

## **I. Introduction**

## **CHAPTER 1 INTRODUCTION**

### **1.1 Introduction to the Study**

#### **1.1.1 Background of the Study**

- 1) Since its declaration of independence from the former Soviet Union (FSU) in 1991, Azerbaijan has exerted great efforts in achieving economic and social stability in the country. In recent years, the Azerbaijan economy has been showing positive signs of expansion and strengthening while inflation remains low. This is possible largely due to the rapid resource development programs implemented by the Government with very active private sector participation. In contrast with such economic activities however, the urban transport sector has not been able to grow in tandem to meet the increasing demand on travel, with the results that urban roads are often congested while the public transport system is over-crowded. Baku, the capital city of Azerbaijan had a population of about 2 million in 1996, representing about 30 percent share of total population in the country. The city area of Baku is about 2,245 km<sup>2</sup>.
- 2) The urban transport system of Baku consists of private modes such as cars and public transport modes such as metro (2 lines), trams (3 lines), trolley buses (3 lines), buses (348 routes), and taxis. Baku has been depending heavily on buses as its main transport mode that accounted for about 75% share of the city mass transportation in 1997.
- 3) Baku has a radial road network extending as much as 2,013 km along the Caspian sea coast. There are also a number of ring roads surrounding a grid road network in the town center. The total length of main roads in the city is to 1,053 km. The Baku Circular Road was originally proposed in the General Plan of 1985 and was regarded as the most essential link required in the Baku road network for the dispersal of urban traffic.
- 4) The general urban plan of Baku prepared in 1985 called the "General Plan" has neither been updated nor modified so far. However, the city government of Baku is keen to modify this plan in addressing the various current pressing urban problems that have emerged since its introduction 14 years ago. In essence, Baku is now experiencing poor transport conditions mainly due to the obsolescence of its aging transportation facilities and public infrastructure amid the booming traffic demand. The inadequate level of traffic control facility is also a cause of severe traffic congestion in the city.
- 5) Under these circumstances, the Japan International Cooperation Agency implemented "Project Formation Study" in the transport infrastructure sector in Baku in October 1998. On the basis of this study, the government of Azerbaijan requested the implementation of the Study on Urban Transport Improvement including the feasibility study on the selected projects in the City of Baku to the government of Japan. In response to the said request, the government of Japan dispatched a preliminary study group to Baku in June 2000 and signed and exchanged the Scope of Work (S/W). Thus this Study is to be implemented.

### **1.1.2 Objectives of the Study**

The objectives of this Study in accordance with the above-mentioned background are shown below:

- (i) To formulate an Urban Transport Improvement Plan for Baku City (M/P) with target year of 2020;
- (ii) To conduct a feasibility study on priority projects (F/S); and
- (iii) To carry out technology transfer through the implementation of the Study.

### **1.1.3 Planning Area**

The Study area covers Baku City comprising of 11 districts. The Planning Area consists of six (6) districts (Sabail, Yasama, Nasimi, Narimanov, Nizami and Khatail) within Central Baku and the adjacent densely populated area of the Binagadi, Sabunchi, and Surakhan districts. This Area is 285.4 km<sup>2</sup> and has a population of 1.342 million persons (if refugees and internally displaced people are included, 1.450 million persons).

### **1.1.4 Basic Concept of Implementing the Study**

Keeping the urban transport planning trends in the 21<sup>st</sup> century in mind, this Study shall satisfy following conditions:

- 1) To have definite goals and basic strategies on the urban structure and transport system from the various viewpoints of daily activities of citizens, industrial activities, and cultural activities aiming at sustainable development with due consideration of the urban environment.
- 2) To have a clear and definite land use plan, urban development plan, and social policy corresponding to the urban transport plan.
- 3) To have improvement plans for the funding system to the transport infrastructure, building restrictions based on density and purpose, a management system of public transport together with a physical plan of urban transport.
- 4) To include opinions from citizens and to advertise the established plan to citizens as much as possible.



