Diagnostic Report of the City of Larnaka and surrounding area

The Urban Sustainable Development Strategies (USUDS) project

The European Union’s USUDS project for ‘Larnaka’

November 2013
The USUDS program refers to the Mediterranean Network to promote Urban Sustainable Development Strategies and is part of the European Programme ENPI (European Neighborhood and Partnership Instrument) and CBC MED (Cross Border Cooperation in the Mediterranean).

The USUDS program falls under Priority 1 in promoting socio-economic development and improvement under point 1.3 on the strengthening of national strategic territorial planning by integrating different levels and promoting balanced and sustainable socio-economic developments.

The project partners come from four Mediterranean countries: Spain, Tunisia, Lebanon and Cyprus. Representation comes from the Metropolitan area of Barcelona, the CIEDES Institute of Andalusia in Spain, and the Municipalities of Sfax and Sousse in Tunisia, the Municipalities of Saïda and Al Fayhaa in Lebanon and the Municipality of Larnaka in Cyprus.

The program lasts for two years with a total budget of €2,863,011. The budget contributors are the ENPI Network (62%), the partners (22%) and other organizations and institutions (the remaining 16%). The Municipality of Larnaka has been allocated €454,000, of which 14.5% will come from its own resources.

It is commonly acknowledged that the development of cities and the urban system is not perfectly balanced. This raises the need for decisions at the strategic level in order to create specific development strategies through a participatory process that builds on all the social partners of the City.

The USUDS objective is to address the challenges of urban planning development as described above, through the promotion of sustainable urban strategies and exchange of knowledge and experiences. The program will implement three strategies for urban renewal in the cities of Sousse, Saida, and Larnaka, and set up three centers of knowledge and expertise transfer in Malaga, Sfax and Al Fayhaa.

The program has the goal to prepare the strategic framework for urban sustainable development of Larnaka that will result in a detailed action plan with projects, studies and interventions for the wider Larnaka with particular emphasis on its implementation and monitoring. The steps followed to achieve the above objective are: the Pre-diagnostic Study involving the collection of all data and studies for the City; the Diagnostic Study that analyses the data of the City and identifies the critical points in its development through an expanded participatory procedure; and the preparation of an Action Plan resulting from the Diagnostic Study with particular emphasis on implementation and monitoring.

The group structure of the Municipality of Larnaka team that is accredited in the program is composed of: members of the City Council under the City’s Mayor; members of the Municipal Office; and the Local Group, that is entirely funded by the program. Also included is an International Expert, entirely funded by the program, and an expanded co-ordinating committee involving other interested bodies of the City and government departments.
Specifically, the project team consists of the following people:

- **Project Manager**
  - The Mayor, Mr. Andreas Louroutziatis

- **Municipal Department of Larnaka**
  - The Coordinator, Mr. Eleftherios Empedocles, the Municipal Secretary
  - Technical Support
  - Head of the Project, Mr. Andreas Karakatsanis, Municipal Engineer
  - Neofytoula Angelides, Urban Designer
  - Vassos Steliou, Engineer
  - Christiana Kouzari, Head of Environmental Monitoring
  - Administrative and Financial Support
  - Dimitris Georgiou, Clerk
  - Loukia Constantinou, Clerk

- **Local team**
  - Konstantina Konstantinidou Architect/Urban Designer, Co-ordinator
  - Elena Papageorgiou, Landscape Architect
  - Thomas Thompson, Environmental Scientist
  - Simos Nicholas, GIS & Mapping Expert
  - Eliza Kitipou, Administrative Officer

- **International Expert**
  - Mr Josep Acebillo, Professor of Architecture

The co-ordinating Committee is composed of the following members:

- **The Mayor of Larnaka**
- Representatives of the political parties in the City Council
- President of the Chamber of Commerce
- Representative of the Larnaka Tourist Board
- Representative of the Technical Chamber (ETEK)
- Representative of the Cyprus Organisation of Professional Craftsmen and Shopkeepers (POVEK)
- Representatives of environmental organizations
- Representatives of Government Departments
  - Department of Urban Planning and Housing
  - Department of Public Works
  - Department of the Environment
  - Department of Antiquities
  - Water Development Department
  - The District Officer
- Representatives of:
  - The Electricity Authority
The subject of this Diagnostic Report is the study of the problems faced in Larnaka along with the potential for growth in relevant areas. It is also concerned with the promotion of these concepts as a part of the design process of the development strategy for Larnaka.

Chapter 1 presents data in relation to the demographics of Larnaka. The trends identified may lead to strengths or weaknesses and concerns that need to be addressed, providing an important context for the following chapters.

In Chapter 2, the assessment of the current situation in relation to the adequacy and quality of the City's infrastructure presented and analysed. In terms of supply infrastructure, this is assessed in terms of supporting the future growth of the City, the comparative advantages over other regions, as well as identifying incompatibility issues.

Following on from the chapter on Infrastructure, Chapter 3 discusses the environmental wealth of Larnaka and related environmental issues. It examines the evolution of the current situation in Larnaka with respect to the topography, climate, water bodies, biodiversity, air quality, waste management, and renewable energy sources.

The last 20-30 years of our history has produced significant adjustments in the structure and operation of urban economies during which a number of major industries and methods of production have been replaced with new products and production processes. The study of the level of the City of Larnaka's development is achieved through the longitudinal analysis of indicators of prosperity and development. In such a context it is understood that Larnaka is subject to evolution, while its causes and effects are diagnosed, analysed and evaluated in this report.

Finally, this report includes an in-depth description of the planning system in the fifth and final chapter.
Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development has three main components:

1. Economic prosperity
2. Social inclusion and cohesion
3. Environmental protection

### i Economic prosperity

Promoting a prosperous, innovative, knowledge-rich, competitive and eco-efficient economy which provides high quality of life, full employment and quality of work.

### ii Social inclusion and cohesion

Promoting a democratic, healthy, safe and just society based on social inclusion and cohesion, respect for fundamental rights and cultural diversity, ensuring gender equality and the elimination of discrimination.

### iii Environmental protection

Preserving the earth's ability to support life for all its diversity, respect to the planet's natural resources and ensuring a high level of protection and improvement of environmental quality. Preventing and reducing environmental pollution, while promoting sustainable consumption and production, in order to disconnect economic growth from environmental degradation.

Sustainable development is a primary objective of the European Union, and is a guiding principle of all its policies and activities. The concept of sustainable development aims to ensure the ability of the earth to support all kinds of life based on the principles of democracy, equality, solidarity, the rule of law and respect for human rights, including freedom and equal opportunities for all. It aims at the continuous improvement of quality of life and well-being on earth for this and future generations. It promotes a dynamic economy with full employment and a high level of education, health protection, social and territorial cohesion, and environmental protection, in a peaceful and secure world which respects cultural diversity.
CHAPTER 1

DEMOGRAPHIC CHARACTERISTICS OF LARNACA
1.1 INTRODUCTION

1.1.1 Methodology

The statistics presented in this chapter have been taken mainly from the Census of Population, 2011. Additionally, historical data is taken from the 2001 Census and from previous censuses where relevant. Data is presented separately for Larnaka, other districts in Cyprus, and in the national context when needed.

The methodological approach followed in this chapter is broken down into four (4) stages:

- The first stage is a brief analysis of the existing situation and the general elements that make up the population of Larnaka compared with the total population of the Island (controlled by the Republic of Cyprus).

- The second stage is concerned with the development of the population compared to the other districts of Cyprus.

- The third stage shows the characteristics of the population of Larnaka when compared with the characteristics of the total population of Cyprus (controlled by the Republic of Cyprus).

- The fourth stage is an analysis of the data, explaining the possible reasons for the trends identified.

1.1.2 Sources


- Department of Town Planning and Housing, Larnaka Local Plan revised in 2011 and approved in 2013.

- Municipality of Larnaka, Technical Department and Financial Department
The population of Cyprus according to the results of the Population Census of 2011 was 856,960 (as of 1st October 2011) compared to 689,565 in the previous census of 2001. This represents an increase of 21.9% over the past 10 years.

It should be noted that the district with the largest population growth in 2011 compared to 2001 is Paphos with an increase of 33.0%, followed by Larnaka with an increase of 24.2%, Famagusta with an increase of 23.4%, Limassol with an increase of 19.2 % and lastly Nicosia with an increase of 18.8%.

The total population of Cyprus has increased by about 22% from 2001 to 2011, however this increase does not reflect the number of Cypriot births. The preliminary results of the population census show a dramatic decline in births and an increase in the number of foreign nationals living in Cyprus. According to the results, one in five people are foreign nationals.

The District of Larnaka has an area of 102,100 hectares (which accounts for 18.6% of the total area controlled by the Republic of Cyprus). The Greater Urban Area of Larnaka has an area of 12,155 hectares of which 3,206 hectares comprise the Municipality of Larnaka (Fig. 1.1, Table 1.1).

Figure 1.1: The District of Larnaka

<table>
<thead>
<tr>
<th>REGION</th>
<th>AREA (ha)</th>
<th>POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>District of Larnaka</td>
<td>102,100</td>
<td>143,192</td>
</tr>
<tr>
<td>Greater Urban Area</td>
<td>12,155</td>
<td>91,724</td>
</tr>
<tr>
<td>Municipality of Larnaka</td>
<td>3,206</td>
<td>51,468</td>
</tr>
</tbody>
</table>

SOURCES: Department of Town Planning and Housing, Department of Statistics, Population Census of 2011
The total population of Larnaka as of 1st October 2011 was 143,192 (urban and rural areas combined) which corresponds to 17% of the total population. In the urban area of Larnaka the population was 84,279 and the rural area was 58,435. Of the 84,279 in the urban area of Larnaka, 51,468 reside in the area pertaining to the Municipality of Larnaka.

Larnaka is the third largest District in population number with an annual growth rate of 2.5% (an increase of approximately 3,000 per year).

The limits of the Larnaka Local Plan comprise the following communities: Municipality of Larnaka, the Municipality Aradhippou, the Municipality of Livadia, the Community Councils of Dromolaxia and Meneou, the seafront Community Councils of Voroklini and Pyla, and part of the area of the Community Council of Kalo Chorio (Figure 1.2).

Figure 1.2: Larnaka Local Plan - Study area and administrational framework

The largest communities that surround the Municipality of Larnaka (see Figure 1.3) in terms of population are: the Municipality of Aradippou with 19,228 residents, the Municipality of Livadia with 7,206 residents, the Community Councils of Voroklini with 6,134 inhabitants, Dromolaxia with 5,064 inhabitants, Kiti with 4,252 residents, Pervolia with 3,009 residents and Pyla with 2,771 inhabitants. With lower populations, follow the Community Councils of Meneou with 1,625 inhabitants, Kalo Chorio with 1,518 inhabitants, Tersefanou with 1,299 residents, Troulloi with 1,175 inhabitants, Klavdia with 427 residents, Kelia with 387 inhabitants, and finally Avdellero with 218 inhabitants (please refer to Table 1.2).
The surface areas (Ha) in descending order for each community within the boundaries of the Local Plan of Larnaka are as follows: the Municipality of Aradhippou 5,594 hectares, the Municipality of Larnaka 3,206 hectares, Troulloi 2,843 hectares, Kalo Chorio 2,721 hectares, Klavdia 2,103 hectares, Avdellero 2,004 hectares, Pyla 1,954 hectares, Tersefanou 1,919 hectares, Dromolaxia 1,670 hectares, Voroklini 1,538 hectares, Kochi 1,366 hectares, Kelia 1,258 hectares, Kiti 878 hectares, Livadia 861 hectares, Pervolia 853 hectares, and finally Meneou 447 hectares (refer to table 1.2).

The Administrative District of the Municipality of Larnaka is divided into 10 quarters: Skala, Agios Nikolaos, Chrysopolitissa, Sotiros, Agioi Anargyroi I, Agioi Anargyroi II, Kokkines, Tsiakkilero, Kamares and Archbishop Makarios III (figure 1.4). The area and the population for the year 2011 of each quarter is presented in Table 1.3.
According to the census of population of 2011, the urban area of Larnaka ranks third in population compared to the other urban areas in Cyprus, whereas its rural area ranks second compared to the other rural areas in the country.

The distribution of population of the urban/rural area of Cyprus by District, is presented in figure 1.5 below, and the change over time of the population in each District in figure 1.6. The population in all urban Districts shows a small increase in the years between 2000 and 2011. In Nicosia, the increment is around 20.5%, in Larnaka 21.5%, in Limassol 15.9%, and in Paphos 39.8% (see Figure 1.7)

Likewise, the population in all rural Districts appears to have a small increase in the years between 2000 and 2011. In Nicosia, the increment is around 22.1%, in Famagusta 25.9%, in Larnaka 32.8%, in Limassol 40.7%, and in Paphos 31.8% (see Figure 1.8)
Figure 1.6: Population according to District (End of year results)

<table>
<thead>
<tr>
<th>Year</th>
<th>Nicosia</th>
<th>Famagusta</th>
<th>Larnaka</th>
<th>Limassol</th>
<th>Paphos</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>280,3</td>
<td>38,5</td>
<td>117,5</td>
<td>201,6</td>
<td>67,6</td>
</tr>
<tr>
<td>2002</td>
<td>283,1</td>
<td>39,0</td>
<td>119,0</td>
<td>203,5</td>
<td>69,1</td>
</tr>
<tr>
<td>2003</td>
<td>286,2</td>
<td>39,6</td>
<td>120,8</td>
<td>205,7</td>
<td>70,6</td>
</tr>
<tr>
<td>2004</td>
<td>289,7</td>
<td>40,1</td>
<td>122,8</td>
<td>208,1</td>
<td>72,3</td>
</tr>
<tr>
<td>2005</td>
<td>293,5</td>
<td>40,8</td>
<td>124,8</td>
<td>210,8</td>
<td>74,1</td>
</tr>
<tr>
<td>2006</td>
<td>298,4</td>
<td>41,6</td>
<td>127,4</td>
<td>214,3</td>
<td>76,2</td>
</tr>
<tr>
<td>2007</td>
<td>305,1</td>
<td>42,7</td>
<td>130,8</td>
<td>219,0</td>
<td>78,8</td>
</tr>
<tr>
<td>2008</td>
<td>312,6</td>
<td>43,8</td>
<td>134,5</td>
<td>224,4</td>
<td>81,6</td>
</tr>
<tr>
<td>2009</td>
<td>320,6</td>
<td>45,1</td>
<td>138,5</td>
<td>230,2</td>
<td>84,7</td>
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<tr>
<td>2010</td>
<td>328,0</td>
<td>46,3</td>
<td>142,3</td>
<td>235,5</td>
<td>87,7</td>
</tr>
<tr>
<td>2011</td>
<td>336,0</td>
<td>47,6</td>
<td>146,3</td>
<td>241,3</td>
<td>90,8</td>
</tr>
</tbody>
</table>

Figure 1.7: Population according to urban area

<table>
<thead>
<tr>
<th>Year</th>
<th>Nicosia</th>
<th>Famagusta</th>
<th>Larnaka</th>
<th>Limassol</th>
<th>Paphos</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>204,1</td>
<td>71,1</td>
<td>159,3</td>
<td>204,1</td>
<td>45,7</td>
</tr>
<tr>
<td>2001</td>
<td>206,2</td>
<td>72,0</td>
<td>161,2</td>
<td>206,2</td>
<td>47,3</td>
</tr>
<tr>
<td>2002</td>
<td>208,1</td>
<td>72,7</td>
<td>162,0</td>
<td>208,1</td>
<td>48,4</td>
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<tr>
<td>2003</td>
<td>210,3</td>
<td>73,5</td>
<td>163,1</td>
<td>210,3</td>
<td>49,5</td>
</tr>
<tr>
<td>2004</td>
<td>212,8</td>
<td>74,4</td>
<td>164,3</td>
<td>212,8</td>
<td>50,7</td>
</tr>
<tr>
<td>2005</td>
<td>215,4</td>
<td>75,4</td>
<td>165,7</td>
<td>215,4</td>
<td>52,0</td>
</tr>
<tr>
<td>2006</td>
<td>219,0</td>
<td>76,6</td>
<td>167,7</td>
<td>219,0</td>
<td>53,5</td>
</tr>
<tr>
<td>2007</td>
<td>223,7</td>
<td>78,4</td>
<td>170,7</td>
<td>223,7</td>
<td>55,3</td>
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<tr>
<td>2008</td>
<td>229,1</td>
<td>80,3</td>
<td>174,1</td>
<td>229,1</td>
<td>57,3</td>
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<tr>
<td>2009</td>
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<td>82,4</td>
<td>177,8</td>
<td>234,9</td>
<td>59,5</td>
</tr>
<tr>
<td>2010</td>
<td>240,2</td>
<td>84,3</td>
<td>181,1</td>
<td>240,2</td>
<td>61,6</td>
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<tr>
<td>2011</td>
<td>245,9</td>
<td>86,4</td>
<td>184,6</td>
<td>245,9</td>
<td>63,9</td>
</tr>
</tbody>
</table>

SOURCE: Department of Statistics
It should be noted that after 2004 (the year Cyprus joined the European Union) the population growth in each District increased by larger increments. This can be attributed to the fact that many European Union citizens moved to Cyprus, mainly for employment reasons.

When analysing the population growth in the urban area of each District during the period between the two censuses of 2001 and 2011, it is evident that Larnaka holds second place with an increase of 20%, only exceeded by Paphos (33% for the same period). The growth rates for the urban areas of Nicosia and Limassol between 2001 and 2011 were 18.4% and 14.3% respectively. With regard to the increase of population in the rural area during the same period, Larnaka again holds the second place with a growth rate of 31%, behind Limassol where the growth rate was 38.3%. The growth rates for the rural areas of Paphos, Famagusta, and Nicosia over the same period were: 30.4%, 23.4% and 19.6% respectively.

Figure 1.9 presents the distribution of rural and urban population in the five Districts of Cyprus for the years 2001 and 2011. It is obvious that Larnaka presents a more balanced distribution between the urban and rural population compared to the other Districts. Specifically, the urban population in the District of Larnaka accounts for 59% of the total population of the District compared to 73% in Nicosia, 77% in Limassol and 70% in Paphos. This scene may change over time and we may see population concentration in the urban area following the national trend if we take into consideration the population growth of the urban population in Larnaka recorded over the period 2001-2011.
Figure 1.9: Population growth according to District during the time period between the years 2001-2011

Population per District

- **Larnaka**
  - 44,766 (31%)
  - 84,591 (20%)

- **Nicosia**
  - 72,956 (19.6%)
  - 237,703 (18.4%)

- **Limassol**
  - 39,614 (38.3%)
  - 179,421 (14.3%)

- **Paphos**
  - 20,041 (30.4%)
  - 61,986 (33.8%)

- **Famagusta**
  - 37,738 (23.4%)

**SOURCE:** Department of Statistics, Population census of 2001 and 2011
The proportional increase in the total population of Cyprus during the period 2001-2011 was 18.8% in the urban areas and 27% in the rural areas. In both cases Larnaka exceeds these rates (refer to figure 1.10).

Figure 1.10: Population growth of the total population of Cyprus between the years 2001-2011

SOURCE: Department of Statistics, Population census of 2001 and 2011
As far as the number of births is concerned, Larnaka follows along with the other Districts in the downward trend of recent decades (please refer to table 1.5 in the Demographics Appendix, Volume II). Table 1.11 which follows, presents the number of live births according to the mother's place of residence and District during 2011. It can be concluded that the urban area of Larnaka ranks third in live births after Nicosia and Limassol respectively. However, with reference to figure 1.12, unlike the other Districts, the birth rate in the urban area is lower than that in the rural area.

Figure 1.11: Number of births according to the mother's place of residence and District, 2011

Figure 1.12: Percentage of live births over the total population according to District, 2011

Note: The total fertility rate for 2011 was 1.35 - Table 1.4, Demographics Appendix, Volume II

SOURCE: Department of Statistics, Population census of 2011
1.4 POPULATION CHARACTERISTICS IN THE MUNICIPALITY OF LARNACA

In general terms, Agios Nikolaos Quarter has the largest population and number of households, followed by Sotiros, Chrysopolitissa and Scala Quarters. Households of two people are the most prevalent in all the quarters of Larnaka (Figures 1.13 and 1.14).

