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ENVIRONMENTAL IMPACT ASESSMENT

1. PROJECT

1.1 General Description

The Middle Ring Road sections that have been proposed to include in the IDA financing in the new Transport Project is one of the main links for the urban traffic in the city. The section proposed has a total length of 3.34 km divided in three sub-sections respectively the main cross sections as follow:

- Section 1 – Starting at cross section with Durresi Road (Black Bird roundabout) to cross-section with boulevard "Zogu I" at Train Station with a length of 970 meter.
- Section 2 – Starting at cross section with boulevard "Zogu I" to cross section with Dibra Road with a length of 1,220 meter, and
- Section 3 – Starting at cross section with Dibra Road to boulevard "Zhan D'Arc" along Lana River with a length of 1,150 meter.

The existing road is a dual carriageway with an asphalted width of 12 m. In both sides there are sidewalks with variable width from 3 to 5 meters. The asphalt layers in the carriageway and cement tiles in the sidewalks are highly deteriorated as result of increasing of heavy traffic and lack of maintenance for a long period.

This road after the reconstruction is intended to maintain the same parameters as the other sections already reconstructed or are under reconstruction.
The project will provide the widening of the existing carriageway by expanding the non-divided dual carriageway to a divided four carriageway with a total width of asphalted carriageway of 14 m, extending and reconstructing sidewalks with a minimum width of 3 m and adding a lane for alongside parallel parking at 2.5 m in the most of the sections length.

The road will be torn up to allow the reconstruction of underground sewerage, drainage, electrical utilities to be replaced and road lighting system in the places where needed and defined by the executive project. The road base will be then reconstructed with the proper sub base and base layers (two layers of 15 cm) in the extensions of the new carriageway as well as in the existing carriageway where the project foreseen and will be surfaced with a double asphalt layer (binder 6 cm and wearing course 5 cm). The new engineering project foreseen the improvement with base layer of at least 50 % of the total asphalt pavement.

New green vegetated areas with grass and decorative trees will be provided along the section with 1.5 m of widths according to the apace allowed by the existing right-of-way that will remain at the same parameters in all the length.

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The sidewalks will be reconstructed along the section and where possible the sidewalks will be separated from the carriageway by a vegetated median. The new carriageways will be separated in the middle by a double prefabricated concrete kerb with 1 meter width and with vegetation and road lights allocated in this area.
New decorative lampposts for pedestrians will be mounted in the roadside of the sidewalks in a distance not longer than 25 m and alternated with road lighting and leaving the necessary space for traffic lights as well.

The drainage system in whole length and the sewer system where needed is being replaced as part of this project because it is in disrepair and threatening the integrity of the drinking water system, which also lies beneath the existing road. Drainage pipes are designed under the ditches in both sides and will constructed with concrete pipes and concrete manholes every 25 m. Sewerage pipes that will affected by the project will remain in the same position as before and will be upgraded accordingly.

Eventually there is under reconstruction contracts all the other length of the Middle Ring Road as well as the main feeder roads that connect with the MRR.

An important part of the project is the reconstruction of traffic lights and signs in all the cross-sections and all along the road.

1.2 Natural Environment

1.2.1 Topography

As shown in the general plan attached, the new road will remain within the existing right-of-way, which is determined in the most of the length by the Regulatory Urban Plan in force.

The total length of the project section has been considered in three sections that are divided in the main cross-section. In the project are included the redesigning of all cross-sections including "Zogu i Zi" cross-section with "Durresi Road", cross-section with "Boulevard Zogu I" and Train Station and cross-section with Boulevards "Bajram Curri" and "Zhan D'Ark" at the end of the project.

Almost all the length of the road has an inclination inferior to 2 %. In the section 2 there is a segment of about 300 m with the inclination of about 5 %.

1.2.2 Geology and Soils

All road is situated in the existing traditional urban area. The maximum depth of excavation will not exceed 2 m and in these conditions there are not expected debris by the weathering or exposed hard rock.
The area within the right-of-way, and up to 3 m of depth, is filled by normally consolidated soils, and mainly hard clay. The water table in general is low and controlled by the main existing collectors situated in the perpendicular road sections in the lower quotes than Ring Road.

1.2.3 Climate

To characterize the climate of Tirana the parameters which have been examined are temperature, rainfall and wind, for which data is available at the meteorically station of Tirana

Air Temperatures

Average Air Temperature

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual
Tirana	8.1	10.9	12.6	14.3	18.6	21.3	24.3	23.7	20.4	18.4	14.5	9.1	16.4

Maximum Absolute Air Temperature

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual
Tirana	20.2	24.5	26.3	28.0	35.2	37.3	38.8	41.1	35.3	30.9	25.7	22.5	41.1

Minimum Absolute Air Temperature

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual
Tirana	-7.0	-5.2	-2.0	3.5	7.0	-	-	-	-	2.0	-0.5	-4.5	-7

Rainfall

The Average Rainfall in mm

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual
Tirana	19.7	49.1	12.6	113.2	17.3	22.3	10.5	7.2	142.1	120.5	147.6	251.9	1,553

The Maximum 24 hour Rainfall in mm

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual
Tirana	123	90	111	85	67	120	47	105	120	107	125	90	167

The Average Number of Rainy Days

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual
Tirana	12.5	12.2	12.7	10.7	8.8	7.4	4.7	4.8	6.6	9.2	14.8	13.5	122.9

Wind

The Annual Frequency in Percent of the Wind Direction

	Calm	N	NE	E	SE	S	SW	W	NW
Tirana	7.1	7.2	5.3	4.4	5.9	4.7	6.4	6.8	6.8

The Average Wind Velocity in m/s

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Annual
Tirana	2.0	2.3	2.3	2.0	1.6	1.5	1.7	1.8	1.5	1.6	2.1	2.2	1.8

1.3 Air Quality

Air Quality

Primary pollutants produced by road traffic are those emitted directly into the atmosphere from vehicle exhausts and are carbon dioxide (CO_2), carbon monoxide (CO_2), hydrocarbons (HC), oxides of nitrogen (NO_x), oxides of sulphur (SO_x), and particulates. CO_2 is a global warming gas and the natural product of the combustion of gasoline and diesel fuel. It does not have a direct health impact on an adjacent population. CO concentrations reduces man's capability to metabolise and thus to function. Symptoms are drowsiness and headaches. At concentrations of over 0.1 percent it can cause death. These levels are not caused by traffic and concentrations in rural areas are seldom of concern. People exposed to CO can recover by leaving a contaminated area. CO is particular problem for people such as vendors, working for long periods at the side of congested city streets with surrounding buildings creating a canyon effect concentrating pollutants at low levels.
Secondary pollutants are created from two primary pollutants, HC and NO_x . As a result of photochemical reactions, oxidants such as ozone (0_3), peroxacetyl nitrate (PAN) and peroxybenzol nitrate (PBN) are produced. Oxidants such as these can have an extensive effect on health and vegetation in high concentrations.
Albania has air quality standards that are shown in Tables following.

Albania Standards for Ambient Air Quality in Urban Areas.

Pollutant	Standard	Average Time
Carbon monoxide	2 mg/m^3 6 mg/m^3	24 hours for a single measurement
Lead	1,5 ► g/m^3	24 hours
Nitrogen dioxide	150 ► g/m^3 500 ► g/m^3	24 hours for a single measurement
PM10[11]	50 ► g/m^3 150 ► g/m^3	24 hours for a single measurement
Sulphur dioxide (SO_2)	150 ► g/m^3	24 hours for a single measurement

	500 ► g/m^3	

Ambient Air Quality Standards in the USA

Pollutant	Standard	Average Time
Carbon monoxide	10 mg/m^3 40 mg/m^3	8 hours 1 hour
Lead	1 ► g/m^3	Three-monthly average
Nitrogen dioxide	100 ► g/m^3	Annual (arithmetical average)
PM10[11]	50 ► g/m^3 150 ► g/m^3	Annual (arithmetical average) 24 hours
Sulphur dioxide (SO_2)	80 ► g/m^3 365 ► g/m^3	Annual (arithmetical average) 24 hours

There is no relevant air quality data available relevant to city of Tirana and project area. The only data available for Tirana is shows in the Tables below.