Observing these conditions required, the issues to be examined in the Study for the establishment of optimal urban transport improvement plan are the following:

- 1) Formation of an urban transport system with an emphasis on public transportation through the integral improvement of relevant policy factors including land use, traffic management, fund procurement, and legal restrictions shall be studied to achieve a vigorous and environmentally friendly Baku.
- 2) An efficient urban structure to alleviate burdens to transport and environment by utilizing existing transport infrastructure shall be studied.
- 3) Improvement of institutional framework to provide a favorable urban structure and land use, shall be studied.
- 4) Public transport plan by maximum use of existing public transport facilities (metro, tram, bus, etc.) taking account of the roles of each transport mode shall be studied.
- 5) Road network shall be studied considering the functions of roads such as trunk road, and feeder roads for the rectification of road traffic. Improvement of ring roads, bottleneck intersections, arrangement of freight terminal in the fringe area of the city, connection between inter-city roads and urban streets shall be studied.
- 6) In order to maintain smooth traffic flows in the central area, measures to reduce the vehicle inflow into the central urban area shall be studied. Traffic regulations and control for smooth operation of public transport modes such as buses and trams shall be studied.
- 7) Fund resources and organizations for the improvement of roads and public transport shall be studied.
- 8) The way to appeal to citizens shall be studied for better transport planning and smooth implementation of the plan.

#### **1.1.5 Work Schedule**

The entire work period of this Study was nineteen months, beginning with the domestic preparatory work in September 2000 up to the submission of the final report in March 2002. The Study is to be divided into five stages: the domestic preparatory work (the first study in Japan), the first and second study in Azerbaijan, and the second third study in Japan.

### 1.1.6 Reports and Seminars

In this Study, the following reports were made and submitted.

#### Contents and Submission Dates of the Reports

| Report name        | Submission date        | Items to be included                                                                                                                                                                                                                                                                                                                                                           | Number of copies to be submitted English |
|--------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Inception Report   | Middle of October 2000 | Basic concepts, contents, methodology, and work flow were included.                                                                                                                                                                                                                                                                                                            | Russian 30 copies<br>English 5 copies    |
| Progress Report    | April 2001             | Analytical results of relevant information, existing data and studies, and various traffic surveys including a passenger survey, etc. were reported. Analysis of the problems and issues on the present transport conditions were reported.                                                                                                                                    | Russian 30 copies<br>English 5 copies    |
| Interim Report     | October 2001           | Forecast of socioeconomic framework and future traffic demand in 2010 and 2020 were reported. The strategy for urban transport improvement and draft Master Plan were reported. Preliminary cost estimate, economic and financial analyses, and initial environmental evaluation of the examined Master Plan projects were reported. Selected priority projects were reported. | Russian 30 copies<br>English 5 copies    |
| Draft Final Report | January 2002           | All the results of the studies including the feasibility studies of the priority projects were reported.                                                                                                                                                                                                                                                                       | Russian 30 copies<br>English 5 copies    |
| Final Report       | March 2002             | In response to the comments from the Azerbaijan side on the draft Final Report, Revised contents were reported.                                                                                                                                                                                                                                                                | Russian 50 copies<br>English 5 copies    |

The final reports consist of Main Report (English and Russian), Summary (English, Russian and Japanese), and Appendix (English).

In this Study, two workshops and one seminar were held. The outline is shown below.

| Type                | Date          | Expected attendance                                                                | Theme                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------|---------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The first Workshop  | May 2001      | Counterparts, relevant governmental organizations, institutes (some 70 attendants) | <ul style="list-style-type: none"> <li>- World Urban Transport Planning Trends</li> <li>- General Report of passenger Survey</li> <li>- Transport Problems and Issues in Baku</li> <li>- Present Land Use and Possible Urban Structure</li> <li>- Panel Discussion on the Future Urban Transport in Baku</li> </ul>                                                                                                                |
| The second Workshop | November 2001 | Counterparts, relevant governmental organizations, institutes (some 50 attendants) | <ul style="list-style-type: none"> <li>- Existing Urban Transport Problems and Issues</li> <li>- Past and Future Road Planning in Baku</li> <li>- Road Plan in Urban Transport Improvement Plan</li> <li>- Public Transport Plan in Urban Transport Improvement Plan</li> <li>- Evaluation of Urban Transport Improvement Plan</li> <li>- Discussion on Urban Transport Improvement for Better Mobility and Environment</li> </ul> |
| Seminar             | February 2002 | Counterparts, relevant governmental organizations, institutes                      | <ul style="list-style-type: none"> <li>- Results of the whole Study</li> <li>- Recommendation on transport improvement plans</li> <li>- Panel discussion</li> </ul>                                                                                                                                                                                                                                                                |

## **1.2 Outline of the Study**

### **1.2.1 Flow of the Study**

The overall Work Flow for the Study is shown in Figure 1.2.1.

### **1.2.2 Contents of the Study**

The main operations of each work stage were as follows.