Figure 1.13: Population within the administrative boundaries of Larnaka according to quarter

Figure 1.14: Number of households in Larnaka according to size and quarter

According to urban, or rural area, Larnaka is third in the number of urban households and second in the number of rural households nationwide (Figure 1.15).
The total number of households nationwide recorded in October 2011 was 303,242, of which 119,203 were in Nicosia, 15,826 in the Famagusta area, 50,038 in Larnaka, 85,171 in Limassol, and 33,004 in Paphos.

Figure 1.15: Number of households according to District and urban/rural area

The population according to District consists primarily of Cypriot citizens, followed by citizens of the European Union, and citizens of other countries. (Figure 1.16)

If we analyse the number of European citizens nationwide, we observe that Nicosia has the largest proportion among its total population (31%) while Larnaka, although ranking third in population numbers nationwide, is only fourth with 16% (Figure 1.17).

Moreover, when we compare the percentage of the number of citizens of countries outside the European Union nationally, we can observe that Larnaka ranks third with 16%, i.e. half the rate of Limassol, which ranks second in the series with 32%, after Nicosia which has 39% (see Figure 1.18).
Figure 1.17: Population according to nationality and district - European Union citizens

European Union Citizens

- Nicosia 31%
- Famagusta 7%
- Larnaka 16%
- Limassol 24%
- Paphos 22%

Source: Department of Statistics, Population census of 2011

Figure 1.18: Population according to nationality and district – Citizens of countries other than the European Union

Citizens of Countries Other than EU

- Nicosia 39%
- Famagusta 3%
- Larnaka 16%
- Limassol 32%
- Paphos 10%

Source: Department of Statistics, Population census of 2011
Cypriot citizens in the Municipality of Larnaka reside mainly in the quarters of Agios Nikolaos with 80% and Sotiros with 75%. The majority of European citizens and citizens of countries outside the European Union reside in the quarters of Scala (including the Urban Shopping Center) with a percentage of 49%, and Chrysopolitissa with a percentage of 42% (see Figure 1.19).

**Figure 1.19: Population according to nationality and quarter**

![Population by Nationality and Quarter](chart.png)

**SOURCE:** Department of Statistics, Population census of 2011
It is interesting to note that, nationals of European countries residing in Larnaka are mainly from Greece, the United Kingdom, Romania and Bulgaria (see Figure 1.20).

Furthermore, nationals of countries outside the European Union residing in Larnaka are mainly women from the Philippines, Vietnam, Sri Lanka and Russia. In addition, there is a significant number of Palestinians in the Municipality of Larnaka (see Figure 1.21).

Figure 1.20: Population according to country of citizenship and gender

- European Union citizens in the Municipality of Larnaka

![Figure 1.20: Population according to country of citizenship and gender - European Union citizens in the Municipality of Larnaka](source)

Figure 1.21: Population according to country of citizenship and gender

- Citizens of countries other than the European Union in the Municipality of Larnaka

![Figure 1.21: Population according to country of citizenship and gender - Citizens of countries other than the European Union in the Municipality of Larnaka](source)
If the percentage of the economically active population according to urban area is examined, it can be noted that this proportion in the urban area of Larnaka comes third following the Districts of Nicosia and Limassol. More specifically, in the urban area the percentage of the economically active population in Larnaka is 14.5% compared with 18.9% in Nicosia, and 16.1% in Limassol. The rural area of Larnaka is in third place with 11.4% after Famagusta with 15.8% and Nicosia with 13.1% (see Figure 1.22).

The same trend applies for the unemployment rate, where the urban area of Larnaka ranks third with 3.4% after Limassol and Nicosia, while the rural area of Larnaka is second with 3.9% unemployed after the rural area of Limassol (see Figure 1.23).

**Figure 1.22: Percentage of economically active population according to District, 2011**

![Graph showing percentage of economically active population by District, 2011](source)

**Figure 1.23: Percentage of unemployed persons according to District, 2011**

![Graph showing percentage of unemployed persons by District, 2011](source)
Figures 1.24 and 1.25 which follow, present the age structure of the population within the administrative boundaries of the Municipality of Larnaka in 2011 and 2001 respectively. The pie charts located on the right side of each figure separate the age structure of the population into economically active and inactive population. It is concluded that during the last decade within the Municipality of Larnaka there has been a slight increase of the active population of ages 20 to 59 years and a parallel increase of the population over 60 years. However, at the same time there has been a significant reduction of about 7% in the number of young people under 20 years old.

**Figure 1.24: Population in Larnaka according to gender and age**

- **Municipality of Larnaka 2011**

  ![Population chart 2011](chart1.24-2011.png)

**Figure 1.25: Population in Larnaka according to gender and age**

- **Municipality of Larnaka 2001**

  ![Population chart 2001](chart1.25-2001.png)

**SOURCE:** Department of Statistics, Population census of 2011

Between the years 2001 and 2011, the growth rate in the District of Larnaka was 24%, while the corresponding increase in the total population of Cyprus was 22%. The corresponding population growth for the same period in the urban area was 20% and in the rural area 31%. It should be
noted that the population of the Municipality of Larnaka increased by 10%.

Figures 1.26 to 1.35 show the age structure of the population in each quarter within the administrative boundaries of the Municipality of Larnaka in 2011. It is worth noting that in all the quarters where we find settlements of the refugees of the Turkish invasion of 1974, the percentage of population that is 60 years and above ranges from 25% to 36% (above the overall average) while the proportion of the population under 20 years old is relatively low compared to other quarters. The quarters mentioned above are: Archbishop Makarios III quarter, Tsiaxklero quarter, Kokkines quarter, Agioi Anargyroi I and II quarters, and Kamares quarter.

Furthermore, the quarters with the largest proportion of the economically active population among residents are Scala, Chrysopolitissa and Sotiros. It should be stressed that Skala has the lowest proportion of young people up to 19 years. This finding determines the profile of the population in Urban Shopping Center, which is located in the Scala quarter.

Figure 1.26: Population in Larnaka according to gender and age
– Scala Quarter 2011

Figure 1.27: Population in Larnaka according to gender and age
– Chrysopolitissa Quarter 2011
1 – DEMOGRAPHIC CHARACTERISTICS OF LARNACA

Figure 1.28: Population in Larnaka according to gender and age
– Sotiros Quarter 2011

Figure 1.29: Population in Larnaka according to gender and age
– Archbishop Makarios Quarter III 2011

SOURCE: Department of Statistics, Population census of 2011

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Figure 1.30: Population in Larnaka according to gender and age
- Tsiakilero Quarter 2011

Figure 1.31: Population in Larnaka according to gender and age
- Kokkines Quarter 2011

Figure 1.32: Population in Larnaka according to gender and age
- Agios Nikolaos Quarter 2011
Figure 1.33: Population in Larnaka according to gender and age
— Ayios Nikolaos I Quarter 2011

Figure 1.34: Population in Larnaka according to gender and age
— Ayios Nikolaos II Quarter 2011

SOURCE: Department of Statistics, Population census of 2011
Figure 1.35: Population in Larnaka according to gender and age
– Kamares Quarter 2011

SOURCE: Department of Statistics, Population census of 2011
The distribution of Cypriot inhabitants based on their level of education in the urban and rural areas of the country is presented in Figure 1.36. Figure 1.37 shows the corresponding distribution of the population by level of education in Larnaka. These two figures present a similar trend, and therefore we can conclude that Larnaka follows the national trend.

Figure 1.36: Population in Cyprus (15+ years) according to education and urban/rural area

Figure 1.37: Population in Larnaka (15+ years) according to education and urban/rural area

SOURCE: Department of Statistics, Population census of 2011
The proportion of married people to single people is significantly different in the Municipality of Larnaka when compared to national picture. Specifically, within the Municipality of Larnaka, the percentage of married people is 48% and the percentage of single individuals is 42%, while nationwide the percentage of married people is 59.6% and single individuals is 29.8% (see Figures 1.38 and 1.39).

Figure 1.38: Population in Larnaka (15+ years) according to marital status and urban/rural area

<table>
<thead>
<tr>
<th></th>
<th>Urban Area</th>
<th>Rural Area</th>
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<tr>
<td>Married</td>
<td>40.905</td>
<td>29.965</td>
</tr>
<tr>
<td>Widowed</td>
<td>3.787</td>
<td>2.429</td>
</tr>
<tr>
<td>Divorced</td>
<td>3.633</td>
<td>1.930</td>
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<tr>
<td>Single</td>
<td>35.797</td>
<td>24.028</td>
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<tr>
<td>Not Specified</td>
<td>469</td>
<td>249</td>
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</table>

SOURCE: Department of Statistics, Population census of 2011

Figure 1.39: Comparison of the percentage of the population in the Municipality of Larnaka with the percentage of the population in Cyprus (15+ years) according to marital status and urban/rural area

Municipality of Larnaka

- Married: 48%
- Widow: 4%
- Divorced: 4%
- Single: 5%
- Not Specified: 1%

National

- Married: 59.6%
- Widow: 5.3%
- Divorced: 29.8%
- Single: 4.5%
- Not Specified: 0.8%

SOURCE: Department of Statistics, Population census of 2011
1.5 DATA ANALYSIS

1.5.1 Growth rates

While observing the growth rate of the population of Larnaka we can conclude that in both the urban area and the rural area, the level of increase is high when compared to the Districts of Nicosia and Limassol. This can be attributed to the centroidal position of Larnaka and the fact that it has a well developed road network.

The fact that Larnaka is located in a central region of the island undoubtedly offers easy access to Nicosia, Limassol and Famagusta, and even Paphos. Moreover, the International Airport of Larnaka, the Port, the Fuel Terminal, and other large infrastructures are located in Larnaka offering adequate jobs for residents of the rural area of Larnaka. Undoubtedly, access to the labour market is a major reason for the increase of population in the rural area.

The balanced relationship between the urban and rural population in the District of Larnaka is mainly explained by the fact that it has a good road network and an economically developed rural area, providing employment opportunities thus retaining population.

Additionally, Larnaka offers lower property values and rent prices compared to other Districts. For this reason, many young couples prefer to live in the District of Larnaka than elsewhere. The above reason along with the facts that Larnaka has a lower cost of living and is quieter than the other districts of Cyprus gives incentives for many Cypriots and foreign nationals prefer Larnaka as a place of residence over the other districts.

The risks created by the continuous increase of the population have to do with the consumption of natural resources such as water, which is a valuable commodity on an island such as Cyprus. Another danger is the creation of liquid and solid waste in excess so that it can be a difficult and costly process.

One drawback of the population growth in the urban area is the crowding observed during recent years by students and workers mainly of foreign origin. This has been seen in Urban Shopping Center due to the residency of multiple users in a single premise with the risk of increased crime, and other social consequences.

1.5.2 Social profile

Larnaka, like every city has its own local peculiarities and in particular the area has strong ties between expatriates and social ties of mutual support.

The disadvantages observed are: a gradual loss of the specific local and social characteristics, with all the drawbacks of globalization. In addition, this could result in the lack of mechanisms for public information and awareness of other peoples and different cultures with the parallel risk of the increasing influx of economic migrants to magnify social exclusion.

The opportunities created are refining the standards for development and the better integration of local characteristics and economic migrants into the fabric of the City.

A negative feature observed in the population of Larnaka is that it has the largest percentage of single people in any Cyprus district. This factor could offset any future increases in the local population from migration.
1.5.3 Age profile

In Larnaka, as in the rest of the country, life expectancy is high while birth rates are low. These trends have inverted the population pyramid and are creating various social and economic disadvantages.

In addition, there is an imbalance in the population structure, such as the concentration of population of the upper age groups in the Urban Shopping Center and the refugee settlements.

The above statements offer opportunities for implementing co-financed programs, which will be the key to stimulating the local economy, such as incentives for creating new areas for primary residence.

The risks correlated to the above features are the increasing aging indicators, and increasing trends towards a higher proportion of non-economically active population.

1.5.4 Educational profile and workforce

The educational level in Larnaka both in the urban and in the rural areas is high and similar to the average of the country. Prospects include the exploitation of new technologies for education and training tailored to local circumstances, but there are also risks in terms of relocating scientific staff to other cities due to lack of opportunities.

Another advantage which Larnaka has is the existence of trained and skilled personnel, especially in the following areas: trade, manufacturing, tourism and construction. Although these sectors currently have a rather high unemployment rate they are sectors in which Larnaka has a comparative advantage which creates prospects for improving skills and increasing the knowledge of human resources, supporting a multi-skilled local workforce.

One disadvantage of the population of Larnaka is the low percentage of the workforce compared to the other cities in the country which consequently has a higher dependency ratio. Inversely, this also creates an opportunity as the population in the productive age can be more easily capitalised upon.
CHAPTER 2

THE SIGNIFICANT INFRASTRUCTURE OF LARNACA
2.1 Preface

2.1.1 Definition

Infrastructure describes the basic physical and organizational structures that are demanded for the city to operate. It is the set of interconnected components which provide support throughout development and is a significant indicator when judging a country’s or a city’s level of development.

The term often refers to technical structures that support a society, such as roads, bridges, water supply, drainage, power grids, and telecommunications. They can be defined as the ‘natural ingredients’ of interrelated systems that provide goods and services necessary for the maintenance or strengthening of society, living conditions, and the basic social services such as schools and hospitals.

2.1.2 Categorisation

Infrastructure can be categorized as either ‘Hard Infrastructure’ or ‘Soft Infrastructure’. The term ‘Hard Infrastructure’ refers to large facilities and networks that are necessary for the functioning of a modern state (for example, ports, airports, electric power grid). ‘Soft infrastructure’ refers to all instruments or institutions that are required to maintain the economy, health, as well as the cultural and social standards of a country (for example, the educational system, the health system, the system of government and law enforcement, and emergency services).

The distinction between ‘hard’ and ‘soft’ infrastructure cannot be absolute and depending on the nature and purpose they are serving, a piece of infrastructure could fall into both the categories simultaneously.
2.1.3 Sections

The infrastructure that are listed in the diagram below (Figure 2.1) and explained in the following chapters are the significant infrastructure of Larnaka.

The infrastructure of the Public Utility Services and those of national importance (hard infrastructure) are discussed in chapters 2.2 and 2.3 respectively, while the infrastructure of local importance (Soft Infrastructure) are discussed in chapter 2.4.

Figure 2.1: Chapters of Infrastructure

- **2.2 PUBLIC UTILITY SERVICES**
  - 2.2.1 Electric Energy Network
  - 2.2.2 Telecommunications
  - 2.2.3 Water Management
  - 2.2.4 Coastal Management
  - 2.2.5 Solid Waste Management

- **2.3 INFRASTRUCTURE OF NATIONAL IMPORTANCE**
  - 2.3.1 Port - Marina
  - 2.3.2 Airport
  - 2.3.3 Fuel Terminal

- **2.4 INFRASTRUCTURE OF LOCAL SIGNIFICANCE**
  - 2.4.1 Transport
  - 2.4.2 Infrastructure of Economic Activities
  - 2.4.3 Health
  - 2.4.4 Education
  - 2.4.5 Social Welfare
  - 2.4.6 Government Departments
  - 2.4.7 Cultural Centres
  - 2.4.8 Athletic Halls
  - 2.4.9 Security Services

**SOURCE:** USUDS, Municipality of Larnaka
2.1.4 Sources

The data used in this chapter has been compiled from the following agencies and organizations:

- Municipality of Larnaka
- EAC (Electrical Authority of Cyprus)
- CERA (Cyprus Energy Regulatory Authority)
- CYTA (Cyprus Telecommunications Authority)
- LWB (Larnaka Water Board)
- LSDB (Larnaka Sewerage and Drainage Board)
- WDD (Water Development Department)
- RTD (Road Transport Department)
- CPA (Cyprus Port Authority)
- CTO (Cyprus Tourism Organisation)
- HERMES AIRPORTS
- Ministry of Commerce, Industry and Tourism
- Ministry of Health
- Ministry of Education and Culture
- Town Planning and Housing Department
- PWD (Public Works Department)
- Forestry Department
- Department of Fisheries and Marine Research
- Department of Agriculture
- Department of Environment
- Statistical Service
- Cyprus Agricultural Payment Organisation
- Oceanographic Center
- National Technical University of Athens
- Cyprus Police
- Cyprus Fire Service
- Google Maps/Earth
2.2 SERVICES UTILITIES

2.2.1 Electrical network

The electrical network is a significant and complicated type of ‘Hard Infrastructure’. The use of electricity is inseparable from the modern way of life covering a large part of human activity, whether relating to our daily lives or the most demanding financial or industrial activity. It is clear that, for the support of several other essential infrastructure and for the functioning of a society, a city depends heavily on the existence of reliable sources of energy.

The structural changes in the energy markets of the Member States of the European Union, aiming at a common single energy market has created the need to establish Regulators in EU countries. Cyprus, as a member of the EU and based on the directive 96/92/EC was required to establish the Cyprus Energy Regulatory Authority (CERA). CERA is an independent authority for the State and has executive powers.

Electricity is produced in Cyprus by the Electricity Authority of Cyprus (EAC), which is the sole producer of electricity by conventional means. Three Power Stations (PS) make up the bulk of this production with the remainder from isolated plants of Renewable Energy Sources (RES) of different forms which are dispersed throughout the free Cyprus. Figure 2.2 shows the total electricity production of the (PS) and Pancyprian Windfarms for a 24-Hour period from the June 9, 2013 until 10 June 2013.

Figure 2.2: Cyprus electricity production from 09/06/13 00:00 to 10/06/13 00:00

![Power production graph]

2.2.1.1 Electricity Authority of Cyprus (EAC)

EAC is an independent, semi-government organization, established to fulfill to the Electricity Development Act of 1952 for activities related to the generation, transmission and distribution of electricity in Cyprus.
The term semi-government is used in Cyprus, in the case of organizations who are independent and are put in place by the relevant law, to provide services or rendering of services relating to public utility sectors. These organizations are run by boards appointed by the Cabinet.

EAC has power stations at Dekhelia (PS D), Vasilikos (PS V) and one at Moni (PS M). The first two are located within the administrative boundaries of the Larnaka and the third is in Limassol, as shown in Image 2.1 below.

Image 2.1: Power Stations EAC

2.2.1.1.1 The Capacity of Power Stations in Cyprus

The total capacity in the three PS of the EAC is 1598 MW, as shown in Table 2.1. This is the expected future capacity after the full recovery of damages suffered as a result of the explosion in Mari on July 11, 2011.
Table 2.1: Installed capacity of the power stations

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<th>Description</th>
<th>Capacity</th>
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<td><strong>Vasiliko PS</strong></td>
<td>1 x 130 MW Steamturbine Unit No.1</td>
<td>130 MW (June 2013)</td>
</tr>
<tr>
<td></td>
<td>1 x 130 MW Steamturbine Unit No.2</td>
<td>130 MW (June 2013)</td>
</tr>
<tr>
<td></td>
<td>1 x 130 MW Steamturbine Unit No.3</td>
<td>130 MW (Jan 2013)</td>
</tr>
<tr>
<td></td>
<td>1 x 38 MW Gasturbine</td>
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</tr>
<tr>
<td></td>
<td>1 x 220 MW Combine Cycle Unit</td>
<td>220 MW</td>
</tr>
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<td><strong>Dhekelia PS</strong></td>
<td>6 x 60 MW Steamturbine Units</td>
<td>360 MW</td>
</tr>
<tr>
<td></td>
<td>2 x 50 MW Internal Combustion Engines</td>
<td>100 MW</td>
</tr>
<tr>
<td><strong>Moni PS</strong></td>
<td>4 x 30 MW Steamturbine Units</td>
<td>120 MW</td>
</tr>
<tr>
<td></td>
<td>4 x 37.5 MW Gasturbines</td>
<td>150 MW</td>
</tr>
<tr>
<td><strong>Total Installed Power</strong></td>
<td></td>
<td>1598 MW</td>
</tr>
<tr>
<td><strong>Available Power</strong></td>
<td></td>
<td>988 MW</td>
</tr>
<tr>
<td></td>
<td>1060.5 MW (Nov. 2012)</td>
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</tr>
<tr>
<td></td>
<td>1208 MW (Dec. 2012)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1338 MW (Jan. 2013)</td>
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</tr>
<tr>
<td></td>
<td>1598 MW (June 2013)</td>
<td></td>
</tr>
</tbody>
</table>

**SOURCE:** Cyprus Electricity Authority

### 2.2.1.1.1 Dekhelia Power Station (PS D)

Dekhelia Power Station (PS D) (image 2.2) is located on the southeast (SE) coast of Cyprus, 12.5 km northeast of Larnaka (image 2.1), within the borders of the British military base at Dhekelia, next to the fishing port community Ormideia. It occupies an area of 120,000 m² and is visible from all over the coastal area of the Bay of Larnaka.

