenko A.	Vice Minister of Economics
Hashimoto, F.	JICA ODA Advisor, Ministry of Economics
Saidenov A.	Vice Minister of Finance
Galimov F.	First Deputy Mayor, Astana City
Abdukamalov O.	Vice Minister of Natural Resources and Environmental Conservation
Shardarbekov Sh.	Chaiman of Construction Committee, Ministry of Energy, Industry and Trade
Ramazanov A.	Chairman of Water Resources Committee, Ministry of Natural Resources and Environmental Conservation
Zverkov V.	Director of External Economic Cooperation Department, Ministry of Foreign Affairs
Omarov G.	Head of Traffic Police Department, Ministry of Internal Affairs
Chodiev P.	Chairman, Capital Development Corporation
Orazov B.	General Director, Capital Development Corporation
Dosmagambetov B.	Head of Architecture and Urban Construction Department
Nurkenov Zh.	General Manager of Joint Stock Company GORVODOKANAL (Operation and Maintenance of Water Supply System)
Zhumabaev A.	President, Joint Stock Compnay Akmola-Teploset (Power and Heat Supply)
Kanafin B.	Director, Astana-Telecom
Saifullin R.	Director of State Enterprise Akmola Goroformlenie (Forestation and Vegetation in Astana)
Nurkeinov T.	Chairman of Land Resources Management Committee
Fursov V.	General Director of Enterprise GORCOM-

	MONHOZ (Drainage and Flood Protection)
Rustambekov S.	Ak Orda Design and Construction Company
Kurokawa, K.	Team Leader, JICA Study Team
Yamada, K.	Co-Team Leder, JICA Study Team
Shibata, T.	Co-Team Leder, JICA Study Team
Cheriex, H.	JICA Study Team
Goto, Y.	JICA Study Team (Interpreter)
Izumi, K.	Vice President, JICA
Ishiguro, J.	JICA

RESOLUTION
OF THE GOVERNMENT OF THE RK

Dated March 14, 2000
No.392

On amendments in the Resolution of the GOK of March 18, 1999 No.261

GOK takes decision:

1. To make the following amendments in the resolution of March 18, 1999 No.261 "On additional measures on Astana City development" :

"3-1. To take into consideration plan of works for Study on Master Plan for Astana City development, Republic of Kazakhstan, agreed upon between the Ministry of Foreign Affairs, RK, Agency on Strategic Planning and Reforms, CJSC "Corporation of Capital Development", Akim of Astana City and the Japanese Agency of International Cooperation (JICA) on October 5, 1999.

3-2. Secret.

3-3. Ministries, Agencies and organizations of the Republic of Kazakhstan within their authorizations to take measures on providing assistance to Akim of Astana City and CJSC "CDC" in solving issues related to implementation of the plan of works on Study".

2. The present Resolution comes into force from the day of its signing.

Premier-Minister of the
Republic of Kazakhstan — K.Tokayev

MINUTES OF MEETING
FOR
THE PROGRESS REPORT MEETING
FOR
THE STUDY ON THE MASTER PLAN
FOR
THE DEVELOPMENT OF CITY OF ASTANA
IN
THE REPUBLIC OF KAZAKHSTAN

AGREED UPON
AMONGST
THE MINISTRY OF FOREIGN AFFAIRS,
THE CAPITAL DEVELOPMENT CORPORATION,
THE CITY OF ASTANA,
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

ASTANA,
14th APRIL, 2000

F. GALIMOV
First Deputy Akim
of Astana City

S. AISAGALIYEVA
Director,
Investment Policy Dept.
Ministry of Economics

V. ZVERKOV,
Director of External
Economic Relations Dept.
Ministry of Foreign Affairs

Dr. Kisho KUROKAWA
Team Leader,
JICA Study Team

B. ORAZOV
General Director,
Capital Development Corporation

The Japanese Study Team (hereinafter called "the Study Team") for the Master Plan for the Development of City of Astana in the Republic of Kazakhstan (hereinafter called "the Study"), organized by the Japan International Cooperation Agency (hereinafter called "JICA"), headed by Dr. Kisho KUROKAWA, Team Leader, together with Ms. Eri Honda of JICA, visited Kazakhstan from 10th of April to 18th of April, 2000, to discuss the contents of the Progress Report for the Study.

The discussion concerning the Progress report was held in the afternoon of 12th of April, 2000, at the Inter-Continental Hotel Conference Room, attended by representatives of concerned organizations and agencies. The following are the items agreed upon by the concerned parties as represented by the undersigned.

1. The future land use plan prepared by the JICA Study Team was in principle accepted. The Kazakhstan side expressed appreciation to the work done by the JICA Study Team. In specific locations, however, the conflicts were pointed out with regard to the on-going and approved construction. Problems pertaining to the relocation of dacha's and a village were also pointed out. Such conflicts shall be considered by the Study Team for modification and adjustment of the future land use plan in the course of the Study.

2. The Feasibility Study to be conducted by JICA shall cover the sectors of water supply and sewerage, combining the urgent projects of the both sectors.

3. The comments expressed in the Progress meeting with regard to the Master Plan and Feasibility Study shall be discussed and considered in the course of the Study carefully.

4. In order to make a more comprehensive and appreciable Master Plan, all the concerned organizations and agencies are requested to provide relevant data and information.

This Minutes of Meeting is prepared in English and Russian. In case any contradiction should arise in interpretation, the English text shall prevail.

Annex

List of Attendants

Kubashev Ye.	Ministry of Foreign Affairs of the RK
Khairov	Ministry of Foreign Affairs of the RK
Galimov F.	First Deputy Akim of Astana City
Dosmagambetov B.	Chief Architect of Astana City
Nurpeissov	Management Office of the President
Orazov B.	Capital Development Corporation
Kulushov B.	Ministry of Transport and Communications of the RK
Saudabayev D.	Ministry of Transport and Communications of RK
Erzhanova L.S.	Ministry of Economy of the RK
Dostiarov B.	Ministry of Finances of the RK
Shardarbekov E.	Agency for Investments of the RK
Khashimoto F.	JICA Adviser to the Ministry of Economy of the RK
Kanafin B.	General Director "Astanatelecom"
Yakovleva T.M.	Department of Economy and Small Business Development
Lukinykh	Committee for Water Resources, Ministry of Natural Resources of the RK
Rustambekov S.	DCC "Ak Orda"
Demeuova A	Department of Employment and Social Security of Astana City
Gabdullin Zh.	Committee for Construction Affairs, Ministry of Energy, Industry and Trade of the RK
Ashenov G.	Ishim Basin Water Management Department
Popov V.	President JSC "Karaganda GIIZ & Co"
Kazhibayev V.	OJSC "KEGOC"
Katarbekov Zh.	Deputy Director of Housing Department
Kim T.	Department for Emergency Cases
Kostenko M.	Chief Sanitary Doctor, Head of Sanitary Control Department
Meiramov E.	Head, Territorial Department for Environmental Protection, Ministry of Natural Resources of the RK
Baizhakhanov B.	Head, Department for Transport and Communications
Merkushev V.	Department for Public Utilities Management
Syundikov V.	"Gorvodokanal"
Seitzhanov K.	Fund of Communal Property
Yerezhepov B.	Director, Department of Capital Construction
Honda E.	Deputy Director, First Development Study Division, Social Development Study Department, JICA
Dr.K.Kurokawa	Team Leader, JICA Study team
Yamada K.	Co-Leader, JICA Study Team
Shibata T.	Co-Leader, JICA Study Team

MINUTES OF MEETING

THE STUDY ON THE MASTER PLAN FOR THE DEVELOPMENT OF THE CITY OF ASTANA IN THE REPUBLIC OF KAZAKHSTAN

AGREED UPON
AMONGST
THE MINISTRY OF FOREIGN AFFAIRS,
THE MINISTRY OF ECONOMICS,
THE CAPITAL DEVELOPMENT CORPORATION,
THE CITY OF ASTANA,
AND
THE JAPAN INTERNATIONAL COOPERATION AGENCY

ASTANA,
25th JULY, 2000

S. YESSILOV
Deputy Akim
of Astana City

S. AISAGALIYEVA
Director,
Investment Policy Dept.
Ministry of Economics

V. ZVERKOV,
Director of External
Economic Relations Dept.
Ministry of Foreign Affairs

Dr. Kisho KUROKAWA
Team Leader,
JICA Study Team

Eri HONDA,,
Deputy Director, First Social
Development Study Div
JICA

B. ORAZOV
General Director, Capital
Development Corporation

A meeting to discuss the progress of the Study on the Master Plan for the Development of the City of Astana (the Master Plan Study) and the Feasibility Study for Water Supply and Sewerage (the Feasibility Study) was held on 25 July 2000 at the Conference Room of Astana City. The meeting was attended by representatives from the relevant organizations of Kazakhstan, the Japan International Cooperation Agency (JICA) and the Japanese Study Team.

The major topics in the meeting were (A) Inception Report for the Feasibility Study and (B) Progress of the Formulation of the Master Plan.

The following are the items agreed upon by the concerned parties as represented by the undersigned.

(A) Inception Report for the Feasibility Study

1. The Kazakhstan side basically approved the contents of the Inception Report of the Project.

2. In order to make a more comprehensive and appreciable feasibility study, all the concerned organizations and agencies are requested to provide relevant data and information.

(B) Progress of Master Plan

1. The future land use plan which was prepared by the JICA Study Team at the Progress Meeting in April and modified as per comments received in and after the Meeting, was accepted by the Kazakhstan side. The Kazakhstan side expressed appreciation to the work done by the JICA Study Team.

2. The Kazakhstan side requested JICA that the gas supply plan be prepared under the Master Plan, and the possibility of introduction of incineration be studied as part of the solid waste management plan of the Master Plan. JICA will consider this request.

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3. In order to make a more comprehensive and appreciable Master Plan, all the concerned organizations and agencies are requested to provide relevant data and information.

This Minutes of Meeting is prepared in English and Russian. In case any contradiction should arise in interpretation, the English text shall prevail.

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Annex

List of Attendants

Karapischenko G.	Head, Section, Presidential Operational Office
Baigarin O.	Head, Construction Section Ministry of Foreign Affairs, Department for Diplomatic Missions
Kubashev E.	Department, International & Economic Cooperation, Ministry of Foreign Affairs, RK
Kalymbetov Z.	Referent, Department of International Economic Cooperation Ministry of Foreign Affairs
Kerimbekov A.	Deputy Director of the Department Agency on Investment
Gabdullin Zh.	Head of the Section for Architecture and Urban construction
Abaidildin U.	Head of Section of Amelioration and Water Resources Ministry of Agriculture
Dyisenbaeva G.	Head, Ministry of Finances RK
Arynov E.	Deputy Director, Dpt. on Investment Policy, Ministry of Economy RK
Zharov T.Zh.,	Deputy General Director (economics)RSE "Irtysh-Karaganda Canal"
Irgibayev M	Head , Section, Astana City Akimat
Zhunussov	Deputy Director, Dpt. of Architecture and Urban Planning
Nurkenov Zh.	Manager, Gorvodocanal
Kostenko M.	Head, Sanitary & Epidiological Control Dpt.
Beloussova T.	Ishim Basin Dpt.
Merkushev V.	Deputy Director, Communal Dpt.
Frolov	Gorkommunhoz
Repin N	Chief Engineer Astanagorproject
Pushkin I.	Dpt. of Major Construction
Meiramov E.	Head, Environmental Protection Dpt.
Kukunova K.	Head, Inspection for monument protection
Yakovleva T.	Director, Dpt. for economy and small business
Kalika V.	Deputy Chairman for Land Resources
Suzuki	JICA Adviser
Rustambekov S.	President, "Ak Orda"
Kim S.	Deputy Director, "Astana Su"
Yamada K	Co-Team Leader, M/P JST
Shibata T	Co-Team Leader, M/P JST
Okazaki K.	Co-Team Leader, F/S JST