#### **(1) Preparatory Work in Japan (The first Study in Japan)**

Related materials necessary for the Study were collected and analyzed, and the Inception Report was prepared.

#### **(2) The First Study in Azerbaijan**

The contents of the Inception Report were explained to the Azerbaijan side, and consensus was made. In parallel to the collection of related information and the review of the existing study, various transport studies, environmental studies, and various traffic surveys including a Person Trip Survey were implemented. Next the problems and issues in the existing transport conditions were analyzed.

#### **(3) The Second Study in Japan**

A Progress Report on the results of various traffic surveys, analysis of present transport conditions were prepared.

#### **(4) The Second Study in Azerbaijan**

The contents of the Progress Report were explained to the Azerbaijan side, and consensus was made.

Based on socioeconomic framework and future land use plan, transport demand forecast in 2010, 2020 was carried out.

The strategy for urban transport policy was determined based on the transport demand forecast. Next improvement plans for public transport, road, and traffic demand management were studied. Those sectoral plans were integrated as a draft Master Plan. After alternatives to the Master Plan were examined, the Urban Transport Improvement Plan was formulated. Preliminary cost estimate, economic and financial analyses, and initial environmental evaluation of the examined Master Plan projects were conducted, and priority projects were selected.



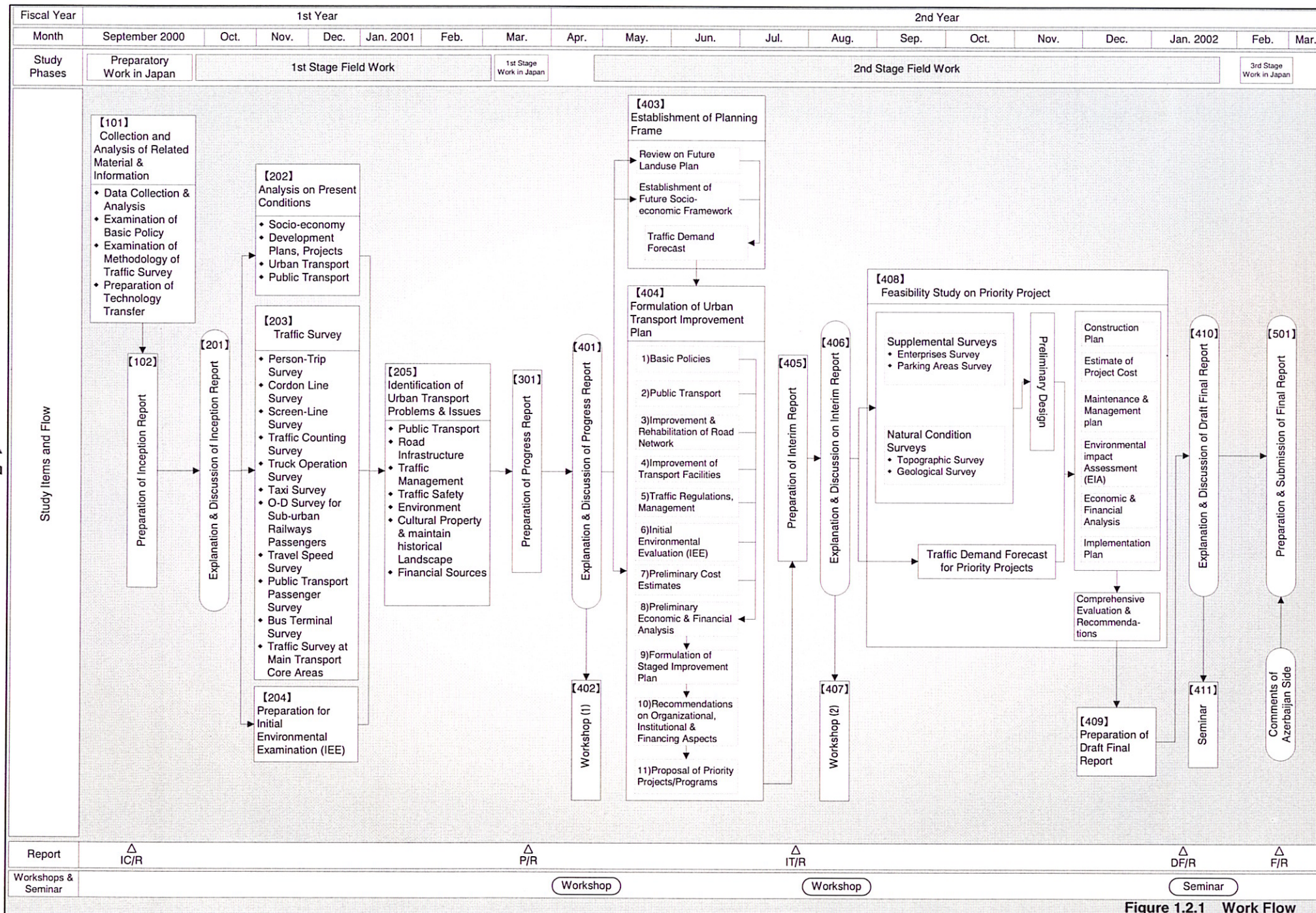


Figure 1.2.1 Work Flow



The results of the study conducted after the explanation of the Progress Report were summarized as an Interim Report.

The contents of the Interim Report were explained to the Azerbaijan side, and consensus was made.

Feasibility studies were performed for the selected priority projects. Supplemental surveys on transport and natural conditions were made. Topographic maps were prepared to make an urgent improvement plan.

The results of the above were summarized as a Draft Final Report. The contents of the Draft Final Report were explained to and discussed with the Azerbaijan side.

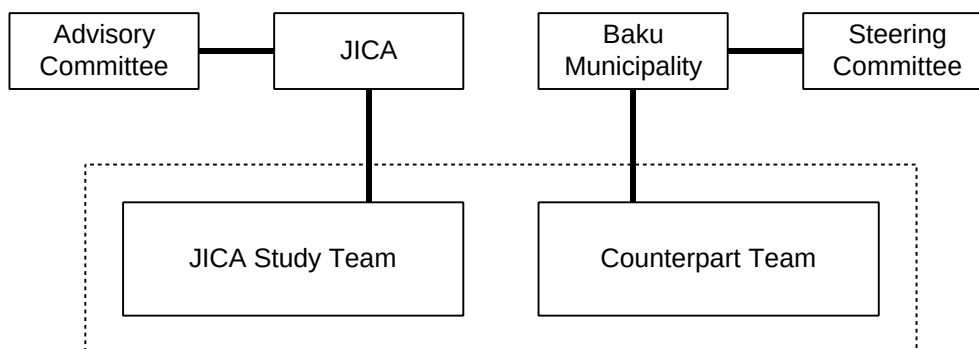
## **(5) The Third Study in Japan**

In response to the comments from the Azerbaijan side, the Final Report was formulated and submitted.

### **1.3 Organization of the Study**

#### **1.3.1 Organization of the Study**

The Study was organized as shown below:



### 1.3.2 Steering Committee

|                        |                                                                                   |