Monthly Average Concentrations of PM10 in Various Locations in Tirana in ► g/m^3

Town	Monitoring Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Tirana	Train Station	197.86	163.27	127.23	146.93	143.17	142.22	112.73	132.82
	Sq. Ataturk	344.74	252.68		183.41	174.28	175.06	169.73	186.07
	Hospital No.3	146.66	111.97	70.68		162.99			

Monthly Average Concentrations of Carbon Monoxide (CO) in the Air in Tirana, 1998 (in mg/m^3)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Tirana	0.1458	0.10355	0.0367	0.0237	0.0288	0.0238	0.0206	0.0282	0.1341	0.0376

1.4 Noise

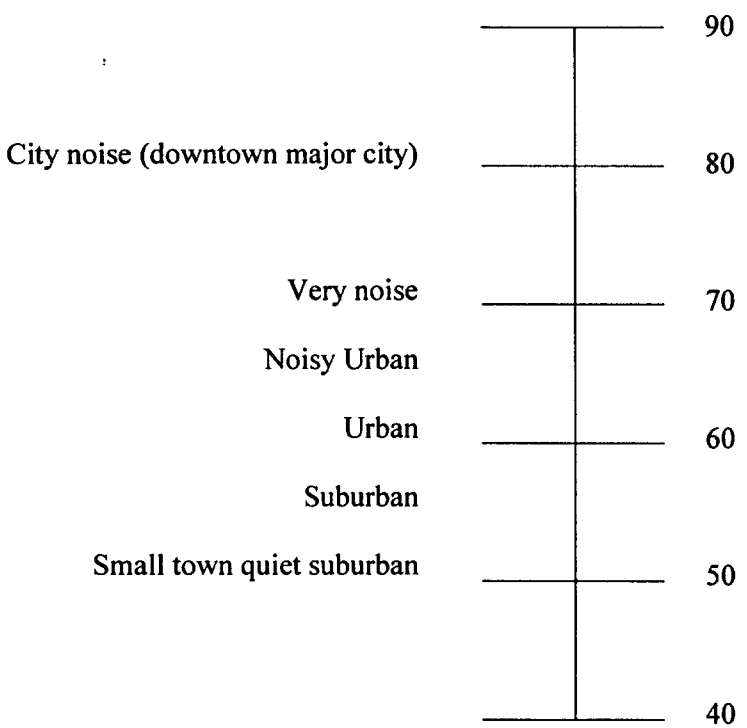
Noise is an undesirable or unwanted sound perceived subjectively by the individual. Acceptance of a certain level may vary among neighbourhoods, individuals and the time of day. Sound can effect all activities but are of particular concern near noise sensitive facilities such as hospitals. Residential areas can be impacted by nighttimes noise which disturb sleep and during late afternoon (after 7.00 pm in summer time and 6.00 pm winter time) that for local inhabitants is consider as resting time for adults and studying time for school ages.

Noise associated with road traffic is generally considered to be at more or less constant noise level, though this may not be a fair representation of noise generated by

the current traffic along the road section under the project. Highway noise is represented as the average of the sum of the noise levels associated with each individual vehicle. The dominant sources of vehicular noise are usually tires and exhaust. Other important sourced are engines and transmissions. Actual levels of highway-generated noise will vary with traffic conditions and vehicle mix.

The customary unit for measuring noise is the decibel (dB). Decibels are expressed on a scale in which a perceived doubling of in noise level correspond to an increase of about 10 decibels. The smallest difference in sound level reliability perceived by the human ear is about 3 dB. A-weighting is a method whereby the high frequencies are given extra weight because people are more sensitive to high frequency noise than to lower frequency noise. Figure following shows dB(A) level of some common noises.

Noise Levels Associated with Typical Situations
Sound Levels in dB (A)



A measurement of average noise levels is the L_{eq}. The L_{eq} is the equivalent constant sound level, which, over time, contains the same amount of sound energy as the varying levels of traffic noise.

Various ambient noise standards have been developed, though none in Albania. The World Bank has developed values for different types of areas and these are presented in the follow Table. These indicate the highest noise levels that should be tolerated during the day and night time.
World Bank Noise Values
Maximum Allowable Hourly L_{eq} in dBA

Receptor	Daytime	Night time
Residential, Institutional, Educational	55	45
Industrial / Commercial	70	70

1.5 Human Environment

1.5.1 Population

There is recent accurate population data in Albania that must be found in publication of INSTAT (Institute of Statistics) of year 2000. Instead of that Municipality of

Tirana publishes the yearly Bulletin with comprehensive information. In the time of preparation of this report we found available Bulletin 2003 with detailed demographical data.

Under the Municipality of Tirana jurisdiction in 2003 there are registered 516,030 of

	Arrivals from Migration									
	Total		From the Region				From other Regions			
			From rural areas		From other towns		From rural areas		From other towns	
Year	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
2002	11019	12725	634	822	2858	3811	2782	2824	4745	5268
2003	14871	16297	970	1042	4564	5413	3723	3784	5614	6058

inhabitants. The population has change rapidly during last years as a massive

migration from rural areas to urban areas in addition to large-scale emigration overseas. This factor has been tremendous during the beginning of years '90 after the falling of communist regime but it still evident in recent years. Registration of population records for Tirana 478,424 of population in 2001 and 494,409 of population in 2002. The tables below show the movements of population during years 2002 and 2003 for the city of Tirana and the origin of the incoming population.

The majority of the arrivals are situated in the periphery of the city especially in the north and northeast areas of the city. In most of the cases they have built illegal houses and have created non-organized urban areas with problems for organizing a normal traffic and establishing necessary services for water supply, sewerage and drainage.

As result of this non-organized migration the periphery of the city is extended rapidly and the Middle Ring Road that before the years '90 was considered as periphery, today is considered as centre of the city and manage all the entrance traffic from the periphery of national entrance roads.

Starting at cross section with Durresi Road, the sections of Middle Ring Road under this project traverse the Municipal Units (MU) No. 11 with a population of 52 146, MU No.9 with population of 40 735, MU No. 8 with population of 35 290, MU No. 4 with population of 56 410, and MU No. 3 with 31 450 of population. All these MU are considered as peripheral areas of the city and there are established about 70 % of the arrivals from migration.

1.5.2 Land Use

Land use along all segments of the project is urban land with no agricultural land, forests or scrub adjacent. All segments has been traditionally part of the city road system and urban infrastructure is built adjacent and underneath road layers. From the beginning, this road was foreseen to be widened according to the changes of the traffic rates. This is shown in the Urban Master Plan of 1989 – available in Municipality of Tirana- where the right-of-way for all the sections has been designed in a width of 35 meters.

Year	Ablations from Migration									
	Total		From the Region				From other Regions			
			From rural areas		From other towns		From rural areas		From other towns	
	M	F	M	F	M	F	M	F	M	F
	1	2	3	4	5	6	7	8	9	10
2002	3603	4717	196	282	2997	3755	134	235	276	445
2003	4756	5861	180	235	3967	4798	181	264	428	564

For this reason no legal structures are identified within these boundaries and old buildings 4 to 5 floors built in both side of the road restrict this area evidently.

The majority of the legal structures along the road are 4 to 5 floor apartments built at least 20 years ago. In the first segment, the left hand of the road (counting clockwise) is limited in most of the length by public areas and structures like Harry Fultz High school, prison, Central Archive of State and Railway Station area. The same orientation in section 3 is ocupied by the Hospetal area.