APPROVED:
Vice-Premier of the GOK
_____D.Akhmetov
"____" _____2000

Terms of Reference
For Master Plan of Astana Development

1	Name of Designing Work	Master Plan for the Development of Astana
2	Basis for Master Plan designing	2.1 Inter-state Agreement signed by the President of the RK and the Prime-Minister of Japan on Dec.8, 1999 in Tokyo 2.2 S/W signed on Oct 5, 1999 2.3 M/M on Inception Report (IR) signed on Feb 9, 2000
3	Customer	Capital Development Corporation (CDC),
4	Master Plan Designer	JICA Study Team composed of 4.1 Kisho Kurokawa architect and associates (KKAA) 4.2 Nippon Koei Co., LTD 4.3 International Development Center of Japan
5	Estimated Periods	Base year 2000 Medium term; 2010 Intermediate term; 2020 Long term; 2030
6	Basic data for designing	
6.1	Topographic & geodesic materials	6.1.1 Topographical maps 1/10,000 compiled in year 1998, modified to the existing situation as of 2000 confirmed by the Agency on Management of Land Resources. 6.1.2 Topographical maps 1/10,000; 1/25,000 or 1/50,000 (as necessary for areas outside of the city area) 6.1.3 Topographical survey 1/2,000 and 1/5,000 for the newly developed area in year 2000 covering - 350ha of a new government city area in 1/2,000 - 800ha of an areas in selected new development areas in 1/5,000
6.2	Engineering survey and Natural Environment	6.2.1 Engineering and geological survey - covering an area under the Master Planning using existing stock of data of customer - covering an area of a new center and its vicinity 6.2.2 Hydrological analysis of Ishim river and Nura River with tributes for the water resources planning, 6.2.3 hydro-geological conditions for designing of engineering protection of territories against floods and underground water drainage. 6.2.4 Water quality sampling and analysis in the Ishim and Nura river basins, at locations; 6.2.5 vegetation (condition of greenery, types, greenery density and system of forestation); 6.2.6 underground water protection 6.2.7 animal life (conditions, species, existence of rare species, constraints); 6.2.8 natural landscape (natural sights for the purpose of establishment of natural reservations); 6.2.9 Production of solid waste, both household and industrial
6.3	Economic basis	6.3.1 Technical and economic conditions on industrial, construction transportation, commercial, service enterprises, 6.3.2 Population: sex/age, social and natural growth, ethnic composition, employment in the sectors of production and services, income, family composition, etc. 6.3.3 Comparative demographic data on the former capital –

		Almaty ; 6.3.4 Characteristics of the existing housing stock and land use condition in order to identify area for reconstruction; 6.3.5 Characteristics of cultural, public, administrative and business institutions; 6.3.6 Characteristics of office and commercial floors by planning regions 6.3.7 Characteristics of recreation sites;
6.4	Present status on land use and planning structure	6.4.1 Population by planning regions 6.4.2 Housing stock by planning regions; 6.4.3 Employment by planning division;
6.5	Status of infrastructures and transportation infrastructure	6.5.1. Sources, facilities and main networks: - Water supply and sewerage; - Underground water drainage; - Storm-water drainage; - Energy supply; - Heat supply - Gas supply - Telecommunications. - Solid waste 6.5.2. Data on transportation types: - Vehicles; - Trolley-buses; - Railway; - Airplane; 6.5.3 Traffic volume, origin and destination survey, preference for modal selection etc.
6.6	Health status of population	6.6.1. Sickness rate in comparison to other cities (statistical data).
6.7	Historical & cultural monuments	6.7.1 List of historical and cultural monuments protected by Government and their analysis.
7.	Work done	7.1. Concept of urban development of the city: - Principal scheme of Akmola development drawn by DCC "Ak Orda" in 1997 - Projects of the International Competition for sketch-idea of Master Plan for New Center Development of Akmola city of 1998. 7.2. Master Plans of City: - Master Plan of Tselinograd, designed by the "Kazgiprograd" Institute in 1987. - Master Plan of Akmola City for the period upto 2015, designed by DCC 'Ak Orda" in 1997 "Analysis of the Present Conditions" - Master Plan of Astana for the period upto 2005 designed by DCC "Ak Orda" in 1998. - Master Plan of Astana, designed by "Saudi Ben Ladin Group" in 1999. 7.3. District planning of Akmola Oblast; 7.4. Development projects of city suburbs; 7.5. Development projects of architectural complexes, squares and main roads; 7.6. Development projects of engineering facilities;
8.	General requirements	
8.1	On norms and methods for designing	8.1.1. To make maximum analysis of and reference to the existing City Master Plan and the normative and legislative documentation and guidelines of the Government of RK. 8.1.2. In designing of concepts of territorial development to consider assessment of engineering and construction

		conditions and planning restrictions.
8.2	On Mid-term	8.2.1. Master Plan shall specify the stage-wise development of the city and corresponding provision of infrastructures. The Mid-term shall cover the years up to 2010, in which the urgent construction area shall be indicated
8.3	On economic basis of the city	8.3.1. As a part of Master Plan to make analytical studies on planning structure, functional city zones and economic resource potential and to give proposals on economic hypothesis of city development. 8.3.2. To make analysis on demographic structure and on population growth.
8.4	On engineering facilities status and engineering provision	8.4.1. Considering engineering and construction conditions relating to "Ground-water Drainage", "Storm-water Drainage" and "Protection against Flood". 8.4.2. To give decisions on stage-wise provision of engineering facilities in respect to all engineering infrastructures listed in item 6.5.1.
8.5	On transport	8.5.1. In the Project, on the basis of analysis of present conditions and concept of territorial development of city and growth of population, proposals on solution on development of street – road network and transport shall be proposed , considering inter-city and intra-city transport, connection to air and rail nodes. 8.5.2 To give proposals on modern surface types of transport. 8.5.3 To give proposals on required land plots for parking area of private vehicles.
8.6	On architectural and planning organization of territories	8.6.1. Proposals on spatial organization of city should be based on present conditions of the urban areas in the city and system-making of the future urban structures (natural, transport, separation, etc.) 8.6.2. Based on existing market-oriented relations and new urban planning conditions to make proposals on perspective development of areas. In working out of these proposals to use modern program and technical means of the project. 8.6.3. In working out proposals on build-up of greenery and organization of recreation for population of the new capital to make decisions on wide use of water body – green axis of the city on the basis of Ishim River. 8.6.4 In the realization of the capital city; take consideration of the symbolic importance of the city as the Capital of RK. 8.6.5. In the Project to make proposals on stable functioning of the city under emergency circumstances. 8.6.6 In selection of area expansion of the city, consider the noise annoyance resulting from the existing airport and its future expansion. 8.6.7. Considering new economic conditions to include in the Master Plan parts on "Financial Strategy" and the "Implementation Program". 8.6.8. To propose actions for the preservation of historical-architectural objects and monuments existing in the city.
8.7	On environment protection	8.7.1. To make Environmental Impact Assessment in accordance with guidelines of Standards and Norms of the RK 03.02.01-1993.
8.8	On household and industrial wastes	8.8.1. To give proposal on methods of waste collection, transportation and treatment.
9	Additional requirements	9.1 For the 1st phase of development, to make planning project of the new center and its vicinity at scale 1:2000.
10	Project contents	10.1 The project contents shall be compiled as Final Report of the Project with all the analysis of the existing conditions, analysis of alternatives and formulated plans for the estimated period.

11	Procedure of approval	The Master Plan shall pass expertise under the support of the CDC and shall be agreed upon with the concerned bodies as per the presented list of the customer and be approved by the GOK.
12	Other terms	Terms of Reference during designing period could be clarified and added as per the content of the Kazak and Japanese sides.
13	Period of Completion	In accordance with schedule starting in February 2000 to March 2001.

Customer:

General Director, Capital Development Corporation _____ B.Orazov

Agreed upon:
Minister of Natural Resources and Environmental Protection of the RK _____ S. Daukeev

Chairman, Committee on Construction Affairs, Ministry of Energy, Industry and Trade of the RK _____ Sh. Shardarbekov

Akim, Astana City _____ A. Dzhaksybekov

Department of Architecture and Urban Planning of Astana City _____ B.Dosmagambetov

Master Plan Designer (Japan):

JICA Study Team _____ K.Kurokawa

MINUTES
Of Public Discussion Held in the Union of Architects on the "Master Plan of the City of Astana" Developed by the JICA Study Team

27th September, 2000

Chaired by: President of the Union of Architects of RK – Rustembekov A.I.

Recorded by: Organizational Secretary of the Union of Architects - Anikina G.N.

Almaty, Kazybek Bi Str., 39
Architects' House

Participants from JICA Study Team:

1. Mr. Kisho Kurokawa — JICA Study Team Leader
2. Mr. Koji Yamada — JICA Study Team Co-Leader

Participants from Kazakhstan side:

1. Rustembekov A.I. - President of the Union of Architects of RK;
2. Martemyanov S.N. - Vice-President of AA of RK;
3. Katsev V.Z. - Honored Architect of RK;
4. Kapanov A.K. - Honored Architect of RK;
5. Kim V.N. - Honored Architect of RK;
6. Valikhanov Sh.I. - Honored Architect of RK;
7. Zhaksylykov M.F. - Honored Architect of RK;
8. Petrova A.A. - Honored Architect of RK;
9. Rustambekov S.I. - Chairman of the Union of Architects' branch in Astana, Honored Architect of RK, Corresponding Member of International Academy of East Countries Architecture;
10. Zhunusov T.Zh. - Honored Architect of RK, Academician;
11. Zhandauletov MO,. - Corresponding Member of International Academy of Eastern Countries Architecture;
12. Montakhayev K.Zh. - Honored Architect of RK, Full Member of International Academy of East Countries Architecture, Academician;
13. Balykbaev O. - Honored Architect of RK;
14. Abilov A.Zh. - Professor of Kazakh State Architectural-Urban Planning Academy;
15. Abdrasilova G. - Head of Department of Kazakh State Architectural-Urban Planning Academy;
16. Izbasarova M.R. - Assistant Professor of Kazakh State Architectural-Urban Planning Academy;
17. Mataybekov Sh. - Laureate of World Triennial of Architects in 2000 in Sofia;
18. Torekulov T. - Chief Editor of the "Kumbez" Magazine (architecture, space, time);
19. Sanpilov A. - Chief Editor of the "Exclusive Design" Magazine;
20. Ordabayev A.B. - Vice-President of the Association of Designers of RK;
21. Kokhanovich V. - Honored Architect of RK;
22. Vulpe D.O. - Representative of the Union of Architects of RK in Moscow (Russia);

23. Orazbekov M.O. - Deputy Chairman of Almaty branch of the Union of Architects of RK;
24. Bazarbayev S.O. - Executive Director of "AS-75" Company;
25. Zhakipbayev M. - Architect;
26. Abubakirov Ye.A. - Architect;
27. Abilda T. - Director of Workshop of JSC "Giprogor";
28. Vasyakin Ye.A. - Architect;
29. Mukanov N.A. - Director of "SKS" L.L.C.;
30. Yusupov Sh. - Director of Creative Workshop of JSC "Giprogor";
31. Ibrayev B.A. - Honored Architect of RK, Real Member of International Academy of East Countries Architecture;
32. Aitbalayev Zh. - General Director of "Alua" L.L.C., Architect;
33. Pereboyev V. - Director of AV "Designer" L.L.C., Architect;
34. Gorokhov M.D. - Director of TPA "Kvant-1";
35. Dosmagambetov T.S. - Honored Cultural Worker of RK, Laureate of National Award of the USSR, sculptor;
36. Abenov A. - Architect;
37. Agitayev S. - Member of methodic Council of the Committee of Culture, Architect;
38. Tonn A. - Architect;
39. Rustambekov S.S. - Architect;
40. Timchenko G.N. - Architect;
41. Saumenov A. - Architect of JSC "Almatygiprogor", Laureate of the World Biennial, Architect;
42. Karapetyan Yu.K. - Leader of Creative Workshop of the Union of Architects of RK;
43. Yessenbayev K.N. - Architect;
44. Falkov D.E. - Director of "Tangrif" L.L.C.;
45. Marshanskaya N. - Architect;
46. Praliyev Zh. - Architect;
47. Bukibayeva G. - Architect;
48. Hodzhikov V. - Architect;
and others.

