

CHAPTER 4

BEHSASS TRANSPORT CENTER PROJECT

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4.1 PRESENT PLAN

During the development of the city, an informal bus/taxi terminal grew in the city center at Al-Taal Square. This terminal cannot serve the intercity buses. Therefore, these buses are parking on streets near to Al-Tall Square and almost block the roads in front of through traffic. The street inventory survey shows that presently the intercity taxis are parked at Al-Taal Square in looks like a taxi terminal. Due to the taxi over supply, many taxis do illegal double-parking that reduces the road capacity significantly. There is on-going implementation plan under the management of Ministry of Public Works to built a terminal in the south side of Tripoli city (Behsass) to looks like the one constructed in Beirut (Sharal El-Helou). This plan is included in the Short-term Plan of this Study.

4.2 OBJECTIVES

The main objectives for constructing multi-function Transport Center can be summarized as to:

- Provide Tripoli with anti-pollution environmental friendly transport terminal.
- Mitigate traffic congestion in the city Central Area.
- Interconnect the city with the surrounding new developed areas.
- Interconnect new areas with the other country cities.
- Interconnect Bus journey with others modes of transport services that include railway, taxis and private cars.
- Enforce the rule of El-Mina Port as the country main port in the North Area.
- Insist the urban development in the North Area.

Before the civil war, the city was provided by the railway services. The line to north was very active in handling passengers and goods. The railway infrastructure was destroyed during the years of the civil war. Therefore, the buses cover the shortage happened due to the missing of railway services. Instead of railway, the buses will be needed to carry out the passengers and truck will be needed to carry out the goods to the different destinations. Coordination between these two types of transport modes, buses and trucks needs to consider a terminal where this coordination can be carried out.

Since Tripoli is the capital of North Lebanon, a high increase in transport demand is generated while the terminal facilities do not exist. Due to the limited land in the Central Area, a construction of a terminal outside the congested Central Area is the most reliable solution. The connection between this new terminal and different destinations inside the Study Area will be depended on the introducing of the city bus service and control management over shared taxi service. Therefore, city bus terminal and service taxi parking areas have to be considered within the area of the intercity terminal.

The inter-urban relation among Tripoli and other areas such as Halba in North-East side that serve Akkar Region, Zagarta in East side, Amonin in South-East side that serve Koura Area and Battron in South side are in need to be strengthen. Construction of a terminal at Behsass can be utilized as transport center to acquire the abovementioned requirements.

4.3 LOCATION

The proposed location is existed in the south side of Tripoli City between the Old Beirut-Tripoli Highway and Beirut-Tripoli Autostrad. The area belongs to the railway authority (Office of Rail Road and Public Transport). The study carried out under the authority of Ministry of Transport estimated the required area about 34,000 m² that is represents about 36% of the total land area. Figure 4.3-1 shows the proposed location.