Dekhelia Power Station, with an installed capacity of 460 MW (6 x 60MW Steam turbines and 100 MW internal combustion units) produced 54.17% (2 560 819 MWh) of total electricity generated in 2011.

It will be difficult to have a plan to upgrade or expand the plant due to the nature of the area and the neighboring developments. It is just 4km from the tourist area of Larnaka, and located close by to the station is the Dhekelia Desalination Plant (see Chapter 2.3).
2.2.1.1.1.2 Vasilikos Power Station (PS V)

The Vasilikos Power Station (PS V) (image 2.3) is the largest single piece of infrastructure in Cyprus. The operation is closely linked with the broader economic development of Cyprus. Located in the District of Larnaka, 37.8 Km from the City of Larnaka (image 2.1) inside the biggest industrial area of the island (map 2.1).

Also located at Vasilikos and in the surrounding area (Mari, Zygi, Moni) the following infrastructure are placed:

- To the SW of the station, the power station of Moni is placed (Limassol District)
- To the SE, the Zygi fishing shelter is placed
- Next to the station is the military nautical base
- Next to it is the cement factory of Vasilikos
- Two private fuel terminals for the import and trading of fuel (the one is at the expansion stage and the second under construction).
- The desalination plant under construction for the EAC (using solar energy)
- Fuel terminal for state fuel reserves (under construction)
- Facilities under study for natural gas production and distribution.

The Vasilikos power station is a high technology infrastructure comprising of:

- Three conventional power plants 130 MW each, all using fuel oil. A flue gas desulfurization system has been installed to reduce emissions of sulfur dioxide to below the limits set by the European Directive for Large Combustion Plants.
- A 38 MW gas turbine using diesel fuel.
- Two combined cycle units of 220 MW each, fueled by diesel and can be converted to use gas.
On the 11th of July of 2011, an explosion at the Mari Nautical Base caused heavy damage to the adjacent Vasilikos Power Station resulting in the temporary suspension of its operation.

The employees of the EAC together with the contractors of the stations have repaired most of the damage, however, there are still three conventional units (with a total capacity of 390 MW) due to be repaired. The restoration of the combined cycle unit number 4 will be completed by December.
2012. It is expected that the station number 3 will restart the first months of 2013, while stations number 1 and 2 will restart in June 2013.

The Vasilikos Power Station produced 34.92% (1,650,547 MWh) of the total electricity produced by the power stations of Cyprus in 2011.

2.2.1.1.3 Moni Power Station (PS M)

The Moni Power Station (PS M) (image 2.4) located in the Limassol District, consists of four (4) conventional units of 30 MW each, using fuel oil, and an additional four 37.5 MW turbines using diesel. The first two steam units began operating in 1966 and the last two in 1976. Two turbines were added to the system in 1992 and two more in 1995, mainly used for addressing peak loads and for emergencies.

The Moni Power Station produced 10.91% (515,518 MWh) of the total electricity produced by the power stations of Cyprus in 2011.

Image 2.4: Power Station Moni
2.2.1.1.2 Distribution Network

2.2.1.1.2.1 The Cyprus distribution Network

The distribution network interconnects the generating stations of the EAC to load centers. The development of transportation projects that were completed recently have increased the reliability of the installed capacity of transmission substations at 111MVA. The Individual elements of the Transmission Network of EAC are shown in Table 2.2.

Table 2.2: Transmission Network Data (EAC)

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit</th>
<th>In Commission 31.12.06</th>
<th>Commissioned in 2007</th>
<th>Taken out of Commission in 2007</th>
<th>In Commission 31.12.07</th>
</tr>
</thead>
<tbody>
<tr>
<td>220kV Transmission Lines operated at 132kV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route Length</td>
<td>km</td>
<td>1.40</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Circuit Length</td>
<td>km</td>
<td>2.80</td>
<td>-</td>
<td>-</td>
<td>1.40</td>
</tr>
<tr>
<td>132kV Transmission Lines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route Length</td>
<td>km</td>
<td>408.15</td>
<td>5.85</td>
<td>5.00</td>
<td>409.00</td>
</tr>
<tr>
<td>Circuit Length</td>
<td>km</td>
<td>761.51</td>
<td>11.70</td>
<td>10.01</td>
<td>763.20</td>
</tr>
<tr>
<td>132kV Underground Cables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route Length</td>
<td>km</td>
<td>63.53</td>
<td>0.05</td>
<td>0.04</td>
<td>63.54</td>
</tr>
<tr>
<td>Circuit Length</td>
<td>km</td>
<td>91.60</td>
<td>0.05</td>
<td>0.04</td>
<td>91.61</td>
</tr>
<tr>
<td>132kV U/G Cables-Operated at 66kV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route Length</td>
<td>km</td>
<td>8.33</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Circuit Length</td>
<td>km</td>
<td>8.33</td>
<td>-</td>
<td>-</td>
<td>8.33</td>
</tr>
<tr>
<td>66kV Underground Cables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route Length</td>
<td>km</td>
<td>1.68</td>
<td>-</td>
<td>-</td>
<td>1.68</td>
</tr>
<tr>
<td>Circuit Length</td>
<td>km</td>
<td>1.68</td>
<td>-</td>
<td>-</td>
<td>1.68</td>
</tr>
<tr>
<td>Route Length</td>
<td>km</td>
<td>168.81</td>
<td>4.96</td>
<td>4.86</td>
<td>168.91</td>
</tr>
<tr>
<td>Circuit Length</td>
<td>km</td>
<td>267.35</td>
<td>9.92</td>
<td>9.72</td>
<td>267.55</td>
</tr>
<tr>
<td>66kV Transmission Lines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route Length</td>
<td>km</td>
<td>291.78</td>
<td>-</td>
<td>-</td>
<td>291.78</td>
</tr>
<tr>
<td>Circuit Length</td>
<td>km</td>
<td>291.78</td>
<td>-</td>
<td>-</td>
<td>291.78</td>
</tr>
</tbody>
</table>

**SOURCE:** EAC

2.2.1.1.2.1 The distribution network of Cyprus

The electrical Distribution Network is the connection between the customers and the supplier (EAC). The Individual elements of the Distribution Network of EAC are shown in Table 2.3.
Table 2.3: Distribution Network Data (EAC)

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit</th>
<th>In Commission 31.12.06</th>
<th>Commissioned in 2007</th>
<th>Taken out of Commission in 2007</th>
<th>In Commission 31.12.07</th>
</tr>
</thead>
<tbody>
<tr>
<td>132/66kV Interbus Transformers</td>
<td>No.</td>
<td>12</td>
<td>-</td>
<td>-</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>MVA</td>
<td>603</td>
<td>-</td>
<td>-</td>
<td>603</td>
</tr>
<tr>
<td>132/11kV Step Down Transformers</td>
<td>No.</td>
<td>67</td>
<td>3</td>
<td>-</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>MVA</td>
<td>2 119</td>
<td>96</td>
<td>-</td>
<td>2215</td>
</tr>
<tr>
<td>132/6,6kV Step Down Transformers</td>
<td>No.</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MVA</td>
<td>58</td>
<td>-</td>
<td>-</td>
<td>58</td>
</tr>
<tr>
<td>132/3,3kV Step Down Transformers</td>
<td>No.</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MVA</td>
<td>20</td>
<td>-</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>66/11kV Step Down Transformers</td>
<td>No.</td>
<td>68</td>
<td>1</td>
<td>-</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>MVA</td>
<td>668,5</td>
<td>15</td>
<td>-</td>
<td>683,5</td>
</tr>
<tr>
<td>66/3,3kV Step Down Transformers</td>
<td>No.</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MVA</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>15,75/132kV Step Up Transformers</td>
<td>No.</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MVA</td>
<td>330</td>
<td>-</td>
<td>-</td>
<td>330</td>
</tr>
<tr>
<td>11/132kV Step Up Transformers</td>
<td>No.</td>
<td>13</td>
<td>-</td>
<td>-</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>MVA</td>
<td>741</td>
<td>-</td>
<td>-</td>
<td>741</td>
</tr>
<tr>
<td>11/66kV Step Up Transformers</td>
<td>No.</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MVA</td>
<td>150</td>
<td>-</td>
<td>-</td>
<td>150</td>
</tr>
<tr>
<td>Substations</td>
<td>No.</td>
<td>50</td>
<td>1</td>
<td>-</td>
<td>51</td>
</tr>
</tbody>
</table>

**DISTRIBUTION EQUIPMENT:**

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit</th>
<th>km</th>
<th>MV</th>
<th>LV</th>
<th>22000-11000/433/250V P.M. Transformers</th>
<th>kVA</th>
<th>22000-11000/433V G.M. Transformers</th>
<th>kVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>MV Overhead Lines</td>
<td>5 059,07</td>
<td>111,43</td>
<td>29,13</td>
<td>5 141,37</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MV Underground Cables</td>
<td>2 499,81</td>
<td>182,76</td>
<td>23,12</td>
<td>2 659,45</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LV Overhead Lines</td>
<td>8 362,05</td>
<td>215,26</td>
<td>36,24</td>
<td>8 541,07</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LV Underground Cables</td>
<td>2 559,68</td>
<td>460,44</td>
<td>0,14</td>
<td>3 019,98</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22000-11000/433/250V P.M. Transformers</td>
<td>8 190</td>
<td>312</td>
<td>98</td>
<td>8 404</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>740 127</td>
<td>54 428</td>
<td>29 514</td>
<td>765 041</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22000-11000/433V G.M. Transformers</td>
<td>4 208</td>
<td>316</td>
<td>7</td>
<td>4 517</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>740 127</td>
<td>54 428</td>
<td>29 514</td>
<td>765 041</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SOURCE:** EAC
2.2.1.3 Fiber Optics

The EAC has an extensive aerial and underground fiber optic network which interconnects the 21 transmission substations, power stations and offices of the Authority. This serves the needs of the systems of energy management, remote protection of the transmission lines, telephone, cargo handling, Computing and other services.

The EAC continues to provide infrastructure to its strategic partners for the commercialisation of fiber optic networks and other facilities and services for telecommunications purposes.

To meet modern demands the EAC is developing facilities at the Vasilikos Power Station and at the substation of Athalassa (Nicosia) for the installation of mobile phone masts.

2.2.1.4 Employees

The EAC was the employer of 671 employees in the District of Larnaka (up to December 31st 2012). The majority of staff are at a technical and scientific level, employed in power stations in Dhekelia, Vasilikos and at the City of Larnaka for trouble shooting, upgrade and expansion of the network. The employees at Dekhelia total 137, while at Vasilikos there are 234, and at in the City of Larnaka, 300.
2.2.1.2 Electricity Consumption

2.2.1.2.1 Electricity consumption within the District of Larnaka

The Consumption within the District of Larnaka in 2011 was 963,760,681KWh (see Figure 2.3, in the Parenthesis the population of each district/area is given).

The District of Larnaka has a population of 30% less than Limassol, but only 12% less consumption. This is due to the existence of large infrastructure at the District of Larnaka, such as the Airport and the desalination plants.

Figure 2.3: Electricity consumption per District / region in 2011

SOURCE: EAC
Figure 2.4 shows the consumption of electricity in each District from 2009 to 2011. In recent years it is clear that the consumption has stabilized in all Districts.

The small decline in 2011 in relation to 2010, is due to the temporary shut down of the Vasilikos power station after the explosion at the Mari Nautical Base.

**Figure 2.4: Electrical Power Consumption by district (2009-2011)**

![Electrical Power Consumption by district (2009-2011)](image)

**SOURCE: EAC**

### 2.2.1.2.2 Electricity consumption in the Municipality of Larnaka.

The Municipality of Larnaka had 8% less consumption of electricity in 2011 compared to 2009 (diagram 2.5). Apart from the reason described above, there is also the fact that during the winter of 2011 the desalination units were in reserve.

**Figure 2.5: Consumption at the Municipality of Larnaka.**

![Consumption at the Municipality of Larnaka.](image)

**SOURCE: EAC**

The consumption of electricity at the Municipality building at Athinon Avenue is generally stable, although according to table 2.4 and Figure 2.6 there have been some small fluctuations between 2008-2012.
Table 2.4: Electricity consumption of the Larnaka Town Hall building (2008-2012) per month

<table>
<thead>
<tr>
<th>POWER CONSUMPTION AT THE MUNICIPALITY BUILDING IN KWh</th>
<th>MONTH/YEAR</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAN</td>
<td>9,771</td>
<td>8,226</td>
<td>7,437</td>
<td>8,356</td>
<td>9,222</td>
<td></td>
</tr>
<tr>
<td>FEB</td>
<td>8,597</td>
<td>7,446</td>
<td>7,286</td>
<td>8,187</td>
<td>9,180</td>
<td></td>
</tr>
<tr>
<td>MAR</td>
<td>5,372</td>
<td>6,649</td>
<td>6,665</td>
<td>6,940</td>
<td>7,962</td>
<td></td>
</tr>
<tr>
<td>APR</td>
<td>5,402</td>
<td>5,629</td>
<td>5,538</td>
<td>5,251</td>
<td>6,060</td>
<td></td>
</tr>
<tr>
<td>MAY</td>
<td>7,306</td>
<td>6,663</td>
<td>6,864</td>
<td>6,835</td>
<td>7,172</td>
<td></td>
</tr>
<tr>
<td>JUN</td>
<td>12,063</td>
<td>13,191</td>
<td>11,980</td>
<td>11,081</td>
<td>12,305</td>
<td></td>
</tr>
<tr>
<td>JUL</td>
<td>17,345</td>
<td>18,262</td>
<td>16,534</td>
<td>12,386</td>
<td>18,366</td>
<td></td>
</tr>
<tr>
<td>AUG</td>
<td>14,346</td>
<td>17,649</td>
<td>18,469</td>
<td>13,171</td>
<td>17,778</td>
<td></td>
</tr>
<tr>
<td>SEP</td>
<td>14,929</td>
<td>13,737</td>
<td>17,950</td>
<td>13,499</td>
<td>14,988</td>
<td></td>
</tr>
<tr>
<td>OCT</td>
<td>8,101</td>
<td>10,191</td>
<td>9,835</td>
<td>7,363</td>
<td>10,813</td>
<td></td>
</tr>
<tr>
<td>NOV</td>
<td>5,902</td>
<td>5,990</td>
<td>6,215</td>
<td>6,004</td>
<td>7,264</td>
<td></td>
</tr>
<tr>
<td>DEC</td>
<td>6,070</td>
<td>6,686</td>
<td>6,786</td>
<td>6,552</td>
<td>6,636</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>115,204</td>
<td>120,319</td>
<td>121,559</td>
<td>105,625</td>
<td>127,746</td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: Municipality of Larnaka

Figure 2.6: Electricity consumption of the Larnaka Town Hall building (2008-2012)

In addition, the consumption of electricity in order to light Europe Square and operate the fountain from 2008 to 2012 is described in table 2.5 and diagram 2.7. The big change in 2011 compared to the previous years is due to the restrictive measures on electricity usage due to the Mari explosion.
Table 2.5: Electricity consumption for Europe Square (2008-2012, bi-monthly)

<table>
<thead>
<tr>
<th>Year/ Month</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAN/FEB</td>
<td>10,527</td>
<td>11,893</td>
<td>13,730</td>
<td>13,857</td>
<td>10,585</td>
</tr>
<tr>
<td>MAR/APR</td>
<td>8,579</td>
<td>3,002</td>
<td>14,425</td>
<td>16,145</td>
<td>9,411</td>
</tr>
<tr>
<td>MAY/JUN</td>
<td>11,533</td>
<td>17,512</td>
<td>6,319</td>
<td>11,021</td>
<td>12,844</td>
</tr>
<tr>
<td>JUL/AUG</td>
<td>6,953</td>
<td>6,170</td>
<td>7,454</td>
<td>3,144</td>
<td>12,499</td>
</tr>
<tr>
<td>SEP/OCT</td>
<td>2,504</td>
<td>16,075</td>
<td>23,182</td>
<td>5,795</td>
<td>21,524</td>
</tr>
<tr>
<td>NOV/DEC</td>
<td>6,515</td>
<td>12,250</td>
<td>17,660</td>
<td>7,140</td>
<td>13,372</td>
</tr>
<tr>
<td>TOTAL</td>
<td>46,611</td>
<td>66,902</td>
<td>82,770</td>
<td>57,102</td>
<td>80,235</td>
</tr>
</tbody>
</table>

SOURCE: Municipality of Larnaka

Figure 2.7: Electricity consumption for Europe Square (2008-2012)
2.2.1.3 Renewable Energy Sources

Renewable Energy Sources (RES) are defined as non-fossil energy sources (wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, biological treatment plants and biogas). The definition is given in the EU Directive EK 77/2001 referring to the Community Framework for State Aid for Environmental Protection. Continuous reassessment of energy generation is a prerequisite for the implementation of the directive as well as ensuring the adequacy and optimal economic development and management of energy resources.

Electricity production using renewable energy has a key role in the plans of the Cyprus Energy Regulatory Authority (CERA) for the energy needs of Cyprus. The National Action Plan 2010-2020 was prepared under the provisions of Directive 2009/28/EC and approved by the European Commission and foresees the installation and operation by 2020 as follows (Installed Capacity (MW) / Annual Production (GWh)):

- Wind, 300 MW/ 499 GWh
- Photovoltaic, 192 MW/ 309 GWh
- Solar thermal, 75 MW/ 223 GWh
- Biomass, 17 MW/ 143 GWh

Total 584 MW/ 1,174 GWh

Based on the above, the gradual implementation of the National Plan is implemented as designed with rates of the use of RES in the coming years expected to exceed the targets of the original plan. The share of electricity production from Renewable sources in gross electricity production at the end of 2011 exceeded the target of 5%.

The total capacity of Renewable Energy at the 31st of December 2012 was 168,7 MW as follows:

- Biomass 8,6 MW
- Photovoltaic 13,4 MW
- Wind 146,7 MW

By the end of 2012, Twenty-three (23) wind farms had been granted permission for construction, operation and production. Fourteen (14) of those are within the District of Larnaka. Currently, Five of the 23 have been built and are operating. Three of those are in the District of Larnaka and their combined capacity is 62.3MW (Figure 2.8).

Figure 2.8: Installed Capacity of Wind Turbines

The technical characteristics of the three wind parks and their locations are shown in the Table 2.6
and Map 2.3 respectively.

Table 2.6: Wind power farms in Larnaka

<table>
<thead>
<tr>
<th>ENERGY “WIND PARK”</th>
<th>ENERG “WIND PARK”</th>
<th>ENERGY “WIND PARK”</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALEXIGROS</td>
<td>AGIA ANNA</td>
<td>AG. ANNA – PSEVDAS</td>
</tr>
<tr>
<td>21 VENSYS82 Wind turbines 1.5 MW each</td>
<td>10 G90 Wind turbines 2 MW each</td>
<td></td>
</tr>
<tr>
<td>31.5 MW</td>
<td>20 MW</td>
<td>10.8 MW</td>
</tr>
</tbody>
</table>

**Total Installed Power: 62.3 MW**

*SOURCE: Cyprus Energy Regulatory Authority*

Map 2.3: Location of wind farms in Larnaka

Table 2.7 shows figures for photovoltaic energy from February 2005 to the end of 2012. Since 2009, the installation of photovoltaics has increased dramatically, with electricity production increasing from 2.9 million kWh to 18.6 million kWh.
Table 2.7: RES (Cyprus) from photovoltaics (2005-2012)

<table>
<thead>
<tr>
<th>PERIOD</th>
<th>PHOTOVOLTAIC SYSTEMS</th>
<th>PV SYSTEMS ON PUBLIC BUILDINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of PV Systems</td>
<td>INST. CAPACITY kW</td>
</tr>
<tr>
<td>FEB'-DEC 2005</td>
<td>38</td>
<td>155</td>
</tr>
<tr>
<td>2006</td>
<td>133</td>
<td>578</td>
</tr>
<tr>
<td>2007</td>
<td>196</td>
<td>843</td>
</tr>
<tr>
<td>2008</td>
<td>321</td>
<td>1,586</td>
</tr>
<tr>
<td>2009</td>
<td>469</td>
<td>2,695</td>
</tr>
<tr>
<td>2010</td>
<td>592</td>
<td>4,821</td>
</tr>
<tr>
<td>2011</td>
<td>740</td>
<td>8,571</td>
</tr>
<tr>
<td>2012</td>
<td>982</td>
<td>15,616</td>
</tr>
<tr>
<td>TOTAL</td>
<td>982</td>
<td>15,616</td>
</tr>
</tbody>
</table>

SOURCE: Cyprus Energy Regulatory Authority

Table 2.8 shows the energy production from biomass/biogas and wind farms from February 2005 to the end of 2012.