D-r Kurokawa introduced the report "Main Ideas and Creative Principles of the Development of the Master Plan of the City of Astana".

The following participants took part in the discussion:
1. Valikhanov Sh.I.
2. Kapanov A.K.
3. Rustembekov A.I.
4. Katsev V.Z.
5. Zhunusov T.Zh.

After consideration of the presented materials and exchange of the opinions the Union of Architects of RK has made a **RESOLUTION:**

1. To approve the creative ideas and principles for the development of the Master Plan of the City of Astana;

2. To agree with the principal solutions for the planning structure and territory zoning;
3. To recommend the Official State Expertise to take into consideration the resolutions of the present discussion at time of examination of the master Plan Project.

Chairman of the meeting **Rustembekov A.I.**

Secretary of the meeting **Anikina G.N.**

MINUTES

of discussion on the concept of new Administrative & Business Center of Astana City, presented by JICA Study Team headed by K. Kurokawa

Astana City 1 October, 2000

Attendants:

Dosmukhanbetov T.M.	Head of Presidential Administration of RK
Galimov F.K.	First Deputy Mayor of Astana City
Kurokawa K.	JICA Study Team Leader
Yamada K.	Deputy Team Leader of JICA Study Team
Laptev V.A.	in charge of the Director of the Department of Architecture and Urban Planning, the Chief Architect of Astana City
Rustambekov S.I.	The Chairman of the City Organization of Architect Union of Kazakhstan in Astana, the President of OSC "Orta"
Zhunusov S.I.	Deputy Chief Architect of Astana
Chikanaev A.S.	Professor of Architecture and Design Department of Eurasia University
Kaparov S.K.	Architect, First Deputy General Director of Joint Fund "Motiv-Akmola"
Orazov B.	General Director of CSC "CDC"
Iskakov T.I.	Head of the Department of Construction of the Presidential Administration Office

To agree with the Conceptual Scheme of the new center of Astana City, proposed by JICA Study Team.

To note that the tenders have been held and nowadays design and preparatory construction works on a number of facilities in the new city center are carried out under the current Master Plan of the city. It includes roads #1 and #2 with a complete set of engineering infrastructure facilities. These facilities are necessary for sustainable development of priority facilities in the new center, buildings of Senate of the Parliament, Ministry of Defense, Ministry of Foreign Affairs, Ministry of Transport and Communications, KazakhOil, KazTransOil, People's Bank, complex of Diplomatic City, complex of residential area located between the existing road to the airport and newly laid, on the extension of Sary-Arka Street, highway, southward of Korgalginsky Highway, and others. All the necessary fundamental decisions on engineering provision of the new center have been made.

Draft sketch of the new city center development proposed by the JICA Study Team will have a substantial effect upon implementation of the plans on the territory development.

Considering the newly appeared circumstances, the following documents are to be elaborated and submitted for approval to the Department of Architecture and Urban Planning of Astana City by the end of October of the current year:

- Pre-design proposal on location of the Presidential Residence on the left bank and the right bank of Ishim River along with solutions for engineering and transport infrastructure provision, flood protection and relief elevation of the Presidential Residence' territory as well as its adjacent areas;
- Pre-design proposal on provision of the new city center by engineering infrastructure considering all works implemented so far;
- Pre-design proposal on relief elevation of the new city center;
- Pre-design proposal on location of the first priority facilities listed in the attachment of the Minutes herewith;
- Pre-design proposal on color solution in respect to front of facilities in the new city center.

The earlier implemented works on actual development of the new city center are to be considered when elaborating the above mentioned proposals.

(Signatures)
Dosmukhanbetov T.M.
Galimov F.K.
Kurokawa K.
Yamada K.
Laptev V.A.
Rustambekov S.I.
Zhunusov S.I.
Chikanaev A.S.
Kaparov S.K.
Orazov B.
Iskakov T.I.

PRESIDENT
OF THE REPUBLIC
OF KAZAKHSTAN

Attention: **D.K. Akhmetov**
A.R. Zholshibekov
T.M. Dosmukhanbetov

Integrated construction policy in Astana City is to be provided based on the present document

N.A. Nazarbayev

«4» October 2000
No. 4029

Re: Minutes of discussion on the concept of the new administrative & business center of Astana City dated 01/10/00.

Republic of Kazakhstan

Construction Committee
Ministry of Energy, Industry and Trade
Raionny Str. 15/1, Astana City 473000
Tel: 34-62-73
Fax: (3172) 34-62-84

No. ШШ-05-1-938 as of November 23, 2000

To: Mr. Okazaki
Leader of the F/S Team
in Astana City

The Construction Committee under the Ministry of Energy, Industry and Trade of RK, having looked through the submitted additional materials concerning water use rates for Astana City, informs you of the following.

Your proposed revised water use rates, which include water consumption for household-drinking needs, water consumption by commercial and public organizations, are within the framework of the standard requirements SNiP 2.04.02-84 "Water supply. Surface nets and facilities".

Taking into account the aforesaid, we think that there is no need for co-ordination of the above-mentioned water use rates with the Construction Committee.

Chairman Shardarbek Sh.

Republic of Kazakhstan
Astana City
State Enterprise "Astana Su Arnasy"
Abai Avenue 229, Astana City 474021,
Tel: 34-12-13

To: Mr. Okazaki K.
Leader of the F/S Team
for the project of "Water supply and sewerage"

Municipal State Enterprise "Astana Su Arnasy" has already looked through the additional materials (№ FAS-00-67) submitted on November 14, 2000 regarding water demand rates proposed by the F/S Team.

Taking into account that the revised water consumption rates include domestic water consumption, water consumption by commercial and public enterprises and correspond to the requirements of construction norms and regulations (SNiP) 2.04.02-84 "Water supply. Distribution network and facilities", State Enterprise "Astana Su Arnasy" considers that it is reasonable to apply the rates during the implementation of the feasibility study.

General Director Nurkenov Z.E.

Executor: Syundyukov V.

MINUTES OF MEETING

THE STUDY ON THE MASTER PLAN FOR THE DEVELOPMENT OF THE CITY OF ASTANA IN THE REPUBLIC OF KAZAKHSTAN

AGREED UPON
AMONGST
THE MINISTRY OF FOREIGN AFFAIRS,
THE MINISTRY OF ECONOMICS,
THE CAPITAL DEVELOPMENT CORPORATION,
THE CITY OF ASTANA,
AND
THE JAPAN INTERNATIONAL COOPERATION AGENCY

ASTANA,
30 NOVEMBER 2000

S. GALIMOV
First Deputy Akim
of Astana City

B. BAISHEV
Director,
Investment Policy Department,
Ministry of Economics

M. TASHIBAYEV
Acting Director,
External Economic
Relations Department,
Ministry of Foreign Affairs

Dr. Kisho KUROKAWA
Team Leader,
JICA Study Team

Eri HONDA,
Deputy Director, First Social
Development Study Division,
JICA

B. ORAZOV
General Director,
Capital Development
Corporation

A meeting to discuss the Interim Report for the Study on the Master Plan for the Development of the City of Astana (the Master Plan Study was held on 30th November 2000 at the Astana Su Arnasy in the Astana City. The meeting was participated by representatives from the relevant organizations of Kazakhstan, the Japan International Cooperation Agency (JICA) and the JICA Study Team.

The following are the items agreed upon by the concerned parties as represented by the undersigned.

1. The contents of the Interim Report were basically approved by the Kazakhstan side. The comments and opinions expressed in the Meeting shall be duly considered in the course of the Study and be integrated in the Draft Final Report scheduled for submission in March 2001.

2. Kazakhstan side basically approved the District Plan prepared by the Study Team for the new Government and Business Centers on the left bank of the Ishim River, based on the Instruction by the President of RK. Efforts shall be made to minimize the modifications on the infrastructures designs and tender works already committed by Astana City.

3. The Kazakhstan side informed JICA that the city boundary has been expanded from the old boundary (258 km^2) to the new one (710 km^2) by a Government Decree issued and effectuated in August 2000. The Study Area of Master Plan stipulated in the Scope of Work, therefore, needs to be changed to the new boundary. JICA will consider this request.

4. In order to make a more comprehensive and appreciable Master Plan, all the concerned organizations and agencies are once again requested to provide relevant data and information.

This Minutes of Meeting is prepared in English and Russian. In case any contradiction should arise in interpretation, the English text shall prevail.

TRANSLATION

MINUTES

Of Meeting on discussion of the draft project of Astana new center development On the left bank of Ishim river

Astana City **1st December, 2000**

Participants from Kazakhstan side:

Laptev V. – Director of the Department of Architecture and Urban Planning
Dosmagambetov B. – Director of the State Enterprise "Astanagenplan"
Orazov B. – General Director of CDC

Participants from the side of JICA Study Team:

Yamada K. – Co-Leader of JICA Study Team on Master Plan of Astana City development
Okazaki K. – Co-Leader of Feasibility Study Team on water supply and sewerage

Having considered the draft project of the new city center presented by JICA Study Team and having exchange the opinions, it's been decided:

1. To agree with the Conceptual Scheme of the new center of Astana City, proposed by JICA Study Team;
2. To place the President's Residence on the left bank of Ishim River;
3. To take notice of the announcement of JICA Study Team to agree with the new center engineering infrastructure projects designed earlier by municipal organizations and to consider them in further work;
4. To accept ground elevation, designed by the city, with respect to tendered streets #1 and #2 and adjacent blocks considering flood protection and Ishim riverbed improvement measures being recently undertaken by the city municipality;
5. To locate the Ministry of Foreign Affairs and Ministry of Defense within the proposed Green Belt on condition that the continuation of the Green Belt proposed and agreed upon by the both parties will be guaranteed. As for the Circle District it will pertain to the competency of the designer and will be settled during the next stage of detailed design;
6. To accept the concept of the Color Management Plan of the new City Center. In the implementation of the plan consideration needs to be made for specific large buildings.

From Kazakhstan side

Laptev V.

Dosmagambetov B.

Orazov B.

From JICA Study Team

Yamada K.

Okazaki K.

TRANSLATION

DECREE
OF THE GOVERNMENT OF THE REPUBLIC OF KAZAKHSTAN

dated: " 9 " January 2001
No. 23
copy No. _____

On Some Aspects of the Master Plan for the Development of Astana City

In order to provide the integrated policy for urban planning of the City of Astana and due to commencement of active development of new territories on the left bank of the Ishim River, the Government of the Republic of Kazakhstan ENACTS:

1. To approve basic decisions of the Draft Master Plan and Feasibility Study for water supply and sewerage systems development projects of Astana City developed by JICA Study Team.

2. For the Ministry of Finance together with the Ministry of Economy and Trade of the Republic of Kazakhstan and CSC "Capital Development Corporation" (on concordance) to take proper measures for holding negotiations with the Japan Bank of International Cooperation (JBIC) in order to obtain special Yen loan for implementation of the project on water supply and sewerage systems development in Astana City.