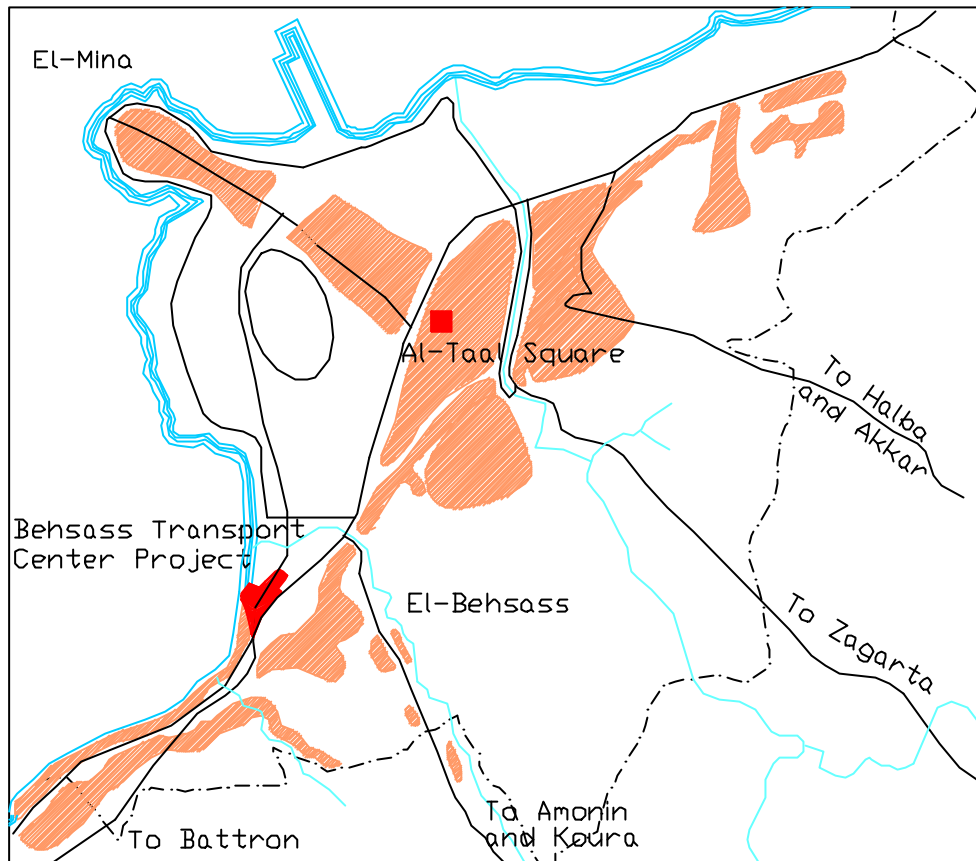


Figure 4.3-1 Location Map of Behsass Terminal

4.4 PROJECT FUNCTION

Tripoli is the capital of North Lebanon and for long time has been the main commercial, industrial, financial and administrative activity center. The city is also characterized by its historical attraction places. Due to the importance of the city, the project aims to provide the convenient interconnection among the different mode of transport to strongly relate the city with other main cities, surrounding cities and also surrounding cities with the main ones through Tripoli. The project also will relate with other transport modes including maritime transport through El-Mina Port. Figure 4.4-1 shows the main components of the terminal to fulfill the abovementioned functions. The relations between the related components are considered as:

- Relation between city and intercity transport modes
- Relation between trucks and Port
- Relation involving intercity and city transport modes

Based on correlation among these dependent services, the terminal will be included the following main facilities:

- Intercity Bus Terminal
- Inter City Taxi Terminal
- City Bus Terminal
- City Taxi Parking Area
- Private Car Parking Area
- Truck Loading/Unloading Area
- Commercial Area / Shopping Center

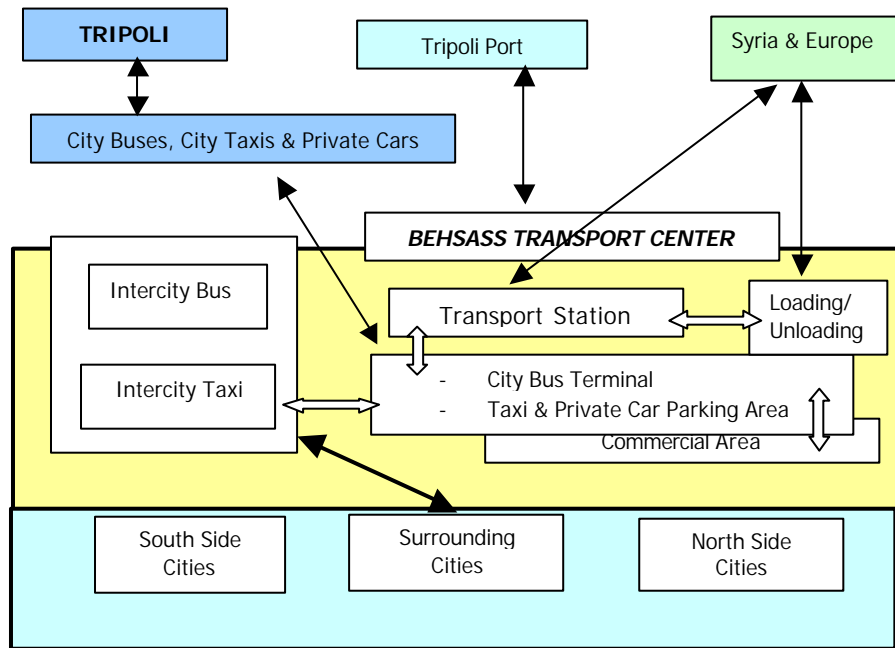


Figure 4.4-1 Function of Transport Center

4.5 TRANSPORT REQUIREMENTS

Based on the estimation carried out under the Study, Table 4.5-1 presents the required number of parking stalls for the different modes of transport.

Table 4.5-1 Required Parking Stalls

Category	Number of Stalls		
	2005	2010	2020
Buses			
Intercity	24	15	17
City	140	90	95
Taxis			
Intercity	106	87	94
City	8	16	24
Trucks	4	8	12
Private Car	100	75	25

Figure 4.5-1 shows the general layout of the terminal as proposed by the study done under the Ministry of Transport Authority. However, during the detail engineering stage, this plan must be revised especially for the following aspects:

- Traffic circulation
- Entrance and exits to the autostrad
- Relation between the bus terminal and railway station
- Correlation between the two parts of the terminal

