



FIZIBILITETI STUDY

PUBLIC TRANSPORT TERMINAL OF TIRANA

Tirana on, Decmber 2016

1. BACKGROUND

Brief Description of the Project

Tirana currently has no bus terminal, with myriads of informal drop-off and loading locations having evolved over the years, which cause undue traffic congestion, air pollution, and pedestrian safety concerns. The project is proposed to solve an urban transport deficiency in the City, namely, the lack of a public transport terminal and addresses the urgent need to improve the status quo, which finds a disparate location pattern of boarding/alighting of passengers across the city by the some 20,000, with inter-city coaches and minibuses that enter and exit the city daily.

There are about 70,000 vehicles registered in Tirana, about 30% of the nation's total. About 80% of the vehicles use diesel fuel, releasing a volume of amount of particulate matter 20 times higher than petrol engines. Besides carbon monoxide, major pollutants caused by vehicles include Pb, S, CO₂, NO_x, O₃ and SO₂. With about 90% of the capital costs from the road transport, compared with 5% for rail and 2.5% for marine and aviation², air pollution will remain a matter of concern.

Furthermore, the main areas of air pollution in Tirana are at the intersections of major roads. In these sites, there is high concentration of pollution from vehicles, as the main source of environmental pressure in the Tirana region is traffic.

To achieve CO₂ emission reduction amid the anticipated continuing rapid growth in transport demand, the transport sector must seize all opportunities in a strategic way to promote ecotransport a way of sustainable transport development that is resources saving and environmentally friendly. Multi-modal integrated transport development in the rapidly growing city of Tirana is such an opportunity.

The terminal will be located along Rruga-Durresit corridor, precisely the area proposed for the new terminal, is located near the "Kamzas' Overpass", and near the intersection of Rr. Kastriotet (classified as primary road) and Tirana-Durres highway/expressway classified as primary interurban road. Adjacent the terminal area is located the railway line. The main idea of the terminal design is to integrate bus terminal with other available transport alternatives, and later on the tram and rail station interchange to a transport hub.

According to domestic EIA legal framework the project is classified for Preliminary EIA report, and Category B as per EBRD environmental procedures, due to its limited scale of anticipated environmental and social impacts associated with the Tirana Public Transport Terminal. Based on the environmental screening and assessment, the following safeguards policies are taken in consideration: PR 1: Environmental and Social Appraisal and Management; PR 2: Labour and Working Conditions; PR 3: Pollution Prevention and Abatement; PR 4: Community Health, Safety and Security; PR 5: Land Acquisition, Involuntary Resettlement and Economic Displacement; PR 10: Information Disclosure and

1. General Information of the Project

Project of Tirana Public Transport Terminal is provided to be a place of exchange between different transport modes and integration of the network and the framework of urban infrastructure, in the present and future.

Purpose of the Project

Purposes of the Project of Tirana Public Transport Terminal are as follows:

Transport

- Development of TPTT in an intermodal transportation hub that integrates current and future assets of local and regional transition to a comprehensive transportation system;
- Promoting of transfers between the many different ways of transport also the pedestrian and bicycle access on a site that is efficient, logical and safe;
- Increasing the number of public transport passengers in crossing / transit;
- Relevance of local and regional crossing in the railway and intercity buses, including future railway express; and
- Providing further connections to and from the International Airport "Mother Teresa".

Urban Design

- Promote the use of combined private development-oriented in the transit way that meets the city's TTPT and neighborhoods near;
- Ensuring that the design, materials and scale of a new architecture fulfill the existing and future use of land;
- Connecting the neighborhoods with the entry of vehicles, bicycles, pedestrians; and
- Reaching an agreement that will enable economic development for the city, region and country.

Achieving these aims will potentially create an area that will provide the real estate properties to be accessible for transport in the city of Tirana, with values that can be accessed to develop the transport facilities for the mutual benefit of both private and public sector. Such investments for real estate and transport will affect on making Tirana more attractive for further development and bring an example of sustainable, necessary for economic success.

The new terminal is intended to become the center of exchanges and have the capability of linking two urban areas and areas outside the city, in accordance with the existing railway network and tram line in the future.

In this context, the project will be integrated with the new urban plan of the capital city as well as central Tirana masterplan, prepared by the Consultant "Grimshaw Architects' UK.

During the preliminary study by the Municipality of Tirana and other studies carried out by external Consultants regarding Public Traffic to Tirana and future developments, are pre-selected 3 variants of the project, associated with the main indicators as follows:

- (i) **the dimensioning of Terminal,**
- (ii) **the general scheme of planimetry (including all surfaces of parking and platform, train station, etc.),**
- (iii) **operational scheme**
- (iv) **economic and financial analysis**

Road access

Street entrance of TTPT is a new roundabout on the street "SH 1", which allows to go to / or exit from Terminal.

Bus terminal.

Organization of the bus terminal includes:

- i. Terminal for inter-urban buses,
- ii. Terminal for international buses owned by transport companies of northern Albania,
- iii. Terminal for international buses owned by foreign companies of transport and taxi parking area in the south.
- iv. Urban Bus terminal and taxi drivers in the west area, garage and service station fuel in the east.

In this way, the two poles of urban transport, urban bus station and tram station are located along two main border terminal, the first near the urban road network, the second along the route of the new tram line.

A motel, three storeys high, is at the western side of the tram station - train. Number of parking signs for any kind of passenger transportation is as follows:

The passenger vehicle lines

International 34

Intercity buses 57

Urban buses 12

Taxi vans (8 +1) 25

Tram - and the Train Station.

The project will include the study of a settlement including public transport services by tram and railway. Tram station one of the two stations next to the tram line that will connect the terminal to the center of Tirana using the unused railway line. Infrastructure tram - train (railways and platforms, water supply facilities, power lines, signaling, etc.) are not part of the project.

Station building is organized in two levels and passenger entrance is on the side of the square facing the front of the terminal building. On the ground floor are projected escalators, elevators and escalators, and railway equipment rooms (office manager of the station, room systems, electrical systems, signaling system etc.).

Buildings for passengers and routes for pedestrians

The first and the second building of passengers, form a bridge, cross over the bus terminal. Work buildings and services are an alternating themselves, pedestrian tunnels, stores, waiting areas, offices terminal operating, travel agencies, public buildings and bathroom personnel, equipment and maintenance etc.

Terminal Mater Plan has met the parameters as follows:

- Project Compatibility with the new urban plan of Tirana;
- Dimension of parking spaces for buses and taxi vans, the verification of the parking capacity in the period 2035;\
- Dimension of the tram station, train and tram depot;
- Preparation of a proposal for a customized network improved the bus route, which will work in an optimized manner in the new terminal.
- The best positioning in town, integrating terminal in the city and making it an element of exchange with the city;
- Making a node intermodale terminal, facilitating the movement of customers and creating areas of trading and movement attractive commercial areas.
- Suitability of Architecture.

It is important to note that most of the passengers of inter-urban trips are currently distributed through many informal places around the city. For this reason, an important part of the future terminal will include increasing the capacity and speed of the bus operators along the Durrresi street hallway, as well as taxi services.

The terminal project gives priority to the quality of public space.

Tirana Municipality will provide for this purpose used a 85.000m² plot of land owned by the Municipality of Tirana, obtained from DCM nr.770, dated 10.11.2011, along the main street to Durres, outside the capital.

System of bus lines urban buildings will become a distributor and system supplier for carrier terminal passengers from Tirana to TTPT-in and distribute passengers from TTPT in Tirana.

The study will include vans cab with 8 + 1 seats, operating in lines of municipalities and intercity aimed at regulating the market, the improvement of the transport service for passengers, relieve traffic in Tirana and income enhanced terminal concession.

Considering the above, are set users whome identify the main transport sectors of TTPT's affecting future activity of Tirana Terminal:

1. International road transport and interurban
2. Urban and suburban for passenger of Tirana
3. Passenger of rail Transport

Total buses/vans, internal transfers reach the number of 18.066 units. The main access road towards internal direction is Durrresi Street with 7,250 transfers per day (equivalent to 40% of total movements in the internal direction), followed Elbasani Street with 5,270 transfers per day (29%); Kavaja Street with 4.674 transfers per day (26%) and finally Dajtit Street with 872 transfers per day (5%).

Daily transfers by bus /van moving in the outer direction are more numerous than those moving in the internal direction, amounting to 20.776 units. The main street running outside is again Durres street in which 44% of daily transfers to external directions are made (9.092 transfers per day). The second major way outward is Kavaja Street (7.292 transfers per day equal to 35% of total movements externaly directed) that with Durres Street is included with almost 80% of total movements externaly directed. The remaining 21% is devided in Elbasani

Street (3.528 transfers per day equal to 17% of movements externally directed) and Dajti Street (Dibra Street) (864 transfers per day equal to 4% of movements externally directed) which even for the externally directed movements is the last important.

Organizing of transport surface for transport vehicles is calculated as follows:

1. Parking places for international regular bus lines.

Operators of international bus lines will use their parking spaces (34 parking spaces) and even a parking lot during the day and night. Recent experience shows that this will be enough because one of the buses always travels by night.

2. Parking places for intercity buses.

From the overall schedule of intercity bus lines, a total of around 175 buses is estimated that should be parked at Tirana Terminal during the night. 57 parking spaces for intercity bus lines can be used for parking at night, which means 120 overnight parking spaces needed in Tirana Terminal.

3. Parking lots for cars and taxis (4 + 1 seats)

A total of 20 parking spaces is provided for Taxis of 4 + 1 seats.

4. Dimensioning of spaces for trains and trams stations

Transport Terminal of Tirana will include a rail tram station that allows the connection from / to the city center through an intermodal interchangeable rail line. This couple of two stations with no exit will be realized in the space currently occupied by the tram lines.

Moreover, the tram stop will include a warehouse for carrying out maintenance operations. Consequently, a preliminary calculation of the size of the tram station, depot and train station is conducted.

In short, the study of future tram line will be a double line with a length of 7.2 km in both directions and will have a commercial speed of 20 km / hour and an interval of 4-7 minutes.

Selection of the appropriate functions.

The terminal is not intended as a sum of functions, but as a set of services that occur open and closed places, where the traveler, intended as a free entity, is going from one situation to another.

The project coordinates the different and opposite aspects: the movement of passengers, the movement of vehicles, the connection with the surrounding urban areas.

Selected functions and dimensioning are connected with the study of the flow of passengers.

The terminal will be located along the corridor Durres Street, namely the proposed site for the new terminal is located near the " Kamza Overpass, and near the cross road of Kastriotet Street (classified as primary roads) and Tirana Durres Highway classified as primary suburban road. The railway line is located adjacent to the terminal area.

It is important to note that most of the passengers on inter-urban traveling are scattered around many informal places currently moving through the city. For this reason, in the future an important part of the terminal will include an increase in the quality and frequency of bus operators along Durresi Street corridor, as well as taxi services.

The terminal is part of a broader strategy of urban transport which will provide solutions to urgent needs for improving traffic and reducing air pollution in Tirana, through parking all

means of passenger's transport from across the country and creating optimal conditions for their transport in Tirana.

The objective of the Municipality of Tirana is to improve the general mobility, providing a transportation terminal at full capacity to allow interurban vehicles for unloading passengers, for connections with urban buses and taxis along the corridor leading to the rest of the city, reducing congestions in the town center, improving the reduction of air pollution and fuel consumption for public transport.

Organization of surface for transport vehicles is calculated as follows:

Based on the evaluation of forecast demand for passengers and passenger's vehicles transiting the Tirana Terminal and their integrated schedules, the number of parking spaces (anchors) and needed parking space in Tirana Terminal for international buses, intercity and municipalities, taxi vans (8 + 1), urban buses, taxis (4 + 1) is estimated. At the bottom are designated **34 parking places** for international buses, **45 parking places** for intercity buses, **12 parking places** for municipality buses, **12 parking places** for urban buses and **25 parking places** for taxi minibus (8 + 1).

Estimated number of parking places and parking spaces has been established to handle the demand of passengers and passenger's vehicles in Tirana Terminal **for 2035**.

<u>Vehicle passenger lines</u>	<u>N°. The countries of residence</u>
International bus	34
Intercity bus	45
Municipal buses	12
Urban buses	12
Taxi vans (8+1)	25
Buses parking at night	177

Project goals

Project goals of Public Transport Terminal of Tirana (TTPT) are as follows:

Transport

- Developement of the Project in an intermodal transport hub that integrates current and future assets of local and regional transition to a comprehensive transportation system;
- Promotion of transfers between the many different means of transport and pedestrian and bicycle access on a site in a way that is efficient, logical and safe;
- Increasing the number of public transport passengers of crossing / transit;
- Relevance of local and regional crossing the railway and intercity buses, including future railway express; and
- Providing further connections to and from the International Airport "Mother Teresa".

- TPTT aims to become a transport hub and therefore should have the ability and the possibility of linking the two urban areas and areas outside the city, in accordance with the development of railway and tramway network in the future.

Drafting of TTPT had the following objectives:

- a. Good Placement in town,
- b. Selection of appropriate functions;
- c. The terminal should be an intermodal hub, making it easy for passengers to move and creating areas of exchange, the transit and shopping areas;
- d. Appropriate Architecture;
- e. Flexibility

TTPT is designed to integrate the infrastructure network and the urban area, both present and future: one of the main axes of this project is a continuation of a new urban axis of the Master Plan of Tirana.

Urban Planning

- Promote the combined use, private oriented development towards transit that completes the area of PTTT and nearby neighborhoods;
- Ensure that the design, materials and scale of a new architecture complements existing and future use of land / land;
- Connecting neighborhoods with new vehicles entry, bicycle, pedestrian; and
- Reaching an agreement that will enable economic development for the city, region and country.

Achieving these goals will create an area that will be accessible to real estates for transport in the city of Tirana, with values that can be accessed to more fully develop transport facilities for the mutual benefit of both private and public sector. These investments in real estate and transportation will make Tirana more attractive for further development and will bring a sustainable example, necessary for economic success

The new terminal is intended to become the center of exchanges and have the capability of linking two urban areas and areas outside the city, in accordance with the existing railway network and tram line in the future.

Regarding this, the project will be integrated with the new urban plan of the capital city as well as central masterplan of Tirana

During the preliminary study by the Municipality of Tirana and study of foreign consultant ITASLFERR Spa, Italy in connection with the public traffic to Tirana and future developments are 3 variants of the project pre-selected, associated with the main indicators as follows:

- (v) **terminal dimensioning**
- (vi) **the general scheme of the layout (including all surfaces of parking and platfors, train station, etc.),**
- (vii) **operational scheme**
- (viii) **economic and financial analysis**

Road access

The entrance to Terminal is a new roundabout on the road axis "SH 1", which allows to go to / or exit from Terminal

Bus Terminal

Organization of bus terminal includes:

- i. Terminal for inter-city buses,
The terminal for international buses owned by transport companies in northern Albania,
- ii. Terminali për autobusët ndërkombëtare në pronësi të kompanive të huaja të transportit dhe zonën e parkimit taksi - van në jug , The terminal for international buses owned by foreign transport companies and taxi parking area – van in the south of Albania
- iii. Urban buses terminal and taxis area in the West garage and fuel service station in the east.
The bus terminal

2. Inception of Terminal Project

Taking consideration the development strategies of urban traffic and public transport in Tirana, the interurban transportation, as a regular service that must fulfill the increasing passenger demand, is in a bad condition regarding the end point connections, called as terminals. Consequently, the need of the concentration of transport lines to control the interurban distance, leads to the creation of a multi-functional terminal for public transport in Tirana. (TTPT).

The objective of the Municipality Tirana is to improve mobility in general, providing a transportation terminal at full capacity to allow interurban vehicles to drop passengers, and allow them to connect them with urban buses and taxis along the corridor leading to the rest of the city, thus reducing the congestion in the city center, improving the reduction of air pollution and fuel consumption.

Tirana municipality based on its policies and the Strategy of Sustainable Development of Transport in Tirana and Conservation of the Environment, in cooperation with the European Bank for Reconstruction and Development (EBRD) and based on the legal framework in Albania for participation in private sector, for implementing projects in the public sector (Public Private Partnership), the Law Nr. 125/2013 (as amended) "On Concessions and Public Private Partnership", and DCM. 575, dated 10.07.2013 "On approval of rules for the evaluation and concession public private partnership" etc., the Municipality of Tirana in the role of the Contracting Authority has identified and has examined the Project concession public private partnership "Public Transport Terminal Tirana "(TTPT). The European Bank for Reconstruction and Development (EBRD) has assisted the Municipality of Tirana for the financing the current preparation of a Feasibility Study, Environmental and Social Analysis and preparation of tender sequential concession contract.

In 2012 there was a Grant Agreement signed between EBRD and the Municipality of Tirana, amended on 09.10.2012, for the Feasibility Study of the Public Transport Terminal of Tirana, with a value 495.000 Euro.

Through this grant is financed the consulting contracts on "Review of existing Feasibility Study and preparation of the Concession Tender" for the Public Transport Terminal in Tirana, associated on 09.10.2012 between the Municipality of Tirana and foreign consultant ITALFERR Spa, Italy.

It was agreed that EBRD would had assist for financing the preparation of the detailed design, including the completion of (i) feasibility study, (ii) an analysis of environmental and social impact (iii) tender documents for the concession contract to the Municipality.

During the structuring of the project as a concession, Tirana Municipality will offer a 85,000 square meters of land positioned along the main corridor outside the city from northwest to Durres, to be used in a long-term plan for the future concessionaire.

The Municipality of Tirana in 2015, has developed tender procedure for consulting services on "Feasibility study and preparation of tender documents" Project of the Public Transport Terminal Tirana.

The tender winner was declared SPA Italy ITALFERR company. Consulting contract with the company "ITALFERR SPA" Italy, was signed on 04.02.2016 financed by the European Bank for Reconstruction and Development.

3. Current Situation

Along with the process of democratization that began in 1991, it has developed further urbanization in the capital, Tirana, which has undergone a rapid growth of population shift from rural and mountainous areas. The population of Tirana in 2008 reached six hundred forty thousand (640,000) people from two hundred and fifty thousand (250,000) in 1989, and increase of almost 270 percent in just nine years. According to the planning documents, the city will rise to 1,000,000 people in 2020.

Urban development in the sectors of transport, water and Sewerage management in particular must urgently be balanced with the influx of urban population.

Since the early 90's, road traffic has increased exponentially in Tirana. Today the growth of road traffic not only pays much infrastructure, but increase also the air pollution which is a threatening for the health of people.

Modal public transport division currently has about thirty six percent of all trips, or a total of eight hundred thousand trips for day caused by buses and minibuses. This level of bus passenger volumes can be expected to fall about to twenty-five percent of all trips in 2020.

There are three hundred thirty urban buses in a standard size that are operating together in ten main streets, and one hundred minibus and about Eight hundred and fifty taxi. Public transport is regulated by the Directorate of Road Traffic Transport Tirana, under contracts concluded licensing and operations of the drivers are liberalized. Only one urban roads operated by a public company; all others are privately operated and do not receive subsidies.

Daily movements led off buses minibuses are fewer than movements within and counts 20.776 units.

- Main Street movements will be Durres street again in which exceed 44% of total movements for outside (9.092 movements per day).
- The second route for movement out is the Kavaja street (7.292 movements per day equal to 35% of the total of "leaks" to outside), which together with the road to Durres is involved in almost 80% of total "leak" out.
- The remaining 21% is divided in Elbasani Street (3.528 movements per day equal to 17% of the total) and the path of Dajtit (864 movements per day equal to 4% of the total) which even for movements outside, it is way less important.

According to the Institute of Statistics, the number of registered vehicles in Tirana since 2010 is around 120 000. Tirana has about 40% of vehicles to Albania. Traffic load is very high and the network in the most part of the day is full, especially within the middle ring.

Tirana (since 2009) has about 178 cars per 1000 inhabitants, is only slightly less than half the European average and is expected to grow rapidly the next few years.

Rapid motorization has brought many urban problems in the metropolitan area of Tirana, such as traffic congestion and environmental pollution. Traffic congestion on

city roads and streets associated with the surroundings is getting worse year after year. This is because the capacity of roads in possession to travel from the suburbs to the city center is very limited due to legal/illegal parking, there is a traffic jam, especially in the radial roads during peak hours in the morning and afternoon.

The inclusion of some donor funding and implementation of studies dealing with some aspects of the transportation system plays an important role in the implementation of the policies outlined above.

Tirana road network is incomplete in some segments of the main roads that enter the city from the suburban areas or from cities like (Durrës, Elbasan, Dajti and Kavaja). The current road network is based on:

- A main ring road (inner ring road, or city center ring road) within which are focused all the main activities in Tirana;
- Another ring road which is shorter and incomplete (small ring road)
- A small part of the outer ring road in the eastern part of the city.

The above data clearly show another important issue to the development of the road network in Tirana. Two of the three rings described above, the internal ring and small rings have a common section on the edges of Lana. It comes from two reasons which represents a physical limitation that has influenced the development of roads in Tirana.

Considering the development strategy of public transport in Tirana, sustainable transport development includes all kinds of bus transportation in accordance with the legislation in power. Intercity transport, as a regular service, that must meet growing passenger demand, presents two main problems.

First, the creation of distributed stations (non-integrated) causes traffic delays, reduction of parking capacity in the city. Tirana municipality has licensed 54 urban lines with 243 bus vehicles, adding the vehicles traffic flow entering in Tirana, Tirana is estimated to endure around 865 departures/arrival per day.

Second, bus departure / arrival are not equipped with the necessary infrastructure to serve passengers. Suburban transport intended to serve the needs of the population that moves from the center of municipalities towards the city and conversely, actually operate about 33 regular suburban lines with about 314 departure / arrival per day (transport flow during peak hour is of 34 bus/hour). The stationing of suburban lines represents a problem that most of these lines in the center of Tirana completed by intervening in urban bus lines and heavy traffic on the incoming axes in the center of Tirana. International transport operators represented by 34 international passenger transport offering service in 53 international lines connecting Tirana with Greece, Italy, Germany, Turkey, Macedonia and Kosovo. Given the nature of this service, the majority of agencies are focused on the Boulevard Zogu I. Stationing of interurban lines in the city centre represents a problem, because they are mixed with most of inner city public bus stations, in this way creating a traffic jam in main roads leading to the city centre.

The lack of an integrated terminal is one of the recommendations of many studies conducted for transportation in Tirana, starting with the strategy of Sustainable Transport in 2009 and to the recent study funded by the Japanese government, the thematic study of Tirana, ended in June 2009 "Strategy of Sustainable Road Transport

Hall," and "New Urban Regulatory Plan of Tirana" for 2021 was also completed in 2009.

Current traffic problems:

4. Need for Primary Road Network
5. Vehicle traffic unbalanced in CBD
6. Reduced Road Capacity
7. Traffic Control and Management
 - a. Lack of Traffic Monitoring Systems
 - b. Traffic Regulation
 - c. Parking problems

New parking facilities should be located at the following places:

- Stops of the main intermodal nodes (points of transfer between primary roads and public access, transport by bus or a new public transport);
- In all CBD Tirana (in the middle of the ring road), especially around the office buildings and large commercial buildings, where demand for parking is too high; and
- In sub-center (if available) situated in the outskirts of Tirana.

There are about 70,000 registered vehicles in Tirana, which are 30% of the total nation wide, 80% of vehicles use diesel fuel that discharges a quantity of particles volume which is 20 times higher than diesel engines. In addition to carbon monoxide, the main pollutants caused by motor vehicles include Pb, S, CO₂, NO_x, O₃ and SO₂. With about 90% of the capital costs of road transport, compared with 5% for rail and 2.5% for shipping and aviation, air pollution will remain a concern.

This necessity for the city to be liberated from the heavy traffic of means of transport by bus and adjust with European parameters the transport of people from Tirana, was also addressed during the drafting of the Regulatory Plan of the City, in which it was adopted the Multimodal Terminal positioning in the entrance of Tirana was approved in December 2012. Taking into account the development strategies of urban traffic and public transport in Tirana, the intercity transportation as a regular service that must meet increasing passengers demand is in a very bad conditions regarding the departure and arrival stations, called terminals. Consequently, the concentration of far/in (inter-urban) distance transport lines was necessary for the creation of a multi-functional terminal for public transport in Tirana (TTPT).

The terminal is part of a broader strategy of urban transport which will provide solutions to urgent needs for improving traffic in Tirana, through parking all means of transport of passengers from across the country and creating optimal conditions for their transport in Tirana.

The objective of the Municipality Tirana is to improve mobility in general, providing a transportation terminal at full capacity to allow interurban vehicles to drop passengers, and allow them to connect them with urban buses and taxis along the corridor leading to the rest of the city, thus reducing the congestion in the city center, improving the reduction of air pollution and fuel consumption.

4. Assessment of Demand Forecast

4.1 OVERVIEW

The main objectives of the assessment demand forecast activity are defining and evaluating of the current passenger and passenger vehicles demand in the urban and extra urban transportation zones affecting the future Tirana Public Transport Terminal (TPTT) and the forecasting of the transport demand trends, and relevant traffic flows as well, for the time horizons of years 1, 5, 10 and 20 since the starting of terminal operation.

It is important to stress the fact that the major objective of this part of the study is to provide to the investor / concessionaire the number of buses and taxi vans (8+1) that today should likely be using the Tirana Public Transport Terminal, their time tables and their future growth rates in a 1, 5, 10 and 20 years of time horizons.

The intercity passenger demand, strongly related to the dimensioning and major revenues of TPTT, is even more important for the main objective of the project than the urban public transportation demand which should serve only as a feeder / distribution system for the Tirana Terminal.

As a consequence of above mentioned items, there are two traffic demand forecast models needed for the assessment of demand forecast of TPTT: *Tirana urban traffic model* and *Albanian intercity* (domestic and international) *traffic model*. Each of them needs large surveys and traffic counts and processing for their correct calibration.

4.2 THE METHODOLOGY

There are two methods to assess the current passenger and passenger vehicles demand in Tirana Terminal:

- 1) Modelling the passenger and passenger vehicles traffic in Tirana urban areas and intercity areas;
- 2) Finding out the number of passenger transport licenses or authorization issued to the bus companies operating in regular bus lines with origin / destination or transiting the Tirana City.

Regarding the first method, two passenger demand forecast models are needed, urban and intercity (national and International), as above stressed.

For each model are necessary large surveys and traffic counts for their due calibration. It is technically impossible to build up, load the data, calibrate and run such large models in such a relatively short period of time.

Fundamentally it should be an expensive and unnecessary process because:

- There are recent and very good models used by the previous studies concerning Tirana urban transportation and Albanian national transport;
- No more accurate results should be provided with the new modelling of urban and intercity passenger demand forecast. Following the second method it can be directly obtained reliable and very useful data as concerning the number of buses and taxi vans (8+1) and their time tables, that currently have Tirana City as their origin / destination

or transit point either.

Based on the above presented reasons, the ***Consultant have chosen to apply the second method as concerning the assessment of current demand of passengers and passenger vehicles, and to use the outputs and results of the models of previous recent studies, in order to assess the demand forecast for the 1st, 5th, 10th and 20th year, subsequent to the beginning year of terminal operation.***

- a. The frequency of feeder and/distribution system in TPTT (urban bus lines) will be assigned.
- b. Based on above, the number of buses and taxi vans stalls (docks), parking places will be designed.

4.3 THE SELECTION OF TRANSPORTATION MODELS NEEDED FOR THE ASSESSMENT OF PASSENGER DEMAND FORECAST

Examined and analysed all the previous studies regarding Tirana (see Task 1 – Preview of the existing studies prepared by the City), the Consultant selected:

- the **Transportation Demand Forecast Model of ANTP 2 Project – First Five Years Review of Albanian National Transport Plan – Louis Berger 2010**, as a basis model for the passenger transport demand forecast for the intercity (domestic and international) traffic in Albania and
- the **Urban Transportation Demand Forecast Model of JICA - The Project for Tirana Thematic Urban Planning 2012**, as a basis for passenger transport demand forecast in Tirana city.

Hereinafter the selected models and their major inputs are analysed in details, selecting and checking further their most important outputs and results to be used for the assessment of passengers and passenger vehicles demand forecast.

Only relative data and outputs are used for the assessment of demand forecast, as growth rates, daily, weekly and yearly traffic variations, and modal split data are.

4.3.1 ANTP2 Modelling (First Five Year Review of the Albanian National Transport Plan)

4.3.1.1 Passenger Transport Demand

The modelling of passenger transport demand consists in trying to define the socio-economic factors which trigger and explain the volume of inter-urban (between TAZs) passenger movements. Louis Berger built a series of models:

4.3.2 ANTP2 Modelling (First Five Year Review of the Albanian National Transport Plan)

4.3.2.1 Passenger Transport Demand

The modelling of passenger transport demand consists in trying to define the socio-economic factors which trigger and explain the volume of inter-urban (between TAZs) passenger movements. Louis Berger built a series of models:

A generation model to estimate traffic flows generated by each TAZ using as explanatory factors the zones socio-economic characteristics (population, income levels, development potential, motorization rate ...).

An attraction model to estimate the number of trips attracted by each zone using input data characterizing the “attractiveness”, the dynamism of these zones (population, economic activities, employment opportunities, tourism or leisure facilities...).

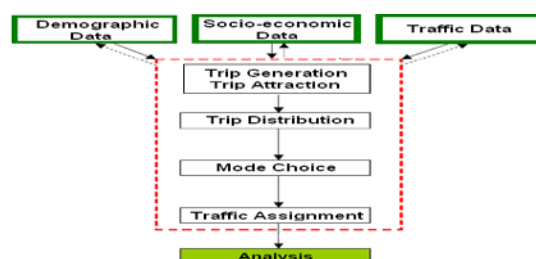
A distribution model able to estimate the number of trips between each pair of traffic analysis zones using the calculated generated and attracted trips as input data. In order to simulate the destination choices of trip makers, the Consultant (Louis Berger) used a gravity-type trip distribution model that explicitly relates flows between zones to inter-zonal impedance to travel.

The impedance of the network links is used to determine the minimum path between each origin-destination pair on which the traffic flows are assigned by the Transport Model. This impedance is the cost “perceived” by the users of that link during their travel on the network. The Consultant (Louis Berger) used as impedance the travel time between centroids. Travel time was calculated as a function of distance, and average speeds according to the condition and geometric characteristics of the network.

Louis Berger calibrated the distribution model by adjusting the estimated flows for the year 2010 to the traffic flows recorded during the traffic surveys.

A general view of this modelling process is shown on the following Figure 2.1:

Figure 2.1 Passenger Transport Demand Modelling Process



Louis Berger defined equations for the generation and distribution models using regression analysis. Different forms of equations (linear, exponential and polynomial) and different explanatory variables were considered until the correlation between the actual and calculated passenger flows between each OD pair cannot be further improved. The OD matrix calibrated with externally generated passenger trips, border crossing statistics and seasonal factors.

4.4 THE POTENTIAL PASSENGER TRANSPORT MARKET OF TIRANA TERMINAL

Passenger transport modes affecting Tirana Terminal

The TPTT should be likely frequented by international regular bus lines, intercity regular bus lines, communes regular bus lines (connecting the city with other around communes or/and municipalities) having Tirana as origin or/and destination or transiting through it.

The urban bus lines system of Tirana will become a feeder and distribution system for the terminal transporting passenger from Tirana city to TPTT and distributing passengers from TPTT to Tirana city.

The Consultant proposes to accommodate in the TPTT even the Taxi-vans 8+1 operating in the intercity and communes lines, aiming the market regulation, improvement of transport service for passengers, traffic calming in Tirana city and added revenues for the terminal concession as well.

Considering the above identified users of TPTT the main transport sectors affecting Tirana Terminal future activity has been determined:

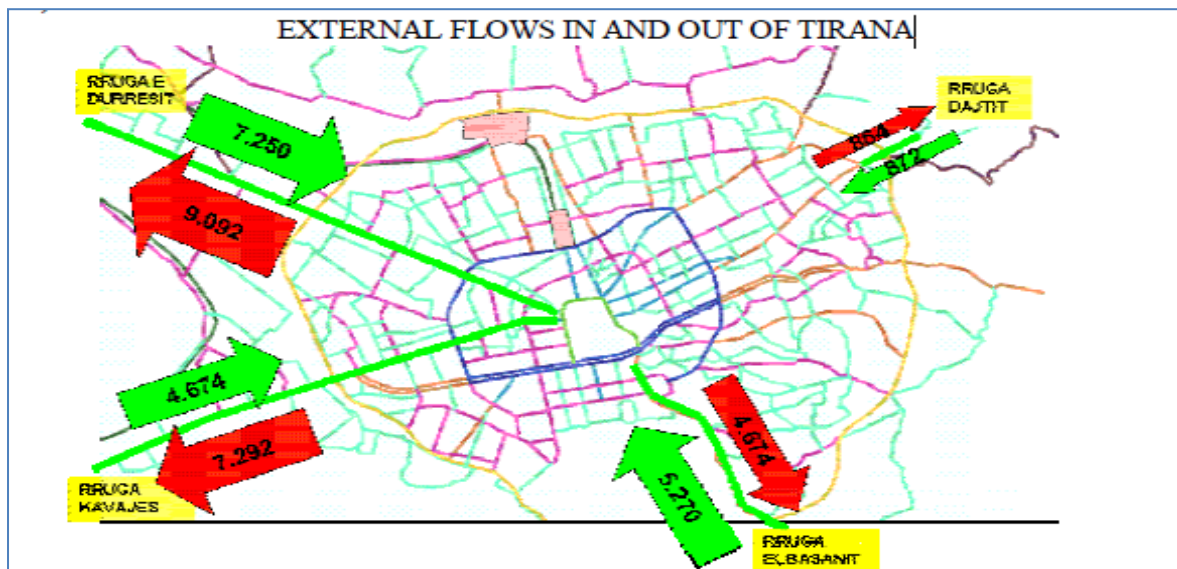
- (a) Intercity/interurban and international road transport of passengers
 - (b) Tirana urban and suburban transport of passenger
- Potentially, railway transport of passengers, after the allocation of the Tirana Center Railway Station and new forecasted tramline is put into operation.

Tirana Terminal location and share of total passenger vehicle traffic transiting Tirana City

Considering the location of the TPTT at the North West edge of Tirana City, is necessary to evaluate with the most accurate estimate the share of existing passenger vehicles that will possibly access the TPTT as its operation get started.

The ToR give the following data on passenger vehicles flow distribution by the four main gates of Tirana City, as shown even in the following Figure 2.7:

I. **Figure 2.7 External Flows in and out Tirana**



Source: Tirana Municipal Sustainable Transport Strategy - EBRD 2009

Based on the above given data, it can be concluded that:

1. It is possible to include all the traffic flows coming from **Rruga Kavajes** (Plepa – Ndroq – Tiranë direction), **Rruga Durrësit** (Durrës – Vorë – Tiranë direction– SH2) and **Kamza** (SH1 – North direction), that represent about 72.5% of total daily transfers in Tirana;
2. It is impossible to attract, to the TPTT the passenger vehicles flow coming from **Rruga e**

Dajtit (Dibres), which represent only 4.5% of total daily transfers in Tirana.

3. The passenger vehicles flow coming from Rruga Elbasanit represents an important share of 23% of total daily transfers in Tirana.

From “Rruga Elbasanit” comes the traffic of taxi vans (8+1) and the traffic of busses coming from Elbasan, Librazhd, Perrenjas, Pogradec, Korçë, Greece, Turkey and Macedonia .

4.5 DATA COLLECTION, DATA VERIFICATION, SURVEYS AND INTERVIEWS

The Consultant examined and crosschecked all the data, main findings and outputs of the previous studies, identifying the needs for updates and corrections and selected the more reliable of them to be used in the Tirana PT Terminal Feasibility Study with other new data collected from official sources.

The Consultant has performed a series of short field surveys in order to verify the accuracy of traffic related data used as inputs or the outputs of the previous studies regarding the Tirana urban transport especially observing the peak and rush hours in Tirana main exit / entrance roads, verifying the location of intercity and communes bus stations, and vans (8+1) as well, the operation of the urban bus lines in the routes transiting the Tirana Public Transport Terminal service zone, etc.

Useful consultations and exchange of information with members and heads of regular bus lines associations, bus stations administrators, and bus drivers either, were organized by the Consultant. On the other hand, hasn't been possible to organise consultation with the vans (8+1) associations or drivers because their lack of willingness to exchange information about.

Helpful meetings with competent authorities as the Transport Department of Tirana Municipalities, Road Transport Sector and Railway Transport Sector in the Ministry of Public Works and Transport, were organised by the Consultant.

Regarding the international passengers transport in regular bus lines, the source of data was the Road Transport Sector and License Sector in the Ministry of Transport (MPWT) with data concerning international bus lines and their time tables for the year 2012.

Regarding the intercity passenger transport in regular bus lines, the Consultant provided data from the Road Transport Sector, License Sector in the Ministry of Transport (MPWT) and Department of Transport in Tirana Municipality with data concerning intercity bus lines and their time tables for the year 2012.

The Consultant crosschecked the data coming from different sources and found them reliable and satisfactory close to each other. Very good results provided also the comparison of calculations as concerning the bus demand to the Tirana Terminal done in basis of data coming from MPWT and Municipality and data from the OD passenger demand matrixes of ATNP2.

Regarding the commune passenger transport by regular bus lines, the source of data was the Tirana Region, through the Department of Transport in Tirana Municipality, which provided data concerning commune regular bus transport connecting Tirana with around communes, and their schedules as well.

4.6 VERIFICATION OF BASIS DATA FOR ASSESSMENT OF DEMAND FORECAST – CONFRONTATION TO THE NEW DEVELOPMENT TRENDS

The two selected models for the transport demand forecast in Tirana Terminal have operated on the basis of data of year 2009 and 2011. The first step of modelling process is the Trip Generation Step that is based on **demographic, socio-economic** and **traffic** data.

Data only two years old normally are considered as satisfactory fresh data, but just at the end of 2011 and during 2012 emerged some important developments that must be taken into consideration:

- In the begging of 2012, INSTAT published preliminary data about 2011 Census of Population with surprising result about Albanian resident population (about 2.8 million inhabitants, instead of 3.2 million expected);
- During 2012 the economic crises has caused major impact in the deterioration of macroeconomic indicators of Albanian economy, and the year 2013 is forecasted to be a difficult year as well.

To be able to properly use the outputs and results of these two transport models, these must be compared with the new developments concerning Albanian and Tirana population, deterioration of Albanian macro-economic indicators and the motorization rates of Albania and Tirana.

4.6.1 Statistical Data about Albanian macroeconomic indicators and their trends

The data about Gross Domestic Production (GDP), GDP per capita, Gross National Incomes (GNI) per capita and their growth rates are very important indicators as concern the mobility and transport demand forecast because there is a very strong linear correlation between GDP per capita and GNI per capita growth rates to the mobility and transport growth rates.

Analysing the trends of cross-border traffic by modes of transports and by all modes, it can be concluded that:

- ✚ There is a uniform and constant growth of passenger traffic in the Albanian cross-border checkpoints for all modes of transport;
- ✚ Despite short term crisis (i.e. 1997 unrests) the general medium and long term growth trends are firmly positive and with relatively high levels of rates.
- ✚ Minimal annual average growth rate is demonstrated for the maritime transport of passengers: **7.13**;
- ✚ Maximal annual average growth rate is demonstrated for the road transport of passengers: **16.8%**;
- ✚ The annual average growth rate for all modes of passenger transport is **14.8%**.

4.6.2 Tirana Population trends

Based on the results of Census 2011, the total population of Albania is 2,831,741. According to the 2001 Population and Housing Census, the population of Albania was in 2001 equal to 3,069,275. The comparison of the figures shows that the population of Albania has decreased by 7.7% in about ten years. Large scale emigration and fertility decline are supposed to be the main causes of the observed population decrease.

*The population varies only in relation to the number of births and deaths and does not take into account the considerable emigration flows in particular to Italy and Greece. This explains the differences with the census data on resident population in 2001 and 2011

4.6.3 Albanian passenger vehicles registered and in circulation

In the Table 2.14 is shown the inventory of the passenger road vehicles registered in the Republic of Albania.

Table 2.14 Passenger road vehicles registered in Albania, by vehicle category

Year	Cars	Vans (8+1)	Buses (> 9 seats)	All Passenger vehicles
1993	56,728	3,943	1,645	62,316
1994	67,960	4,237	1,768	73,966
1995	58,682	3,459	1,443	63,584
1996	67,278	3,958	1,652	72,888
1997	76,822	4,548	1,898	83,269
1998	90,766	4,798	2,002	97,566
1999	92,252	6,399	2,670	101,322
2000	114,532	8,739	3,647	126,918
2001	133,533	10,823	4,516	148,872
2002	148,531	10,934	4,563	164,027
2003	174,782	11,280	4,707	190,770
2004	190,004	13,034	5,439	208,478
2005	195,125	15,316	6,391	216,832
2006	225,114	18,706	7,806	251,626
2007	237,932	15,343	6,403	259,678
2008	248,938	15,899	6,645	271,482
2009	264,362	16,429	6,594	287,385
2010	277,045	17,311	7,032	301,388
2011	282,916	16,643	6,698	306,256

The Consultant has calculated the average annual growth rates for the passenger vehicles in circulation in Albanian territory, by vehicle categories (Table 2.16).

Table 2.16 The annual average growth rates for the passenger vehicles in circulation in Albania.

Cars	Vans (8+1)	Buses	All Passenger vehicles
9.34%	8.33%	8.11%	9.220%

Analysing the trend of Albanian GNI per capita, PPP (current international) by years at Figure 2.12 above and the trend of the number of passenger vehicles by years, at Figure 2.28, a very strong correlation has been found between them. The following correlation coefficients have been calculated in Excel sheet as by CORREL function formula:

Cars coefficient	Vans (8+1) coefficient	Buses coefficient	All passenger vehicles
0.9904	0.9483	0.9404	0.9894

Considering that the annual average increasing rate of **GNI per capita**, PPP (current international US\$) is **8.07%**, it can be concluded that **the average increasing rate of GNI per capita (PPP) is almost equal with the increasing rates for buses (8.11%) and vans 8+1 (8.33%), and very close to the cars increasing rate (9.34%).**

The main conclusion of the above analysis is that the **trends of motorisation rate has a strong coupling with the GNI per capita ones, fully justifying and supporting the forecasted growth trends of urban and intercity passenger traffic**, by the two models.

4.6.4 Summary traffic tables of International bus lines by time horizons

Based on the data as above specified, the Consultant calculated the final Tables 2.30 regarding the international regular passenger and passenger vehicle traffic for the years: 2012, 2015, 2020, 2025 and 2035 that are important for terminal planning.

Table 2.30 International regular passenger and passenger vehicle traffic 2012, 2015, 2020, 2025, 2035

Year 2012							
Departures from Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
International Bus	1,016	34	30	2,735	111	25	52
Arrivals in Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
International Bus	1,221	41	30	3,094	125	25	52

Source: Consultant elaboration of data provided by Ministry of Public Works and Transport 2012

Year 2015							
Departures from Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
International Bus	1,258	42	30	3,389	137	25	52
Arrivals in Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
International Bus	1,458	49	30	3,695	150	25	52

Source: Consultant elaboration of data provided by Ministry of Public Works and Transport 2012

Year 2020							
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Departures from Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
International Bus	1,799	60	30	4,843	196	25	52
Arrivals in Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
International Bus	1,960	65	30	4,966	202	25	52

Source: Consultant elaboration of data provided by Ministry of Public Works and Transport 2012

Year 2025							
Departures from Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
International Bus	2,570	86	30	6,922	280	25	52
Arrivals in Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
International Bus	2,634	88	30	6,675	271	25	52

Source: Consultant elaboration of data provided by Ministry of Public Works and Transport 2012

Year 2035							
Departures from Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
International Bus	5,251	175	30	14,139	570	25	52
Arrivals in Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
International Bus	4,758	159	30	12,059	489	25	52

Source: Consultant elaboration of data provided by Ministry of Public Works and Transport 2012

4.7 INTERCITY REGULAR BUS LINES IN TIRANA TERMINAL

Being not yet in Tirana any integrated intercity bus terminal, there are several bus and van stations spread out in the city. They are mostly located at roadside, without toilets, ticket window, waiting room, etc., and cause considerable disturbances to the traffic. The existing individual bus stations are run by private and international bus stations, and the locations are presented in the Figure 2.32 as above presented.

Ministry of Public works and Transport and Tirana Municipality – Transport Department, provided detailed data about intercity regular bus lines that should likely transit in Tirana Public Transport Terminal.

The data collected were object to a further elaboration, analysis and interpretation due to gaps of information, and difficult and unclear format they had, especially crosschecking data from different sources.

From the list of intercity lines, only the lines which likely should be frequented the future TPTT were selected.

The intercity regular bus lines have been divided in 4 groups: Southern Bus lines, South-East Bus lines, Northern Bus lines and Bus lines having destination Tirana.

4.8 Intercity Bus lines daily traffic variation

The Consultant elaborated the data provided by the traffic counts in exit/entering road in Tirana of the study *Strategy for a Sustainable and Integrated Traffic Development - 2007* (only such data are available) and calculated the daily variation and peak hours factor for traffic entering and leaving Tirana.

4.8.1 Summary tables of intercity regular bus lines in Tirana Terminal by time horizons

In the following Tables the Consultant provides the necessary database for the calculations of the intercity regular bus lines traffic in Tirana Terminal.

From the OD Matrixes of ANTP2 study (Louis Berger) it can be obtained daily passenger demand in intercity travels, by extracting from the total of Tirana demand the passengers having the origin and destination in the Albanian Cross Borders and neighbouring countries that represent the international traffic.

Table 2.41 Database for the intercity regular bus lines traffic in Tirana Terminal

Year 2010							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passengers	Vehicles	Average pass/vehicle	Passengers	Vehicles	Average pass/vehicle	
Departures from Tirana							
Cars	10,775	4,490	3	26,968	11,236	2.4	5
Vans (8+1)	6,350	977	8	15,829	2,435	6.5	8
Intercity buses	5,878	238	34	15,829	641	24.7	40
Total/Average	23,004	5,705	4.03	58,625	14,312	4.10	
Arrivals in Tirana							
Cars	11,854	4,939	3	30,642	12,768	2.4	5

Vans (8+1)	7,569	1,164	8	17,986	2,767	6.5	8
Intercity buses	7,097	287	34	17,986	728	24.7	40
Total/Average	26,520	6,391	4.1	66,614	16,263	4.10	
Source: Data elaborated by the Consultant based on ANTP2 - Louis Berger 2010							
Year 2030							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passengers	Vehicles	Average pass/vehicle	Passengers	Vehicles	Average pass/vehicle	
Departures from Tirana							
Cars	51,866	21,611	3	80,722	33,634	2.4	5
Vans (8+1)	30,567	4,703	8	80,722	12,419	6.5	8
Intercity buses	28,294	1,146	34	83,168	3,367	24.7	40
Total/Average	110,726	27,459	4.03	244,613	49,420	4.9	
Arrivals in Tirana							
Cars	42,875	17,865	3	70,727	29,470	2.4	5
Vans (8+1)	27,378	4,212	8	70,727	10,881	6.5	8
Intercity buses	25,669	1,039	34	72,870	2,950	24.7	40
Total/Average	95,922	23,116	4.15	214,324	43,301	4.9	
Source: Data elaborated by the Consultant based on ANTP2 - Louis Berger 2010							

Table 2.42 Shares of International and Intercity regulars by lines to the total passenger demand of Tirana Terminal (ANTP2 2010 O/D Data)

Passenger demand	International Demand		Intercity demand		Total demand
	Passengers	%	Passengers	%	
Departing from Tirana	5,839	9.06%	58,625	9.09	64,464
Arriving in Tirana	6,336	8.70%	66,614	9.13	72,950
Total	12,175	8.86%	125,239	9.11	137,414

Source: Data elaborated by the Consultant based on ANTP2 - Louis Berger 2010

On the basis of transportation model outputs and other data obtained from the ANTP2 – Louis Berger 2010, will be calculated the total number of buses operating in the bus lines entering and leaving Tirana.

The total passenger daily demand for year 2010 was defined **137,414 passengers leaving and entering** Tirana. For the base year 2012 will be calculated the total passenger daily demand using growth rates defined by Louis Berger (ANTP2 - 2010): **156,335 passengers daily**.

On the basis of modal split rates as by ANTP2 defined, the passenger number travelling by buses should be **27% of total demand** or **42,210 bus passengers**. Having by ANTP2 the average rate of bus occupancy **24.7** passengers per intercity, international or Communes buses, it has be calculated the number of buses which resulted **1,708 buses** a day leaving or entering Tirana.

4.9 THE SUBURBAN REGULAR BUS LINES CONNECTING TIRANA WITH AROUND COMMUNES AND MUNICIPALITIES

4.9.1 Overview on Communes/municipalities around Tirana bus lines

In Tirana District there are 33 more communes regular bus lines that are operated by individual surrounding communes and municipality of Kamza (but actually all by private operators) as presented in Figure 2.42.

Summary of all the commune bus line operations is also presented in Table 2.43 The service frequencies are fixed in the transport licence (permit) issued by the competent authority. Most of the commune lines seem to overlap with the city bus lines. Though the commune bus operators are not officially allowed to transport passengers if both the boarding and alighting bus stops are inside the city of Tirana, it is quite common that passengers utilize the commune bus lines instead of the city bus lines to travel inside Tirana, paying the same fare.

4.9.2 Daily and Annual frequency of Commune bus lines in Tirana Terminal

Table 2.44 shows some calculations' result of commune regular bus lines transiting in Tirana Terminal.