The biomass production stations in Larnaka are placed next to the large farms of Aradippou and Avdellero. Since 2010 there has been stagnation in the development of new power plants using biogas. At the end of 2012, the total capacity stands at 8.7 MW. The National Action Plan requires the installation of power plants from this source with a total 17MW by 2020.

The total capacity of the wind farms is expected to reach 300MW by 2020. Given the steady growth rate of these facilities, this goal seems attainable (total installed capacity has now reached 146.7 MW). Of the five wind farms that currently exist in Cyprus, three are located in the District of Larnaka.
Table 2.8: RES (Cyprus) from Biomass, Biogas, and Wind power (2005-2012)

<table>
<thead>
<tr>
<th>PERIOD</th>
<th>BIOMASS/ BIOGAS UNITS</th>
<th>WIND TURBINE PARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. Of UNITS</td>
<td>INSTALLED CAPACITY kW</td>
</tr>
<tr>
<td>2006</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2007</td>
<td>1</td>
<td>250</td>
</tr>
<tr>
<td>2008</td>
<td>8</td>
<td>3,310</td>
</tr>
<tr>
<td>2009</td>
<td>8</td>
<td>3,555</td>
</tr>
<tr>
<td>2010</td>
<td>10</td>
<td>7,214</td>
</tr>
<tr>
<td>2011</td>
<td>11</td>
<td>7,964</td>
</tr>
<tr>
<td>2012</td>
<td>12</td>
<td>8,764</td>
</tr>
<tr>
<td>TOTAL</td>
<td>12</td>
<td>8,764</td>
</tr>
</tbody>
</table>

SOURCE: Cyprus Energy Regulatory Authority

Table 2.9 shows the total installed capacity of RES in Cyprus and the production from 2006 to 2012.

Table 2.9: RES (Cyprus) Total power in kW / Total Production in kWh (2006-2012)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TOTAL INSTALLED CAPACITY IN kW</th>
<th>TOTAL PRODUCTION IN kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>578</td>
<td>322,311</td>
</tr>
<tr>
<td>2007</td>
<td>1,093</td>
<td>970,238</td>
</tr>
<tr>
<td>2008</td>
<td>1,093</td>
<td>9,445,561</td>
</tr>
<tr>
<td>2009</td>
<td>4,896</td>
<td>22,758,150</td>
</tr>
<tr>
<td>2010</td>
<td>94,778</td>
<td>61,011,631</td>
</tr>
<tr>
<td>2011</td>
<td>150,783</td>
<td>164,195,135</td>
</tr>
<tr>
<td>2012</td>
<td>171,828</td>
<td>242,509,869</td>
</tr>
</tbody>
</table>

SOURCE: Cyprus Energy Regulatory Authority
2.2.2 Telecommunications

This sector has set in place, with respect to compliance with the Law 112 (1) / 2004, the creation of the Office of the Commissioner of Electronic Communications and Postal Services (OCECPS). Based on harmonizing this bill, the Commissioner must exercise the functions and powers of the office to fulfill the provision of telecommunications and postal services to the entire public, the interests of consumers, especially in terms of price and quality of service. The introduction of effective competition and offering a wide range of telecommunications equipment and services is also a central principle for the OCECPS.

2.2.2.1 Mobile Network, Wi-fi, Internet, and Fiber Optics

When looking at telecommunications in relation to infrastructure in Larnaka, it is apparent that the City has a reliable and integrated network. The majority of the network is physically delivered by wooden poles on the pavements of the streets. In the city center, the network is underground, and the new and repaired network is also underground.

The access to the Internet and the reliable connection, in combination with effective technical support, characterise the system as reliable and business friendly. The mobile telephony signal reception is universal throughout the city except for some areas in the vicinity of Aradippou, where there are improvement works taking place. In this area there has been a continued upgrading of services using new technologies. Specifically, from 2014 it is planned to upgrade the mobile telephony network to 4G LTE (Forth Generation Long-term Evolution).

In the UK, there is a clear public commitment by the telecommunications organizations to develop the 4G LTE technology and EU has committed to begin implementing these services by the end of 2012. Corporate customers are already anticipating the comparative advantages of 4G. An EU survey shows that 94% of IT (information technology) decision-makers in the UK believe that 4G technology will be "an important business tool." 84% of respondents claim to be excited by the prospect of the introduction of 4G and over 60% hope to develop the 4G within six months of its implementation. These benefits are confirmed by enterprises in countries where 4G LTE technology is already available.

In a survey, commissioned by the EU, between organizations using the 4G LTE in the United States, 67% have seen increased productivity. In addition, 47% have reduced their operating costs and 39% say that they have increased their turnover. Compared with the previous mobile network, the 4G LTE offers much higher data transfer rate, faster response times from the network and improved spectral efficiency (increase in total network capacity).
2.2.2.2 Statistics surveys regarding the internet use by the companies.

In Cyprus today, there is more and more business use over the internet for operations and transactions. Figure 2.9 shows the type of internet connection that companies use on the island.

Figure 2.9: Type of internet connection by companies (2004-2011)

![Type of Internet Connection](image)

In Table 2.10, Cypriot companies are classified according to their size (number of employees).

Table 2.10: Companies of Cyprus in 2011 in figures

<table>
<thead>
<tr>
<th>COMPANY SIZE</th>
<th>NUMBER</th>
<th>PERCENTAGE %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-9 (micro)</td>
<td>56,048</td>
<td>93.7</td>
</tr>
<tr>
<td>10-49 (small)</td>
<td>3,139</td>
<td>5.2</td>
</tr>
<tr>
<td>50-249 (medium)</td>
<td>529</td>
<td>0.9</td>
</tr>
<tr>
<td>&gt;249 (large)</td>
<td>79</td>
<td>0.1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>59,795</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2.10 shows the internet usage by companies according to their size. Since 2004, usage has increased dramatically with today's level being almost at 100% when looking at all types of companies.
Figure 2.10: Internet use by companies (2004-2011)

![Internet Usage Graph](image)

**SOURCE:** Statistical Service of Cyprus

More and more companies use the internet to pay their bills to the government, as figure 2.11 shows.

Figure 2.11: Internet use by companies for transactions with government (2004-2011)

![e_Government Graph](image)

**SOURCE:** Statistical Service of Cyprus

Based on the previous figures and the trends of companies there is a great deal of evidence that the cities which invest in this sector will acquire a comparative advantages in many other related sectors.

The internet connection faces some challenges such as the low connection speed. Efforts to strengthening the connection speeds through the existing conventional network have been done and shown a marked improvement in recent years. A more effective response to this problem
would be the further development of the fiber optic network. The EAC plans to expand the existing network through developing strategic partnerships with telecom operators.

Free wireless internet connections are available from the two suppliers in Larnaka Airport, the area of Athena Avenue, the Makenzy area, the Marina, and the Football Fields. In addition, the majority of the restaurants by the sea and the central shopping area offer free Wi-Fi internet connections.

### 2.2.3 Water management

Water management is an essential infrastructure component for the viability of every town and country. The Framework Directive on water management 2000/60/EC (WFD) establishes a framework for sustainable water management and protection of water resources. The main purpose of this Directive is to prevent further deterioration of all waters and to achieve "good status" by the end of 2015. Additionally, the European Directive on Urban Waste Water Treatment 91/271/EEU amended by Directive 98/15/EEU and has also been incorporated into the legislation of Cyprus, in accordance with Regulation AR772/2003.

The supplier of water within the District of Larnaka is the Larnaka Water Board (LWB) (see Chapter 2.2.3.1). The Water Development Department (WDD) is the supplier to the Board, and is responsible for the management (or delegation of management to third parties) relating to the desalination plants and the water dams.

Larnaka Sewerage and Drainage Board (LSDB) operates the sewerage drainage systems (management and treatment) and the majority of the stormwater drainage systems. Certain parts of the stormwater system in the City are under the responsibility of the Department of Public Works (main roads) and there are other areas where the Municipality of Larnaka is responsible. The Department of Public Works have the responsibility of studying and developing flood protection works in relation to the flow of water in rivers, and likewise they have the obligation to protect the coast from erosion.

In Larnaka, where there is a special relationship with water, the issue of water management should be brought to the forefront of any future discussions in order to create conditions for better co-ordination and strategic planning. The need for a single management body with a more idealised, organized, sustainable and viable approach, is apparent.

### 2.2.3.1 Water supply

The supplier of water within the District of Larnaka is the Larnaka Water Board (LWB). Figure 2.12 gives some statistics about the Board.
The water reservoirs of the LWB (8,000 m³) are located south-east of the road between Larnaka and Limassol near the village of Klavdia (10 km from the center of Larnaka).

The LWB’s privately owned boreholes are located southwest of the reservoirs, around the Tremithous River. In the early years of operation, these were the only sources of water supply. As demand for water has grown, so has water supplied from the Government water supply systems (WDD).

Depending on the efficiency of drilling, which depends on the recharge of groundwater aquifer, the water pumped from boreholes can satisfy up to 35% of demand, but only 2% in drought periods.

The distribution of water in Larnaka had an upward trend until 2001 (Figure 2.13). During the last decade there has been a stabilization of the quantities demanded. Channelling quantities from private sources has stopped since 1983, while the amounts of the sources of the Board is limited. Therefore the bulk of water supplied is purchased by the Board and passed to consumers from government sources that are managed by the WDD (see Figure 2.13).

Providing water to 35,000 properties and serving approximately 70,000 consumers, the LWB uses a pipe network with a total length of approximately 357 km. Of this network, 27 km makes up the
transmission network and 330 km, the distribution network. The transmission network consists of large pipes with diameters ranging from 300-700 mm, while the distribution network consists of smaller diameter pipes ranging in size from 80-300 mm.

Much of the installation was originally carried out using asbestos pipes. More recently, ductile iron pipes have been used for main transmission pipes, while plastic pipes (UPVC) are used for the distribution. For household supplies, polyethylene pipe with a diameter of 15-25 mm is used, while large consumers such as hotels, factories and organized groups, a serviced with larger diameter pipes.

2.2.3.1.1 Areas

The LWB divides the Municipality into 21 areas (Map 2.4) according to the way the water network distribution branches through the city.
2.2.3.1.2 Water meters

In the Municipality of Larnaka, there are approximately 34,000 water meters (figure 2.14). The rate of installation of new water meters, compared to previous years has decreased considerably with the total number actually starting to decline slightly.
Figure 2.14: Number of installed water meters in the Municipality of Larnaka

![Number of installed water meters]

Figure 2.15 shows the number of water meters in every area for each year from 2009. The majority are located in Areas 4, 8, 11 and 19. Area 4 is a part of the St. Nicolas area where there are many multi-story buildings, while Area 8 is the City Center. Area 11 covers the area from the coast of the old refinery to the C.T.O beach. Area 19 is part of the Turkish Cypriot neighbourhood, where many multi-story buildings have been built.

SOURCE: Larnaka Water Board
Figure 2.15: Number of installed water meters in the Municipality of Larnaka by area (2009-2012)

<table>
<thead>
<tr>
<th>Region</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>52</td>
<td>50</td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td>20</td>
<td>781</td>
<td>797</td>
<td>799</td>
<td>801</td>
</tr>
<tr>
<td>19</td>
<td>3016</td>
<td>3045</td>
<td>3058</td>
<td>3058</td>
</tr>
<tr>
<td>18</td>
<td>1904</td>
<td>1913</td>
<td>1929</td>
<td>1900</td>
</tr>
<tr>
<td>17</td>
<td>1821</td>
<td>1878</td>
<td>1929</td>
<td>1999</td>
</tr>
<tr>
<td>16</td>
<td>1362</td>
<td>1383</td>
<td>1405</td>
<td>1442</td>
</tr>
<tr>
<td>15</td>
<td>877</td>
<td>883</td>
<td>913</td>
<td>904</td>
</tr>
<tr>
<td>14</td>
<td>1778</td>
<td>1815</td>
<td>1824</td>
<td>1827</td>
</tr>
<tr>
<td>13</td>
<td>24</td>
<td>24</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>12</td>
<td>70</td>
<td>69</td>
<td>68</td>
<td>69</td>
</tr>
<tr>
<td>11</td>
<td>3044</td>
<td>3035</td>
<td>3068</td>
<td>3072</td>
</tr>
<tr>
<td>10</td>
<td>1512</td>
<td>1573</td>
<td>1565</td>
<td>1602</td>
</tr>
<tr>
<td>9</td>
<td>1428</td>
<td>1419</td>
<td>1440</td>
<td>1432</td>
</tr>
<tr>
<td>8</td>
<td>3143</td>
<td>3220</td>
<td>3304</td>
<td>3278</td>
</tr>
<tr>
<td>7</td>
<td>1705</td>
<td>1710</td>
<td>1688</td>
<td>1695</td>
</tr>
<tr>
<td>6</td>
<td>1995</td>
<td>2026</td>
<td>2041</td>
<td>2048</td>
</tr>
<tr>
<td>5</td>
<td>1938</td>
<td>2024</td>
<td>2002</td>
<td>2023</td>
</tr>
<tr>
<td>4</td>
<td>2817</td>
<td>2858</td>
<td>2908</td>
<td>2913</td>
</tr>
<tr>
<td>3</td>
<td>2498</td>
<td>2536</td>
<td>2550</td>
<td>2575</td>
</tr>
<tr>
<td>2</td>
<td>843</td>
<td>858</td>
<td>876</td>
<td>861</td>
</tr>
<tr>
<td>1</td>
<td>338</td>
<td>345</td>
<td>353</td>
<td>363</td>
</tr>
</tbody>
</table>

SOURCE: Larnaka Water Board
2.2.3.1.3 Water Consumption

The consumption of the Municipality in recent years fluctuates around 4 million $m^3$ (Figure 2.16). It is important to note that there were 15% less water meters in 2006, however, the consumption is very similar today.

Figure 2.16: Water consumption in the Municipality of Larnaka (2004-2012)
Figure 2.17 shows the consumption in each area for the last four years.

**Figure 2.17: Total yearly consumption by region (2009-2012)**

*Source: Larnaka Water Board*
The LWB, according to the expected consumption and the type of development, has three main types of tariff. Type 1 refers to residential use and small shops, type 2 refers to large companies and type 3 refers to large developments. Types 4-7 refer to specific areas (such as type 7 which refers to the industrial area of Aradippou). Figure 2.18 shows the number of customers for each type of tariff and according to area. It is important to note that almost every area has customers using each main type of tariff (i.e. residential, commercial, industrial).

**Figure 2.18: Number of customers per region per tariff**

![Number of customers per region per tariff](Image)

Source: Larnaka Water Board

Figure 2.19 shows how many consumers belong to each type of tariff in the first quarter of the year. The majority of them are Type 1 (residential and small shops). The decline in the total number of consumers for the first time in recent years is mainly due to a decline in these Type 1 tariff customers.

**Figure 2.19: Total number of consumers per tariff**

![Total number of consumers per tariff during the first period of the year](Image)

Source: Larnaka Water Board
Figure 2.20 shows the consumption for each type of pricing. Consumption by each type of tariff has remained fairly stable since 2005.

**Figure 2.20: Total consumption per tariff from 2005-2012**

![Total consumption per tariff per year in m³](image)

*SOURCE: Larnaka Water Board*

Every three months, the number of water meters that had zero consumption are counted (Figure 2.21). The total number increased sharply in the first quarter of 2012. This is due to the abandonment of some premises (e.g., small shops) who have stopped their operation, increasing trends towards cohabitation and small-scale relocations to other areas.

**Figure 2.21: Number of water meters with zero consumption**

![Number of water meters showing zero consumption](image)

*SOURCE: Larnaka Water Board*
### 2.2.3.1.4 Non-charged water (Losses)

An amount of water that passes to the network is lost and is not paid for by the end-user directly (losses). The amount of losses depends on the efficiency of the network system and the management of water pressure in the system. In 2012 the losses over the network of Larnaka were less than in previous years. In 2010 the percentage of losses was 33%, in 2011 was 27% and in 2012 was 25% (Figure 2.22). Figure 2.23 shows the supply and the consumption for each year.

In comparison to other cities, the losses in London can reach 50%, while the losses in other EU cities can range from 20% up to 50%. The loss of water in Nicosia was 23% in 2011.

**Figure 2.22: Non charged water**

![Graph showing non-charged water as a percentage of the total supply in Larnaka municipality over the years 2005 to 2012.](SOURCE: Larnaka Water Board)

**Figure 2.23: Supply versus consumption**

![Bar graph showing supply versus consumption in m³ for each year from 2004 to 2012.](SOURCE: Larnaka Water Board)

### 2.2.3.2 Desalination

Regular periods of drought in recent years in Cyprus, have made the physical amount of water available insufficient and have presented the need to construct desalination plants in order to have...
2 – IMPORTANT INFRASTRUCTURE OF LARNACA

water at any time, not just after periods of rainfall.

The District of Larnaka is the number one supplier of desalinated water in Cyprus, as the first two plants were built here.

The first plant to be constructed was the Dekhelia Desalination Plant in April 1997, having a production capacity of 40,000 m³/day. The water supplies the Famagusta area and part of Nicosia and Larnaka. The plant was extended in July 2008 and again in April 2009, so that today the plant produces 60,000 m³/day.

The Larnaka Desalination Plant worked for the first time in June 2001 and produced 52,000 m³/day, before the extension of an additional 10,000 m³/day in January 2009. Today it produces 62,000 m³/day.

The two plants of Dekhelia together with Larnaka can more or less cover the needs of Nicosia, Larnaka and Famagusta.

In addition the Water Development Department, agreed with EAC to buy water from a new desalination plant that will be build in Vasilikos (also in the District of Larnaka) in 2013 and will produce 60,000 m³/day. This would result in the total production of desalinated water in the District of Larnaka increasing to 182,000 m³/day.

The government has to purchase a minimum amount of water from the operator for the fixed term of the contract (e.g. 20 years). After that period, the plants will belong to the government, who can buy the plant before the end of the contract if they choose.

2.2.3.2.1 Specifications and operation

Each desalinization operation comprises of:

- Pipeline underwater and on-shore for seawater and brine disposal.
- Pipeline and pumping station for sea water at the beach.
- Desalination plant
- Pumping station and pipelines that carry the desalinated water to the tanks of the Water Development Department (WDD).

The seawater is taken from a point usually located 500-1000 meters from the beach (depending on the prevailing conditions). The water then goes to the pumping station (on the beach) through the pipeline. After passing through a dense mesh to remove solids, the water is pumped to the plant located away from the beach.

There are 3 stages of processing, the pre-processing stage, the reverse osmosis stage and the final treatment stage.

a) Pre-processing: The microorganisms have to be destroyed and the suspended solids to be removed to prevent the mineralization of membranes. The pre-processing comprises pre-chlorination, aggregation of colloidal organic substances with the addition of chemicals, filtering through sand filters and adding sulfuric acid to adjust the acidity. The filtered water is pumped in special polypropylene filters that keep all solids larger than 1mm (which would cause damage to the reverse osmosis membranes). De-chlorination then takes place because the membranes are destroyed in the presence of free chlorine.

b) Reverse osmosis: The water fed to the reverse osmosis membranes with high pressure pumps which provide the pressure required (about 65 to 80 atmospheres) that the water to pass through the membranes and to reject salts. The recovery/efficiency of the membranes is about 50 %, i.e. to produce a cubic meter of desalinated water requires two cubic meters of sea water. Seawater of
approximately double the original salt concentration (brine) returns into the sea after passing through the high pressure pumps. As a result of the pressure it has received a part of energy requirement is reduced (about 25-30 %) at the pumps. In this way, there is a saving on the electricity demand (Image 2.5).

c) Final treatment stage: The desalinated water is led to the final treatment tank where the use of chemicals such as lime and carbon dioxide or sulfuric acid balance the acidity and increase the hardness of the produced water. Finally, the water is chlorinated and is ready for pickup by the Water Development Department.