|------------------------|-----------------------------------------------------------------------------------|
| Mr. Rauv Panakhov      | Deputy Mayor, Baku Municipality                                                   |
| Mr. Aliyev Vahid       | Head, State Road Police Department                                                |
| Mr. Muradov Elbrus     | Chief Engineer, Baku Subway                                                       |
| Mr. Nazirov Kurban     | Head, Industrial Union of Passengers Transit, Azerbaijan State Railway            |
| Mr. Kazimov Soltan     | Chief Engineer, Baku Sea Harbor                                                   |
| Mr. Asadov Adishirin   | Chief, Engineering Department, Baku Sea Harbour                                   |
| Mr. Abdullayev Kavuz   | Vice President on State Department “Azeravtonagliyat”                             |
| Mr. Guliyev Feyzula    | Author of the General Plan, Project Institute of Baku                             |
| Mr. Faradov Latif      | Senior Specialist, Town Planning Department, Baku Municipality                    |
| Mr. Gafarov Farhad     | Deputy, Town Planning Department, Baku Municipality                               |
| Mr. Orlov Stroganov    | Head, Town Planning Department, Baku Municipality                                 |
| Mr. Gasanov Yashar     | Deputy, City Economic Department, Baku Municipality                               |
| Mr. Sadigov Yashar     | Head, Road Operation Department, Baku Municipality                                |
| Mr. Rustamov Hidayat   | Deputy, Traffic Department, Baku Municipality                                     |
| Mr. Saleh Badalov      | Deputy Chairman Transport Department, Baku Municipality                           |
| Mr. Rustamov Zakir     | Deputy Chairman Transport Department, Baku Municipality                           |
| Mr. Haydar Ibragimov   | Traffic Police of Baku                                                            |
| Mr. Guliyev Iskender   | Traffic Police of Baku                                                            |
| Mr. Manafov Anver      | Deputy Chief, City Economic Department, Cabinet of Ministers                      |
| Mr. Babayev Telman     | Advisor, Transport and Communication Department, Cabinet of Ministers             |
| Mr. Suleymanov Rovshan | Senior Advisor, the Economy and Financial Credit Department, Cabinet of Ministers |
| Mr. Godjayeve Adil     | Head, State Department “Azeravtoyol”                                              |
| Mr. Mirdjavadov Miri   | Head, State Department “Azeravtoyol”                                              |
| Mr. Eyvazov Fuad       | Senior Specialist, Ministry of Economic Development                               |