Table 2.44 Communes regular bus lines transiting in Tirana Terminal

No	Municipality / Commune	Communes/ Municipality Bus Line	Departures Time Table	Arrivals Time Table	Daily Departures / Arrivals	Bus Capacity (Pax /Bus)	Pax No / Bus	Pax/Day	Daily Pax Capacity
1	Kamez	Kamez-Tirane	5:00 to 23:00 - every hour		18	80	49.6	893	1,440
2	Kamez	Tirane-Kamez-Tirane	5:00 to 22:00 - every 1.5 hours	6:00; 23:00 - every 1.5 hours	12	60	37.2	446	720
3	Zall-Herr	Zall-Herr - Bathore - Tirane	6:30; 11:00; 16:00	7:30; 12:30; 17:30	3	40	24.8	74	120
4	Zall-Herr	Tirane - Zall-Herr - Tirane	6:00; 8:00; 10:00; 13:00; 15:00; 17:00	7:00; 9:00; 11:00; 14:00; 16:00; 18:00	6	40	24.8	149	240
5	Vore	Vore - Tirane	Starting from 5:00	up to 20:00	8	40	24.8	198	320
6	Vore	Tirane - Vore - Tirane	5:00 to 22:00 - every 2 hours	6:00 to 23:00 - every 2 hours	8	40	24.8	198	320
7	Vore	Marikaj-Tirane-Marikaj	6:00 deri 20:00 - every 2 hours	8:00 to 21:00 - every 2 hours	7	40	24.8	174	280
8	Berxull	Domje - Tirane	every hour		8	40	24.8	198	320
9	Berxull	Tirane - Berxull - Tirane	5:00 to 22:00 - every 2 hours	6:00 to 23:00 - every 2 hours	8	40	24.8	198	320
10	Berxull	Berxull - Domje - Tirane	every hour		8	40	24.8	198	320
11	Preze	Preze Kala - Tirane	10:00; 14:00		2	40	24.8	50	80
12	Ndroq	Ndroq - Tirane	5:00 -19:00 every 30 min		17	80	49.6	843	1,360
13	Ndroq	Tirane - Ndroq - Tirane	5:00 -22:00 every hour	6:00 -23:00 every hour	17	80	49.6	843	1,360
14	Kashar	Kashar (Qender) - Tirane	7:00 - 22:00 every hour		16	80	49.6	794	1,280
15	Kashar	Tirane - Kashar - Tirane	5:00 - 22:00 - every 2 hour		8	80	49.6	397	640
16	Paskuqan	Paskuqan (Qender) - Tirane	6:00 - 22:00 every 30 min		32	80	49.6	1,587	2,560
17	Peze	Peze (Qender) - Tirane	7:00 -19:00 every hour		12	40	24.8	298	480
18	Peze	Tirane - Peze e Madhe - Tirane	5:00 - 22:00 every 1.5 hours		12	40	24.8	298	480
19	Vaqar	Vaqar - Tirane - Vaqar	5:00 - 22:00 every 1.5 hours		12	60	37.2	446	720
20	Vaqar	Tirane - Vaqar - Tirane	5:00 - 22:00 every 1.5 hours		12	60	37.2	446	720
Grand Total/Average					226	62.3	38.6	8,730	14,080

Twenty will be the communes' regular bus lines that should likely transit daily Tirana Terminal in the future.

There are 14 Itineraries, 1 Municipality (Kamza) and 9 Communes involved and 10 bus platforms (docks) needed.

Commune regular buses traffic in Tirana Terminal is calculated as follow:

- ✚ 452 departures and arrivals Daily;
- ✚ 164,980 bus departures and arrivals or passengers Pick-ups and Drop-offs;
- ✚ 6,368,228 passengers annually served.

4.9.3 Daily variation of communes buses traffic in Tirana Terminal

Table 2.45/46 shows the results of elaborations and calculations performed on daily variation and peak hours identification about commune bus lines coming in Tirana city.

Table 2.45/46 Daily variation and peak hour identification of commune bus lines traffic in Tirana Terminal

[illegible]

4.9.4 Summary tables regarding main indicators of commune bus lines

The following Table 2.47 presents the communes bus lines database set up by the consultant.

Table 2.47 Database for commune regular bas lines

Year 2012							
Departures from Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
Commune bus lines	2,916	76	38.6	9,035	235	38.6	62.3
Arrivals in Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
Commune bus lines	3,504	91	38.6	10,245	265	38.6	62.3

Source: Consultant elaboration of data provided by Tirana Municipality and Tirana Region
Tables 2.48, 2.49, 2.50 and 2.51 present the communes' bus lines traffic in Tirana Terminal by time horizons.

Table 2.48 Commune regular bus traffic Year 2015

Year 2015

Departures from Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
Commune bus lines	3,613	94	38.6	11,219	291	38.6	62.3
Arrivals in Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
Commune bus lines	4,184	108	38.6	12,234	317	38.6	62.3

Source: Consultant elaboration of data provided by Tirana Municipality and Tirana Region 2012

Table 2.51 Commune regular bus traffic Year 2035.

Year 2035							
Departures from Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
Commune bus lines	15,074	391	38.6	46,813	1,211	38.6	62.3
Arrivals in Tirana							
Mode of Transport	Rush hours 7-9 and 15-17			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
Commune bus lines	13,655	354	38.6	39,927	1,033	38.6	62.3

4.9.5 INTERCITY VANS 8+1 LINES IN TIRANA TERMINAL

Overview on vans operating way

Vans with 8+1 seats including driver seat operate, in large scale, in the intercity lines strongly competing the regular bus lines possessing due transport license for operation in bus line. There is a part of vans that have Taxi license and they broke the Albanian transport law only when operate by time schedule and return to their license city with passengers in board and they usually do that. The other passenger vans operate in the intercity lines in an abusive and outlaw way.

Considering the huge number of Taxi vans 8+1 operating in Intercity and communes lines, the Consultant propose to accommodate even them in TPTT, aiming the market regulation,

improvement of transport service for passengers, traffic calming in Tirana city and added revenues for the terminal concession as well.

The operation of Taxi – vans (8+1) in the Terminal must be in compliance with the Albanian Transport Law and its subordinated regulations and guidelines. The operation of Taxi vans (8+1) in the Tirana terminal will be performed only under two main law/regulations provisions:

- (a) The return trip to the origin city (the city who issued the taxi license) must be realised without taking passengers in board;*
- (b) Will be not pre-defined time tables.*

Van stations for other cities are located in different places as shown in the above presented Figure 2.42. While vans have an official capacity of eight passengers (excluding the driver), some vans are carrying more than 8 passengers. They usually do not follow any schedule, but they depart based on the flow of passengers.

4.9.6. Taxi-Van (8+1) lines

Though it is difficult to estimate the frequency of Taxi vans (8+1), the van lines and approximate operation hours are presented in the following Table 2.52.

It is impossible to have accurate data about their operating in intercity and communes line but observing their stations and analysing the traffic counts performed by other studies in Tirana it can be evaluated that their peak hours are the same as the buses' peak hours are.

Through the available data it has been calculated a daily frequency of **149 taxi-vans** likely transiting in the Tirana Terminal and a total annual number of **108,770** departures and arrivals in Tirana Terminal.

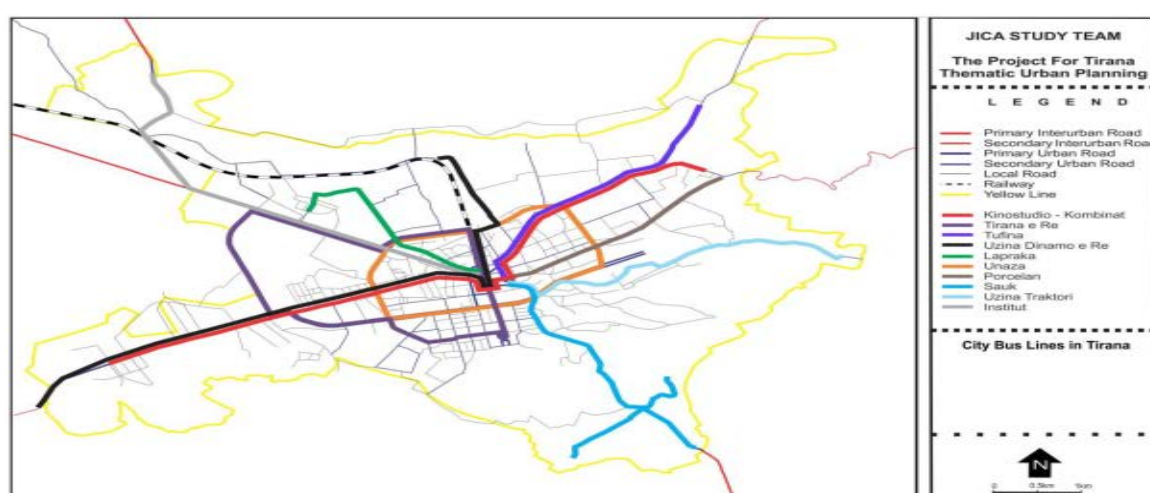
The Consultant stress again that this number is only a small part of the total number of vans operating in intercity and communes lines. The Consultant recommends the accommodation of vans 8+1 in Tirana Terminal, but some small transport law modification must be done concerning the return trip with passenger on board.

4.10 URBAN BUS LINES IN TIRANA PUBLIC TRANSPORT TERMINAL

Overview on urban bus lines in Tirana

The map of Tirana city bus lines is presented in Figure 2.44. Tirana has total 11 city bus lines. Those existing city bus lines have been organized mainly based on a radial system, by means of which the lines go from the suburbs of the city to the city centre. In addition, there are some “through centre” lines, such as Kinostudio – Kombinat line and Uzina Dinamo e Re (or Sharra) line. Furthermore, there are two circular lines that do not follow the radial scheme: namely, Unaza line (Ring Road),

II. Figure 2.44 Map of the Tirana City bus lines



4.11 Passenger traffic volumes of the urban bus line in Tirana City

From the Bus Travellers Monitoring study performed by Institute of Transport Studies Tirana, year 2007, the following tables with the main indicators of the Tirana city bus lines can be highlighted.

4.11.1 Summary tables for urban transport of passengers to Tirana Terminal and vice versa

To be able to find the main attributes of the passenger urban flows arriving in Terminal from Tirana city and distributed to Tirana city from the Terminal, we have to determinate even the peak hour ratios of passengers' vehicles departing and arriving in Tirana terminal having destinations and origins other countries, cities and communes as well.

In the following Table 2.56/1 and Figure 2.47/1 are shown the coupled timetables and daily variations of intercity and communes regular bus lines transiting Tirana Terminal. Being intercity and communes buses the most of buses transiting Tirana terminal (*1,365 buses from 1,601 in total, or about 85% of bus total*), their peak hour interval will be representative (the same) for all of regular passenger vehicle lines taken independently.

Table 2.56/1 Peak hour ratios for intercity and communes regular bus lines transiting Tirana Terminal

All intercity and Communes regular bus lines transiting in Tirana Public Transport Terminal																																										
Traffic flow direction by regular bus lines	Bus frequency subtotals	Hour Intervals																																								
		4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00	19:30	20:00	20:30	21:00	21:30	22:00	22:30	23:00	23:30	
		3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00	19:30	20:00	20:30	21:00	21:30	22:00	22:30	23:00	23:30
Departures Communes	250	0	0	0	7	2	7	6	10	4	12	3	12	6	9	4	14	4	9	7	12	4	11	3	13	6	9	5	15	3	9	6	9	4	8	2	7	5	2	1	0	
Arrivals Communes	250	0.0	0.0	0.0	0	7	7	7	4	12	6	9	6	9	7	11	4	11	9	8	3	12	7	9	6	9	8	12	2	10	10	7	3	9	5	5	4	4	3	5	0	
Total communes	500	0	0	0	7	9	14	13	14	16	18	12	18	15	16	15	18	15	18	15	15	16	18	12	19	15	17	17	17	13	19	13	12	13	13	7	11	9	5	6	0	
Departures Intercity	432.5	1	2	0.5	6	6	20	13	27	15	24	11	19.5	12	24	11	21	12	31	11	32	13	28	12	24	6	19	6	8	3	5	6	1	2	2	0	0	0.5	1	0	0	
Arrivals Intercity	432.5	1.5	1.0	0	2	2	2	6	9	14	30	25	32	25	23	18	15	16	13	13	14	14	14	12	15	18	15	14	14	15	10	9	8	7	4	4	0	0	1	0	0	
Total Intercity	865	2.5	3	0.5	8	8	22	19	36	29	54	36	51	36.5	47	29	36	28	43	24	46	27	42	24	39	24	34	20	22	18	15	15	9	9	6	4	0	0.5	2	0	0	
Departures Intercity + Communes	682.5	1	2	0.5	13	8	27	19	37	19	36	14	31.5	18	33	15	35	16	40	18	44	17	39	15	37	12	28	11	23	6	14	12	10	6	10	2	7	5.5	3	1	0	
Arrivals Total Intercity + Communes	682.5	1.5	1	0	2	9	9	13	13	26	36	34	37.5	33.5	30	29	19	27	22	21	17	26	21	21	21	27	23	26	16	25	20	16	11	16	9	9	4	4	4	5	0	
Total Intercity + Communes	1,365	2.5	3	0.5	15	17	36	32	50	45	72	48	69	51.5	63	44	54	43	61	39	61	43	60	36	58	39	51	37	39	31	34	28	21	22	19	11	11	9.5	7	6	0	
Peak hour ratio of departures	7.25%	50																																								
Peak hour ratio of Arrivals	10.40%	71																																								
Total Peak Hour Ratio	8.83%	121																																								

From the above Table 2.561 and Figure 2.47/1 of intercity and communes coupled timetables we find out that the **Peak Hour** interval is **09:00 – 10:00** in the morning with **121 buses** which is almost the same with 08:00 – 09:00 interval with 120 buses. Based on the peak hour interval **09:00-10:00**, we calculate the Peak Hour Ratio as the ratio of passenger vehicles number during peak hour to the total of passenger vehicles number, for each bus/van line.

Based in all the data as above specified the Consultant calculated the main urban traffic parameters for the years 2015, 2020, 2025, and 2035, as presented in the following Tables 2.57:

Tables 2.57 Main urban traffic parameters for the years 2015, 2020, 2025, and 2035 (with and without North – South tramline)

The modal split tables for the year 2015, 2020 and 2025 (**without North – South tramline**) are given below:

are given below.

Cars to/from Tirana Terminal	3%						
Vans (8+1) to/from Tirana Terminal	1%						
Urban Buses to/from Tirana Terminal	96%						
Year 2015							
Mode of Transport	Peak Hour 09:00 - 10:00			Total daily			Capacity seat / vehicle
	Passengers	Vehicles	Average pass/vehicle	Passengers	Vehicles	Average pass/vehicle	
Departures from Tirana to Terminal							
Cars to terminal	63	25	2.5	865	346	2.5	5
Urban van (8+1)	21	3	6.5	288	41	6.5	8
Urban bus	2,020	37	55	27,684	503	55	90
Tram	no	no	no	no	no	no	no
Total	2,104			28,838			
Arrivals in Tirana from Terminal							
Cars from terminal	87	35	2.5	900	360	2.5	5
Urban van (8+1)	29	4	6.5	300	46	6.5	8
Urban bus	2,768	50	55	28,814	524	55	90
Tram	no	no	no	no	no	no	no
Total	2,884			30,015			

Source: Table elaborated by the Consultant

Year 2020							
Mode of Transport	Peak Hour 09:00 - 10:00			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
Departures from Tirana to Terminal							
Cars to terminal	175	70	2.5	1,198	479	2.5	5

Urban van (8+1)	58	8	6.5	399	61	6.5	8
Urban bus	2,098	38	55	38,338	697	55	90
Total	2,331			39,935			
Arrivals in Tirana from Terminal							
Cars from terminal	240	96	2.5	1,247	499	2.5	5
Urban van (8+1)	80	11	6.5	416	64	6.5	8
Urban bus	2,875	52	55	39,902	725	55	90
Total	3,195			41,565			

Source: Table elaborated by the Consultant

Source: Table elaborated by the Consultant

Year 2025							
Mode of Transport	Peak Hour 09:00 - 10:00			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
Departures from Tirana to Terminal							
Cars to terminal	242	97	2.5	1,661	664	2.5	5
Urban van (8+1)	81	12	6.5	554	85	6.5	8
Urban bus	2,908	53	55	53,141	966	55	90
Total	3,231			55,355			
Arrivals in Tirana from Terminal							
Cars from terminal	332	133	2.5	1,728	691	2.5	5
Urban van (8+1)	111	16	6.5	576	89	6.5	8
Urban bus	3,986	72	55	55,309	1006	55	90
Total	4,428			57,614			

Source: Table elaborated by the Consultant

Year 2035							
Mode of Transport	Peak Hour 09:00 - 10:00		Total daily			Capacity seat/vehicle	
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
Departures from Tirana to Terminal							
Cars to terminal	467	187	2.5	3,200	1,280	2.5	5
Urban van (8+1)	156	22	6.5	1,067	164	6.5	8
Urban bus	5,602	102	55	102,391	1,862	55	90
Total	6,225			106,657			
Arrivals in Tirana from Terminal							
Cars from Terminal	640	256	2.5	3,330	1,332	2.5	5
Urban van (8+1)	213	30	6.5	1,110	171	6.5	8

Urban bus	7,679	140	55	106,570	1,938	55	90
Total	8,532			111,010			

Source: Table elaborated by the Consultant

The modal split table for the situation **with North – South tramline** is given as follow:

Cars to/from Tirana Terminal	6%
Vans (8+1) to/from Tirana Terminal	2%
Urban Buses to/from Tirana Terminal	72%
Tramlines to/from Tirana Terminal	20%
Total	100%

Year 2020							
Mode of Transport	Peak Hour 09:00 - 10:00			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
Departures from Tirana to Terminal							
Cars to terminal	175	70	2.5	2,396	958	2.5	5
Urban van (8+1)	58	8	6.5	799	114	6.5	8
Urban bus	2,098	38	55	28,753	523	55	90
Tram				7,987	53	150	280
Total	2,331			39,935			
Arrivals in Tirana from Terminal							
Cars from terminal	240	96	2.5	2,494	998	2.5	5
Urban van (8+1)	80	11	6.5	831	119	6.5	8
Urban bus	2,875	52	55	29,927	544	55	90
Tram				8,313	55	150	280
Total	3,195			41,565			

Source: Table elaborated by the Consultant

Year 2025							
Mode of Transport	Peak Hour 09:00 - 10:00			Total daily			Capacity seat/ vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
Departures from Tirana to Terminal							
Cars to terminal	242	97	2.5	3,321	1,329	2.5	5
Urban van (8+1)	81	12	6.5	1,107	158	6.5	8
Urban bus	2,908	53	55	39,856	725	55	90
Tram				11,071	74	150	280
Total	3,231			55,355			
Arrivals in Tirana from Terminal							
Cars from terminal	332	133	2.5	3,457	1,383	2.5	5

Urban van (8+1)	111	16	6.5	1,152	165	6.5	8
Urban bus	3,986	72	55	41,482	754	55	90
Tram				11,523	77	150	280
Total	4,428			57,615			

Source: Table elaborated by the Consultant

Year 2035							
Mode of Transport	Peak Hour 09:00 - 10:00			Total daily			Capacity seat/vehicle
	Passenger	Vehicles	Average pass/vehicle	Passenger	Vehicles	Average pass/vehicle	
Departures from Tirana to Terminal							
Cars to terminal	467	187	2.5	6,399	2,560	2.5	5
Urban van (8+1)	156	22	6.5	2,133	305	6.5	8
Urban bus	5,602	102	55	76,793	1,396	55	90
Tram				21,331	142	150	280
Total	6,225			106,657			
Arrivals in Tirana from Terminal							
Cars from Terminal	640	256	2.5	6,661	2,664	2.5	5
Urban van (8+1)	213	30	6.5	2,220	317	6.5	8
Urban bus	7,679	140	55	79,927	1,453	55	90
Tram				22,202	148	150	280
Total	8,532			111,010			

4.11.2 Restructuring urban lines network of Tirana terminal

Alternative 1 of restructuring Tirana urban bus lines

There are three urban bus lines in Tirana that affect the Tirana Public Transport Terminal:

- Tirana Centre – Agriculture Institute (Institute)** (Buses of this bus line will pass in transit through the Tirana Terminal.
- Tirana Centre – Lapraka** - Have to be changed, extending to the Tirana Terminal which will be ending (terminal) station for the line.
- Tirana e Re – Dogana** - Have to be changed extending to the Tirana Terminal which will be ending (terminal) station for the line.

In order to improve the accessibility of Tirana Terminal from all city zones, the Consultant recommends the joining and extension of bus city lines as following:

- Students' City** bus line with **Agriculture Institute** bus line (will be replaced by N-S tramline);
- Sauku** bus line with **Lapraka** bus line (new Lapraka bus line with new itinerary to Tirana Terminal);

- f) **Uzina Traktori** with **Kamza** bus line (Kamza line passing through Tirana Terminal)
- g) **Porcelani** line will be extended to the **Tirana Terminal**.

A new bus line connecting **Kombinati** to the **Tirana Terminal**, as end line station, should be created in order to improve the accessibility of terminal from the west-south side of Tirana city.

The annual frequencies of Tirana Terminal by the buses of three urban lines affecting the Tirana Terminal are: **125,759** buses in arrivals or departures (**344.5** buses daily).

The total daily passengers' number of three urban lines affecting Tirana Terminal and that are picked-up and dropped off in this terminal, is **41,699**.

4.11.3 Alternative 2 of restructuring Tirana urban bus lines

The Municipality of Tirana presented its comments regarding the relatively high number of urban city buses which should frequent Tirana Terminal, especially **during the rush hours**. The concerns were related to the traffic problems that may occur at the roundabout in the entrance/exit gate of Tirana Terminal.

The above proposed restructuring of urban bus lines network by the Consultant was made **to provide a good level of service** to the passengers that should frequent the Tirana Terminal, in terms of **shortest travel times**.

Taking into consideration the Municipality of Tirana observations, the Consultant propose another alternative (Alternative 2) for the restructuring of urban bus lines network in Tirana City, based on the following principals:

1. **Not all the buses of urban bus** lines affecting Tirana Terminal **should frequent the terminal**.
2. Will be a **fixed frequency of 20 minutes** for the city buses which should frequent Tirana Terminal.

The city bus lines changes should be as follow:

1. **Tirana Centre – Agriculture Institute (Institute)** will join **Mihal Grameno bus Line**.

Only a bus every 20 minutes will pass in transit through the Tirana Terminal.

2. **Lapraka - Tirana Centre** will join **Sauku / Senatoriumi bus line**:

The new bus line will have a sub line extended to the Tirana Terminal which will be ending (terminal) station for the sub line.

Only a bus every 20 minutes will serve to the new sub-line

3. **Tirana e Re – Dogana**

This bus line will have a sub line extended to the Tirana Terminal which will be ending (terminal) station for the sub line.

Only a bus every 20 minutes will serve to the new sub-line

4. **Uzina Traktori** will be extended to the **Tirana Terminal**.

Only a bus every 20 minutes will serve to the new sub-line

5. **Porcelani** line will have a new sub line extended to the **Tirana Terminal**.

Only a bus every 20 minutes will serve to the new sub-line

4.12 OUTPUTS ON PASSENGER TRAFFIC IN TIRANA PUBLIC TRANSPORT TERMINAL

Calculation of number of stalls (docks) for each kind of passenger transport in Tirana Terminal

The calculation of number of stalls and parking places will be done based on the number of passenger vehicles and their time tables of the base year 2012.

Being the time tables distribution for all the bus lines in TPTT the basis of the calculations of the number of stalls and parking places in TPTT, their number cannot be designed based on the year 2035 demand forecast because it cannot foresee the time tables distribution for that year.

During the design process regarding the number of stalls and parking places the Consultant has considered that the number of passenger vehicles, for the base year 2012, is the factual (real) number calculated on the basis of the passenger transport licenses and authorizations, and time tables as well, issued to the bus and taxi van operators till the end of year 2012.

The occupancy rate of the passenger vehicles is about 50% which is even the limit of operation effectiveness for the passenger transport. This means that the number of passenger vehicles and their timetable for the starting year of operation practically should be the same, as it is easily afforded by increasing the occupancy rate of vehicle.

During design process of stalls and parking place number, the Consultant has considered the Terminal parameters that influence directly to the increasing of Terminal capacity in order to afford even the passenger vehicles demand forecasted for year 2035.

These parameters are the following:

-  Occupancy rate of passenger vehicles
-  Rush (peak) hour factors
-  Bus/Van time tables distribution

International bus lines

There are in total 34 Albanian international bus companies, operating in 53 international bus lines connecting Tirana with 6 Countries: Greece (**27 bus lines**), Italy (**6 bus lines**), Germany (**1 bus line**), Turkey (**6 bus lines**), Macedonia (**6 bus line**) and Kosovo (**7 bus lines**).

Any company runs as average about **1,56** international regular bus lines.

Considering the specifics of their operations, it is recommended that for each company having a stall that will serve even to the foreign partner bus operator. The current practice and the interviews with international bus operator indicate that one stall per operator it is sufficient. Each international operator would like to have their ticket and travel agency in the Tirana Terminal.

In total, in Tirana terminal should be necessary **34 stalls** (docks) for the international bus lines.

Intercity bus lines

There are 71 intercity regular bus lines with 432.5 daily transits likely in Tirana Terminal and with about 6 daily departures / arrivals for each line.

There are 54 regular bus lines having origin or license plate of Tirana City.

From the summary time table for all intercity bus lines that will likely frequent the TPTT, the Consultant has evaluated the number of buses departing and arriving during the peak hour, that is **90 buses in hour**.

The number of buses during peak hours (90buses/hour) is about the **double of daily average hourly** number of buses.

Considering that the optimal minimum time for the pick-up / drop off operations during the peak hours in the intercity bus stations in Tirana is about 30 minutes, the number of stalls (docks) in Tirana terminal will be **45 stalls**.

Communes and municipalities around Tirana bus lines

There are 20 suburban bus lines that likely should frequent the TPTT and 14 itineraries for 1 Municipality (Kamza), and 9 Communes involved.

The number of buses during peak hours (**34 buses an hour**) is about **26% greater** than the daily average hourly number of buses.

Based on the respective summary time table and considering that the commune bus lines have large differences as far as bus frequencies in different bus lines concerned, and the optimal minimum time for the pick-up / drop off operations during the peak hours is 30 minutes (20 minutes as average for the high frequency bus lines), has been defined:

- 1 stall (dock) for the Kamza Municipality;
- 2 stalls (docks) for each of high frequency lines of Ndroqi and Paskuqan;
- 7 stalls (docks) for other 7 communes – 1 stall for every commune.

In total are necessary **12 stalls** (docks) for the commune regular bus lines in Tirana terminal. The average time for the pick-up / drop-off operations is **20 min**.

Urban (City) bus lines

The following Table 2.68 shows the frequencies of urban bus lines frequenting the Tirana Terminal and the calculation of the stalls' number for the urban buses. The calculations are performed for the agreed Alternative 2 with sub lines departing to Tirana Terminal every 20 minutes without peak periods.

Table 2.68 Main parameters of urban bus lines frequenting the Tirana Terminal

No	New Urban bus lines connected to Tirana Terminal	Length (km)	Fixed Frequency (min)	Average Frequency in Terminal, (Bus/hour)
1	Lapraka - Sauk / Senatorium - Tirana Terminal	9.10	20	3
2	Tirana e Re - Dogana - Tirana Terminal	12.7	20	3
3	Porcelani - Centre - Tirana Terminal	7.90	20	3
4	Uzina Traktori - Centre - Tirana Terminal	10.20	20	3
5	Agriculture Institute -Tirana Terminal - Mihal Grameno	9.20	20	3
6	Kombinat - Unaza Re - Tirana Terminal	5.00	20	3
Total / Average		9.02	20	18

On the basis of a constant frequency of 18 bus/hour and a departing interval of 30 minutes, 9 (3 x 3) stalls (docks) for the buses of urban lines frequenting the Tirana Terminal could be sufficient. However, in the future the number of urban buses is expected to grow significantly (3 times about, between 2015 and 2035). Using tighter departing interval (about 10 minutes) for stall designing and having the possibility to distribute better (phase shifting) and optimise the time of their arriving in terminal, this scenario **can face, with 12 (4x3) stalls, the urban buses demand (55 bus/hour) in Tirana terminal forecasted for the year 2035.**

Taxi van (8+1) intercity lines

There are practically 18 taxi vans (8+1) lines operating as intercity lines in Tirana.

There are estimated about 149 daily transits of taxi vans (8+1) that should likely frequent the Tirana Terminal and about 21 taxi vans (8+1) during the peak hour.

Considering that the Taxi vans (8+1) will operate as a normal taxi (4+1), a time of 20 minutes for pick-up / drop-off actions will be calculated, hence the number of stalls (docks) should be as much as 7 stalls as regards the current number of daily transit. In the future the number of Taxi vans is expected to grow over 4 times. In order to maintain the same standard of service, the number of parking spaces required should be at least **25 stalls**. The availability of space guarantees the flexibility to meet these needs deriving from the increasing of the flows.

In the following Table 2.69 are given the calculation of the number of stall for each kind of passenger line.

Kiss & Ride

From the Table 2.57 the Kiss & Rides cars daily numbers for the time horizons 2015, 2020, 2025, 2035 have been obtained and calculated the peak hour number of cars on the basis of maximum peak hour ratio to the total given in the Table 2.35 above. Considering that Kiss and Ride is an area in which cars can discharge and pick up passengers allowing drivers to stop and wait without making long-term parking, no stalls must be designed in this case.

The results of calculations are presented in the following Table 2.68/1.

Table 2.68/1 Number of cars Kiss & Ride during maximal peak hour

Kiss & Ride Cars	2015	2020	2025	2035
Departures daily	346	958	1,329	2,560
Peak Hour Departures	25	70	97	187
Arrivals daily	360	998	1,383	2,664
Peak Hour Arrivals	35	96	133	256
Total Daily	706	1,956	2,712	5,224
Peak Hour Total	60	166	230	443

Considering that Kiss and Ride is an area in which cars can discharge and pick up passengers allowing drivers to stop and wait without making long-term parking, no stalls must be designed in this case.

In conclusion, the calculation of the stalls' number for each kind of passenger vehicle line is shown in the table 2.69

Table 2.69 The calculation of the stalls' number for each kind of passenger vehicle

Passenger vehicle lines	Vehicles/ peak hour	Time of pick-up/drop-off operations (Min)	Vehicles per dock in a hour	No Stalls (Docks)
International	8	60	1	34
Intercity buses	90	30	2	45
Communes buses	34	20	3	12
Urban buses	18	30	2	12
Taxi vans (8+1)	21	20	3	25
Kiss and Ride (K&R)	60	30	-	-

4.13 Parking places calculations

As the Terminal of Tirana get started the operations, the buses of regular lines should be parked in the Tirana Terminal during the night, in case free places are available.

Parking places for International regular bus lines

The international bus lines operators will use their own stalls (**34 stalls**) even a parking during the day and the night. The current experience shows that this will be sufficient because one of buses always travels during the night.

Parking places for intercity buses

From the total time table of the Intercity bus lines a number of about 175 buses have been estimated that likely should be parked in the Tirana Terminal during the night. These are the buses returning by night from their trips and departing early in the morning.

The 57 stalls for the intercity bus lines could be used for nocturne parking, the rest of them can be parked in private parking station..

Parking places for Cars and Taxi (4+1)

In the following Table 2.70 are given the number of parking places for taxi 4+1 frequenting the Tirana Terminal.

Table 2.70 Calculations of Car and taxi (4+1) parking places number

Mode of Transport	Vehicles/hour	Departing interval (Minutes)	Number of Parking places
Taxi (4+1) parking	12	~ 60 minutes	20

4.13.1 Verification of capacity of designed parking areas

The verification of capacity of parking areas, that is, the comparison between the Terminal's potential in terms of number of vehicles that it can managed per unit of time and the expected

traffic flows was performed using the queue theory. More specifically, each parking area has been treated the same as a system of auxiliary channels subject to the following conditions:

- The applicable rule is that of “first in, first out” (FIFO);
- The system has zero losses, that is, no user renounces as a result of excessive waiting times;
- The system is failure free, that is, the types of failures that can be presumed are included in the mathematical model proper to the service.

The calculation model requires the number of parallel service spots, that is, the number of spaces, the average duration of the service (parking time) and the average interval between arrivals. The need to define a law for the distribution of arrivals and for service hours is also provided for.

The technical literature considers a 5% probability that a queue will form in front of the network a good limit in the planning phase.

The model was applied for each service category and with reference to the expected traffic flows for 2035, which represent the most critical conditions terminal operation.

The results obtained are set out below.

Table 2.69 The calculation of the stalls’ number for each kind of passenger vehicle

Passenger vehicle lines	Vehicles/ peak hour	Time of pick-up/drop-off operations (Min)	Vehicles per dock in a hour	No Stalls (Docks)
International	8	60	1	34
Intercity buses	90	30	2	45
Communes buses	34	20	3	12
Urban buses	18	30	2	12
Taxi vans (8+1)	21	20	3	25
Kiss and Ride (K&R)	60	30	-	-

The model was applied for each service category and with reference to the expected traffic flows for 2035, which represent the most critical conditions terminal operation.

The results obtained are set out below.

INTERCITY BUS + COMMUNES BUS

The parking lot has a capacity of 57 stalls. In relation to the estimated demand flows, it has been found that the average number of buses managed by the terminal is 170 bus/h, with a time interval of 0.35 minutes between arrivals.

In these circumstances, the approx. 5% (or less) probability of a queue forming in front of the parking lot is verified for an average operating time, that is, for a parking period of circa 15 minutes. Said time period is consistent with the type of service examined.

INTERNATIONAL BUS

The parking lot has a capacity of **34** stalls. In relation to the estimated demand flows it has been found that the average number of buses managed by the terminal is 29 bus/hour, with a time interval between arrivals of 2.1 minutes.

In these circumstances, the approx. 5% (or less) probability of a queue forming in front of the parking lot is verified for an average operating time, that is, for a parking period of circa 50 minutes. Said time period is consistent with the type of service examined.

URBAN BUS

The parking lot has a capacity of **12** stalls. In relation to the estimated demand flows, it has been found that the average number of buses managed by the terminal is 55 bus/hour, with a time interval between arrivals of 1.1 minutes.

In these circumstances, the approx. 5% (or less) probability of a queue forming in front of the parking lot is verified for an average operating time, that is, for a parking period of circa 7-8 minutes. Said time period is consistent with the type of service examined.

TAXI VAN

The parking lot has a capacity of **25** stalls. In relation to the estimated demand flows, it has been found that the average number of Taxi Vans managed by the terminal is 37 vehicles/hour, with a time interval between arrivals of 1.62 minutes.

In these circumstances, the approx. 5% (or less) probability of a queue forming in front of the parking lot is verified for an average operating time, that is, for a parking period of circa 25-28 minutes. Said time period is consistent with the type of service examined.

TAXI

The parking lot has a capacity of **20** stalls. In relation to the estimated demand flows, it has been found that the average number of taxis managed by the terminal is 12 vehicles/hour, with a time interval between arrivals of 5 minutes.

In these circumstances, the approximately 5% (or less) probability of a queue forming in front of the parking lot is verified for an average operating time, that is, for a parking period of circa 60-65 minutes. Supposed time period is consistent with the type of service examined.

4.14 CONCLUSIONS

Consultant has taken as a basis point the existing international, intercity and communes' bus and taxi van (8+1) passenger transport system.

On the basis of licences, authorizations and timetables issued to the passenger transport operators in regular bus lines, till the end of year 2012, the Consultant assessed the number of international, intercity and communes' buses and taxi vans (8+1) that will frequent the Tirana Terminal and their integrated timetables.

Using the outputs and results of the models of previous recent studies, other new data and new short surveys either, the Consultant assessed the demand forecast for the 1st, 5th, 10th and 20th year, subsequent to the beginning year of terminal operation.

For the year 2012 are calculated **236 international buses, 865 intercity buses, 500 commune buses and 298 taxi vans** that could transit daily in Tirana PT Terminal. For the year 2035 the demand forecast is **1,059 international buses, 3,883 intercity buses, 2,244 commune buses and 1,338 taxi-vans (8+1)**.

Daily passenger demand (entries and exits) in Tirana Terminal for the year 2015 and 2020 is respectively forecasted about **58,853 passengers and 81,501 passengers** and will be transported by buses to and from Tirana City **96%** of them..

The number of urban buses needed for the transportation of above mentioned passengers from city to from Tirana Terminal and vice versa will be **324 buses daily** for the **year 2015** and **984 buses daily** in the **year 2035**.

In the future, The Tirana Terminal may include a tram-train station allowing the connection from/to the city centre through an intermodal exchange rail-road. This couple of two dead-end stations will be realized on the area currently occupied by the railway line. Moreover, the tram station will incorporate a depot for the execution of maintenance operations.

The tram line (North – South) will be a double line of 7,2 km of length in both directions and will have a commercial speed of 20 km/h and an headway of 4-7 min. The tram station will have 4 tracks dedicated to the passenger transport and the depot will be organized with three 225 meters long tracks.

On the basis of demand forecast assessment for the passengers and passenger vehicles transiting Tirana Terminal and their integrated timetables, it is calculated the number of stalls (docks) and parking place needed in Tirana Terminal for international, intercity and commune buses, taxi vans (8+1), urban buses, taxi (4+1). At the end **34 stalls** for international buses, **45 stalls** for intercity buses, **12 stalls** for commune buses, **12 stalls** for urban buses and **25 stalls** for taxi vans (8+1) have been designed.

The calculated number of stalls and parking places it is checked to afford the passengers and passenger vehicles demand in Tirana Terminal even for the **year 2035**.

A verification of the capacity of designed parking areas has been carried out and positive results were produced.

5. Site plan and utility and infrastructure needs.

5.1 NETWORK INTEGRATION PREPARATION PLANNING

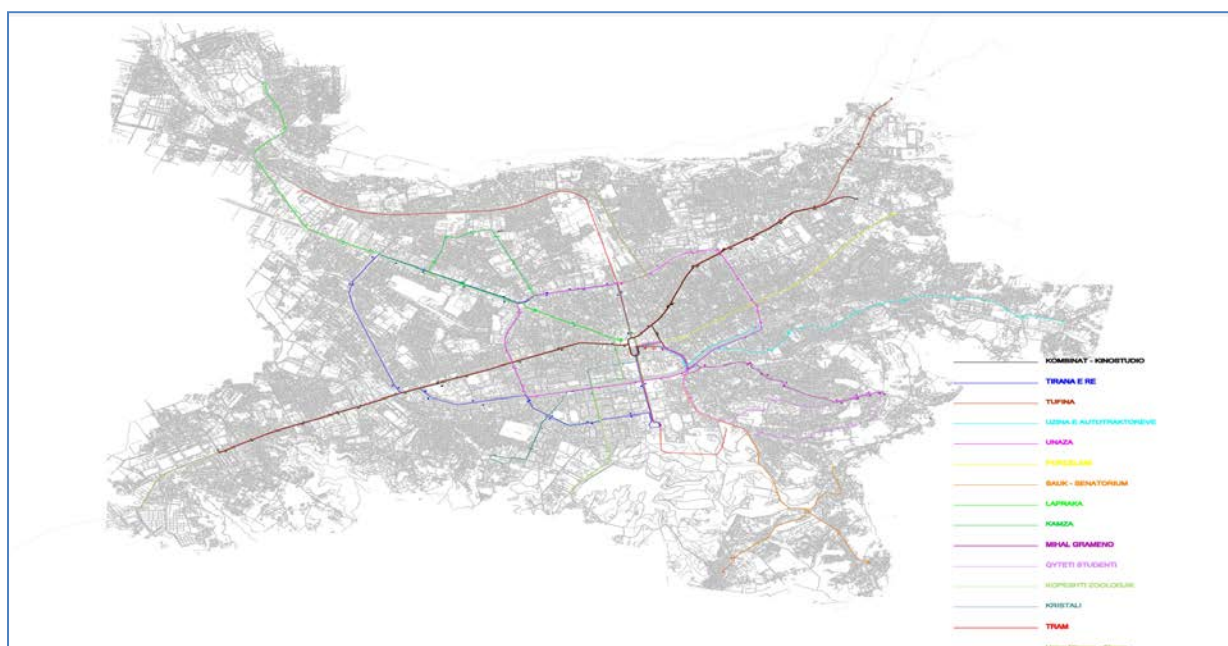
0 THE AIM OF THE TASK

The aim is to develop an integrated system, including the intercity/international to urban bus services, but also taking into account taxis, and the possible future LRT service. The Consultant will therefore, in consultation with the City, prepare a proposal for an adapted network of bus route that should work in an optimized manner with the new terminal. This plan should be implemented during the two year construction period, to allow bus operators needed time to adapt their time tables and transport supply to the new Terminal and provide maximum benefit for passengers.

0 THE EXISTING URBAN BUS SERVICE IN TIRANA

The map of Tirana city bus lines is presented in Figure 3.1, where is included even the future tram line North – South connecting Tirana Terminal with Student City. Tirana has total 11 city bus lines. Those existing city bus lines have been organized mainly based on a radial system, by means of which the lines go from the suburbs of the city to the city centre. In addition, there are some “through centre” lines, such as Kinostudio – Kombinat line and Uzina Dinamo e Re (or Sharra) line. Furthermore, there are two circular lines that do not follow the radial scheme: namely, Unaza line (Ring Road), which goes along the Middle Ring Road around the city centre, and Tirana e Re line, which has a circular route passing the city centre and the western part of Tirana via the completed part of the Outer Ring Road.

✓ **Figure 3.1 The existing urban bus system of Tirana**



Source: Tirana Municipality – Transport Department

In the Task 2 – Assessment of demand forecast, that has an internal correlation and exchange of information with the Task 3 – Network Integration Preparation Planning, useful and indispensable information about the technical parameters for of each urban bus line has been collected and evaluated.

In the following task 3 section the impact of operation of Tirana Terminal to the urban bus passenger transport of the Tirana City has been analysed.

5.2 ANALYSES OF IMPACT OF TIRANA TERMINAL OPERATION TO THE URBAN TRANSPORT SYSTEM OF TIRANA

Once the Tirana Terminal will start its operation, all the trips of international / intercity / commune buses and taxi vans (8+1), connecting Tirana Terminal with the existing stations almost inside Unaza, will not be allowed by Municipality Ordinance. The Consultant does not recommend the principal of voluntary frequency of the Tirana Terminal.

The prohibition of buses and taxi-vans to circulate inside the City will produce immediately positive consequences as concerning the air and acoustic pollution and traffic jams in the most problematic road section in Tirana.

In the same time, the new Tirana Terminal will change the itineraries of passenger flows demanding to get to Tirana Terminal or to return back from.

Based on the analysis and calculations of the above presented figures 3.2, 3.3 and 3.4, and their related data, it has concluded that:

1. The centre of gravity of Tirana Population is almost the Tirana centre – Skenderbeg Square;
2. The centre of gravity of bus and van stations is almost the Tirana centre – Skenderbeg Square;

Hence, the centre of gravity of the passengers flows demanding to get to the Tirana Terminal will be **shifted about 4 km towards North – West**, comparing to the existing one.

As a final conclusion it can be stated that the average trip length of passengers having destination or origin of their trip in Tirana Terminal **will be augmented by 4 km**, while the total volume of urban transport of passengers travelling toward / from Tirana Terminal, **will be almost the same**.

Daily passenger demand (entries and exits) in Tirana Terminal for the year 2015 of starting operations is forecasted about **58,853 passengers** (Table 2.66 of Task 2 Report) and will be transported by buses to and from Tirana City **96%** of them or **56,499** (Table 2.57 of Task 2 Report).

During the year 2007 are transported by urban bus lines in Tirana **87,831,820 passengers** or **240,635 passengers daily** (Table 2.53 of Task 2 Report. Source: *Bus Travellers Monitoring 2007 – IST 2007*). Considering the annual average growth rate **5.71%** for urban transport in Tirana (*JICA Project on Tirana Thematic Urban Planning 2012*), the forecasted urban bus transport demand for the year 2015 is **374,937 passengers daily**. Hence, the share of daily

passenger urban bus demand of Tirana Terminal to the total urban bus transport demand is **15.1 %**.

It must be stressed that this **volume of transportation in passengers doesn't change but increases only the average distance of their trip** or demand volume in **passenger km** to/from Tirana Terminal.

Based on the above stated conclusions, in the following section of Task 3 the urban bus system will be reconfigured in order to face the increasing demand of urban transport as **passenger km**.

5.3 The impact to traffic and environment

In order to assess the environmental and traffic impact as a consequence of Tirana Terminal operation, it has been calculated the number of bus/km and taxi van km saved as a result of their banning to enter in centre of Tirana city.

In the following Table 3.1 are given the distances saved as a terminal effect.

3.1 The existing bus and Taxi (Van 8+1) stations and the distances saved as a terminal impact

No	Existing Bus / Taxi Van Stations	Saved Distances as terminal impact (km)
1	Boulevard Zogu I	4.4
2	In the Central Train Station	3.85
3	Near Train Station Karl Gega Street	4.2
4	Rruga Burgut (Prosecution)	3.6
5	Rruga Duresit (Before Zogu Zi)	2.5
6	Zogu Zi	2.82
7	Near Parliament (PD Headquarter)	4
8	Fabrika Miellit	0
9	Former NSHRAK Station (Direction Kombinat)	1.13
10	Former NSHRAK Station (Direction Unaza Re)	4.4
11	21 Dhjetori	4.6
12	ETC Station	2.8
13	BKT (in front of ETC)	3
14	Qemal Stafa Stadium	2
15	Ministry of Foreign Affairs	3.8

In the following Table 3.2, 3.3, 3.4 and 3.5 are shown the average decreases in bus/vans trip length (bus x km and Taxi-van x km)) inside Tirana City as an impact of Tirana Terminal.