3. The present Decree comes into force from the day of its signing.

Prime-Minister
of the Republic of Kazakhstan K. Tokaev

Serial No. 0028915

AGREEMENT

The Ishim Basin Water Management Department(IBWMD) and JICA Study Team(JST) on "Master Plan for the Development of the City of Astana" had series of discussion on water resources, flood control and water supply of Master Plan (refer to letter of Ishim Basin Water Management Department dated 8th January, 2001). The both parties agreed on the following items.

1. Water Resources

   JST changed the water balance of the Ishim River, following the appropriate comment from IBWMD. Estimates of water loss had been increased by including infiltration. The sanitary flow in the Ishim River include necessary water to cover the water requirement for the areas downstream of Astana for consumption. Reflecting this change, necessity and urgency of the Irtysh-Karaganda Canal was enhanced.

2. Flood Protection

   JSTam adopted the basic principles indicated by IBWMD, and revised the flood protection plan with three major components as follows; (i) flood regulation in Vyacheslavsky reservoir, (ii) temporary storage in the low lying area upstream of Astana City, and (iii) river improvement in Astana City.

3. Water Demand Projection

   JST (both Master Plan and Feasibility Study) explained the procedure of water demand projection, which considered both SNiP and actual water use in Astana, and the estimated water demand. As this estimation had been accepted by both Construction Committee and Astana Su Arnasy, no substantial change has been made.

4. Progress Report (2)

   All the above changes are explained in Progress Report (2) to be discussed on 29th January, based on the items above. Both JST and IBWMD have no disagreement on major points as clarified in the above..

25th January 2001

Ishim Basin Water Management Department

Ashenov G. , Director

JICA Study Team on "Master Plan for the Development of the City of Astana"

Koji Yamada, Deputy Team Leader

MINUTES OF MEETING

THE STUDY ON THE MASTER PLAN FOR THE DEVELOPMENT OF THE CITY OF ASTANA IN THE REPUBLIC OF KAZAKHSTAN

AGREED UPON
AMONGST
THE MINISTRY OF FOREIGN AFFAIRS,
THE MINISTRY OF ECONOMICS AND TRADE,
THE CAPITAL DEVELOPMENT CORPORATION,
THE CITY OF ASTANA,
AND
THE JAPAN INTERNATIONAL COOPERATION AGENCY

ASTANA,
29th JANUARY, 2001

S. YESSILOV
First Deputy Akim
of Astana City

B. BAISHEV
Director,
Investment Policy Dept.
Ministry of Economics

M. TASHIBAEV
Director in charge of
Dept. of Economic Policy.
Ministry of Foreign Affairs

Dr. Kisho KUROKAWA
Team Leader,
JICA Study Team

Eri HONDA,
Deputy Director, First Social
Development Study Div
JICA

B. ORAZOV
General Director, Capital
Development Corporation

A meeting to discuss the Progress (II) Report for the Study on the Master Plan for the Development of the City of Astana (the Master Plan) was held on 29th January 2001 at the Intercontinental Hotel, Astana. The meeting was participated by representatives from the relevant organizations of Kazakhstan, the Japan International Cooperation Agency (JICA) and the JICA Study Team.

The following are the items agreed upon by the concerned parties as represented by the undersigned.

1. The contents of the Progress (II) Report were basically approved of by the Kazakhstan side. The comments and opinion expressed in the Meeting shall be duly considered in the course of the Study and be integrated in the Draft Final Report scheduled for submission in March 2001.

2. Kazakhstan side basically approved the District Plan prepared by the Study Team for the new government and business center of the left bank of the Ishim River, following the Instruction by President of RK on 1st November, 2000, and the Minutes of Meeting agreed upon and signed by the Study Team and Municipality on 1st December, 2000.

This Minutes of Meeting is prepared in English and Russian. In case any contradiction should arise in interpretation, the English text shall prevail.

ORDER
OF THE PRIME-MINISTER OF THE REPUBLIC OF KAZAKHSTAN

April 11, 2001
No 22-p

On creation of the Working Group on consideration of the Draft Master Plan For the Development of the City of Astana

With the purpose of considering the Draft Master Plan for the Development of the City of Astana formulated by the JICA Study Team, I instruct as follows:

1. To form a working group on review of the Draft Master Plan for the development of Astana City and preparation of the experts' conclusion (hereinafter referred as "working group") which will consist of members specified in the annex.

2. To permit the working group together with RSE "State Expertise" of the Construction Committee under the Ministry of Economy and Trade of the Republic of Kazakhstan to engage key scientists and specialists of research organizations, enterprises and also foreign experts in the review of separate issues and sections of the Draft Master Plan, if it is required.

3. Central and local executive bodies should render assistance to the working group in its work on consideration of the Draft Master Plan for the development of Astana City.

First Deputy Prime Minister Achmetov D.

Annex
to the order
of the Prime-Minister of RK
dated as April 11, 2001 Ref. No. 22-p

Members of the working group
on review of the Draft Master Plan for the development of Astana City

1. Shardarbek Sharipbek Shardarbekovich	- Chairman of the Construction Committee under the Ministry of Economy and Trade of RK, Leader
2. Bekmukhambetov Serik Kiirbaevich	- Head of the Department of the Construction Committee under the Ministry of Economy and Trade of RK, Deputy Leader
3. Kokoev Vitaly Vladimirovich	- General director of RSE "State Expertise", Deputy Leader
4. Laptev Vladimir Alexandrovich	- Chief Architect of Astana City, Deputy Leader
5. Baishev Berik Kairatovich	- Head of the Investment Policy Department under the Ministry of Economy and Trade of RK
6. Meiramov Esengeldy Akimovich	- Head of the Local Territorial Department of Environmental Protection
7. Rustambekov Akmyrza Isaevich	- President of the Union of Architects in Kazakhstan (after coordination)
8. Bocharov Yurii Petrovich	- Academician of the Russian Academy of Architecture and Construction (RAAC), Doctor of Architecture, Professor (after coordination)
9. Neustroev Konstantin Fyodorovich	- Head of "Ekograd" Central Research Institute of Designing and Urban Planning (Moscow City), Candidate of Architecture Science, Professor (after coordination)
10. Nauryzbaev Kamal Sagimbekovich	- Head of SC "Almatygenplan" (after coordination)

11. Mametov Arkinzhan Achmetovich	- Head of CSC "Urban Planning Center" (after coordination)
12. Gorshtein Fredii Avramovich	- President of SC "Karaganda Promstroiproject", Candidate of Engineering Sciences" (after coordination)
13. Popov Victor Nikitovich	- President of OSC "Karaganda GIIZ", Candidate of Engineering Sciences (after coordination)
14. Tastanbekov Akylbek Tastanbekovich	- Secretary of RSE "State Expertise", Secretary of the group.

Ministry of Natural Resources and Environment Protection
Of the Republic of Kazakhstan

ENVIRONMENT PROTECTION COMMITTEE

475000, Akmola Province, the city of Kokshetau, Satpaev St. 1
tel: (31622) 5-54-10, fax: (31622) 5-06-20

14 May, 2001
Ref. No 09-1139

To: City Development Corporation

CONCLUSION OF STATE ECOLOGICAL EXPERTISE WITH REGARD TO THE MASTER PLAN FOR THE DEVELOPMENT OF THE CITY OF ASTANA – CAPITAL OF THE REPUBLIC OF KAZAKHSTAN

The following documentation related to the Master Plan for the Development of the city of Astana was submitted for state ecological expertise by the JICA Study Team and the City Development Corporation:

1. Main Report, Volume – I;
2. Section "Environmental Impact Assessment", Volume – I;
3. Album of Drawings, Volume – I;
4. Attachment, Volume III "Assessment of Air Pollution Impact of Industrial Enterprises and Transport:
   - Book 1- Existing Conditions
   - Book 2 – 2010;
   - Book 3 – 2030.

The grounds of conducting the Study is the agreement and approval of the basic plan and scope of work on the Master Plan between the Government of Japan and the Government of Kazakhstan.

The following R&D institutions and design companies have participated in the development of certain sections of EIA: OJSC "Orta", KazNIPlenergoprom, Institute for Hydrological Sciences named after Satpaev K. I., Almatygenplan, ect.

The purposes of the Study on the Master Plan for the development of the city of Astana in the Republic of Kazakhstan are as follows:

- formulation of the Master Plan for the development of the city of Astana up to the year 2030 aimed at providing conditions for capital development and improvement of living standards of the city population;
- conducting Feasibility Study on the priority project within the Master Plan Study – water supply and sewerage project;
- enhancement of institutional framework of both central and city governments through introduction of the new technologies in the course of the Study.

In accordance with the Decree of the President of the Republic of Kazakhstan dated August 8, 2001, the administrative boundaries of the city have been changed, i.e. the territory of Astana city has extended up to 710 km^2 and now it includes the part of Tselinogradski and Shortandinski rayons with the total area 452 km^2. The scope of the Study has been adjusted accordingly.

The development of the current Master Plan was initially assigned by the City Municipality to the Arabian company – Saudi Bin Laden which was approved by the ROK Government in February 2000 with some amendments to be maid thereto. That Master Plan served a basis for the development of the present MP. The New City Center plan was reviewed based on the decisions taken in both Master Plans. The land use plan proposed by the JICA Study Team was approved.

The submitted Report "The Study on the Master Plan for the Development of the city of Astana" contains 9 Chapters, of which Chapter 6 describes the main environmental aspects in conjunction with the development of the city of Astana, as well as provides preliminary assessment of the environment impact of the works proposed under the project. This aspect will be elaborated in more details in the Final Report.

Environmental Impact Assessment

Air pollution

Air pollution is mainly caused by Thermal Plants 1 and 2 of OJSC "Astanaenergoservise". Less pollution is caused by boiling houses. As of December 1, 1999, the number of autonomous heating systems is 31, including 13 in "Almaty" district and 18 – in "Saryarka" district.

Cars effluent also contributes greatly to air pollution. The number of cars in the city increases extensively. The light traffic volume has increased for more than 1, 44 times and the total number of registered cars comprised 29 357 vehicles.

The basic city transport network to be developed in the period up to 2030, involves the following projects:

- Construction of Ring Road;
- Finalizing the construction of the northern part of bypass ring road;
- Construction of roads to serve new residential districts on the Left Bank the Ishim River and proposed industrial areas on the north;
- Construction of roads to serve the Business City;
- Improvement of roads in the existing undeveloped districts of the city;
- Construction of LTR route in the new residential areas;
- Construction of multifunctional terminal on the territory of International Exhibition Center;
- Finalizing the construction of the southern part of the bypass ring road;
- Construction of the road to connect the bypass ring roads in/outside the city;
- Construction of LTR route (ring route along the bypass road), including elevated intersections;
- Construction of multifunctional terminal on Abylai-Khan Avenue.

The following enterprises have the most significant impact on the atmospheric pollution: SC "Astana-Technopark", LLC "Nysana", Locomotive Depot, LLC "Sagzhan", OSC "Tselidorstroi", SE "Turmys", SC "Akmola Munai Onimderi", Akmola-Astyk Trust, SC "Akmola Zholdary", Passenger Depot (Station), LLC "Zhanar", OSC "Akmolastroi", Akmola Wagon Depot, LLC "Zhana-zhol", LLC "Sagalar", Municipal Department "Zarechnyi", OSC "Hotel – Astana", Astana International Airport. Disorganized sources of the atmospheric pollution are the City MSW landfill, sludge drying beds at the Wastewater Treatment Plant, sand and crushed stone quarry.
The assessment of the air environment in the City of Astana was carried out on the basis of the calculation method in terms of initial data on the parameters of the sources submitted by different branch institutions. The pollution of the atmosphere in the City of Astana exceeds hygienic maximum permissible concentrations applied for settlements in the emissions of all the branches: industry, heat and power engineering and autotransport.