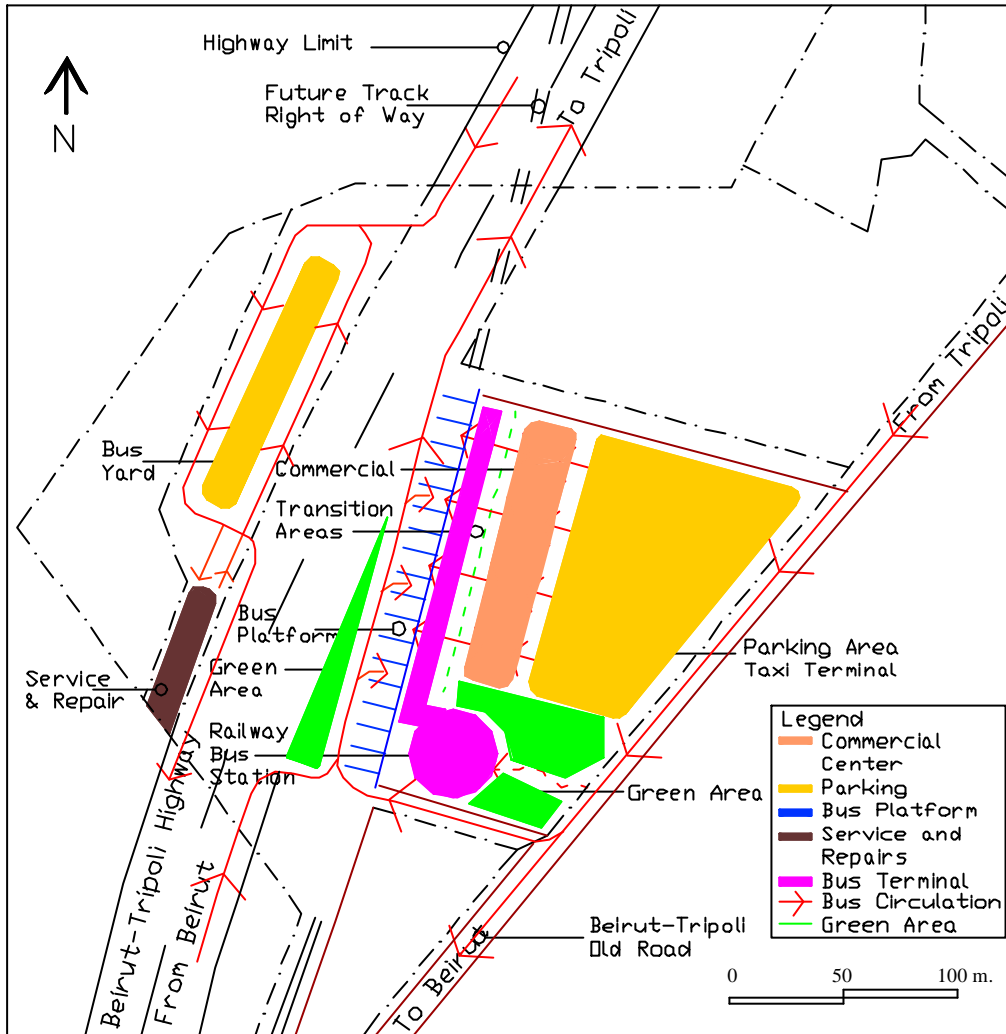


Figure 4.5-1 Proposed Terminal Layout by Previous Study

4.6 ECONOMIC EVALUATION

Under the study carried out by the MOPWT, the required cost is estimated to be 5.53 million US\$ (LL 8.3 Billion). The estimated economic parameters show that the project has high economic viability.

- EIRR % 19.50 - NPV (LL Billion) 7.275 - B/C 2.02

4.7 IMPLEMENTATION PLAN

As mentioned early, an immediate action is required to transfer the intercity bus on-street parking terminals to the temporary designated terminals until the construction of the terminal at Behsass can be done by the end of the Short-Term Improvement Plan. Table 4.6-1, shows the implemented plan to construct the terminal.

Table 4.6-1 Implementation Plan

Task	2002	2003	2004	2005
Fund Allocation				
Consultant Selection				
Detail Design				
Tendering				
Contractor Selection				
Construction				

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

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5.1 TRIPOLI BOULEVARD UNDERPASS PROJECT

- The project aims to revitalize activities in the City Center and Old City, to alleviate the existing severe traffic congestion at three (3) at-grade intersection along Tripoli Boulevard and to reduce traffic pollution as an Anti Pollution Facility.
- The project is justified to be technically and economically feasible and favorable in environmental impact.

EIRR (%)	32.68
NPV (LL Billion):	51.39
B/C:	3.15

- The urgency of project implementation is assessed to be very high because of existing issues in term of severe traffic congestion and traffic pollution, which is seriously hampering the socioeconomic activity of people. In addition, it will support the revitalization of the Old City to regain its role as a tourism and commercial center.
- Based on the above findings, the Project is recommended for implementation at the soonest possible time.