Table 3.3 Average decrease in intercity bus trip length (bus x km) inside Tirana City as Tirana Terminal impact

The average decrease in bus trip length (bus x km) inside Tirana City as the Tirana Terminal Effect Intercity Regular Bus Lines Transiting Tirana Public Transport Terminal						
No	Bus Lines descriptions	Daily bus Frequency	Annual bus Frequency	Average decreased distance (km)	Daily save in Bus km	Annual save in Bus km
1	Tiranë - Patos-Ballsh - Tiranë	6	2,190	4.4	26.4	9,636
2	Tiranë - Përmet-Tri Urat- Tiranë	6	2,190	4.4	26.4	9,636
3	Tiranë - Buz-Përmet - Tiranë	4	1,460	4.4	17.6	6,424
4	Tiranë - Vlorë - Tiranë	48	17,520	4.4	211.2	77,088
5	Tiranë - Durrës - Tiranë	72	26,280	4.2	302.4	110,376
6	Tiranë - Fier - Tiranë	34	12,410	4.4	149.6	54,604
7	Tiranë - Poliçan - Tiranë	10	3,650	4.4	44	16,060
8	Tiranë - Sarandë - Tiranë (Bregu detit)	12	4,380	4.4	52.8	19,272
9	Tiranë - Sarandë - Tiranë (Nga Ballshi)	16	5,840	4.4	70.4	25,696
10	Tiranë-Himarë-Tiranë	6	2,190	4.4	26.4	9,636
11	Tiranë - Lushnje - Tiranë	34	12,410	4.4	149.6	54,604
12	Tiranë - Çorovodë - Tiranë	10	3,650	4.4	44	16,060
13	Tiranë - Shijak - Tiranë	16	5,840	3.85	61.6	22,484
14	Tiranë - Kuçovë - Tiranë	18	6,570	4.4	79.2	28,908
15	Tiranë - Berat - Tiranë	46	16,790	4.4	202.4	73,876
16	Tiranë - Kakavijë - Tiranë	8	2,920	4.4	35.2	12,848
17	Tiranë - Gjirokastrë - Tiranë	20	7,300	4.4	88	32,120
18	Tiranë - Libohovë - Tiranë	2	730	4.4	8.8	3,212
19	Tiranë - Delvinë - Tiranë	8	2,920	4.4	35.2	12,848
20	Tiranë - Tepelenë - Tiranë	8	2,920	4.4	35.2	12,848
21	Tiranë - Konispol - Tiranë (Nga bregu)	4	1,460	4.4	17.6	6,424
22	Tiranë - Kavajë - Tiranë	8	2,920	1.2	9.6	3,504
23	Tiranë-Kavaje-Tirane	8	2,920	1.2	9.6	3,504
24	Tiranë - Rogozhinë - Tiranë	8	2,920	1.2	9.6	3,504
25	Tiranë - Rrogozhinë - Tirane	8	2,920	1.2	9.6	3,504
26	Tiranë - Selenicë - Tiranë	4	1,460	4.4	17.6	6,424
1	Tiranë - Peqin - Tiranë	4	1,460	4.4	17.6	6,424
2	Tiranë - Korçë - Tiranë	22	8,030	2	44	16,060
3	Tiranë - Elbasan - Tiranë	22	8,030	2.8	61.6	22,484
4	Tiranë - Kapshticë - Tiranë	5	1,825	2.8	14	5,110
5	Tiranë - Ersekë - Tiranë	6	2,190	2	12	4,380
6	Tiranë - Gramsh - Tiranë	8	2,920	3.8	30.4	11,096
7	Tiranë - Pogradec - Tiranë	10	3,650	2	20	7,300
8	Tiranë - Bilisht - Tiranë	8	2,920	2	16	5,840
1	Tiranë - Rrëshen - Tiranë	20	7,300	3.8	76	27,740
2	Tiranë - Koman- B.Curri- Tiranë	12	4,380	4	48	17,520
3	Tiranë - B.Curri - Tiranë (Q.Malit)	10	3,650	4	40	14,600
4	Tiranë - Hani-Hotit - Tiranë	4	1,460	2.5	10	3,650
5	Tiranë - Burrel - Tiranë	14	5,110	2.5	35	12,775
6	Tiranë - Bulqizë - Tiranë	6	2,190	2.5	15	5,475
7	Tiranë - Peshkopi - Tiranë	14	5,110	3.6	50.4	18,396
8	Tiranë - Shkodër - Tiranë	24	8,760	4.2	100.8	36,792
9	Tiranë - Koplik - Tiranë	4	1,460	2.5	10	3,650
10	Tiranë - Kukës-Morinë - Tiranë	4	1,460	2.5	10	3,650
11	Tiranë - Murriqan - Tiranë	4	1,460	2.5	10	3,650
12	Tiranë - Krumë - Tiranë	8	2,920	2.5	20	7,300
13	Tiranë - Krujë - Tiranë	20	7,300	3.6	72	26,280
14	Tiranë - Laç - Tiranë	32	11,680	3.6	115.2	42,048
15	Tiranë - Fushë-Krujë- Tiranë	28	10,220	3.6	100.8	36,792
16	Tiranë-Fushë Arrëz- Tiranë	8	2,920	3.6	28.8	10,512
17	Tiranë - Rinas - Tiranë	12	4,380	4	48	17,520
18	Tiranë - Rinas - Tiranë (Rinas Expres)	26	9,490	4	104	37,960
19	Tiranë - Lezhë - Tiranë	26	9,490	4.2	109.2	39,858
20	Tiranë - Mjedë-Pukë - Tiranë	14	5,110	3.6	50.4	18,396
1	Roskovec - Tiranë - Roskovec	6	2,190	4.4	26.4	9,636
2	Libohovë - Tiranë - Libohovë	2	730	4.4	8.8	3,212
3	Orikum - Tiranë - Orikum	4	1,460	4.4	17.6	6,424
4	Sukth - Tiranë - Sukth	6	2,190	4.2	25.2	9,198
5	Ballsh - Tiranë - Ballsh	2	730	4.4	8.8	3,212
6	Manëz - Tiranë - Manëz	4	1,460	4.2	16.8	6,132
7	Divjakë - Tiranë - Divjakë	4	1,460	4.4	17.6	6,424
8	Këlcyrë - Tiranë - Këlcyrë	2	730	4.4	8.8	3,212
9	Vau Dejës - Tiranë -Vau Dejës	6	2,190	2.5	15	5,475
10	Klos - Tiranë - Klos	4	1,460	2.5	10	3,650
11	Përrenjas - Tiranë - Përrenjas	4	1,460	3	12	4,380
12	Librazhd - Tiranë - Librazhd	6	2,190	3	18	6,570
13	Bilisht - Tiranë - Bilisht	4	1,460	2	8	2,920
14	Belsh - Tiranë - Belsh	2	730	3	6	2,190
15	Cërrik - Tiranë - Cërrik	2	730	4.4	8.8	3,212
16	Kavaje- Tirane	6	2,190	1.2	7.2	2,628
17	Rrogozhinë-Tirane	2	730	1.2	2.4	876
71	Grand Total	865	315,725	3.73	3226.6	1,177,709

Table 3.4 Average decrease in commune bus trip length (bus x km) inside Tirana City as Tirana Terminal impact

The average decrease in bus trip length (bus x km) inside Tirana City as the Tirana Terminal Effect						
Bus lines of Tirana Around Communes/Municipalities						
No	Communes / Municipality Bus Line	Daily Bus Frequency	Annual bus Frequency	Average decreased distance (km)	Daily saves in Bus km	Annual saves in Bus km
1	Kamez-Tirane	36	13,140	4	144	52,560
2	Tirane-Kamez-Tirane	24	8,760	4	96	35,040
3	Zall-Herr - Bathore - Tirane	6	2,190	4	24	8,760
4	Tirane - Zall-Herr - Tirane	12	4,380	4	48	17,520
5	Vore - Tirane	16	5,840	4	64	23,360
6	Tirane - Vore - Tirane	18	6,570	4	72	26,280
7	Marikaj-Tirane-Marikaj	14	5,110	4	56	20,440
8	Domje - Tirane	30	10,950	4	120	43,800
9	Tirane - Berxull - Tirane	18	6,570	4	72	26,280
10	Berxull - Domje - Tirane	30	10,950	4	120	43,800
11	Preze Kala - Tirane	4	1,460	4	16	5,840
12	Ndroq - Tirane	54	19,710	2.5	135	49,275
13	Tirane - Ndroq - Tirane	36	13,140	2.5	90	32,850
14	Kashar (Qender) - Tirane	30	10,950	4	120	43,800
15	Tirane - Kashar - Tirane	18	6,570	2.5	45	16,425
16	Paskuqan (Qender) - Tirane	62	22,630	4	248	90,520
17	Peze (Qender) - Tirane	22	8,030	2.5	55	20,075
18	Tirane - Peze e Madhe - Tirane	24	8,760	2.5	60	21,900
19	Vaqar - Tirane - Vaqar	22	8,030	2.5	55	20,075
20	Tirane - Vaqar - Tirane	24	8,760	2.5	60	21,900
Total		500	182,500	3.4	1,700	620,500

Table 3.5 Average decrease in taxi vans (8+1) trip length (taxi van x km) inside Tirana City as Tirana

The average decrease in vans trip length (van x km) inside Tirana City as the Tirana Terminal Effect						
Taxi-Van lines						
No	Taxi-Van Lines	Daily Bus Frequency	Annual bus Frequency	Average decreased distance (km)	Daily saves in Van km	Annual saves in Van km
1	Tirane - Berat	24	8,760	4.4	106	38,544
2	Tirane - Burrel	12	4,380	2.8	34	12,264
3	Tirane - Durres	44	16,060	3.9	169	61,831
4	Tirane - Elbasan	24	8,760	2.5	60	21,900
5	Tirane - Fier	30	10,950	4.6	138	50,370
6	Tirane - Koplik	8	2,920	2.8	22	8,176
7	Tirane - Korce	12	4,380	2.2	26	9,636
8	Tirane - Krume	8	2,920	1.0	8	2,920
9	Tirane - Kukes	8	2,920	1.0	8	2,920
10	Tirane - Lac	12	4,380	2.8	34	12,264
11	Tirane - Lezhe	12	4,380	2.8	34	12,264
12	Tirane - Lushnje	22	8,030	4.6	101	36,938
13	Tirane - Peshkopi	8	2,920	0.5	4	1,460
14	Tirane - Pogradec	8	2,920	2.0	16	5,840
15	Tirane - Puke	8	2,920	4.2	34	12,264
16	Tirane - Shkoder	28	10,220	2.8	78	28,616
17	Tirane - Tropoje	8	2,920	4.0	32	11,680
18	Tirane - Vlore	22	8,030	2.8	62	22,484
Total		298	100,010	2.9	860	313,827

The Table 3.6 shows the total impact of Tirana Terminal to calming traffic disturbances and mitigating the environmental traffic pollution.

Table 3.6 Summary of Tirana Terminal impact to the traffic calming and reducing of air and acoustic pollution

The average decrease in bus/van trip length (bus x km) inside Tirana City as the Tirana Terminal Effect					
Bus/ Taxi Vans (8+1) regular lines	Daily bus Frequency	Annual bus Frequency	Average decreased distance (km)	Daily save in Bus/van km	Annual save in Bus/van km
International	236	86,244	4.4	1,040	379,475
Intercity	865	315,725	3.7	3,227	1,177,709
Communes / municipal	500	182,500	3.4	1,700	620,500
Bus subtotal	1,601	584,469	3.7	5,966	2,177,684
Taxi Van (8+1)	298	100,010	2.9	860	313,827
Total / Average	1,899	684,479	3.6	6,826	2,491,511

The average decreased distance calculated 3.6 km (10 % less) in the above table confirms that the **gravity centre of bus stations** is almost **the same as the population gravity centre is**.

5.5 RESTRUCTURATION OF BUS NETWORK SYSTEM OF TIRANA CITY

Alternative 1 of urban bus lines restructuration

In order to improve the accessibility of Tirana Terminal from all city zones, the Consultant recommends the joining and extension of bus city lines as following:

- h) **Tirana Centre – Agriculture Institute (Institute)**, to be joined with **Mihal Grameno Bus Line**. Buses of this line will pass in transit through the Tirana Terminal.
- i) **Lapraka - Tirana Centre**: Have to be changed, extending to the Tirana Terminal which will be ending (terminal) station for the line and to join further with **Sauku / Senatoriumi bus line**.
- j) **Tirana e Re – Dogana** - Have to be changed extending to the Tirana Terminal which will be ending (terminal) station for the line.
- k) **Uzina Traktori** will be extended to the **Tirana Terminal**.
- l) **Porcelani** line will be extended to the **Tirana Terminal**

A new bus line connecting **Kombinati** with **Tirana Terminal** (as end of bus line station) must be created in order to improve the accessibility of Terminal from the West-South side of Tirana city. The itinerary of the new bus line should be:

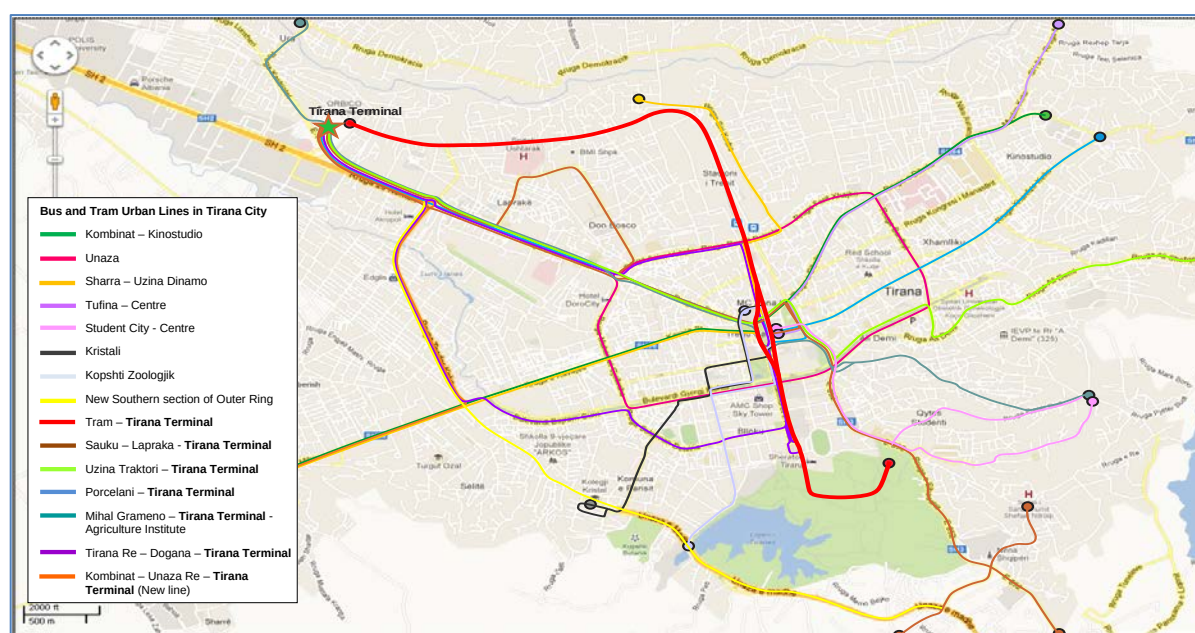
Kombinat - Shkolla Teknologjike Intersection - Dogana Roundabout (Eagle Plaza) – Tirana Terminal, and vice versa

When the new southern section of Tirana Outer Ring will be finished, probably on the year 2015, a new itinerary should be designed for the line Sauku – Lapraka – Tirana Terminal. This line should be a circular bidirectional line including the itinerary Tirana Terminal - Dogana Intersection – Unaza e Re – Shkolla Teknologjike Intersection – New section of Outer Ring – Sauku Roundabout.

The annual frequencies of Tirana Terminal by the buses of urban lines affecting the Tirana Terminal are: **125,759** buses in arrivals or departures (**344.5** buses daily). The total annual number of passengers Pick-up and Drop Off Operations in Tirana Terminal from the buses of the urban lines affecting Tirana Terminal is: **251,518** (**689** operations daily).

In the following Figure 3.5 is presented the reconfiguration of the Tirana city bus lines as a feeder / distribution system for the Tirana Terminal.

✓ **Figure 3.5 Proposed reconfiguration of urban lines to improve their feeder attributes to Tirana Terminal**



Source: Consultant Elaborations

In the following Table 3.7 is shown the restructuring of Tirana city bus lines in order to fit to the Tirana Terminal Operation. **This restructuring must be realised at the starting year of Tirana Terminal operation.**

Table 3.7 Restructuring and Integration of City Bus Lines in Tirana with Tirana Terminal Operation

No	Bus Line Name		Length (km)		Average Frequency (min)	
	Existing	With Tirana terminal	Existing	With Terminal	Existing	With Terminal
1	Kinostudio – Kombinat	Kinostudio – Kombinat	8.70	8.70	4	4
2	Unaza	Unaza	7.60	7.60	5	5
3	Tufina - Centre	Tufina - Centre	4.30	4.30	8	8
4	Sharra - Uzina Dinamo e Re	Sharra - Uzina Dinamo e Re	9.00	9.00	7	7

The number of urban buses transiting in Tirana Terminal is given in the following table 3.17

Table 3.17 Number of urban buses transiting in Tirana Terminal - Year 2015

	Bus city lines	Bus /hour	Bus /day	Bus / year
1	Agriculture Institute - Terminal -Mihal Grameno	3	54	19,710
2	Tirana Re - Dogana Extended to Terminal	3	54	19,710
3	Sauku - Lapraka,Extended to Terminal	3	54	19,710
4	Porcelani - Centre, Extended to Terminal	3	54	19,710
5	Uzina Traktori - Centre, extended to Terminal	3	54	19,710
6	Kombinati - Terminal e vice versa	3	54	19,710

Total	18	324	118,260
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The total numbers of busses and taxi van (8+1) departing and arriving in Tirana Terminal are:

Departures = 210 + 49 + 45 + 18 = 277 buses/3h + 45 vans/3h = 322 passenger vehicles/3h

Arrivals = 139 + 49 + 41 + 18 = 206 buses + 41vans = 247 passenger vehicles/3h

Total = 483 buses/3h + 86 vans (8+1)/3h = 569 passenger vehicles per 3 hours
= 190 passenger vehicles/hour

Considering:

- bidirectional traffic flow year 2012 in the adjacent Road SH1 (section Kastriotët) is **1,394 vehicles/h** during peak hour, and it is forecasted to be, with an annual average growth rate **6.75%**, **1,696 vehicle/h**;
- added traffic flow from Terminal should be about **190 buses and taxi vans (8+1)** during peak hour, or about **11%** of total traffic flow;
- volume /capacity ratio is about **0.4** or **LOS (Level Of Service) C, D**, in the year 2012, and it is forecasted to be, with an annual average growth rate **6.75%**, **0.48 %** at the year 2015, **keeping almost the same level of service LOS C,D**.

it can be concluded that the impact of passenger vehicles traffic departing and arriving in Tirana Terminal in the traffic flow of adjacent road **is low and without any consequence, as the Level of Service (LOS) of the Road SH1 almost don't changes**.

A 3D simulation of the traffic flow in the roundabout at the main entry / exit gate of Tirana Terminal have shown no circulation problems on it.

It was calculated that, after **8 years** the **LOS** will reach the level **F** or **congestion level**, during rush hours intervals in the road SH1 section adjacent to the Tirana Terminal, if other improvement measures should not be taken.

Taking into consideration that the road SH1 continues in an highly inhabited area (Kamza city) with a lot of traffic and intersections as well, it is expected to have traffic problems even before, as reflections of traffic congestions during rush hours in Kamza main street area.

It must be stressed again that traffic flows of Tirana Terminal will be not the cause of traffic congestions in the future, but will suffer the growing traffic problems.

5.5 PREVIOUS PROJECTS ON BUS ROUTES RESTRUCTURING AND URBAN TRANSPORT INTEGRATION

In the Task 3 of the present FS the reconfiguring of bus transport lines and their adoption to the needs of Tirana Terminal being focused only to the direct correlation of the two transportations systems has been studied.

It is well-known that the success of Tirana Terminal will depend mainly from the well-functioning of feeder / distribution system of urban public transport, considering even the

increasing of average trip length (4 km more) for the passenger's urban flows going to Tirana Terminal and vice versa.

The Task1 of the FS has reviewed carefully and evaluated all the previous existing studies regarding the integration and restructuring of urban bus transport in Tirana city.

It can be confirmed that the JICA Project on Tirana Thematic Urban Planning 2013 had well studied these important urban transport issues, giving as outputs detailed action plans and recommendations regarding the development of road and urban transportation for Tirana City.

The Consultant underlines that our solutions are in compliance with related conclusions and recommendations of JICA project.

General conclusion is that the Tirana Terminal cannot run successfully without implementing the following projects that will guarantee an effective feeder / distribution urban transport system:

- ✓ Dedicated bus lines in Tirana
- ✓ Traffic Management Tirana Centre
- ✓ New Southern Section of Tirana Outer Ring
- ✓ North – South Tram line
- ✓ Improvement of parking system
- ✓

5.6 CONCLUSIONS

It is developed an integrated system in the TPTT, including the intercity/international/communes and taxi vans 8+1 to urban bus services, also taking into account taxis.

With Tirana Terminal in full operation, the gravity centre of passengers movements to and from terminal, to travel in international, intercity, communes regular bus lines, and railway either, will be shifted about **4 km** from centre toward North-West border of Tirana city, augmenting by **4 km** the average length of urban trip.

The number of passengers that use the urban transport to travel to/from Tirana Terminal is about **15%** of total number of passengers transported by urban lines in Tirana City.

A new configuration of urban bus lines network is prepared by new bus line creation, joining and extending urban bus lines, and designing the new North-South tramline as well, hence creating a feeder / distribution system for Tirana Terminal, capable to cover all urban service zones of Tirana.

New urban bus *sub-lines* will frequent every 20 minutes Tirana Terminal in order to transport the passengers from Tirana city to the terminal and bringing them back after the return trip.

A new tramline with high transportation capacity is designed to connect in the future the terminal with the Student City, facilitating the connection of marginal city zones, but not only, with Tirana PT Terminal.

It is calculated the saving in **2,177,684 bus-km** per year and **313,827 taxi vans-km** per year, as an direct positive impact of Tirana Terminal that eliminates the circulation inside city of international, intercity, and communal buses and taxi vans. A direct impact in reducing the environment pollution from exhausting gases and acoustic traffic noises will be verified as soon as terminal starts its operation.

The impact of passenger vehicles traffic, transiting in Tirana Terminal, to the traffic flow of adjacent road **is low and without any consequence, as the Level of Service (LOS) of the Road SH1 almost don't changes.**

A 3D simulation of the traffic flow in the roundabout at the main entry / exit gate of Tirana Terminal have shown no circulation problems on it.

It was calculated that, after **8 years** the **LOS** will reach the level **F** or **congestion level**, during rush hours intervals in the road SH1 section adjacent to the Tirana Terminal, if other improvement measures should not be taken.

The terminal do not cause traffic disturbance or traffic congestion in the adjacent road network to Tirana Terminal, but the terminal will suffer the traffic congestion in the middle term future.

The proposed restructuring and reorganization of the urban transport lines is fully feasible because requests only 15% increase in bus fleet inventory and organization measures. This plan can be easily implemented during the two year construction period, to allow bus operators needed time to adapt their time tables and transport offer to the new Terminal and provide maximum benefit for passengers.

General conclusion is that the Tirana Terminal cannot run successfully without implementing the following projects which will guarantee an effective feeder / distribution urban transport system and will eliminate traffic congestion in Tirana city:

- ✓ Dedicated bus lines in Tirana
- ✓ Traffic Management Tirana Centre
- ✓ New Southern Section of Tirana Outer Ring
- ✓ North – South Tram line
- ✓ Improvement of parking system

6. Basic Site Plan and Utility and Infrastructure Needs of the New Terminal

6.1 INTRODUCTION

In October 2012, the Municipality of Tirana (the “MoT”) appointed the Consultant to provide consultancy services in respect of Tirana Public Transport Terminal (TPTT) - Feasibility Study and Concession Tender preparation Support (the “Project”) The Project has been carried out, by the Consultant, to solve an urban transport deficiency in the City, namely, the lack of a public transport terminal.

The MoT intends to prepare and tender for the construction of The new Public Transport The objective of the MoT is to improve overall mobility by providing a full-capacity transport terminal to allow intercity coaches to pick up and unload passengers to urban buses and taxis along the city’s principal corridor to the rest of the country, thereby reducing traffic congestion in the city centre, improving air pollution and reducing fuel consumption for public transport.

The winning bidder will be selected in an open international tender by the MoT, under a Design Build, Finance Operate Transfer (DBFOT) concession.

EBRD will assist The MoT with the funding of the present detailed preparation of the project, including the completion of a feasibility study, environmental and social analysis, and the preparation of the follow-on tender as a concession contract.

In structuring the project as a concession, the MoT will offer an 85,000 square meters land plot situated along the main corridor leading north-westerly out of the city toward Durres. The concession will be contracted out on a long-term basis (+20 years) to a future concessionaire to build, operate and maintain the terminal for the benefit of operators and passengers. In exchange, bus docking fees, retail rental revenues, and parking fees, will be collected by the concessionaire to amortize its initial capital costs, operational costs, and cover debt service.

6.2 ANALYSIS OF URBAN PLANNING OF THE PROJECT AREA

The design of the terminal has been developed from the analysis of the urban planning documentation provided by the MoT, listed below:

- Master plan of the Tirana City, Year 2009.
- New Urban Plan of Tirana City, Year 2012.
- Engineering Infrastructure Network of Tirana for:
 - Alb telecom;
 - AMC;
 - Vodafone;
 - Eagle;
 - Plus;
 - CEZ;
 - Water Supply Network;

- OST;
- Presentation of Urban Structure Network of Tirana;
- Updated of New Engineering Infrastructure Network of Tirana.

In the Master plan of the Tirana City (2009), the land use of the area B31 is stipulated as “Existing high rise residential buildings” while in the Regulation of the New Tirana Urban Plan (2013), the land use of the area 11/41 is stipulated as:

- Structural subunits of Mixed (Mixed) Housing, Public Services and Infrastructure.

Also in this area will be constructed multimodal public transport terminal.

The examination of the documentation relating to “Engineering Infrastructure Network of Tirana” has noted the absence of interference between the project works and underground utilities.

6.3 PROJECT CONCEPT

The TPTT is intended to become a Transport Hub and therefore to have the ability of connecting both the urban areas and the areas outside the city, in compatibility with the develop of the railway network and the future tramline.

The terminal design has had the following objectives:

- Best placement within the city;
- selecting the suitable functions;
- making the terminal a intermodal node, making easy the travellers’ movement and creating exchange zones, transit ones and shopping areas;
- Recognisability of the architecture;
- Flexibility.

Best placement within the city

The new terminal is designed to integrate the infrastructural network and the urban framework, both present and future: one of the main axes of the project is continuity with one of the new urban axis of the Tirana Masterplan. The purpose of said axis is also to guarantee the possibility of cutting across the entire lot, given that, by passing over the tracks of the tram train station; it serves as a footway linking together the two sides of the city divided by the railway.

Selecting the suitable functions

The terminal is not intended as a sum of functions, but as a set of services that take place in open and closed spaces, where the passenger, meant as a free entity, goes from one situation to another.

The project coordinates different and conflicting aspects: the movement of passengers, the movement of means of transport, the connection with the surrounding urban areas.

The functions selecting and sizing are connected with the study of passenger's flows. Some areas within the Terminal will be used for cultural activities. These activities with the commercial spaces inside the terminal will start processes of urban renewal, with reduction or elimination of urban blight.

Making the terminal an intermodal node

The new terminal will be a node of public transport network and the pivot of new urban framework: the transport system will become an element of urban design.

The functional organization of the terminal provides a network distribution of functions and a separation of pedestrian and vehicular routes.

Recognisability of the architecture

The close relationship with the urban place and the adoption of new construction technologies (steel, glass, concrete) will qualify the architecture of the terminal, which must be immediately recognizable in the city. The emerging element of the project will be the tower with the office district, the restaurant and the hotel.

Flexibility

The project guarantees the flexibility of the works, on a temporary basis, or to allow future developments of the terminal in order to satisfy new requirements or to redefine the distribution of investment costs.

6.4 FUNCTIONAL ORGANIZATION OF THE TERMINAL

Terminal accessibility: alternative hypothesis of links to the existing road traffic and verification of traffic flow capacity to and from the terminal

Before describing the analysis of the access road to the terminal, it's necessary to premise some considerations about the traffic situation in Tirana present and future.

It should be noted that the traffic in Tirana, especially along the road network adjacent to the Terminal, is bound to reach congestion in the next few years unless certain important measures are taken. This conclusion is common to all the final studies and city transport models applied up to the city of Tirana. Therefore also the inflow traffic to the terminal will be affected by that phenomenon. The possible criticalities concerning traffic congestion of urban road access to the terminal depend on the tight restrictions on the position and size of the project area and on the impossibility to intervene in the topology of the road network adjacent to the Terminal imposed by the City. The consultant therefore, can do no more than highlight the potential congestion issue unless the City decides to intervene beforehand on the road traffic inflow to the Terminal or reserve the possibility to do so in the future should the growth trends be confirmed. After 2025 a series of adaptation works will be required on the existing network which does not lie within the responsibility of the future Concessionaire since they will not be useful only to the Terminal.

Terminal accessibility has been studied with an eye to minimizing the impact of the projects on the existing road network, as per project input.

In particular, the following four configurations have been analysed:

1. **Hypothesis 1a** (Figure 5-1 **Errore. L'origine riferimento non è stata trovata.**). This hypothesis features a dedicated access lane leading to the terminal on the SH1 and a roundabout for exiting the terminal on the SH1, occupying only areas

internal to the lot and without the need to expropriate any area. In the alternative, the entry to and exit from the terminal may also be provided via the roundabout (hypothesis 1b, Figure 5-3);

2. **Hypothesis 2** (Figure 5-5). This hypothesis provides access to the terminal via the existing private roundabout next to the SH2/SH1 junction and an exit on the SH1, with a ramp for U-turns. Said hypothesis, represented solely through a graph in drawing code, provides for the mixed use of an acceleration/inflow lane exiting the terminal by three different types of flows: first, the flow leaving the terminal and entering the SH1 from an acceleration lane, second, the flow leaving the terminal which needs to make a U-turn and, third, that which, coming from the SH1 and heading toward Kamza, needs to make a U-turn to return to the SH2/SH1 junction. For that reason, said hypothesis should be discarded;
3. **Hypothesis 3a** (Figure 5-2). This hypothesis provides access to the multimodal centre via an already existing roundabout on the SH2 at the Custom junction, and the adaptation of the existing network by creating a road classified as “E Urbana di Quartiere” under applicable Italian law [4], in the absence of local normative references. The flow leaving the terminal can be channelled toward the same road and toward the SH1 via an acceleration/access lane (dedicated to the flow leaving the terminal and heading toward Kamza) or, in the alternative, it can be fully distributed to the existing and adapted network with the ‘E –urbana di quartiere’ (hypothesis 3b, Figure 5-4 –);
4. **Hypothesis 4a** (Figure 5-6). This hypothesis provides that part of the traffic entering/leaving the terminal uses a lane-changing section on the SH1 (for traffic coming from and heading toward Kamza) and that the remaining flow is channelled along the existing adapted network, classified as E ‘Urbana di Quartiere’ [4], as set out in point 3. In the alternative, the entire flow entering and leaving the terminal can use the existing adapted network with the ‘E –urbana di quartiere’ (hypothesis 4b Figure 5-8).

We have performed a number of checks for each hypothesis in order to analyse the effects of the Terminal on the mobility system and, in particular, on the adjacent infrastructures.

In particular, with regard to the expected traffic flows for the different timeframes, we have assessed on a case by case basis the level of service corresponding to each project hypothesis, taking as reference the degree of saturation of the existing infrastructure.

The aim of said checks has been to support the selection process of a project hypothesis in a way such as to combine the related requirements with the tight infrastructural restrictions, and to guarantee a service level that is appropriate for the expected demand flow.

It should first be noted that the various capacity verifications, performed with reference to the 2035 timeframe and deadline of the concession, have produced theoretically negative results. However, based on the available data and information, it can be argued that:

- the current traffic flows, simulated in the reference study, already show a high degree of saturation of the road network adjacent to the terminal, in particular of the SH2 and SH1;

Road	Direction	existing vehicle flow (vehic/h)	Capacity (vehic/h) [estimated]	Degree of Saturation
SH1	Terminal - Kamza	866	1304	0.66
	Kamza - Terminal	800	1304	0.61
	Terminal - Durres/Custom	800	2106	0.38
	Durres/Custom - Terminal	866	2106	0.41
SH2	Junction SH2/SH1 - Durres	2933	2760	1.06
	Durres - Junction SH2/SH1	2167	2760	0.79
	Junction SH2/SH1 - Custom	3333	2434	1.37
	Custom - Junction SH2/SH1	2400	2434	0.99

- consequently, the positioning of the terminal in the area identified by the Client, despite the new transport mode adjustment and the redistribution of traffic flows, may not be sufficient in itself to relieve congestion on the adjacent road network, also in view of the expected growth of traffic flows managed by the Terminal which, according to the reference studies previously conducted, are bound to increase significantly over the next 20-year period;
- the demand flow forecasts related to future timeframes are vitiated by an error, the effects of which are magnified over time. The demand flows for 2035, therefore, could be overestimated, which would consequently lead to an overestimation of the transport supply;
- from a system perspective, the construction of the Terminal, complemented by the additional projects for the strengthening and adaptation of the road network as preview by the national transport plan, will require a redistribution and optimisation of the vehicular flows in order to possibly relieve congestion on the SH2 and SH1.

Based on the foregoing, it can be reasonably argued that the real effects of the Terminal on the existing road system have a presumably lesser impact than what the analytical estimates would suggest. We can therefore assume that the degree of saturation values – commonly considered critical – do not actually refer to conditions of complete traffic halt, but more likely to congested or highly congested outflow conditions.

It should be noted that the foregoing makes reference, in particular, to the 2035 timeframe, by which the demand flow is expected to grow significantly. In the shorter term, starting from the time the terminal will be fully operational, said estimates will likely be updated and, consequently, approved or questioned.

Road	Direction	Terminal entry/exit flow (vehic. equi./h)	Percentage direction	Bus flow per direction (vehic. equi./h)
SH1	Terminal - Kamza	767	36%	276
	Kamza - Terminal	767	36%	276
	Terminal - Durres/Custom	767	66%	506
	Durres/Custom - Terminal	767	66%	506
SH2	Junction SH2/SH1 - Durres	767	40%	307
	Durres - Junction	767	40%	307
	Junction SH2/SH1 - Custom	767	26%	199
	Custom – Junction SH2/SH1	767	26%	199

Said flows have been complemented by the pre-load flows, that is, the current ones estimated in the previous studies:

Road	Direction	Existing vehicle flow (vehic. equi./h)
SH1	Terminal - Kamza	866
	Kamza - Terminal	800
	Terminal - Durres/Custom	800
	Durres/Custom - Terminal	866
SH2	Junction SH2/SH1 - Durres	2933
	Durres – Junction SH2/SH1	2167
	Junction SH2/SH1 - Custom	3333
	Custom – Junction SH2/SH1	2400

Given that the traffic flows from/to the Terminal are bound to overlap the existing ones, only 2/3 of them have been taken into account, given that part of the public transport traffic is already accounted for in the current flows.

The effects produced on the road network adjacent to the Terminal, assuming that the project is an isolated event, would be such as to cause a further worsening of traffic conditions. In fact, on the same road traffic flows (even though, in reality, they are bound to increase), the degree of saturation of the various sections of the SH2 and of the SH1 along the routes upstream and downstream from the access points (hence, irrespective of the type of access point) would be equal to:

2020

Road	Direction	Terminal entry/exit flow	Percentage	Bus flow per direction	Existing vehic flow	Total flow (2/3 bus flow)	Capacity	Saturation Degree
SH1	Terminal - Kamza	292	36%	105	866	936	1304	0,7
	Kamza - Terminal	292	36%	105	800	870	1304	0,7
	Terminal - Durres/Custom	292	66%	193	800	928	2106	0,4
	Durres/Custom - Terminal	292	66%	193	866	994	2106	0,5
SH2	Junction - Durres	292	40%	117	2933	3011	2760	1,1
	Durres - Junction	292	40%	117	2167	2245	2760	0,8
	Junction - Custom	292	26%	76	3333	3384	2434	1,4
	Custom - Junction	292	26%	76	2400	2451	2434	1,0

2025

Road	Direction	Terminal entry/exit flow	Percentage	Bus flow per direction	Existing vehic flow	Total flow (2/3 bus flow)	Capacity	saturation degree
SH1	Terminal - Kamza	402	36%	145	866	963	1304	0,7
	Kamza - Terminal	402	36%	145	800	897	1304	0,7
	Terminal - Durres/Custom	402	66%	266	800	977	2106	0,5
	Durres/Custom - Terminal	402	66%	266	866	1043	2106	0,5
SH2	Junction - Durres	402	40%	161	2933	3040	2760	1,1
	Durres - Junction	402	40%	161	2167	2274	2760	0,8
	Junction - Custom	402	26%	105	3333	3403	2434	1,4
	Custom - Junction	402	26%	105	2400	2470	2434	1,0

2035

Road	Direction	Terminal entry/exit flow	Percentage	Bus flow per direction	Existing vehic flow	Total flow (2/3 bus flow)	Capacity	Saturation degree
SH1	Terminal - Kamza	767	36%	276	866	1050	1304	0,8
	Kamza - Terminal	767	36%	276	800	984	1304	0,8
	Terminal - Durres/Custom	767	66%	506	800	1137	2106	0,5
	Durres/Custom - Terminal	767	66%	506	866	1203	2106	0,6
SH2	Junction - Durres	767	40%	307	2933	3137	2760	1,1
	Durres - Junction	767	40%	307	2167	2371	2760	0,9
	Junction - Custom	767	26%	199	3333	3466	2434	1,4
	Custom - Junction	767	26%	199	2400	2533	2434	1,0

As a result, the tables set out above show that the inclusion of the Terminal will probably not be sufficient to improve mobility, that is, not as long as it remains an isolated project, and not

part of a larger development plan comprising also other important projects for the strengthening of the road network.

On the basis of those data, has been verified the following:

- for the dedicated access lane for which we have estimated a capacity of 1000-1150 vehic/h, in view of the fact that it will be used by the full inbound traffic flow, we estimated a degree of saturation of 0.38-0.48 compared to the expected traffic volumes as at 2025, which indicate a good service level. On the other hand, compared to the expected traffic flows as at 2035, if confirmed, the resulting degree of saturation is of 0.73-0.92 which, as already discussed, indicates a significant probability of having congestion phenomena;
- as regards the roundabout, the CETUR method gives simple capacities for each arm to the extent that the maximum degree of saturation as at 2025 lies in the 0.40-0.53 range. On the other hand, compared to the expected flows for 2035, if confirmed, the degree of saturation of the roundabout arms lies in the 0.40-0.53 range which, as already discussed, indicates a significant probability of having congestion phenomena.

In the alternative, we could assume the use of the roundabout for both entry to and exit from the terminal. In that case, compared to the expected traffic volumes as at 2025, the degree of saturation of the roundabout arms vary from 0.53 to 0.60, indicating normal traffic conditions, although tending toward congestion. Compared to the expected flows as at 2035, if confirmed, we would reach a significant level of congestion (from 0.70 to 0.90).

6.6 Solution 3

The solution 3 is a variant of the Solution 2, which differs from this one by elimination of the tram-train station and its space needed for the terminal area. Also in this solution is eliminated the public space in the South part of the plot.

This space is given to a ground floor parking of 170 plots. The remained buildings in this solution are only the traveler building + pedestrian paths and all its necessary functions as below:

6.6.1 Dimensioning of the bus terminal

The organization of the bus terminal includes: the intercity bus terminal locational in the centre of the plot, the North of the terminal for international buses owned by Albanian transport companies, to the South the terminal for international buses owned by foreign transport companies and the taxi-van parking area, to the West the urban bus terminal and the taxi area, to the East the garage and the fuel service station.

In this solution is chooses to eliminate the tram station and its spaces. The remained space is considered now as green space which increases significantly the green area in the plot.

This kind of intervention brings a new configuration for the North part of the plot, directing the spaces and all movement axes toward the South.

Table 5-1 – Calculation of the stalls' number for each kind of passenger vehicle line

Passenger vehicle lines	No Stalls (Docks)
International	38
Intercity buses	57
Communes buses	12
Urban buses	12
Taxi vans (8+1)	25

The International buses will pull on two saw tooth platforms, whereas the intercity buses will pull on parallel platforms that allow queuing of three buses for each platform. The urban buses will pull on one parallel platform that allows queuing of three buses for each platform. All platforms will be used for mixed arrivals and departures.

Table 5-2 – Functional mix solution 3

According to the differ of the plot, there are some changes in the functional surfaces as below:

Functional mix	Sq. m
Terminal yard (urban, intercity and international bus terminals, taxi and taxi-van parking lot)	28533
Shelters	10158
Footbridges	727
Garage and fuel service station	1300
Terminal roads	17389
New roundabout	3800
Environmental mitigation	49378
One level car parking	5410 (170 places)
Retail Store	1174
Transport Companies Office +Tickets Office	1851
Food and Beverage	792
Waiting Room	395
Technical Room Maintenance	234
WC	233

6.6.3 Piano-altimetry arrangement of services

Level +0 (Street level). At Level +0, moving from North to South, is the ground floor of the terminal station, the terminal for international buses owned by Albanian transport companies, the intercity bus terminal, the terminal for international buses owned by foreign transport companies, the taxi-van parking area and a terrace-shaped public square, bordering to the West with the urban bus terminal. The garage and the fuel service station are situated to the

East, near to the intercity bus terminal. The fuel service station is for private use, with fixed fuel dispensers connected to underground tanks for the exclusive supply of vehicles of the transport companies operating in the terminal. Under the terminal square there will be a rainwater drainage system, which will disperse the water in the subsoil or will be accumulated before evacuate it in the local sewage network with regulated flow.

Level +6 At this level, moving from north to south, is the first floor of the terminal station – which houses the travellers’ services, waiting rooms, ticket offices, offices, shops – the first and the second travellers’ buildings - orthogonal each other - which house a mix of services: pedestrian tunnels, shops, waiting areas, terminal operating offices, travel agencies, public and personnel bathroom facilities, equipment and maintenance rooms, etc.

Both buildings, which are shaped like a bridge, pass over the terminal bus and have two stories: the floor open to the public, at level +6, and the equipment mezzanine floor, which is to house the air ventilation and air conditioning machines and the conduits for the electrical power, mechanical and fire protection systems. Also at this level is the L-shaped building housing some of other utility spaces, with a wing forming the continuation of the first passenger building, along the new urban axis. Complementing this setting are two footbridges running in a North-South direction and parallel to the first travellers’ building.

Pedestrian pathways, vehicle tracks and automatic access control

In order to guarantee the safety and functionality of movement and comfort of passengers, the vehicle tracks and the travellers’ pathways are kept separate, since the pedestrian pathways are to be built mainly at +6.00 m above the terminal yard, inside the two footbridges and the two bridge-shaped passenger buildings, so as to minimise the movement of travellers at street level. Also the urban bus terminal is connected to the travellers building by a fixed staircase, an escalator and a lift.

The footbridges and the two passenger buildings are connected to the terminal platforms via fixed staircases, escalators and lifts, which allow for interchange between the various transport modes.

6.6.4 Investment costs

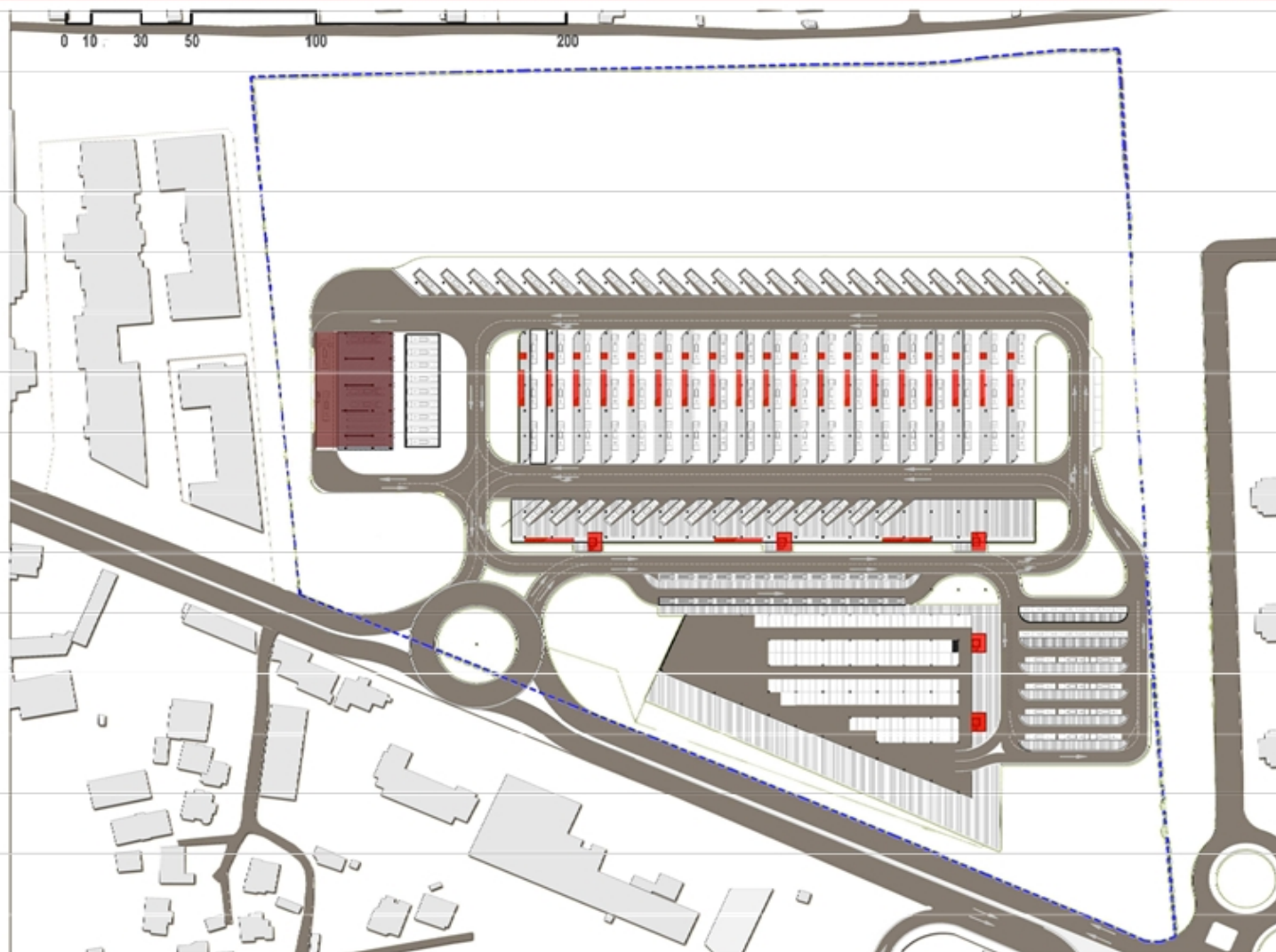
The investment cost of the solution 3 is shown in the following table.

Table 5-3 - Investment cost of the solution 3

		Main construction costs (€)	Additional costs (€)						Total additional costs (€)
			Surveys	Temporary work	Contingencies	Design	Utilities	Automatic control system	
<i>Solution 3</i>	<i>terminal</i>	11,931,047	29,828	238,621	2,386,209	357,931	238,621	295,600	3,546,810
	<i>commercial</i>								
	<i>hotel</i>								
	<i>TOTAL</i>	11,931,047	29,828	238,621	2,386,209	357,931	238,621	295,600	3,546,810

“Zgjidhja 3”





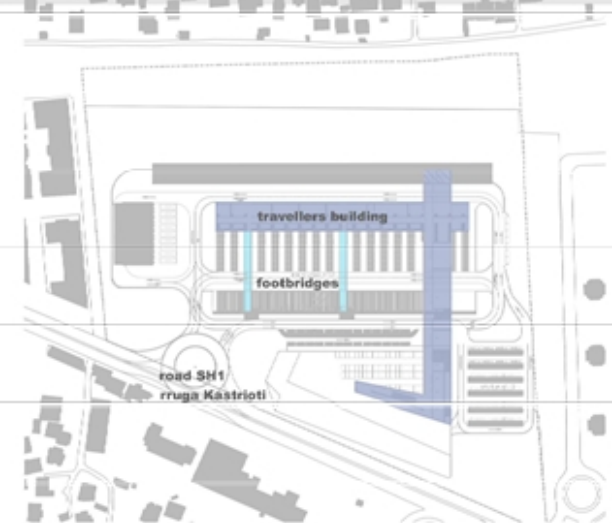
- STAIRS
- ELEVATORS
- ESCALATORS
- RAILWAY EQUIPMENT ROOMS
 - office for station manager
 - rooms for signalling systems
 - rooms for mechanical systems
 - rooms for telecommunication systems
 - rooms for HVAC systems
 - safety and security
 - cabine hi voltages and switch gear
 - low voltages
- TRAM DEPOT
- GARAGE AND FUEL SERVICE STATION
- TECHNICAL ROOMS
- MAINTENANCE
- WC
- RETAIL STORE
- WAITING ROOMS
- FOOD AND BEVERAGE
- TERMINAL MANAGMENTS OFFICES
- POLICE
- TRANSPORT COMPANIES OFFICE + TICKETS OFFICE
- SHOPPING CENTER, CULTURAL CENTER, RESTAURANT
- MOTEL

FUNCTIONAL ANALYSIS

solution 03 LEVEL +0



solution 03 LEVEL +6



CAR PARKING	PUBLIC SPACE	URBAN BUS	GARAGE AND FUEL SERVICE STATION	INTERCITY BUS	INTERNATIONAL BUS	TAXI TAXI VAN K&R	ROUND ABOUT	TRAVELLERS BUILDINGS	FOOTBRIDGE
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road SH1-rruga kastrioti

public space

SOLUTION 3_section

footbridges

travellers buildings

7. Strategic and Operational Benefits expected from the Project of the Terminal

IMPACT AND BENEFITS OF THE PROJECT

1.1. Environmental Benefits

1.1.1 Improvement of the Air Quality

The Existing Situation of public transport and the specific Situation in the project area is chaotic and lacks a rational Planning. Irregular travel itineraries always cause traffic jam extending the loading and unloading time and consequently increasing the emissions from vehicles. After the Terminal building (Public Transport Terminal of Tirana), the itineraries of the transport will be divided spatially, that may diverge a fast entrance or exit of the buses from the junction of transition, reducing the waiting and travel time, as well as reduce the vehicle emissions.

1.1.2 Improvement of Water Quality

The newly Terminal (TTPT) should consider creating a diverse environment for initial treatment of the sewage water, including oil filter, septic tanks, sedimentation tanks, thus improving the quality of water discharge.

1.1.3 Ecological Environment Improvement

The area of the ground floor of the terminal will not only be a concrete surface, green areas will also be part of the terminal. After completing the Project (TTPT), the green area will be approximately 1.0 hectares. These green areas will improve the ecological environment; will help reduce the level of noise and absorb the emissions of vehicles.

1.2. Social Benefits

1.2.1. Increased national and local tax revenues.

Completion of this project will contribute to the annual national and local income tax. The project will accelerate the development of passengers transport industry to form a new point of economic growth.

1.2.2. Promotion of urban construction

Completion of this project will contribute to:

- a) speeding up the process of urban construction in Tirana, beautify the city, improve the urban taste, promote the expansion of Quality Improvement of Tirana.
- b) improvement of urban infrastructure in Tirana, optimize the investment environment.
- c) improving the traffic situation in Tirana to assist passengers, to reduce congestion and promote urban civilization
- a) speeding up the process of urban construction in Tirana, beautify the city, improve the urban taste, promote the expansion of Quality Improvement of Tirana.
- b) improvement of urban infrastructure in Tirana, optimize the investment environment.
- c) improving the traffic situation in Tirana to assist passengers, to reduce congestion and promote urban civilization civilization driven urban.

1.2.3. Accelerating the development of transport

Completion of the project will contribute to:

- a) creating the conditions for rapid development of urban transport market;
- b) strengthening the management of road transport, establishing normal order of motor transport, the protection of the legitimate rights and interests of transport;
- c) facilitating urban planning, relieve traffic pressure, change the current chaotic situation of passenger transport, realizing the goal of integrated rural transport and urban passengers;
- d). Increase employment opportunities. Implementation of this project can provide the community with a lot of employment to contribute to social stability and development.
- e) The project includes all necessary measures to avoid, minimize or mitigate any negative changes in environmental conditions and impact on public health and safety.

f) public consultation and stakeholder engagement will be important and will enable public participation in decision-making (in accordance with the UN Convention ECE Aarhus);

In summary, this project is a good project of public transport infrastructure.

1.3 Institutional Strengthening and Capacity Building

During project implementation, environmental specialists from the Municipality of Tirana and the Ministry of Transport, REA and IA (Implementation Agency), contractors and supervisory companies will be earmarked for environmental management and implementation of the Environmental Management Plan. These persons will be trained in environmental laws, regulations, technology and environmental management. After the project, the capacity for environmental management will be significantly promoted.

- ”, i ndryshuar;
- Rregullorenr.
1 datë 15.03.2006 “Përparandalimin e ndikimeve negative në shëndet në mjedistëve primtare
vendi tjetër”.

8. Bashkërendimi i Projektit me Studimet dhe Politikat e Përgjithshme të Investimeve Sektoriale

Projekti i Terminalit të Transportit Publik ka një historik planifikimi që i paraprin përpjekjeve aktuale koncesionare.