In accordance with the Master Plan concept it is proposed:
1. to provide a new gas firing turbine combined cycle plant of 150 MW output at TETs-1 (2010-2011);
2. to construct a new conventional coal firing boiler of 420 tons/hour and 150 MW output;
3. to construct three new heat centers at the district areas of the left bank of the Ishim River with the following output for the year 2010:
   HC-1 – 60 Gcal/hour
   HC-2 – 80 Gcal/hour
   HC-3 – 25 Gcal/hour

All the existing heat centers in the districts planned to be provided with gas supply in 2010-2011 (mainly industrial zone and south-east area of the City up to the Sofievskoe highway) will be transferred to gas firing.

The following issues should be included into the plan of atmospheric pollution protection:
- High control of the efficiency of the facilities for removal of pollutants from gas, prevention and quick elimination of accidents.
- Not less than 50 m buffer zone should be established between the residential area and industrial zone. For this purpose it is necessary to use greenery plantation constructing boulevards, public gardens, parks and forest parks.
- Summarized report on Maximum Permissible emission should be developed.
- Problem of the offensive odour generating from the sewage treatment facilities should be solved.

The fixed measures on the atmospheric pollution reduction are as follows:
- Construction of the by-pass (ring) highway around the city for the removal of transit transport
- Introduction of green traffic flow on the major roads
- Improvement of the method of control of the technical conditions of vehicles, quality of the road covering

- Quality improvement of the city development and planting of greenery on the streets
- Construction of road fly-over at different levels, increasing of passenger traffic at the electric public transport
- Construction of Cargo Terminal in the northern buffer zone, removal of unloading and warehouse facilities from other territories

For the long-term period it is proposed to relocate the industrial enterprises out of the city area and to shut down the detrimental industries. Agricultural engineering enterprises should be transferred to assembling of the machinery and equipment and supply of parts from the adjacent regions.
It is necessary to have a network of ambient air pollution observation stations for the objective evaluation of the city atmosphere. During the monitoring special attention should be paid to the atmosphere quality on the major roads with big traffic intensity.

Unconventional method of additional power supply using wind-power generating plant was proposed in the Master Plan. In this regard it is recommended to reserve the required area for the possible location of this plant.

Noise
In this section the values of the existing and projected noise from the transport flows on the road network, railway junctions and the International Airport of the City of Astana were determined for the target periods. A noise map was prepared for the assessment of the existing and projected noise levels. The following recommendations on reduction of noise to the standard level were given on the basis of the noise condition of the city territory:

- Planting of deciduous tree species for noise reduction on the main streets
- Establishment of the car parking system with big lots and garages outside the central and residential area
- Possible extension of the area between the major roads for the relocation of the development area from the roads
- Organization of freight transportation from the freight terminal to the residential area using vehicles with the carrying capacity of 15 tons
- If it is required the construction of multi-storey buildings that will serve for provision for acoustical comfort for the residents and reduction of noise impact on the territories located between them.
- Additional measures on acoustic protection for windows of the buildings located from 22 to 60m
- Separate railway stations (passenger and freight). In thin connection a new Fright Terminal was proposed.
- Construction of noise protecting reinforced concrete structures that will allow to reduce the noise level to 15-20 decibels.
- Changing of the conditions of airplane take-off and landing: special piloting system, night flight limitation, prohibition of flights over settlements, use of modern noiseless airplanes.

Surface water
At present there are no big pollution sources on the Ishim River basin with the surrounding area. First of all, it is connected with the drastic setback in production

and division of the former big agricultural enterprises into small farms that led to suspension of industrial and agricultural production output.
Industrial enterprises do not discharge wastewater into water bodies and waterways on their own. All the wastewater is collected by the City sewage system. Sewage is discharged into the Taldy Kol Reservoir. Contamination of surface water can take place if polluted water of the reservoir is drained through its floor and dike to the direction of the floodplain river.
Other potential sources of surface water contamination are ash disposal site at TETs-1 and TETs-2 and MSW landfill.
For the short term part of water flow of Irtysh-Karaganda Canal transferred to the upstream of the Ishim River will be used as an additional source for water supply of the City of Astana.
City sewage treatment system at the wastewater treatment plant was adopted in the Master Plan and EIA Section:

- improvement of treatment technologies
- natural treatment cleaning ability of the Taldy Kol Reservoir
- system of water bodies on the low floodplain of the Ishim River
- rehabilitation of the previous water level in the swampy area around the Taldy Kol Reservoir after water level recession in the reservoir, next melioration measure is planting of water resistant trees.
- Master Plan provides for the measures on the mitigation of negative impact on river flows.

Groundwater
Four main potential permanent sources of groundwater contamination are located within the city territory. These sources are ash disposal sites at TETs-1 and TETs-2, Taldy Kol Reservoir and MWS landfill. At present water supply of the capital is based only on surface water. However, in future use of groundwater is considered reasonable.
The present results of the analyses show that groundwater quality complies with the requirements of GOST "Drinking water", except for bromine and iron.
The following measures on the reduction of groundwater contamination were proposed:

- waterproofing of the quarry bottom and walls
- construction of drainage branch ducts
- construction of the reservoir for sewage and supernatant collection
- construction of venting manhole
- supply of technical (special equipment washing) and drinking water
- monitoring of groundwater, especially groundwater wells
- construction of the drainage system for the sewage collection.

Conclusion
The requirements of the Laws of the Republic of Kazakhstan "On Environmental Protection" and "On Ecological Expertise", the requirements of SNiP B.1-7-97 "Instruction on the procedure, coordination and approval of the urban planning project in the ROK" were taken into consideration in the Master Plan for the development of the City of Astana.
Section of EIA and environmental protection comply with "Tentative instruction on the assessment of impact of planned activities on the environment (EIA) in the ROK" (RND 03.02.01-93).

On the basis of the above mentioned State Ecological Expertise APPROVES the Master Plan for the Development of the City of Astana developed by the Japanese International Cooperation Agency and Capital Development Corporation of the City of Astana.

In accordance with the environmental regulation of the Republic of Kazakhstan, the Feasibility Study and Technical and Economic Calculation (construction of treatment facilities, roads, reconstruction of the International Airport, MSW landfill, hospital waste utilization facilities, reclamation works, planting of greenery, etc.) stipulated in the Master Plan for the development of the City of Astana should be submitted to State Ecological Expertise.

Chief expert of the State Ecological Expertise
Of the Republic of Kazakhstan — Keremkulov V.

Dzhumadildaev A.
(316-22) 5-54-10, 5-42-42

TO APPROVE:

The Deputy Leader of Working Group
Head of Department of Architecture and
Urban Planning of the Construction Committee
of the Ministry of Economy and Trade
of the Republic of Kazakhstan

Bekmukhambetov S.

SUMMARY CONCLUSION

of overall urban planning expertise
No 2-114/2001 dated May 14, 2001

On the Project
"Master Plan for the Development of the city of Astana"

The Author: Study Team of Japanese International Cooperation Agency (JICA),
Kisho Kurokawa Architect & Associates" (KKAA),
Nippon Koei Co., LLD,
International Development Center of Japan

Customer: City Development Corporation (CDC)

Astana

SUMMARY CONCLUSION
Of the overall urban planning expertise of the Draft Master Plan for the Development of the city of Astana

The overall urban planning expertise of the Draft Master Plan for the Development of the city of Astana worked out by JICA Study Team has been carried out based on the Resolution of the ROK Government No 22 – p dated April 11, 2001.

The Draft Master Plan for the Development of the city of Astana was worked out in 2001 based on the International Agreement signed by the ROK President and the Prime-Minister of Japan on December 8, 1999 in Tokyo. The Instruction on the development of the Master Plan was approved by the Government on July 27, 2000. The Customer of the Project is "City Development Corporation" (hereafter referred to as CDC).

The following target years have been established: starting period – 2000, mid-term period – 2010, long-term period – 2020 and ultimate term – 2030.

In the course of developing the Master Plan, the decisions thereon have been discussed and approved by the following agencies:

- The Resolution of the Government of the Republic of Kazakhstan No 23 dated January 9, 2000 on Approval of Key Decisions of the Master Plan and Feasibility Study on Water Supply and Sewerage;
- The Ministry of Foreign Affairs of the Republic of Kazakhstan , CDC, Akim of the city of Astana (Memoranda of joint sessions dated February 9, 2000, April 14, 2000 and January 29, 2001);
- The Union of Architects of the Republic of Kazakhstan (Memorandum of public hearings dated September 27, 2000);
- Administration of the President of the Republic of Kazakhstan with participation of relevant ministries and agencies (Memorandum dated October 1, 2000);
- The Union of Architects of the Republic of Kazakhstan (Memorandum of joint meeting dated May 11, 2001);
- The Ministry of Natural Resources and Environment Preservation of the Republic of Kazakhstan (conclusion of State Ecological Expertise of the Master Plan for the Development of the city of Astana – the capital of the Republic of Kazakhstan, No 09-1139 dated May 14, 2001).

The following MP texts and drawings were submitted for the State Expertise:

- The Study on the Master Plan for the Development of the city of Astana – Main Report (1 Volume);
- Drawings and Plans – the Drawings Album.

The composition and the contents of the material submitted differs slightly from the similar documentation developed in accordance with the established standards approved in the Republic of Kazakhstan and, therefore, the State Expertise considered it in accordance with the contents of the Main Report.

1. THE PURPOSES OF THE STUDY

2. Social and Economical Development Plan

The authors of MP have conducted a deep analysis of economical situation of the Republic of Kazakhstan starting from 1991, as well as described the reasons of capital transfer.

The sub-section "Population Forecast and Economy Development", the indications of current and perspective economic development are specified. The forecast was made based on comparison of alternatives by certain sectors of city industries in conjunction with the city future economic development. Particularly, it is noted that the population increase is closely interrelated with the economical conditions, as the development of economy provides employment possibilities for the population. Therefore, we share the authors' point of view with regard this issue.

The population forecast is developed based on the two alternatives taking into account different tendencies of population migration – low increase and middle increase. The basic approach taken in the MP is the idea of retaining the birth and mortality rate at the current level, increase of migration rate which in certain years comprised 19 thousand. It is also assumed in the MP that the total investments to the city of Astana in 2001 to 2005 will comprise 452 billion tenge, and by 2005 the total annual investments will increase up to 150 million US dollars.

It is worthwhile to mention that the authors have used the original method of making an economical development forecast which can be applied in case of Kazakhstan.

However, the following comments are maid with regard to this section: in describing the future economy development forecast (p.2 -14) and the structure of the employed population (p.3-50), the key city planning priority – "the capital factor" is not fully emphasized, and the issue of population employment is included into column "Other services" (p.2-14). These aspects may influence the population increase rate. Moreover, "the capital factor" comprises 14,8% of the total number of the employed population. It is also planned to further develop the capital factor in the period up to 2030, because it must be the key employment factor and this is also not specified in the MP. With this regard, it is necessary to more clearly highlight the perspective role of Astana as the biggest business, cultural, scientific and tourist center of the republic.

The tables on pages 2-11 and 2-14 fail to specify such issues as science, scientific services, higher school (education), international tourism. Taking into account the idea of development as administrative, business and cultural center, it is necessary to follow the idea of reasonable industrial development. The Draft MP gives an increased value of specific ratio (absolute increase) of the employed population in the industrial sector, which in the future will increase by 2,8 times (p. 3-50).

The authors' criticism of insufficient competency of the executive bodies in terms of developing the investment projects and providing financial control thereof is quite understandable. It is noteworthy to mention that the plans of attracting investments to the city of Astana are not sufficiently substantiated. For example, in projecting the water tariffs, the calculation of the revenue and expenditure parts of the drinking water supply services was made without taking into account such aspects as the population number, the number of organizations and enterprises. However, when analyzing deeply the drinking

water tariffs proposed by the MP, it appears that they are also ill-grounded, i.e. it is not clear enough why the interest rate is assessed on the half of the capital invested. Put in other words, there are still the points requiring additional agreement and substantiation.