5.2 TRANSPORT MANAGEMENT PLAN

- The Project aims to improve the existing disorderly congested flow in Central Tripoli where roads were not designed for car movement, but only for pedestrians and carriage movement practically in the Old City.
- The Project also intends to re-explore Lebanon's heritage and the existing historical places that attract tourism and promote the development of the city.
- The Project is evaluated from technical, economical and environmental aspects to be feasible.

EIRR (%):	28.49
NPV (LL Billion):	4.3
B/C:	1.78

- The urgency of project implementation is recognized from the existing traffic situation and decrease in tourism industry.
- Based on the above analysis, the early implementation of the Project is recommended with the emphasis that the Project requires the relatively small investment and short time, but the efficient traffic enforcement system.

5.3 BEHSASS TRANSPORT CENTER PROJECT

- The Project aims to provide the transport terminal for interconnection of bus trips with other mode of taxi and private cars, thus reduce traffic congestion in the city.
- The Project is also planned to facilitate interconnections with surrounding new developed areas with other regions and enforce the role of Tripoli as an international city and the capital of the north.
- The Project is evaluated to be feasible from technical and economical aspects and acceptable in environmental impact.

EIRR (%):	19.50
NPV (LL Billion):	7.3
B/C:	2.02

- The Project is a committed plan of the Ministry of Public Works and Transport, which supervises the Office of Railroad and Public Transport that owns the required land. Therefore, the Plan can be implemented at any time.
- Based on the above findings, the Project is recommended to be urgently implemented, but with the efficient operation system.

5.4 PROJECT INTEGRATION

The first (2) Projects are located in Central Tripoli, which is the most congested area with deteriorated environment. When the two projects are integrated, they can create the multiplier effect in traffic efficiency and improvement of environment. Economic parameters of the package of the two projects are as follows:

EIRR (%):	35.11
NPV (LL Billion):	64.3
B/C:	3.18

The third Project aims to provide an integrated center for transport multi-function such as bus/taxi terminal and logistic center. When the second and third projects are integrated, the service of bus/taxi, as the public transport system in the Study Area, can be operated efficiently and systematically.

The optimum solution to solve many of the transport problems in the Study Area in the short-term comes with the integration of the three projects. This integrated plan will result in improving the transport system for people and logistics, decreasing traffic congestion in Central Tripoli, ensuring traffic safety and enhancing natural and social environment.

5.5 RECOMMENDATIONS

1) Fund Preparation Measures

- For implementing the proposed projects under the Short-term Plan, funds to be allocated can be obtained based on the nature and scale of each project, from several resources, such as national budget, CDR's reconstruction fund, BOT and private funds and loans from international institutions.
- In order to implement large-scale projects under the Short-term Plan, it is necessary to find out the possibility to apply ODA loans of foreign countries, as such projects will contribute in the national social and economic development and will improve the environmental conditions.

2) Organization and Institution

- Taking into consideration the small-organization principle, the implementing organization shall be strengthened as follows:
 - Involved international organizations should be requested to dispatch experts in the transport sector in order to provide more technical skills in implementing the projects.
 - For construction projects and maintenance works, contract-out system to employ private contractors and consultant should be applied to achieve successful implementation.

3) Maintenance and Management

- As the maintenance system in Tripoli is based on the maintenance by contract (MBC) method, it is necessary to upgrade the existing system in order to acquire more efficient and proper maintenance. Maintenance and management standards and levels as well as necessary programs should be established.

4) Traffic Operation and Management

- It is necessary to strictly enforce traffic laws and regulations. Therefore, traffic police should be increased and equipped in order to control traffic operation and apply enforcement laws.
- In order to efficiently carry out the tasks of traffic operation and management, a road and traffic unit should be established and the manuals should be prepared to cover the traffic operation and management contents, techniques and programs.

5) Urban Environment Considerations

- As air quality in Tripoli Central Area is deteriorated, the early implementation of the Short-term Plan projects will reduce the air pollution and improve the natural environment.

6) Early Implementation of Short-term Projects

- Three (3) projects which are Tripoli Boulevard Underpass Project, (Anti pollution facility to reduce negative environment impact of traffic), Transport Management Project in Central Tripoli (Environmental enhancement in Greater Tripoli) and Behsass Transport Center Project are rationalized to be feasible from the technical, economical and environmental aspects as well as the implementation capacity view point.
- The first two (2) projects should be implemented together as an integrated project to improve traffic and environmental conditions in the central area of Tripoli.
- The third project, which is an urgent and committed project by MOPWT, is recommended for implementation at the soonest possible time to provide a multi-function transport center and accommodate public transport modes.