- a) Objektivat e qeverisë shqiptare, të cilësuar në dokumentat strategjikë, si “Dokumenti Strategjik indikativ për Shqipërinë (2014-2020)”, “Plani Kombëtar për Integrimin European 2016-2020”, Strategjinë Sektoriale për zhvillimin e transportit në Shqipëri; i) në politikat e Bashkisë Tiranë për sigurimin e një shërbimi cilësor të transportit në qytetin e Tiranës, si dhe në ii) dokumentat ekzistues të planifikimit të territorit, në kushtet kur Plani Vendor i planifikimit të territorit për Bashkinë Tiranë, përfshirë të gjitha njësitë administrative të saj, është ende në proces hartimi.
- b) Në vitin 2002, **Studimi i Përmirësimeve të Transportit Urban të Tiranës** (TUTIS) ishte ndër përpjekjet e para kërkimore për identifikimin e problemeve të ndryshme të shërbimit të transportit në qytetin e Tiranës. Projekti TUTIS, financuar nga Banka Botërore. Rezultatet e pritura nga ky studim kanë qenë përmirësimi i transportit në qytet, përmes miratimit të masave të përshtatshme dhe efektive që do të zbatohen në një periudhë kohore pesëvjeçare.
- c) Ndërtimi i Terminaleve të udhëtareve është parashikuar gjëresisht në Planin Kombëtar të Transportit – ANTP 2 si edhe në Strategjinë e Zhvillimit të Transportit Rrugor, veçanërisht në reformin e transportit të udhëtareve që po realizon se fundmi Ministria e Transportit dhe Infrastruktura.
- d) Në vitin 2007, **Studimi i Përmirësimeve të Transportit Urban të Tiranës** shërbeu si pikënisje për Strategjinë e ndjekur të Zhvillimit të Qëndrueshëm dhe të Integruar të Trafikut në qytetin e Tiranës, të përgatitur në kuadër të projektit "Zhvillimi i qëndrueshëm i trafikut në Tiranë, Shqipëri" (SUSTRAFFTIA) i financuar nga BE / LIFE dhe bashkë-financuar nga Ministria Federale për Mjedisin, Natyrën, Ruajtjen dhe Sigurinë Bërthamore të Gjermanisë gjatë viteve 2005 -2007.

SUSTRAFFTIA, propozon 4 terminale. Sipas këtij studimi, terminalët duhet të jenë të vendosur në

- Kombinat – korridori i shërbimit A dhe linjat furnizuese jugperëndimore;
- Kamez – korridoret e shërbimit B dhe C sidhe linjat furnizuese veriperëndimore;
- Lumi i Lanës, Lindje – korridoret e shërbimit B, C dhe D si dhe linjat furnizuese juglindje: dhe,
- Myslym Keta – korridori i shërbimit A dhe linjat e furnizimit verilindje.

Terminali Kamez do të jetë një vend i përsosur për kombinimin e një terminali të rëndësishëm autobusësh BRT, një qendre shopping-u, si dhe objekte argëtimi.

- e) PTKSH 2 propozoi Planin e Investimit për vitin 2021 që arrin shumën e 383 milionë Euro, të përbërë nga:
 - Rinovimi i parqeve të automjeteve: 95 milionë Euro;

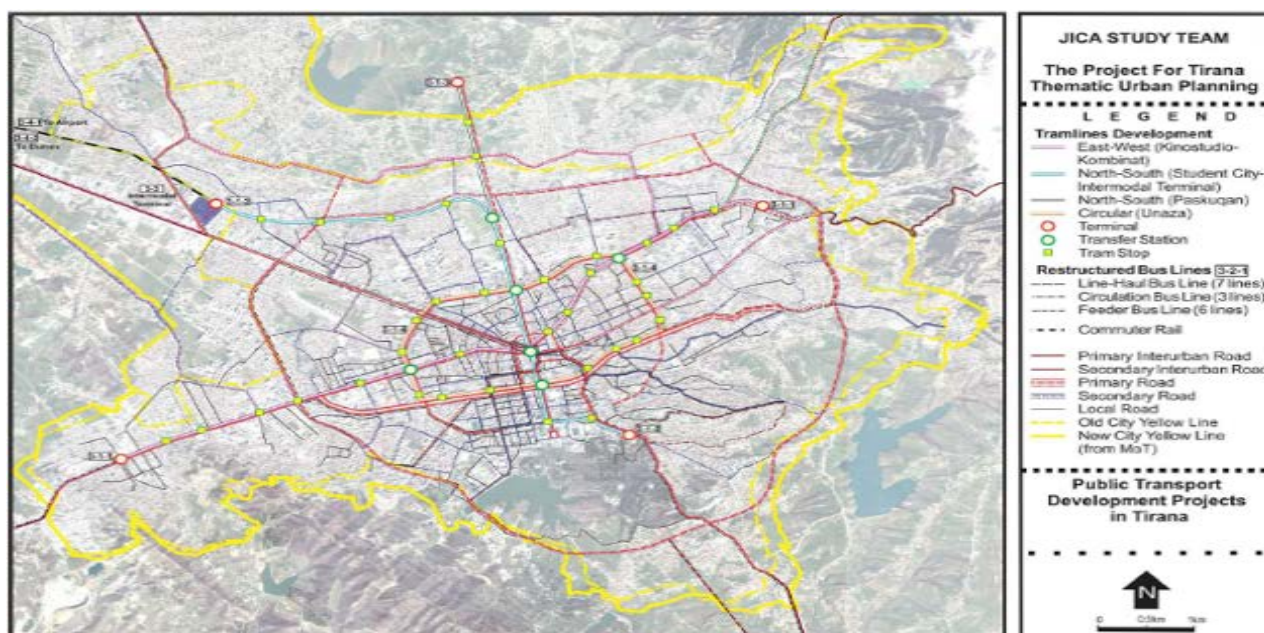
- Implementimi i korsive të autobusëve: 150 milionë Euro me 2.5 milion Euro/km, me gjatësi korsie autobusësh prej 53.2 km;
 - Ndërtimi i lidhjeve të reja urbane hekurudhore: 100 milionë Euro me 20 milionë Euro/km, me gjatësi 4.4 km dhe stacione shtesë tramvaji; dhe
 - Mjetet e transportit hekurudhore për shërbimin e trenave-tramvajeve: 38 milionë Euro me 2.5 milionë Euro për njësi për 15 njësi.
- f) Në vitin 2009 u hartua **Strategjia e Transportit të Qëndrueshëm Komunal të Tiranës**, e zhvilluar si një strategji e integruar e cila synonte të kombinonte mjetet e ndryshme të transportit duke nxitur mjete më pak ndotëse të tilla si transporti publik dhe të ashtuquajturit mobilitetin e lehtë.

Koncepti i elaboruar në këtë strategji është integrimi i transportit publik me shërbimet publike ndërrbane (jo në varësi të Bashkisë së Tiranës) që do të ndalen në terminalin e autobusëve më të jashtëm (në afërsi të stacionit të trenit), me të cilat njerëzit mund të gjejnë shërbimet urbane për të arritur destinacionin e tyre në Tiranë.

Në periudhën kohore 2011-2013, u zbatua një tjetër projekt i lidhur ngushtë me menaxhimin e transportit urban në Tiranë. **Projekti për Planifikimin Urban Tematik të Tiranës**, propozoi 4 Plane Master në perspektivat afatgjata që synojnë vitin 2027 dhe planet përkatëse të veprimit për projektet prioritare në katër (4) sektorë të infrastrukturës, duke përfshirë Transportin Rrugor dhe Urban.

Sipas planit Master të Transportit Rrugor dhe Urban, zhvillimi i një terminali intermodal të transportit së bashku me zhvendosjen e stacionit hekurudhor të Tiranës, është një nga të prioritetet strategjike të Ministrisë së Transportit dhe vëmendje duhet t'i kushtohet funksioneve intermodale transferimit ndërmjet mënyrave të ndryshme të transportit, që do të thotë, ndërmjet linjave (furnizuese) lidhëse të autobusëve dhe linjave të tramvajit, si dhe ndërmjet mënyrave private të transportit dhe linjave të tramvajit.

Stacionet e mëdha candidate me parking në shkallë të gjerë të propozuara në planin e këtij plani master ishin Terminali i Transportit Intermodal.



Burimi: Projekti për Planifikimin Urban Tematik të Tiranës, Ekipi i Studimit JICA, 2012

Figura 3.1.1 Projektet e Zhvillimit të Transportit Publik në Tiranë

Sipas vlerësimit të ekipit të studimit, në mënyrë të veçantë Terminali i Transportit Intermodal i Tiranës duhet të zhvillohet në vendin ku stacioni ekzistues hekurudhor i Tiranës do të zhvendoset (afërsisht 85,000 m²). Të gjithë linjat e autobusëve dhe furgonëve ndërqytetës dhe ndërkombëtare për në drejtime veriore, perëndimore dhe jug-perëndimore duhet të integrohen në këtë terminal në mënyrë që të ndihmojnë në parandalimin e hyrjes së automjeteve të mëdha në CBD e Tiranës.

Vendodhja e Terminalit të Transportit Intermodal është përcaktuar tashmë në mënyrë definitive nga Ministria e Transportit, kështu që nuk janë kryer vlerësime të mëtejshme në zona të tjera të mundshme nga ekipi i Studimit JICA.

Kjo domosdoshmëri për qytetin për ta çliruar nga trafiku i rënduar prej mjeteve të transportit me autobus dhe për të rregulluar në parametra europian lëvizjen e njerëzve për/nga Tirana, u adresua edhe gjatë hartimit të Planit Rregullues të Qytetit, Dhjetor 2012, në të cilin u miratua pozicionimi i Terminalit Multimodal të Tiranës në hyrje të Tiranës.

Terminali është pjesë e një strategjie të gjerë të transportit urban i cili do t'u japë zgjidhje nevojave urgjente për përmirësimin e trafikut në Tiranë, nëpërmjet parkimit të gjithë mjeteve të transportit të udhëtarëve nga i gjithë vendi dhe krijimin e kushteve optimale për transportin e tyre në qytetin e Tiranës.

Objektivi i Bashkisë Tiranë është që të përmirësojnë lëvizshmërinë e përgjithshme, duke siguruar një terminal të transportit me kapacitet të plotë për të lejuar mjetet e transportit ndërqytetas të shkarkojnë pasagjerët, për lidhje me autobusë urban dhe taksi përgjatë korridorit kryesor me pjesën tjetër të qytetit, duke zvogëluar bllokimet e trafikut në Qendrën e Qytetit, përmirësimin në uljen e ndotjes së ajrit dhe konsumin e karburantit për transport publik.

Duke marrë parasysh strategjitë e zhvillimit të trafikut urban dhe transportit publik në Tiranë, transporti ndërqytetës si një shërbim i rregullt që duhet të përmbushë kërkesën në rritje të pasagjerëve është në gjendje të keqe në lidhje me stacionet e nisjes dhe mbërritjes të quajtura terminale. Rrjedhimisht, pikëpamja e përqendrimit të linjave të transportit të largët/në distancë (ndër-urban) ishte e nevojshme për krijimin e një Terminali multi-funksional për Transportin Publik në Tiranë.

9. Estimate Cost and Revenues and E&F Analyses

10.1 INTRODUCTION

The effects of the construction of the new Tirana Public Transport Terminal (TPTT) in terms of advantages and disadvantages were analyzed with a Cost Benefit Analysis (CBA), i.e. with a consolidated and well experimented methodology that is a common standard for investments of every size and field of application.

The following documents were considered as reference guidelines in this specific study:

- The *Guide to cost-benefit analysis of investment projects*, of December 2014 (prepared by the European Commission, Directorate General Regional Policy) 1;
- The *Commission Implementing Regulation (EU) 2015/207 of 20 January 2015* and in particular its *Annex III, Methodology for carrying out the cost-benefit analysis* 2.

This CBA, like any others, has a double objective:

- first, to evaluate the financial feasibility of the project, in terms of pure cash flow from the point of view of the concessionaire of the infrastructure, that in our case will be also its operator;
- second, to evaluate the economic feasibility of the projects, in terms of costs and benefits from the general point of view (the “social” point of view).

As any other CBA, also this one makes a comparison between one or more scenarios that may be called “with project” and that considers the construction of the TPTT with its different technical solutions (as explained in other parts of this study, three different solutions were studied, referred as “solution 1”, “solution 2” and “solution 3”) and a reference scenario that may be called “without project”, that considers the preservation of existing situation.

The parameters considered in this analysis are those commonly adopted in CBA. There is a large literature on these topics that can be used as a reference (the aforementioned two documents are an example), and this literature should be used in order to have a complete description of common CBA methodology. Nevertheless, it is important to remind some basic points about CBA:

- a basic characteristic of CBA is discounting. This is important as costs and benefit flows do not occur at the same time, and it makes a difference when, after

having made an investment (= costs), it is necessary to wait a long time before benefits are generated. The general principle is that a value of (for instance) 100 € today is not the same value of 100 € in one year's time. That is the reason why a discount rate (expressed in %) is defined in order to define the yearly depreciation of money value.

- the results of this CBA are expressed by means of the traditional indicators that are used in this field. They are (for both financial and economic CBA):
 - o the **Net Present Value (NPV)** that is the sum of all discounted costs and benefits. This sum reflects how much the project will be profitable. If the NPV is negative, clearly the costs prevail over the benefits and the project is not financially or economically feasible;
 - o the **Internal Rate of Return (IRR)**, that is the rate with which the discounted costs equal the discounted benefits, thus giving the break-even (NPV=0) at that particular rate. The IRR can then be compared with a base line or standard rate, for example the current interest rate, or a certain minimum rate, and if the IRR is higher the project would be profitable;
 - o the **benefit-cost ratio B/C** is similar to the NPV. Whereas the NPV is the difference between all costs and benefits, the B/C is the ratio of (discounted) costs and benefits. It is assumed initially that benefits are gross benefits, and costs are gross costs, which means that all costs (investments and recurrent costs) are added together. For a project to be profitable, the B/C should exceed 1.

The general conclusions that can be achieved from the present study of the TPTT are that:

- The project is feasible from the financial point of view, i.e. it is self-sustainable, but with some major risks for the solution 1. The financial **NPV** of the investment is positive for all solutions and respectively equal to **58,90 € x 10⁶**, **86,72 € x 10⁶** and **31,73 € x 10⁶** respectively for the solutions 1, 2 and 3. The same values for an investment limited to the terminal only (i.e. without the commercial and hotel areas) are respectively **56,59 € x 10⁶** and **84,22 € x 10⁶** for solutions 1 and 2 (solution 3 does not provide

commercial and hotel areas by default). The financial NPV of the solution 3 is lower in comparison to the values of the other two solutions, but such solution has

the more favourable financial IRR, i.e. **19,62%** vs. **11,86%** and **18,11%** respectively for solutions 1 and 2 (**12,67%** and **20,90%** respectively without the commercial and hotel areas). Solution 3 appears to be the most feasible option, especially within a “low- cost” scenario.

- Sensitive analyses show that the NPV decreases below 0 for solution 1 with a decrease of the parking revenues of 31% of the forecasted values, while solution 2 and 3 appear to be more “robust”, with a NPV that never reaches a null even with a decrease of 50% of the parking revenues (the financial NPV with these strongly negative conditions is $14,75 \text{ €} \times 10^6$ and $4,03 \text{ €} \times 10^6$ respectively for solutions 2 and 3)
- The project is feasible from the economic point of view. Externalities and social benefits can compensate the investment. The economic NPV is firmly positive and equal to **$87,53 \text{ €} \times 10^6$** , **$109,43 \text{ €} \times 10^6$** and **$45,09 \text{ €} \times 10^6$** respectively for the solutions 1, 2 and 3, while economic IRR is respectively **16,5%**, **23,8%** and **28,5%**. However, the economic CBA was carried out mainly on a parametric basis taking into account the improvement of the average access times to the new terminal with respect of the existing access times to the interurban bus stations. This because access time is a critical factor, and therefore this improvement must be sustained by adequate transport policies in the next years.

The analysis was carried out at fixed prices and the adopted values for the discount factors were 5% and 5.5% respectively for the financial and economic CBA, as recommended by the European Commission for the 2014 - 2020 period. The cash flows were extended for 20 years (that is the suggested extension of a possible concession), starting from year 2020 until year 2039 (included). Years before 2020 were considered as a starting period during which the tendering procedures, the design activities and the construction phases will occur.

The following chapters describe step-by-step the assumption and the procedures implemented for the financial and economical cost/benefit analysis of the TPTT.

9.2 FINANCIAL ANALYSIS

9.2.1 OPERATIONAL CRITERIA

The financial analysis was carried under the viewpoint of the concessionaire who will carry out the project and shall manage the terminal during the concession period (from 2020 to

2039). Hypotheses considering a Public-Private Partnership, with a share of the City of Tirana inside the company that will manage the TPTT were not considered, being the City Administration not interested in this eventuality. Separate values were calculated for the full investment (parking + commercial + hotel) and for partial investments (parking only from one side and commercial + hotel as a single investment from the other side).

It is important to remind that in this paragraph and in the following ones the word “parking” includes in terms of cost and revenues also those complementary activities that are part of that quota of investment, i.e.:

- that portion of commercial activities that are functionally linked with the terminal itself: ticket offices, food shops, café-restaurant, etc.
- the motel, that is also functional to the terminal itself, being reserved to the bus drivers.

On the other side the words “commercial” and “hotel” are referred respectively to:

- the additional shopping area and the offices that are not strictly functional to the terminal activities the hotel itself (rooms + complementary activities: bar / restaurant, conference room)

Capital expenses and operating expenses (CAPEX and OPEX) were estimated for all solutions 1, 2 and 3, on the basis of the technical characteristics of the investment and on the basis of the traffic demand that will interest the new terminal.

9.2.2 CAPEX

The main CAPEX are presented into the following tables.

Table 2-1 - Investment costs for the solution 1 (construction only)

MAIN WORKS	unit	m ³	m ²	Cost per m ²	Cost per m ³	Cost per item	Workforce in %	Total
tram train station			5.900	€ 1.100				€ 6.490.000
terminal yard			21.750	€ 55			25%	€ 1.196.250
tram depot			5.000	€ 350				€ 1.750.000
underground parking		110.000	29.500	€ 800			25%	€ 23.600.000
roads			18.300	€ 73				€ 1.335.900
garage and fuel service station			1.300	€ 350			30%	€ 455.000
shelters			14.000	€ 350				€ 4.900.000
footbridges		4.200	1.200		€ 160		20%	€ 672.000
technical room for inspection pumps		350	117	€ 400			30%	€ 46.667
oil/light fluid separator	no.	1				€ 42.000		€ 42.000
travellers buildings			6.200	€ 1.100				€ 6.820.000
elevators 8 peoples	no.	12				€ 35.000		€ 420.000
inn - motel			2.560	600			30%	€ 1.536.000
TOTAL PARKING								€ 49.263.81
SHOPPING CENTER + OFFICE			6.700	€ 1.100			25%	€ 7.370.000
hotel			2650	1100			0,3	€ 2.915.000
elevators 8 peoples	no.	2				€ 35.000		€ 70.000
TOTAL HOTEL			2650	1100			0,3	€ 2.985.00
environmental mitigation:								
tree	no.	320				€ 200		€ 64.000
grass			15.700	€ 1,20				€ 18.840
works for irrigation system	no.	1				€ 16.500		€ 16.500
demolition of buildings and soil excavations		40.500	9.000	€ 180			10%	€ 1.620.000
escalators	no.	12				€ 57.500		€ 690.000
elevators 5 peoples	no.	19				€ 22.000		€ 418.000
public space			7.350	€ 55				€ 404.250
TOTAL SHARED EXPENSES								€ 3.231.590
TOTA								€ 62.850.407

Table 2-2 - Investment costs for the solution 2 (construction only)

MAIN WORKS	unit	m ³	m ²	Cost per m ²	Cost per m ³	Cost per item	Workforce in %	Total
tram train station			5.900	€ 1.100				€ 6.490.000
terminal yard			21.750	€ 55			25%	€ 1.196.250
tram depot			5.000	€ 350				€ 1.750.000
multilevel parking			10.800	€ 375			25%	€ 4.050.000
roads			18.300	€ 73				€ 1.335.900
garage and fuel service station			1.300	€ 350			30%	€ 455.000
shelters			14.000	€ 350				€ 4.900.000
footbridges		4.200	1.200		€ 160		20%	€ 672.000
technical room for inspection pumps		350	117	€ 400			30%	€ 46.667
oil/light fluid separator	no.	1				€ 42.000		€ 42.000

travellers buildings			6.200	€ 1.100				€ 6.820.000
elevators 8 peoples	no.	12				€ 35.000		€ 420.000
inn - motel			2.560	€ 600			30%	€ 1.536.000
TOTAL PARKING								€ 29.713.81
SHOPPING CENTER + OFFICE			6.450	€ 1.100			25%	€ 7.095.000
hotel			2.650	€ 1.100			0,3	€ 2.915.000
elevators 8 peoples	no.	2				€ 35.000		€ 70.000
TOTAL HOTEL			2.650	€1.100			0,3	€ 2.985.00
environmental mitigation:								
tree	no.	320				€ 200		€ 64.000
grass			18.700	€ 1,20				€ 22.440
works for irrigation system	no.	1				€ 16.500		€ 16.500
demolition of buildings and soil excavations		40.500	9.000	€ 180			10%	€ 1.620.000
escalators	no.	12				€ 57.500		€ 690.000
elevators 5 peoples	no.	19				€ 22.000		€ 418.000
public space			2.000	€ 55				€ 110.000
TOTAL SHARED EXPENSES								€ 2.940.940
TOTAL								€ 42.734.757

Table 2-3 - Investment costs for the solution 3 (construction only)

MAIN WORKS	unit	m ³	m ²	Cost per m ²	Cost per m ³	Cost per item	Workforce in %	Total
parking space			2,200	€ 375				€ 825,000
roads			18,300	€ 73				€ 1,335,900
garage and fuel service station			1,300	€ 350			30%	€ 455,000
shelters			17,000	€ 350				€ 5,950,000
footbridges		3.360	727		€ 160		20%	€ 537,600
technical room for inspection pumps		350	117	€ 400			30%	€ 46,667
oil/light fluid separator	no.	1				€ 42.000.00		€ 42,000
travellers buildings			6	€ 1,100				€ 6.820.000
elevators 8 peoples	no.	5				35,000.00		€ 175,000
TOTAL PARKING								€ 9,367,167
environmental mitigation:								
tree	no.	485				€ 200		€ 97,000
grass			47,400	€ 1.2				€ 56,880
works for irrigation system	no.	1				€ 33,000		€ 33,000

Green area construction works			38,000			€ 40		€ 1,520,000
demolition of buildings and waste		200	400	€ 180			10%	€ 72,000
escalators	no.	6				€ 57,500		€ 345,000
elevators 5 peoples	no.	10				€ 22,000		€ 220,000
public space			4,000	€ 55				€ 220,000
TOTAL SHARED EXPENSES								€ 2,563,880
TOTAL								€ 11,931,047

Table 2-4 - Total investment costs

		Main construction costs (€)	Additional						Total additional costs (€)
			Surveys	Temporary work	Contingencies	Design	Utilities	Automatic control system	
Solution 1	terminal	51.934.12	129.835	1.038.68	10.386.82	1.558.02	1.038.68	295.600	14.447.64
	commercial	7.769.48	19.424	155.39	1.553.89	233.085	155.390		2.117.18
	hotel	3.146.80	7.867	62.936	629.36	94.404	258.953		1.053.52
	TOTAL	62.850.40	157.126	1.257.00	12.570.08	1.885.51	1.453.02	295.600	17.618.35
Solution 2	terminal	31.909.80	79.775	638.19	6.381.96	957.294	638.196	295.600	8.991.02
	commercial	7.619.35	17.738	141.90	1.419.00	212.850	141.900		1.933.38
	hotel	3.205.60	7.492	59.933	599.33	89.900	258.953		1.015.61
	TOTAL	42.734.75	105.005	840.02	8.400.29	1.260.04	1.039.04	295.600	11.940.02
Solution 3	terminal	11,931,04	29,828	238,62	2,386,20	357,931	238,621	295,600	3,546,81
	TOTAL	11,931,04	29,828	238,62	2,386,20	357,931	238,621	295,600	3,546,81

The above Table 2-4 -estimate complementary costs as a percentage of the main construction costs, by adopting the following values:

surveys	0,25%
temporary work	2,00%
contingencies	20,00%
design	3,00%
connections for supply	2,00%

The introduction of these costs inside the cash flow is scheduled with the following criteria:

year 2017: design costs

year 2018: 1/4 of the construction costs, including complementary costs (except design)

year 2019: 3/4 of the construction costs, including complementary costs (except design)

Infrastructure maintenance costs were also scheduled 5 years after the start-up of the terminal activities, i.e. at years 2025, 2030 and 2035. These extraordinary maintenance costs are presented into the next table.

Table 2-5 - Extra maintenance costs (every five years)

Component	Unit cost (€*year/m ²)	Solution 1		Solution 2		Solution 3	
		Quantity	Total	Quantity	Total	Quantity	Total
		(m ²)	(€)	(m ²)	(€)	(m ²)	(€)
parking area	30	47.677	1.430.300	28.977	869.300	19.528	585.840
road surfaces	10	47.400	474.000	42.050	420.500	42.050	420.500
commercial area	50	6.700	335.000	6.450	322.500	0	0
hotel area	50	2.650	132.500	2.650	132.500	0	0

9.2.3. OPEX

Running costs were estimated on the basis that the Concessionaire of the infrastructure will manage directly only its main function (i.e. the terminal and parking function), while other parallel activities will be managed under a rent basis (except for some general activities such as safety).

The main hypotheses carried by the Consultant in terms of equipment requirements, staffing levels, and operating costs are represented by the following table.

Table 2-6 - Main personnel costs (Terminal organization and managing) for all solutions

Position	Number	Avg monthly salary (€)	Annual cost (€)
Chief Executive Officer	1	1.100,00	13.200,00
Director	1	1.000,00	12.000,00

Marketing Manager	1	634,97	7.619,64
Transport Manager	1	634,97	7.619,64
Responsible for the Financial, Human Resource and Commercial	3	634,97	22.858,92
Responsible for the Maintenance & security	1	634,97	7.619,64
Secretaries	5	362,97	21.778,20
Administrative employers	10	393,85	47.262,00
TOTAL	23		134.604,36
Not administrative personnel for parking operations (sol. 1 & 2)	6	393,85	28.357,00
TOTAL (SOL. 1 & 2)	29		168.315,24
Not administrative personnel for parking operations (sol. 3)	4	393,85	18.905,80
TOTAL (SOL 3)	27		158.862,84

Other costs are represented by maintenance, cleaning, supply consumption and security costs. In this case there are some differences between solutions. While some costs are pertaining to only one section of the investment (parking / commercial) some others are shared among the different components. A resume of the yearly additional costs is presented inside the next table.

Table 2-7 - Yearly additional costs (maintenance excluded)

Component	Item	Solution 1	Solution 2 (€/year)	Solution 3 (€/year)
Parking	Energy	806.212	489.995	489,995
	Water	37.255	22.643	22,643
	Cleaning	178.31	108.37	108,37
Commercial	Energy	113.29	109.07	0
	Water	5.235	5.04	0
	Cleaning	25.05	24.123	0
All	Security	94.52	94.524	94,524

Maintenance costs are not included into the above table. Such costs were estimated as 1% of the yearly incomes for ordinary maintenance of the parking and commercial areas. Values at starting year 2020 are the following for solutions 1 and 2:

Parking: 90.450 (€/year) for solution 1 / 88.182(€/year) for solution 2
Commercial 10.343 (€/year)

Solution 3 does not provide a specific commercial area, and the costs for maintenance of the parking area is 28.154 (€/year)

As regards the hotel, the cost of the ordinary maintenance is included into the general costs of the hotel itself. All costs are calculated on the basis of a full yearly exploitation of the terminal (365 days per year) for the full duration of the concession (20 years).

9.2.4 YEARLY REVENUES

Revenues were estimated for the entire duration of the concession on the basis of the following criteria:

- as regards the parking area, the Concessionaire or the authority that will manage the infrastructure will directly manage and provide the services: incomes will be represented by parking fees and tariffs paid by bus operators;
- as regards the commercial area (solution 1), commercial spaces will be rented to commercial operator: incomes will be represented by renting fees;
- as regards the hotel area (solution 1), the hotel service and the related activities (bar, restaurant, etc.) will be managed under a franchising schema (the operator will pay a franchise fee to some hotel chain, costs of such fees were included into the general hotel expenses).

The revenues for the use of parking slots may be estimated for years 2015, 2020, 2025 and 2035 as presented in the following tables. Year 2015 is theoretical, given that it is preceding the realistic start-up year.

Table 2-8 - Yearly revenues on parking slots / Solution 1

	Years			
	2015	2020	2025	2035
	(€/year)			
Night parking	398.790	398.790	398.790	398.790
Tolls	4.034.940	6.796.759	9.397.721	18.158.912
TOTAL	4.433.730	7.195.549	9.796.511	18.557.702

Table 2-9 - Yearly revenues on parking slots / Solution 2

	Years			
	2015	2020	2025	2035
	(€/year)			
Night parking	171.990	171.990	171.990	171.990
Tolls	4.034.940	6.796.759	9.397.721	18.158.912
TOTAL	4.206.930	6.968.749	9.569.711	18.330.902

Table 2-10 - Yearly revenues on parking slots / Solution 3

	Years			
	2015	2020	2025	2035
	(€/year)			
Night parking	64.260	64.260	64.260	64.260
Tolls	2.004.090	3.373.825	4.678.863	11.239.667
TOTAL	2.068.350	3.438.085	4.743.123	11.303.927

Table 2-11 - Daily incomes departures from terminal (solutions 1 & 2)

YEAR	2015						2020						2025						2035					
Mode of Transport	Number of slots	Single ticket fare	Incomes	Number of vehicles	Single ticket fare	Incomes	Number of slots	Single ticket fare	Incomes	Number of vehicles	Single ticket fare	Incomes	Number of slots	Single ticket fare	Incomes	Number of vehicles	Single ticket fare	Incomes	Number of slots	Single ticket fare	Incomes	Number of vehicles	Single ticket fare	Incomes
		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day
Taxi van (8+1)	25	0	0,00	149	0	0,00	25	0	0,00	251	0	0,00	25	0	0,00	348	0	0,00	25	0	0,00	669	0	0,00
Intercity buses	57	0	0,00	433	6	2.727,90	57	0	0,00	729	6	4.592,70	57	0	0,00	1.011	6	6.369,30	57	0	0,00	1.942	6	12.234,60
Municipal buses				250	6	1.575,00				422	6	2.658,60				584	6	3.679,20				1.122	6	7.068,60
Bus park intercity (sol. 1)	120	0	0,00	0	0	0,00	120	0	0,00	0	0	0,00	120	0	0,00	0	0	0,00	120	0	0,00	0	0	0,00
Bus park intercity (sol. 2)	34	0	0,00	118	18	2.065,00	34	0	0,00	199	18	3.482,50	34	0	0,00	276	18	4.830,00	34	0	0,00	530	18	9.275,00
international bus	30	0	0,00	1.020	0	0,00	30	0	0,00	1.430	0	0,00	30	0	0,00	2.004	0	0,00	30	0	0,00	6.047	0	0,00
K & R	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00
Car Parking (short stay)	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00
Car Parking shopping area	20	0	0,00	146	0,4	51,10	20	0	0,00	204	0,4	71,48	20	0	0,00	286	0,4	100,21	20	0	0,00	1.814	0,4	634,96
Taxi (4+1)	12	0	0,00	162	0	0,00	12	0	0,00	214	0	0,00	12	0	0,00	283	0	0,00	12	0	0,00	492	0	0,00
Urban buses	0	0	0,00	101	1	141,40	0	0	0,00	170	1	238,28	0	0	0,00	179	1	250,53	0	0	0,00	283	1	396,85

Table 2-12 - Daily incomes departures from terminal (solution 3)

YEA R	2015						2020						2025						2035					
Mode of Transport	Number of slots	Single ticket fare	Incomes	Number of vehicles	Single ticket fare	Incomes	Number of slots	Single ticket fare	Incomes	Number of vehicles	Single ticket fare	Incomes	Number of slots	Single ticket fare	Incomes	Number of vehicles	Single ticket fare	Incomes	Number of slots	Single ticket fare	Incomes	Number of vehicles	Single ticket fare	Incomes
		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day
Taxi van (8+1)	25	0	0,00	149	0	0,00	25	0	0,00	251	0	0,00	25	0	0,00	348	0	0,00	25	0	0,00	669	0	0,00
Intercity buses	57	0	0,00	433	6	2.727,90	57	0	0,00	729	6	4.592,70	57	0	0,00	1.011	6	6.369,30	57	0	0,00	1.942	6	12.234,00
Municipal buses				250	6	1.575,00				422	6	2.658,00				584	6	3.679,20				1.122	6	7.068,00
Bus park intercity (sol. 1)	120	0	0,00	0	0	0,00	120	0	0,00	0	0	0,00	120	0	0,00	0	0	0,00	120	0	0,00	0	0	0,00
Bus park intercity (sol. 2)	34	0	0,00	118	18	2.065,00	34	0	0,00	199	18	3.482,90	34	0	0,00	276	18	4.830,00	34	0	0,00	530	18	9.275,00
international bus	30	0	0,00	1.020	0	0,00	30	0	0,00	1.430	0	0,00	30	0	0,00	2.004	0	0,00	30	0	0,00	6.047	0	0,00
K & R	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00
Car Parking (short stay)	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00
Car Parking shopping area	20	0	0,00	146	0,4	51,10	20	0	0,00	204	0,4	71,48	20	0	0,00	286	0,4	100,21	20	0	0,00	1.814	0,4	634,96
Taxi (4+1)	12	0	0,00	162	0	0,00	12	0	0,00	214	0	0,00	12	0	0,00	283	0	0,00	12	0	0,00	492	0	0,00
Urban buses	0	0	0,00	101	1	141,40	0	0	0,00	170	1	238,28	0	0	0,00	179	1	250,53	0	0	0,00	283	1	396,85

YEAR	2015						2020						2025						2025					
Mode of Transport	Number of slots	Single ticket fare	Incomes		Single ticket fare	Incomes	Number of slots	Single ticket fare	Incomes		Single ticket fare	Incomes	Number of slots	Single ticket fare	Incomes		Single ticket fare	Incomes	Number of slots	Single ticket fare	Incomes		Single ticket fare	Incomes
		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day
Taxi van (8+1)	25	0	0,0 0	149	1	208,6 0	25	0	0,0 0	251	1	351,40	25	0	0,0 0	348	1	487,20	25	0	0,0 0	669	1	936,6 0
Intercity buses	57	0	0,0 0	433	2	866,0 0	57	0	0,0 0	729	2	1.458,00	57	0	0,0 0	1.011	2	2.022,00	57	0	0,0 0	1.942	2	3.884,0 0
Municipal buses	0	0	0,0 0	250	1	175,0 0	0	0	0,0 0	422	1	295,40	0	0	0,0 0	584	1	408,80	0	0	0,0 0	1.122	1	785,4 0
Bus park intercity (sol. 1)	0	0	0,0 0	0	0	0,00	0	0	0,0 0	0	0	0,0 0	0	0	0,0 0	0	0	0,00	0	0	0,0 0	0	0	0,00
Bus park intercity (sol. 2)	34	0	0,0 0	118	18	2.065,0 0	34	0	0,0 0	199	18	3.482,5 0	34	0	0,0 0	276	18	4.830,0 0	34	0	0,0 0	530	18	9.275,0 0
international bus	30	0	0,0 0	1.020	0	0,00	30	0	0,0 0	1.430	0	0,0 0	30	0	0,0 0	2.004	0	0,00	30	0	0,0 0	6.047	0	0,00
K & R	90	0	0,0 0	0	0	0,00	90	0	0,0 0	0	0	0,0 0	90	0	0,0 0	0	0	0,00	90	0	0,0 0	0	0	0,00
Car Parking (short stay)	500	0	0,0 0	0	0	0,00	500	0	0,0 0	0	0	0,0 0	500	0	0,0 0	0	0	0,00	500	0	0,0 0	0	0	0,00
Car Parking shopping area	20	0	0,0 0	146	0,4	51,1 0	20	0	0,0 0	204	0,4	71,4 8	20	0	0,0 0	286	0,4	100,2 1	20	0	0,0 0	1.814	0,4	634,9 6
Taxi (4+1)	12	0	0,0 0	162	0	0,00	12	0	0,0 0	214	0	0,0 0	12	0	0,0 0	283	0	0,00	12	0	0,0 0	492	0	0,00
Urban buses	0	0	0,0 0	0	1	0,00	0	0	0,0 0	0	1	0,0 0	0	0	0,0 0	0	1	0,00	0	0	0,0 0	0	1	0,00

Table 2-13 - Daily incomes arrivals to terminal (solutions 1 & 2)

YEAR	2015						2020						2025						2035					
Mode of Transport	Number of slots	Single ticket fare	Incomes	Number of vehicles	Single ticket fare	Incomes	Number of slots	Single ticket fare	Incomes	Number of vehicles	Single ticket fare	Incomes	Number of slots	Single ticket fare	Incomes	Number of vehicles	Single ticket fare	Incomes	Number of slots	Single ticket fare	Incomes	Number of vehicles	Single ticket fare	Incomes
		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day
Taxi van (8+1)	25	0	0,00	149	4	521,50	25	0	0,00	251	4	878,50	25	0	0,00	348	4	1.218,00	25	0	0,00	669	4	2.341,50
Intercity buses	57	6	359,10	433	6	2.727,90	57	6	359,10	729	6	4.592,70	57	6	359,10	1.011	6	6.369,30	57	6	359,10	1.942	6	12.234,00
Municipal buses				250	6	1.575,00				422	6	2.658,60				584	6	3.679,20				1.122	6	7.068,60
Bus park intercity (sol. 1)	120	6,3	756,00	0	0	0,00	120	6,3	756,00	0	0	0,00	120	6,3	756,00	0	0	0,00	120	6,3	756,00	0	0	0,00
Bus park intercity (sol. 2)	34	6,3	214,20	118	18	2.065,00	34	6,3	214,20	199	18	3.482,50	34	6,3	214,20	276	18	4.830,00	34	6,3	214,20	530	18	9.275,00
international bus	30	0	0,00	1.020	0	0,00	30	0	0,00	1.430	0	0,00	30	0	0,00	2.004	0	0,00	30	0	0,00	6.047	0	0,00
K & R	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00
Car Parking (short stay)	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00
Car Parking shopping area	20	0	0,00	146	0,0	0,00	20	0	0,00	204	0,0	0,00	20	0	0,00	286	0,0	0,00	20	0	0,00	1.814	0,0	0,00
Taxi (4+1)	12	0	0,00	162	0	0,00	12	0	0,00	214	0	0,00	12	0	0,00	283	0	0,00	12	0	0,00	492	0	0,00
Urban buses	0	0	0,00	101	0	0,00	0	0	0,00	170	0	0,00	0	0	0,00	179	0	0,00	0	0	0,00	283	0	0,00

Table 2-14 - Daily incomes arrivals to terminal (solution 3)

Y E A R	2015						2020						2025						2025					
Mode of Transport	Number of slots	Single ticket	Incomes	Number of vehicles	Single ticket	Incomes	Number of slots	Single ticket	Incomes	Number of vehicles	Single ticket	Incomes	Number of slots	Single ticket	Incomes	Number of vehicles	Single ticket	Incomes	Number of slots	Single ticket	Incomes	Number of vehicles	Single ticket	Incomes
		(€)	€/day		(€)	€/day		(€)	€/day		(€)	€/day		(€)	€/day		(€)	€/day		(€)	€/day		(€)	€/day
Taxi van (8+1)	25	0	0,00	149	1	208,60	25	0	0,00	251	1	351,40	25	0	0,00	348	1	487,20	25	0	0,00	669	1	936,60
Intercity buses	57	0	0,00	433	2	866,00	57	0	0,00	729	2	1.458,00	57	0	0,00	1.011	2	2.022,00	57	0	0,00	1.942	2	3.884,00
Municipal buses	0	0	0,00	250	1	175,00	0	0	0,00	422	1	295,40	0	0	0,00	584	1	408,80	0	0	0,00	1.122	7	7.854,00
Bus park intercity (sol. 1)	0	2,1	0,00	0	0	0,00	0	2,1	0,00	0	2	0,00	0	6,3	0,00	0	2	0,00	0	2,1	0,00	0	2	0,00
Bus park intercity (sol. 2)	34	6,3	214,20	118	18	2.065,00	34	6,3	214,20	199	18	3.482,50	34	6,3	214,20	276	18	4.830,00	34	6,3	214,20	530	18	9.275,00
international bus	30	0	0,00	1.020	0	0,00	30	0	0,00	1.430	0	0,00	30	0	0,00	2.004	0	0,00	30	0	0,00	6.047	0	0,00
K & R	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00
Car Parking (short stay)	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00
Car Parking shopping area	20	0	0,00	146	0,0	0,00	20	0	0,00	204	0,0	0,00	20	0	0,00	286	0,0	0,00	20	0	0,00	1.814	0,0	0,00
Taxi (4+1)	12	0	0,00	162	0	0,00	12	0	0,00	214	0	0,00	12	0	0,00	283	0	0,00	12	0	0,00	492	0	0,00
Urban buses	0	0	0,00	0	0	0,00	0	0	0,00	0	0	0,00	0	0	0,00	0	0	0,00	0	0	0,00	0	0	0,00

The values of the above table are based on a critical assumption: all the intercity and international bus traffic referring the city of Tirana will have their point of departure or origin inside the terminal, without any other additional stops inside the city. This hypothesis must be granted by the city Administration with appropriate enforcement policies³. Only one exception is considered: for solution 3 bus services serving East Albania will use a separate terminal.

In order to estimate the above incomes, the Consultant evaluated the “willingness to pay” expressed by the operators for the use of the new terminal. Incomes are divided into two parts: a first share coming from “long term” bus parking and a second share coming from the “short term” use arrival/departure slots. The second quota includes also the contribution given by taxi cars (4 passengers max + 1 driver) and taxi vans (8 passengers + 1 driver).

Yearly revenues for intermediate years and for years above 2025 were estimated using linear interpolation.

Revenues from commercial and motel/hotel areas were estimated on the basis of the local market prices. The revenues were estimated as following (for both Solutions 1 & 2):
for the parking area:

- o revenues for the commercial portion of the parking area will start with a value of 0,88 millions € per year at the beginning of the period of analysis (year 2020) up to a final value of 1,06 millions € per year at the end (year 2039)
- o revenues for the motel portion of the parking area (solution 1) are only incidentally similar to the previous ones and will start with a value of 0,89 millions € per year at the beginning of the period of analysis up to a final value of 1,07 millions € per year at the end (year 2039)
- o the gas station will also give a minor contribution to the revenues of the parking area, that was considered fixed for all the time of analysis, i.e. 0,08 millions € per year

for the hotel and commercial area (solution 1):

- o revenues for the shopping area plus real estate (rent of offices) will start with a value of 1,03 millions € per year at the beginning of the period of analysis (year 2017) up to a final value of 1,25 millions € per year at the end (year 2039)
- o revenues for the hotel will start with a value of 0,86 millions € per year at the beginning of the period of analysis up to a final value of 1,04 millions € per year at the end (year 2039)

No residual values were considered at the end of period of analysis of the project, assuming the hypothesis that the infrastructure will be given back by the Concessionaire to the Municipality without any refund. This is anyway a conservative approach. As a matter of fact, the possibility to

have or not a refund represented by the residual value should be verified after the definition of the concession contract.

9.2.5 CALCULATION OF THE FINANCIAL CBA PARAMETERS

The financial analysis was carried out for all solutions, by adopting the hypothesis that the City of Tirana will not make any disbursement for this infrastructure, except for the free allowance of the land owned by the municipality for the entire duration of the concession. Within this schema the Concessionaire will keep in its own budget as full incomes all the proceeds coming from the sale of terminal services. The hypothesis of a shared investment between the City and a private Concessionaire was not considered, because this possibility was considered of no interest by representatives of municipalities.

The results of the first schema give positive values for the financial analyses. As yet said, the Consultant evaluated three different investment scenarios and calculated three sets of results:

- a. the first scenario considered the full investment (parking + commercial and hotel areas)
- b. the second and third scenarios considered only partial investments (parking only and commercial + hotel respectively)

The results are presented into the next tables.

Table 2-15 - Results of the financial analysis / Overall investment

	Solution 1	Solution 2	Solution 3
NPV (millions of €)	58,90	86,72	31,73
IRR	11,86%	18,11%	19,62%
B/C ratio	1,56	2,17	2,34

Table 2-16 - Results of the financial analysis / Parking area only

	Solution 1	Solution 2	Solution 3
NPV (millions of €)	56,59	84,22	31,73
IRR	12,67%	20,90%	19,62%
B/C ratio	1,67	2,54	2,34

Table 2-17 - Results of the financial analysis / Commercial + hotel areas only

	Solution 1	Solution 2	Solution 3
NPV (millions of €)	2,31	2,50	not av.
IRR	7,00%	7,17%	not av.
B/C ratio	1,12	1,13	not av.

The above results show positive values for all solutions. Nevertheless, solution no. 3 appears to be more reliable in comparison to 1 and 2 as overall investments, having the highest value of IRR. Solution 3 has lower value of NPV, but this is a consequence of the smaller amount of the investment. The results of the sensitivity analyses (for the “parking area only” scenario) are presented below.

Table 2-18 - Results of the financial analysis / sensitivity analysis based on parking Revenues (+/- 50% increase and reduction) / Parking area only

correction factor	Solution 1			Solution 2			Solution 3		
	IRR	NPV (millions €)	IRR	IRR	NPV (millions €)	IRR	IRR	NPV (millions €)	IRR
0,5	2,50%	-13,97	8,56%	8,56%	8,56%	1,27	7,47%	4,03	1,17
0,6	5,02%	0,14	11,44%	11,44%	11,44%	1,52	10,40%	9,57	1,40
0,7	7,21%	14,25	14,04%	14,04%	14,04%	1,78	12,99%	15,11	1,64
0,8	9,18%	28,37	16,45%	16,45%	16,45%	2,03	15,35%	20,65	1,87
0,9	10,98%	42,48	18,73%	18,73%	18,73%	2,29	17,55%	26,19	2,11
1	12,67%	56,59	20,90%	20,90%	20,90%	2,54	19,62%	31,73	2,34
1,1	14,27%	70,70	22,99%	22,99%	22,99%	2,79	21,59%	37,27	2,57
1,2	15,79%	84,82	25,01%	25,01%	25,01%	3,05	23,49%	42,81	2,81
1,3	17,25%	98,93	26,99%	26,99%	26,99%	3,30	25,32%	48,35	3,04
1,4	18,67%	113,04	28,92%	28,92%	28,92%	3,56	27,10%	53,89	3,28
1,5	20,04%	127,16	30,81%	30,81%	30,81%	3,81	28,83%	59,44	3,51

Table 2-19 - Results of the financial analysis / sensitivity analysis based on investment costs (+/- 50% increase and reduction) / Parking area only

correction factor	Solution 1			Solution 2			Solution 3		
	IRR	NPV (millions €)	B/C	IRR	NPV (millions €)	B/C	IRR	NPV (millions €)	B/C
0,5	24,21%	87,31	2,62	37,41%	103,25	3,89	34,00%	39,37	3,46
0,6	20,68%	81,17	2,35	32,22%	99,45	3,52	29,57%	37,85	3,16
0,7	18,01%	75,02	2,13	28,35%	95,64	3,21	26,23%	36,32	2,90
0,8	15,88%	68,88	1,95	25,34%	91,83	2,95	23,59%	34,79	2,69
0,9	14,14%	62,74	1,80	22,91%	88,03	2,73	21,43%	33,26	2,50
1	12,67%	56,59	1,67	20,90%	84,22	2,54	19,62%	31,73	2,34
1,1	11,41%	50,45	1,56	19,19%	80,42	2,37	18,07%	30,20	2,20
1,2	10,30%	44,30	1,46	17,72%	76,61	2,23	16,72%	28,67	2,07
1,3	9,33%	38,16	1,37	16,43%	72,81	2,10	15,53%	27,15	1,96
1,4	8,45%	32,02	1,29	15,29%	69,00	1,99	14,47%	25,62	1,86
1,5	7,66%	25,87	1,22	14,27%	65,20	1,88	13,52%	24,09	1,77

As shown inside Table 2-18 and Table 2-19 solution 1 presents higher risks, considering that variations of about -31% in terms of parking revenues give a negative NPV. It is quite manifest that the solutions 2 and 3 are the most profitable among those two that were considered, at least in terms of financial results. At the end, they have similar results, but solution 3 has a lower initial investment.

The full financial cash flows are presented into the next tables for all solutions.