According to the authors of MP, the main criterion of why we need investments is the necessity to increase the production output and revenue. However, it would be relevant to divide the investment projects by production and non-production sectors, but not by targeted use, as proposed in MP. With this regard, we share the authors' point of view that one of the negative factors in attracting the foreign investors to Kazakhstan is its market instability.

The structure of the proposed financial plan itself requires additional review. For example, it would be appropriate to begin this plan with the analyzing the current financing situation of Astana, to describe the development trends and compare the previous years data. Such kind of deeper analysis not given in the MP would allow to make more real forecast.

We suggest that the following algorithm be applied in calculation of NPV and IRR:

$$C_t = FC + \sum_{t=1}^{n} VC/(1+i)^t, NPV = \sum R_t/(1+i)^t - C_t, t = 1, where$$

R_t – cash inflow, C_t – cash outflow, t – time, FC – fixed costs, VC – variable costs;
IRR – i_1 – $((NPV_1 - NPV_2)/NPV_2)$x i_2.

Based on this calculation method, we have the following: Rt = 716 million tenge; C_t = 2275.3 million tenge; NPV = 3092.62 million tenge.

IRR calculation may be summarized in the following table:

i1, %	NPV1	i2, %	NPV2	IRR
13	3091.9310	15	3029.8801	0.127
13	3091.9310	20	2883.8017	0.156
13	3091.9310	25	2749.4097	0.099
13	3091.9310	30	2625.3554	0.077
13	3091.9310	35	2510.4904	0.049
13	3091.9310	40	2403.8301	0.015
13	3091.9310	42	2363.2691	0

As you can see, the payback rate of investments is big enough and its upper level is 42%, i.e. much higher than the level of 30-35% in case of exceeding which the investments are not needed. Taking into consideration the average inflation rate 10%, the project may be evaluated as profitable. With this in mind, we can not consider this project to be unprofitable one.

Also, it is worthwhile to mention that there exists the two-level budget system in Kazakhstan – the republican budget and local budget, as specified in the Law of the Republic of Kazakhstan "On Budget System". The MP provides financing only from state and city budgets and this is wrong.

There are following remarks with regard to the calculations, population forecast and economical development of the city:

- on page 2-6, in item 2.2.2, the words "gross" in words "gross birth rate" and "gross death rate" must be excluded;
- on page 2-7, in Table "Actual population growth in recent five (5) years in Astana City" , the figures 318 200 and 321 600 must be replaced by 320 300 and 324 100, accordingly;
- on page 2-8, item (2), taking into account the fact that the process of moving of officials into the city has finished, it is necessary to specify what kind of officials is meant here, or to exclude the sentence "In addition, there is a possibility that many families of the government officials would move into this city".
- on page 2-33, 2.4.1, in the second paragraph, the figure 6,8% must be replaced by 5,7%. On page 2-34, Table "Comparison of annual budget per capita, Astana and State, 1998 base" contains wrong figures, as they arise as a result of the governmental policy aimed at decentralization of social sector financing system. Therefore, it is necessary to give in this table comparative figures for the city of Astana by this categories for a number of years or to compare with other regions of the republic. The 2000 data should be also included.
- In item 2.4.2, paragraph (1) Wage, in Table, the data for 2000 must be given;
- In item (2) Education, in the first paragraph, incomplete data for 2000 is given. The text of this paragraph must be adjusted as follows: "In Astana, there are 59 comprehensive schools, 35 pre-school entities, 5 professional schools; 14 colleges, including 8 private ones; 8 non-state schools." In the next sentence, the figure 26 must be replaced by 13.
- In the second paragraph, in the first sentence, the word "national" should be replaced by "republican" (the same correction must be probably made in all the Report);
- In item (3) Health Care, the current situation in health care section is described. However, the data mentioned here are for the years of 1999 and 2000 and in Table – for 1998. These data do not comply with those of the Statistics Agency and Healthcare Agency;
- In this item, there are the words "state medical facilities", but the data given refers to 'state medical organizations";
- In Table on page 2-36, the 2000 data must be given base on information of the Statistics Agency;
- On page 2-42, in a) the word "government" should be replaced by "executive authority". In b) the second sentence must be corrected, as the poverty problem has many aspects and it is not just the matter of reviewing the poverty line.

3. URBAN AND ARCHITECTURE PLANNING

This Section is written based on the deep analysis of the development history of the city. It describes the main concept of development of Astana – the priority of such ideas as metabolism, symbiosis, ecology and environment. It also describes the basic perspective view of the city, specifying such factors as population growth, climate conditions, etc.

The following comments are made with regard this section.

The total area of Astana as of August 2000 is 45,2 thousand ha (according to the Decree of the President of the Republic of Kazakhstan No 432, dated August 8, 2000). In MP, the total area is 71 thousand ha.

In the MP, the issues of perspective land use are examined very thoroughly. The general structure of land use should be better presented based on land allocation by type of land use (by category of land), particularly:

- residential and public construction;
- land of general use;
- construction of industrial facilities and warehouses;
- recreation area;
- agricultural land use;
- special land use;
- military facilities;
- water bodies;
- other areas.

The residential area is considered very deeply in MP. However, the data provided with regard to housing floor must be amended by the following information:

- the potential scope of reconstruction and rehabilitation of the existing housing floor, specifying the projected figures on decrease of housing fund;
- the future trend of housing fund by target years: the existing housing floor minus replaced housing floor plus new housing floor = the total housing floor.

Based on the above approach, for the whole period of implementing the MP about 15 million m^2 of housing floor, or 500 000 m^2/year, will be needed. Given the current rate is 120 000 m^2/year, the new housing floor in 2020-2030 will increase up to 800 000 to 100 000 m^2/year, otherwise, the target indicator – 25 m^2/person will not be achieved. According to rough estimates, it will be necessary to construct annually not less than 1 to 1, 5 million of total residential and public area and to provide them with all relevant infrastructures. This sounds quite doubtful, especially on the initial stage of MP implementation, given weak construction possibilities. This is why the MP must provide for more expeditious development of construction industry.

The MP provides for the development of social infrastructure of the city and gives a detailed description of each social infrastructure facility. However, it fails to provide a general picture of availability of social facilities in the current stage. For this, it is necessary to evaluate the status of public services in the city.

To determine the scope of potential new social facilities construction with the purpose of reserving the territories for the city multifunctional and specialized centers, it is necessary to make a forecast of public services availability in accordance with SNiP 2.07. 01 –89 "Planning and Development of Individual Construction Regions" taking into account the current conditions and new tendencies of social sphere. The MP doesn't elaborate the issue of perspective social infrastructure.

We agree with the methodology of designing office and trade floors which can be successfully applied in urban planning in our republic. However, in addition to this, it is necessary to have a detailed data about the number of beds, hospital visits, etc., as well as the data with regard to a total number of floor in comprehensive schools, pre-school facilities, hospitals, libraries, sport and fitting facilities, etc. All this data are available in the MP, but as far as the data on pre-school facilities is concerned, it is necessary to specify in calculations the children under 6 comprising now 9,7 % of total population.

We have no objections with regard to division of the city into planning districts. However, we think it is necessary to give city planning proposals by each planning district in terms of legal zoning, particularly, of central districts and the New City Center, where both domestic and foreign investments are most extensively realized. According to the experience of recently developed master plans (Master Plan of Moscow, 1999), this provides the investors a good basis to plan in advance, prior to arranging his land tenure rights, their activities in conformity with the requirements of the plan. Also, it is necessary to conceptually develop construction of functions and landscape zoning scheme enabling proposed land use to be applied properly following the guidelines thus detailed in the Master Plan.

Present practical construction of the new capital center, changeable conjuncture of the market of local and foreign investors, problems with engineering infrastructure arise the necessity to correct functional territory planning of the city center not changing its main direction of development, quick reaction to environment situation and operative designing.

Taking into account the above-mentioned recommendations and comments regarding the decisions made by designers it is necessary to make the following notes:

- the city should be considered beyond its administrative boundaries where the settlement system should be coordinated with the city development as a single whole. Such an approach will be rather perspective for nearest settlements taking into consideration the development of the capital national economic complex and for recreation zones;
- develop a "business plan" of the capital development with a preliminary deferential assessment of the city territories according to the principle "land should make profit for the city budget". It concerns also industrial zones.

The existing road network within the developed territories of the city can be compared with the rectangular scheme with a different spatial orientation of streets and roads in planning sectors. Within the boundaries of the Central-Planning Region southward from Akzhaiyk Street, from Sary-Bulak River to Sherbakov Street, the spatial orientation of streets – northwest to southeast and from southeast to northwest with insignificant deviations from the strict meridional and latitudinal directions. On the remaining territory of the Cebtral-Planning Region, along Sherbakov Street and also in the western region and northern industrial zone wide streets go almost in parallel with a railway the direction of which is deviated significantly from the spatial orientation of wide streets on the main territory of the Central-Planning Region.
The street network in this districts also looks like a rectangular scheme. These districts are constructed 95% by one-story, ram-shackled buildings. Street network of residential area is characterized by short, deformed streets.
The framework of road and street systems consists of:

Comments on development of the road network are given below:

- construction of the road through the territory with many enterprises and railways located in the northern-planning region is unreasonable because the demolishment of the above-mentioned facilities will not pay the expenses;
- it is proposed to make Pushkin Street longer which will go through the northern industrial zone and construct a road-transport overpass through the eastern part of Akmola station and a high-way which will go through the existing industrial

enterprises. The construction of the highway through the territory of industrial enterprises is not advisable from the economical point of view.

Comments on transport are given below:

- the volumes of passenger traffic and passenger distribution between different types of transports for each target period (year) should be defined and substantiated by transport and town planning calculations. The results of such calculations are not specified in the Master Plan. There are no also maps which reflect traffic flow, its size in the transport network and passenger distribution by types of transport in the Master Plan. Due to the lack of such information it is difficult to assess decisions (proposals) made in the project on development and use of this or that passenger transport. That's why the advisability of installation the ways for light train traffic along the proposed routes without the calculations of traffic flows seems to be not enough convincing;
- the possibility to use light train traffic as a passenger transport will raise doubts because there is no exact definition and even name of this type of transport. Its main characteristics such as: carring capacity, type, wagon capacity, number of wagons in one train are not specified. Also it is not specified where exactly such type of transport is applied. Approximate capital expenses required for construction of 1 km of this line are not also mentioned. That's why knowing almost nothing about this type of transport to discuss the possibility of use of this light train traffic (Astana airport – Akmola station) is very difficult.
- Akmola railway junction is one of the most important transport junctions in the network of railways of Kazakhstan because four directions of main railways are crossed in it. According to the mutual work of ESKATO OON and IEK OON on development of transport corridors between Asia and Europe it is planned to implement the carriage of big cargo containers between China, South-eastern Asia and Western Europe by means of the railway corridor from the China sea port Lyanyungan located in Pacific Ocean to Poland, German, Finland and etc. There are prerequisites to organize in the future a railway corridor North-South with the exit to Middle East and India. Akmola railway junction will be included into this transport corridor where on the northern railway bypass a big terminal with a yard for transit containers are planned for construction. Astana railway communications with other cities of Kazakhstan and CIS will increase significantly. The number of the suburb railway communications will also increase. New railway communications will appear between Astana City and the recreation zone "Borovoey". The above-mentioned factors stipulates the necessity to develop Akmola railway junction by target years.
- one of the most important sub-sections of the transport infrastructure and the basis of the urban planning in the Master Plan is the system of the future development of road networks. The above-mentioned comments regarding road networks do not influence the general idea of structural formation of road network in the city;
- in practice of the soviet town planning, as a rule, simultaneously with the Master Plan of the big city (with population more than 500 thousand people) sectoral project work was developed – integrated scheme on development of all types of transport. It gave the opportunity to check all the alternatives of architectural and urban planning proposals on city development and substantiate them by transport and urban planning calculations. The design parameters do not comply with the accepted decisions in the present Master Plan;

- together with population growth the number of railway and auto communications between Astana, Karaganda, Kokshetau Cities, settlements, recreation zones will also increase. In order to solve the problem on organization of suburb transport communications it is reasonably to develop in the future the project on rayon wised planning of Akmola Province (a province is divided on a few rayons) within the boundaries of A/AKP proposed by the designers of the present Master Plan;
- however, as a whole, all types of transport are considered in the Master Plan;
- implementation of the project decisions on development of transport infrastructure will require huge capital investments. The volume of the necessary investments are not specified in the Master Plan including main sources to finance the development of the transport system in Astana City by target years.