Image 2.5: Reverse osmosis taking place at Larnaka Desalination Plant

2.2.3.3 Sewerage system and treatment

The EU Directive 91/271/EEC concerning urban wastewater, has a main objective to protect the aquatic environment from the adverse effects of the discharge of the untreated municipal sewerage. The main obligation of member countries is the installation of central sewer networks and wastewater treatment plants in communities and municipalities with a population equivalent (including permanent, and seasonal populations from tourism) greater than 2,000. The recycled water from wastewater treatment is used for irrigation of existing agricultural crops.

The Sewerage and Recycling section of the Water Development Department (WDD) among others, has the authority and responsibility for implementing the above EU directive. Figure 2.24 shows the progress of the implementation of the National programs in urban settlements. Larnaka is slightly above average in terms of compliance and completion of the program.
Larnaka Sewerage and Drainage Board (LSDB) is a public body under the Ministry of Interior and is responsible for sewerage and stormwater drainage in the City of Larnaka. It is headed by the Mayor of Larnaka, with other representatives from the communities of Livadia, Voroklini, Pyla, Meneou, Dromolaxia, Kiti and Pervolia. The LSDB employs 50 permanent scientific, technical, labour and office staff. They also employ at various times people extra employees mainly for supervision of work.

LSDB is responsible for the construction and operation of the sewerage system in the City in addition to the construction and operation of the wastewater treatment plant. The sewerage system was designed in two phases.

The first stage (Phase A) was completed in 2003 and since then the sewerage system has operated in the city center and coastal areas.

As part of Phase A, the Sewerage Treatment Plant was constructed, very close to the airport, next to the Larnaka desalination plant. There are ongoing construction projects to expand and upgrade the sewerage treatment plant to meet the needs of the population by 2047.

Construction work as part of Phase B started in 2006 and is scheduled to be completed in 2015. In some areas that face flooding risk, a new stormwater sewer system is also under construction.

### 2.2.3.3.1 Phases, regions and specifications

Map 2.5 shows how the two phases relate to each local area. Specifically, the purple areas indicate Phase A and red colour indicates Phase B. The Green areas indicate parts of phase B where the works are under construction or haven’t started yet. The yellow areas indicate areas that made a contract with the Larnaka Sewerage Board in October 2009.
After the completion of the Phase B sewerage plan, the LSDB will serve the whole of the Municipality of Larnaka, the tourist area of Pyla, Livadia and Voroklini up to the highway of Larnaka – Dekhelia and the four communities of Dromolaxia, Meneou, Kitiou and Pervolia (red colour on map 2.6).
The specifications of Phase A (red area in Map 2.6) are shown in Figure 2.25. This stage included to the construction of 150km of sewerage pipes and 13km of pipeline to collect stormwater, 17 pumping stations for wastewater and 9 for stormwater. At the same time the sewerage treatment system operates, serving 46,340 people.
Figure 2.25: Technical data of Phase A

Map 2.7 that follows shows the quarters of the Municipality of Larnaka, along with their associated populations.

SOURCE: Larnaka Sewerage and Drainage Board
2 – IMPORTANT INFRASTRUCTURE OF LARNAKA

Map 2.7: Quarters of Municipality of Larnaka - Population

SOURCE: Municipality of Larnaka/Statistical Service
The LSDB is currently implementing the design and construction of Phase B. Table 2.11 shows the contracts (C) and execution of construction projects which have been completed. Map 3.8 represents areas and related contracts.

**Table 2.11: Contracts of LSDB program**

<table>
<thead>
<tr>
<th>COMPLETED PROJECTS</th>
<th>PROJECTS IN PROGRESS</th>
<th>FUTURED PROJECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract C5 (Sewerage)</td>
<td>Contract C13 (Sewerage and Stormwater)</td>
<td>Contract C12 (Sewerage and Stormwater)</td>
</tr>
<tr>
<td>Contract C6 (Sewerage)</td>
<td>Contract C16 (Sewerage and Stormwater)</td>
<td>Contract C9 (Sewerage and Stormwater)</td>
</tr>
<tr>
<td>Contract C7 (Sewerage)</td>
<td>Contract C19 (Drainage)</td>
<td>Contract C14 (Sewerage and Stormwater)</td>
</tr>
<tr>
<td>Contract C11 (Sewerage and Stormwater)</td>
<td>Contract C8 (Sewerage)</td>
<td>Contracts $C_{18}$ και $C_{21}$ (Sewerage in Aradippou)</td>
</tr>
<tr>
<td></td>
<td>Contract C10 (Upgrading of SWTP)</td>
<td>Contract C15 (Sewerage)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contract C20 (Stormwater/section of PHASE A')</td>
</tr>
</tbody>
</table>

**SOURCE:** Larnaka Sewerage and Drainage Board

**Map 2.8: Partial display of the construction projects by contract**

**SOURCE:** Larnaka Sewerage and Drainage Board
The specifications of Phase B are illustrated in figure 2.26 that follows. It includes 180km of sewerage network, 50km of pipes of stormwater, 11 pumping stations for wastewater, 3 pumping stations for stormwater and the expansion and upgrade of the sewerage treatment plant.

Figure 2.26: Technical data of Phase B

180km SEWER PIPES

11 SEWAGE PUMPING STATIONS

50km STORMWATER PIPES

2 STORMWATER PUMPING STATIONS + 1 ENHANCE STORMWATER PUMPING STATION

EXPANSION AND UPGRADE OF THE WWTP FROM 46,340 POP TO 100,000 POP

SOURCE: Larnaka Sewerage and Drainage Board

The location of the pumping stations of the wastewater and stormwater is shown on maps 2.9 and 2.10 respectively.
Maps 2.9 & 2.10: Imaging of the pumping stations (sewerage and stormwater)

2.2.3.3.2 Sewerage Treatment Plant

An important part of Phase B is the extension and upgrade of the Sewerage Treatment Plant, that is located on the beach next to the Larnaka Desalination Plant and close to the Airport (Map 2.11)
The plant has the following technical characteristics (Table 2.12).

**Table 2.12: Technical data of the Sewerage Treatment Plant**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Population</td>
<td>46,340</td>
</tr>
<tr>
<td>Ave. Flow to Works - Dry Weather Flow (DWF)</td>
<td>8,500 m³/day</td>
</tr>
<tr>
<td>Peak Flow to Works</td>
<td>25,900 m³/day</td>
</tr>
<tr>
<td>(Equal to 3 x DWF)</td>
<td></td>
</tr>
<tr>
<td>Design Flow to Works</td>
<td>31,100 m³/day</td>
</tr>
<tr>
<td>Design Effluent Flow</td>
<td>8,500 m³/day</td>
</tr>
</tbody>
</table>

**SOURCE:** Larnaka Sewerage and Drainage Board

The Sewerage Treatment Plant produces 7,500 m³ per day of tertiary treated wastewater. The treated wastewater is recycled and used for irrigation around the Municipality, at hotels and at the football fields. This water is also used for irrigation of the plants that animals eat, such as corn and alfalfa. The dried sludge, as a product of the treatment, is free for lubrication of the agricultural land in the region, as it contains useful ingredients (e.g. nitrates, phosphorus) for crops. The management of the recycled water produced by the plant is the responsibility of the Water Development Department (WDD).

The existing capacity at the sewerage works is 8,500 m³/day. After the completion of the upgrading works the plant will have the ability to treat up to 18,000 m³/day (requirement for the year 2027).
Subsequent upgrading will further increase capacity to 22,000 m³/day (the planned requirement for the year 2047 to serve a population of 100,000 people).

2.2.3.4 Stormwater

The LSDB replaces the old stormwater network in areas where it is inefficient or needs a more complex solution. The Areas of Prodromou (contract C19), Sotira (contract C12) and Kamares (WDD) are sometimes flooded. Contract C19 is under construction, while C12 is currently being awarded.

The LSDB, the Municipality of Larnaka and the Public Works Department are co-operating to find the solutions to the problems that they face. The problem of stormwater management in the City of Larnaka is exacerbated by the morphology of the region which is extensively flat and very close to the level of the sea (see Chapter 3, Figure 3.1). This requires the use of larger pipes than would usually be necessary (up to 800mm) and requires energy to operate pumping stations.

The Department of Public Works is responsible for the stormwater drainage system in the main roads of the City, while the Municipality of Larnaka manages the system that is already installed in roads of secondary importance.

There are four open channels (Maps 2.12 & 2.13) and a closed channel (below Spyrou Kyprianou Avenue, Map 2.13) which divert stormwater to the sea.

The channel of Livadia is the combined outflow to the sea, of the rivers Archangelos and Kamitsis. These two rivers join just before the discharge point. The Ximbouli channel is a man made construction formerly used by the refinery for its operations. The closed channel below Spyrou Kyprianou (formerly Timayia) was constructed to address historical problems of flooding within the Kathari catchment area.

The open channel of the Sarri in the Prodromou area was constructed thirty-five years ago and was used as a stormwater channel. Today, the channel will be a part of the stormwater network of the Prodromou area, and the new construction works will make it a closed channel.
The Kamares river which stems from the Kalo Chorio catchment area, winds around the salt lake and diverts into the sea. It is an important part of the stormwater network system of the ‘salt lakes catchment area’ which faces serious problems of flooding and has been classified by the WDD as an Area of Potentially Significant Flood Risk (AFSFR).
2.2.3.5 Flooding

The Water Development Department (WDD) is responsible for the evaluation of flood risk in the City. The WDD acts according to the Framework Directive 2007/60/EC in establishing a system for the assessment and management of flood risks, aiming to reduce the negative effects on human health, the environment, cultural heritage and economic activity associated with floods. The Directive 2007/60/EC has been harmonised in Cyprus legislation with the Evaluation, Management and Control of Flood Hazard Law (N 70 (I) / 2010).

The WDD has identified all areas of potential significant flood risk in Cyprus, which for the City of Larnaka includes the area of Kamares. Map 2.14 shows the sub-catchments of the Kamares catchment area (Salt Lakes catchment area).
The whole area has low relief especially the area of the main road near the old Kamares aqueduct. In summary, the Kamares catchment area includes the area from Kalo Chorio up to the sea (see Chapter 3.3 for more description).

In the District of Larnaka there are areas within Aradippou, Levadia and Ormideia, also considered as APSFR’s.

Within the City of Larnaka significant flood defenses are being constructed by the LSDB in the regions of Prodromou and Sotira, and will be completed over the next two years. The department proposes that the projects will be closely monitored after their completion. Please note that a bid was awarded to a private company for this project, which is expected to be completed in June 2014.
2.2.4 Coastal erosion

Much of the Cyprus coastline is threatened by coastal erosion. In order to reduce the problem, the Department of Public Works have commissioned from time to time, experts to record their findings and suggest sustainable ways to reduce this phenomenon.

As seen from an earlier study in Cyprus the erosion occurs due to a number of factors, such as the construction of dams that has halted the sedimentation of the coastline, and unregulated or isolated man-made structures on the coast (e.g. ports and shelters).

Regarding the erosion of the beaches in Larnaka reference is made in a recent study as to the extent of the problem. This study which has been made on behalf of the Public Works by a group of scientists from the National Technical University of Athens, Greece. The study has been published and the findings presented very briefly below:

The study area includes the sea and land area of the Port of Larnaka up to the administrative boundaries between Voroklini and Pyla.

- **SUBAREA 1: PORT OF LARNAKA UP TO THE BOADER OF THE DISTRICT OF LARNAKA-VOROKLINI**
  The area has the coastal length of 3km. The main feature is that it hosts the Fuel Terminal and associated tanks. Also in the area are underwater and land pipelines. Close to the border of this region is the yacht club of Larnaka and Nicosia. The beach front is mostly covered with gravel and there is a significant erosion. There are some vertical arms as protective measures.

- **SUBAREA 2: THE BORDER OF THE DISTRICT OF LARNAKA-VOROKLINI-HOTEL LENIOS**
  A stretch of coastline 1km long covering a small tourist area with sandy beaches and some pebbles. A small amount of erosion is visible here.

- **SUBAREA 3: HOTEL LENIOS TO PHYLA- VOROKLINI**
  It is one and a half kilometers (1.5 km) of mainly sandy beach with intense tourist development. There are 16 breakwaters and the erosion is minor, except the area next to Lenios hotel where there is intense erosion.

The solutions proposed by the team of Technical University are mentioned briefly in the following lines and shown in Figure 2.6.

- **SUB AREA 1: CONSTRUCTION OF 5 BREAKWATERS WITH NATURAL STONES OF 100 METERS LENGTH, PARALLEL TO THE COASTLINE.**

- **SUB AREA 2: CONSTRUCTION OF 7 BREAKWATERS WITH NATURAL STONES OF 100 METERS LENGTH, PARALLEL TO THE COASTLINE.**

- **SUB AREA 3: DISMANTLING PART OF THE GROIN NEAR LENIOS HOTEL - CONSTRUCTION OF 4 NEW BREAKWATERS – REPAIR WORKS TO THE EXISTING.**
The erosion of coastal zones has very serious impacts on both the environment and human activities. The erosion can destroy the homes of people and their infrastructure. It threatens both European coasts and the shores of Larnaka. The study ‘Living with Coastal Erosion in Europe’, compiled by the European Union found that about one fifth of the shores of the EU have been seriously affected by erosion. Parts of the coastline in Larnaka are receding by between 0.5 and 2 meters every year and in some severe cases up to 15 meters has been recorded.

At the same time, in an effort to address the risk of coastal erosion, it is proposed through the Local Plan of Larnaka, to protect the beach over its entire length. Within this ‘coastal protection zone’ construction development is prohibited. In Larnaka there are several developments which preceded the proposals of the Local Plan, resulting in strong erosion of coastlines in those area.

### 2.2.5 Solid Waste Management

Solid waste management is one the most serious issues that modern cities face. It is linked to both environmental protection and public health, and within this spirit of this, the relevant European Directives were developed, and are today implemented in Cyprus.

Cyprus within the context of harmonization and implementation of the provisions of the Waste Act of 2011 (N.185 (I) / 2011), has created the Division of Solid Waste Management. The Division of Solid Waste Management is part of the Technical Services of the Ministry of Interior.

The Ministry of Interior in order to implement the strategic plan and enhance the procedures and the rational management of non-hazardous solid waste has set the following targets:

- Promote and adopt appropriate legislation for the rational management of non-hazardous solid waste and identify waste streams within the jurisdiction.
- Licensing other bodies for collection, transportation and disposal of solid waste.
- Licensing Units of processing, recycling, excavation, construction and demolition.
- The Construction of a Waste Management Facility (for Municipal Solid Waste) in every district, and if required, transit stations.
- The development of a ‘Green points network’.
- Restoration of the existing uncontrolled waste disposal sites.

The District of Larnaka has the following facilities for Municipal Solid Waste:
The waste treatment station at Koshi serving the Larnaka and Famagusta District.

The Skarinou transit station to serve the region of Larnaka.

### 2.2.5.1 Waste Collection and Recycled Material

The waste collection is done by the relevant department of the Municipality of Larnaka over the entire area of the administrative boundaries.

The Department of Sanitation of the Municipality of Larnaka employs 54 people in the collection of waste, 39 people in street cleaning, and 6 people are employed in the offices of the department. The department has 13 collecting vehicles, 3 street cleaning machines, 2 trucks, 3 diggers as well as waste disposal bins.

In most areas the waste collection frequency is three times a week, apart from the Urban Shopping Center which is collected daily.

Large bins of the Municipality of Larnaka are placed periodically in various parts of the Municipality, for residents to deposit prunings and grasses which are then transported in the Klavdia landfill site. Bulky waste of the Municipality is also disposed of at this site. Demolition materials are transported to a designated area in the Stavrovouni region, received and managed by a private company.

The work of collecting of recyclables is performed by a private company involving PMD, paper and glass. There are special points throughout the City where people can deposit recyclable materials.

Figure 2.7 shows the Municipal Garage which operates (daily from 08:00 to 14:00) as a collection point for old electrical and electronic equipment. It is located close to the sports center ‘Kition’ and Larnaka General Hospital.

**Image 2.7: Municipal Garage (repository of old electrical and electronic equipment)**

The following table 2.13 shows the statistics in relation to the production of waste in Municipality of Larnaka in 2011.
Table: 2.13 Municipality of Larnaka - Statistical Data of waste production (2011)

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal Waste Collection</td>
<td>31,284,810kg</td>
</tr>
<tr>
<td>Recycled Material</td>
<td>2,308,444kg</td>
</tr>
<tr>
<td>Bulky Waste (Estimate)</td>
<td>1,500,000kg</td>
</tr>
<tr>
<td>Green Waste (Estimate)</td>
<td>1,500,000kg</td>
</tr>
<tr>
<td>TOTAL</td>
<td>36,593,254kg</td>
</tr>
<tr>
<td>WASTE PER CAPITA</td>
<td>710 kg</td>
</tr>
</tbody>
</table>

SOURCE: Municipality of Larnaka

The Koshi sorting and landfill operation began in spring 2010. The waste of Larnaka and Famagusta is transported there including that of the Municipality of Larnaka. The Landfill area of Koshi and the waste management facility had a Design–Build–Operate contract and the consortium is responsible for the operation of the plant for 10 years. The construction cost is fully borne by the government, while the operating costs are determined based on a contract undertaken by Local Authorities.

Specifically, for the management and monitoring of the contract during the period, by all Municipalities and Communities of Larnaka and Famagusta, a Council was set up. This consists of 4 Mayors, 4 Presidents of councils of the District of Larnaka and Famagusta, and a representative of the Ministry of Interior. According to the Household Waste Law 85(I)/2005, the Council, has the responsibility to adjust the charges with Municipalities, depending on the quantities of household waste brought to the factory.

For many years before 2010, an area within the administrative boundaries of the community Klavdia has been used for disposal of Municipal Solid Waste. The restoration of this Area of Uncontrolled Waste Disposal at Klavdia is being carried out.

The plant at Koshi consists of the following main sections:

- Department for receiving the waste
- Department for mechanical and sorting (Figure 2.8)
- Department for Composting, Refining, and Storage.
- Landfill site for waste.
Image 2.8: Koshi Landfills - Tallying Department

SOURCE: KOSHI LANDFILLS
2.3 INFRASTRUCTURE OF NATIONAL IMPORTANCE

2.3.1 Port and Marina of Larnaka - Preface

The area of the Port and the Marina of Larnaka is one of the key factors to create the conditions for sustainable development of the City of Larnaka. Two government agencies, the Cyprus Ports Authority (CPA) and the Cyprus Tourism Organisation (CTO) currently manage the Port and the Marina respectively.

In the context of developing this area, the government has decided to opt for a specialist use with the goal of becoming the only tourist passenger port in Cyprus.

To implement this target, a search was undertaken for an investor who will take on the planning, financing, implementation and operation of this project. Based on this perspective, the consortium, 'Zenon' was selected and the negotiations with the government have been completed for an agreement. The agreement is currently pending mainly due to the economic crisis.

In summary, the consortium's proposal ‘Zenon’ as submitted and agreed with the government, is illustrated below.

The area of the harbor and marina consists of four modules:

- Zenon Marina (Figure 2.9)
- Zenon Cruise (Figure 2.10)
- Green areas (Figure 2.11)
- Green Residential (Figure 2.12)
It has the following goals (see Image 2.13):

- This new development to become well known worldwide through the sustainable and innovative architecture that takes into account human and environmental needs.
- To preserve the local site views and character in a creative way in relation to society and the visitor.

The areas to be constructed are:

- Public meeting and entertainment places (Figure 2.15)
- A shopping mall
- Concert and conference halls
- School
- Residential areas
- Expansion and upgrading the Marina to offer high quality services (Figure 2.14)
- Create new berthing quays for cruise
- Guest Rooms
- Storage areas
This combined strategic planning hopes to lead the city into a new period of creation and progress.

2.3.1.1 The Port

The Port of Larnaka is the second biggest port of Cyprus (Figure 2.16), after that of Limassol. It is located 2km from the City Center, between the onshore facilities of the Petroleum storage area to the north and the Larnaka Marina to the south. The Port began operating in 1973, and occupies an area of 445,000 m². It is the nearest European port to the Middle East, the Suez Canal and North East Egypt (145 n.m. from Tel-Aviv, 230 n.m. from Port Said). Despite this strategically attractive location however, it cannot meet the needs of modern navigation.

2.3.1.1.1 Current specifications

Figure 2.27 presents the technical characteristics of the current specifications of the Port:

- Turning circle 300M
- Seabed at -12m (MSL)
- Length of north quay: 326m
- Length of south quay: 340m
- Three storage areas: 18,000m²
- Open area of container storage: 74,670m² and 41,140m²
- Passengers building.
- Offices of CPA, Customs and Police.