Table 2-20 - Financial cash flow (solution 1) – values in € x 10⁶ / Discount rate 5%

YEAR	Yearly financial costs								Yearly incomes					Total (overall investment)		Difference Incomes - Costs (overall investment)	Discount factor	Total (overall investment)	
	Investment costs parking area	Investment costs commercial area	Investment costs hotel	Overall investments costs	Operating costs parking area	Operating costs commercial area	Operating costs hotel	Overall operating costs	Incomes from parking area	Incomes from commercial area	Incomes from hotel	Total incomes	Residual values	Costs	Incomes			Discounted Costs	Discounted incomes
2016	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		0,00	0,00	0,00	1,00	0,00	0,00
2017	1,56	0,23	0,09	1,89	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		1,89	0,00	-1,89	0,95	1,80	0,00
2018	16,13	2,41	1,03	19,57	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	19,57	0,00	-19,57	0,91	17,75	0,00
2019	48,69	7,24	3,08	59,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	59,01	0,00	-59,01	0,86	50,98	0,00
2020	0,00	0,00	0,00	0,00	1,80	0,16	0,39	2,35	9,05	1,03	0,86	10,94	0,00	2,35	10,94	8,59	0,82	1,93	9,00
2021	0,00	0,00	0,00	0,00	1,83	0,16	0,40	2,39	9,37	1,04	0,87	11,28	0,00	2,39	11,28	8,89	0,78	1,87	8,84
2022	0,00	0,00	0,00	0,00	1,87	0,17	0,40	2,44	9,39	1,06	0,87	11,32	0,00	2,44	11,32	8,89	0,75	1,82	8,45
2023	0,00	0,00	0,00	0,00	1,91	0,17	0,41	2,48	9,73	1,07	0,88	11,68	0,00	2,48	11,68	9,20	0,71	1,76	8,30
2024	0,00	0,00	0,00	0,00	1,95	0,17	0,41	2,53	10,09	1,08	0,89	12,06	0,00	2,53	12,06	9,53	0,68	1,71	8,16
2025	2,02	0,34	0,13	2,49	2,00	0,18	0,41	2,59	11,74	1,09	0,90	13,72	0,00	5,08	13,72	8,64	0,64	3,28	8,85
2026	0,00	0,00	0,00	0,00	2,04	0,18	0,42	2,64	12,18	1,10	0,91	14,19	0,00	2,64	14,19	11,55	0,61	1,62	8,71
2027	0,00	0,00	0,00	0,00	2,09	0,19	0,42	2,70	12,65	1,11	0,92	14,68	0,00	2,70	14,68	11,98	0,58	1,58	8,58
2028	0,00	0,00	0,00	0,00	2,13	0,19	0,43	2,75	13,14	1,12	0,93	15,19	0,00	2,75	15,19	12,44	0,56	1,53	8,46
2029	0,00	0,00	0,00	0,00	2,18	0,20	0,43	2,81	13,65	1,13	0,94	15,72	0,00	2,81	15,72	12,91	0,53	1,49	8,34
2030	2,12	0,34	0,13	2,59	2,23	0,20	0,44	2,86	14,19	1,14	0,95	16,27	0,00	5,46	16,27	10,82	0,51	2,76	8,22
2031	0,00	0,00	0,00	0,00	2,28	0,21	0,44	2,92	14,74	1,15	0,96	16,85	0,00	2,92	16,85	13,93	0,48	1,41	8,11
2032	0,00	0,00	0,00	0,00	2,33	0,21	0,44	2,98	15,32	1,17	0,97	17,46	0,00	2,98	17,46	14,47	0,46	1,37	8,00
2033	0,00	0,00	0,00	0,00	2,38	0,22	0,45	3,05	15,93	1,18	0,98	18,08	0,00	3,05	18,08	15,04	0,44	1,33	7,89
2034	0,00	0,00	0,00	0,00	2,43	0,22	0,45	3,11	16,57	1,19	0,99	18,74	0,00	3,11	18,74	15,63	0,42	1,29	7,79
2035	2,23	0,34	0,13	2,70	2,49	0,23	0,46	3,17	17,23	1,20	0,99	19,43	0,00	5,87	19,43	13,55	0,40	2,32	7,69
2036	0,00	0,00	0,00	0,00	2,54	0,24	0,46	3,24	17,92	1,21	1,00	20,14	0,00	3,24	20,14	16,90	0,38	1,22	7,59
2037	0,00	0,00	0,00	0,00	2,60	0,24	0,47	3,31	18,65	1,22	1,01	20,89	0,00	3,31	20,89	17,58	0,36	1,19	7,50
2038	0,00	0,00	0,00	0,00	2,66	0,25	0,47	3,38	19,40	1,24	1,03	21,66	0,00	3,38	21,66	18,28	0,34	1,16	7,41
2039	0,00	0,00	0,00	0,00	2,72	0,25	0,48	3,45	20,19	1,25	1,04	22,48	0,00	3,45	22,48	19,02	0,33	1,12	7,32
TOTAL	72,76	10,89	4,60	88,25	44,46	4,04	8,67	57,17	281,15	22,77	18,87	322,79	0,00	145,42	322,79	177,38		104,29	163,19

YEAR	Yearly financial costs								Yearly incomes					Total (overall investment)		Difference Incomes - Costs (overall investment)	Discount factor	Total (overall investment)	
	Investment costs parking area	Investment costs commercial area	Investment costs hotel	Overall investments costs	Operating costs parking area	Operating costs commercial area	Operating costs hotel	Overall operating costs	Incomes from parking area	Incomes from commercial area	Incomes from hotel	Total incomes	Residual values	Costs	Incomes			Discounted Costs	Discounted incomes
2016	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		0,00	0,00	0,00	1,00	0,00	0,00
2017	1,56	0,23	0,09	1,89	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		1,89	0,00	-1,89	0,95	1,80	0,00
2018	16,13	2,41	1,03	19,57	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	19,57	0,00	-19,57	0,91	17,75	0,00
2019	48,69	7,24	3,08	59,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	59,01	0,00	-59,01	0,86	50,98	0,00
2020	0,00	0,00	0,00	0,00	1,80	0,16	0,39	2,35	9,05	1,03	0,86	10,94	0,00	2,35	10,94	8,59	0,82	1,93	9,00
2021	0,00	0,00	0,00	0,00	1,83	0,16	0,40	2,39	9,37	1,04	0,87	11,28	0,00	2,39	11,28	8,89	0,78	1,87	8,84
2022	0,00	0,00	0,00	0,00	1,87	0,17	0,40	2,44	9,39	1,06	0,87	11,32	0,00	2,44	11,32	8,89	0,75	1,82	8,45
2023	0,00	0,00	0,00	0,00	1,91	0,17	0,41	2,48	9,73	1,07	0,88	11,68	0,00	2,48	11,68	9,20	0,71	1,76	8,30
2024	0,00	0,00	0,00	0,00	1,95	0,17	0,41	2,53	10,09	1,08	0,89	12,06	0,00	2,53	12,06	9,53	0,68	1,71	8,16
2025	2,02	0,34	0,13	2,49	2,00	0,18	0,41	2,59	11,74	1,09	0,90	13,72	0,00	5,08	13,72	8,64	0,64	3,28	8,85
2026	0,00	0,00	0,00	0,00	2,04	0,18	0,42	2,64	12,18	1,10	0,91	14,19	0,00	2,64	14,19	11,55	0,61	1,62	8,71
2027	0,00	0,00	0,00	0,00	2,09	0,19	0,42	2,70	12,65	1,11	0,92	14,68	0,00	2,70	14,68	11,98	0,58	1,58	8,58
2028	0,00	0,00	0,00	0,00	2,13	0,19	0,43	2,75	13,14	1,12	0,93	15,19	0,00	2,75	15,19	12,44	0,56	1,53	8,46
2029	0,00	0,00	0,00	0,00	2,18	0,20	0,43	2,81	13,65	1,13	0,94	15,72	0,00	2,81	15,72	12,91	0,53	1,49	8,34
2030	2,12	0,34	0,13	2,59	2,23	0,20	0,44	2,86	14,19	1,14	0,95	16,27	0,00	5,46	16,27	10,82	0,51	2,76	8,22
2031	0,00	0,00	0,00	0,00	2,28	0,21	0,44	2,92	14,74	1,15	0,96	16,85	0,00	2,92	16,85	13,93	0,48	1,41	8,11
2032	0,00	0,00	0,00	0,00	2,33	0,21	0,44	2,98	15,32	1,17	0,97	17,46	0,00	2,98	17,46	14,47	0,46	1,37	8,00
2033	0,00	0,00	0,00	0,00	2,38	0,22	0,45	3,05	15,93	1,18	0,98	18,08	0,00	3,05	18,08	15,04	0,44	1,33	7,89
2034	0,00	0,00	0,00	0,00	2,43	0,22	0,45	3,11	16,57	1,19	0,99	18,74	0,00	3,11	18,74	15,63	0,42	1,29	7,79
2035	2,23	0,34	0,13	2,70	2,49	0,23	0,46	3,17	17,23	1,20	0,99	19,43	0,00	5,87	19,43	13,55	0,40	2,32	7,69
2036	0,00	0,00	0,00	0,00	2,54	0,24	0,46	3,24	17,92	1,21	1,00	20,14	0,00	3,24	20,14	16,90	0,38	1,22	7,59
2037	0,00	0,00	0,00	0,00	2,60	0,24	0,47	3,31	18,65	1,22	1,01	20,89	0,00	3,31	20,89	17,58	0,36	1,19	7,50
2038	0,00	0,00	0,00	0,00	2,66	0,25	0,47	3,38	19,40	1,24	1,03	21,66	0,00	3,38	21,66	18,28	0,34	1,16	7,41
2039	0,00	0,00	0,00	0,00	2,72	0,25	0,48	3,45	20,19	1,25	1,04	22,48	0,00	3,45	22,48	19,02	0,33	1,12	7,32
TOTAL	72,76	10,89	4,60	88,25	44,46	4,04	8,67	57,17	281,15	22,77	18,87	322,79	0,00	145,42	322,79	177,38		104,29	163,19

Overall investment		Terminal		Commercial & Hotel	
NPV	58,90	NPV	56,59	NPV	2,31
IRR	11,86%	IRR	12,67%	IRR	7,00%
B/C ratio	1,56	B/C ratio	1,67	B/C ratio	1,12

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Table 2-21 - Financial cash flow (solution 2) – values in € x 10⁶ / Discount rate 5%

YEAR	Yearly financial costs								Yearly incomes					Total (overall investment)		Difference In comes - Costs (overall in vestm ent)	Discount factor
	Investment costs parking area	Investment costs comm ercial area	Investment costs hotel	Overall in vestm ents costs	Operating cos ts parking area	Operating c osts commercial area	Operating costs hotel	Overall o perating costs	Incomes from parking area	Incomes from commercial area	Incomes from hotel	Total incomes	Residual values	Costs	Incom es		
2016	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		0,00	0,00	0,00	1,00
2017	0,96	0,23	0,10	1,28	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		1,28	0,00	-1,28	0,95
2018	9,91	2,37	1,04	13,32	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	13,32	0,00	-13,32	0,91
2019	30,03	7,10	3,13	40,27	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	40,27	0,00	-40,27	0,86
2020	0,00	0,00	0,00	0,00	1,30	0,15	0,39	1,85	8,82	1,03	0,86	10,71	0,00	1,85	10,71	8,86	0,82
2021	0,00	0,00	0,00	0,00	1,33	0,16	0,40	1,88	9,15	1,04	0,87	11,06	0,00	1,88	11,06	9,17	0,78
2022	0,00	0,00	0,00	0,00	1,36	0,16	0,40	1,92	9,49	1,06	0,87	11,42	0,00	1,92	11,42	9,50	0,75
2023	0,00	0,00	0,00	0,00	1,38	0,16	0,41	1,95	9,85	1,07	0,88	11,80	0,00	1,95	11,80	9,84	0,71
2024	0,00	0,00	0,00	0,00	1,40	0,17	0,41	1,98	9,53	1,08	0,89	11,49	0,00	1,98	11,49	9,51	0,68
2025	1,37	0,32	0,13	1,82	1,45	0,17	0,41	2,04	11,51	1,09	0,90	13,50	0,00	3,86	13,50	9,64	0,64
2026	0,00	0,00	0,00	0,00	1,48	0,18	0,42	2,07	11,96	1,10	0,91	13,97	0,00	2,07	13,97	11,89	0,61
2027	0,00	0,00	0,00	0,00	1,51	0,18	0,42	2,11	12,43	1,11	0,92	14,45	0,00	2,11	14,45	12,34	0,58
2028	0,00	0,00	0,00	0,00	1,54	0,19	0,43	2,15	12,91	1,12	0,93	14,96	0,00	2,15	14,96	12,81	0,56
2029	0,00	0,00	0,00	0,00	1,57	0,19	0,43	2,19	13,43	1,13	0,94	15,49	0,00	2,19	15,49	13,30	0,53
2030	1,44	0,32	0,13	1,89	1,61	0,20	0,44	2,24	13,96	1,14	0,95	16,05	0,00	4,13	16,05	11,92	0,51
2031	0,00	0,00	0,00	0,00	1,64	0,20	0,44	2,28	14,52	1,15	0,96	16,63	0,00	2,28	16,63	14,35	0,48
2032	0,00	0,00	0,00	0,00	1,67	0,21	0,44	2,32	15,10	1,17	0,97	17,23	0,00	2,32	17,23	14,90	0,46
2033	0,00	0,00	0,00	0,00	1,71	0,21	0,45	2,37	15,71	1,18	0,98	17,86	0,00	2,37	17,86	15,49	0,44
2034	0,00	0,00	0,00	0,00	1,75	0,22	0,45	2,42	16,34	1,19	0,99	18,51	0,00	2,42	18,51	16,10	0,42
2035	1,51	0,32	0,13	1,97	1,79	0,22	0,46	2,46	17,00	1,20	0,99	19,20	0,00	4,43	19,20	14,77	0,40
2036	0,00	0,00	0,00	0,00	1,82	0,23	0,46	2,51	17,70	1,21	1,00	19,91	0,00	2,51	19,91	17,40	0,38
2037	0,00	0,00	0,00	0,00	1,86	0,23	0,47	2,56	18,42	1,22	1,01	20,66	0,00	2,56	20,66	18,09	0,36
2038	0,00	0,00	0,00	0,00	1,91	0,24	0,47	2,62	19,18	1,24	1,03	21,44	0,00	2,62	21,44	18,82	0,34
2039	0,00	0,00	0,00	0,00	1,95	0,25	0,48	2,67	19,97	1,25	1,04	22,25	0,00	2,67	22,25	19,58	0,33
TOTAL	45,22	10,66	4,67	60,56	32,03	3,91	8,67	44,61	276,94	22,77	18,87	318,58	0,00	105,17	318,58	213,41	

Overall investment

NPV	86,72
IRR	18,11%
B/C ratio	2,17

Terminal

NPV	84,22
IRR	20,90%
B/C ratio	2,54

Commercial & Hotel

NPV	2,50
IRR	7,17%
B/C ratio	1,13

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Table 2-22 - Financial cash flow (solution 3) – values in € x 10 / Discount rate 5%

YEAR	Yearly financial costs								Yearly incomes					Total (overall investment)		Difference Incom es - Expend i- tu res (overall investment)	Discount factor	Total (overal Discounted Expend i- tu res
	Inv estment costs parking area	Inv estment costs commercial area	Inv estment costs hotel	Overall in vestm ents costs	Operating costs parking area	Operating costs commercial area	Operating costs hotel	Overall op erating costs	Incomes from parking area	Incomes from commercial area	Incomes from hotel	Total incomes	Residual v alues	Expend i- tu res	Incom es			
2016	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		0,00	0,00	0,00	1,00	0,00
2017	0,36	0,00	0,00	0,36	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		0,36	0,00	-0,36	0,95	0,34
2018	3,71	0,00	0,00	3,71	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,71	0,00	-3,71	0,91	3,36
2019	11,41	0,00	0,00	11,41	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	11,41	0,00	-11,41	0,86	9,86
2020	0,00	0,00	0,00	0,00	0,64	0,00	0,00	0,64	2,82	0,00	0,00	2,82	0,00	0,64	2,82	2,18	0,82	0,52
2021	0,00	0,00	0,00	0,00	0,65	0,00	0,00	0,65	2,89	0,00	0,00	2,89	0,00	0,65	2,89	2,24	0,78	0,51
2022	0,00	0,00	0,00	0,00	0,66	0,00	0,00	0,66	2,97	0,00	0,00	2,97	0,00	0,66	2,97	2,31	0,75	0,50
2023	0,00	0,00	0,00	0,00	0,69	0,00	0,00	0,69	4,06	0,00	0,00	4,06	0,00	0,69	4,06	3,38	0,71	0,49
2024	0,00	0,00	0,00	0,00	0,71	0,00	0,00	0,71	4,22	0,00	0,00	4,22	0,00	0,71	4,22	3,52	0,68	0,48
2025	1,07	0,00	0,00	1,07	0,72	0,00	0,00	0,72	4,39	0,00	0,00	4,39	0,00	1,79	4,39	2,60	0,64	1,15
2026	0,00	0,00	0,00	0,00	0,74	0,00	0,00	0,74	4,57	0,00	0,00	4,57	0,00	0,74	4,57	3,83	0,61	0,45
2027	0,00	0,00	0,00	0,00	0,75	0,00	0,00	0,75	4,75	0,00	0,00	4,75	0,00	0,75	4,75	3,99	0,58	0,44
2028	0,00	0,00	0,00	0,00	0,78	0,00	0,00	0,78	5,40	0,00	0,00	5,40	0,00	0,78	5,40	4,62	0,56	0,43
2029	0,00	0,00	0,00	0,00	0,79	0,00	0,00	0,79	5,62	0,00	0,00	5,62	0,00	0,79	5,62	4,82	0,53	0,42
2030	1,12	0,00	0,00	1,12	0,81	0,00	0,00	0,81	5,85	0,00	0,00	5,85	0,00	1,94	5,85	3,91	0,51	0,98
2031	0,00	0,00	0,00	0,00	0,83	0,00	0,00	0,83	6,09	0,00	0,00	6,09	0,00	0,83	6,09	5,25	0,48	0,40
2032	0,00	0,00	0,00	0,00	0,85	0,00	0,00	0,85	6,34	0,00	0,00	6,34	0,00	0,85	6,34	5,48	0,46	0,39
2033	0,00	0,00	0,00	0,00	0,87	0,00	0,00	0,87	6,60	0,00	0,00	6,60	0,00	0,87	6,60	5,73	0,44	0,38
2034	0,00	0,00	0,00	0,00	0,89	0,00	0,00	0,89	6,87	0,00	0,00	6,87	0,00	0,89	6,87	5,98	0,42	0,37
2035	1,18	0,00	0,00	1,18	0,92	0,00	0,00	0,92	7,16	0,00	0,00	7,16	0,00	2,10	7,16	5,06	0,40	0,83
2036	0,00	0,00	0,00	0,00	0,94	0,00	0,00	0,94	7,46	0,00	0,00	7,46	0,00	0,94	7,46	6,52	0,38	0,35
2037	0,00	0,00	0,00	0,00	0,96	0,00	0,00	0,96	7,77	0,00	0,00	7,77	0,00	0,96	7,77	6,81	0,36	0,34
2038	0,00	0,00	0,00	0,00	0,98	0,00	0,00	0,98	8,10	0,00	0,00	8,10	0,00	0,98	8,10	7,11	0,34	0,34
2039	0,00	0,00	0,00	0,00	1,01	0,00	0,00	1,01	8,44	0,00	0,00	8,44	0,00	1,01	8,44	7,43	0,33	0,33
TOTAL	18,85	0,00	0,00	18,85	16,21	0,00	0,00	16,21	112,35	0,00	0,00	112,35	0,00	35,05	112,35	77,29		23,68

YEAR	Yearly financial costs								Yearly incomes					Total (overall investment)		Difference Incomes - Costs (overall investment)	Discount factor	Total (overall investment)	
	Investment costs parking area	Investment costs commercial area	Investment costs hotel	Overall investments costs	Operating costs parking area	Operating costs commercial area	Operating costs hotel	Overall operating costs	Incomes from parking area	Incomes from commercial area	Incomes from hotel	Total incomes	Residual values	Costs	Incomes			Discounted Costs	Discounted incomes
2016	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		0,00	0,00	0,00	1,00	0,00	0,00
2017	1,56	0,23	0,09	1,89	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		1,89	0,00	-1,89	0,95	1,80	0,00
2018	16,13	2,41	1,03	19,57	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	19,57	0,00	-19,57	0,91	17,75	0,00
2019	48,69	7,24	3,08	59,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	59,01	0,00	-59,01	0,86	50,98	0,00
2020	0,00	0,00	0,00	0,00	1,80	0,16	0,39	2,35	9,05	1,03	0,86	10,94	0,00	2,35	10,94	8,59	0,82	1,93	9,00
2021	0,00	0,00	0,00	0,00	1,83	0,16	0,40	2,39	9,37	1,04	0,87	11,28	0,00	2,39	11,28	8,89	0,78	1,87	8,84
2022	0,00	0,00	0,00	0,00	1,87	0,17	0,40	2,44	9,39	1,06	0,87	11,32	0,00	2,44	11,32	8,89	0,75	1,82	8,45
2023	0,00	0,00	0,00	0,00	1,91	0,17	0,41	2,48	9,73	1,07	0,88	11,68	0,00	2,48	11,68	9,20	0,71	1,76	8,30
2024	0,00	0,00	0,00	0,00	1,95	0,17	0,41	2,53	10,09	1,08	0,89	12,06	0,00	2,53	12,06	9,53	0,68	1,71	8,16
2025	2,02	0,34	0,13	2,49	2,00	0,18	0,41	2,59	11,74	1,09	0,90	13,72	0,00	5,08	13,72	8,64	0,64	3,28	8,85
2026	0,00	0,00	0,00	0,00	2,04	0,18	0,42	2,64	12,18	1,10	0,91	14,19	0,00	2,64	14,19	11,55	0,61	1,62	8,71
2027	0,00	0,00	0,00	0,00	2,09	0,19	0,42	2,70	12,65	1,11	0,92	14,68	0,00	2,70	14,68	11,98	0,58	1,58	8,58
2028	0,00	0,00	0,00	0,00	2,13	0,19	0,43	2,75	13,14	1,12	0,93	15,19	0,00	2,75	15,19	12,44	0,56	1,53	8,46
2029	0,00	0,00	0,00	0,00	2,18	0,20	0,43	2,81	13,65	1,13	0,94	15,72	0,00	2,81	15,72	12,91	0,53	1,49	8,34
2030	2,12	0,34	0,13	2,59	2,23	0,20	0,44	2,86	14,19	1,14	0,95	16,27	0,00	5,46	16,27	10,82	0,51	2,76	8,22
2031	0,00	0,00	0,00	0,00	2,28	0,21	0,44	2,92	14,74	1,15	0,96	16,85	0,00	2,92	16,85	13,93	0,48	1,41	8,11
2032	0,00	0,00	0,00	0,00	2,33	0,21	0,44	2,98	15,32	1,17	0,97	17,46	0,00	2,98	17,46	14,47	0,46	1,37	8,00
2033	0,00	0,00	0,00	0,00	2,38	0,22	0,45	3,05	15,93	1,18	0,98	18,08	0,00	3,05	18,08	15,04	0,44	1,33	7,89
2034	0,00	0,00	0,00	0,00	2,43	0,22	0,45	3,11	16,57	1,19	0,99	18,74	0,00	3,11	18,74	15,63	0,42	1,29	7,79
2035	2,23	0,34	0,13	2,70	2,49	0,23	0,46	3,17	17,23	1,20	0,99	19,43	0,00	5,87	19,43	13,55	0,40	2,32	7,69
2036	0,00	0,00	0,00	0,00	2,54	0,24	0,46	3,24	17,92	1,21	1,00	20,14	0,00	3,24	20,14	16,90	0,38	1,22	7,59
2037	0,00	0,00	0,00	0,00	2,60	0,24	0,47	3,31	18,65	1,22	1,01	20,89	0,00	3,31	20,89	17,58	0,36	1,19	7,50
2038	0,00	0,00	0,00	0,00	2,66	0,25	0,47	3,38	19,40	1,24	1,03	21,66	0,00	3,38	21,66	18,28	0,34	1,16	7,41
2039	0,00	0,00	0,00	0,00	2,72	0,25	0,48	3,45	20,19	1,25	1,04	22,48	0,00	3,45	22,48	19,02	0,33	1,12	7,32
TOTAL	72,76	10,89	4,60	88,25	44,46	4,04	8,67	57,17	281,15	22,77	18,87	322,79	0,00	145,42	322,79	177,38		104,29	163,19

Overall investment		Terminal		Commercial & Hotel	
NPV	58,90	NPV	56,59	NPV	2,31
IRR	11,86%	IRR	12,67%	IRR	7,00%
B/C ratio	1,56	B/C ratio	1,67	B/C ratio	1,12

9.2.6. IMPACT OF A POTENTIAL EBRD'S LOAN

EBRD's rules about their loans are quite flexible⁴. As specifically mentioned in their "Guide to EBRD financing" the "EBRD's loans are structured with a high degree of flexibility to match Client and project needs. The Bank suggests a suitable loan currency and interest rate. The basis for a loan is the expected cash flow of the project and the ability of the Client to repay the loan over the agreed period. The credit risk can be taken entirely by the Bank or may be partly syndicated to the market".

The characteristics of a loan are therefore variable and cannot defined "a-priori". The Consultant estimated the impact of a possible loan on the financial cash flow by doing some realistic but subjective assumptions that may be valid (or not) not only for a loan from EBRD, but also from any other IFI. The hypotheses made by the Consultant do not imply – on the other side – any definitive assurance that a possible loan will have these characteristics. They must be considered only as a preliminary estimation of the impact of a potential loan.

The assumptions made by the Consultant are resumed in the following table.

Table 2-23 - Subjective hypotheses on a possible EBRD's loan

	Solution 1	Solution 2	Solution 3	Notes
EBRD quota	80,0%	80,0%	80,0%	+decreasing sensitivity
loan amount	53,11	32,72	12,38	
instalments	12	12	12	
grace period	3	3	3	
annual rate	4,43	2,73	1,03	+decreasing sensitivity (based on EBRD's quota)
starting at year	2022	2022	2022	
ending at year	2034	2034	2034	
Euribor 6 M	0,3%	0,3%	0,3%	
Spread	4,0%	4,0%	4,0%	
Interest rate (EUR 6 M + spread)	4,3%	4,3%	4,3%	+ increasing sensitivity

The interest rate of the loan was supposed to based on an Euribor 6 months rate of 0,3% + 4%. The loan duration was assumed of 15 years, including a 3-year grace period (12+3 = 15 years total).

The results of the basic assumptions are presented into the following table (calculations were made on the conservative hypothesis that only the terminal portion of investment will be financed).

Table 2-24 - Results of the financial analysis (correction with loan, basic assumptions of Table 2-23 -) / Terminal only

Indicators	Solution 1	Solution 2	Solution 3
NPV (millions of €)	60,84	86,84	32,72
IRR	30,57%	62,30%	51,05%
B/C ratio	1,76	2,67	2,44

Of course, a loan gives a higher “dosage of reliability” to the investment by postponing payments to later periods. Sensitive analyses were also carried out in order to better investigate the effects of variations in terms of interest rates and overall quota of the investment. The results of these analyses are presented in the next tables.

Table 2-25 - Results of the financial analysis / sensitivity analysis based on possible interest rates of a loan (from 1.7% to 6.9%, corresponding to -60% to + 60% of the basic assumption)

corrected interest rate	Solution 1			Solution 2			Solution 3		
	IRR	NPV (millions €)	B/C	IRR	NPV (millions €)	B/C	IRR	NPV (millions €)	B/C
1,7%	37,78%	68,66	1,95	69,33%	91,66	2,94	57,62%	34,54	2,66
2,6%	35,29%	66,05	1,88	66,99%	90,05	2,84	55,41%	33,94	2,58
3,4%	32,88%	63,45	1,82	64,65%	88,45	2,75	53,22%	33,33	2,51
4,3%	30,57%	60,84	1,76	62,30%	86,84	2,67	51,05%	32,72	2,44
5,2%	28,37%	58,24	1,70	59,96%	85,24	2,59	48,91%	32,11	2,38
6,0%	26,30%	55,63	1,65	57,61%	83,63	2,51	46,82%	31,51	2,32
6,9%	24,37%	53,03	1,60	55,27%	82,03	2,44	44,77%	30,90	2,26

Table 2-26 - Results of the financial analysis / sensitivity analysis based on possible quotas of a loan with respect of the full investment (from 40% to 80%)

corrected loan %	Solution 1			Solution 2			Solution 3		
	IRR	NPV (millions €)	B/C	IRR	NPV (millions €)	B/C	IRR	NPV (millions €)	B/C
40%	16,34%	58,72	1,71	28,43%	85,53	2,60	25,85%	32,23	2,39
50%	17,96%	59,25	1,72	31,98%	85,86	2,62	28,66%	32,35	2,40
60%	20,23%	59,78	1,73	37,18%	86,19	2,63	32,67%	32,47	2,42
70%	23,79%	60,31	1,75	45,69%	86,52	2,65	39,01%	32,60	2,43
80%	30,57%	60,84	1,76	62,30%	86,84	2,67	51,05%	32,72	2,44

The Consultant does not give any additional comment about the above tables. As yet said, the impact

of a loan is obviously positive on the financial reliability of the investment, but the actual parameters of a possible loan will be decided, if any, only after an agreement between the City of Tirana (or the concessionaire) and the Bank itself.

9.2.7. DISTRIBUTION OF PROFITS AND RISKS BETWEEN THE CONCESSIONAIRES AND THE MUNICIPALITY

Many hypotheses can be carried out in order to identify a possible schema for the distribution of profits and risks among the Concessionaire and the Municipality. What is proposed by the Consultant is therefore only a sample among the theoretically unlimited number of possibilities. The variation of some parameters among those determining the schema of distribution may be used in order to identify some significant scores during the development of the tender procedures.

The proposed schema may be defined by the following points:

1. starting from the identification of a possible future cash flow, it may be possible to estimate a potential yearly revenue of the infrastructure: such possible future cash flow may be, in principle, the same one identified within this CBA analysis, subject to certain possible adjustments that might be identified in the final stages of the preparation of the tender
2. considering that the Municipality of Tirana has some responsibilities in terms of transport policies, implementation of enforcement measures, etc. and given that the same Municipality may obtain additional benefits from the financial point of view if the performances of the terminal will exceed those considered into this CBA, it may be possible to make the following hypotheses:
 - a. the Municipality will guarantee at least the 80% of the potential yearly revenues of the terminal: this means that if for example during one year of activity the terminal will earn only 70% of the expected results, the loss of 30% will be partially recovered by the Municipality with a contribution of 10% of the expected earnings, while the remaining 20% will represent a loss of revenues for the Concessionaire
 - b. if the actual revenues will be higher than expected, the first quota of increased earnings below 5% will be entirely assigned to Concessionaire as “equity” quota, while the potential quota above a 5% increase will be shared among the Concessionaire and the Municipality on a 50% / 50% basis

All the above percentages merely represent hypotheses carried out by the Consultant: the values of 80%, 5% and 50% / 50% may be changed and – as yet said – they may represent a variable that may be taken into consideration inside the tender procedure.

The Consultant made some simulations based on the hypotheses presented above. Such simulations brought to the results presented in the next tables, that basically represent a sensitivity analysis giving the amount of possible disbursements (for the Municipality), loss of revenues (for the Concessionaire) and increased revenues (for both) on the basis of a possible increase or decrease of parking revenues.

Table 2-27 - Results of the financial analysis / sensitivity analysis for a possible distribution of additional profits and losses based on parking revenues (+/- 50% increase and reduction) / Parking area only / Solution 1

correction factor	Disbursement from municipality	Loss of revenues for the concessionaire	Full increased revenues for the concessionaire	Shared increased revenues	
				Concessionaire	Municipality
	(millions €, sum of discounted values)				
0,5	44,68	25,89	0,00	0,00	0,00
0,6	30,57	25,89	0,00	0,00	0,00
0,7	16,45	25,89	0,00	0,00	0,00
0,8	2,34	25,89	0,00	0,00	0,00
0,9	0,00	14,11	0,00	0,00	0,00
1	0,00	0,00	0,00	0,00	0,00
1,1	0,00	0,00	6,47	3,06	4,58
1,2	0,00	0,00	6,47	8,70	13,05
1,3	0,00	0,00	6,47	14,35	21,52
1,4	0,00	0,00	6,47	19,99	29,99
1,5	0,00	0,00	6,47	25,64	38,46

Table 2-28 - Results of the financial analysis / sensitivity analysis for a possible distribution of additional profits and losses based on parking revenues (+/- 50% increase and reduction) / Parking area only / Solution 2

correction factor	Disbursement from municipality	Loss of revenues for the concessionaire	Full increased revenues for the concessionaire	Shared increased revenues	
				Concessionaire	Municipality
	(millions €, sum of discounted values)				
0,5	45,46	24,01	0,00	0,00	0,00
0,6	31,56	24,01	0,00	0,00	0,00
0,7	17,67	24,01	0,00	0,00	0,00
0,8	3,77	24,01	0,00	0,00	0,00
0,9	0,00	13,89	0,00	0,00	0,00
1	0,00	0,00	0,00	0,00	0,00
1,1	0,00	0,00	6,00	3,95	3,95

1,2	0,00	0,00	6,00	10,89	10,89
1,3	0,00	0,00	6,00	17,84	17,84
1,4	0,00	0,00	6,00	24,79	24,79
1,5	0,00	0,00	6,00	31,73	31,73

**Table 2-29 - Results of the financial analysis / sensitivity analysis for a possible distribution of additional profits and losses based on parking revenues (+/- 50% increase and reduction)
/ Parking area only / Solution 3**

correction factor	Disbursement from municipality	Loss of revenues for the concessionaire	Full increased revenues for the concessionaire	Shared increased revenues	
				Concessionaire	Municipality
				(millions €, sum of discounted values)	
0,5	18,64	9,06	0,00	0,00	0,00
0,6	13,10	9,06	0,00	0,00	0,00
0,7	7,56	9,06	0,00	0,00	0,00
0,8	2,02	9,06	0,00	0,00	0,00
0,9	0,00	5,54	0,00	0,00	0,00
1	0,00	0,00	0,00	0,00	0,00
1,1	0,00	0,00	2,26	1,64	1,64
1,2	0,00	0,00	2,26	4,41	4,41
1,3	0,00	0,00	2,26	7,18	7,18
1,4	0,00	0,00	2,26	9,95	9,95
1,5	0,00	0,00	2,26	12,72	12,72

10. ECONOMIC ANALYSIS

From the mathematical point of view the general approach of an economic CBA is the same used for a financial CBA, but they differ from each other for the points of view adopted. As yet said, the financial analysis considers the point of view of the owner of the infrastructure, whereas inside a socio-economic approach the general users' point of view is taken into account. And, as general users we intend in this case the entire community, represented by citizens and State considered as a single body.

This means that:

the cost and benefits used for the socio-economic analysis are not the same as those used for the financial analysis. even if they can partially coincide;

prices used for the socio economic point of view are corrected by eliminating taxes, surtaxes, custom duties and other surcharges that represent a cost for the owner of the infrastructure but not for the entire society.

Therefore, in this specific case

- economic / financial corrections factor were introduced;
- social benefits due to the reduction of time travel were also considered.

As regards the first of the two above points the following conversion factors were adopted:

- materials: 0,95,
- labour: 0,64.

When the distinction between materials and labour components is unclear an average factor of 0,86 was adopted (with the arbitrary assumption of a share of 70% / 30% between materials and labours component).

As regards the second point, it must be emphasized that there are some other benefits that the Consultant did not consider, in order to maintain a conservative approach and also because of the objective difficulties of transforming some of these benefits into monetary values. Among these benefits there are:

- the increase of occupation that the new infrastructure will produce;
- the “architectonical value” of the infrastructure, that cannot be transformed into a monetary value but that is indeed present in such kind of investment;
- the “intrinsic necessity” of Tirana of having this transport terminal, that is present in practically all the main European cities.

One of the difficulties that the Consultant encountered consisted also in a correct estimation of the reduction of travel time for the future terminal users. In theory, a correct estimation of the reduction of the travel time may require an extended approach that is above the limits of this study. Such approach would require the adoption of a transport model extended to the entire city of Tirana and the identification of detailed origin/destination matrices specifically calibrated on the future users of the new infrastructure. The Consultant considered more useful for the practical goals of this study to estimate this information with a simplified approach and evaluate its impact on the economic results with a sensitivity analysis.

Indikatore	Zgjidhja 1	Zgjidhja 2	Zgjidhja 3
VAN (milionë €)	87,53	109,43	47,44
NBK	16,5%	23,8%	28,5%
Raporti B/C	2,08	2,93	3.58

Both results are positive, but the level of uncertainty about the issue of the access time must be considered carefully. From this point of view there are elements that are balanced and that have opposing influences, such as:

- the higher accessibility given by the new tramway systems that will connect the infrastructure with the city centre and other areas of the city
- the non-central position of the terminal, which could lead some users to the detriment of others.

For the above reasons, a sensitivity analysis based on the variation of the time of access is much more significant than the results of the previous table. This sensitivity analysis is presented into the next tables.

Table 3-2 - Results of the economic analysis / sensitivity analysis based on access time (+/- 50% increase and reduction)

correction factor	Solution 1			Solution 2			Solution 3		
	IRR	NPV (millions €)	B/C	IRR	NPV (millions €)	B/C	IRR	NPV (millions €)	B/C
0,5	25,24%	188,80	3,32	34,89%	210,71	4,72	60,81%	148,72	9,10
0,6	23,65%	168,55	3,07	32,82%	190,46	4,36	54,86%	128,46	8,00
0,7	21,99%	148,29	2,83	30,70%	170,20	4,00	48,71%	108,21	6,89
0,8	20,27%	128,04	2,58	28,50%	149,94	3,65	42,32%	87,95	5,79
0,9	18,45%	107,78	2,33	26,21%	129,69	3,29	35,64%	67,70	4,69
1	16,53%	87,53	2,08	23,82%	109,43	2,93	28,52%	47,44	3,58
1,1	14,47%	67,27	1,69	21,28%	89,18	2,30	20,57%	27,18	1,81
1,2	12,20%	47,02	1,18	18,54%	68,92	1,50	10,47%	6,93	0,56
1,3	9,64%	26,76	0,84	15,52%	48,67	1,01	Not converging	-13,33	0,08
1,4	6,62%	6,50	0,59	12,04%	28,41	0,69	Not converging	-33,58	-0,18
1,5	2,73%	-13,75	0,40	7,71%	8,16	0,45	Not converging !	-53,84	-0,33

The table above shows how much access time may become critical especially for the solution 3. This means that the transport policies that will adopted by the City in the next year must guarantee a high level of accessibility to the infrastructure. This is a critical factor that joins that one of non-dispersion of the transport demand on other “ghost” terminals (that, as yet seen, may be a critical factor from the financial point of view). Both factors must be pursued by the City in the upcoming years with adequate transport policies and probably also with the support of the national legislation.

The full economic cash flows are presented into the next tables for all solutions.

Table 3-3 - Economic cash flow (solution 1) – values in € x 10

YEAR	Yearly economic costs								Yearly incomes					Value of time	Total (VOT excluded)		Difference Inco mes - C osts + VOT
	Investment costs parking area	Inv estment costs commercial area	Investment costs hotel	Overall investments costs	Operating costs parking area	Operating costs commercial area	Operating costs hotel	Overall operating costs	Incomes from parking area	Incomes from commercial area	Incomes from hotel	Total incom es	Residual values		Costs	Incom es	
2016	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00			0,00	0,00	0,00
2017	1,00	0,15	0,54	1,68	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00			1,68	0,00	-1,68
2018	13,81	2,07	0,60	16,48	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		16,48	0,00	-16,48
2019	41,44	6,20	1,79	49,43	1,40	0,14	0,00	1,54	0,00	0,00	0,00	0,00	0,00		50,97	0,00	-50,97
2020	0,00	0,00	0,00	0,00	1,49	0,14	0,02	1,66	9,05	1,03	0,86	10,94	0,00	0,68	1,66	10,94	9,96
2021	0,00	0,00	0,00	0,00	1,51	0,15	0,02	1,68	9,37	1,04	0,87	11,28	0,00	0,75	1,68	11,28	10,36
2022	0,00	0,00	0,00	0,00	1,52	0,15	0,02	1,69	9,39	1,06	0,87	11,32	0,00	0,82	1,69	11,32	10,45
2023	0,00	0,00	0,00	0,00	1,54	0,15	0,02	1,72	9,73	1,07	0,88	11,68	0,00	0,90	1,72	11,68	10,86
2024	0,00	0,00	0,00	0,00	1,56	0,16	0,02	1,74	10,09	1,08	0,89	12,06	0,00	0,97	1,74	12,06	11,29
2025	1,73	0,34	0,11	2,18	1,59	0,16	0,02	1,77	11,74	1,09	0,90	13,72	0,00	1,03	3,95	13,72	10,81
2026	0,00	0,00	0,00	0,00	1,61	0,17	0,02	1,79	12,18	1,10	0,91	14,19	0,00	1,10	1,79	14,19	13,50
2027	0,00	0,00	0,00	0,00	1,62	0,17	0,02	1,82	12,65	1,11	0,92	14,68	0,00	1,17	1,82	14,68	14,04
2028	0,00	0,00	0,00	0,00	1,64	0,18	0,02	1,84	13,14	1,12	0,93	15,19	0,00	1,24	1,84	15,19	14,59
2029	0,00	0,00	0,00	0,00	1,66	0,18	0,02	1,87	13,65	1,13	0,94	15,72	0,00	1,36	1,87	15,72	15,21
2030	1,82	0,34	0,11	2,27	1,68	0,19	0,02	1,89	14,19	1,14	0,95	16,27	0,00	1,47	4,16	16,27	13,59
2031	0,00	0,00	0,00	0,00	1,70	0,19	0,02	1,92	14,74	1,15	0,96	16,85	0,00	1,59	1,92	16,85	16,52
2032	0,00	0,00	0,00	0,00	1,73	0,20	0,02	1,94	15,32	1,17	0,97	17,46	0,00	1,70	1,94	17,46	17,21
2033	0,00	0,00	0,00	0,00	1,75	0,20	0,02	1,97	15,93	1,18	0,98	18,08	0,00	1,81	1,97	18,08	17,93
2034	0,00	0,00	0,00	0,00	1,77	0,21	0,02	2,00	16,57	1,19	0,99	18,74	0,00	1,93	2,00	18,74	18,67
2035	1,91	0,34	0,11	2,36	1,79	0,21	0,02	2,03	17,23	1,20	0,99	19,43	0,00	2,04	4,39	19,43	17,08
2036	0,00	0,00	0,00	0,00	1,81	0,22	0,02	2,05	17,92	1,21	1,00	20,14	0,00	2,16	2,05	20,14	20,24
2037	0,00	0,00	0,00	0,00	1,83	0,22	0,02	2,08	18,65	1,22	1,01	20,89	0,00	2,27	2,08	20,89	21,08
2038	0,00	0,00	0,00	0,00	1,86	0,23	0,02	2,11	19,40	1,24	1,03	21,66	0,00	2,39	2,11	21,66	21,94
2039	0,00	0,00	0,00	0,00	0,17	0,00	0,02	0,20	20,19	1,25	1,04	22,48	6,59	2,51	0,20	29,07	31,38
TOTAL	61,71	9,42	3,26	74,39	27,57	2,95	0,35	30,86	204,98	17,85	14,79	237,62	6,59	29,89	105,26	237,62	152,93

Discount rate	5,5%
NPV	87,53
IRR	16,5%
B/C ratio	2,08

Table 3-4 - Economic cash flow (solution 2) – values in € x 10

YEAR	Yearly economic costs								Yearly incomes					Value of time	Total (VOT excluded)		Difference In com es - Outcom es + VOT
	Investment costs parking area	Investment costs commercial area	Investment costs hotel	Overall investments costs	Operating costs parking area	Operating costs commercial area	Operating costs hotel	Overall operating costs	Incomes from parking area	Incomes from commercial area	Incomes from hotel	Total incom es	Residual values		Outcom es	Incom es	
2016	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00			0,00	0,00	0,00
2017	0,61	0,15	0,55	1,31	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00			1,31	0,00	-1,31
2018	8,49	2,03	0,60	11,12	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		11,12	0,00	-11,12
2019	25,46	6,08	1,81	33,35	0,99	0,14	0,00	1,12	0,00	0,00	0,00	0,00	0,00		34,48	0,00	-34,48
2020	0,00	0,00	0,00	0,00	1,07	0,14	0,02	1,23	8,82	1,03	0,86	10,71	0,00	0,68	1,23	10,71	10,16
2021	0,00	0,00	0,00	0,00	1,09	0,14	0,02	1,25	9,15	1,04	0,87	11,06	0,00	0,75	1,25	11,06	10,56
2022	0,00	0,00	0,00	0,00	1,10	0,15	0,02	1,27	9,49	1,06	0,87	11,42	0,00	0,82	1,27	11,42	10,98
2023	0,00	0,00	0,00	0,00	1,11	0,15	0,02	1,28	9,85	1,07	0,88	11,80	0,00	0,90	1,28	11,80	11,41
2024	0,00	0,00	0,00	0,00	1,12	0,15	0,02	1,29	9,53	1,08	0,89	11,49	0,00	0,97	1,29	11,49	11,16
2025	1,17	0,32	0,11	1,61	1,15	0,16	0,02	1,33	11,51	1,09	0,90	13,50	0,00	1,03	2,93	13,50	11,60
2026	0,00	0,00	0,00	0,00	1,16	0,16	0,02	1,34	11,96	1,10	0,91	13,97	0,00	1,10	1,34	13,97	13,72
2027	0,00	0,00	0,00	0,00	1,18	0,17	0,02	1,36	12,43	1,11	0,92	14,45	0,00	1,17	1,36	14,45	14,26
2028	0,00	0,00	0,00	0,00	1,19	0,17	0,02	1,38	12,91	1,12	0,93	14,96	0,00	1,24	1,38	14,96	14,82
2029	0,00	0,00	0,00	0,00	1,21	0,18	0,02	1,40	13,43	1,13	0,94	15,49	0,00	1,36	1,40	15,49	15,45
2030	1,23	0,32	0,11	1,67	1,22	0,18	0,02	1,42	13,96	1,14	0,95	16,05	0,00	1,47	3,09	16,05	14,43
2031	0,00	0,00	0,00	0,00	1,24	0,18	0,02	1,44	14,52	1,15	0,96	16,63	0,00	1,59	1,44	16,63	16,77
2032	0,00	0,00	0,00	0,00	1,25	0,19	0,02	1,47	15,10	1,17	0,97	17,23	0,00	1,70	1,47	17,23	17,46
2033	0,00	0,00	0,00	0,00	1,27	0,19	0,02	1,49	15,71	1,18	0,98	17,86	0,00	1,81	1,49	17,86	18,18
2034	0,00	0,00	0,00	0,00	1,29	0,20	0,02	1,51	16,34	1,19	0,99	18,51	0,00	1,93	1,51	18,51	18,93
2035	1,30	0,32	0,11	1,73	1,30	0,21	0,02	1,53	17,00	1,20	0,99	19,20	0,00	2,04	3,26	19,20	17,98
2036	0,00	0,00	0,00	0,00	1,32	0,21	0,02	1,56	17,70	1,21	1,00	19,91	0,00	2,16	1,56	19,91	20,52
2037	0,00	0,00	0,00	0,00	1,34	0,22	0,02	1,58	18,42	1,22	1,01	20,66	0,00	2,27	1,58	20,66	21,35
2038	0,00	0,00	0,00	0,00	1,36	0,22	0,02	1,60	19,18	1,24	1,03	21,44	0,00	2,39	1,60	21,44	22,22
2039	0,00	0,00	0,00	0,00	0,17	0,00	0,02	0,20	19,97	1,25	1,04	22,25	4,45	2,51	0,20	26,70	29,01
TOTAL	38,26	9,22	3,31	50,79	19,93	2,85	0,35	23,13	201,68	17,85	14,79	234,32	4,45	29,89	73,92	234,32	180,96

Discount rate	5,5%
NPV	109,43
IRR	23,8%
B/C ratio	2,93

Table 3-5 - Economic cash flow (solution 3) – values in € x 10

YEAR	Yearly economic costs								Yearly incomes					Value of time	Total (VOT excluded)		Difference Incomes - Outcomes + VOT
	Investment costs parking area	Investment costs commercial area	Investment costs hotel	Overall investments costs	Operating costs parking area	Operating costs commercial area	Operating costs hotel	Overall operating costs	Incomes from parking area	Incomes from commercial area	Incomes from hotel	Total incomes	Residual values		Outcomes	Incomes	
2016	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00			0,00	0,00	0,00
2017	0,23	0,00	0,00	0,23	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00			0,23	0,00	-0,23
2018	3,15	0,00	0,00	3,15	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		3,15	0,00	-3,15
2019	9,45	0,00	0,00	9,45	0,47	0,00	0,00	0,47	0,00	0,00	0,00	0,00	0,00		9,92	0,00	-9,92
2020	0,00	0,00	0,00	0,00	0,50	0,00	0,00	0,50	2,82	0,00	0,00	2,82	0,00	0,68	0,50	2,82	2,99
2021	0,00	0,00	0,00	0,00	0,50	0,00	0,00	0,50	2,89	0,00	0,00	2,89	0,00	0,75	0,50	2,89	3,14
2022	0,00	0,00	0,00	0,00	0,51	0,00	0,00	0,51	2,97	0,00	0,00	2,97	0,00	0,82	0,51	2,97	3,29
2023	0,00	0,00	0,00	0,00	0,52	0,00	0,00	0,52	4,06	0,00	0,00	4,06	0,00	0,90	0,52	4,06	4,44
2024	0,00	0,00	0,00	0,00	0,53	0,00	0,00	0,53	4,22	0,00	0,00	4,22	0,00	0,97	0,53	4,22	4,66
2025	0,91	0,00	0,00	0,91	0,54	0,00	0,00	0,54	4,39	0,00	0,00	4,39	0,00	1,03	1,44	4,39	3,98
2026	0,00	0,00	0,00	0,00	0,54	0,00	0,00	0,54	4,57	0,00	0,00	4,57	0,00	1,10	0,54	4,57	5,13
2027	0,00	0,00	0,00	0,00	0,55	0,00	0,00	0,55	4,75	0,00	0,00	4,75	0,00	1,17	0,55	4,75	5,37
2028	0,00	0,00	0,00	0,00	0,56	0,00	0,00	0,56	5,40	0,00	0,00	5,40	0,00	1,24	0,56	5,40	6,08
2029	0,00	0,00	0,00	0,00	0,57	0,00	0,00	0,57	5,62	0,00	0,00	5,62	0,00	1,36	0,57	5,62	6,41
2030	0,95	0,00	0,00	0,95	0,57	0,00	0,00	0,57	5,85	0,00	0,00	5,85	0,00	1,47	1,53	5,85	5,79
2031	0,00	0,00	0,00	0,00	0,58	0,00	0,00	0,58	6,09	0,00	0,00	6,09	0,00	1,59	0,58	6,09	7,09
2032	0,00	0,00	0,00	0,00	0,59	0,00	0,00	0,59	6,34	0,00	0,00	6,34	0,00	1,70	0,59	6,34	7,45
	0,00	0,00	0,00	0,00	0,60	0,00	0,00	0,60	6,60	0,00	0,00	6,60	0,00	1,81	0,60	6,60	7,82
2034	0,00	0,00	0,00	0,00	0,60	0,00	0,00	0,60	6,87	0,00	0,00	6,87	0,00	1,93	0,60	6,87	8,20
2035	1,00	0,00	0,00	1,00	0,61	0,00	0,00	0,61	7,16	0,00	0,00	7,16	0,00	2,04	1,61	7,16	7,59
2036	0,00	0,00	0,00	0,00	0,62	0,00	0,00	0,62	7,46	0,00	0,00	7,46	0,00	2,16	0,62	7,46	9,00
2037	0,00	0,00	0,00	0,00	0,63	0,00	0,00	0,63	7,77	0,00	0,00	7,77	0,00	2,27	0,63	7,77	9,41
2038	0,00	0,00	0,00	0,00	0,64	0,00	0,00	0,64	8,10	0,00	0,00	8,10	0,00	2,39	0,64	8,10	9,85
2039	0,00	0,00	0,00	0,00	0,07	0,00	0,00	0,07	8,44	0,00	0,00	8,44	1,26	2,51	0,07	9,70	12,13
TOTAL	15,69	0,00	0,00	15,69	9,34	0,00	0,00	9,34	80,59	0,00	0,00	80,59	1,26	29,89	25,03	80,59	76,13
Discount rate	5,5%																
NPV	47,44																
IRR	28,5%																
B/C ratio	3,58																

12. Project Coordination with Studies and General Sectorial Investment Policy

Projekti i Terminalit të Transportit Publik ka një historik planifikimi që i paraprin përpjekjeve aktuale koncesionare. The Project of Public Tirana Terminal has a planning history that precedes the current efforts of concession. The Project of Public Tirana Terminal has a history Planning

- g) Albanian government's objectives, specified in strategic documents, as "Indicative Strategic Document for Albania (2014-2020)", "National Plan for European Integration 2016-2020" Sectorial Strategy for transport development in Albania; i) policies of the Municipality of Tirana to provide a quality service to transportation in Tirana, as well as ii) existing documents of territorial planning, when Local Plan of territorial planning for the Municipality of Tirana, including all its administrative units, is still under drafting.
- h) In 2002, **Study of Improvement of Urban Transport in Tirana** (TUTIS) was among the first research efforts to identify the various problems of transport service in the city of Tirana. TUTIS project, funded by the World Bank. Expected results from this study have been improvement of transport in the city, through the adoption of appropriate and effective measures to be implemented over a period of five years.
- i) Construction of passenger's terminal is widely anticipated in the National Transport Plan - UITP 2 as well as the Development Strategy of Road Transport, especially in reforming the transport of passengers being recently completed the Ministry of Transport and Infrastructure.
- j) In 2007, the **Study of Improvement of Urban Transport in Tirana** served as the starting point for the followed Strategy of Sustainable Development and Integrated Traffic in Tirana, prepared within the project "Sustainable development of traffic in Tirana, Albania "(SUSTRAFFTIA) financed by the EU / LIFE and co-funded by the Federal Ministry for Environment, Nature, Conservation and Nuclear Safety of Germany during 2005 -2007.