There are some comments regarding issues on greenery:

- green wedges and secondary green corridors from the southern part of the city from Maibalyk lake to the city center are planned by the specialists of the Master Team not taking into account soil suitability. Their slight relocation depending on soil suitability will allow to create green plantations without additional expenditures;
- according to the plan of the designer the green belt of the city will protect the city from unfavorable climatic conditions, especially from hard winds. Ring location of greenery around the city can protect from the wind at the distance of not more than 500 m from the greenery. As soon as the wind reaches the greenery line gradually it gains the initial speed. So it means that the designed location of greenery will not have an significant effect on wind speed reduction in the city.
- Taldy Kol reservoir is located to the south-west from the city. Forest parks are planned to surround the reservoir. At present 5.700 ha are planted by greenery. after the development of the city the volume of wastewater will increase and the water level in the reservoir will be higher. It will lead to the appearance of salt on the surface, formation of solonchaks, will have a negative impact on the planted greenery and will make any greenery planting difficult. A proposal on the reduction of water level in the reservoir to the natural level is required.
- for successful forestation and greenery planting it is necessary to create botanic gardens for the conduction of investigations and acclimatization in conditions of Astana City. At the stage of the detail design it is necessary to make a correct selection of plant species in compliance with soil characteristics.

Comments on industrial zone development and on accepted decisions in the Master Plan which can be corrected at the next stage of the Master Plan implementation are specified below;

- not enough convincing attempts to formulate the boundaries and impact of the existing industrial territory and some separate enterprises on formed town planning decisions.
- expansion of explication of industrial enterprises does not allow to assess planning restrictions of the decisions on residential territories;
- there is no analysis on technical and transport linkages between enterprises. The attention was not paid to problems of operation of industrial enterprises incompatible with enterprises of higher equipment level;
- the problem of cargo flow in the south industrial zone within the boundaries from Sary-Bulak to Salty Balka is not solved. There is no a special street near railways from west to east;

- according to the supplementary note the location of the cargo center proposed by the specialists is not clear, also its interrelation with the residential zone, industrial enterprises and transport communication;
- it is impossible to assess the decisions made by the specialists of this project on relocation of industrial enterprises from the residential zones and industrial districts due to the absence of studies.

4. INFRASTRUCTURE DEVELOPMENT PLANNING

Comments to the Power Supply Section are as follows:

- the main disadvantage of the project is that there is no accurate forecast for the planning regions, this fact does not allow to determine within the possible accuracy the necessity in construction of the new 110/10kV substations and the required capacity of transformers at these substations, and also the necessity in reconstruction of the existing substations replacing the transformers.
- It is proposed to construct new 110/10 substations in the New City Center and District No. 17 for the target year 2020, and also to construct a new 110kV transmission line from TETs-2 to the Airport switching substation. The connection of the additional substation in District No. 17 to the existing 110kV transmission line from TETs-2 to the Airport can not be accepted. It is necessary to consider circuit design of the construction of the 110kV outdoor switchgear at the Eastern substation with input-output, or connection of the Eastern substation and the substation in District No. 17 according to the modular circuit and the additional transmission line along the ring road. Construction of a 115MW electric power and heat energy generating plant at TETs-2 leads to the necessity to check and control the power on the existing network. These issues should be incorporated into the system planning.
- For the year 2020 the construction of substations and transmission lines according to the development is proposed. The provision of additional capacity at TETs-1 constructing new firing gas turbine plant at TETs-1 of 150MW output by 2011. In this connection the construction of the additional transmission line between 500 kv central substation and TETs-2 will not be sufficient for the required output. Voltage 220 kV may be required for the optimal output.
- The site for the construction of substations, distribution centers, and route for the overhead and underground transmission lines were not determined. Supply of power to the surrounding area was not considered. Principles of the 110 kV (and higher) network construction, the number of substations, the expediency of the construction of the electric power network along the ring road (route extension) should be coordinated with each other. The amount of the required investments should be estimated as well. The issue on the sources of financing of the construction of electric power facilities was not reflected in the Report.

Further detailed study and development of the Power Supply section should be carried out as part of the Sectoral Electric Power Network Development Plan.

Comments to the Heat Supply Section.

- The volume of materials for the heat supply system development proposed in the Draft Final Master Plan Report for the target year 2030 does not comply with the

requirements of SNiP B.1-7-97 "Instruction on the procedures of development, coordination and approval of town planning facilities in the ROK" in regard to the main indicators for the heat supply system listed in the mentioned SNiP.

- The projected heat demand was estimated for the whole city without taking into consideration the consumers provided with heat from independent heat sources and without identifying the potential increase of heat demand in the existing right-bank and new left-bank area. The structure of the district heat consumption by different categories of consumers is not given in the report.
- There is no data on the heat sources for the consumers that are not connected to the centralized system of heat supply.
- There are no proposals on use of new technologies in the system of heat distribution, for instance, use of isolated heating pipelines. This structure is rather hermetic and does not require additional measures on the protection of heating pipelines from groundwater.
- The investments required for the construction of heat supply facilities were not evaluated.
- Master Plan proposals on heat supply to the left bank of the Ishim River until 2010 only from the existing TETs are not coordinated with the potential of the stations and the existing heat distribution system. Before gasification in the City of Astana for heat supply to the independent buildings in the New City Center it will be necessary to construct local fuel boiler houses with the further transfer to gas operation, or these boiler houses will become standby after the connection of these buildings to the centralized heating system.
- There are no proposals on the period of dismantling of the existing equipment at TETs-1. It is not clear whether this station will operate until 2020 before the construction of gas firing turbine plant of 150 MW output at TETs-1.

The proposals on the Heat Supply section given in the Master Plan are recommended for the approval taking into consideration the comments and its further development in Sectoral Heat Supply Plan.

Comments to the Water Supply and Sewerage Sector are as follows:

- The second water supply source should be proposed in accordance with the requirement of SNiP 2.01.51-90. (Water supply system of the city should be based on not less than 2 independent sources.)
- Maximum use of the existing groundwater reserves should be considered (see SNiP 2.04.02-84*).
- Balance of water consumption and sewerage service consumption in the City of Astana should be submitted taking into consideration the comments of the State Expertise to the Feasibility Study on Water Supply and Sewerage Development in the City of Astana. Industrial and agricultural water consumption should be estimated on the basis of the norms approved by Ministry of Water Resources and Ministry of Agriculture.
- Proposals on future wastewater (storm water, drainage water) collection and reuse are not made. It is possible to irrigate not more than 5,000 ha within a radius of 20-25 km around the Taldy Kol Reservoir according to the Technical and Economic Design of the irrigation system with reuse of treated wastewater. The remaining area should be studied additionally.

Taking into account the comments to Water Supply and Sewerage Section, Draft of the Master Plan needs to be elaborated at the next stages of the Feasibility Study or Sectoral Plan.

The following comments refer to the Gas Supply Section:

- The volume of materials for the Gas Supply system development proposed in the Draft Final Master Plan Report for the target year 2030 does not comply with the requirements of SNiP B.1-7-97 "Instruction on the procedures of development, coordination and approval of town planning facilities in the ROK".
- Gas supply system development in the City of Astana both in the existing area and new development area is generalized and conceptual, as main indicators for the gas supply system are not given in the submitted report.
- Quality of the supplied gas for the residential district was not assessed.
- Potential industrial consumers and their standard consumption of natural gas were not specified.
- Natural gas consumption level was not substantiated from economic and ecological viewpoints.

Proposals on gas supply system development made by the Designer are conceptual proposals. They need to be specified and elaborated at the next design stages.

Comments to Telecommunication section are as follows:

- It is necessary to correct the number of the telephone lines maintained by Astanatelecom and the ratio of digital and analog facilities of the automatic telephone system in the City of Astana as of May, 2001, because data of March, 2000, has been changed.
- The facilities for SDH network should be changed due to the increased transmitting power on the main ring.
- At the outside telecommunication facilities it is planned to use pipes with the diameter of 100mm and 50mm as asbestos-cement conduit run. Only 100mm pipes should be proposed.
- Due to the activities implemented for the network improvement by Astanatelecom it is necessary to consider the quality of the services provided in 2001, because only data of 1999 was submitted in the report.
- Demand for the telecommunication services in the City of Astana also requires additional marketing research.

Comments to the Solid Waste section are given below.

Plan of solid waste management in Master Plan was carried without significant attention. Solid waste disposal program was worked out placing the emphasis on the isolated plant that would serve the existing area and the area to be developed. The assessment of the

present conditions of collection, disposal and treatment of MSW was based on the relative facts. Different authoritative sources of information were not used in this section.
Cooperation of the concerned organizations: Gorkommunkhoz, Spetsavtotransport in Almaty and Saryarka districts, Ecological Police, Sanitary and Epidemiological Center, Environmental Protection Department, etc., was not fully studied. No attention was paid to the solid waste from the settlement within the city boundaries. The existing administrative and legal framework for the MSW management was not analyzed and there are no proposals on its improvement.
The main attention was concentrated on the classification and utilization of waste. Utilization of metallic waste, old machinery and mechanisms, etc. was not studied. The position of such enterprises as Vtorchermet was not identified. No attention was paid to the food industries (such enterprises as Meat Processing Plant and Alcoholic Beverage Manufacturing Plant). The city market which is the source of significant number of infections was not investigated. Cattlegrave and utilization of hospital solid waste need to be thoroughly investigated.
Taking into consideration the above mentioned, the section of solid waste utilization and methods of sanitary treatment of the city need more detailed investigation at the next design stage.

5. PLANNING OF ENGINERING PROTECTION

Possible emergency situations connected with natural phenomena were considered in the Master Plan. The priorities that can have impact on the prevention of emergency situations, especially in flood period, were determined justifiably.

Meanwhile, the following comments and recommendations should be made:

- In whole, the adopted engineering protection plan for the City of Astana complies with the carried out Feasibility Study and does not raise doubts except some comments that should be taken into consideration in the Master Plan.
- The Designer exaggerates the role of the natural depression of the flood plain on the territory of the Essil (Ishim) River from Volgodonovka to Astana. Actually, flood regulating is significant only during average and small discharges from the Vyacheslavsky Reservoir. Maximum flood flow with 0.1% probability will be after flooding the floodplain, and increasing of the maximum flow should be expected on this territory.
- In the calculation of the flood regulating at the Vyacheslavsky Reservoir, judging by figures the Designer follows the recommendations that stipulate the initial HWL with the further discharge. It is more practical to discharge at the beginning of flood, it will allow to reduce maximum discharge volume.
- Possible damage caused by flooding was not determined in the Master Plan.
- It is necessary to include the area from the bridge in Sary-Arka street to the exit out of the City into the priority river improvement works for the year 2010.
- 2 regulating dikes should be constructed on the territory of the Gas Equipment Plant.
- On page 5-4 it is mentioned that the distributed discharge to the river is recommended as 1.250 m^3/s in consideration of probable flood estimation by Astana Municipality. It is not clear where this figure was taken from, as it should be 750 m^3/s in accordance with the Feasibility Study on Flood Protection.