Figure 2.27: Technical specifications of the Larnaka Port

2.3.1.1.2 Transport in and out of the Port

The transport of passengers and containers to the ports of Larnaka and Limassol are recorded in Figures 2.28 and 2.29. In 2012 the Larnaka Port handled 44,055 people while container traffic was non-existent. The use of this important infrastructure is clearly struggling, with little activity taking place.
Figure 2.28: Distribution of passengers for the years 2009 to 2012 at the ports of Larnaka and Limassol

![Passengers Traffic Diagram]

**SOURCE:** Cyprus Ports Authority

Figure 2.29: Distribution of containers for 2009-2012 at Larnaka and Limassol ports

![Containers Traffic Diagram]

**SOURCE:** Cyprus Ports Authority

In Figures 2.30 and 2.31 that follow the transfer of loads and ships are recorded (including cargo and fuel tankers) for all ports and terminals of Cyprus.

Based on the diagrams above, the Port of Larnaka performs disappointingly and the need to reorganize and redefine the concept and the operation of the Port is clear.
2.3.1.2 The Marina

The Larnaka Marina (image 2.17) is located at the center of the town. It is one of the official ports of entry into Cyprus.

It has a maximum capacity of 450 boats. The minimum water depth is about 1.5 meters and a maximum of 4.0 meters. The Marina is well protected from difficult weather conditions that can occur in the area.

The Larnaka Marina is located in Larnaka Bay and is 110 nautical miles from Beirut and Tripoli, 145 n.m. from Tel Aviv, 230 n.m. from Port Said and 250 n.m. from Rhodes.
Larnaka Marina is the largest marina in Cyprus and offers many services for the service of anchored vessels such as:

- Water (free of charge).
- Electricity (in every Quay it supplies 240 volts/50HZ, consumption is metered).
- Fuel
- Firefighting equipment installed throughout the Marina.
- Osmosis treatment
- Repair of Boats/Facilities: many private companies are operating within the Marina for launching and repair of yachts.
- Laundry, Toilets, Showers, Mini Market, Safe storage.
- Telephone, fax, e-mail available at the Customer Service Desk.
- 24 h insurance. Access to the marina is controlled and limited to boat owners and crews.

A key part of the Larnaka Marina is the wooden pier which has been described as neoclassical and dates back to 1882 (Image 2.18).
2.3.2 Larnaka International Airport

2.3.2.1 Specifications

Cyprus has two commercial airports (one in Larnaka and one in Paphos). Both airports have been developed with the BOT method (Build, Operate, Transfer) by a consortium of companies (Hermes).

The specific area of Larnaka International Airport covers 5,900,000 m². The boundaries are the adjacent salt marshes, the sea to the east and the wastewater treatment plant and desalination plant to the south (Image 2.19).
The facilities of the new terminal (Figure 2.32) include the following features: handling of passengers, baggage, offices, shops, the taxiing lines, parking of aircraft, covered repair/inspection area of the aircraft, the offices of the managing company, the control tower, parking available for small aircraft, storage of goods, fire and police (government buildings), underground bunkers and ground fuel tanks at the entrance area of the old airport. There are also parking spaces for the cars of the passengers, visitors and staff.
All the buildings that housed the old airport are still in place, however most are abandoned except for some that are used as warehouses, offices and reception rooms for official arrivals (Image 2.20).

Image 2.20: View of the old Larnaka Airport area

The new Larnaka International Airport started its operation in November 2009 and is the main gateway in and out of the island for millions of people every year.

The airport consists of 102,500 m² of indoor area, 130,000 m² taxiways and 170,000 m² parking places of the aircrafts. It has the ability to serve 7.5 million passengers a year and 3,217 passengers per hour at peak times.
The passenger terminal and aircraft parking areas have the following technical characteristics:

- 67 check-in counters
- 8 automatic machines to check-in
- Processing time of 2 minutes/passenger
- 2,221 Passengers per/hour
- 22 gates
- 16 parking places of aircrafts with boarding bridges (Figure 2.33).
- 11 remote parking and 20 parking places of aircrafts at the old airport’s apron area.
There are future plans for a second phase of construction (assuming that passenger traffic will reach 7.5 million per year). In the second phase, the extension of the new terminal (98,000m$^2$ of additional covered area) will be built, that would be able to service 9 million passengers per year.

The access to the Airport through the existing national road network offers a quick and safe entry and exit to and from the Airport to all cities and tourist areas of Cyprus. Table 2.14 gives the distances in kilometers from Larnaka Airport to some other urban areas of Cyprus.

### Table 2.14: Distances (by car) of the Island’s cities to and from Larnaka airport (km)

<table>
<thead>
<tr>
<th>To/From</th>
<th>NICOSIA</th>
<th>LIMASSOL</th>
<th>PARALIMNI</th>
</tr>
</thead>
<tbody>
<tr>
<td>LARNAKA AIRPORT</td>
<td>48km</td>
<td>70km</td>
<td>44km</td>
</tr>
</tbody>
</table>

The passenger traffic at Larnaka Airport in 2012 compared to 2011 declined by approximately 340,000 passengers (around 6%, see table 2.15). Conversely, the passenger traffic at Paphos Airport experienced an increase of approximately 450,000 passengers. This difference is partly explained by an increasing trend (in relation to airlines and tour operators) to choose Paphos Airport. The development of the tourism product of Paphos in the recent years (especially in creating new beds) is an important reason for this.
Table 2.15: Movement of passengers at the airports of Larnaka and Paphos per month for the years 2011-2012

<table>
<thead>
<tr>
<th>2012 - PASSENGER TRAFFIC</th>
<th>Larnaka Airport</th>
<th>Pafos Airport</th>
<th>Both Airports</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>218,752</td>
<td>49,688</td>
<td>268,440</td>
</tr>
<tr>
<td>February</td>
<td>199,949</td>
<td>59,138</td>
<td>259,087</td>
</tr>
<tr>
<td>March</td>
<td>251,323</td>
<td>81,485</td>
<td>332,808</td>
</tr>
<tr>
<td>April</td>
<td>393,149</td>
<td>175,727</td>
<td>568,876</td>
</tr>
<tr>
<td>May</td>
<td>451,369</td>
<td>253,871</td>
<td>705,240</td>
</tr>
<tr>
<td>June</td>
<td>595,553</td>
<td>267,321</td>
<td>862,874</td>
</tr>
<tr>
<td>July</td>
<td>702,226</td>
<td>296,228</td>
<td>998,454</td>
</tr>
<tr>
<td>August</td>
<td>735,743</td>
<td>310,173</td>
<td>1,045,916</td>
</tr>
<tr>
<td>September</td>
<td>616,387</td>
<td>301,715</td>
<td>918,102</td>
</tr>
<tr>
<td>October</td>
<td>534,380</td>
<td>279,238</td>
<td>813,618</td>
</tr>
<tr>
<td>November</td>
<td>254,448</td>
<td>104,382</td>
<td>358,830</td>
</tr>
<tr>
<td>December</td>
<td>212,945</td>
<td>63,831</td>
<td>276,776</td>
</tr>
<tr>
<td>Total PAX Traffic per year</td>
<td>5,166,224</td>
<td>2,242,797</td>
<td>7,409,021</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2011 - PASSENGER TRAFFIC</th>
<th>Larnaka Airport</th>
<th>Pafos Airport</th>
<th>Both Airports</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>233,103</td>
<td>48,423</td>
<td>281,526</td>
</tr>
<tr>
<td>February</td>
<td>208,243</td>
<td>53,340</td>
<td>261,583</td>
</tr>
<tr>
<td>March</td>
<td>276,304</td>
<td>79,483</td>
<td>355,787</td>
</tr>
<tr>
<td>April</td>
<td>440,498</td>
<td>137,232</td>
<td>577,730</td>
</tr>
<tr>
<td>May</td>
<td>520,588</td>
<td>184,314</td>
<td>704,902</td>
</tr>
<tr>
<td>June</td>
<td>601,467</td>
<td>208,134</td>
<td>809,601</td>
</tr>
<tr>
<td>July</td>
<td>749,156</td>
<td>233,322</td>
<td>982,478</td>
</tr>
<tr>
<td>August</td>
<td>777,307</td>
<td>245,706</td>
<td>1,023,013</td>
</tr>
<tr>
<td>September</td>
<td>626,723</td>
<td>218,585</td>
<td>845,308</td>
</tr>
<tr>
<td>October</td>
<td>572,100</td>
<td>207,314</td>
<td>779,414</td>
</tr>
<tr>
<td>November</td>
<td>269,713</td>
<td>101,147</td>
<td>370,860</td>
</tr>
<tr>
<td>December</td>
<td>232,350</td>
<td>61,898</td>
<td>294,248</td>
</tr>
<tr>
<td>Total PAX</td>
<td>5,507,552</td>
<td>1,778,898</td>
<td>7,286,450</td>
</tr>
</tbody>
</table>

**SOURCE:** Hermes Airports

Based on the above, the decline in passenger traffic at Larnaka Airport and the increase at Paphos Airport is clear. The managing company of the two airports states that the Paphos airport is approaching its limit in relation to the annual number of passenger serviced. It is often discussed that protectionism of the national airline of Cyprus affects the possible increase in tourist arrivals to Larnaka airport from destinations in third countries. Intergovernmental agreements exist in such third countries where the national airline of Cyprus flies.

The considerable increase in passenger traffic at Paphos Airport (up 20%) is in contrast, to the 5%
decline in numbers at Larnaka Airport between 2011 and 2012 and requires further consideration in order to promote positive actions for recovery. This is not only true in relation to the Airport, but also in relation to overall tourism development of the City of Larnaka (Figures 2.34 and 2.35).

Figure 2.34: Share of passenger traffic 2011

Figure 2.35: Share of passenger traffic 2012

SOURCE: Hermes Airports
2.3.3 Fuel Terminal

2.3.3.1 Siting and Features

The Fuel Terminal is located along the coastline towards the north of the Municipality, stretching from the Port up to the Yacht club of Larnaka and includes the protected beach zone (Images 2.22 and 2.23).

Image 2.22: The Fuel Terminal of Larnaka

Image 2.23: The Fuel Terminal of Larnaka

The area of the Fuel Terminal is mostly privately held land, with the exception of the old oil refinery which is government land. In total, the Fuel Terminal land coverage takes up a total length of around 3km and a width varying between 70m and 150m (Image 2.24).

Image 2.24: The Fuel Terminal of Larnaka

SOURCE: Municipality of Larnaka
The Larnaka Fuel Terminal is the main source of fuel for the whole of Cyprus. There is daily transportation of fuel tankers crossing Larnaka on their way to all parts of the Island. An agreement between the fuel companies and the government requires the movement of the tanks to Vasilikos and creation of a new fuel terminal there. The tanks of the old refinery (Figure 2.36) are today a component of the government owned national strategic fuel reserves.

Figure 2.36: Area of the former refinery of Larnaka

SOURCE: Municipality of Larnaka
2.3.3.2 Capacity

The amount of fuel stored at the tanks of the inactive refinery stands at 60,000 metric tons (MT) (part of the national strategic fuel reserves). Additionally, six private companies import, store and trade fuels, with two other companies doing the same with gas fuels. There are also two companies which trade and supply fuel for aviation and shipping.

The EAC also owns tanks located at the power stations (for the needs of operating the plants) with a total capacity of 240,000 MT. Additionally, the two cement factories at Vasilikos and Moni have their own facilities for importing solid and liquid fuels. A private company maintains these tanks at Vasilikos.

Several private oil companies own facilities for importation, storage and distribution of petroleum products at the Fuel Terminal. After the refinery ceased to operate these oil companies are permitted to import oil in larger quantities, thereby reducing the overall the import costs, to the benefit of consumers and the economy in general. The total capacity of the Larnaka terminal including storage areas of the refinery is approximately 300,000 MT.

The trade of petroleum products, both at the retail and wholesale level, is mainly carried out by the oil companies. The retail trade makes up 70% of the market sold through the 254 Petrol stations in Cyprus with the remaining 30% is traded directly by the companies, with deliveries to large consumers.

The Energy Service of the Ministry of Commerce, Industry and Tourism, monitors the petroleum services and when problems occur takes initiatives to resolve them in consultation with companies and others actors. The goal of the Ministry is to satisfy demand for fuel, which is quality checked and traded at the fairest price for consumers.
2.4 Infrastructure of Local Importance

2.4.1 Transport

Public transport in Larnaka and Cyprus is available mainly from bus services. Public transport by bus has experienced radical changes to the services implemented by the Road Transport Department (RTD). These changes were first put in place on 5 July 2010, and saw ambitious targets for the usage of public transport in the future being set out.

The transport by bus has a passenger fare, which is cheaper compared to several European countries. Children under 12 years old, students, soldiers and social card holders (pensioners) do not pay a fare, while university students pay 50% of the ticket price.

The transport services for all Districts in Cyprus, are operated by the bodies shown in Table 2.16 (one for each District). These are consortia of bus owners who have agreements with the government.

Table 2.16: Bus Organizations in Cyprus

<table>
<thead>
<tr>
<th>Nicosia District</th>
<th>Organization of Transport Nicosia District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limassol District</td>
<td>Limassol Public Transportation Company</td>
</tr>
<tr>
<td>Paphos District</td>
<td>Organization of Transport Paphos District</td>
</tr>
<tr>
<td>The District of Larnaka</td>
<td>Larnaka Buses Zenon Ltd</td>
</tr>
<tr>
<td>Famagusta District</td>
<td>Organization of Transport Ammochostos District</td>
</tr>
<tr>
<td>Pancyprian</td>
<td>Λ.Λ.Λ.Α. Intercity Buses Ltd</td>
</tr>
</tbody>
</table>

SOURCE: Road Transport Department

2.4.1.1 Buses

2.4.1.1.1 Fleet/Route/Bus

‘Zenon Limited’ operate the bus routes in the City and District of Larnaka. The company’s fleet is shown in Table 2.17 and the routes where these vehicles are used are shown in Table 2.18.
Table 2.17: Fleet of the Larnaka bus company ‘Zenon Limited’

<table>
<thead>
<tr>
<th>Bus Type</th>
<th>Bus Fleet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big: &gt; 42 Seats</td>
<td>88</td>
</tr>
<tr>
<td>Medium: 23 &lt; Seats &lt; 41</td>
<td>4</td>
</tr>
<tr>
<td>Small: 9 &lt; Seats &lt; 22</td>
<td>51</td>
</tr>
<tr>
<td>Total no. of Buses of Zenon Ltd</td>
<td>143</td>
</tr>
</tbody>
</table>

SOURCE: Larnaka Buses Zenon Ltd

Table 2.18: Type of route and bus

<table>
<thead>
<tr>
<th>Bus Type</th>
<th>Big: &gt; 42 Seats</th>
<th>Medium: 23 &lt; Seats &lt; 41</th>
<th>Small: 9 &lt; Seats &lt; 22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route Type↓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>35</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td>Students</td>
<td>84</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>Rural</td>
<td>15</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>Social Card Holders</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

SOURCE: Larnaka Buses Zenon Ltd

2.4.1.1.2 Routes

Table 2.19 shows the urban and regional services of the company and the new number of routes that will operate the second half of this year.

Table 2.19: Type of route / Schedules / New schedules

<table>
<thead>
<tr>
<th>ZENON LTD BUS ROUTES</th>
<th>ROUTES UNTIL 25/08//13</th>
<th>ROUTES ON FROM 26/08/13</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN ROUTES</td>
<td>25 URBAN ROUTES AND 5 NIGHT ROUTES DAILY</td>
<td>11 URBAN ROUTES</td>
</tr>
<tr>
<td>REGIONAL ROUTES</td>
<td>17 REGIONAL AND 9 NIGHT DAILY</td>
<td>17 REGIONAL ROUTES</td>
</tr>
</tbody>
</table>

SOURCE: Road Transport Department

The following maps (2.15 and 2.16) show the urban and regional routes respectively.
The Long distance routes are operated by the two companies listed in tables 2.20 with the destination, the number of routes, and frequency.
Table 2.20: Intercity routes (Intercity buses and OSEA)

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>Larnaka/Nicosia Route</th>
<th>Larnaka/Agia Napa Route</th>
<th>Larnaka/Limassol Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERCITY BUSES</td>
<td>13 DAILY 7 WEEKEND 3 STOPS</td>
<td>10 DAILY 6 WEEKEND 3 STOPS</td>
<td>10 DAILY 6 WEEKEND 4 STOPS</td>
</tr>
</tbody>
</table>

SOURCE: Road Transport Department

<table>
<thead>
<tr>
<th>COMPANY (OSEA)</th>
<th>ROUTE No. 711</th>
<th>ROUTE No. 712</th>
<th>ROUTE No. 714</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMMOCOSTOS/LARNACA ROUTE</td>
<td>6 DAILY 4 WEEKEND</td>
<td>7 DAILY 4 WEEKEND</td>
<td>6 DAILY 4 WEEKEND</td>
</tr>
</tbody>
</table>

SOURCE: Road Transport Department

2.4.2 Infrastructure of Economic Importance

The following section provides information on the industrial zones of Larnaka and the types of activities which take place there. Data relating to the number of farms by region and the infrastructure relating to fishing is also presented.

2.4.2.1 Industrial Zones, Craft Zones and Farming Zones

2.4.2.1.1 The capacity of the Industrial Zones

The following table shows the sizes (Ha) of the industrial and small industry zones, both within the boundaries of the Municipality of Larnaka and in the District of Larnaka (Table 2.21).

Table 2.21: Industrial and Small Industry Zones - Areas (Ha)

<table>
<thead>
<tr>
<th>Industrial Zone Cat A</th>
<th>27.1 Ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Zone Cat B</td>
<td>164.4 Ha</td>
</tr>
<tr>
<td>Industrial Zone Cat C</td>
<td>15.5 Ha</td>
</tr>
<tr>
<td>Government Industrial Area Cat B</td>
<td>86.1 Ha</td>
</tr>
<tr>
<td>Free Government Ind. Area Cat B</td>
<td>45.8 Ha</td>
</tr>
<tr>
<td>Mixed Zone</td>
<td>41.4 Ha</td>
</tr>
<tr>
<td>Economic Activities Zone</td>
<td>41.9 Ha</td>
</tr>
<tr>
<td>Craft Zone Cat B</td>
<td>87.1 Ha</td>
</tr>
<tr>
<td>Craft Area Cat B</td>
<td>2.7 Ha</td>
</tr>
</tbody>
</table>

Note: 1 Ha = 10,000 sq.m.

SOURCE: TOWN PLANNING and HOUSING DEPARTMENT

The above zones and areas are scattered mainly around the City of Larnaka outside the administrative boundaries of the Municipality.
2.4.2.1.2 Siting of Industrial, Small Industry and Farming and Livestock Zones

Map 2.5 below shows a comprehensive view of the industrial, craft and farming zones within the local plan of Larnaka (see Chapter 5). The maps marked on Map 2.17 correspond to larger scale maps shown in the following pages (Maps 2.18, 2.19, 2.20 and 2.21).

Map 2.17: Local Plan of Larnaka (Industrial, Craft and Farming areas)

SOURCE: TOWN PLANNING and HOUSING DEPARTMENT
Map 2.18: Government Industrial Zone and other related areas in the Municipality of Larnaka and Municipality of Aradhippou

SOURCE: TOWN PLANNING and HOUSING DEPARTMENT

Map 2.20: Industrial, Craft and Farming Zones between the Communities of Dromolaxia, Klavdia, Kalo Chorio and the Municipality of Aradhippou

SOURCE: TOWN PLANNING and HOUSING DEPARTMENT
Map 2.21: Industrial, Craft and Farming Zones between the Communities of Dromolaxia, Klavdia, Kalo Chorio and the Municipality of Aradhippou

Map 2.22: Craft Zones in the Municipality of Larnaka

The legend below describes the abbreviations of the above projects.
In the main industrial area in the Municipality of Larnaka and Aradippou (Map 2.18) facilities are operating in the following sectors:

- ALUMINIUM PROCESSING/CONSTRUCTION
- PAINT PRODUCTION
- UPVC PROCESSING
- PAPER PROCESSING
- SOLAR COLLECTORS
- METAL PROCESSING/CONSTRUCTIONS
- RUBBER AND PLASTICS MANUFACTURING
- FLOORING
- FOOD PRODUCTION/PROCESSING
- OILS & FATS PRODUCTION
- IMPORTATION AND PACKAGING OF SALT
- FURNITURE MANUFACTURING/TRADING
- EXPANDED POLYSTYRENE MANUFACTURING
- SHOWROOMS
- LOGISTICS AND WHAREHOUSING
- MECHANICAL/TECHNICAL SERVICES
- COOLING AND HEATING INSTALLATIONS
- TIMBER TRADING AND PROCESSING
- GENERAL TRADING
- MILK AND MILK PRODUCTS MANUFACTURING
2.4.2.2 Farms and Livestock

2.4.2.2.1 Animal Production in Cyprus

The livestock population in Larnaka is the biggest of any area of Cyprus. The proportion of livestock located in Larnaka can be upwards of 50% of the total island population for certain species (e.g. Bovine). Figure 2.37 shows the Cyprus livestock production by species.