SUSTRAFFTIA proposes 4 terminals. According to this study, terminals must be located in

- Kombinat - service corridor A and southwest supply lines;
- Kamza - service corridors B and C and northwest supply lines;
- Lana River, East - corridors of service B, C and D as well as southeast supply lines, and,
- Myslym Keta - corridor of service A and lines northeast supply.

Kamza terminal will be a perfect place for combining a major bus terminal BRT, a shopping center, and entertainment facilities.

- k) 2 PTKSH proposed the Investment Plan 2021 totaling Euro 383 million, consisting of:
 - Mjetet e transportit hekurudhore për shërbimin e trenave-tramvajeve: 38 milionë Euro me 2.5 milionë Euro për njësi për 15 njësi.
 - Renewal of car parks: 95 million Euro;

- Implementation of bus lanes: 150 million Euro to 2.5 million Euro / km, with a length of 53.2 km bus lane;
- Construction of new urban railway connections: 100 million Euro to 20 million Euro / km, with a length of 4.4 km and additional tram stations; and
- Rolling stock for train-tram service: 38 million Euro to 2.5 million Euro per unit for 15 units.

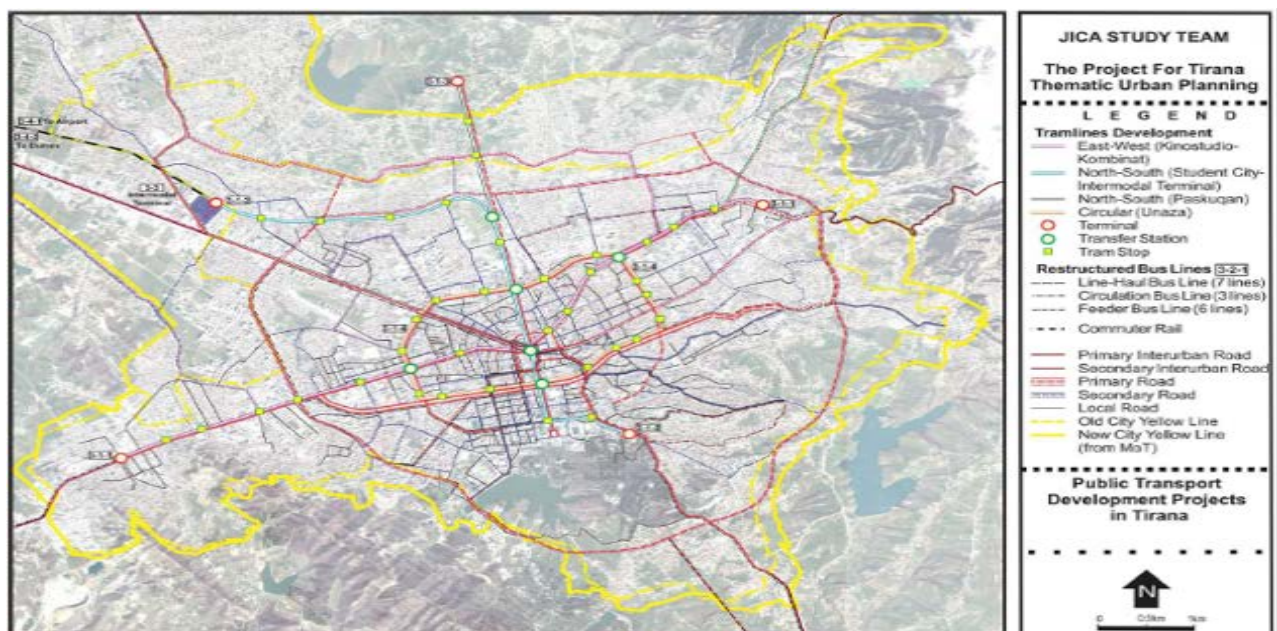
- l) **Municipality Sustainable Transport Strategy of Tirana** was drafted in 2009, developed as an integrated strategy which aimed to combine different means of transport by promoting less polluting vehicles such as public transport and the so-called mobility easier .

The concept outlined in this strategy is the integration of public transport with interurban public services (not depending on the Municipality of Tirana) who will stop at the bus terminal (near the train station), by which people can find urban services to reach their destination in Tirana.

During 2011-2013 another project was implemented closely related to the management of urban transport in Tirana. **Tirana Thematic Urban Planning Project**, proposed 4 Master Plans aimed at long-term prospects in 2027 and the relevant action plans for priority projects in four (4) sectors of infrastructure, including Urban and Road Transport.

According to the Road Transport Master Plan and Urban development of an intermodal transport terminal along with the relocation of the railway station of Tirana, it is one of the strategic priorities of the Ministry of Transport and attention should be paid to intermodal transfer functions between different modes of transports, respectively, between the lines (supply) connecting bus and tram lines, as well as between private modes of transport and tram lines.

Candidate stations with large-scale parking proposed in this master plan were Intermodal Transport Terminal.



Burimi: Projekti për Planifikimin Urban Tematik të Tiranës, Ekipi i Studimit JICA, 2012

Figura 3.2.1 Projektet e Zhvillimit të Transportit Publik në Tiranë

Sipas vlerësimit të ekipit të studimit, në mënyrë të veçantë Terminali i Transportit Intermodal i Tiranës duhet të zhvillohet në vendin ku stacioni ekzistues hekurudhor i Tiranës do të zhvendoset (afërsisht 85,000 m²). Të gjithë linjat e autobusëve dhe furgonëve ndërqytetës dhe ndërkombëtare për në drejtime veriore, perëndimore dhe jug-perëndimore duhet të integrohen në këtë terminal në mënyrë që të ndihmojnë në parandalimin e hyrjes së automjeteve të mëdha në CBD e Tiranës.

Vendodhja e Terminalit të Transportit Intermodal është përcaktuar tashmë në mënyrë definitive nga Ministria e Transportit, kështu që nuk janë kryer vlerësime të mëtejshme në zona të tjera të mundshme nga ekipi i Studimit JICA.

Kjo domosdoshmëri për qytetin për ta çliruar nga trafiku i rënduar prej mjeteve të transportit me autobus dhe për të rregulluar në parametra europian lëvizjen e njerëzve për nga Tirana, u adresua edhe gjatë hartimit të Planit Rregullues të Qytetit, Dhjetor 2012, në të cilin u miratua pozicionimi i Terminalit Multimodal të Tiranës në hyrje të Tiranës.

Terminali është pjesë e një strategjie të gjerë të transportit urban i cili do t'u japë zgjidhje nevojave urgjente për përmirësimin e trafikut në Tiranë, nëpërmjet parkimit të gjithë mjeteve të transportit të udhëtarëve nga i gjithë vendi dhe krijimin e kushteve optimale për transportin e tyre në qytetin e Tiranës.

Objektivi i Bashkisë Tiranë është që të përmirësojnë lëvizshmërinë e përgjithshme, duke siguruar një terminal të transportit me kapacitet të plotë për të lejuar mjetet e transportit ndërqytetas të shkarkojnë pasagjerët, për lidhje me autobusë urban dhe taksi përgjatë korridorit kryesor me pjesën tjetër të qytetit, duke zvogëluar bllokimet e trafikut në Qendrën e Qytetit, përmirësimin në uljen e ndotjes së ajrit dhe konsumin e karburantit për transport publik.

Duke marrë parasysh strategjitë e zhvillimit të trafikut urban dhe transportit publik në Tiranë, transporti ndërqytetës si një shërbim i rregullt që duhet të përmbushë kërkesën në rritje të pasagjerëve është në gjendje të keqe në lidhje me stacionet e nisjes dhe mbërritjes të quajtura terminale. Rrjedhimisht, pikëpamja e përqendrimit të linjave të transportit të largët/në distancë (ndër-urban) ishte e nevojshme për krijimin e një Terminali multi-funksional për Transportin Publik në Tiranë.

13. Environmental and Social Analysis Report

INTRODUCTION

Overview of the Project

The project is being carried out to solve an urban transport deficiency in the City, namely, the lack of a public transport terminal. The proposed project is part of a wider urban transport strategy and addresses the urgent need to improve the status quo, which finds a disparate location pattern of boarding/alighting of passengers across the city by the some 20,000¹, with inter-city coaches and minibuses that enter and exit the city daily.

In this context, the City of Tirana intends to prepare and tender the construction of a new public transport terminal. The winning bidder will be selected in an open international tender by the City, under a Design Build, Finance Operate Transfer (DBFOT)

concession. The loan will be used to construct the bus platforms, and parking areas to service all the inter-city to urban passenger transfers in the north-west of the City. Following a successful concession tender process, financing to the private party will be analysed by the Bank. The City has requested that Bank assist with the funding of a detailed preparation of the project, including the completion of a feasibility study, environmental and social analysis, and the preparation of the follow-on tender as a concession contract.

In structuring the project as a concession, the City will offer an 85,000 square meter land plot situated along the main corridor leading north-westerly out of the city toward Durres to be contracted out on a long-term basis (+20 years) to a future concessionaire to build, operate and maintain the terminal for the benefit of operators and passengers. In exchange, all bus docking fees, rental revenues, and parking fees, will be collected by the concessionaire to amortize its initial capex, operational costs, and cover debt service. The transaction will enable Tirana Municipality to implement, through usage of a land plot along the Durres road leading out of the capital, to be transferred back to the City upon contract expiration, one of the key elements of its infrastructure development.

The objective of the City is to improve overall mobility by providing a full-capacity transport terminal to allow intercity coaches to unload passengers to urban buses and taxis along the city's principal corridor to the rest of the country, thereby reducing traffic congestion in the city Centre, reducing fuel consumption for public transport and GHG emissions, improving the air quality while meeting the need for transport accessibility and mobility in the city. Furthermore, it is hoped that the project will create a national best/good practice model for city sustainable land development, based on low-carbon transport system.

The project will likely be phased, to allow for the future construction of a new train station to be built on the eastern side of the land plot under a possible Phase II. The City has identified this as a strategic decision to allow for a future train/tram service to be initiated on the existing train track owned by the Albanian national railway company.

12.1 Project Goals

The goals of the Tirana Public Transportation Terminal (TPTT) project include the following:

Transportation

- Develop the TPTT into an intermodal transportation hub that integrates current and future regional and local transit modes into a comprehensive transportation system;
- Promote transfers between many different transportation modes, as well as pedestrian and bicycle access, on one site in a way that is efficient, logical, and safe;
- Increase transit ridership;

- Connect local and regional transit with intercity bus and potentially in the future with rail, including future high-speed rail; and
- Provide further connections to and from Mother Teresa International Airport.

Urban Design

- Encourage mixed-use, transit-oriented private development that complements the TPTT site and adjacent neighbourhoods;
- Ensure that the design, materials, and scale of new architecture complement the existing and future land use;
- Connect neighbourhoods with new pedestrian, bicycle, and vehicle access; and
- Produce a signature development that provides economic opportunities for the city, region, and the nation

Achieving these goals will create an area that will have the most transportation accessible real estate in Tirana City with values that can be captured to more fully develop the transportation facilities for mutual public and private benefit. These transportation and real estate investments will make Tirana more attractive for further development opportunities and draw a sustainable example needed for the economic success.

14. ENVIRONMENTAL AND SOCIAL ACTION PLAN ESAP

BACKGROUND

Brief Description of the Project

Tirana currently has no bus terminal, with myriads of informal drop-off and loading locations having evolved over the years, which cause undue traffic congestion, air pollution, and pedestrian safety concerns. The project is proposed to solve an urban transport deficiency in the City, namely, the lack of a public transport terminal and addresses the urgent need to improve the status quo, which finds a disparate location pattern of boarding/alighting of passengers across the city by the some 20,000¹, with inter-city coaches and minibuses that enter and exit the city daily.

There are about 70,000 vehicles registered in Tirana, about 30% of the nation's total. About 80% of the vehicles use diesel fuel, releasing a volume of amount of particulate matter 20 times higher than petrol engines. Besides carbon monoxide, major pollutants caused by vehicles include Pb, S, CO₂, NO_x, O₃ and SO₂. With about 90% of the capital costs from the road transport, compared with 5% for rail and 2.5% for marine and aviation², air pollution will remain a matter of concern.

Furthermore, the main areas of air pollution in Tirana are at the intersections of major roads. In

these sites, there is high concentration of pollution from vehicles, as the main source of environmental pressure in the Tirana region is traffic.

To achieve CO₂ emission reduction amid the anticipated continuing rapid growth in transport demand, the transport sector must seize all opportunities in a strategic way to promote ecotransport a way of sustainable transport development that is resources saving and environmentally friendly. Multi-modal integrated transport development in the rapidly growing city of Tirana is such an opportunity.

The terminal will be located along Rruga-Durresit corridor, precisely the area proposed for the new terminal, is located near the “Kamzas’ Overpass”, and near the intersection of Rr. Kastriotet (classified as primary road) and Tirana-Durres highway/expressway classified as primary interurban road. Adjacent the terminal area is located the railway line. The main idea of the terminal design is to integrate bus terminal with other available transport alternatives, and later on the tram and rail station interchange to a transport hub.

According to domestic EIA legal framework the project is classified for Preliminary EIA report, and Category B as per EBRD environmental procedures, due to its limited scale of anticipated environmental and social impacts associated with the Tirana Public Transport Terminal. Based on the environmental screening and assessment, the following safeguards policies are taken in consideration: PR 1: Environmental and Social Appraisal and Management; PR 2: Labour and Working Conditions; PR 3: Pollution Prevention and Abatement; PR 4: Community Health, Safety and Security; PR 5: Land Acquisition, Involuntary Resettlement and Economic Displacement; PR 10: Information Disclosure and

Purpose and Scope of the ESAP

This Environmental and Social Action Plan (ESAP) compiles the organizational requirements and mitigation measures (“Action Items”) to avoid potentially adverse effects of the Project on the environment, on conditions of health, safety and security of workforce and the public, and on social and socio-economic conditions. The ESAP applies for all Project phases, i.e. project design, construction, and operation.

This ESAP also presents Action Items required to make the Project compliant with international requirements, international best practice, and Lenders Requirements that are defined as follows:

Lenders Environmental and Social Requirements:

- All elements of the Project will need to meet Albanian environmental, health and safety and social laws and regulations;
- All elements of the Project will be carried out in compliance with the European Union environmental and social standards;
- Compliance with the EBRD’s Environmental and Social Policy and Performance Requirements (PR’s) 2008;

<http://www.ebrd.com/about/policies/enviro/policy/2008policy.pdf>

- Public consultation and stakeholder engagement will be meaningful and allow or public participation in decision making (in accordance with UN ECE Aarhus convention);

-The project includes all necessary measures to avoid, minimize or mitigate any adverse change in environmental conditions and impacts on public health and safety.

15. ENVIRONMENTAL AND SOCIAL ACTION PLAN

The following environmental and social actions are required to fulfill the requirements of the EBRD's Environment and Social Policy (2008), within the timescale indicated. During the project development, the principle of "people first" has been followed so as to the best extent to meet the demand of the public. It is anticipated that this project will improve the transport conditions for the general public, thereby increasing the living standard and beautifying the urban landscape.

Figure 3.2.1 Public Transport Development Projects in Tirana

According to the study team assessment, specifically the new Intermodal Transportation Terminal should be developed in the location where the existing Tirana railway station is to be relocated (approx. 85,000m²). All the intercity and international bus and van lines to the northern, western, and south-western directions should be integrated into this terminal in order to help to prevent large vehicles from entering the CBD of Tirana. More importantly, the new terminal needs to be connected to several city bus lines for smooth transfer to central Tirana or to other destinations and in the future may potentially be connected to the tramline and several city bus lines for smooth transfer to central Tirana or to other destinations. Furthermore, introduction of new transit terminals where some city bus lines as well as other public transport meet and passengers can transfer or access by private vehicles should be realized.

The location for the Intermodal Transportation Terminal was already decided as definitive location by the MoT, so no further assessment on other potential sites was done by JICA Study team.

3.3. Project Location

The City will offer an 85,000 m² land plot situated along the main corridor leading north-westerly out of the city toward Durres to be contracted out on a long-term basis (+20 years) to a future concessionaire to build, operate and maintain the terminal for the benefit of operators and passengers.

The terminal will be located along Rruga-Durresit corridor, precisely the area proposed for the new terminal, is located near the "Kamzas' Overpass ", and near the intersection of Rr. Kastriotet (classified as primary road) and Tirana-Durres highway/expressway classified as primary interurban road. Adjacent the terminal area is located the railway line (Figure 3.3.1).

It is important to note that most passengers on inter-city trips are currently distributed around the many informal boarding/alighting locations around the city. Therefore, an important part of the future terminal will include an increase in the capacity and frequency of the bus operators along the Rruga-Durresit corridor but not only, as well as taxi services.

Figure 3.3.1 Location Map of the Project

The project location is reasonable site for the Tirana Public Transport Terminal since the proposed location is determined as the most appropriated in the Sustainable Traffic Development in Tirana, Road and Transport Master Plan and Tirana Urban Plan, and more important as the only solution proposed by the MoT.

Environmental and Social Action Plan

TIRANA PUBLIC TRANSPORT TERMINAL (TPTT) PROJECT

ENVIRONMENTAL AND SOCIAL ACTION PLAN

The following environmental and social actions are required to fulfill the requirements of the EBRD's Environment and Social Policy (2008), within the timescale indicated. During the project development, the principle of "people first" has been followed so as to the best extent to meet the demand of the public. It is anticipated that this project will improve the transport conditions for the general public, thereby increasing the living standard and beautifying the urban landscape.

Environmental and Social Action Plan

TIRANA PUBLIC TRANSPORT TERMINAL (TPTT) PROJECT

No.	EBRD Performance Requirement (PR)	Proposed Actions	Time frame	Responsibility	Resources EUR	Evaluation criteria for success
1	Policy	Implementation Agency (IA) and its Contractors shall design and manage the Project's Environmental, Social and Health and Safety ("ESHS") matters in a manner that is compliant with: applicable national and EU laws; and International good practice and EBRD Environmental and Social Policy (2008).	All project phases	IA	Personnel and office cost	Compliance reports and annual report to EBRD
2	PR 1 - Environmental Management System	IA shall establish and maintain an Environmental management system in line with International good practice.	Before construction	IA - Environment Team	Personnel and office cost	System documentation and evidence of monitoring and follow up.
3	PR 1 - Management system (operations)	Develop and implement an EHS management system for operations at the Tirana Public Transport Terminal (TPTT). To include standard operating procedures, training and a monitoring and inspection programme.	Prior to operations	IA and Contractor(s)	Personnel and office cost	EHS system and manual in place during commissioning

4	PR 1 - Contractor Management	The Contactor shall implement an Environmental Health and Safety (EHS) Management System in line with International good practice. This system shall include: Environmental Management Plan, H&S Plan, Training Plan, Grievance process, Environmental monitoring plan, Traffic Management Plan, Stakeholder Engagement Plan.	Before Construction - Tender requirement	Contractor(s)	Personnel and office cost	Plans in place & monitored.
5	PR 1 - Contractor Management and Monitoring	IA EHS Experts to periodically carry out independent monitoring of the EHS performance of the Contractors on site in addition to PIU. This monitoring should be defined in an annual plan and records retained.	Construction	IA - EHS Experts	Personnel and office cost	Audit reports
6	PR 2 - Working conditions and employment/ Grievance mechanism	IA shall establish and maintain a HR Policy, retrenchment policy and worker grievance mechanism compliant with PR 2 requirements. The Contractor will provide a grievance mechanism for workers to raise reasonable workplace concerns and a process for their resolution. This shall be monitored by IA at least quarterly during construction.	Before construction	IA and Contractor(s)	Personnel and office cost	Compliance reports and annual report to EBRD
7	PR 2 _ Occupational Health and Safety (OHS) - Hazardous materials	Define operational control procedures and implement a training program for operators who work with hazardous materials regarding safe handling practices and emergency response procedures.	Prior to construction and updated before commissioning	IA	Personnel and office cost	Procedures and training records
8	PR2 - OHS	All workers shall be given EHS training and be informed of their obligations described in this ESAP, as appropriate, as part of a training plan. As a minimum all workers on site must attend an EHS site induction and records of training must be maintained.	Before Construction Tender requirement	IA and Contractor(s)	Personnel and office cost	Compliance reports and annual report to EBRD

9	PR2 - OHS	A safe and systematic approach to excavation work is to be adopted whenever any ground disturbance is carried out to protect workers and others who may be affected by the work. This should include following best working practice, assessment of the risks, adequate supports to prevent problems, methods to detect unhealthy atmospheres before allowing any entry into any excavation, adequate means to enter and leave the excavation which are to remain in situ for the duration, instruction and information to all workers on the hazards associated with excavations and the risks to their health and safety and any other controls that minimize the risks which were identified during the initial assessment.	Before during ground disturbance	and any	Contractor(s)	Personnel and office cost	Zero incidents, monitoring identifies the following of EBRD good practice and no complaints from third parties.
10	PR3 - Pollution prevention and compliance with EU standards	Implement monitoring programs (with corrective actions procedures) to measure the effectiveness of the pollution prevention measures for during operations to ensure compliance with EU standards.	During project preparation and implementation			Personnel and office cost	Monitoring plans in place and follow up measures
11	PR 4 - Transportation and Traffic	Contractor(s) to develop a Transportation plan for moving equipment and construction material on public roads agreed with relevant local Authorities to include safety provisions and clear rules for drivers. Develop and implement a traffic management plan to avoid traffic congestion and facilitate the mobility of heavy vehicles, and other vehicles.	Before during Construction	and	Contractors	Personnel and office cost	Approved plan in place. Evidence of implementation.
12	PR 4 - Emergency Response	Develop and implement Emergency Preparedness and Response Plan/ procedures to deal with emergencies on and off site, major incidents issues and health concerns.	During project preparation and implementation		IA and Contractor(s)	Personnel and office cost	Approved Plan in place and evidence of its implementation. Compliance reports and annual report to EBRD

13	PR 5 - Land Acquisition, Legal compliance.	Develop and implement an Action Plan for the completion of the land acquisition, and setting out clear lines of communication and responsibility for completing this activity. The Action Plan should detail of all relevant actions and documents for all transactions needed to acquire land rights. Information of the affected land owners and users about land acquisition process and compensation issues.	During construction	IA	Personnel and office cost	Approved procedures. Information Meetings held, Information Brochure prepared and distributed
14	PR 6 - Impact on Biodiversity	Even though there haven't been identified issues related to biodiversity and natural resource use, IA and the Contractor(s) should develop and further implement the Biodiversity Action Plan (BAP)	Before and during Construction	IA and Contractor(s)	Personnel and office cost	Approved plan in place. Evidence of implementation.
15	PR 6 - Groundwater	Development of a Construction Site Groundwater and Surface water Management Plan to prevent drainage or other adverse impacts to nearby habitats	Before Construction	IA and Contractor(s)	Personnel and office cost	Approved plan in place. Evidence of implementation.
16	PR 6 - Sewage Water	Contractor must confirm that the potential additional water and sewage needs of the worker camp and construction activities can be handled by the local systems in Tirana. If needed, additional portable treatment capacities must be provided.	Before Construction	IA and Contractor(s)	Personnel and office cost	Confirmation by the responsible department
17	PR 7 - Indigenous Peoples	Heritage				
18	PR 8 - Cultural					

PR 7 is not considered applicable in the context of the TPTT

enous Peoples has been identified for the project area.

PR 8 is not considered applicable in the context of the TPTT Project, as no concerns related to Cultural Heritage has been identified for the project area.

19	PR 9 - Financial Intermediaries	PR9 is not considered applicable in the context of the TPTT as no financial intermediaries will be appointed or operational in this Project.					
20	PR 10 - Community Engagement	Contractor(s) and IA will designate a Community Contact Officer (CCO) as part of the implementation of the SEP. It should be designated a responsible person to the office to follow up on complaints and grievances from local communities involving the contractor and monitor and report on SEP implementation to EBRD annually.	During project preparation and implementation	IA and Contractor(s)	Personnel and office cost	Grievances resolved and annual report to EBRD	
21	PR 10 - SEP	The Contractor shall distribute information on a timely basis prior to work commencing concerning to : - Inform affected communities about any works that may affect them (traffic and access obstructions, noise and dust); - Inform affected communities on the progress of works; - Solicit feedback from community members on the effectiveness of any mitigation measures, and the availability of the grievance Procedure to the public.	During project preparation and implementation	Contractor	Personnel and office cost	Grievances resolved and annual report to EBRD	
22	PR 10 - Social Issues	Contractor(s) to develop and implement a Social Management Plan SMP to address mitigation measures related to the construction phase of the project. The Plan is to be approved by IA and the Lenders prior to construction works.	Before Construction	Contractor	Personnel and office cost	Social Management Plan.	

16. LEGL FRAMEWORK

Introduction

This section discusses the legal framework within which the Project should be conducted and the environmental regulatory requirements that Project activities should apply. The applicable international requirements and Albanian legal framework are addressed below, as are various international agreements to which Albania is a party.

The projects should comply with Albanian national legislation and international environmental and socioeconomic requirements, with specific regard to the European Union Legislative Framework and alignment with the European Bank for Reconstruction and Development (EBRD).

International Requirements

In its commitment to the environment and the community, the Project should adopt the EBRD Performance Requirements from (PR) 1-10 and standards as the main standards for compliance during the execution of Project activities. The EBRD PR makes reference to other international best practice guidelines such as those of the International Finance Corporation (IFC) and World Bank.

The various ways in which the EBRD promotes such development are described in the EBRD's Environmental Policy document (the Policy). One specific step taken by the EBRD to address this mandate and the General Principles and Objectives set out in the Policy is to ensure that all of its investment and technical cooperation projects undergo environmental and socioeconomic appraisal along with the financial, economic, legal and technical due diligence that is carried out and to ensure that appropriate monitoring is undertaken following approval of projects by the Board of Directors.

The EBRD adopted its first Environmental Policy in 1991 and has since been updated. In May 2008 it was reviewed to become an Environmental and Social Policy, reaffirming EBRD's commitment to ensure that the projects it finances are socially and environmentally sustainable.

EBRD Environmental Procedures

All proposals submitted to the EBRD must undergo environmental screening to identify potential environmental risks and liabilities. The EBRD therefore seeks to ensure through an environmental appraisal process that financing for projects is environmentally sound, designed to operate in compliance with applicable regulatory requirements, and that environmental performance is monitored. The first step in the appraisal process is screening, which is undertaken to identify potential negative and positive aspects of a proposed project. It ultimately results in the grouping of projects A/B/C/FI categories to ensure the appropriate detail of investigation. The categorization process is dependent on the type, location, sensitivity and scale of the project, and the nature and magnitude of its potential environmental impacts.

Projects are classified as Category A when the EBRD funding involves Greenfield developments, or major expansion/transformation, that is expected to result in potentially significant adverse future environmental impacts. In this case, an Environmental and Social Impact Assessment (ESIA) is required to identify and assess the future environmental and socioeconomic impacts associated with the Terminal Project, also identify potential environmental and socioeconomic improvement opportunities, and recommend any measures needed to prevent, minimize and mitigate adverse impacts

Category B projects involves new construction, rehabilitation, or process/technology changes that result in future environmental impacts that are less adverse than Category A. An environmental analysis would then be required to assess these impacts.

Category C is those projects that would not require an EIA or an environmental analysis and are expected to result in minimal or no adverse environmental impacts. An environmental audit may also be identified as requirement through screening, to assess past or current operations of existing projects.

As a Greenfield Project, TPTP should be classified as Category A according to EBRD criteria, and as such a special formalized participatory assessment process is required according to EBRD Standards. The process should include:

- A comprehensive Environmental and Social Impact Assessment in compliance with PR 1 Environmental and Social Appraisal Management and PR 10 Information Disclosure and Stakeholder Engagement.
- An examination of the technically and financially feasible alternative solutions and the rationale for the solution selection.
- Also addressing PRs 2 and 4 the ESIA should identify the issues related to potential risks related to community health, safety and security, as well as labour and working conditions.
- The assessment of involuntary resettlement issues according to PR 5 Land Acquisition, Involuntary Resettlement and Economic Displacement.
- The sustainable use of the natural resources and the protection of biodiversity will have to be considered as instructed by PR 6.
- An assessment of impacts on cultural heritage according to PR 8 Cultural Heritage.

According to the requirements for the ESIA, the application of EBRD standards requires the following additional processes:

Scoping: a process by which stakeholders are consulted to contribute to the identification of key issues to be investigated as part of the ESIA. This Scoping Document is prepared in application of this requirement.

- Stakeholder Engagement Plan: a comprehensive approach to the communication and consultation with the identified stakeholders throughout the whole project lifecycle.
- Focus on Social Issues: whereas the Albanian legislation mainly refers to environmental impacts the EBRD approach also focuses on the identification of impacts on the impacted communities and subsequent definition of necessary mitigation measures.

European Union Legislation

As, Albania applied for EU membership in 2009 its legal framework is largely and progressively being harmonized with EU legislation. On this regard, The Project shall respect the main guidelines provided by the European Directives since each Directive must be implemented by each Member State.

EU Environmental Impact Assessment (EIA) Legislation

The Environmental Impact Assessment (EIA) was introduced for the first time in Europe in 1985 by the EIA Directive (85/337/EEC) and represents a key instrument for European Union environmental policy. The EIA Directive of 1985 has been amended three times:

- *Directive 97/11/EC* brought the EIA Directive in line with the UN ECE Espoo Convention on EIAs in a Trans boundary Context. The 1997 Directive widened the scope of the EIA Directive by increasing the types of projects covered and the number of projects requiring mandatory environmental impact assessment (Annex I). It also provided for new screening arrangements, including new screening criteria (included in Annex III) for Annex II projects, and established minimum information requirements;
- *Directive 2003/35/EC* sought to align EIA Directive provisions with the Aarhus Convention on public participation in decision-making and access to justice in environmental matters; and
- *Directive 2009/31/EC* amended Annexes I and II of the EIA Directive, adding projects related to the transport, capture and storage of carbon dioxide (CO₂).

On 28 January 2012, Directive 2011/92/EU on the effects of public and private projects on the environment was published in the Official Journal. Directive 2011/92/EU codifies Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment (EIA Directive) and its associated amendments. Directive 2011/92/EU fully preserves the content of the acts being codified and does no more than bring them together with only such formal amendments as are required by the codification exercise itself.

The scope of this Directive is to ensure that plans, programmes and projects likely to have significant effects on the environment undergo an Environmental Assessment prior to their approval or authorization. While Annex I contains a list of projects for which the EIA is mandatory, Annex II defines those categories of projects whose ESIA is optional and at the discretion of the community member states.

The TPPT Project falls under Annex II, clause 10 (Tramways, elevated and underground railways, suspended lines or similar lines of a particular type, used exclusively or mainly for passenger transport; Urban development projects, including the construction of shopping centres and car parks; Construction of railways and intermodal transshipment facilities, and of intermodal terminals (projects not included in Annex I) of the EIA Directive and is therefore required to determine whether the project shall be made subject to an assessment. Member States shall make that determination through case-by-case examination or thresholds or criteria set by the Member State. Member States may decide to apply both procedures.

National Albanian Legislation

The Albanian legal framework regarding environmental and socioeconomic issues is based on the Constitution of the Republic of Albania and consists of laws and regulatory acts, such as Decisions of the Council of Ministers (DCM), ministerial acts, regulations, guidelines and standards. The key piece of legislation that applies to the Project is the Law No. 10440, dated 07.07.2011 “On Environmental Impact Assessment, amended with Law No. 12/2015. The new law was enacted to harmonize/integrate the national legislative system into EU directives.

According to the EIA legal framework the EIA process starts with drafting a preliminary EIA, which then submitted through the Ministry of Environment (MoE) to the National Environmental Agency for an official statement of the project category and the respective EIA report needed.

After the examination of the report, NEA makes a decision whether the project should require an in-depth EIA Report or not, and makes a notification to the developer. Thereafter, the developer has to revise the report when is request further information and comments from the public Hearing on the report.

As a final step, after the official communication of NEA, the Ministry of Environment takes the decision on the project and issues Environmental Statement, which may suggest to the planning authority:

- a) Permit the development of that project, without any objections from the environmental point of view;
- b) Permit the development of that project, with conditions that must be met by the developer, to prevent, minimize and manage negative impacts on the environment;

- c) Reject the application for development permit for the project, due to the important negative impacts on the environment with long-term consequences that affect the quality of the environment and do not allow fulfilling the relevant environmental standards.

Environmental Statement is sent immediately to developer and the parties involved in the process, also is published on the website of the NEA and MoE.

According to the EIA Law, Appendix II on “Projects subject to preliminary procedure of EIA” Point 10, Infrastructure Development, point c) Rail station and intermodal transport terminals (projects not included the Annex 1 and its complementary facilities is classified to undergo the process of EIA Screening, to decide whether the project will have or not significant impacts in the environment.

The screening process is undertaken by the National Environmental Agency (NEA), in consultation with relevant institutions and the Regional Environmental Agency.

Referring to the findings, comments and suggestions provided on the expected impacts on the environment, NEA can, also, take the decision that the project submitted by the developer, is subject to the in-depth process of EIA, even if such project is not mentioned in Appendix 1 on “Projects subject to the Procedure of in-depth EIA” of the EIA Law.

Other Environmental Legal Framework

In the last decade and especially since 2001, a number of laws and other legal acts on the environment have been drafted and approved. A brief overview of the laws currently in force is presented below:

- Law No. 10431, dated 9 June 2011, regarding Environmental Protection
- Law No. 10440, dated 07 July 2011, regarding Environmental Impact Assessment, amended with Law No. 12/2015
- Law No 10448 dated 14.07.2011 "On environmental permits", as amended with Law No 60/2014, for some changes of Law No 10448 dated 14.07.2011 "On environmental permits"
- Law No. 8093, dated 16 May 2002, regarding Water Resources
- The Law No.162 dated 04.12.2014 “On protection of air quality in environment”.
- Law 9115, dated 24 July 2003, regarding Administration of Polluted Water
- Law No. 9587, dated 20 July 2006, regarding Biodiversity Protection
- Law No. 8906 dated 6 June 2002, regarding Protected Areas (Law No.9868, dated 4 February 2008 On some additions and amendments to the Law 8906, dated 6 June 2002

- Law No. 10006, dated 23 October 2008, regarding Wild Fauna Protection
- Law No 10463 dated 22.09.2011 “On the integrated waste management”; Law No 32/2013 dated 14.02.2013 and Law No.156/2013 dated 10.10.2013 “On some amendments of law No 10463 dated 22.09.2011 “On the integrated waste management”.
- Law No. 9048, dated 4 July 2003, regarding Cultural Heritage
- Law No. 8561, dated 22 December 1999 regarding land expropriation or temporary use of private lands for the public interest
- Law No. 9774, dated 12 July 2007, regarding Assessment and Management of Noise in the Environment.
- Decision of Council of Ministers No. 13, dated 1 April 2013, regarding the rules, responsibilities and deadlines for conducting the EIA procedure
- Decision of Council of Ministers No. 103, dated 31 March 2002, regarding Environmental Monitoring
- Decision of Council of Ministers No. 249, dated 24 April 2003, regarding approval of documentation for environmental permits and environmental permit elements
- Decision of Council of Ministers No.177, dated 31.3.2005, regarding the Norms of discharges of liquid and zoning criteria receiving water environments.
- Decision of Council of Ministers No. 803, dated 4.12.2003, regarding Approval of Air Quality Norms.
- Decision of Council of Ministers No. 248, 24.4.2003, regarding the Approval of temporary norms for discharges into the air and their implementation

The Laws on Environmental Permits, Environmental Protection, and Environmental Impact Assessment and on Integrated Waste Management set out the legal framework for the environment.

According to this legislation MoE and the National Environmental Agency will be the key actors in EIA approval, (in case NEA decides that the project needs an in-depth EIA) in addition to all other ministries, local authorities, REAs and communities. Law No. 10440, dated 07 July 2011, regarding Environmental Impact Assessment, provides a transition period for the restructuring and

CONCLUSIONS

Considering the above, in accordance with Law No. 8652 Date 31.07.2000 “On the organization and functioning of local government” (*changed*) Article 10, Law No. 125/2013 (*changed with Law No.84/2014 “On concessions and Public Private Partnership”*), and the tasks foreseen in the:

- Order of the Mayor of Tirana No. **38517**, Date **14.12.2016** “On the specification of composition of the Commission for the Granting of Concession / Public Private Partnership “Tirana Public Transport Terminal”

The Commission Members conclude that:

1. The Feasibility Study, submitted by the Consultant “ Italferr S.p.A” Italy, and subsequently analyzed, appraised and approved by members of the Commission, in accordance with the local legislation, more specifically:
 - Law No. 125/2013 (changed with Law No. 84/2014 “On Concessions and Public Private Partnership”);
 - Decision of the Council of Ministers, No. 575, Date 10.07.2013 “On the approval of regulations for evaluating and granting in concession/public private partnership” Article 8;
2. From the detailed analysis of the study, the suggestion of the Consultant, and the unanimous opinion of the Commission, it is recommended as the only considerable option, for the concessionary procedure of the transport terminal, **“OPTION 3”** of the study. The reasons why the commission comes to such conclusion are as follows:
 - Decrease of the investments costs for the private partner
 - Decrease of the construction time and elimination of the risks and additional costs that would be incurred in case of construction of additional infrastructure such as hotel, shopping mall or underground parking.
 - Elimination of the financial exposure for the public partner. The Municipality does not engage financially in any of the project’s components, as per the Option 3.
3. The members of the Commission, in implementing DCM No. 575, date 10.07.2013 “On the approval of regulations for the evaluation and granting in concession/public private partnership” Article 8, points 5 and 6, and taking in account the data presented in the Feasibility Study, performed the risk analysis, so that to measure, consider and minimize the risk’s consequences on the project. The Commission, in accordance with the regulations of the European System of Accounts (ESA95), taking in account the combination of allocations of the following three typologies of risks: risk of construction, risk of availability and risk of demand, deemed that the Transport Terminal Project does not have any *carried risk* (risk remaining with the contracting authority) but has only *transferrable risk* (a risk transferred to the private partner).
4. The feasibility study and the accompanying documents submitted by the Consultant and approved by the commission, based on the results of the analysis performed in accordance with DCM no. 575/2013, “On the approval of regulations for the evaluation and granting in concession/public private partnership” Article 8, confirm the lucrativeness and sustainability

of the project; meanwhile, the concession/PPP scheme appears to be the most suitable model for the implementation of this project. The reasoning of the commission in choosing such a model is based on a combination of factors:

- The limited financial capacities of the contracting authority in order to carry out an investment of similar size. Such investment is not justifiable, considering the financial capacities of the contracting authority. Additionally, in the agreement signed between the Contracting Authority and the European Bank for Reconstruction and Development (EBRD) parties have agreed on the possibility of financing of this project through the concession/PPP scheme, based on an initiative of EBRD, which has also financed the carrying out of the feasibility study, through a grant given to the Contracting Authority.
- Additionally, the Contracting Authority shall benefit yearly profits, based on turnover and profit, as a consequence of the operation of this concession/PPP scheme, without having any obligation or financial exposure vis-à-vis the project.
- The contracting authority has not had previous experiences of constructing, managing and successfully operationalizing a transport terminal. The contracting authority, therefore, lacks the technical and logistical expertise necessary to carry out such an investment, which would bring upon a sizeable financial exposure for the contracting authority.
- The operationalizing of a transport terminal requires an intertwining of capacities in the areas of construction, transport, logistics, information technology etc. and therefore it exceeds the current sphere of capacities of the contracting authority.

5. In closing, in accordance with the Law No. 8652 Date 31.07.2000 “On the organization and functioning of local government” (changed) Article 10, the Law No. 125/2013 (changed) “On concessions and Public Private Partnership”, the Commission for the Granting of Concession / Public Private Partnership “Tirana Public Transport Terminal” decides to propose to the contracting authority chair, the Mayor of Tirana, the application of the concession/Public Partnership scheme for the Tirana Public Transport Terminal.

Mr. Genci Kojdheli

General Director, General Directorate of Strategic Projects

Mr. Henrik Hysenbegasi

Director, Directorate of Foreign Investments Management

Ms. Ledia Ramo

Head of Sector, Directorate of Procurement

Mr. Enton Punavija

Director, Directorate of Transport and Traffic Management

Mr. Sokol Gjata

Head of Sector for Legal and Financial Affairs

Ms. Sidita Temali

Economist, ATRAKO

Mr. Erjon Murataj
Economist, ATRAKO

Projekti Teknik

Analiza teknike është pjesë e studimit të fizibilitetit dhe ka si objektiv kryesor të demonstrojë se projekti mund të zbatohet duke përdorur teknologjitë e propozuara dhe pa risqe të paarsyeshme teknike.

Analiza teknike

Analiza teknike duhet të përmbajë informacionin e mëposhtëm:

1.1.1. Sfondin e projektit.

1.1.2. Vendndodhjen dhe truallin.

1.1.3. Kushtet lokale.

1.1.4. Përshkrimin konstruktiv, funksional dhe teknik të projektit.

1.1.5. Periudha e vlerësuar e ndërtimit (në muaj).

1.2. Ndikimet mjedisore dhe sociale

Ndikimi mjedisor dhe social i projektit duhet të përgatitet në përputhje me legjislacionin në fuqi.

- *Studimi identifikon efektet e mundshme negative apo të kundërta në përbërësit mjedisore por që nuk kufizohen vetëm te: popullsia, ajri, toka, uji, peizazhi, fauna, flora, aspekte të biodiversitetit, duke përfshirë speciet e rrezikuara, ekosistemet e ndjeshme dhe identifikimin e atyre që mbrohen ligjërisht. Ai duhet të tregojë, gjithashtu, edhe masat parandaluese që duhen ndërmarrë për të siguruar përputhjen me standardet e BE-së për mjedisin.*
- *Studimi merr parasysh aspektet sociale, të tilla si: mbrojtja e të drejtave të njeriut dhe e shëndetit të komuniteteve, siguria, çështjet e punës dhe, nëse është rasti, ndikimet mbi grupet e pafavorizuara ose në nevojë, blerja e tokës dhe risistemimi i pavullnetshëm, mbrojtja e pasurisë kulturore dhe trashëgimisë.*

1.3. Analiza ekonomike dhe financiare

Analiza ekonomike dhe financiare minimalisht duhet të përbehet duke u referuar në elementet e mëposhtëm

- Kostot e drejtpërdrejta të investimeve
- Kostot e drejtpërdrejta të mirëmbajtjes
- Kostot e drejtpërdrejta operative lidhen me funksionimin e përditshëm
- Kostot indirekte të projektit

- Të ardhurat e projektit përfitohen nga:
- Analizë cilësore dhe sasiore risku në mënyrë që të identifikohet dhe të vlerësohet gama e riskut që mund të ndikojë mbi projektin.
- Analiza e ndjeshmërisë.

2. Arsyetimi i vendimit koncesionit/PPP-së

Bazuar në rezultatet e analizave të ndërmarra në përputhje VKM nr. 575/2013, studimi duhet të arsyetojë nëse është konfirmuar leverdishmëria dhe qëndrueshmëria e projektit; dhe nëse forma koncesion/PPP duket si modeli më i përshtatshëm për zbatimin e projektit.

Arsyetimi i vendimit të koncesionit/PPP-së kryhet duke filluar me Krahasuesin e Sektorit Publik dhe duke përdorur modele të përshtatshme financiare, të tilla si metodologjia e Krahasuesit Publik Privat ose modeli “Hije”.

MBI PUNËN EKOMISIONIT TË KONCESIONIT/PARTNERITETIT PUBLIK PRIVAT “TERMINALI I TRANSPORTIT PUBLIK TË TIRANËS”

Mbështetur në Ligjin Nr. 125/2013 (i ndryshuar) “Për koncesionet dhe Partneritetin Publik Privat”, dhe VKM Nr. 575, Datë 10.07.2013 “Për miratimin e rregullave për vlerësimi dhe dhënie me koncesion/partneritet publik privat”, Bashkia e Tiranës në rolin e Autoritetit Kontraktor ka identifikuar dhe ka shlyrtuar Projektin e koncesionit /partneritetit publik privat “Terminali i Transportit Publik të Tiranës”(TTPT).

Banka Europiane për Rindërtim dhe Zhvillim (BERZH) ka asistuar Bashkinë e Tiranës për financimin e përgatitjes aktuale të një Studimi Fizibiliteti, Analizën Mjedisore dhe Sociale dhe përgatitjen e tenderit vijues si kontratë koncesioni.

Në vitin 2012 është lidhur Marrëveshja e Grantit lidhur midis BERZH dhe Bashkisë Tiranë (e ndryshuar), në datë 09.10.2012 „Për Studimin e Fizibilitetit të Terminalit të Transportit Publik të Tiranës, me vlerë 495.000 Euro.

Nëpërmjet këtij granti është financuar kontrata e konsulentit me objekt “Rishikimi i Studimit të Fizibilitetit ekzistues dhe Përgatitja e Tenderit të Koncesionit” për Terminalin e Transportit Publik të Tiranës, lidhur në datën 09.10.2012 midis Bashkisë Tiranë dhe konsulentit të huaj ITALFERR Spa, Itali.

Bashkia Tiranë mbështetur në Politikën e Zhvillimit të Transportit Publik është prirur nga koncepti se Terminali i ri duhet të ofrojë shërbimet bazë për transportin publik dhe ka kërkuar rishikimin e Studimit të Fizibilitetit ekzistues të vitit 2013.

Objekti i Bashkisë Tiranë është përmirësimi i lëvizshmërisë së përgjithshme, duke siguruar një Terminal të Transportit Publik me funksion të plotë të kapaciteteve duke lejuar kompanitë e transportit ndërqytetor për të marrë dhe zbritur pasagjerët e pjesës tjetër të vendit, në autobusët urbane dhe taksitë përgjatë aksit rrugor kryesor të qytetit, duke zvogëluar bllokimet e trafikut në qendër të qytetit dhe duke ulur e përmirësuar ndotjen ajrit dhe reduktimin e konsumit të karburantit për nevojat e transportit publik.

Në strukturimin e projektit si një koncesion, Bashkia e Tiranës do të ofrojë një truall prej 85.000m² i cili ndodhet përgjatë korridorit kryesor që të çon në anën veri-perëndimore nga qyteti në drejtim të Durrësit.

Koncesioni do të kontraktohet në baza afatgjatë (+20 vjetë) nga një koncesionar i ardhshëm për të financuar, ndërtuar, operuar dhe për të mirëmbajtur terminalin, në përfitim dhe për mirën e operatorëve dhe të udhëtarëve. Në këmbim të kësaj tarifë e ndalimit të autobusëve, të ardhurat e shitjes me pakicë, me qira, si dhe tarifët e parkimit, do të mbledhen nga koncesionari për të amortizuar kostot fillestare kapitale, shpenzimet operative, dhe për të mbuluar detyrimet e shërbimit të borxhit.

Ofertuesi fitues do të zgjidhet në një Tender të Hapur Ndërkombëtar nga Bashkia Tiranë, sipas një koncesioni të formës Projektimi, Ndërtimi, Financimi, Operimi dhe Transferimi (PNFOT).

Huaja e BERZH mund të përdoret për ndërtimin e platformave të autobusëve, hapësirës për pikat e shitjes me pakicë dhe zonave të parkimit për t'i shërbyer të gjitha transferimeve të pasagjerëve ndërqytetës tek ata urbanë në veriperëndim të Qytetit. Pas një procesi të suksesshëm të tenderit të koncesionit, financimi për palën private do të analizohet nga BERZH.