1.5.3 Socio-economics

The project area presents an urban area with high density of population, about 25 persons/ha, and with high commercial activity which is reflected by the numerous shops, kiosks and open markets along the project road.

The majority of the commercial activities and services positioned along the road or that using the road as main access are registered as small businesses. Factories and manufacture lines are situated in the outside areas of the Ring Road and they using the road as their main access line. There is also an unidentified number of activities related to road transport such as vehicles maintenance, car washing, selling of spare parts, vehicle workshops and a high number of traditional bars and rest areas.

All the road sections that connect the periphery of the city with the Middle Ring Road to reach the centre are under reconstruction or have been rehabilitated recently.

1.6 Archeological and Cultural Features

There are no church, mosque or other religious objects set back of about 30 m in distance from the boundaries of the project right-of-way.
During other construction activities carried out in the road as well as in building construction, there were found no archaeological or cultural features or even known to exist. Under Albanian law, religious buildings are treated as private properties, unless those are owned by the state.
There is no law also, for detailing the actions to be taken in the case of finds of cultural value made during the construction project. In these conditions, in case of archaeological or religious finds being uncovered, the procedure followed in similar road contracts might be applied: In such case, the Engineer has to inform the Employer, that immediately had to inform the Institute of Archaeology of the Academy of Science of Albania. A team composed by the professionals of the field, had to visit the site to locate, identify and remove any relics.

1.7 Water Resources

Surface Waters.

Albania has published a water quality standard for surface waters to be used as sources for drinking water and social and cultural activities, i.e bathing and other contact sports.
These data are shown in the Table below:

Standards approved by the Ministry of Health
for
Limits of concentration of harmful and poison substances in surface waters for drinking use and social-cultural activities

No.	Definition	Surface water for drinking water of food industry	Surface water for socio-cultural activities
1	Suspended particles	≤ 0.25mg/l	≤ 0.75mg/l
2	Floating particles	It is not permitted to have mineral oils and other blends on the water surface	
3	Smell and taste	Water must not have taste and smell intensity ≥ 2 ball	
4	Color	It is not possible to see through a water column 20cm. high	It is not possible to see through a water column 10 cm. high
5	Temperature	Temperature generated as a consequence of pollution must not reach values ≥3°C than the normal temperature of water	
6	Reaction (pH)	6.6≤pH≤8.5	
7	Mineral content (mineral particles)	Dry residue must be ≤1000mg/l with chlorides ≤350mg/l and sulphates ≤500mg/l	
8	Dissolved Oxygen (DO)	DO≥4mg/l in every season of the year, 12 hours/day	
9	Maximum Biological Oxygen Demand (BOD)	BOD≤1mg/l al 20°C	BOD≤6mg/l al 20°C
10	Pathogenic agents	Water must not contain pathogenic agents. Water containing pathogenic agents must be mechanically cleaned and disinfected.	
11	Poisoning particles	Water must not contain poisoning particles, which could cause directly or indirectly intoxication of human organism.	

Project area is relatively connected by two main water streams, Tirana River and Lana River. Drainages of road segments under project pour the water in different sections of these streams.

The average monthly temperature of the water in the hydrographic basin of the Tirana River varies between 5.8 and 7.3 degrees Celsius in January and between 19.6 and 24.1 degrees Celsius in August.

The level of minerals in the water is low (260-280mg/l). The most dominant substances are the bicarbonates (52-62%), due to the dominant presence of limestone in its water catchments basin.

In all European countries, the qualitative values of water of the rivers relate to a classification, which considers a water of a good quality if it is ranked from Category I to Category III.

The water classification criteria, its parameters to be measured and compared and their method of calculation, are based on the physical, chemical and biological characteristics of the water, which are differently considered from country to country.

Table below shows the classification by categories adopted by the Economic Commission of the United Nations of Europe (UNACE).

UNECE`s Classification of River Quality (in mg/l)

Category	P_{total}	NO_3^-	Dissolved O_2 (DO)	BOD_5	COD	NH_4^+
Quality I	< 10	<5	>7	<3	<3	<0.1
Quality II	10-25	5-25	7-6	3-5	3-10	0.1-0.5
Quality III	25-50	25-50	6-4	5-9	10-20	0.5-2
Quality IV	50-125	50-80	4-3	9-15	20-30	2-8
Quality V	>125	>80	<3	>15	>30	>8

From data gathered from the monitoring stations it results that 80% of the river waters comply with the specifications for Category I; this means that in general the quality of the rivers is good in Albania. This can be explained by the fact that at the present moment the number of factories, which could contaminate the water, is very limited. Normally the water monitoring stations are located far from factories; in this way the average level of water quality and the dilution capacity of the environment are better represented.

The most common parameters adopted for the measurement of the water quality of the rivers are:

- Organic particles content
- Food particles content
- Inorganic nitrogen content
- Microbe particles content

Organic substances in the rivers - The content of organic substances in the rivers are related usually to Chemical Oxygen Demand (COD) and Biological Oxygen Demand (BOD). These two parameters cannot be compared directly because COD includes

also organic particles, which cannot be biologically separated. The data available show that in general the quality of BOD varies between 0.4 and 0.6 mg O2 / l. The following concentrations for the Tirana River indicate that it meets the UNECE Quality I standard:

1997	COD = 0.9	BOD = 0.8
1998	COD = 0.4	BOD = 0.7

Sewage and urban solid waste, which mainly are discharged in the river, are the main sources of contamination. This situation contributes to the creation of ammonia and the deoxygenation, which could put in serious danger the aquatic species. The transformation of ammonium ion (NH_3) in Ammonia (NH_4) brings significant consequences to the fish life due to the high toxicity of this element.

Concentration of the Nutritional substances – Phosphorus and nitrogen in the rivers can cause eutrophication. The composition of nitrogen can have a similar toxic action like ammonia for the fishes. All this cases can sensibly reduce the quantity of oxygen in the water.
An elevated presence of nitrites in the drinking water can be a relevant issue. The natural content of phosphorous in clean rivers is less than 25 µg/l. When the concentration is more than 50 µg/l, it can become a serious risk for the human organism. The following figures for Tirana River indicate that it meets the UNECE quality standard.

1997	P_{total} = 0.017 mg/l
1998	P_{total} = 0.018 mg/l

Content of the nitrates, ammonia and dissolved oxygen – After the analysis of more than 90% of the samples collected, it was indicated that all the rivers can be included in the first Category. According to the results of the test performed in 1997, in 44% of the samples the DO were below value included in the standards and in 33% of the samples ammonia was above the recommended value included in the standards. In 1998 the situation has improved; only 5% of the samples shows a content of DO less than 9mg/l and 22%of the samples shows a value of ammonia bigger than the value recommended in the standards.

For Tirana River the following concentration were found showing that it met the UNECE Quality I standard:

Nitrates (NO_3)	1997 = 0,01 mg/l	1998 = 1,5 mg/l
Ammonia (NH_4)	1997 = 0,01 mg/l	1998 = 0,05 mg/l
DO	1997 = 0,01 mg/l	1998 = 11,0 mg/l[10]

Hydrology of the Project Area

The Southern portions of Tirana River and Lana River, act as main collectors of the runoff waters of the area, which is crossed by a complex and rather dense drainage

and irrigation system. The longitudinal and the transverse slope of the plain in the road area are less than 0.05%.

The road alignment is practically located in center of the former bed of Tirana River , with an elevation between 3.5 and 5.5m,up to the crossing of the Lana River, where the ground elevation starts to rise approaching the hills of Selita .

Groundwater

The study area is reach in groundwater, which result from heavy rainfalls (1,500-2,000 mm), and the wide water catchments area, which allow the accumulation of groundwater.