Figure 2.37: Livestock production by species (2011)

![Livestock production by species](source: Department of Agriculture)

2.4.2.2.2 Cattle/Bovine population

The cattle farms and the distribution of their population by district is shown in Table 2.23. Larnaka is home to 51% of the total cattle/bovine population.

Table 2.23: Geographical distribution of the bovine population (2007-2011)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NICOSIA DISTRICT</th>
<th>THE DISTRICT OF LARNAKA</th>
<th>LIMASSOL DISTRICT</th>
<th>AMM/STOS DISTRICT</th>
<th>PAPHOS DISTRICT</th>
<th>TOTAL POP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>18821</td>
<td>28222</td>
<td>5290</td>
<td>3170</td>
<td>417</td>
<td>55920</td>
</tr>
<tr>
<td>2008</td>
<td>18518</td>
<td>27793</td>
<td>5536</td>
<td>3252</td>
<td>585</td>
<td>55684</td>
</tr>
<tr>
<td>2009</td>
<td>17612</td>
<td>27558</td>
<td>5142</td>
<td>3181</td>
<td>604</td>
<td>54097</td>
</tr>
<tr>
<td>2010</td>
<td>18215</td>
<td>27557</td>
<td>5203</td>
<td>3043</td>
<td>697</td>
<td>54715</td>
</tr>
<tr>
<td>2011</td>
<td>18559</td>
<td>28941</td>
<td>5474</td>
<td>3274</td>
<td>667</td>
<td>56915</td>
</tr>
</tbody>
</table>

SOURCE: Department of Agriculture
2 – IMPORTANT INFRASTRUCTURE OF LARNAKA

Figure 2.38 shows the distribution of cattle farms by community in Larnaka.

Figure 2.38: Distribution of number of bovine holdings in Larnaka (2012)

![No. of HOLDINGS (Bovine)](image)

SOURCE: Department of Agriculture

2.4.2.2.3 Pig Farms

In Larnaka there are 30 pig farms out of a total of 79 in Cyprus (Table 2.24).

Table 2.24: Piggeries by size per district (2011) **Totals don’t add up**

<table>
<thead>
<tr>
<th>District</th>
<th>&lt;10</th>
<th>101-300</th>
<th>301-500</th>
<th>501-700</th>
<th>701-900</th>
<th>901-1100</th>
<th>1101-1300</th>
<th>1300&lt;</th>
<th>Σύνολο</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicosia</td>
<td>8</td>
<td>3</td>
<td>11</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>4</td>
<td>41</td>
</tr>
<tr>
<td>Larnaka</td>
<td>7</td>
<td>10</td>
<td>8</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>11</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Limassol</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>01</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Paphos</td>
<td>10001</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>00</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Amm/stos</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>00</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Pitsilia</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>00</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>15</td>
<td>20</td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>16</td>
<td>79</td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: Department of Agriculture
2.4.2.2.4 Goat Farms

The number of goat farms (Table 2.25) in the District of Larnaka stands at 797 from a total of 2,771 (29% of the Cyprus total).

Table 2.25: Number of sheep and goat holdings by district (2007-2011)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>AMM/STOS</th>
<th>LARNAKA</th>
<th>LIMASSOL</th>
<th>NICOSIA</th>
<th>PAPHOS</th>
<th>PITSILIA</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>270</td>
<td>819</td>
<td>625</td>
<td>553</td>
<td>560</td>
<td>70</td>
<td>2.897</td>
</tr>
<tr>
<td>2008</td>
<td>263</td>
<td>782</td>
<td>600</td>
<td>511</td>
<td>558</td>
<td>68</td>
<td>2.782</td>
</tr>
<tr>
<td>2009</td>
<td>262</td>
<td>791</td>
<td>604</td>
<td>513</td>
<td>563</td>
<td>60</td>
<td>2.793</td>
</tr>
<tr>
<td>2010</td>
<td>272</td>
<td>807</td>
<td>603</td>
<td>522</td>
<td>571</td>
<td>55</td>
<td>2.83</td>
</tr>
<tr>
<td>2011</td>
<td>263</td>
<td>797</td>
<td>570</td>
<td>522</td>
<td>557</td>
<td>62</td>
<td>2.771</td>
</tr>
</tbody>
</table>

SOURCE: Department of Agriculture

2.4.2.2.5 Rabbit Farms

There are 31 rabbit farms in the District of Larnaka (30% of the Cyprus total, see Table 2.26).

Table 2.26: Number of rabbit breeding premises and corresponding employment (2011)

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>FULL TIME</th>
<th>PART TIME</th>
<th>NO. OF PREMISES</th>
</tr>
</thead>
<tbody>
<tr>
<td>NICOSIA</td>
<td>14</td>
<td>15</td>
<td>28</td>
</tr>
<tr>
<td>LIMASSOL</td>
<td>10</td>
<td>9</td>
<td>25</td>
</tr>
<tr>
<td>LARNAKA</td>
<td>14</td>
<td>8</td>
<td>31</td>
</tr>
<tr>
<td>AMM/STOS</td>
<td>5</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>PAPHOS</td>
<td>3</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>PITSILIA</td>
<td>7</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>NATIONWIDE</td>
<td>53</td>
<td>45</td>
<td>102</td>
</tr>
</tbody>
</table>

SOURCE: Department of Agriculture
2.4.2.2.6 Aviculture

32% of the number of poultry producers are based in Larnaka (Table 2.27).

Table 2.27: Number of poultry farmers by district and combined farming type (2011)

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>NICOSIA</th>
<th>LARNAKA</th>
<th>LIMASSOL</th>
<th>PAPHOS</th>
<th>AMM/STOS</th>
<th>CYPRUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat Production</td>
<td>19</td>
<td>13</td>
<td>6</td>
<td>2</td>
<td>4</td>
<td>44</td>
</tr>
<tr>
<td>Laying</td>
<td>13</td>
<td>13</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>Reproduction</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Partridges</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Ostriches</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Quail</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Meat Production/Laying</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Meat Production/Turkey</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Meat Production/Egg/Turkey</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Production/Laying/Breeding</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Turkeys</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Slaughterhouse</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>48</td>
<td>32</td>
<td>12</td>
<td>4</td>
<td>4</td>
<td>100</td>
</tr>
</tbody>
</table>

SOURCE: Department of Agriculture

2.4.2.2.7 Milk Production

Larnaka houses the most livestock and poultry farms in Cyprus and also has the highest proportion of milk production (Table 2.28).

Table 2.28: Production of sheep and goat milk (2011)

<table>
<thead>
<tr>
<th>District</th>
<th>SHEEP</th>
<th>GOAT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammo/stos</td>
<td>2.352,4</td>
<td>1.282,4</td>
<td>3.634,8</td>
</tr>
<tr>
<td>Larnaka</td>
<td>10.930,9</td>
<td>5.950,3</td>
<td>16.881,2</td>
</tr>
<tr>
<td>Limassol</td>
<td>3.901,9</td>
<td>6.244,0</td>
<td>10.145,9</td>
</tr>
<tr>
<td>Nicosia</td>
<td>5.945,9</td>
<td>7.370,0</td>
<td>13.315,9</td>
</tr>
<tr>
<td>Paphos</td>
<td>2.884,2</td>
<td>5.980,1</td>
<td>8.864,2</td>
</tr>
<tr>
<td>Pitsilia</td>
<td>21,6</td>
<td>185,5</td>
<td>207,1</td>
</tr>
<tr>
<td>Total</td>
<td>26.036,9</td>
<td>27.012,3</td>
<td>53.049,2</td>
</tr>
</tbody>
</table>

SOURCE: Department of Agriculture

2.4.2.3 Fishing

In the City and District of Larnaka there are five (5) fishing shelters (Table 2.29 and Map 2.21). The brand new shelter in Zygi, can accommodate up to 250 vessels. The fishing port of Larnaka is
sited between the medieval castle of Larnaka and the coastal area of Mackenzie.

Table 2.29: Fishing shelters in Larnaka

<table>
<thead>
<tr>
<th>Fishing Shelter</th>
<th>Area</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xilofagou</td>
<td>Vathia Laxia</td>
<td>39</td>
</tr>
<tr>
<td>Ormidia</td>
<td>Meritsi</td>
<td>35</td>
</tr>
<tr>
<td>Xilotimpou</td>
<td>Xilotimpou</td>
<td>15</td>
</tr>
<tr>
<td>Larnaka</td>
<td>Piale Pashia</td>
<td>163</td>
</tr>
<tr>
<td>Zigi</td>
<td>Zigi Village</td>
<td>250</td>
</tr>
</tbody>
</table>

*SOURCE: Department of fisheries and marine research*

Map 2.21: Fishing shelters in Larnaka

Larnaka plays an important role nationally in fish production from aquaculture. Most of the fish farms are in the sea area of Zygi.

The Department of Fisheries and Marine Research (DFMR) operates two research stations, the Marine Aquaculture Research Station at Meneou (MARSM) at Larnaka (Image 2.25) and the Aquaculture Research Station of freshwater at Kalopanayiotis.

The MARSM has upgraded the building facilities, constructing new buildings in 2012, and modernizing equipment. This resulted in the upgrading of the research work carried out and the support it provides in the field of aquaculture. The MARSM is a very important part of the activities of the fisheries department, since it is the only research center of its kind in the region.
2.4.3 Health

2.4.3.1 Capacity of Public and Private Hospitals

In the City of Larnaka there are two public hospitals, the General Hospital and an Outpatient Department. The beds by department in the Larnaka General Hospital are listed in Table 2.30.
Government buildings which today house the Outpatient Department (Figure 2.26) are located on the plot of the old hospital. In this plot the old hospital Larnaka was built and is located between two schools, one public (Lyceum 1, L1) and a private (Private 1, PR1). The size of the plot is approximately 13,500 m².

### Table 2.30: Number of beds in public hospitals by department and district

<table>
<thead>
<tr>
<th></th>
<th>Nicosia general hospital</th>
<th>Arch. Makarios Ill hospital</th>
<th>Larnaka general hospital</th>
<th>Ammochostos general hospital</th>
<th>Limassol general hospital</th>
<th>Paphos general hospital</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All sections</strong></td>
<td>436</td>
<td>197</td>
<td>164</td>
<td>66</td>
<td>328</td>
<td>125</td>
<td>1,316</td>
</tr>
<tr>
<td>Pathological</td>
<td>60</td>
<td>..</td>
<td>20</td>
<td>18</td>
<td>55</td>
<td>8</td>
<td>179</td>
</tr>
<tr>
<td>Intensive/ Cardiology Unit</td>
<td>17</td>
<td>..</td>
<td>11</td>
<td>6</td>
<td>11</td>
<td>8</td>
<td>53</td>
</tr>
<tr>
<td>Cardiology</td>
<td>30</td>
<td>..</td>
<td>10</td>
<td>..</td>
<td>30</td>
<td>12</td>
<td>82</td>
</tr>
<tr>
<td>Nephrology</td>
<td>16</td>
<td>..</td>
<td>6</td>
<td>..</td>
<td>16</td>
<td>..</td>
<td>38</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>..</td>
<td>122</td>
<td>25</td>
<td>10</td>
<td>42</td>
<td>18</td>
<td>217</td>
</tr>
<tr>
<td>Gynecology/ Obstetrics</td>
<td>..</td>
<td>14</td>
<td>12</td>
<td>12</td>
<td>14</td>
<td>4</td>
<td>56</td>
</tr>
<tr>
<td>General Surgery</td>
<td>50</td>
<td>..</td>
<td>26</td>
<td>..</td>
<td>32</td>
<td>17</td>
<td>125</td>
</tr>
<tr>
<td>Orthopaedic</td>
<td>58</td>
<td>..</td>
<td>20</td>
<td>20</td>
<td>30</td>
<td>21</td>
<td>149</td>
</tr>
<tr>
<td>Urology</td>
<td>24</td>
<td>..</td>
<td>6</td>
<td>..</td>
<td>10</td>
<td>4</td>
<td>44</td>
</tr>
<tr>
<td>Neurosurgery</td>
<td>20</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>20</td>
</tr>
<tr>
<td>Paraplegic</td>
<td>20</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>20</td>
</tr>
<tr>
<td>Vascular/Cardio surgery</td>
<td>26</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>26</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>..</td>
<td>13</td>
<td>6</td>
<td>..</td>
<td>5</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td>Otorhinolaryngology</td>
<td>16</td>
<td>..</td>
<td>4</td>
<td>..</td>
<td>5</td>
<td>2</td>
<td>27</td>
</tr>
<tr>
<td>Oncology</td>
<td>18</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>16</td>
<td>..</td>
<td>34</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>22</td>
<td>..</td>
<td>..</td>
<td>24</td>
<td>..</td>
<td>46</td>
<td>..</td>
</tr>
<tr>
<td>Plastic Surgery</td>
<td>8</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>8</td>
<td>..</td>
</tr>
<tr>
<td>Hematology</td>
<td>10</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>14</td>
<td>..</td>
<td>24</td>
</tr>
<tr>
<td>Viral Infections</td>
<td>..</td>
<td>6</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>6</td>
<td>..</td>
</tr>
<tr>
<td>Pneumology</td>
<td>20</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>20</td>
<td>..</td>
</tr>
<tr>
<td>Nuclear Medicine</td>
<td>2</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>2</td>
<td>..</td>
</tr>
<tr>
<td>Oro-Maxillofacial-Surgery</td>
<td>6</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>6</td>
<td>..</td>
</tr>
<tr>
<td>Haemodialysis</td>
<td>27</td>
<td>..</td>
<td>12</td>
<td>7</td>
<td>19</td>
<td>8</td>
<td>73</td>
</tr>
<tr>
<td>Emergency units</td>
<td>20</td>
<td>..</td>
<td>3</td>
<td>8</td>
<td>16</td>
<td>4</td>
<td>51</td>
</tr>
<tr>
<td>Thalasaimias</td>
<td>..</td>
<td>14</td>
<td>19</td>
<td>..</td>
<td>20</td>
<td>13</td>
<td>66</td>
</tr>
<tr>
<td>Angiography</td>
<td>5</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>5</td>
<td>..</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>488</td>
<td>211</td>
<td>198</td>
<td>81</td>
<td>383</td>
<td>150</td>
<td>1,511</td>
</tr>
</tbody>
</table>

*SOURCE: Statistical Service of Cyprus*
There is a government plan to expand the Larnaka General Hospital, upgrading existing infrastructure. The project cost is estimated at €26m and is due for completion in 2014.

There are 16 private hospitals. Table 2.31 shows the number of private hospitals, beds, nurses, midwives and assistants in every district.

Table 2.31: The number of private hospitals, beds, nurses, midwives and assistants

<table>
<thead>
<tr>
<th>District</th>
<th>Number Of Hospitals/Clinics</th>
<th>Number Of Beds</th>
<th>Nursing Staff</th>
<th>Number of midwives</th>
<th>Number of paramedics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicosia</td>
<td>24</td>
<td>24</td>
<td>485</td>
<td>478</td>
<td>361</td>
</tr>
<tr>
<td>Ammochostos</td>
<td>4</td>
<td>4</td>
<td>108</td>
<td>107</td>
<td>36</td>
</tr>
<tr>
<td>Larnaka</td>
<td>16</td>
<td>15</td>
<td>195</td>
<td>190</td>
<td>63</td>
</tr>
<tr>
<td>Limassol</td>
<td>31</td>
<td>29</td>
<td>493</td>
<td>435</td>
<td>209</td>
</tr>
<tr>
<td>Paphos</td>
<td>12</td>
<td>11</td>
<td>243</td>
<td>234</td>
<td>69</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>87</td>
<td>83</td>
<td>1.524</td>
<td>1.444</td>
<td>738</td>
</tr>
</tbody>
</table>

*SOURCE: Statistical Service of Cyprus*
2.4.4 Education

2.4.4.1 General Information

Attendance at reception class is mandatory for all children who have reached the age of 4 years and 8 months at 1 September of the year that will begin their studies, while attending primary school is compulsory for all children who have reached the age of 5 years and 8 months.

Secondary education is provided for pupils aged 12 to 18 years, through two three-year cycles: Gymnasium (the first three years of high school), and Lycium (the last three years of high school). Attendance is free for all classes and compulsory up to age 15.

Secondary technical and professional education is provided in 12 technical schools, which operate in Nicosia, Limassol, Larnaka, Paralimni, Avgorou, Paphos and the community of Polis Chrysochou in Paphos.

The number of schools, students, teachers for all the above levels of education for the city of Larnaka are given in tables 2.32 to 2.36.

Higher education in Cyprus consists of public and private institutions at university and college level. In the City and District of Larnaka there is a private university (Pyla) and six private tertiary education establishments. Two of the private schools offer courses from three U.K universities by franchise agreements.

2.4.4.2 Number of Schools, Students and Teachers in Education

2.4.4.2.1 Nursery and Kindergarten

Table 2.32: Number of kindergartens, students and teachers in the District of Larnaka - Urban and Rural Areas (2010-2011)

<table>
<thead>
<tr>
<th>Kindergarten Larnaka</th>
<th>Public</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Teaching Staff FTE</td>
</tr>
<tr>
<td></td>
<td>Schools</td>
<td>Children</td>
</tr>
<tr>
<td>Urban</td>
<td>22</td>
<td>1,208</td>
</tr>
<tr>
<td>Rural</td>
<td>30</td>
<td>918</td>
</tr>
<tr>
<td>District</td>
<td>52</td>
<td>2,126</td>
</tr>
</tbody>
</table>

*FTE: Full Time Equivalent  
SOURCE: Statistical Service of Cyprus

2.4.4.2.2 Primary Schools
Table 2.33: Number of primary schools, students and teachers in the District of Larnaka - Urban/Rural Areas (2010-2011)

| Schools of Primary Education in Larnaka | Public | | Private | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Schools | Children | Teaching Staff FTE | Children per Teacher | Schools | Children | Teaching Staff FTE | Children per Teacher | |
| Urban | 27 | 5,778 | 471 | 12.3 | 3 | 336 | 32 | 10.5 | |
| Rural | 35 | 3,725 | 369 | 10.1 | 0 | 0 | 0 | 0 | |
| District | 62 | 9,503 | 840 | 11.3 | 3 | 336 | 32 | 10.5 | |

*FTE: Full Time Equivalent

**SOURCE:** Statistical Service of Cyprus

2.4.4.2.3 Secondary Education

Table 2.34: Number of secondary schools, and students by gender in the District of Larnaka (2010-2011)

| Level | Public Schools | | Private Schools | | Grand Total | |
|---|---|---|---|---|---|---|---|---|
| | Number of Schools | Number of students | | Number of Schools | Number of students | | Number of Schools | Number of students | |
| | Boys | Girls | Total | Boys | Girls | Total | Boys | Girls | Total | |
| High school | 11 | 2,210 | 2,212 | 4,422 | 0 | 0 | 0 | 0 | 11 | 2,210 | 2,212 | 4,422 |
| Lyceum | 6 | 1,603 | 2,159 | 3,762 | 0 | 0 | 0 | 0 | 6 | 1,603 | 2,159 | 3,762 |
| Evening High school / Technical School | 1 | 139 | 60 | 199 | 0 | 0 | 0 | 0 | 1 | 139 | 60 | 199 |
| Technical School / Vocational School | 2 | 746 | 162 | 908 | 0 | 0 | 0 | 0 | 2 | 746 | 162 | 908 |
| High School and Lyceum | 1 | 160 | 189 | 349 | 3 | 967 | 868 | 1,835 | 4 | 1,127 | 1,057 | 2,184 |
| Total | 21 | 4,858 | 4,782 | 9,640 | 3 | 967 | 868 | 1,835 | 24 | 5,825 | 5,650 | 11,475 |

**SOURCE:** Statistical Service of Cyprus
2.4.4.2.4 Special Education

Table 2.35: Number of special education schools, pupils by gender, and teaching staff by gender in the District of Larnaka - Urban and Rural Areas (2010-2011)

<table>
<thead>
<tr>
<th>LARNAKA</th>
<th>Schools</th>
<th>Students</th>
<th>Teaching Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>Urban Areas</td>
<td>1</td>
<td>30</td>
<td>15</td>
</tr>
<tr>
<td>Rural Areas</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>District</td>
<td>1</td>
<td>30</td>
<td>15</td>
</tr>
</tbody>
</table>

SOURCE: Statistical Service of Cyprus

2.4.4.2.5 Secondary Education and Foreign Students

Table 2.36: Number of foreign students at secondary schools in the District of Larnaka - Urban and Rural Areas (2010-2011)

<table>
<thead>
<tr>
<th>LARNAKA</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
<td>Total</td>
</tr>
<tr>
<td>Urban Areas</td>
<td>382</td>
<td>360</td>
<td>742</td>
</tr>
<tr>
<td>Rural Areas</td>
<td>18</td>
<td>11</td>
<td>29</td>
</tr>
<tr>
<td>District</td>
<td>400</td>
<td>371</td>
<td>771</td>
</tr>
</tbody>
</table>

SOURCE: Statistical Service of Cyprus

2.4.4.3 School Buildings

The technical services of the Ministry of Education and Culture has the responsibility for the logistics and maintenance of school buildings. The condition of the school buildings is generally good since almost all existing buildings have been renovated or expanded within the program of the Ministry.