Terminali është pjesë e një strategjie të gjerë të transportit urban i cili do t'u japë zgjidhje nevojave urgjente për përmirësimin e trafikut dhe uljes së ndotjes së ambientit në Tiranë, nëpërmjet parkimit të gjithë mjeteve të transportit të udhëtarëve nga i gjithë vendi dhe krijimin e kushteve optimale për transportin e tyre në Tiranë.

- Veprimet përgatitore për dhënien e koncesionit/partneritet publik privat (PPP), të identifikuar nga Bashkia e Tiranës, janë mbështetje të kuadrit ligjor:
 - Ligji **Nr.125/2013 (i ndryshuar)**, “Për koncesionet dhe Partneritetin Publik Privat”;
 - Vendimi i Këshillit të Ministrave **Nr.575, Datë 10.07.2013** “Për miratimin e rregullave për vlerësimi dhe dhënien e koncesion/partneritet publik privat”;
 - Vendimi i Këshillit të Ministrave **Nr 150, datë 22.03.2007** “Për organizimin dhe funksionimin e Agjencisë së Trajtimit të Konçensioneve(ATRAKO)” (i ndryshuar)
 - Vendimi i Këshillit të Ministrave **Nr. 445, datë 22.5.2013** “Për përcaktimin e autoritetit kontraktues për dhënien e koncesion vendor të projektimit, ndërtimit, financimit, operimit dhe transferimit të terminalit të transportit publik në qytetin e Tiranës”;
 - Marrëveshja e Grantit lidhur midis BERZH dhe Bashkisë Tiranë (e ndryshuar), në datë 09.10.2012 “Për Studimin e Fizibilitetit të Terminalit të Transportit Publik të Tiranës”.
- Në vijim të këshillimeve me Agjencinë e Trajtimit të Konçensioneve (ATRAKO), Bashkia Tiranë me shkresën **Nr. 21309/1 Date 11.12.2015** i ka kërkuar Agjencisë së Trajtimit të Konçensioneve (ATRAKO), përcaktimin e dy përfaqësuesve të saj për në Komisionin e Dhënies të Koncesionit/P.P.P. “Terminali i Transportit Publik i Tiranës”.
- ATRAKO ka konfirmuar me shkresën **Nr.17 datë 11.01.2016**, (protokolluar në Bashkinë e Tiranës me Nr.929 date 13.01.2016) dy përfaqësuesit e saj të caktuar në cilësinë e anëtarëve të komisionit të koncesionit/ppp “Terminali i Transportit Publik i Tiranës”(TTPT) nëpunësit:
 - Znj. Aurora Pengu (Jurist)
 - Z. Gazmir Vehbi (Ekonomist)
- Kryetari i Bashkisë Tiranë me **Urdhërin Nr. 10353 , Date 06.04.2016** “Për përcaktimin e përbërjes Komisionit të Dhënies së Koncesionit / Partneritetit Publik Privat “Terminali i Transportit Publik i Tiranës”, ka ngritur komisionin në përbërje të së cilit janë dhe dy përfaqësues të Agjencisë së Trajtimit të Konçensioneve(ATRAKO). Në Urdhër janë përcaktuar detyrat e Komisionit konform Nenit 18 “Komisioni i Dhënies të Koncesionit/Partneritetit Publik Privat” të ligjit Nr.125/2013 (i ndryshuar) dhe

VKMNr.575, Datë 10.07.2013 “Për miratimin e rregullave për vlerësimi dhe dhënien me koncesion/partneritet publik privat”;

Objekt i punës së Komisionit ishte shqyrtimi dhe analiza e Studimit të Fizibilitetit për TTPT, për gatitur nga Konsulenti “Italferr SpA” Itali si dhe vlerësimi nëse praktikë dhe dokumentacioni i Studimit të Fizibilitetit, është i plotë dhe në përputhje me kriteret ligjore, përputhet me objektivat dhe strategjitë e Bashkisë së Tiranës dhe paraqet interes publik.

- Komisioni shqyrtoi, diskutoi dhe analizoi praktikë dhe dokumentacion e për gatitur nga Konsulenti “Italferr SpA” Itali, duke përfshirë :
 - Studimin e fizibilitetit teknik dhe financiar të projektit;
 - Studimin e vlerësimit mjedisor dhe social;
 - Të dhëna të mjaftueshme për konceptin dhe teknologjinë e parashikuar nga Konsulenti.

Komisioni vlerësoi se rezultatet dhe treguesit ekonomik, financiar dhe ambiental të Studimit të rishikuar, përputhen me objektivat dhe strategjinë e Bashkisë së Tiranës dhe ai paraqet interes publik.

Takimet e Komisionit të Dhënies të Koncesionit /Partneritetit Publik Privat “Terminali i Transportit Publik të Tiranës”

Gjatë shqyrtimit të Studimit të Fizibilitetit të për gatitur nga Konsulenti, për dhënien me koncesion të Projektit të Transportit Publik “Terminali i Transportit Publik të Tiranës”) është mbledhur 4 (katër) herë, duke e dokumentuar aktivitetin e tij me anë të process verbaleve të firmosura nga të gjithë anëtarët.

- Mbledhja e parë është mbajtur më datën 05.05.2016 ora 12.00;
- Mbledhja e dytë është mbajtur më datën 13.05.2016 ora 11.00;
- Mbledhja e tretë është mbajtur më datën 19.05.2016 ora 10.00;
- Mbledhja e fundit është mbajtur më datën 15.06.2016 ora 12.00;

Gjatë mbledhjeve të tij, Komisioni i Dhënies të Koncesionit /Partneritetit Publik Privat “Terminali i Transportit Publik të Tiranës” ka shqyrtuar dhe analizuar nëse:

- A. Dokumentacioni i për gatitur nga Konsulenti është në përputhje me kriteret ligjore, duke përfshirë:
 - *studimin e fizibilitetit teknik dhe financiar të projektit ;*
 - *studimin e vlerësimit mjedisor dhe social*
 - *të dhëna të mjaftueshme për konceptin dhe teknologjinë e parashikuar në Konsulenti.*
- B. Komisioni ka analizuar dhe vlerësuar nëse:

- *Studimi i Fizibilitetit dhe konçensioni si formë ka rentabilitet dhe përshtatshmëri financiare;*
- *nëse projekti konçensionar është i mundshëm ose jo për t'u zbatuar.*

DETYRA 4: RISHIKIMI I KAPITALIT TE TERMINALIT DHE KOSTOT OPERATIVE

Konsulenti do të zhvillojë një propozim për një plan operativ dhe kostot e shoqëruara për terminalin në mënyrë që të fushëveprimi të kërkesat themelore koncesionarit, duke përfshirë kërkesat pajisjeve, nivelet e stafit, dhe shpenzimet operative. Kjo duhet të përfshijë:

- Planet Operacionale
- Shërbimet
- Parametrat operacionale
- Kontrolli i Operimit dhe Udhëzime
- Shpenzimet për funksionimin dhe mirëmbajtjen TTPT

Këto vlerësime të kosto duhet të vlerësohen për të gjithë kohëzgjatjen e koncesionit, në mënyrë që nivelet e larta të mirëmbajtjes duhet të parashikohen si moshat e objektit.

Shpenzimet kapitale terminal duhet të llogariten bazuar në vlerësimet e konsulentit të hapësirës dhe të objektit kërkesat minimale të përcaktuara në Detyren 3.

Efektet e ndërtimit të Terminalit të Transportit Publik të Tiranës (TTPT) në aspektin e avantazheve dhe disavantazheve u analizuan nëpërmjet një analize kosto përfitim (CBA), d.m.th. me një metodologji të konsoliduar dhe eksperimentuar mire, standard i përbashkët për investimet e çdo madhësie dhe çdo fushë zbatimi.

Dokumentet në vijim janë konsideruar si udhëzues reference në këtë studim të veçantë:

- Udhëzues për analizën kosto-përfitim e projekteve të investimeve, të dhjetorit 2014 (përgatitur nga Komisioni Evropian, Drejtoria e Politikave të Përgjithshme Rajonale) 1;
- Rregullore e Implementuese e Komisionit (BE) 2015/207 e 20 janarit 2015 dhe në veçanti Aneksi III, Metodologjia për kryerjen e analizës kosto-përfitim 2.

Kjo CBA, si të tjerat, ka një objektiv të dyfishtë:

- së pari, vlerësimin e realizueshmërisë financiare të projektit, në drejtim të rrjedhës së fluksit të pastër monetar nga pikëpamja e koncesionerit të infrastrukturës, që në rastin tonë do të jetë gjithashtu operatori i saj;
- së dyti, vlerësimin e realizueshmërisë ekonomike të projekteve, në aspektin e kostove dhe përfitimeve nga pikëpamje e përgjithshme (këndvështrimi "social").

Si çdo CBA tjetër, edhe kjo bën krahasimin ndërmjet një ose më shumë skenarëve që mund të quhen "me projekt" dhe që konsideron ndërtimin e TPTT me zgjidhjet e saj të ndryshme teknike (siç shpjegohet në pjesët e tjera të këtij studimi, janë studiuar dy zgjidhje të ndryshme, të referuara si "zgjidhja 1" dhe "zgjidhja 2") dhe një skenar referimi i cili mund të quhet "pa projekt", që konsideron ruajtjen e gjendjes ekzistuese.

Parametrat e konsideruar në këtë analizë janë ato zakonisht miratuar në CBA.

Konkluzionet e përgjithshme që mund të arrihen nga studimi i TPTT janë se:

- **Projekti është i realizueshëm nga ajo financiare**, dmth ai është vetë-qëndrueshëm, por medisa rreziqe të mëdha për zgjidhjen 1.

Vlera neto financiare (NPV) e investimeve është pozitive përtë gjitha zgjidhjet dhe respektivisht të barabarta për 58,90 € x 106, 86,72 € x 106 dhe 31,73 € x 106 përkatësisht për zgjidhjet 1, 2 dhe 3.

Të njëjtat vlera për një investim të kufizuar të TTPT (dmth pa zonat tregtare dhe hoteliere) janë respektivisht 56,59 € x 106 dhe 84,22 € x 106 zgjidhje 1 dhe 2 (zgjidhje 3 nuk parashikon Zonat tregtare dhe hotelin).

NPV financiare e zgjidhjes 3 është më e ulët në krahasim me vlerat e të dy zgjidhjet e tjera, por zgjidhje të tillë ka më shumë IRR favorshme financiare, dmth 19,62% kundrejt 11,86% dhe 18,11% përkatësisht për zgjidhje 1 dhe 2 (12,67% dhe 20,90% respektivisht pa zonat tregtare dhe hoteliere).

Zgjidhja 3 duket mirë opsioni më i mundshëm, veçanërisht në një skenar "Lowcost".

- Analizat e ndjeshme tregojnë se NPV bie nën 0 për zgjidhjen 1 me një ulje të ardhurave të parkimit në 31% të vlerave të parashikuara, ndërsa për zgjidhjen e 2 dhe 3, duket të jenë më të "fuqishme", me një NPV që nuk arrin një vlerë zero edhe me një ulje prej 50% të të ardhurave të parkimit (vlera neto financiare aktuale e këtyre kushteve teje negative është € 14.75 x 106 dhe 4.03 € x 106 për zgjidhje të 2 dhe 3 respektivisht).
- **Projekti është i mundur nga pikëpamja ekonomike.** Eksternalitetet dhe Përfitimet sociale mund të kompensojnë investimin. NPV ekonomike është pozitive dhe barabartë me 87,53 € x 106, 109,43 € x 106 dhe 45,09 € x 106 respektivisht për Zgjidhjet 1, 2 dhe 3, ndërsa IRR ekonomike është respektivisht 16,5%, 23,8% dhe 28,5%.

Megjithatë, CBA ekonomike është kryer kryesisht në një bazë parametrike duke marrë për llogari përmirësimin e kohës mesatare të hyrjes në terminalin e ri merrespektimin e kohës ekzistuese të afrimit në stacionet e autobusëve interurbane. Kjo sepse qasja kohore është një faktor kritik, dhe për këtë arsye ky përmirësim duhet të mbështetet nga politika të përshtatshme të transportit në vitet e ardhshme.

Analiza është kryer me çmime fikse dhe vlerat e miratuara për faktorët zbritje ishin 5% dhe 5.5% përkatësisht për CBA financiare dhe ekonomike, siç rekomandohet nga Komisioni Evropian për periudhën vitit 2014 - 2020. Flukset e mjeteve monetare janë zgjatur për 20 vjet (që është zgjerimi i sugjeruar i koncesionit të mundshëm), duke filluar nga viti 2020 deri në vitin 2039 (të përfshira). Vitet para vitit 2020 u konsideruan si një periudhë fillestare gjatë së cilës do të zhvillohen procedurat tenderuese, aktivitetet e projektimit dhe fazat e ndërtimit.

(Bashkëlidhur Detyra - Rrëshikimi i kapitalit të terminalit dhe kostot operative).

DETYRA 5-6: LLOGARITJA E KOSTOVE DHE TË ARDHURAVE DHE ANALIZA EKONOMIKE DHE FINANCIARE

1. Hyrje

Efektet e ndërtimit të Terminalit të Ri të Transportit Publik të Tiranës (TPTT) në aspektin e avantazheve dhe disavantazheve u analizuan nëpërmjet një analize kosto përfitim (CBA), d.m.th. me një metodologji të konsoliduar dhe eksperimentuar mire, standard i përbashkët për investimet e çdo madhësie dhe fushe zbatimi.

Dokumentet në vijim konsiderohen si udhëzime referimi në këtë studim të veçantë:

- Udhëzues për analizën kosto-përfitim të projekteve të investimeve, version i Dhjetorit 2014 (i përgatitur nga Komisioni Evropian, Drejtoria e Përgjithshme e Politikave Rajonale);
- Rregullorja për zbatim e Komisionit (BE) 2015/207 e datës 20 janar 2015 dhe në vecanti Aneksin III të saj, Metodologjia për kryerjen e analizës kosto-përfitim.

Kjo CBA, si të tjerat, ka një objektiv të dyfishtë:

- së pari, vlerësimin e realizueshmërisë financiare të projektit, në drejtim të rrjedhës së fluksit të pastër monetar nga pikëpamja e koncesionerit të infrastrukturës, që në rastin tonë do të jetë gjithashtu operatori i saj;
- së dyti, vlerësimin e realizueshmërisë ekonomike të projekteve, në aspektin e kostove dhe përfitimeve nga pikëpamje e përgjithshme (këndvështrimi "social").

Si çdo CBA tjetër, edhe kjo bën krahasimin ndërmjet një ose më shumë skenarëve që mund të quhen "me projekt" dhe që konsideron ndërtimin e TPTT me zgjidhjet e saj të ndryshme teknike (siç shpjegohet në pjesët e tjera të këtij studimi, janë studiuar dy zgjidhje të ndryshme, të referuara si "zgjidhja 1", "zgjidhja 2" dhe zgjidhja 3) dhe një skenar referimi që i cili mund të quhet "pa projekt", që konsideron ruajtjen e gjendjes ekzistuese.

Parametrat e konsideruara në këtë analizë janë ato miratuara zakonisht në CBA. Ekziston një literaturë e gjerë mbi këto tema që mund të përdoret si referencë (dy publikimet e lartpërmendura janë një shembull i tyre), dhe kjo letërsi duhet të përdoret për pasjen e një përshkrimi të plotë të metodologjisë së përbashkët së CBA. Megjithatë, është e rëndësishme të kujtojmë disa pika themelore në lidhje me CBA:

- një karakteristikë themelore e CBA është skontimi. Ky është i rëndësishëm duke qenë se flukset e kostove dhe përfitimeve nuk ndodhin në të njëjtën kohë, dhe kjo përbën dallim kur, pas kryerjes së një investimi (= shpenzimet), duhet të kalojë një kohë e gjatë përpara se të krijohen përfitime. Parimi i përgjithshëm është se një vlerë (për shembull) 100 € e sotme nuk është e njëjta vlerë prej 100 € në kohën e një viti. Kjo është arsyeja pse një

normë skontimi (e shprehur në%) përcaktohet në mënyrë që të përcaktojë amortizimin vjetor në vlerë të parave.

- rezultatet e kësaj CBA janë shprehur me anë të treguesve tradicionale që janë përdorur në këtë fushë. Ato janë (si për CBA financiare dhe atë ekonomike):

Vlera Aktuale Neto (VAN) që është shuma e të gjitha shpenzimeve të zbritura dhe përfitimeve. Kjo shumë pasqyron se sa projekti do të jetë fitimprurës. Nëse VAN është negative, në mënyrë të qartë kostot mbizotërojnë mbi përfitimet dhe projekti nuk është financiarisht apo ekonomikisht i realizueshëm;

Norma e Brendshme e Kthimit (NBK), e cila është norma me të cilën shpenzimet e zbritura barazojnë përfitimet e zbritura, duke dhënë kështu pikën kritike ($VAN = 0$), në atë normë të veçantë. NBK pastaj mund të krahasohet me një linjë bazë apo normë standarde, për shembull, normën aktuale të interesit, ose një normë të caktuar minimale, dhe nëse NBK është më e lartë, atëherë projekti do të jetë fitimprurës;

Raporti kosto-përfitim B / C është i ngjashëm me VAN. Ndërsa VAN është dallimi ndërmjet të gjitha kostove dhe përfitimeve, B / C është raporti (i zbritur) i kostove dhe përfitimeve. Është menduar fillimisht se përfitimet janë përfitimet bruto, dhe shpenzimet janë shpenzimet bruto, që do të thotë se të gjitha shpenzimet (investimet dhe shpenzimet rrjedhëse) shtohen së bashku. Që një projekt të jetë i dobishëm, B / C duhet të kalojë 1.

Konkluzionet e përgjithshme që mund të arrihen nga studimi aktual i TPTT janë:

Projekti është i realizueshëm nga pikëpamja financiare, dmth është i vetë-qëndrueshëm, por me disa risqe të mëdha për zgjidhjen 1. VAN financiare e investimeve është pozitive për të dy zgjidhjet dhe respektivisht është e barabartë me 58,90 € x 106 dhe 86,72 € x 106 dhe 31,73 € x 106 përkatësisht për zgjidhjet 1, 2 dhe 3. Të njëjtat vlera për një investim të kufizuar vetëm në terminal (dmth pa zonat tregtare dhe hotelin) janë përkatësisht 56,59 € x 106 dhe 84,22 € x 106 për zgjidhjet 1 dhe 2 (zgjidhja 3 nuk ofron zona tregtare apo hoteli). VAN financiare e zgjidhjes 3 është më e ulët në krahasim me vlerat e dy zgjidhjeve të tjera, por një zgjidhje e tillë ka më të favorizuar IRR (normën e brendshme të kthimit), dmth. 119,62% kundrejt 11,86% dhe 18,11% përkatësisht për zgjidhjet 1 dhe 2 (12,67% dhe 20,90% përkatësisht pa zona tregtare dhe hoteli). Zgjidhja 3 shfaqet opsioni më i mirë i realizueshëm, vecanërisht brenda një skenari me “kosto të ulët”.

Analiza të ndjeshme tregojnë se VAN ulët nën 0 për zgjidhjen 1 me ulje të të ardhurave nga parkimi prej 31% të vlerave të parashikuara, ndërsa zgjidhja 2 dhe 3 duken të jenë më të "fuqishme", me një VAN që kurrë nuk arrin në zero edhe me një rënie prej 50% të të ardhurave nga parkimi (VAN financiare me këto kushte tepër negative është 14,75 € x 106 dhe 4,03€ x 106 përkatësisht për zgjidhjet 2 dhe 3).

Projekti është i realizueshëm nga pikëpamja ekonomike. Eksternalitetet dhe përfitimet sociale mund të kompensojnë investimin (VAN ekonomike është pozitive dhe e barabartë me 87,53 € x 106 dhe 109,43 € x 106 dhe 45,09€ x 106 përkatësisht për zgjidhjet 1, 2 dhe 3, ndërsa IRR ekonomike respektivisht 16,5%, 23,8% dhe 28,5%. Megjithatë, CBA ekonomike u krye kryesisht në baza parametrike duke marrë parasysh përmirësimin e kohëve mesatare të qasjes në terminalin e ri në lidhje me kohët ekzistuese të qasjes në stacionet e autobusëve interurbanë. Kjo për shkak se koha e qasjes është një faktor kritik, dhe për këtë arsye ky përmirësim duhet të mbështetet nga politika adekuate të transportit në vitet e ardhshme.

Analiza është kryer në çmime fikse dhe vlerat e miratuara për faktorët e zbritjes ishin 5% dhe 5.5% respektivisht për CBA financiare dhe ekonomike, siç rekomandohet nga Komisioni European për periudhën 2014-2020. Flukset e mjeteve monetare u shtrinë për 20 vjet (kohë e cila përfaqëson sugjerimin e zgjerimit të një koncesioni të mundshëm), duke filluar nga viti 2020 deri në vitin 2039 (përfshirë). Vitet përpara vitit 2020 janë konsideruar si një periudhë fillestare gjatë së cilës do të ndodhin procedurat tenderuese, aktivitetet e projektimit dhe fazat e ndërtimit. Kapitujt në vijim përshkruajnë supozimin dhe procedurat e zbatuara hap-pas-hapi për analizën financiare dhe ekonomike kosto / përfitim të TPTT.

2. Analiza Financiare

2.1 Kriteret Operacionale

Kriteret Operative

Analiza financiare u krye nën këndvështrimin e koncesionerit i cili do të kryejë projektin dhe do të menaxhojë terminalin gjatë periudhës së koncesionit (nga 2020-2039). Nuk u morën në konsideratë hipotezat e një Partneriteti Publik-Privat, me një pjesë të qytetit të Tiranës brenda shoqërisë që do të menaxhojë TPTT, duke qenë se Administrata e qytetit nuk është e interesuar në këtë eventualitet. Vlera të ndara janë llogaritur për të gjithë investimin (parking + zona tregtare + hotel) dhe për investime të pjesshme (parkim vetëm nga njëra anë dhe zona tregtare+ hotel si një investim i vetëm nga ana tjetër).

Është e rëndësishme të kujtojmë se në këtë paragraf dhe në ato në vijim fjala "parking" përfshin në aspektin e koston dhe të ardhurave edhe ato aktivitete plotësuese që janë pjesë e asaj kuote të investimeve, dmth:

atë pjesë të aktiviteteve tregtare që lidhen funksionalisht me vetë terminalin: biletaritë, dyqanet ushqimore, kafe-restorant, etj moteli, që funksionon në vetë terminalin, duke u rezervuar për shoferët e autobusëve.

Në anën tjetër, fjalët "tregtare" dhe "hotel" i referohen respektivisht:

Zonave shtesë të pazarit dhe zyrat që nuk janë rreptësisht funksionale në aktivitetet e terminalitvetë hotelin (dhoma + aktivitetet plotësuese: bar / restorant, dhomë konferencash)

Shpenzimet kapitale dhe shpenzimet operative (OPEX and CAPEX) janë llogaritur për të trija zgjidhjet 1, 2 dhe 3, në bazë të karakteristikave teknike të investimit dhe në bazë të kërkesës së trafikut që do të jetë me interes për terminalin e ri.

CAPEX kryesore janë paraqitur në dy tabelat e mëposhtme.

2.7 Kostot e Investimit

2.2.1.CAPEX

Shpenzimet Kapitale (CAPEX) kryesore për të tre zgjidhjet janë paraqitur në tabelat emëposhtme.

Tabela -4 – Kostot e investimit për zgjidhjen 1 (vetëm ndërtimi)

PUNIMET KRYESORE	Njësia	m ³	m ²	Kosto	Kosto	Kosto	Forca	Totali
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				për m ²	për m ³	për artikull	punëtore në %	
Stacion tren/tramvajë			5.900	€ 1.100				€ 6.490.000
Kantjeri i terminalit			21.750	€ 55			25%	€ 1.196.250
Vendgrumbullimi i tramvajëve			5.000	€ 350				€ 1.750.000
Parkimi nëntokësor		110.000	29.500	€ 800			25%	€ 23.600.000
Rrugët			18.300	€ 73				€ 1.335.900
Garazhi dhe stacioni i shërbimit të karburantit			1.300	€ 350			30%	€ 455.000
Strehat			14.000	€ 350				€ 4.900.000
Urat		4.200	1.200		€ 160		20%	€ 672.000
Dhoma teknike për inspektimin e pompave		350	117	€ 400			30%	€ 46.667
Ndarës i naftës/fluidit	nr.	1				€ 42.000		€ 42.000
Ndërtesat e udhëtarëve			6.200	1.100				€ 6.820.000
ashensorë 8 persona	nr.	12				€ 35.000		€ 420.000
bujtinë-motel			2.560	600			30%	€ 1.536.000
TOTALI I PARKIMIT								€ 49.263.817
QENDËR TREGTARE+ZYRË			6.700	1.100			25%	€ 7.370.000
hotelH			2650	1100			0,3	€ 2.915.000
Ashensorë 8 persona	nr.	2				€ 35.000		€ 70.000
TOTALI I HOTELIT			2650	1100			0,3	€ 2.985.000
Zbutje mjedisore:								
pemë	nr.	320				€ 200		€ 64.000
bar			15.700	€ 1,20				€ 18.840
Punime për sistemin e kullimit	nr.	1				€ 16.500		€ 16.500
Prishje ndërtesash dhe gjërmim		40.500	9.000	€ 180			10%	€ 1.620.000
Shkallë lëvizëse	nr.	12				€ 57.500		€ 690.000
ashensorë 5 persona	nr.	19				€ 22.000		€ 418.000
hapësirë publike			7.350	€ 55				€ 404.250
SHPENZIME TË PËRBASHKËTA TOTALE								€ 3.231.590
TOTALI								€ 62.850.407

Tabela -2 – Kostot e investimit për zgjidhjen 2 (vetëm ndërtimi)

PUNIMET KRYESORE	njësia	m ³	m ²	Kosto për m ²	Kosto për m ³	Kosto per artikull	Forca punëtorë në %	Totali
stacion tren/tramvajë			5.900	€ 1.100				€ 6.490.000
kantjeri i terminalit			21.750	€ 55			25%	€ 1.196.250
vendgrumbullimi i tramvajëve			5.000	€ 350				€ 1.750.000
parkimi nëntokësor			10.800	€ 375			25%	€ 4.050.000
rrugë			18.300	€ 73				€ 1.335.900
garazhi e stacioni i shërbimit të karburantit			1.300	€ 350			30%	€ 455.000
strehat			14.000	€ 350				€ 4.900.000
urat		4.200	1.200		€ 160		20%	€ 672.000
dhoma tek.për inspektimin e pompave		350	117	€ 400			30%	€ 46.667
ndarës i naftës/fluidit	nr.	1				€ 42.000		€ 42.000
ndërtesat e udhëtarëve			6.200	€ 1.100				€ 6.820.000

ashensorë 8 persona	nr.	12				€ 35.000		€ 420.000
bujtinë-motel			2.560	600			30%	€ 1.536.000
TOTALI I PARKIMIT								€ 29.713.817
QENDËR TREGTARE+ZYRË			6.450	€ 1.100			25%	€ 7.095.000
hotel			2650	1100			0,3	€ 2.915.000
ashensorë 8 persona	nr.	2				€ 35.000		€ 70.000
TOTALI I HOTELIT			2650	1100			0,3	€ 2.985.000
Zbutje mjedisore:								
pemë	nr.	320				€ 200		€ 64.000
bar			18.700	€ 1,20				€ 22.440
Punime për sistemin e kullimit	nr.	1				€ 16.500		€ 16.500
Prishje ndërtesa dhe gjërmim dheu		40.500	9.000	€ 180			10%	€ 1.620.000
Shkallë lëvizëse	nr.	12				€ 57.500		€ 690.000
ashensorë 5 persona	nr.	19				€ 22.000		€ 418.000
hapësirë publike			2.000	€ 55				€ 110.000
SHPENZIME TË PËRBASHKËTA TOTALE								€ 2.940.940
TOTALI								€ 42.734.757

Tabela -3 – Kostot e investimit për zgjidhjen 3 (vetëm ndërtimi)

PUNIMET KRYESORE	Njesi	m ³	m ²	Kosto perm ³	Kosto perm ³	Kosto per artikull	Forca punëtor e në %	Total
Parkimi			2,200	€ 375				€ 825,000
Rruget			18,300	€ 73				€ 1,335,900
Parkimet dhe furnizimi me strehat			1 300	€ 350			30%	€ 455,000
			17,000	€ 350				€ 5,950,000
Urat		3.360	727		€ 160		20%	€ 537,600
Dhoma teknike per kontrollin e pompave		350	117	€ 400			30%	€ 46,667
Ndarës i naftës/fluidit	no.	1				€42.000		€ 42,000
Godinat e udhetareve			6	€ 1,100				€ 6.820.000
Ashensor per 8persona	no.	5				€35,000.		€ 175,000
TOTALI I PARKIMIT			40.247					€ 9,367,167

Zbutje mjedisore:								
Peme	no.	485				€ 200		€ 97,000
Bar			47,400	€ 1.2				€ 56,880
Punime për sistemin e kullimit	no.	1				€ 33,000		€ 33,000
Zona gjelber punime ndërtimore			38,000			€ 40		€ 1,520,000
Prishje ndërtesa dhe gjërmim dheu		200	400	€ 180			10%	€ 72,000
Shkalle levizese	no.	6				€ 57,500		€ 345,000
Ashensor per5persona	no.	10				€ 22,000		€ 220,000

Hapsira publike			4,000	€ 55				€ 220,000
SHPENZIME TË PËRBASHKËTA TOTALE								€ 2,563,880
TOTAL								€ 11,931,047

Siç mund të vërehet, ndërsa disa shpenzime janë caktuar në mënyrë të qartë për një nga tre komponentët e infrastrukturës (parking, zona tregtare ose zonë hotel) të tjera janë të përbashkëta.

Shpenzimet plotësuese të tilla si anketat, vepra të përkohshme, të paparashikuarat, projektimit dhe lidhjet për furnizimin janë paraqitur në tabelën e ardhshme që në të njëjtën kohë shpërndan shpenzimet e përbashkëta të çdo një nga tre komponentët kryesorë të infrastrukturës. Shpenzimet kryesore e ndërtimit të paraqitura brenda tabelen e ardhshme janë pak të ndryshme nga atopaqitur më parë, për shkak se ato përfshijnë shpenzimet e përbashkëta të caktuara proporcionalisht me vlerat e komponentëve kryesorë.

Tabela 2-4 - Shpenzimet e Përgjithshme të Investimit

		Kosto Kryesore e ndërtimit(€)	Kosto Shtese(€)						Gjitheshej kosto shtese(€)
			studimi	Punime provizore	Rezerve	Projekti mi	Utilities	Sistemi I kontrolltauto matik	
Zgjidhja1	terminali	51.934.123	129.835	1.038.682	10.386.825	1.558.024	1.038.682	295.600	14.447.648
	tregtia	7.769.485	19.424	155.390	1.553.897	233.085	155.390		2.117.185
	hotel	3.146.800	7.867	62.936	629.360	94.404	258.953		1.053.520
	TOTAL	62.850.407	157.126	1.257.008	12.570.081	1.885.512	1.453.025	295.600	17.618.353
Zgjidhja 2	terminali	31.909.800	79.775	638.196	6.381.960	957.294	638.196	295.600	8.991.021
	tregtia	7.619.352	17.738	141.900	1.419.000	212.850	141.900		1.933.388
	hotel	3.205.605	7.492	59.933	599.333	89.900	258.953		1.015.611
	TOTAL	42.734.757	105.005	840.029	8.400.293	1.260.044	1.039.049	295.600	11.940.020
Zgjidhja3	terminali	11,931,047	29,828	238,621	2,386,209	357,931	238,621	295,600	3,546,810
	TOTAL	11,931,047	29,828	238,621	2,386,209	357,931	238,621	295,600	3,546,810

Më sipër Tabela 2-4 –Llogaritja e shpenzimeve shtesë si përqindje e principalit të kostosë ndërtimit, duke pranuar vlerat e mëposhtme:

- Sondazhe 0, 25%
- Punët e përkohshme 2, 00%
- Fondi Rezervë 20, 00%
- Projekti 3, 00%
- Lidhjet për furnizimet 2, 00%

Futja e këtyre shpenzimeve brënda vlerës monetare që do të investohet është planifikuar sipas kriterevetë mëposhtme:

- Viti 2017: shpenzimet e projektimit
- Viti 2018: 1/4 e kostove të ndërtimit, duke përfshirë shpenzimet plotësuese (përveç projektit)
- Viti 2019: 3/4 e kostove të ndërtimit, duke përfshirë shpenzimet plotësuese (përveç projektit)

Shpenzimet e mirëmbajtjes të infrastrukturës janë planifikuar edhe për 5 vjet pas fillimit të aktiviteteve të terminalit, dmth në vitet 2025, 2030 dhe 2035.

Këto kosto të jashtëzakonshme të mirëmbajtjes janë paraqitur në tabelën vijuese.

Tabela 2-5 - Shpenzimet Ekstra të Mirëmbajtjes (çdo pesë vjet)

Komponenti	Kosto per njesi (€*year/m ²)	Zgjidhja1		Zgjidhja2		Zgjidhja 3	
		Sasia	Total	Sasia	Total	sasia	Total
		(m ²)	(€)	(m ²)	(€)	(m ²)	(€)
Hapsira e parkimit	30	47.677	1.430.300	28.977	869.300	19.528	585.840
Siperfaqe e rrugeve	10	47.400	474.000	42.050	420.500	42.050	420.500
Zona tregtare	50	6.700	335.000	6.450	322.500	0	0
Zona e hotelit	50	2.650	132.500	2.650	132.500	0	0

2.8 OPEX

2.8.1 SHPENZIMET OPERATIVE

Kostot rrjedhëse u llogaritën mbi bazën që pronari/koncesionari i infrastrukturës do të menaxhojë drejtpërdrejt vetëm funksionin e tij kryesor (domethënë funksionin e parkimit dhe terminalin) ndërsa aktivitete të tjera paralele do të menaxhohen me anë të qerasë (me përjashtim të disa aktiviteteve si për shembull siguria).

Tabela 2-6 - Kostot e Personelit Kryesore (Organizimi dhe Menaxhimi Terminalit) për të gjitha Zgjidhjet

Pozicioni	Numri	Paga mujore mesatare (€)	Kosto vjetore(€)
Kryeshefi Ekzekutiv	1	1.100,00	13.200,00
Drejtori	1	1.000,00	12.000,00
Menageri I Marketingut	1	634,97	7.619,64
Menageri I transportit	1	634,97	7.619,64
Pergjegjesi per Financat, Burimet njerezore dhe Tregtine	3	634,97	22.858,92
Pergjegjesi per Mirembajtjen dhe Sigurine	1	634,97	7.619,64
Sekretare	5	362,97	21.778,20
Puneonjesite Administrates	10	393,85	47.262,00
TOTAL	23		134.604,36
Personeljo administrativ per operimin e parkimit (Zgjidhja1.1 &2)	6	393,85	28.357,00
TOTAL(Zgjidhja1 dhe 2)	29		168.315,24

Personel jo administrativ per operimin e parkimit (Zgjidhja 3)	4	393,85	18.905,80
TOTAL(Zgjidhja3)	27		158.862,84

Kostot e tjera përfaqësohen nga mirëmbajtja, pastrimi, konsumi e furnizimit dhe shpenzimet e sigurimit. Në këtë rast ekzistojnë disa dallime në mes zgjidhjeve. Ndërsa disa kosto që kanë të bëjnë vetëm me një pjesë të investimit (parkimi/tregtia) disa të tjera janë të përbashkëta mes komponentëve të ndryshëm.

Një përmbledhje e kostove vjetore shtesë është paraqitur në tabelën në vijim.

Tabela 2-7 - Kostot Vjetore Shtesë (pa mirëmbajtjen)

Komponenti	Artikulli	Zgjidhja 1 (€/vit)	Zgjidhja 2 (€/vit)	Zgjidhje3 (€/vit)
Parkimi	Energj	806.212	489.995	489,995
	Uje	37.255	22.643	22,643
	Pastrim	178.311	108.373	108,373
Tregtia	Energji	113.297	109.07	0
	Uje	5.235	5.04	0
	Pastrim	25.058	24.123	0
Total terminali	Ruajtja	94.524	94.524	94,524

Shpenzimet e mirëmbajtjes nuk janë të përfshira në tabelën e mësipërme. Shpenzimet e tilla janë vlerësuar si të1% e të ardhurave vjetore për mirëmbajtjen e zakonshme të parkimit dhe zonave tregtare. Vlerat në fillimit të vitit 2020 janë si më poshtë për zgjidhje 1 dhe 2:

- Parkimi: 90.450 (€ / vit) për zgjidhjen e 1 / 88.182 (€ / vit) për zgjidhjen e 2
- Tregtia 10,343 (€ / vit).

Zgjidhja 3 nuk ka një zonë të caktuar tregtare dhe shpenzimet për mirëmbajtjen e parkingut janë 28,154 (€ / vit)

2.4 TË ARDHURAT VJETORE

Të ardhurat u llogaritën për të gjithë kohëzgjatjen e koncesionit, mbi bazën e kritereve të mëposhtme:

- në lidhje me zonën e parkimit, Koncesionari ose autoriteti që do të menaxhojë infrastrukturën do të menaxhojë drejtpërdrejt dhe do të ofrojë shërbimet: të ardhurat do të përfaqësohen nga pagesat dhe tarifat e parkimit të paguara nga operatorët e autobusëve
- në lidhje me zonën tregtare (zgjidhja 1), hapësirat tregtare do t'i jepen me qera operatorit tregtar: të ardhurat do të përfaqësohen nga tarifat e qirasë
- në lidhje me zonën e hotelit (zgjidhja 1), shërbimi i hotelit dhe aktivitetet e lidhura me të (bar, restorant etj) do të menaxhohen sipas një skeme franchising (autorizim për operim)

(operatori do të paguajë një tarifë operimi për hoteleri, kostot e këtyre tarifave u përfshinë në shpenzimet e përgjithshme të hotelit).

Të ardhurat për përdorimin e vendeve të parkimit mund të llogariten për vitet 2015, 2020, 2025 dhe 2035, siç paraqitet në Tabelën e mëposhtme. Viti 2015 është teorik për shkak se i paraprin vitit realist të funksionimit.

Tabela 2-8 - Të ardhurat vjetore ngaslotet e parkimit / Zgjidhja 1

	Ye			
	2015	2020	202	2035
	(€/ye			
Parkim i	398.790	398.790	398.790	398.790
Tarifat	4.034.940	6.796.759	9.397.721	18.158.912
TOTAL	4.433.730	7.195.549	9.796.511	18.557.702

Tabela 2-9 - Të ardhurat vjetore nga slotet e parkimit / Zgjidhja 2

	Ye			
	2015	2020	2025	20
	(€/yea			
Parkim i nates	171.990	171.990	171.990	171.990
Tarifat	4.034.940	6.796.759	9.397.721	18.158.912
TOTAL	4.206.930	6.968.749	9.569.711	18.330.902

Tabela 2-10 - Të ardhurat vjetore nga slotet e parkimit / Zgjidhja 3

	Years			
	2015	2020	2025	20
	(€/year			
Parkim i nates	64.260	64.260	64.260	64.260
Tarifat	2.004.090	3.373.825	4.678.863	11.239.667
TOTAL	2.068.350	3.438.085	4.743.123	11.303.927

Tabela 2-12 – Te ardhurat e përditshme nga nisjet nga terminali (zgjidhja 1 dhe 2)

Viti	2015						2020						2025						2035					
Menyra eTransportit	Number of slots	Singleticket fare	Incomes		Singleticket fare	Incomes	Number of slots	Singleticket fare	Incomes		Singleticket fare	Incomes	Number of slots	Singleticket fare	Incomes		Singleticket fare	Incomes	Number of slots	Singleticket fare	Incomes		Singleticket fare	Incomes
		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day
Furgon	25	0	0,00	149	0	0,00	25	0	0,00	251	0	0,00	25	0	0,00	348	0	0,00	25	0	0,00	669	0	0,00
Autobuz	57	0	0,00	433	6	2.727,90	57	0	0,00	729	6	4.592,70	57	0	0,00	1.011	6	6.369,30	57	0	0,00	1.942	6	12.234,60
Autobuz I Bashkise				250	6	1.575,00				422	6	2.658,60				584	6	3.679,20				1.122	6	7.068,60
Bus park intercity (sol. 1)	120	0	0,00	0	0	0,00	120	0	0,00	0	0	0,00	120	0	0,00	0	0	0,00	120	0	0,00	0	0	0,00
Bus park intercity (sol. 2)	34	0	0,00	118	18	2.065,00	34	0	0,00	199	18	3.482,50	34	0	0,00	276	18	4.830,00	34	0	0,00	530	18	9.275,00
Autobuz nderkombetar	30	0	0,00	1.020	0	0,00	30	0	0,00	1.430	0	0,00	30	0	0,00	2.004	0	0,00	30	0	0,00	6.047	0	0,00
K&R	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00
Car Parking (short)	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00
Car Parking shopping area	20	0	0,00	146	0,4	51,10	20	0	0,00	204	0,4	71,48	20	0	0,00	286	0,4	100,21	20	0	0,00	1.814	0,4	634,96
Taxi (4+1)	12	0	0,00	162	0	0,00	12	0	0,00	214	0	0,00	12	0	0,00	283	0	0,00	12	0	0,00	492	0	0,00
Urban buses	0	0	0,00	101	1	141,40	0	0	0,00	170	1	238,28	0	0	0,00	179	1	250,53	0	0	0,00	283	1	396,85
Viti	2015						2020						2025						2035					
Mode ofTransport	Numberofslots	Single ticketfare	Incomes		Single ticketfare	Incomes	Numberofslots	Single ticketfare	Incomes		Single ticketfare	Incomes	Numberofslots	Single ticketfare	Incomes		Single ticketfare	Incomes	Numberofslots	Single ticketfare	Incomes		Single ticketfare	Incomes
		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day
Furgon Taksii(8+1)	25	0	0,00	149	0	0,00	25	0	0,00	251	0	0,00	25	0	0,00	348	0	0,00	25	0	0,00	669	0	0,00
Autobuz	57	0	0,00	433	6	2.727,90	57	0	0,00	729	6	4.592,70	57	0	0,00	1.011	6	6.369,30	57	0	0,00	1.942	6	12.234,60
Autobuz I Bashkise				250	6	1.575,00				422	6	2.658,60				584	6	3.679,20				1.122	6	7.068,60
Parkim Autobuz ndergytetas	120	0	0,00	0	0	0,00	120	0	0,00	0	0	0,00	120	0	0,00	0	0	0,00	120	0	0,00	0	0	0,00
Bus	34	0	0,00	118	18	2.065,00	34	0	0,00	199	18	3.482,50	34	0	0,00	276	18	4.830,00	34	0	0,00	530	18	9.275,00

Autobuz nderkombetar	30	0	0,00	1.020	0	0,00	30	0	0,00	1.430	0	0,00	30	0	0,00	2.004	0	0,00	30	0	0,00	6.047	0	0,00
K&R	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00
Parkim makine(l shkurter)	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00
Parkim makine ne zonen tregtare	20	0	0,00	146	0,4	51,10	20	0	0,00	204	0,4	71,48	20	0	0,00	286	0,4	100,21	20	0	0,00	1.814	0,4	634,96
Taksi (4+1)	12	0	0,00	162	0	0,00	12	0	0,00	214	0	0,00	12	0	0,00	283	0	0,00	12	0	0,00	492	0	0,00
Autobus Urban	0	0	0,00	101	1	141,40	0	0	0,00	170	1	238,28	0	0	0,00	179	1	250,53	0	0	0,00	283	1	396,85

Tabela 2-13 - Te ardhurat e përditshme nga nisjet nga terminali (zgjidhje 3)

Viti	2015						2020						2025											
Menyra e Transportit	Numri i shteteve	Single ticketfare	Te ardhurat		Single ticketfare	Te ardhurat	Number of slots	Single ticketfare	Te ardhurat		Single ticketfare	Te ardhurat	Number of slots	Single ticketfare	Te ardhurat		Single ticketfare	Te ardhurat	Number of slots	Single ticketfare	Te ardhurat	Number of slots	Single ticketfare	Te ardhurat
		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day
Furgon Taksii(8+1)	25	0	0,00	149	1	208,60	25	0	0,00	251	1	351,40	25	0	0,00	348	1	487,20	25	0	0,00	669	1	936,60
Autobuz nderqytetas	57	0	0,00	433	2	866,00	57	0	0,00	729	2	1.458,00	57	0	0,00	1.011	2	2.022,00	57	0	0,00	1.942	2	3.884,0
Autobuz I Bashkise	0	0	0,00	250	1	175,00	0	0	0,00	422	1	295,40	0	0	0,00	584	1	408,80	0	0	0,00	1.122	1	785,40
Bus parkintercity(sol.1)	0	0	0,00	0	0	0,00	0	0	0,00	0	0	0,00	0	0	0,00	0	0	0,00	0	0	0,00	0	0	0,00
Bus parkintercity(sol.2)	34	0	0,00	118	18	2.065,00	34	0	0,00	199	18	3.482,50	34	0	0,00	276	18	4.830,00	34	0	0,00	530	18	9.275,00
Autobuz nderkombetar	30	0	0,00	1.020	0	0,00	30	0	0,00	1.430	0	0,00	30	0	0,00	2.004	0	0,00	30	0	0,00	6.047	0	0,00
K&R	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00
Parkim makine(l shkurter)	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00
Parkim makine ne zonen tregtare	20	0	0,00	146	0,4	51,10	20	0	0,00	204	0,4	71,48	20	0	0,00	286	0,4	100,21	20	0	0,00	1.814	0,4	634,96
Taksi(4+1)	12	0	0,00	162	0	0,00	12	0	0,00	214	0	0,00	12	0	0,00	283	0	0,00	12	0	0,00	492	0	0,00
Autobuz urban	0	0	0,00	0	1	0,00	0	0	0,00	0	1	0,00	0	0	0,00	0	1	0,00	0	0	0,00	0	1	0,00

Tabela 2-14 - Te ardhurat e përditshme nga arritjet ne terminal (zgjidhje 1 dhe 2)

YEAR	2015						2020						2025						2035					
Mode ofTransport	Numberofslots	Single ticketfare	Incomes		Single ticketfare	Incomes	Numberofslots	Single ticketfare	Incomes		Single ticketfare	Incomes	Numberofslots	Single ticketfare	Incomes		Single ticketfare	Incomes	Numberofslots	Single ticketfare	Incomes		Single ticketfare	Incomes
		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day
Taxivan(8+1)	25	0	0,00	149	4	521,50	25	0	0,00	251	4	878,50	25	0	0,00	348	4	1.218,00	25	0	0,0	669	4	2.341,50
Intercitybuses	57	6	359,10	433	6	2.727,90	57	6	359,10	729	6	4.592,70	57	6	359,10	1.011	6	6.369,30	57	6	359,1	1.942	6	12.234,60
Municipalbuses				250	6	1.575,00				422	6	2.658,60				584	6	3.679,20				1.122	6	7.068,60
Bus parkintercity(sol.1)	120	6,3	756,00	0	0	0,00	120	6,3	756,00	0	0	0,00	120	6,3	756,00	0	0	0,00	120	6,3	756,0	0	0	0,00
Bus parkintercity(sol.2)	34	6,3	214,20	118	18	2.065,00	34	6,3	214,20	199	18	3.482,50	34	6,3	214,20	276	18	4.830,00	34	6,3	214,2	530	18	9.275,00
internationalbus	30	0	0,00	1.020	0	0,00	30	0	0,00	1.430	0	0,00	30	0	0,00	2.004	0	0,00	30	0	0,0	6.047	0	0,00
K&R	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,0	0	0	0,00
Car Parking(short stay)	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,0	0	0	0,00
Car Parkingshopping area	20	0	0,00	146	0,0	0,00	20	0	0,00	204	0,0	0,00	20	0	0,00	286	0,0	0,00	20	0	0,0	1.814	0,0	0,00
Taxi (4+1)	12	0	0,00	162	0	0,00	12	0	0,00	214	0	0,00	12	0	0,00	283	0	0,00	12	0	0,0	492	0	0,00
Urbanbuses	0	0	0,00	101	0	0,00	0	0	0,00	170	0	0,00	0	0	0,00	179	0	0,00	0	0	0,0	283	0	0,00

Tabela 2-15 - Te ardhurat e përditshme nga arritjet në terminal (zgjidhja 3)

Viti	2015						2020						2025						2025					
Menyra e Transportit	Numberofslots	Single ticketfare	Incomes		Single ticketfare	Incomes	Numberofslots	Single ticketfare	Incomes		Single ticketfare	Incomes	Numberofslots	Single ticketfare	Incomes		Single ticketfare	Incomes	Numberofslots	Single ticketfare	Incomes		Single ticketfare	Incomes
		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day		(€)	€/da		(€)	€/day
Taxivan(8+1)	25	0	0,00	149	1	208,60	25	0	0,00	251	1	351,40	25	0	0,00	348	1	487,20	25	0	0,0	669	1	936,60
Intercitybuses	57	0	0,00	433	2	866,00	57	0	0,00	729	2	1.458,00	57	0	0,00	1.011	2	2.022,00	57	0	0,0	1.942	2	3.884,00
Municipal buses	0	0	0,00	250	1	175,00	0	0	0,00	422	1	295,40	0	0	0,00	584	1	408,80	0	0	0,0	1.122	7	7.854,00
Bus parkintercity(sol.1)	0	2,1	0,00	0	0	0,00	0	2,1	0,00	0	2	0,00	0	6,3	0,00	0	2	0,00	0	2,1	0,0	0	2	0,00
Bus parkintercity(sol.2)	34	6,3	214,20	118	18	2.065,00	34	6,3	214,20	199	18	3.482,50	34	6,3	214,20	276	18	4.830,00	34	6,3	214,2	530	18	9.275,00
internationalbus	30	0	0,00	1.020	0	0,00	30	0	0,00	1.430	0	0,00	30	0	0,00	2.004	0	0,00	30	0	0,0	6.047	0	0,00
K&R	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,00	0	0	0,00	90	0	0,0	0	0	0,00
CarParking(short stay)	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,00	0	0	0,00	500	0	0,0	0	0	0,00
CarParkingshoppingarea	20	0	0,00	146	0,0	0,00	20	0	0,00	204	0,0	0,00	20	0	0,00	286	0,0	0,00	20	0	0,0	1.814	0,0	0,00
Taxi (4+1)	12	0	0,00	162	0	0,00	12	0	0,00	214	0	0,00	12	0	0,00	283	0	0,00	12	0	0,0	492	0	0,00
Urbanbuses	0	0	0,00	0	0	0,00	0	0	0,00	0	0	0,00	0	0	0,00	0	0	0,00	0	0	0,0	0	0	0,00

Vlerat e Tabelës së mësipërme bazohen në një supozim kritik: i gjithë trafiku i autobusëve që i referohet qytetit të Tiranës do të ketë pikën e tyre të nisjes ose origjinën brenda terminalit, pa ndalesa të tjera shtesë brenda qytetit. Kjo hipotezë duhet të jepet nga administrata bashkiake me politikat e përshtatshme të zbatimit³. Vetëm një përjashtim merret në konideratë: për zgjidhjen 3 shërbimet e autobusëve për Shqipërinë Lindore (East Albania) do të përdorin një terminal të vecantë.