In the plains, from November to April, the average groundwater level is 90-115 cm below the soil surface. The water level sometimes reaches ground level resulting in flooding of the lowest parts of the road sections. During the summer season the water table is 160-300 cm below the soil surface. In extreme cases during periods of prolonged droughts water table is 450 cm below the soil surface. However, this will not affect the road, which is to be built on a embankment whereas flooding does exceed 0.5 m. The road, therefore, will be unaffected by flooding.

2 SIGNIFICANT ENVIRONMENTAL IMPACTS

2.1 Introduction

Different impacts will be caused by the construction of the road and by its use. Impacts will either be direct, such as soil erosion during construction, noise and dust during operation, or indirect such as induced changes in land use and economic development. They can be long term or short term.

2.2 Construction

It is estimated that the contractor(s) will employ approximately 80 –100 local workers. The local work force hired within the city will live in their own place and no housing expenditures are needed. The work force for the crushing plant, concrete mixer, asphalt plant, workshops etc. will be hired locally also in the zone where these facilities will be installed. The most likely location of the plant sites will be in the industrial area of the city along the Tirana-Durres highway.

2.2.1 Natural Environment

Impacts from the road construction on the natural environment can include:

- *Soil erosion in turn causing water turbidity in streams* as result of cut and fill operations and leaving embankments unprotected during rainstorms. These streams might be created temporarily during the heavy rainy days especially in the second section of the road near the junction with Dibra road where the inclination is significant. In reality this is a reduced impact within the condition of urban roads but in any case it may cause erosions in the areas and segments that are under reconstruction, the blockage of the sewerage and drainpipes that will not affected by the reconstruction of the road. This risk can be mitigated by the control of the specific operations in the site by the water and sewerage enterprises authorities. Specific operation might be considered the excavations nearby the existing drainage and sewerage facilities, connection of new drainage and sewerage pipes with the existing network, etc. Reducing these kinds of activities during bad weather conditions will reduce the risk of blockages/damages in the operational networks.
- *Air quality – dust from unsurfaced temporary roadways and emissions from construction equipment including asphalt plants.* During construction, road surfaces will be left bare between earth moving, road base and asphalting. Wind and traffic will cause dust to be raised especially in the dry season. To prevent these dusty surfaces have to be watered regularly. This will be required of the contractor Construction equipment, and especially asphalt plants, can emit high levels of pollutants. This can be prevented by adequate emission controls.
- *Noise from the construction activities* can be disturbing the trade and residential areas. Limiting work to daytime can control this. The following section specifies requirements for noise monitoring, controls, time-of-day restrictions and community awareness activities.
- *Improper development and closing of borrow areas for materials used in road construction* can resulting damage to the natural environment, eyesores and in some cases leaving breeding grounds in damage to the natural environment. The contractor must prefer existing approved borrows in the Kruja region some 20 km far from the site. Requirements for obtaining gravel from riverbeds are given in Law No. 8093/96, Article 20. However there are a number of operating borrow pits along the Tirana River from which materials are currently extracted.
- *Improper disposal of surplus materials* can cause damage to the natural and human environments as well as being eyesore. Although, in the preliminary estimation is calculated a small quantity of disposed material the contractor must be requested to prepare and implement a plan to temporary store or disposal of this material in an environmentally sound fashion in consultation with the Employer and responsible Environmental Agencies[1]. This plan has to be prepared by the Contractor in the site before the commencement of the activities. In this plan the contractor must define clearly the quantities of the material that will be stored temporarily and what part of it has to be transported to the final destination of disposal. Details of this plan must specify also the nature of the material that will disposed and the origin

i.e. excavation in channels/ditches, topsoil, scarification of existing road surface or other. This plan has to be reviewed initially by the Supervision of the Contract and after that to address for final approval by Environmental Committee Branch of Tirana and by Cleaning Department in the Municipality of Tirana. The contractors must use for disposal of surplus material the existing approved landfill in Sharra or in Farka Bridge that are located within a distance of 10 km from all sites. Contractor also may propose other opportunities for other places after having ensured necessary permissions from Environmental Committee and Municipality of Tirana.

- *Improper operation and closing of work areas* on completion of the works leading pollution from human and construction wastes and permanent degradation of the environment. The contractor will be required to operate and close the sites in an environmentally sound fashion[2].

2.2.2 Human Environment

Relocation – Clearance of structures within Middle Ring Road Right of Way – The Middle Ring Road will be constructed entirely within legally established rights- of- way over the entire 3.42 km of the project. To accommodate the proposed upgrading and widening of the roadway and similar improvements to the sidewalks, some demolition of structures is required. The consist of removing additions made onto existing structures, and removing walls and other minor structures. No residents will be required to move and some commercial establishments will be removed to other similarly locations. However, in some cases the amount of remaining space left for use by commercial establishments may be reduces due to the required clearance operations.
[1]

No compensation will be paid to the owners of structures demolished as the right-of- way for the middle ring Road was clearly established and owners encroached on this right of won risk. While local law requires the owners encroaching on public rights of way to remove structures at their own expense, under the Projects all structures will be removed at the cost of the Tirana City Government. While there will be some inconvenience to persons and commercial establishments along the Middle Ring Road due

[1] Art. 20 – Permits and authorizations for the exploitation of the gravel from the bed of rivers, streams etc.
"Permits and authorizations for the due exploitation of aggregates, sand, etc. from the bed of rivers, streams, lakes etc. with or without water will be issued by the Water Authorities"
"A company interested in having a concession for the exploitation of a river borrow pit has to fill a form which can be found at the Water Department in the Ministry of Territory and Tourism and must submit this form to the Water authorities. This form must be completed with information regarding the candidate, activity and materials to be covered by the concession, period of time requested, the place, its characteristics, the area involved in the concession, the characteristics of the material which will be extracted from the river, how the concessionaire intend to develop its work, methodology of work for each category of works, safety of the labor resources, measures for protecting the environment and the limitations of the effect against the natural environment."

[2] The amount of the surplus material that has to be disposed from all the road sections is calculated to about 560 m3 of excavated material. This material is composed by deteriorated existing road structures and topsoil. This material result as no hazardous environmentally material.

to demolition of some structures, the substantial improvement of the roadway and sidewalks will constitute a substantial improvement and ultimately will result in a net benefit to the abutting users.

Land Use – The widening, realignment and the reconstruction of the road, will not require any land acquisition. In all the length of the project the alignment will remain within the existing right-of-way. In the cases where the width of the right-of-way reduces, the design will maintain the same carriageway of the road and the reduction will affect in the width of the sidewalks and the green strips along the road.

Public Services – Basically the main public services will be affected by the project. The project will improve the water supply system, drainage and sewerage system, road lighting, will increase the protection of electrical and phone lines in new pipes and manholes. Temporarily during the construction period, these services may create problems to the users. These problems may affect more during the process of the connection of the new cables and pipes with the existing network of the users along the road project.
In these cases the contractor has to prepare the detailed action plan before each step of its activity in the site. This plan must foreseen the accommodation and protection of all public services established in the site of activities such as phone and electrical cables, optic cables, water supply pipes, road lighting cables or other facilities that might result by the inspection of the site. The contractor must coordinate the activities with the responsible enterprises that have the properties of these networks like Telecom, KESH (Electrical Corporate), and Water Enterprise in order to reduce in maximum damages and the time of realizing the links with the existing network. This plan must be reviewed initially by the Supervision of the Contract must start the implementation after the final approval of the Employer.

2.3 Operation

2.3.1 Natural Environment

The operation of the road will result in some release of pollutants such as oil, dust and heavy metals that will be washed into nearby drainage and sewerage collectors of the City.

Population – There is a significant population and activities in both sides along this road. To the extent that the road can lead to improved economic conditions not only for the residents along sides but also for all the traffic in the city. The increasing of the road width and the improvement of the road surface and services will lead a better connection of the quarters between each others and with the center of the City.