#### Others

|                      |                                                                  |
|----------------------|------------------------------------------------------------------|
| Mr. Hasanov Mirgasan | Transport Inspector, City Economic Department, Baku Municipality |
| Mr. Kerimov Hagami   | Head, State Concern “Azeravtoyol”                                |
| Mr. Askerov Nazim    | Chairman, Transport Department, Baku Municipality                |

### 1.3.3 Azerbaijan Counterparts

The Azerbaijan counterparts were same as steering committee members.

### 1.3.4 Study Team

The JICA Study team included following members:

|                          |                                                |
|--------------------------|------------------------------------------------|
| Mr. Nakamura Akio        | Team Leader                                    |
| Mr. Honma Masahito       | Deputy Team Leader/Public Transport Specialist |
| Mr. Gencaga Hasan        | City Planner/Land Use Planner                  |
| Mr. Yamakawa Hirotoshi   | Traffic Survey/Traffic Forecast Specialist     |
| Mr. Chua Mok You         | Traffic Survey/Traffic Forecast Specialist     |
| Mr. Ono Masazumi         | Traffic Survey/Traffic Forecast Specialist     |
| Mr. Yamane Takao         | Institution/Management Specialist              |
| Mr. Okano Yoshimi        | Road Planner                                   |
| Mr. Higuchi Yoshitaka    | Traffic Management Specialist                  |
| Mr. Hara Takayuki        | Transport Facility Planner                     |
| Mr. Naganuma Kengo       | Environmental Specialist                       |
| Mr. Yanagisawa Masatoshi | Design/Cost Estimate Specialist                |
| Mr. Kotani Hiroyuki      | Economist/Financial Analyst                    |
| Mr. Uchida Syogo         | Road Planner/Traffic Forecast Specialist       |
| Mr. Nidaira Masato       | Administrator                                  |
| Mr. Murai Yoshiyuki      | Interpreter                                    |
| Mr. Akasaka Yoshio       | Interpreter                                    |
| Mr. Goto Yukichi         | Interpreter                                    |

### 1.3.5 Advisory Committee and JICA Coordinators

Advisory committee members and JICA coordinators were as follows:

#### Advisory Committee Members

|                      |                                                 |
|----------------------|-------------------------------------------------|
| Dr. Kitamura Ryuichi | Professor, Kyoto University                     |
| Mr. Kimura Yoshiharu | Ministry of Land, Transport, and Infrastructure |
| Mr. Nagano Shoichi   | Ministry of Land, Transport, and Infrastructure |
| Mr. Inooka Hideo     | Ministry of Land, Transport, and Infrastructure |

#### JICA Coordinators

|                    |                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------|
| Mr. Hirai Toshio   | Director, 1st Social Development Study Division, Social Development Study Department        |
| Mr. Umenaga Tetsu  | Deputy Director, 1st Social Development Study Division, Social Development Study Department |
| Ms. Honda Eri      | Deputy Director, 1st Social Development Study Division, Social Development Study Department |
| Mr. Konya Kenichi  | Staff, 1st Social Development Study Division, Social Development Study Department           |
| Mr. Kasai Takahiro | Staff, 1st Social Development Study Division, Social Development Study Department           |

### **1.3.6 Technology Transfer**

The Study Team tried to transfer the planning technology to counterparts through the Study period by working together with the counterparts. In addition, two workshops and one seminar were held for the purpose of informing the Study contents and transferring the planning technology to the specialists. In particular the lectures given by the Advisory Committee members and documents and brochures distributed in the workshops and seminar greatly contributed to enhancing the understanding of the Study.

Recently ADB, EBRD and other international organization have exerted development assistances mainly focusing on the formulation of international transport corridor, that is related to the regional transport network of Baku. In the course of the Study, the Study Team made the technology transfer to the counterpart organizations of regional transport concept formation and transport demand forecast. Therefore, such technology transfer is of great use for these counterpart organizations when they establish and/or modify their own plans by themselves.