Me qëllim llogaritjen e të ardhurave të mësipërme, Konsulenti vlerësoi “gatishmërinë për të paguar” të shprehur nga operatorët për përdorimin e terminalit të ri. Të ardhurat ndahen në dy pjesë: një pjesë e parë që vjen nga parkimi “afatgjatë” i autobusëve dhe një pjesë e dytë që vjen nga vendet e përdorimit “afatshkurtër” të nisjeve/mbërritjeve. Pjesa e dytë përfshin edhe kontributin e dhënë nga veturat-taksi (4 pasagjerë maksimumi + 1 shofer) dhe furgonat-taksi (8 pasagjerë+ 1 shofer).

Të ardhurat vjetore për vitet e ndërmjetme për vitet mbi 2025 u llogaritën duke përdorur interpolimin linear.

Të ardhurat nga zonat tregtare dhe të hoteleve/moteleve u llogaritën mbi bazën e çmimeve të tregut lokal. Të ardhurat u llogaritën si më poshtë (për të dyja Zgjidhjet 1 & 2):

- për zonën e parkimit:
 - të ardhurat për pjesën tregtare të zonës së parkimit do të fillojnë me një vlerë prej 0,88 milionë € në vit në fillim të periudhës së analizës (viti 2020) deri në një vlerë përfundimtare prej 1,06 milionë € në vit në fund (viti 2039)
 - të ardhurat për pjesën e moteleve të zonës së parkimit (zgjidhja 1) janë rastësisht të ngjashme me ato të mëparshme dhe do të fillojnë me një vlerë prej 0,89 milionë € në vit në fillim të periudhës së analizës deri në një vlerë përfundimtare prej 1,07 milionë € në vit në fund (viti 2039)
 - pika e karburantit do të japë gjithashtu një kontribut të vogël për të ardhurat e zonës së parkimit, kjo shumë u konsiderua fikse për të gjithë periudhën e analizës, dmth 0,08 milionë € në vit.
- për zonën tregtare dhe të hoteleve (zgjidhja 1):
 - të ardhurat për zonën tregtare plus pronat e patundshme (qeraja e zyrave) do të fillojnë me një vlerë prej 1,03 milionë € në vit në fillim të periudhës së analizës (viti 2017) deri në një vlerë përfundimtare prej 1,25 milionë € në vit në fund (viti 2039)
 - të ardhurat për hotelin do të fillojnë me një vlerë prej 0,86 milionë € në vit në fillim të periudhës së analizës deri në një vlerë përfundimtare prej 1,04 milionë € në vit në fund (viti 2039)

2.9 Llogaritja e parametrave financiare CBA

Analiza financiare është kryer për të gjitha zgjidhjet, duke miratuar hipotezën se qyteti i Tiranës nuk do të bëjë asnjë disbursim për këtë infrastrukturë, përveç dhënies në përdorim të truallit pronesi e Bashkise, për të gjithë kohëzgjatjen e kontrates së koncesionit. Në kuadër të kësaj

skeme koncesionari do të mbajë në buxhetin e vet si të ardhura të plotë të gjitha të ardhurat që vijnë nga shitja e shërbimeve të terminalit. Hipoteza e një investimi të përbashkët në mes Bashkise të qytetit dhe një koncesionari privat nuk është konsideruar, sepse kjo mundësi është konsideruar e pa interes nga ana e përfaqësuesve të komunave.

Skenari i parë konsiderohet si investim i plotë (zona parkimit + tregtare dhe hoteli)

Skenarët e dytë dhe të tretë konsiderohen vetëm investime të pjesshme (respektivishtvetem parkingu, zona tregtare dhe hoteli)

Rezultatet janë prezantuar në tabelat e mëposhtme:

Tabela 2-15 - Rezultatet e analizës financiare / investimet e përgjithshme

Indikatore	Zgjidhja1	Zgjidhja 2	Zgjidhja 3
VAN (milionë €)	58,90	86,72	31,73
NBK	11,86%	18,11%	19,62%
Raporti B/C	1,56	2,17	2,34

Tabela 2-16 - Rezultatet e analizës financiare / vetem zona e parkimit

Indikatore	Zgjidhja 1	Zgjidhja 2	Zgjidhja 3
VAN (milionë €)	56,59	84,22	31,73
NBK	12,67%	20,90%	19,62%
Raporti B/C	1,67	2,54	2,34

Tabela 2-17 - Rezultatet e analizës financiare / vetem hoteli dhe zona tregtare

	Zgjidhja 1	Zgjidhja 2	Zgjidhja 3
VAN (milionë €)	2,431	2,50	notav.
NBK	7,00%	7,17%	notav.
Raporti B/C	1,12	1,13	notav.

Rezultatet e mësipërme tregojnë vlerat pozitive për të gjitha zgjidhjet. Megjithatë, zgjidhja 3 duket të jenë më të besueshme në krahasim me 1 dhe 2, për investimet, si të përgjithshme, që ka vlerën më të lartë të NBK. Zgjidhja 3 ka vlerë më të ulët të NPV, por kjo është pasojë e shumës më të vogël të investimeve. Rezultatet e analizave të ndjeshmërisë (skenari për "zonën e parkimit vetëm") janë paraqitur më poshtë.

Tabela -58 - Rezultatet e analizës financiare / analizës së sensitivitetit të bazuara në të ardhurat e parkimit (+/- 50% rritje dhe ulje) / Vetëm zona e parkimit

Faktori i korrigjimit	Zgjidhja 1			Zgjidhja 2			Zgjidhja 3		
	NBK	VAN (million)	NBK	NBK	VAN (milionë)	NBK	NBK	VAN (milion)	NBK
0,5	2,50%	-13,97	8,56%	8,56%	8,56%	1,27	7,47%	4,03	1,17
0,6	5,02%	0,14	11,44%	11,44%	11,44%	1,52	10,40%	9,57	1,40

0,7	7,21%	14,25	14,04%	14,04%	14,04%	1,78	12,99%	15,11	1,64
0,8	9,18%	28,37	16,45%	16,45%	16,45%	2,03	15,35%	20,65	1,87
0,9	10,98%	42,48	18,73%	18,73%	18,73%	2,29	17,55%	26,19	2,11
1	12,67%	56,59	20,90%	20,90%	20,90%	2,54	19,62%	31,73	2,34
1,1	14,27%	70,70	22,99%	22,99%	22,99%	2,79	21,59%	37,27	2,57
1,2	15,79%	84,82	25,01%	25,01%	25,01%	3,05	23,49%	42,81	2,81
1,3	17,25%	98,93	26,99%	26,99%	26,99%	3,30	25,32%	48,35	3,04
1,4	18,67%	113,04	28,92%	28,92%	28,92%	3,56	27,10%	53,89	3,28
1,5	20,04%	127,16	30,81%	30,81%	30,81%	3,81	28,83%	59,44	3,51

Tabela -19 - Rezultatet e analizës financiare / analizës së sensitivitetit të bazuara në të ardhurat e parkimit (+/- 50% rritje dhe ulje) / Vetëm zona e parkimit.

Faktori I korrigjimit	Zgjidhja 1			Zgjidhja 2			Zgjidhja 3		
	NBK	VAN (milione €)	B/C	NBK	VAN (milione €)	B/C	NBK	VAN (milione €)	B/C
0,5	24,21%	87,31	2,62	37,41%	103,25	3,89	34,00%	39,37	3,46
0,6	20,68%	81,17	2,35	32,22%	99,45	3,52	29,57%	37,85	3,16
0,7	18,01%	75,02	2,13	28,35%	95,64	3,21	26,23%	36,32	2,90
0,8	15,88%	68,88	1,95	25,34%	91,83	2,95	23,59%	34,79	2,69
0,9	14,14%	62,74	1,80	22,91%	88,03	2,73	21,43%	33,26	2,50
1	12,67%	56,59	1,67	20,90%	84,22	2,54	19,62%	31,73	2,34
1,1	11,41%	50,45	1,56	19,19%	80,42	2,37	18,07%	30,20	2,20
1,2	10,30%	44,30	1,46	17,72%	76,61	2,23	16,72%	28,67	2,07
1,3	9,33%	38,16	1,37	16,43%	72,81	2,10	15,53%	27,15	1,96
1,4	8,45%	32,02	1,29	15,29%	69,00	1,99	14,47%	25,62	1,86
1,5	7,66%	25,87	1,22	14,27%	65,20	1,88	13,52%	24,09	1,77

Siç është paraqitur ne Tabela 2-18 dhe 2-19, tabela e pare paraqet zgjidhje rreziqe më të larta, duke pasur parasysh se variacione të rreth -31% në aspektin e të ardhurave të parkimit të japë një NPV negative. Ajo është mjaft e qartë se zgjidhjet 2 dhe 3 janë më fitimprurëse në mesin e atyre dyve që janë konsideruar, të paktën në aspektin e rezultateve financiare. Në fund, ata kanë rezultate të ngjashme, por zgjidhja e 3 ka një investim të ulët fillestar. Flukset e mjeteve monetare e plota financiare janë prezantuar në tabelat e mëposhtme për të gjitha zgjidhjet.

Tabela 2-20 - Fluksi Financiar i Parave (zgjidhje 1) - Vlera në € x 106 / ulje të normës së 5%

Viti	Kosto Financiare Vjetore								Te ardhurat vjetore					Total(Investimi gjithesej)		Differenc ae te ardhura- me koston	Faktori Zbrites	Total(Investimi gjithesej)	
	Kosto e investimit nga parkimi	Kosto e investimit nga zona tregtare	Kosto e investimit nga hoteli	Kosto e pergjithshme e investimit	Kosto operative parkim	Kosto operative nga zona tregtare	Kosto operative nga hoteli	Kosto operative pergjithshme	Te ardhura nga parkimi	Te ardhura nga zona tregtare	Te ardhura nga hoteli	Te ardhura gjithesej	Vlera e mbetur	Kosto	Te ardhura			Kosto e zbritur	Te ardhura te zbitura
2016	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		0,00	0,00	0,00	1,00	0,00	0,00
2017	1,56	0,23	0,09	1,89	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		1,89	0,00	-1,89	0,95	1,80	0,00
2018	16,13	2,41	1,03	19,57	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	19,57	0,00	-19,57	0,91	17,75	0,00
2019	48,69	7,24	3,08	59,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	59,01	0,00	-59,01	0,86	50,98	0,00
2020	0,00	0,00	0,00	0,00	1,80	0,16	0,39	2,35	9,05	1,03	0,86	10,94	0,00	2,35	10,94	8,59	0,82	1,93	9,00
2021	0,00	0,00	0,00	0,00	1,83	0,16	0,40	2,39	9,37	1,04	0,87	11,28	0,00	2,39	11,28	8,89	0,78	1,87	8,84
2022	0,00	0,00	0,00	0,00	1,87	0,17	0,40	2,44	9,39	1,06	0,87	11,32	0,00	2,44	11,32	8,89	0,75	1,82	8,45
2023	0,00	0,00	0,00	0,00	1,91	0,17	0,41	2,48	9,73	1,07	0,88	11,68	0,00	2,48	11,68	9,20	0,71	1,76	8,30
2024	0,00	0,00	0,00	0,00	1,95	0,17	0,41	2,53	10,09	1,08	0,89	12,06	0,00	2,53	12,06	9,53	0,68	1,71	8,16
2025	2,02	0,34	0,13	2,49	2,00	0,18	0,41	2,59	11,74	1,09	0,90	13,72	0,00	5,08	13,72	8,64	0,64	3,28	8,85
2026	0,00	0,00	0,00	0,00	2,04	0,18	0,42	2,64	12,18	1,10	0,91	14,19	0,00	2,64	14,19	11,55	0,61	1,62	8,71
2027	0,00	0,00	0,00	0,00	2,09	0,19	0,42	2,70	12,65	1,11	0,92	14,68	0,00	2,70	14,68	11,98	0,58	1,58	8,58
2028	0,00	0,00	0,00	0,00	2,13	0,19	0,43	2,75	13,14	1,12	0,93	15,19	0,00	2,75	15,19	12,44	0,56	1,53	8,46
2029	0,00	0,00	0,00	0,00	2,18	0,20	0,43	2,81	13,65	1,13	0,94	15,72	0,00	2,81	15,72	12,91	0,53	1,49	8,34
2030	2,12	0,34	0,13	2,59	2,23	0,20	0,44	2,86	14,19	1,14	0,95	16,27	0,00	5,46	16,27	10,82	0,51	2,76	8,22
2031	0,00	0,00	0,00	0,00	2,28	0,21	0,44	2,92	14,74	1,15	0,96	16,85	0,00	2,92	16,85	13,93	0,48	1,41	8,11
2032	0,00	0,00	0,00	0,00	2,33	0,21	0,44	2,98	15,32	1,17	0,97	17,46	0,00	2,98	17,46	14,47	0,46	1,37	8,00
2033	0,00	0,00	0,00	0,00	2,38	0,22	0,45	3,05	15,93	1,18	0,98	18,08	0,00	3,05	18,08	15,04	0,44	1,33	7,89
2034	0,00	0,00	0,00	0,00	2,43	0,22	0,45	3,11	16,57	1,19	0,99	18,74	0,00	3,11	18,74	15,63	0,42	1,29	7,79
2035	2,23	0,34	0,13	2,70	2,49	0,23	0,46	3,17	17,23	1,20	0,99	19,43	0,00	5,87	19,43	13,55	0,40	2,32	7,69
2036	0,00	0,00	0,00	0,00	2,54	0,24	0,46	3,24	17,92	1,21	1,00	20,14	0,00	3,24	20,14	16,90	0,38	1,22	7,59
2037	0,00	0,00	0,00	0,00	2,60	0,24	0,47	3,31	18,65	1,22	1,01	20,89	0,00	3,31	20,89	17,58	0,36	1,19	7,50
2038	0,00	0,00	0,00	0,00	2,66	0,25	0,47	3,38	19,40	1,24	1,03	21,66	0,00	3,38	21,66	18,28	0,34	1,16	7,41
2039	0,00	0,00	0,00	0,00	2,72	0,25	0,48	3,45	20,19	1,25	1,04	22,48	0,00	3,45	22,48	19,02	0,33	1,12	7,32
TOTAL	72,76	10,89	4,60	88,25	44,46	4,04	8,67	57,17	281,15	22,77	18,87	322,79	0,00	145,42	322,79	177,38		104,29	163,19

- Fluksi Financiar i Parave (zgjidhja 3) - Vlera në € x 10/6 / ulje të normës së 5%

	Kosto Financiare vjetore								Te ardhurat Vjetore					Total (investimi pergjithshem)		Diferenca te ardhurat me shpenzimet	Faktori Zbrites	Total
Viti	Kosto e Investimit parkimi	Kosto e Investimit zona tregtare	Kosto e investimit te hotelit	Kosto pergjithshme e investimit	Kosto operative e zones parkimit	Kosto operativ e zones tregtare	Kosto operative e hotelit	Kosto e pergjithshme operative	Te ardhura nga zona parkimit	Te ardhura nga zona tregtare	Te ardhura nga hoteli	Gjithsej te ardhurat	Vlera e mbetur	Kosto	Te ardhura			Shpenzimet e Zbritura
2016	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		0,00	0,00	0,00	1,00	0,00
2017	1,56	0,23	0,09	1,89	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		1,89	0,00	-1,89	0,95	0,34
2018	16,13	2,41	1,03	19,57	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	19,57	0,00	-19,57	0,91	3,36
2019	48,69	7,24	3,08	59,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	59,01	0,00	-59,01	0,86	9,86
2020	0,00	0,00	0,00	0,00	1,80	0,16	0,39	2,35	9,05	1,03	0,86	10,94	0,00	2,35	10,94	8,59	0,82	0,52
2021	0,00	0,00	0,00	0,00	1,83	0,16	0,40	2,39	9,37	1,04	0,87	11,28	0,00	2,39	11,28	8,89	0,78	0,51
2022	0,00	0,00	0,00	0,00	1,87	0,17	0,40	2,44	9,39	1,06	0,87	11,32	0,00	2,44	11,32	8,89	0,75	0,50
2023	0,00	0,00	0,00	0,00	1,91	0,17	0,41	2,48	9,73	1,07	0,88	11,68	0,00	2,48	11,68	9,20	0,71	0,49
2024	0,00	0,00	0,00	0,00	1,95	0,17	0,41	2,53	10,09	1,08	0,89	12,06	0,00	2,53	12,06	9,53	0,68	0,48
2025	2,02	0,34	0,13	2,49	2,00	0,18	0,41	2,59	11,74	1,09	0,90	13,72	0,00	5,08	13,72	8,64	0,64	1,15
2026	0,00	0,00	0,00	0,00	2,04	0,18	0,42	2,64	12,18	1,10	0,91	14,19	0,00	2,64	14,19	11,55	0,61	0,45
2027	0,00	0,00	0,00	0,00	2,09	0,19	0,42	2,70	12,65	1,11	0,92	14,68	0,00	2,70	14,68	11,98	0,58	0,44
2028	0,00	0,00	0,00	0,00	2,13	0,19	0,43	2,75	13,14	1,12	0,93	15,19	0,00	2,75	15,19	12,44	0,56	0,43
2029	0,00	0,00	0,00	0,00	2,18	0,20	0,43	2,81	13,65	1,13	0,94	15,72	0,00	2,81	15,72	12,91	0,53	0,42
2030	2,12	0,34	0,13	2,59	2,23	0,20	0,44	2,86	14,19	1,14	0,95	16,27	0,00	5,46	16,27	10,82	0,51	0,98
2031	0,00	0,00	0,00	0,00	2,28	0,21	0,44	2,92	14,74	1,15	0,96	16,85	0,00	2,92	16,85	13,93	0,48	0,40
2032	0,00	0,00	0,00	0,00	2,33	0,21	0,44	2,98	15,32	1,17	0,97	17,46	0,00	2,98	17,46	14,47	0,46	0,39
2033	0,00	0,00	0,00	0,00	2,38	0,22	0,45	3,05	15,93	1,18	0,98	18,08	0,00	3,05	18,08	15,04	0,44	0,38
2034	0,00	0,00	0,00	0,00	2,43	0,22	0,45	3,11	16,57	1,19	0,99	18,74	0,00	3,11	18,74	15,63	0,42	0,37
2035	2,23	0,34	0,13	2,70	2,49	0,23	0,46	3,17	17,23	1,20	0,99	19,43	0,00	5,87	19,43	13,55	0,40	0,83
2036	0,00	0,00	0,00	0,00	2,54	0,24	0,46	3,24	17,92	1,21	1,00	20,14	0,00	3,24	20,14	16,90	0,38	0,35
2037	0,00	0,00	0,00	0,00	2,60	0,24	0,47	3,31	18,65	1,22	1,01	20,89	0,00	3,31	20,89	17,58	0,36	0,34
2038	0,00	0,00	0,00	0,00	2,66	0,25	0,47	3,38	19,40	1,24	1,03	21,66	0,00	3,38	21,66	18,28	0,34	0,34
2039	0,00	0,00	0,00	0,00	2,72	0,25	0,48	3,45	20,19	1,25	1,04	22,48	0,00	3,45	22,48	19,02	0,33	0,33

TOTAL	72,76	10,89	4,60	88,25	44,46	4,04	8,67	57,17	281,15	22,77	18,87	322,79	0,00	145,42	322,79	177,38		23,68
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Investimi i Pergjithshem

NPV	58,90
NBK	11,86%
Raporti B/C	1,56

Terminali

NPV	56,59
NBK	12,67%
Raporti B/C	1,67

2.6 NDIKIMI I NJË HUA TE MUNDESHME NGA BERZH

Rregullat e BERZH-it në lidhje me kreditë e tyre janë mjaft të fleksibel. Siç është përmendur në mënyrë specifike në "Udhëzues për financimin e BERZH" së tyre "kredi BERZH-it janë të strukturuar me një shkallë të lartë të fleksibilitetit të përputhen me nevojat e klientit dhe projektit. Banka sugjeron një të përshtatshme monedhë kredi dhe normave të interesit. Baza për një kredi është fluksi monetar i pritshëm i projektit dhe aftësinë e klientit për të shlyer kredi gjatë periudhës së rënë dakord. Rreziku i kredisë mund të merret tërësisht nga Banka ose mund të botohet njëkohësisht pjesërisht në treg".

Karakteristikat e një kredie për këtë arsye janë të ndryshueshme dhe nuk mund të përcaktohet "a-priori". Konsulenti vlerësuar ndikimin e një kredie të mundshme në rrjedhjen e parave financiar duke bërë disa supozime realiste, por subjektive që mund të jenë të vlefshme (ose jo), jo vetëm për një kredi nga BERZH, por edhe nga çdo IFI tjetër. Hipotezat e bëra nga Konsulenti nuk nënkuptojnë - në anën tjetër - çdo siguri definitive që një kredi të mundshme do të ketë këto karakteristika. Ato duhet të konsiderohet vetëm si një vlerësim paraprak të ndikimit të një kredie të mundshme.

Supozimet e bëra nga Konsulenti janë hedhur tabelën e mëposhtme

	Zgjidhja1	Zgjidhja 2	Zgjidhja 3	Shenim
Kuota e BERZH	80,0%	80,0%	80,0%	+sensibilitet ne ulje
Vlera e Kredise	53,11	32,72	12,38	
Pagesat	12	12	12	
Periudha e fillimit te shlyerjes se detyrimeve	3	3	3	
Kestet Vjetore	4,43	2,73	1,03	+ sensibilitet ne ulje (bazuar ne kuotat e BERZH)
Viti I fillimit	2022	2022	2022	
Fundi I vitit	2034	2034	2034	
Euribor6M	0,3%	0,3%	0,3%	
Spread	4,0%	4,0%	4,0%	
Norma e Interesit(EUR6M+spread)	4,3%	4,3%	4,3%	+ sensibilitet ne rritje

Norma e interesit u supozua të bazohet në Euribor normë interesi 6 mujore prej 0,3% + 4%. Kohëzgjatja e kredisë u supozua 15 vjet, përfshirë një periudhë faljeje 3 vjecare (12+3=15 vjet totali).

Rezultatet e supozimeve themelore paraqiten në tabelën e mëposhtme (llogaritjet janë kryer mbi hipotezën konservatore se vetëm pjesa e investimit të terminalit do të financohet).

Tabela - 24 – Rezultatet e analizës financiare (korrigjimi me huanë, supozime bazë të Tab-23) / Vetëm Terminali

Treguesit	Zgjidhja 1	Zgjidhja 2	Zgjidhja 3
VAN (milionë €)	60,84	86,84	32,72
NBK	30,57%	62,30%	51,05%
Raporti B/C	1,76	2,67	2,44

Sigurisht që një kredi i jep një “dozë më të lartë besueshmërie” investimit duke shtyrë pagesat për periudhat e mëvonshme. Analiza të ndjeshme u kryen gjithashtu për të hetuar më mirë efektet e variacioneve përsa i përket normave të interes dhe kuotës së përgjithshme të investimit. Rezultatet e këtyre analizave janë paraqitur në tabelat e mëposhtme.

Tabela -25 - Rezultatet e analizës financiare / analizës së sensitivitetit të bazuara në normat e mundshme të interes të një kredie (nga 1.7% deri në 6.9% në 6.9%, duke i korresponduar -60% në +60 % të supozimit bazë)

Norma e korrigjuar e interesit	Zgjidhja 1			Zgjidhja 2			Zgjidhja 3		
	NBK	VAN (milionë €)	B/C	NBK	VAN (milionë €)	B/C	NBK	VAN (milionë €)	B/C
1,7%	37,78%	68,66	1,95	69,33%	91,66	2,94	57,62%	34,54	2,66
2,6%	35,29%	66,05	1,88	66,99%	90,05	2,84	55,41%	33,94	2,58
3,4%	32,88%	63,45	1,82	64,65%	88,45	2,75	53,22%	33,33	2,51
4,3%	30,57%	60,84	1,76	62,30%	86,84	2,67	51,05%	32,72	2,44
5,2%	28,37%	58,24	1,70	59,96%	85,24	2,59	48,91%	32,11	2,38
6,0%	26,30%	55,63	1,65	57,61%	83,63	2,51	46,82%	31,51	2,32
6,9%	24,37%	53,03	1,60	55,27%	82,03	2,44	44,77%	30,90	2,26

6.7 SHPËRNDARJA E FITIMEVE DHE RREZIQEVE MIDIS KONCESIONARIT DHE BASHKISË

Shumë hipoteza mund të realizohen, me qëllim identifikimin e një skeme të mundshme për shpërndarjen e fitimeve dhe rreziqeve midis Koncesionarit dhe Bashkisë. Rrjedhimisht, çka propozohet nga Konsulenti është vetëm një model midis numrit teorikisht të pafund të mundësive. Ndryshimi i disa parametrave midis atyre që përcaktojnë skemën e shpërndarjes mund të përdoret, me qëllim identifikimin e disa rezultateve të rëndësishme gjatë zhvillimit të procedurave të tenderit.

Skema e propozuar mund të përcaktohet nga pikat e mëposhtme:

1. Duke filluar nga identifikimi i një qarkullimi të mundshëm të ardhshëm i parave, mund të ndodhë llogaritja e të ardhurave të mundshme vjetore të infrastrukturës: ky qarkullim parash,i mundshëm,i ardhshëm, në parim, mund të jetë i njëjtë si ai i identifikuar brenda kësaj analize

CBA-je, në bazë të disa rregullimeve të mundshme që identifikohen në fazat përfundimtare të përgatitjes së tenderit.

2. Duke marrë në konsideratë se Bashkia e Tiranës ka disa përgjegjësi në lidhje me politikat e transportit, implementimi i masave të zbatimit etj dhe duke marrë parasysh se Bashki dhe Konçesionari mund të nxjerrin përfitime shtesë nga pikëpamja financiare, nëse performancat e terminalit do të tejkalojnë ato të shqyrtuara në këtë CBA, mund të shtrohen hipotezat që nëse të ardhurat aktuale do të jenë më të larta sesa pritet, pjesa e parë e fitimeve të rritura nën 5% do t'i caktohet tërësisht Koncesionarit si kuota “aksionesh” ndërsa kuotat potenciale mbi një rritje 5% do të ndahen midis Koncesionarit dhe Bashkisë, në baza 50% me 50%.

Të gjitha përqindjet e mësipërme thjesht përfaqësojnë hipotezat e realizuara nga Konsulenti: vlerat 80%, dhe 50% /50% mund të ndryshohen dhe – siç deklarohet deri tani – ato mund të përfaqësojnë një variabël që mund të merret në konsideratë brenda procedurës së tenderit.

Konsulenti bëri disa simulime në bazë të hipotezave të paraqitura më lart. Këto simulime sollën rezultatet e paraqitura në Tabelat e mëposhtme që përfaqësojnë kryesisht një analizë sensitiviteti, duke dhënë shumën e disbursimeve të mundshme (për Bashkinë), humbjen e të ardhurave (për Koncesionarin) dhe të ardhura të rritura (për të dy) mbi bazën e një rritjeje ose uljeje të mundshme të të ardhurave të parkimit.

Tabela -27 - Rezultatet e analizës financiare / analizës së sensitivitetit për një shpërndarje të mundshme të fitimeve dhe humbjeve shtesë në bazë të të ardhurave të parkimit (+/- 50% rritje dhe ulje) / Vetëm zona e parkimit /Zgjidhja 1

Faktor korigjimi	Disbursimi nga bashkia	Humbja e të ardhurave për koncesionarin	Të ardhura të plota të rritura për koncesionarin	Të ardhura të rritura të përbashkëta	
				Koncesionari	Bashkia
	(milionë €, shuma e vlerave me zbritje)				
0,5	44,68	25,89	0,00	0,00	0,00
0,6	30,57	25,89	0,00	0,00	0,00
0,7	16,45	25,89	0,00	0,00	0,00
0,8	2,34	25,89	0,00	0,00	0,00
0,9	0,00	14,11	0,00	0,00	0,00
1	0,00	0,00	0,00	0,00	0,00
1,1	0,00	0,00	6,47	3,06	4,58
1,2	0,00	0,00	6,47	8,70	13,05
1,3	0,00	0,00	6,47	14,35	21,52
1,4	0,00	0,00	6,47	19,99	29,99
1,5	0,00	0,00	6,47	25,64	38,46

Tabela -28 - Rezultatet e analizës financiare / analizës së sensitivitetit për një shpërndarje të mundshme të fitimeve dhe humbjeve shtesë në bazë të të ardhurave të parkimit (+/- 50% rritje dhe ulje) / Vetëm zona e parkimit /Zgjidhja 2

Faktor korrigjimi	Disbursimi nga bashkia	Humbja e të ardhurave për koncesionarin	Të ardhura të plota të rritura për koncesionarin	Të ardhura të rritura të përbashkëta	
				Koncesionari	Bashkia
	(milionë €, shuma e vlerave me zbritje)				
0,5	45,46	24,01	0,00	0,00	0,00
0,6	31,56	24,01	0,00	0,00	0,00
0,7	17,67	24,01	0,00	0,00	0,00
0,8	3,77	24,01	0,00	0,00	0,00
0,9	0,00	13,89	0,00	0,00	0,00
1	0,00	0,00	0,00	0,00	0,00
1,1	0,00	0,00	6,00	3,95	3,95
1,2	0,00	0,00	6,00	10,89	10,89
1,3	0,00	0,00	6,00	17,84	17,84
1,4	0,00	0,00	6,00	24,79	24,79
1,5	0,00	0,00	6,00	31,73	31,73

3 ANALIZA EKONOMIKE

Nga pikëpamja matematikore qasja e përgjithshme e një CBA-je ekonomike është njëta e përdorur për një CBA financiare, por ato dallojnë nga njëra-tjetra për këndvështrimet e miratuara. Kjo nënkupton që:

- Kostoja dhe përfitimet e përdorura për analizën socio-ekonomike nuk janë të njëjta me ato të përdorura për analizën financiare, edhe nëse ata pjesërisht përkojnë me njëra-tjetrën;
- Çmimet e përdorura për këndvështrimin social-ekonomik korrigjohen nga taksat eliminuese, mbi-tatimi, detyrimet doganore dhe shpenzimet e tjera që përfaqësojnë kosto për pronarin e infrastrukturës, por jo për të gjithë shoqërinë.

Prandaj, në këtë rast të vecantë

- Nuk u paraqit faktori i korrigjimeve ekonomike / financiare;
- U morën në konsideratë përfitimet sociale për shkak të shkurtimit të kohës së udhëtimit.

Në lidhje me dy çështjet e para më sipër u miratuan faktorët e mëposhtëm të konversionit:

- materiale: 0,95
- punë/fuqi punëtore: 0,64

Kur dallimi midis komponentëve të materialeve dhe punës/fuqisë punëtore nuk ishte i qartë, u miratua një faktor mesatar prej 0,86 (me supozimin arbitrar të një ndarjeje 70% / 30% midis komponentit të materialeve dhe punës/fuqisë punëtore).

Sa i përket pikës së dytë, duhet të theksohet se Konsulenti nuk ka marrë parasysh disa përfitime të tjera, në mënyrë që të mbajë një qasje konservatore dhe gjithashtu për shkak të vështirësive

objektive të transformimit të disa prej këtyre përfitimeve në vlera monetare. Ndër këto përfitime janë:

- rritja e punësimit që do të prodhojë infrastruktura e re;
- "vlera arkitektonike" e infrastrukturës, që nuk mund të transformohet në një vlerë monetare, por që është me të vërtetë e pranishme në një lloj të tillë të investimit;
- domosdoshmëria e brendshme" e Tiranës e pasjes së këtij terminali të transportit, që është i pranishëm praktikisht në të gjitha qytetet kryesore evropiane.

Mbi baza të një kohe mesatare aksesit që mund të jetë vetëm më pas se ajo ekzistuese (me një shkurtim kohe mesatar minimal prej një minute dhe një vlerë të kohës mesatare prej 1,98 € /orë për përdorues, rezultatet e analizës ekonomike janë ato të paraqitura në tabelën e mëposhtme:

Tabela 3-1 - Rezultatet e analizës ekonomike

Indikatoret	Zgjidhja 1	Zgjidhja 2	Zgjidhja 3
VAN (milionë €)	87,53	109,43	47,44
NBK	16,5%	23,8%	28,5%
Raporti B/C	2,08	2,93	3.58

Të gjitha rezultatet janë pozitive por niveli i pasigurisë rreth çështjes së kohës së aksesit duhet të shqyrtohet me kujdes. Nga kjo pikëpamje ka elementë që janë të balancuar dhe që kanë ndikime të kundërta, si për shembull:

- Aksesueshmëri më e lartë e dhënë nga sistemet e reja të tramvajeve që do të lidhin infrastrukturën me qendrën e qytetit dhe zona të tjera të qytetit.
- Pozicioni jo-qendror i terminalit që mund t'i bënte disa përdorues t'i shkaktonin dëm të tjerëve.

Për arsyet e mësipërme, një analizë sensitiviteti e bazuar në ndryshimin e kohës së aksesit është shumë më e rëndësishme sesa rezultatet e Tabelës së mëparshme. Kjo analizë sensitiviteti paraqitet në Tabelat e mëposhtme;

Tabela -6 - Rezultatet e analizës ekonomike / analizës së sensitivitetit në bazë të kohës së aksesit (+/- 50% rritje dhe ulje)

Faktori i korrigjimit	Zgjidhja 1			Zgjidhja 2			Zgjidhja 2		
	NBK	VAN (milionë €)	B/C	NBK	VAN (milionë €)	B/C	NBK	VAN (milionë €)	B/C
0,5	25,24%	188,80	3,32	34,89%	210,71	4,72	60,81%	48,72	9,10
0,6	23,65%	168,55	3,07	32,82%	190,46	4,36	54,86%	128,46	8,00
0,7	21,99%	148,29	2,83	30,70%	170,20	4,00	48,71%	108,21	6,89
0,8	20,27%	128,04	2,58	28,50%	149,94	3,65	42,32%	87,95	5,79

Kostot ekonomike vjetore					Të ardhurat vjetore				Vlera e kohës	Totali përfshirë
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0,9	18,45%	107,78	2,33	26,21%	129,69	3,29	35,64%	67,70	4,69
1	16,53%	87,53	2,08	23,82%	109,43	2,93	28,52%	47,44	3,58
1,1	14,47%	67,27	1,69	21,28%	89,18	2,30	20,57%	27,18	1,81
1,2	12,20%	47,02	1,18	18,54%	68,92	1,50	10,47%	6,93	0,56
1,3	9,64%	26,76	0,84	15,52%	48,67	1,01	Nuk konvergon	-13,33	0,08
1,4	6,62%	6,50	0,59	12,04%	28,41	0,69	Nuk konvergon	-33,58	-0,18
1,5	2,73%	-13,75	0,40	7,71%	8,16	0,45	Nuk konvergon	-53,84	-0,33

Tabela e mësipërme tregon sesa kohë aksesimi mund të bëhet kritike veçanërisht për zgjidhjen 3. Kjo do të thotë se politikat e transportit që do të miratohen nga Bashkia në vitin e ardhshëm duhet të garantojnë një nivel të lartë aksesueshmërie për infrastrukturën. Ky është një faktor kritik që bashkon atë të mos-zbërthimit të kërkesës për transport në terminale të tjera “fantazmë” (kjo, siç shihet deri tani, mund të jetë faktor kritik nga pikëpamja financiare). Të dy faktorët duhet të ndiqen nga Bashkia në vizitat e ardhshme me politika të mjaftueshme transporti dhe ndoshta edhe me mbështetjen e legjislacionit kombëtar.

Kostot e investimit nga zona e tregtare	Kostot e investimit nga hoteli	Kostot e përgjithshme të investimit	Kostot operative nga zona e parkimit	Kostot operative nga zona tregtare	Kostot operative nga hoteli	Kostot e përgjithshme operative	Të ardhurat nga zona e parkimit	Të ardhurat nga zona tregtare	Të ardhurat nga hoteli	Totali të ardhurave	Vlerat e mbetura		Rezultatet
0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00			0,00
0,00	0,00	0,23	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00			0,23
0,00	0,00	3,15	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		3,15
0,00	0,00	9,45	0,47	0,00	0,00	0,47	0,00	0,00	0,00	0,00	0,00		9,92
0,00	0,00	0,00	0,50	0,00	0,00	0,50	2,82	0,00	0,00	2,82	0,00	0,68	0,50
0,00	0,00	0,00	0,50	0,00	0,00	0,50	2,89	0,00	0,00	2,89	0,00	0,75	0,50
0,00	0,00	0,00	0,51	0,00	0,00	0,51	2,97	0,00	0,00	2,97	0,00	0,82	0,51
0,00	0,00	0,00	0,52	0,00	0,00	0,52	4,06	0,00	0,00	4,06	0,00	0,90	0,52
0,00	0,00	0,00	0,53	0,00	0,00	0,53	4,22	0,00	0,00	4,22	0,00	0,97	0,53
0,00	0,00	0,91	0,54	0,00	0,00	0,54	4,39	0,00	0,00	4,39	0,00	1,03	1,44
0,00	0,00	0,00	0,54	0,00	0,00	0,54	4,57	0,00	0,00	4,57	0,00	1,10	0,54
0,00	0,00	0,00	0,55	0,00	0,00	0,55	4,75	0,00	0,00	4,75	0,00	1,17	0,55
0,00	0,00	0,00	0,56	0,00	0,00	0,56	5,40	0,00	0,00	5,40	0,00	1,24	0,56
0,00	0,00	0,00	0,57	0,00	0,00	0,57	5,62	0,00	0,00	5,62	0,00	1,36	0,57
0,00	0,00	0,95	0,57	0,00	0,00	0,57	5,85	0,00	0,00	5,85	0,00	1,47	1,53
0,00	0,00	0,00	0,58	0,00	0,00	0,58	6,09	0,00	0,00	6,09	0,00	1,59	0,58
0,00	0,00	0,00	0,59	0,00	0,00	0,59	6,34	0,00	0,00	6,34	0,00	1,70	0,59
0,00	0,00	0,00	0,60	0,00	0,00	0,60	6,60	0,00	0,00	6,60	0,00	1,81	0,60
0,00	0,00	0,00	0,60	0,00	0,00	0,60	6,87	0,00	0,00	6,87	0,00	1,93	0,60
0,00	0,00	1,00	0,61	0,00	0,00	0,61	7,16	0,00	0,00	7,16	0,00	2,04	1,61
0,00	0,00	0,00	0,62	0,00	0,00	0,62	7,46	0,00	0,00	7,46	0,00	2,16	0,62
0,00	0,00	0,00	0,63	0,00	0,00	0,63	7,77	0,00	0,00	7,77	0,00	2,27	0,63
0,00	0,00	0,00	0,64	0,00	0,00	0,64	8,10	0,00	0,00	8,10	0,00	2,39	0,64
0,00	0,00	0,00	0,07	0,00	0,00	0,07	8,44	0,00	0,00	8,44	1,26	2,51	0,07
0,00	0,00	15,69	9,34	0,00	0,00	9,34	80,59	0,00	0,00	80,59	1,26	29,89	25,03

Tabela - 5 - Fluksi monetar ekonomik (zgjidhja 3) – vlerat në € x 10⁶

DETYRA 7: RISHIKIMI I ANALIZËS TË VEPRIMIT MJEDISOR DHE SOCIAL

Mjedisi social-ekonomik

Ne zonën e projektit dhe rrethinat e tij nuk kanë shumë atraksione të forta dhe karakteristika. Rruga kryesore, Rr. Kastriotëve e cila kryqëzohet me autostradën Tiranë-Durrës, shërben kryesisht për shitje me pakicë dhe trotuare për këmbësorë.

Përdorimi i tokës në zonën bazë përfshin një përzierje të tregtisë së shitjes me pakicë, ndërtesat zyra, spital dhe banesa me përdorim të ngjashëm me qendrat e qyteteve të tjera me të njëjtën madhësi. Zona e projektit ka qenë e ekspozuar në të njëjtën seri të ngarkesave që kanë kërcënuar zonat e tjera kryesore urbane në Tiranë në 20 vitet e fundit. Ndryshimet në pakicë dhe ndryshim popullsisë drejt zhvillimit urban dhe suburban kanë dëmtuar rolin tradicional të zonës kryesore.

Gjithashtu, iniciativa të mëtejshme janë ndërmarrë nga investitorët privatë për të rehabilituar dhe të gjelbëruar hapësirat brenda zonave të banuara.

Ndikimet Mjedisore të Mundshme dhe Masat Lehtësuese

Gjatë zhvillimit të projektit, parimi i "njëzërit të parët" u pasua me përshtatje të mirë për të përmbushur kërkesat e publikut. Pritet që ky projekt do të përmirësojë kushtet e transportit për publikun e gjerë, duke rritur nivelin e jetës dhe zbuluar peizazhin urban.

Shtojca 1 përmbledh masat thelbësore gjatë ndërtimit dhe fazat operacionale të projektit.

Korrigjimi dhe përmirësimi i masave zbutëse

Bazuar në inspektimin dhe monitorimin e IA dhe MT të do të vendoset nëse (i) masa të mëtejshme lehtësuese kërkohen dhe veprime korrigjuese, ose (ii) disa përmirësime janë të nevojshme në lidhje me praktikën e menaxhimit të mjedisit. Nëse gjatë inspektimit gjëndet se ka një devijim të konsiderueshme nga PMM ose ndryshime janë bërë për këtë projekt me ndikime potencialisht të rëndësishme negative mjedisore ose të rritet numri i njëzërit të prekur, kështu që IA duhet të konsultohet me BERZH dhe MOT menjëherë dhe në formë një ekip EIA për të kryer vlerësime të tjera mjedisore dhe, kur është e nevojshme, konsultime shtesë publike.

Plani i Monitorimit Mjedisor

Objektivi i planit të monitorimit mjedisor është verifikimi i parashikimit të vlerësimit të ndikimeve mjedisore dhe përcaktimi i performancës mjedisore dhe ndikimeve në zonën rrethuese. Plani i monitorimit do të parashikojë gjithashtu një bazë për agjencinë zbatuese të projektit për përgatitjen e politikave mjedisore, marrjen e masave shtesë për lehtësim që mund të jenë të nevojshme dhe minimizimin e ndikimeve negative.

Një program monitorues me dy komponentë duhet të përgatitet për këtë projekt: monitorimi i përditshëm dhe i rregullt që duhet të kryhet nga kontraktorët dhe shoqëritë mbikëqyrëse të ndërtimit dhe monitorimi periodik i përputhshmërisë nga stacione profesionale monitorimi. Personeli mjedisor në agjencitë përkatëse qeveritare në nivel qendror dhe vendor duhet të monitorojë, duke përfshirë kryesisht monitorimin vizual të pluhurit të transportueshëm nga ajri,

rrjedhjet sipërfaqësore, ruajtjen dhe eliminimin e mbetjeve të ndërtimit, ndikimet e trafikut dhe çështje të sigurisë së ndërtimit. Matësit manualë të zhurmës duhet të përdoren për të monitoruar nivelet e zhurmës në receptorët sensitivë gjatë ndërtimit. Objektivi i këtij programi të përditshëm monitorues është identifikimi i çështjeve mjedisore njëkohësisht me aktivitetet ndërtimit në këto vendpunime që ato masa të duhura lehtësuese, nëse është e nevojshme, mund të iniciohen dhe të zbatohen në kohë për minimizimin e ndikimeve. Ky monitorim ndërsa nuk është i përsosur, është i rëndësishëm pasi ofron një performancë mjedisore të monitorimit të përditshëm dhe mundëson masa korrigjuese të menjëhershme, nëse ndonjë prej aktiviteteve të ndërtimit shkakton ndikime të konsiderueshme përtej parashikimit të Vlerësimit të Ndikimit Mjedisor ose nëse aktualisht propozohen masa lehtësuese jo efektive.

Shifrat e mëposhtme tregojnë përdorimin e tokës dhe zonat e prekura dhe në një rreze prej 500 m dhe 1 km

Zgjidhja 3 -Pa parkim nëntokësor, Platformeper Trenin, funksione Tregtare dhe ato të pushimi



Figura 4.2.1 Përdorimi i tokës dhe zona e ndikimit në një rreze prej 500 m

Zgjidhja 3 është një variant i zgjidhjes 2, e cila ndryshon nga ky vetëm me eliminimin e stacionit Tramit/-Stacioni i Trenit, parkimi nëntokësor dhe disa nga funksionet komerciale dhe të pushimit. Ndërtesat e mbetura janë për udhëtarët dhe rrugët për këmbësorët dhe të gjitha funksionet e tyre të nevojshme. Kjo zgjidhje parashikon eliminimin e stacionit të tramvajit dhe të trenit dhe objektet e tyre, si dhe zëvendësimin e platformës së trenit me zonën e gjelbër.

Zgjidhje 3 është projektuar për të ulur koston e kapitalit të projektit, duke e bërë atë më praktike dhe të mundshme që ai të kryhet, duke përmbushur objektivat kryesore dhe funksionet e projektit.

CONCLUSIONS

Considering the above, in accordance with Law No. 8652 Date 31.07.2000 “On the organization and functioning of local government”(changed) Article 10, Law No. 125/2013 (changed with Law No.84/2014 “On concessions and Public Private Partnership”, and the tasks foreseen in the:

- Order of the Mayor of Tirana No. 38517, Date 14.12.2016 “On the specification of composition of the Commission for the Granting of Concession / Public Private Partnership “Tirana Public Transport Terminal”

The Commission Members conclude that:

6. The Feasibility Study, submitted by the Consultant “ Italferr S.p.A” Italy, and subsequently analyzed, appraised and approved by members of the Commission, in accordance with the local legislation, more specifically:
 - Law No. 125/2013 (changed with Law No. 84/2014 “On Concessions and Public Private Partnership”);
 - Decision of the Council of Ministers, No. 575, Date 10.07.2013 “On the approval of regulations for evaluating and granting in concession/public private partnership” Article 8;
7. From the detailed analysis of the study, the suggestion of the Consultant, and the unanimous opinion of the Commission, it is recommended as the only considerable option, for the concessionary procedure of the transport terminal, “**OPTION 3**” of the study. The reasons why the commission comes to such conclusion are as follows:
 - Decrease of the investments costs for the private partner
 - Decrease of the construction time and elimination of the risks and additional costs that would be incurred in case of construction of additional infrastructure such as hotel, shopping mall or underground parking.
 - Elimination of the financial exposure for the public partner. The Municipality does not engage financially in any of the project’s components, as per the Option 3.
8. The members of the Commission, in implementing DCM No. 575, date 10.07.2013 “On the approval of regulations for the evaluation and granting in concession/public private partnership” Article 8, points 5 and 6, and taking in account the data presented in the Feasibility Study, performed the risk analysis, so that to measure, consider and minimize the risk’s consequences on the project. The Commission, in accordance with the regulations of the European System of Accounts (ESA95), taking in account the combination of allocations of the following three typologies of risks: risk of construction, risk of availability and risk of demand, deemed that the Transport Terminal Project does not have any *carried risk* (risk remaining with the contracting authority) but has only *transferrable risk* (a risk transferred to the private partner).
9. The feasibility study and the accompanying documents submitted by the Consultant and approved by the commission, based on the results of the analysis performed in accordance with DCM no. 575/2013, “On the approval of regulations for the evaluation and granting in concession/public private partnership” Article 8, confirm the lucrativeness and sustainability

of the project; meanwhile, the concession/PPP scheme appears to be the most suitable model for the implementation of this project. The reasoning of the commission in choosing such a model is based on a combination of factors:

- The limited financial capacities of the contracting authority in order to carry out an investment of similar size. Such investment is not justifiable, considering the financial capacities of the contracting authority. Additionally, in the agreement signed between the Contracting Authority and the European Bank for Reconstruction and Development (EBRD) parties have agreed on the possibility of financing of this project through the concession/PPP scheme, based on an initiative of EBRD, which has also financed the carrying out of the feasibility study, through a grant given to the Contracting Authority.
- Additionally, the Contracting Authority shall benefit yearly profits, based on turnover and profit, as a consequence of the operation of this concession/PPP scheme, without having any obligation or financial exposure vis-à-vis the project.
- The contracting authority has not had previous experiences of constructing, managing and successfully operationalizing a transport terminal. The contracting authority, therefore, lacks the technical and logistical expertise necessary to carry out such an investment, which would bring upon a sizeable financial exposure for the contracting authority.
- The operationalizing of a transport terminal requires an intertwining of capacities in the areas of construction, transport, logistics, information technology etc. and therefore it exceeds the current sphere of capacities of the contracting authority.

10. In closing, in accordance with the Law No. 8652 Date 31.07.2000 “On the organization and functioning of local government” (changed) Article 10, the Law No. 125/2013 (changed) “On concessions and Public Private Partnership”, the Commission for the Granting of Concession / Public Private Partnership “Tirana Public Transport Terminal” decides to propose to the contracting authority chair, the Mayor of Tirana, the application of the concession/Public Partnership scheme for the Tirana Public Transport Terminal.