Public Health – There is one of the biggest hospital situated by the side of the section 2 of the road that will reconstructed. There are also some public clinics along the road segment. The widening and reconstruction of the road will provide a faster access for the people to these services.
The improvement of the road will increase the driving speed in the road and will reduce the traffic in the road and the time of travel. In these conditions less polluted gases will be produced by the same quantity of traffic.

Public Services – The improvement of the existing road is expected to have a significant direct impact on public services. Hospitals and clinics, but also schools, municipal buildings, airports, and other public service facilities will be taken. Travel times to public services may shorter and employment in them may be more attractive but the effect is expected to be minor. On the other hand, the improvement of the existing road in the area where traffic is really a big problem could have a major direct impact. Access to public services will be far better.

Road Safety – The improvement of the existing sections of the road will increase the driving speed. However, it will increase the lines of sight. A new system of traffic lights and road signs both vertical and horizontal will be installed in the cross sections and along the road. A along side parallel parking line will be applied where possible along the road. All these improvements will increase the serviceability and the safety of the road segments and cross sections.

3 ENVIRONMENTAL MANAGEMENT PLAN

The project Term of Reference indicate the need to prepare the Road Design in all components including the widening of the existing carriageway and the reconstruction of the sidewalks within the existing right-of-way. The consultant will prepare also the detailed cost estimate for all the sections. In the project will included the realignment of the new underground infrastructure such as: water drainage and sewerage, electric, telephone and street lighting system, traffic lighting and road marking, planting of vegetations where possible by the width.
The environmental management plan (EMP) will therefore include the all three sections of the Middle Ring Road which are intended in the project in all phases of the implementation of the project: design, construction and operation. A summary of the mitigation plan is provided in the Table 1.

3.1 Alignment

The alignment of the new road will respect the existing axe of the road. Widening of the carriageways will realize symmetrically in both sides of this axe. In all cases the

new design will respect the existing right-of-way as indicated in the Master plan. The Consultant has prepared three options (improving each other) in order to minimize in maximum the demolition of structures.

As result of these efforts is arrived to avoid the destruction of houses, apartments and residential structures along all sections. In the cases when the residential structures were positioned in the alignment of the new sidewalk, the consultant has chosen the solution of creating underpasses between the columns of the structures reducing only the spaces of the ground floor that in all cases are identified as commercial or services spaces. By luck, no structures used as residence are positioned in the new carriageway or parking lines.

3.2 Archeological Survey

A detailed archaeological survey of the final selected design shall be undertaken in parallel with the final design and should any archaeological relics be found they shall be removed and preserved prior the commencement of construction. In event that a significant find is located, such as relics of walls or any other type, the works must stop immediately and the contractor must notify the Project Manager and Employer that must pay the maximal attention in identifying and conservation of valued objects.

3.3 Tender Documents

The bid documents need to include all the requirements listed in Sub-section 3.3 below. The following provisions shall be incorporated into the tender and contract documents.

- **Embankment and & Slope protection.** Tender documents and contracts shall be amended to ensure that all necessary actions are incorporated to ensure embankment stabilization, including the selection of less erodable material, placement of gibbons and riprap and good compaction, particularly around bridges and culverts. Contract documents shall specify that final forming and re-vegetation must be completed as soon as possible following fill placement to facilitate regeneration of a stabilizing ground cover. Trenching should be required where necessary to ensure successful establishment of vegetation. Contracts shall specify that:

  - Slopes of road embankments will be seeded with a fast growing crop and potential native seed mix immediately after fill placement to prevent scour and to encourage stabilization.

  - Embankment slopes and road cuts will be stabilized by re-vegetation with grazing resistant plant species, placement of fiber mats, rip-rap, rock gabions, or other appropriate technologies.

- Discharge zones from drainage structures will be furnished with riprap to reduce erosion when required, particular in instances in which drainage structures are installed and/or road formation levels are raised and create bare slopes that require stabilization before the onset of the monsoon.

- Down drains/chutes will be lined with rip-rap/masonry or concrete to prevent erosion. Side slopes will be adjusted to in a range to be determined as necessary and specified in the tender documents to reduce erosion potential or, if steeper, stabilized, covered with riprap or other material to prevent soil erosion.

- **Borrow Pit Restoration Requirements**. It is recommended that contracts be reviewed to ensure enforceable provisions stating that:

  - Borrow areas will be located outside the ROWs.

  - Pit restoration will follow the completion of works in full compliance to all applicable standards and specifications.

  - The excavation and restoration of the borrow areas and their surroundings, in an environmentally sound manner to the satisfaction of the GRD or the construction Supervision Consultant (SC) acting on behalf of the GRD, will be required before final acceptance and payment under the terms of contracts.

  - Borrow pit areas will be graded to ensure drainage and visual uniformity or to create permanent tanks/dams.

  - Topsoil from the opening of borrow pits will be saved and reused to re-vegetate the pits to the satisfaction of the SC. Additional borrow pits will not be opened without the restoration of those areas no longer in use.

- **Siting of Construction Camps and Related Facilities**. Project contract specifications shall stipulate that the siting, construction and environmental restoration of facilities for the housing of construction personnel, the storage of equipment and vehicles, labor camps and similar facilities must be conducted to the satisfaction of, and are subject to the approval of the SC. It should be clear that the stipulations apply to all such facilities, including those that are privately negotiated.

- **Siting of Asphalt Plants**. Contract provisions shall require that asphalt and hot-mix plants will be located at least 500 meters away from the nearest sensitive receptor (e.g., school or hospital) and subject to the approval of the SC, and that operators are required to install emission controls. Contract specifications shall stipulate that the siting, construction and environmental restoration of these facilities must also be conducted to the satisfaction of and

are subject to the approval of the SC. It should be clear that the stipulations apply to all such facilities, including those that are privately negotiated.

- **Other Construction Equipment**. All construction equipment shall be licensed and permitted in accordance with local requirements. If Albania does not require air emission standards for construction equipment, such equipment shall be certified to meet European Community standards or equal The Contractor shall present a copy of such certification to the SC.

- **Baseline and Routine Periodic Air Quality Monitoring**. Pre-construction monitoring of total suspended particulates (TSP) to establish baseline conditions shall be undertaken by the Contractor at locations as determined advisable by the Supervision Consultant (SC). Construction contracts should specify that instrumented monitoring will be required over a period of time of one month, prior to the initiation of construction to establish baselines against which impacts can be measured. Baseline monitoring locations should be determined on the basis of actual construction plans, including the specific locations of pollution sources (e.g., asphalt plants) and properly supervised by the MoT/SC. Additional instrumented baseline monitoring for air pollutants other than TSP is not considered warranted in light of existing ambient conditions and/or the unlikeliness of significant Project impacts or both. Contingency provisions for additional baseline monitoring at the request of the MoT/SC, should be included, however, in the event that unforeseen circumstances are encountered.

  Specialized instrumented monitoring of total suspended particulate (TSP) at the same locations, as the earlier baseline monitoring points shall be stipulated for each Construction Package. Air quality monitoring should occur not less than once per month at each location and more frequently if determined necessary by the SC. Contingency provisions for additional air quality monitoring at the request of the MoT/SC if warranted by events should also be specified.

- **Other Air Quality Provisions**. In addition to the provisions for the siting of asphalt plants, contract provisions shall also be reviewed to ensure that:

  - Open burning is prohibited.
  - Solvents and volatile materials shall be used to the satisfaction of the Supervision Consultant (SC).
  - Blasting (if any) is carried out using small charges.
  - Dust-generating items will be conveyed under cover.
  - Road surfaces, excavation and construction sites will be water sprayed to keep them moist for dust control as determined advisable by the SC.
  - Trucks carrying earth, sand or stone will be covered with tarps to avoid spilling.