Existing sewerage system, nets and facilities were considered in the Master Plan. Calculation of storm and flood water discharge, plan of the existing and planned networks and facilities, recommendations on the design and construction of the above mentioned systems and facilities were given in the report.
Meanwhile, comments to this section that can be specified at the next stages are as follows:

- Wastewater volume factors for the city districts and new developed districts were not given.
- The wastewater treatment facilities required in the districts that will be connected to the sewerage system were not presented.
- Iodine disposal plan after the treatment facilities was not proposed.
- Treated wastewater outlet is not clear.
- Storm water discharge to the domestic sewage collector was not agreed with the owner of this collector and wastewater treatment plant.
- Overall plan of the storm water drainage taking into consideration both left and right banks was not worked out.
- If storm water is discharged to water bodies it is necessary to get the approval of the concerned organizations responsible for these water bodies.

Comments on natural conditions of the city and engineering geology are given below:

- the description of the geological and lithological structure given on pages 6-7 (the third passage from the bottom) are incorrect. It is necessary to rewrite the passage according to the following example: Boring tests showed that coal deposits (sandstone) are covered by articles of residual soil of these deposits which are represented by loam, woody and stony soils, alluvial deposits – loamy soil, sand of different coarseness and gravel.
- page 6-10; it is recommended to substitute the sentence "The level of corrosive aggressiveness of soils with respect to concrete W_4 – is absent" for "The level of corrosive aggressiveness in respect to ferroconcrete constructions varies from high level to low level".

Groundwater drainage problem is solved in the project by means of drainage system construction to reduce groundwater level. Practically, the mentioned below comments should be considered:

- there is no analysis of the volume, quality and characteristic features of drainage water depending on areas under development;
- there is no scheme for drainage water discharge;
- there is a reference to the Feasibility Study on the project of drainage system installation and as if it is already considered by City Akimat. Actually, nobody worked out such Feasibility Study;
- there are no definite recommendations on arrangement of this system;
- there are no alternatives on arrangement of systems on water recession and disposal.

6. PLANNING OF THE ENVIRONMENTAL PROTECTION

The considered draft of the Master Plan for the development of the City of Astana stipulates the possibility of mitigation of the negative impact on the environment caused by the large-scale development of the City. The concept of *Ecological* soundness was adopted

by the Designer as one of the principles which underlie in the Master Plan. In this regard it is mentioned that the City is surrounded by 3 big river systems, the main one of these systems is the Ishim River, other rivers are Nura and Selety Rivers. The availability of these rivers identifies the groundwater level which is less than 2 meters from the ground surface. These circumstances predetermined that 75 % of the city area is inundated, 10 % out of this area is swamped.
According to the results of surveys and collected data analyses the Designer believes that there are no serious geotechnical reasons that hinder the extension of the City of Astana.
Left bank of the Ishim River within the city territory is represented by river terrace, low and high flood plains. Due to the natural impoundment of the territory both low and high flood plains are identified as not suitable for construction, but the river terrace of the left bank of the Ishim River is suitable for construction.

Comments to Section 6:
The planning systems of the environmental protection and EIA section submitted within the framework of the Master Plan are worked out in detail and recommended to be approved.

7. URBAN ADMINISTRATION AND ORGANIZATIONAL ISSUES

Comments:
Taking into consideration the fact that Master Plan should study and give proposal on the problems mainly of the urban planning development and use of the city territories, and creation of favourable economic environment, it is advisable to consider financial and economic issues at the stage of the development of the Programme of long term forecast of the social and economic city development.

Section "Urban Administration and Organizational Issues" is recommended for approval. The proposed plan of the urban administration of the city territory with demarcation of the functions between the Government and City Agency responsible for the territory town-planning developing should be supported.

The demarcation of functions should be based on the differentiation of land use rights: state and municipal ownership. For this purpose it is necessary to develop Land Use Plan for the City of Astana with allotment of land that is in constant use of the Republican state bodies and municipal enterprises. It will allow to separate the authorities of the republican and state agencies on the control of the development and use of the territories under the jurisdiction and to sign contracts on the provision of engineering and transport services with the relevant city organizations. Demarcation of functions coordinated with city territory differentiation will allow to work out the Indicative Plan more legibly and to identify state and city investment to the capital construction, and also impose the responsibility for the period and quality of construction on certain organizations.

8. REGIONAL DEVELOPMENT PLAN FOR ASTANA CITY, AKMOLA PROVINCE AND KARAGANDA PROVINCE

The proposed programs for the development of AAKR is supported, but these programs do not contain the integrated conclusion of the urban planning development of this territory. They are major elements of the Program for the social and economic development of the Central Region of Kazakhstan. Each program will include the consideration of the relevant

territories required for the full solution of the set objectives. Tourism development program should cover the territory of Akmola and Pavlodar Provinces, Industry Revitalization Program will cover the territory of Akmola, Karaganda, Aktyubinsk and Pavlodar provinces.

Development of some programs mentioned in this section is necessary due to the absence of urban planning projects – regional schematic plan of settlement and urban planning development of the territory and integrated plan of urban planning of the development of the Akmola province area. Many aspects of the region development will be determined in these programs. At the stage of the Master Plan of the city development they should be worked out in detail.

At the next stage of urban planning of the development it is necessary to work out the zone affected by Astana in order to determine the integrated development of the city and the surrounding territory. At the first stage it will be necessary to identify the boundaries of the affected zone that should be approved by the relevant Resolution of the Government of the ROK.

Recommendations and comments to the proposals on the regional city development are as follows:

- the authors of the Master Plan have carried out deep research and analytical work in order to reveal the problems connected with the development of the surrounding territory. The targets and conceptual proposals on the development of AAKR were set. Proposals in technical and political aspects deserve to be approved.
- There is no detailed Feasibility Study on the determination of boundaries of the affected zone of AAKR. Affected zone boundaries are identified taking into consideration labour migration, production and technological ties (sources of raw materials and production of the construction industry, delivery of perishable goods), business, administrative, commercial trips of people who live in the surrounding area, availability of recreation zones, location of engineering facilities of the city connected with the capital functioning.
- Direct passenger railway link from Astana to Semipalatinsk, Ust-Kamenogorsk, Kyzylorda, Atyrau and Aktau should be provided.
- Electric train commuter traffic in the direction of Shyuchinsk-Borovoye recreation area, Kokshetau, Petropavlovsk, Karaganda should be increased.
- International airport construction should be completed.
- City air terminal with the capacity of 400 passengers per hour should be constructed.
- Construction of the new gas pipeline from the City of Ishim (Russia) through Petropavlovsk, Kokshetau attaching Karaganda City should be provided.
- The third pipeline from the Vyacheslavsky reservoir should be constructed.
- Facilities for water transfer from the Irtysh-Karaganda Canal to the upstream of the Ishim River should be constructed.

General Comments:

1. Technical and economic indicators according to the Master Plan should be generalized and given in a special summary table.
2. The scale of the main schematic plan for the short term of the development of Astana City until 2010 should be 1:10 000 showing the setback, detailed description of the priority development guideline.

Conclusion

1. The designer of the master Plan carried out a big scope of work on the analysis of scientific-research, town-planning, design and other information on the City of Astana. The base forecast and calculation of population and area for the development of the City were carried out on the basis of the present data taking into consideration the international experience of capital construction. Search for the basic urban planning concept of the capital development with participation of foreign specialists introduces into domestic practice of town planning new positive features on formation of basic goals and targets of the Master Plan in conditions of market economy and adopts a foreign experience in our country.
2. The Master Plan studied by the expertise differs very much from the previous Master Plan developed by the "Saudi Ben Ladin Group" both in form and contest, in theoretical and technical levels of development.
3. This Master Plan for the development of Astana City meets the fixed goals and targets. The contents and components of the project comply with the approved terms of reference for the designing.
4. For implementation of the basic ideas of the Master Plan it is necessary to prepare sectoral schematic plans and programs on engineering, transport, social and cultural infrastructures.
5. Section "Planning of environment protection system" and the carried out EIA correspond to present norms and regulations of RK taking into account the submitted conclusion of the state ecological expertise of the Ministry of Natural Resources and Environment Protection of RK.
6. The project of the "Master Plan for the development of Astana City" prepared by the JICA Study Team is recommended for approval.

First Deputy General Director
of the State Expertise — Baibatshaeyv A.

Chief expert — Tulebaeyv A.

RESOLUTION OF THE MASLIKHAT OF THE CITY OF ASTANA

City of Astana
Ref. No. 100/19-II May 23, 2001

On the Master Plan for the Development of the City of Astana

After hearing of the report made by the leader of the JICA Study Team on the Master Plan for the Development of the City of Astana, report made by the Working Group on the review of the Master Plan of Astana City, and taking into consideration the proposals made by the City Maslikhat Commissions following Article 6 of the Law "On Local State Administration in the Republic of Kazakhstan", the City Maslikhat **resolved**:

1) To submit the Master Plan for the Development of the City of Astana to the Government of the Republic of Kazakhstan for approval

2) To take into account the statement of the Study Team Leader that all the comments made by the Working Group on the review of the Master Plan of Astana City will be considered before the final approval of the Government

3) To make a proposal to the Government of the Republic of Kazakhstan to assign the City Akimat as an authorized agency for the project implementation, further development, making amendments in the Master Plan of the City and performance of the guidelines on urban development.

Chair of the City Maslikhat Session **Umerbaeva R.**

Secretary of the City Maslikhat **Demidov A.**

MINUTES OF MEETING

THE STUDY ON THE MASTER PLAN FOR THE DEVELOPMENT OF THE CITY OF ASTANA IN THE REPUBLIC OF KAZAKHSTAN

AGREED UPON
AMONGST
THE MINISTRY OF FOREIGN AFFAIRS,
THE MINISTRY OF ECONOMICS AND TRADE,
THE CAPITAL DEVELOPMENT CORPORATION,
THE CITY OF ASTANA,
AND
THE JAPAN INTERNATIONAL COOPERATION AGENCY

ASTANA,
24th May, 2001

GALIMOV F.H.
First Deputy Akim
of Astana City

ANDRYUSCHENKO A.I.
Vice-Minister,
Ministry of Economics
and Trade

ONZHANOV N.B.
Director in charge
of Dept. of Economic Policy.
Ministry of Foreign Affairs

Dr. KUROKAWA Kisho
Team Leader,
JICA Study Team

HIRAI Toshio
Director, First Social
Development Study Div
JICA

ORAZOV B.T.
General Director, Capital
Development Corporation

A meeting to discuss the Draft Final Report for the Study on the Master Plan for the Development of the City of Astana was held on 23rd May 2001. The meeting was chaired by the City Parliament, and participated by representatives from the relevant organizations of Kazakhstan, including the State Expertise under the Construction Committee of the Republic of Kazakhstan, and the Japan International Cooperation Agency (JICA) and the JICA Study Team.

The followings are the items agreed upon by the concerned parties as represented by the undersigned.

1. The Kazakhstan side agrees upon the contents of the Draft Final Report of the Master Plan.
2. Following the SUMMARY CONCLUSION of overall urban planning expertise No 2-114/2001 dated 14th May 2001 on the project "Master Plan for the Development of the City of Astana", the participants of this meeting agree with the submission of the Draft Master Plan to the Government of RK for approval.
3. The participants agree that for the implementation of the Master Plan Akimat of the city of Astana must take measures to prepare sectoral plans and programs in respective areas.

This Minutes of Meeting is prepared in English and Russian. In case any contradiction should arise in interpretation, the English text shall prevail.