- **Baseline and Routine Periodic Water Quality Monitoring**. Pre-construction

monitoring to establish baseline conditions should be undertaken at locations as determined by the SC. Baseline monitoring of water quality is recommended on the Tirana River close to the road alignment and work camp. Measurements of suspended solids (SS), biological oxygen demand (BOD), dissolved oxygen (DO), conductivity and fecal coliform, and oil and grease levels are required.

Instrumented monitoring of water quality and runoff from construction camps, staging areas and labor camps, not less than once every month is required. It is required to include measurements of suspended solids (SS), biological oxygen demand (BOD), dissolved oxygen (DO), conductivity and fecal coliform, and oil and grease. Contingency provisions for additional water quality at the request of the MoT/SC, if warranted by events, should also be specified.

- **Other Provisions Related to Water Resources**. In addition to the erosion control, labor camp and related provisions, accommodations incorporated in the detailed design contract provisions shall be reviewed to ensure the adequacy of waste disposal provisions, including provisions for the disposal of waste oil, human waste.

- **Baseline and Routine Periodic Noise Monitoring**. Construction contracts shall specify that instrumented baseline noise monitoring over a stipulated period of time prior to the initiation of construction to establish baselines against which impacts can be measured. Additional instrumented baseline noise and vibration monitoring is not considered warranted in light of existing ambient conditions (existing vibration levels in urban areas, for example, are essentially nil) and the unlikelihood of significant Project impacts or both. Contingency provisions for additional baseline noise monitoring at the request of the SC shall be included however, in the event that unforeseen circumstances are encountered.

  Routine instrumented monitoring of noise levels should be stipulated at not less than two locations in Road Rehabilitation Sites at the same locations as the earlier baseline monitoring. Instrumented monitoring should be stipulated not less than once per month and more frequently if determined necessary by the SC. Contingency provisions for additional noise and vibration monitoring at the request of the SC if warranted by events should also be specified.

- **Other Noise-related Provisions**. Contracts should specify source controls, time of day restrictions, time and activity constraints and community awareness activities.

- **Wastes**. The contractor shall be required to dispose wastes in an environmentally sound way as specified in the Local Sanitary Regulations No. 376 date 17.11.1997 Item III- Disposal of Wastes (see Attachment 3). Wastes include sewage and solid wastes, waste lubricants, and construction wastes.

The contractor shall prepare a plan for waste disposal to be submitted to the SC for his and MoT's approval.

- **Safety Provisions**. Contracts should contain provisions for detours and traffic interruptions, blasting procedures (if any) and emergency response procedures in the event of accidents or natural disasters.

- **Community Relations**. Contracts should contain provisions requiring public information programs in advance of construction, notification procedures, etc.

- **Cultural Resources**. Contracts shall contain provisions to stop work and to notify the SC in the event of the finding of archaeological or cultural remains on the alignment, and to cease work in their vicinity until such time as a team from the Archaeological Institute of the Academy of Science of Albania can be sent to the field and it has had a reasonable opportunity to identify and remove any artifacts.

The following is the procedure to be followed in the event that archaeological or cultural relics are found:

- The Contractor shall stop work and notify the SC and the Director of the Project Implementation Unit (PIU) of the Ministry of Transport based at the General Roads Directorate and the Municipality of Tirana.

- The PIU will then notify the General Director of GRD and General Director of the Public Works in the Municipality of Tirana that these must notify immediately the Archaeological Institute of the Academy of Science of Albania to take necessary actions.

- The PIU will coordinate the mobilization of the team of experts to visit the site and to undertake the necessary steps for the identification and removal, if possible, of the finds and for the further monitoring of those areas that could be contain other relics to the find.

- The contractor shall have the right to be compensated for the cost he has to bear for the immobilization of his equipment throughout the duration of the suspension of works in the area. Additional time will be given to the Contractor equal to the actual time he has obliged to stop works.

- The cost of the team of archaeologists and excavation will be borne by the Municipality of Tirana.

- **Site cleanup**. On completion of works the contractor shall be required to remove and cleanup all his work sites, removing and disposing of materials, debris, and wastes in an environmentally sound way.

3.4 Road Safety

A Road Safety Audit program shall be undertaken by a specialized international Consultant in conjunction with the revision of the design and tender documents. This shall specify design measures, vertical and horizontal signage, guardrails and all other measures necessary to ensure maximum traffic safety. These measures shall be included in the contract drawings and technical specifications as appropriate. Further safety audits should be undertaken during construction and operation to ensure that measures are implemented and successful.

The road safety program will include audits at the following stages:

- Prior to final design a road safety expert will visit the selected road alignment and, after discussions with MoT/PIU, prepare an audit report indicating road safety elements to be included in the road design and incorporated into the construction contract drawings and specifications.
- Prior to acceptance of the final design, the safety expert will review the design drawings and specifications to ensure that the safety requirements have been met.
- On completion of construction and prior to commissioning of the road the safety expert will inspect the road to ensure that the required safety features have been incorporated. He may also recommend additional administrative measures to be taken such as speed limits. He will submit an audit report indicating either acceptance of the road or listing items that need to be completed as well as his recommendations for administrative measures to be taken during operation of the road.
- Approximately two years after the road has been opened the safety expert will inspect the road and review safety experience with the responsible authorities. He will prepare an audit report detailing any further measures he recommends improving safety.

It is recommended that the safety audit procedure be combined with training in the procedure for MoT staff such that they would be capable of undertaking the audit procedure for other urban roads in Tirana in the future.

3.5 Construction

Construction shall be undertaken in accordance with requirements of the revised tender documents including the specifications for minimizing environmental impacts. The requirements of the resettlement plan shall be fully implemented to ensure that impacts on the project on the affected population are minimized. All administrative measures will be established prior to the destruction of any structure or the taking of urban land. Where

commercial activities have to be resettled prior to the taking and destruction of existing structures.

It is estimated that the contractor will employ approximately 200-250 local labor forces. The local workers will be hired locally and live at home or provide for their own housing.
Implementation of the specifications shall be monitored by both the SC and MoT and PIU. Should a design-build contract be awarded it is recommended that an outside consultant be hired to review the Contractor's performance.

MoT must fund the presence of a full-time environmental specialist during construction.

Prior to completion and opening of the new design of the road to traffic a second Traffic Safety Audit shall be undertaken by an independent auditor to ensure that all the required safety measures have been installed.

3.6 Monitoring

The Environmental Monitoring Program incorporated in the Project will include routine site inspections and reporting. Specific baseline and periodic monitoring recommendations related to the major environmental criteria are as follows. These are summarized in Table 2.

Soil and Erosion-Related Monitoring - During construction the MoT Environmental Expert shall inspect all ongoing works weekly to ensure that soil erosion controls are being properly implemented. Where requirements are not being implemented, he/she shall immediately notify the Contractor and the SC who shall be responsible to ensure that appropriate corrective measures are taken. During operation, the MoT Environmental Officer shall inspect the roadway four times a year to determine whether any area is particularly susceptible to soil erosion, or whether such erosion is occurring. In the case that he/she finds signs of erosion, actual or potential, he shall immediately notify the responsible MoT office and superiors, which shall be responsible for taking appropriate corrective action.

Water Quality Monitoring

Instrumented Baseline and Routine Periodic Water Quality Monitoring. Pre construction monitoring to establish baseline conditions should be undertaken at locations as determined advisable by the SC (See Section 3.2). Baseline monitoring of water quality is recommended at the locations of major sources of potential water pollution (construction camps and other sources of significant runoff and liquid waste generation).

Measurements of suspended solids (SS), biological oxygen demand (BOD), dissolved oxygen (DO), conductivity and fecal coliform, and oil and grease levels are recommended. The frequency of water quality monitoring shall be established by the SC during the construction period and implemented by MoT and relevant public enterprises during the operation of the road.

Air Quality Monitoring

Instrumented Baseline and Routine Periodic Air Quality Monitoring. Pre-construction monitoring to establish baseline conditions will be required at locations as determined advisable by the SC within the road rehabilitation segments of sufficient length to warrant such monitoring. Additional instrumented baseline monitoring for air pollutants other than TSP is not considered warranted in light of existing ambient conditions and the unlikelihood significant Project impacts. Contingency provisions for additional monitoring at the request of the MoT/PIU/SC will be specified however, in the event that unforeseen circumstances are encountered.

Noise Monitoring

Baseline and Routine Periodic Noise Monitoring. Construction contracts will require instrumented monitoring over a period of time prior to the initiation of construction to establish baselines against which impacts can be measured. Baseline noise monitoring will be required only where the duration of potential impact and the proximity of sensitive receptors warrant such monitoring. This will be in the section one near the high school "Harry Fultz", in the section two near the market and in the section three in the Hospital territory. Routine instrumented monitoring of noise should be stipulated at same locations as the earlier baseline monitoring. Instrumented monitoring should be stipulated not less than once per year during operation of the road.

Reporting

MoT and PIU Must prepare an annual report detailing the results of the monitoring program.

3.7 Institutional Strengthening

In order to be able to undertake adequate monitoring of the Middle Ring Road Project, as well as other projects for which it is responsible, the Municipality of Tirana (MoT) will appoint a full time Environmental Officer who will be in charge of the Projects Monitoring Unit in the

General Directorate of Public Works. This official will be recruited from among qualified local experts and will also be given additional training as warranted.

4 RESETTLEMENT PLAN

4.1 Executive Summary

The Resettlement Plan for the new project of the Middle Ring Road in Tirana has started in the last days of 2003, after the instruction of the Bank Mission of December 2003.
The Municipality of Tirana extended the scope of the work of the existing contract with SDC (The Consultant) for the designing of the new project.

The team of specialists involved in the preparation of resettlement plan and field surveys were divided in two working groups. An environmental engineer and an assistant composed each of these field-working groups. In most of the visits in the project area, representatives of the Municipality of Tirana assisted our groups. Their presence was considered helpful in explanation of the project and future investments to the people that operate in the structures along the road. At the time of this report and updating of EIA the final design of the road with possible alternatives including the common sections and cross sections is been prepared. As described above in this EIA, the taking of houses has been totally avoided but also other structures has been largely avoided by an appropriate revised final design of the road. It is estimated that the lines of the new project will affect a maximum of 146 structures, both kiosks and concrete buildings. After the preparation of the precise alignment and necessary reductions in the total width of the new road and based also in the detailed site survey is concluded that is possible to avoid the taking of structures altogether or maintaining the concrete structures by creating underpasses in some sections of the sidewalks. In all cases it will be possible to relocate the structure on either the same lot or nearby in order to minimizing the social disruption.

A door-to-door survey was undertaken of the structures affected on the common section and based on this a socioeconomic survey has been prepared on the bases of the data taken. A form has been prepared and completed for each activity/building and a sample form is attached to the study. Besides the public properties along the road, all private constructions are built with no permission by the legal authorities and no compensations can be made to these properties according to Albanian Law No. 8561 copy attached.

The survey indicates that the majority of structures were rented by the people that have commercial activities. In all the cases (rented or owned) the people were aware of the new project and expressed collaboration and understanding for the issue. Same voluntary reallocations are expected to take place before the civil works are undertaken. No recent allocations of people/activities were noted in the project area with beneficiary intention by the project.

4.2 Methodology

Objective and principles: - The basic objective of the survey is to provide the basis for the preparation of a resettlement plan. The site survey has covered all the length of the common section of the new project.
The resettlement plan is based on primary and secondary data and extensive consultation with stakeholders. A set of questionnaires were prepared to collect the primary data for the information in the resource base of the affected population and to develop the socioeconomic database for monitoring and evaluation. The consultation was organized to address the needs of different social groups.

The purpose of this survey is to assess the possible impact of the project on the people having commercial activities and properties along the project in terms of loss/reduction of activities or properties. The survey also aimed at finding out the potential project affected persons' perception about the project and their initial reaction to the idea of relocation and resettlement. The study will also identify the different groups of activities/properties and to find and propose to all cases an acceptable solution.

A team of 5 investigators working independently in two groups collected the information. The two field groups were created in order to reduce the time of collecting data in site, a senior professional supervised both groups.

The activities/building census survey gathered quantitative information on the loss/reduction of structures/commercial activities due to the project in order to facilitate resettlement and rehabilitation.

Transparency of process: - The data for the 100% detailed census survey were collected through interview method, with the help of a structured questionnaire. The majority of the people in the structures likely to be affected by the proposed road project were included in the interviews to determine and assess their likely loss.

All the activities were contacted in their location. People were notified in writing with an approved notification in which was shown a short explanation of the project and the timing of execution. All the primaries of the activities were consulted with the part of the project in the nearby area and opinion was taken were available. An address and a phone number in the Municipality of Tirana was given to the PAP for further explanations if necessary.

The exact location of every structure was decided by measuring in site of each structure. A photograph was taken for every structure. The names and addresses of the owners or peoples operating in the building were registered and the type and starting year of activity is included in the census. Tenants, encroachers and squatters were identified.

Consultation and Participation – The scope of public consultations is to disseminate information about the project to the potentially affected people and to incorporate their views and suggestions in the preparation of the final engineering design where possible.

In general, the social impact survey team members facilitated the public participation, which included members of the local community, local governments NGOs and central government officials.

4.3 Identification of Project Affected People (PAP).

The results for the identification of the structures and activities affected by the construction of the new road were taken by a door-to-door survey. The peoples that perform activities in 146 structures that may be affected from the improvement of the road all along the project sections were interviewed.

From this it was determined that 10 structures that are shown in the resettlement plan drawing that is 7% of total number are fences or concrete platforms that do not affect to the main business situated in the adjacent structures. There are 5 structures (kiosks with light construction) that may be removed to a new position close to the existing position but out of the project lines.

Along the road sections of the project the working team has identified 40 structures that are extensions of the existing buildings. In these cases, the extension affected by the project will be demolished in full or partially. All these people may continue the same activity in a slightly reduced space, which in all cases is not being reduced more than 25% of total space of main structure. Some structures of the extensions were identified as temporarily constructions and the activity there is seasonally because of cold weather, rain etc.

The rest of the structures, 96 units of activities, must be displaced in total. In this group of activities only 28 of them are managed by the owner of the structure, while 54 activities has rented the structure where they operate and the rest of 14 structures are found without any activity for at least three months before the date of interview. The details of all the groups of structures are shown in the table in Appendix 1.

Characteristic of the structures that will be displaced – Almost all the structures that will be displaced are mainly commercial structures that are used by the owners for own business or rented, some owners living far from their buildings, while non of the structures serve as residence.

The majority of the structures situated along the road are defined as temporary building 78 units or 53% of total number. In this category are included the kiosks with no concrete construction or foundations and covered with light material roofs. This type of constructions can be easily moved or reduced where possible for liberating the project area. Even in the cases where these buildings are used as bar or fast food, is found no WC (toilets) inside the buildings and in most of cases no indoors plumbing or on site water source.
The rest of the structures 68 units or 47 % are identified as one or more floor buildings and build with concrete construction.

By the end of the road section 2 of the new project, the majority of the commercial activities have rented the building by using the facility of the existing public industrial market situated nearby. All the people interviewed that have their business in this area expresses no major concern for the displacement of the structures and changing their place of the activity within the area. Not any of the activity established in these buildings receive income from artisan work or any productive activity that is connected with nearby source of raw materials for their acti

4.4 The Expectations of the PAP

Almost all the people that have the activity by the side of the new project consider the improvement of the new road and its extension necessary. Their only concern regarding the alignment was to find possibilities for reduction of green strips and sidewalks where possible to reduce some displacement. These cases were noted in the cases when the activities were developed nearby their houses or apartments.

In general, the owners of the structures that will be displaced totally or partially prefer to do by their selves the demolition or reduction of the structures according to the plans approved. While some of the owners of the structures has request assistance by the authorities to move their activity nearby but out of the project lines or in the vicinity of the existing structures. A very small number (about 3%) has shown resistance to accept one of the solutions proposed. For this last group of people the interviewers had the feeling that their resistance was shown on purpose to secure the major benefit from the situation.

The group of activities that have rented the structures were in majority indifferent to the changes and displacements. Their only concern was to be notified in due time (at least three moths before the displacement) in order to be prepared to move their activities in another place and to close the existing rental contracts with the owners of the structures.

However, in all cases it is necessary to respect the preferences (where possible) of the people running the activities adjacent to the road in order to help their economical development and their living way.

4.5 The Need for a Facilitating Organization

For the process of displacement and later must be considered necessary to establish an appropriate Unit within the Municipality of Tirana, composed by experienced professionals with the capability to provide assistance in social services to the PAP.

This unit must be responsible to coordinate the construction of the road with the affected activities, facilitate the process of displacement and assist displaced persons during and after the construction. This unit will monitor the process of rehabilitation of PAP, must provide social and psychological help with a special focus on marginalized people, especially women and children and any vulnerable persons with limited abilities.

Provision for grievance redness: - The organization (unit) suggested above is indispensable to be created and starting the activity before the time scheduled for the process of displacement and demolitions of scheduled structures. During this period of time the unit must start the contacts with the PAP to explain the details of the design in their area and to create a specialized connection with the consultant in order to take any provision measure in case of possible redness during the process of displacement.

Such organization must become sensitive and aware the community's needs and take an active part in the process as well as providing support during a further period of social consolidation after the completion of the works contract.

4.6 Alternative Sites

In the project proposed there are no alternative solutions for the alignment of the new design. The new design is based in the existing axe of the road and respecting the right-of-way that is decided by the Master Plan of the City.

Regarding the alternative designs of the main cross roads, three in total, the Technical Council of the City has approved already the options with traffic lights that means the alternative that request the minor designated space and that affect in minimum in the structures adjacent.

4.7 Record of Public Consultations

Due to the short time available for the preparation of the EIA, public consultations were relatively limited. However, it is felt that good cross-sections of opinion was contacted. Coordination and consultation meetings and events included meetings with representatives of local communities and representatives of activities along the road.

No specific environmental issue of significant concern in relation to the project was brought out during these meetings.

Separate meetings were held with Heads of Municipal Units (Elected Persons) in the territory of which are situated the road sections of the project. (MU No. 11, MU No. 9, MU No. 8, MU No. 4 and MU No. 3). All these persons indicated the importance of upgrading of these road sections to provide an improved link of the urban transport system. These persons show no specific concerns or recommendations on the technical aspects of the project and were relying on the recommendations of the Consultants.

Informal discussions were held with all people that runs the commercial activities in the structures along the road and with local residents. For each structure/activity was filled a standard Form in which are recorded all the necessary data regarding the technical data for structures and related to the form of the properties of the commercial activity.

A public opinion survey was undertaken as part of EIA study. 87 percent of those interviewed were in favor of rehabilitating the Middle Ring Road as foreseen in the project and eager to know when construction would start. In majority all females were strongly supportive of the road construction when speaking in the presence of their husbands. Although female are a small percentage in the position of road users, those consider a great benefit from the rehabilitated road, the reduction of dust and noise and improvement of lighting system and sidewalks.

Of 87 percent of residents who considered rehabilitation useful the benefits perceived were as follows:

- Possibility to enhance one's culture and civilization 28 %
- Facilitation of traveling and road safety 56 %
- Economic development 16 %

The possibility of employment during the construction was also an important consideration.

Of those interviewed 13 percent does not believe that road rehabilitation would bring any benefits.

The problems foreseen by the respondent as a result of rehabilitation included:

- Loss of illegal activity or structures 78 %
- Air pollutant emissions and consequent hazards for people 14 %
- Increased noise 8 %

Almost all the interviewed persons were expressed in favor of the widest typical cross section with widest sidewalk and green strips in both sides.

An interview Form is included in the report.

4.8 Legal Framework

The legal framework that must be respected during the process is described in the relevant law. Law No. 8651/99 for Expropriations is translated and included in Appendix 3.

4.9 Resettlement and Rehabilitation

After the interview of all activities along the three segments of the new project of the Middle Ring Road the results were recorded in the format of interview for each activity.
The PAP and the structures of their activities were divided in groups as follow:

Group a) Structures that are not classified as buildings (fences, walls, concrete platforms, canopies, shades etc.) and structures will no activities inside. In total for both three sections for this group of structure are identified 10+14=24 items.
All these structures were identified as illegal construction built in public property. The fact that no people were interviewed and that no activities were running these structures might be subject of demolitions without creating any significant impact.

Group b) In this group are classified the extensions of the ground floors of the buildings were activities are established. These kinds of structures are identified as both temporarily or definitive structures. In all cases these extensions are attached to other functional space inside the old building that is not affected by the project.
There are identified 40 structures with these characteristics.
Even these structures will be subject of demolition because in all cases the width of sidewalks adjacent to those cannot achieve any of requested parameters.
In all cases scheduled in this group, the activities may continue in the same structure. The reduction of the existing space of the activity does not exceed 25% of previous structure and besides of that, some of the displaced temporary structures might be replaced after the completion of the new road, were possible and according to legal procedures.

Even in this group no important impact is considered. The person interviewed that run these activities have shown no interest to move their activity from the existing structures.

Group c) In this group are scheduled the 96 structures that has to be displaced totally, from which 82 of them are actually running activities.

14 of those are included in *group a*.
In these 82 activities interviewed we listed 28 activities that are managed by the owner of the structures and the rest of 54 structures are in rent by the persons that run the activity.
Among the 54 rented activities, 32 of them prefer to arrange by their own choice the displacement of the activity in another place. Almost all of persons interviewed in this subgroup, requested to know exactly the time of displacement in order to start the preparations for this procedure.

The remain of activities from this group numbered 50 units, are scheduled according to the type of commercial activity and alternative place were resettlement is proposed with almost the same space and conditions. Where possible, to some persons were offered more than one alternative.

The proposed alternatives are as follow:

- 27 units of commercial of clothes and other industrial merchandise might be allocated in one of two public markets. One of them is situated adjacent to the road of project.
- 12 units of commercial of electrical equipments and accessories can be allocated to one of two public markets of the same type situated nearby Middle Ring Road in the sections already completed.
- 11 units of activities mainly with groceries can be allocated in one of three new markets along the Middle Ring Road according to their preferences.

The Municipality of Tirana has to take urgent measurements in order to provide the necessary free spaces for these activities in the proper markets that are managed by this Institution. The Department of Market and Taxes which is directly responsible for such activities must be advised to start immediately the procedures for creating these spaces or saving such space in the new markets were the activities have not yet started.

A spare space of at least 10 % of the space requested in general by these displacements must be available in each respective market for any grievance redness caused during the process. The Department of Markets and Taxes might take in consideration a reduction of taxes for a period of one month that can be considered as time for resettlement of activity.

From all persons interviewed along the designed road sections, only 6 of them do not accept the resettlement solution proposed.

The result of the door-to-door interview process and records for each structure affected is shown in the following table.

The Environmental Impact Assessment is prepared by the Consultant S.D.C sh.p.k – Tirana, Albania under the direction of ing Maksim Arapi, head of the Technical Department of the consultant. The EIA and RPA are prepared with contribution of Environmental Engineers Eva Çali and Redion Biba.

The Resettlement Plan report is prepared with close consultations of specialists of Public Works Department and Taxes and Market Department in the Municipality of Tirana that have assisted the field groups during the door-to-door survey.

The reports are consulted in advance with the existing studies for relevant projects and with the existing Environmental Law in Albania.