Almost all schools have closed multipurpose halls and stadiums for various sports activities. The last ten years have seen the construction of six schools for various levels of education in the city of Larnaka.

The school buildings are scattered throughout the Municipality of Larnaka. In every quarter of the Municipality of Larnaka, there are schools for each grade education. In addition, the town of Larnaka established two Schools for Technical Education, one evening school, a special primary school for children with learning disabilities and the Armenian school (NAPEK) next to the
Armenian church. Image 2.27 shows the private and public schools.

The schools within the Municipality of Larnaka serve a significant number of students from The District of Larnaka in addition to those from the Municipality. This is more true for students that study in secondary education. The majority of these students travel to school on the Larnaka buses.

Figure 2.27: School buildings in the Municipality of Larnaka

Legend - Image 2.26

- Yellow: Elementary school
- Red: Technical school
- Green: High school
- Pink: Special school
- Blue: Private school

SOURCE: Municipality of Larnaka
2.4.5 Social Welfare

2.4.5.1 District Social Insurance Office

The District Social Insurance Office is housed in a government building behind the central police station of the City near the Larnaka Marina (Image 2.28). This operates under the jurisdiction of the Ministry of Labour and Social Insurance.

Image 2.28: Social Insurance Office

The condition of the building and the surrounding area can be characterized as moderate. The region, however, is significant in terms of potential for residential and tourist development. The building is adjacent to a large plot of land (17,380 m²) currently used as temporary parking area (Figure 2.29). Just down the road is the Larnaka Marina and Finikoudes beach. The relocation of this office, which records the most visits by citizens, into an area that is functional and accessible is needed.
2.4.5.2 Government Institutions and Centers

In Larnaka the following government institutions and centers have been established:

- Children’s shelter
- Specialty house for teenagers
- Day care center of Ormidia
- Day care center of Kokkines
- Day care center of Ayioi Anargiroi
- Infant day care center of Makarios III
- Housing for elderly and disabled at St. George II
- Housing for elderly and disabled of Kokkines

Also, the Municipality of Larnaka has established and operates the ‘Municipal Μέλαθρον Ευγηρίας’.

There are two centers relating to foreigners from third countries who entered the island legally or illegally. The first is the ‘Reception Center for Asylum Seekers’ and the second is the ‘Prohibited Immigrant Detention Center’. The following two centers are housed, at Kofinou and the other at Menogeia respectively, both within the District of Larnaka. This infrastructure is unique for the entire Island.

The ‘Reception Center for Asylum Seekers’ is located next to the Kofinou abattoir, 4 km away from the community. It is used as a temporary residence until the asylum seeker can gain access to housing, employment and benefits under the law and relevant regulations. It can accommodate up to 120 people and the operating expenses amount to around one million euros per year.

The ‘Detention Center for Prohibited Immigrants’ at Menogeia (Image 2.30) hosts people who have entered the island illegally. Detainees are held at the center until their status under the law is clarified. The Facilities are new and have been put into operation early this year and can host up to 250 people. There are 120 employees working there.
2.4.6 Government Departments and Services

The following governmental departments, branches and regional offices are found within the Municipality of Larnaka:

- District Administration
- District Court
- Land Registry of Larnaka
- Veterinary of the District
- District Office of Social Insurance
- District Social Welfare Office
- Office of Citizen Service
- District Office of the Ministry of Agriculture
- District Office of the Ministry of Education and Culture
- District Office of Income Tax
- Office of VAT
- Agricultural Payments Organisation
- Public Works
- Water Development Department
- Department of Building and Housing
- Department of Antiquities
- Department of Fisheries
- Department of Immigration
- Cyprus Tourism Organisation

The above government agencies are scattered throughout different parts of the City. Their premises are often inappropriate in terms of functionality, accessibility, efficiency and the ability to fully meet their goals.

There is a strong need for the concentration of such services in an accessible location to make government agency operations more effective. The issue of financing has been an inhibiting factor to any move in this direction. However, if this hurdle is overcome in the future (e.g. by public–
private partnerships) the benefits of such a development would be considerable. Economic gains could be realized in terms of construction and operation of buildings, modern office spaces, and sustainable transport to and from the sites.

2.4.7 Cultural Centers

2.4.7.1 Theatres and Cultural areas

The Municipal Theatre of Larnaka has a capacity of 600 seats and can be found in the heart of the City, close to the Library and a small Museum of Natural History. This triangular shaped piece of land is at the center of the City close to the Zinon Gymnastics Club (Map 2.22).

Map 2.22: The area of Larnaka Municipal Theatre

The Municipal Theatre was built in the area of the Medieval Castle of Larnaka (Map 2.23). This location holds great significance for the history of Larnaka.

The Municipal Auditorium ‘Pattichion’, with a capacity of 2000 seats operates during the summer months. In addition to the municipal theatres there are a further two private theaters at ‘Skala’ and ‘Antidoto’.
The Municipal Cultural Center, based at a recently restored warehouse building, is located in Europe Square (Map 2.24).
Very close to the Municipal Cultural Center is the Pierides Museum which is considered as one of the most important museums in Cyprus because of the rich archaeological collection on display. This Museum gives a distinctive presentation of Cypriot culture through the centuries (Neolithic, Bronze Age, Geometric, Archaic, Hellenistic, Roman and Byzantine, Medieval). The Museum also houses an excellent collection of old maps of Cyprus and the Eastern Mediterranean, and a collection of Hellenistic and Roman glass vessels. The museum is housed in the residence of Pierides family, a neoclassical building dating from 1825 (Image 2.31).
The Provincial Museum of Larnaka is housed in a building dating from 1969 which was built next to the most important archaeological site of the city, the ancient Kition (Image 2.32). Here are the roots of the City of Larnaka where it was founded as an ancient port city. It is located near the City Center, just 500 meters from today’s coast. There are some massive stone artifacts kept under a canopy in the courtyard of the Museum.
2.4.7.2 Places of Worship

Larnaka has always been, and still is, a multicultural center. This is borne out by the presence of many temples from different religions. The mosaic of places of worship includes Christian churches of the Orthodox Church of Cyprus (the main church of St. Lazarus dating back to the 11th century), the magnificent mosque of Sultan Tekke next to the salt lake, the Armenian church of St. Stephen’s, the Catholic Church (Frangoklissia), the Anglican Church and the Jewish Synagogue.

Image 2.33 shows the ownership of land according to each cultural element of Larnaka. The celebration of Larnaka’s diversity can play an important role in the development of the City.
Image 2.33: General ownership status by cultural element in the Municipality of Larnaka

SOURCE: Municipality of Larnaka
Map 2.25 shows an area of Sotira and Chrysopolitissa where four places of worship of three different religions are located, just a few hundred meters away from each other.

**Map 2.25: Religious places of worship in Sotira and Chrysopolitissa**

*SOURCE: Municipality of Larnaka*
2.4.8 Athletic Areas

Figure 2.39 shows the most important places in Larnaka for sporting activities.

Figure 2.39: Athletic areas

[Diagram showing various athletic areas in Larnaka]

SOURCE: Municipality of Larnaka

The Municipal Community Center of Larnaka is located next to the elementary school St. Lazarus and the provincial office of the Forest Department (Figure 2.34). It is also in contact with a large tree-filled plot, intended to accommodate the new tennis courts of the City.

Image 2.34: Larnaka Community Center

[Image showing the location of the Municipal Community Center, a large empty plot, and adjacent buildings]

SOURCE: Municipality of Larnaka
Today, the tennis courts are within the archaeological site of ancient Kition (Image 2.35).

Image 2.35: Larnaka Tennis Courts

The site of the old G.S.Z. (Gymnastic Club Zenon) has been transformed from a football stadium into centers for different activities by the Cyprus Sport Organisation. It is located adjacent to the Municipal Theatre and the municipal library and a few hundred yards far from the community center of Larnaka (Figure 2.36).

In the City and the wider region we find areas for specialist sports and activities such as the new Olympic shooting range in Klavdia, the Olympic swimming pool at the Kition sports center, and the nautical clubs of Larnaka and Nicosia near the fuel terminal.

It should be noted that the salt lake area also holds considerable amenity value for accessible and comfortable exercise areas to contribute towards the physical health of the Larnaka population. Redefining this area in a positive way will be an important part of the sustainable Larnaka for the City and its inhabitants (see Chapter 3).
Image 2.36: Gymnastic Center GCZ (Gymnastic Club Zenon)

SOURCE: Municipality of Larnaka
2.4.9 Security Services

Larnaka has a good standard of security services in the Municipality and the District. Specifically, the following security forces are established:

- Police
- Fire Department
- ΕΜΑΚ(στη κοινότητα Κοφίνου)
- Department of Forests
- Civil Defence
- Lifeguard service
- Ταμείο Θύρας
- National Guard

The housing of these services is generally of good standard although improvement in relation to the creation of modern buildings would yield higher efficiency.

In the following pages some items involving the Police, the Fire Department and the Forest department are presented.

2.4.9.1 Police

The Central Police Station is located at an old building on Makarios Avenue in the corner of Athens Avenue. There is another station which mainly serves the traffic force of Larnaka. Police stations also exist at the Airport and the Port, and in many communities in Larnaka. The police of Larnaka are responsible for an area equal to 1055 km² and a population of approximately 129,000 people. At the level of resolution of cases of serious crimes, the Larnaka police force has the second best performance with 61.5 % after that the Police force of Famagusta. The Police Department of Larnaka currently has 521 employees, including 75 trained policemen. There are also 35 policemen responsible for security tasks at the Satellite Station Makarios III CYTA in Kakoratzia, the power station of EAC at Vasilikos, and the Fuel Terminal.
2.4.9.2 Fire Service

The fire service in the urban area of Larnaka retains the fire stations presented in Figure 2.40.

Figure 2.40: Fire stations in the urban area of Larnaka

The fire station “1” (Image 2.37) employs 39 people and the station is equipped with 16 vehicles including pump vehicles, tankers, rescue vehicles, ambulances, special trucks for dealing with chemical incidents, vehicles to react to electrical fires and combi-vehicles.

Image 2.37: Fire Station Larnaka “1”

The fire station “2” (Image 2.38) is manned by 43 fire service members and has 17 vehicles, including pump vehicles, tankers, rescue vehicles, ambulances, chemicals trucks, and combi-vehicles. The main mission of this station among dealing with the standard fire emergency calls, is the management of hazards related with any incidents involving the Fuel Terminal and the Dhekelia Power Station.
The fire station at Larnaka Airport (Image 2.39) employs 55 people, which are equipped with 6 vehicles, including a flagship vehicle, a combi-car and four fire service vehicles (using special foam).

The main statistics of the Cyprus Fire Service are listed in table 2.37. The special force “EMAK”, which has its headquarters in the community of Kofinou (District of Larnaka), mentioned in table
2.37 is part of the fire service.

Table 2.37: Fire service statistics for 2012

<table>
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<tr>
<th></th>
<th>FIRES</th>
<th>SPECIAL CALLS</th>
<th>FAULSE CALLS</th>
<th>AMBULANCE ASSISTANCE</th>
<th>TOTAL</th>
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<td>LIMASSOL</td>
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<td>1129</td>
<td>95</td>
<td>2</td>
<td>2881</td>
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<tr>
<td>LARNAKA</td>
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<td>91</td>
<td>21</td>
<td>1905</td>
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<td>48</td>
<td>0</td>
<td>1669</td>
</tr>
<tr>
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<td>221</td>
<td>20</td>
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<tr>
<td>EMAK</td>
<td>246</td>
<td>62</td>
<td>38</td>
<td>0</td>
<td>346</td>
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<tr>
<td>TOTAL</td>
<td>6799</td>
<td>4587</td>
<td>559</td>
<td>88</td>
<td>12033</td>
</tr>
</tbody>
</table>

SOURCE: CYPRUS FIRE SERVICE

2.4.9.3 Forestry Department

The forest stations of the Forestry Department in the District of Larnaka are presented in Figure 2.41. References to numbers of staff are for the year 2012. The Forestry Department comes under the Ministry of Agriculture and has the primary mission of protecting and managing the forests.

Figure 2.41: Forest stations in the District of Larnaka

FOREST STATION LARNAKA: 4 permanent and 16 seasonal staff

FOREST STATION KORNOS: 9 people permanent and 33 seasonal staff

FOREST STATION RIZOELIAS: 6 permanent and 23 seasonal staff

FOREST STATION DHEKELIA: 9 permanent and 10 seasonal staff

SOURCE: Forestry Department
2.5 EVALUATION AND CONCLUSIONS

2.5.1 Strengths

2.5.1.1 Electrical Power Network

Larnaka has good reason to call itself the energy capital of Cyprus.

- Every type of energy source used in Cyprus, can be found in the District of Larnaka (Check page 150 of the Greek report).
- 80% of the installed capacity of power generation by conventional means is located in Larnaka.
- 40% of total wind energy is produced in Larnaka.
- All major energy related infrastructure under construction or under study is being installed (or will be installed) in the District of Larnaka.

The Electricity Authority of Cyprus (EAC) as the sole producer of energy by conventional means in Cyprus has the expertise, the necessary scientific and technical personnel as well as the necessary infrastructure required for the uninterrupted supply of electricity in Cyprus.

The two largest of the three power stations are sited within the District of Larnaka. The location of the power stations ensures their connection to the national road network, as well as their coastal position ensuring unimpeded sea access for refueling and other operations.

Electricity consumption in the District of Larnaka is close to one million kWh annually. In relation to the population, the power consumption is relatively high and is indicative of the presence of organizations with increased demand and consumption.

The high degree of efficiency in troubleshooting responsiveness ensures the smooth operation of the electrical energy grid. This is especially important for the District of Larnaka which houses vital installations with a high electricity consumption (e.g. the Airport, the Port, permanent desalination plants etc.).

The transmission and distribution grids are the backbone of the whole electrical power system. The main and secondary substations spread throughout the District regulate the balanced supply of the electrical load to the consumers. The whole system can be characterized as an efficient network, suffering relatively small losses, mainly because of its small size.

The EAC has the ability to provide any possible future developments in the City of Larnaka with the adequate electrical load. Larnaka has the opportunity to convert this into a comparative advantage in terms of attracting large scale industrial and tourist developments.
2.5.1.2 Telecommunications

The development of the telecommunications network in Larnaka is adequate, reliable and accessible.

In mobile telephony, several upgrades have led to a modern, high quality and technologically advance system. The implementation of new interface technologies by 2014 shall fully cover the requirements of the most widespread form of communication today. Signal reception is universal throughout the City.

The largest part of the existing telecommunications system is the wired lines above ground. In the area of the City’s commercial center, CYTA has replaced the overhead lines with underground cables. The same procedure has been followed for areas where extensive rebuilds or works are taking place. In all new areas and new developments, the wired network for telecommunications is installed underground.

The high degree of accessibility and connectivity to the network, in combination with the effective technical support make the system both reliable and ‘user-friendly’.

In regard to internet connectivity, Cyprus is among only five European countries where households have nearly 100% broadband coverage. Today’s high speed links in Cyprus are around 20 megabits (Mbps). In comparison, Great Britain (which is 16th in the world rankings) has speeds in widespread use at 24Mbps. In Great Britain as here in Cyprus, the long term solution will be to replace the conventional network with a fiber optic network.

A free internet connection in public places is a competitive advantage which could be capitalised on more fully with further upgrades. Expanding this service into more areas will increase public use, and is a definite goal of the authorities for the future.

2.5.1.3 Water Supply

A water supply problem has affected Cyprus in recent years. To a large extent, this has been addressed in the systematic creation of dams and the construction of two permanent large desalination plants in Larnaka. Certainly the reported decline in the amount of rainfall is an important parameter that will inevitably affect the sustainability of all sectors of the economy and threaten quality of life in the future.

Water supply in the City of Larnaka is nowadays unhindered and without significant problems. The management of the local water supply system is undertaken the Larnaka Water Board (LWB). The LWB has its own sources (boreholes in the riverbed of the Tremithos near the community of Klavdia) which in times of heavy rain can cover up to 35% of the total required quantity of water for the residents of the Municipality of Larnaka. In times of drought, the supply rate drops dramatically to 2%.

As for the water supply network, it operates by gravity due to the nature of the topography of the region, and so the distribution of drinking water is reliable and there is little reliance on pumping. Existing water pumping equipment that is required, has been upgraded recently.

As the area usually experiences earthquakes, this affects the stability of the water supply network. There are certainly several improvements and interventions from the Board mainly in areas where
there were leaks or damages (e.g. Turkish Cypriot District, Arch Makarios III Avenue). The network was replaced in areas of redevelopment or reconstruction or where roads are being constructed.

The LWB is testing new technology for leak detection systems, which help to repair faults quickly. The downward trend in the statistics in relation to non-charged amounts of water, together with the increasing frequency of repairing the leaks, shows that the measures taken by the LWB have been effective.

The LWB hopes that the loss rate will be further minimised over the next ten years (to reach a target of 15%). This is based on the fact that replacement of the transmission and distribution network is taking place which will include the gradual replacement of old water meters.

The water storage capacity of 8000m³ of the LWB is placed in Klavdia. There are new storage facilities planned for the future.

The water supplied to the Municipality of Larnaka in 2012 was about 5.5 million m³. Compared to the previous years there is a steady decline in the rates of water consumption and there are increased water saving measures taking place in the District. In 2012 compared to 2006 (where there were 15% fewer installed water meter) the water consumption was almost the same. Therefore, although there were 15% more installations, there was little change in water demand.

2.5.1.4 Desalination

The huge problems and risks posed by periods of drought has led to the creation of two permanent desalination plants, both operated in the District of Larnaka.

The Dhekelia Desalination Plant (created in 1997) and the Larnaka Desalination Plant (created in 2008), are capable of producing the necessary quantities of water for the districts of Larnaka, Famagusta and Nicosia combined.

The operation of the two plants is based on the method of reverse osmosis, in which to produce a cubic meter of desalinated water, two cubic meters of sea water are needed (see the description in section 2.2.3.2.1). After the production, the water is driven to the WDD network and then to the consumers through the network of the Water Boards.

The plants are technologically advanced and have minimised the drought problem. The desalination plants are now on standby, as the water is pumped from the government sources that fully meet the current needs of the Island.

2.5.1.5 Sewerage System, Wastewater Treatment, Stormwater and Flooding

The harmonization in Cyprus with the EU Water Framework Directive has stimulated the development in water and wastewater management, that results in conditions that allow the preservation of the natural environment and improvement the quality of life.

The progress of the sewerage and drainage system project in the Municipality of Larnaka has passed the first phase, which included the installation of the entire seafront. The second phase consists of the inclusion in the project of the communities of Meneou, Dromolaxia, Kití and Pervolia and is currently in progress.

After the completion of the program in 2015, Larnaka and the associated communities will have
entered a new era in the management and treatment of wastewater. They can enjoy a better and more sustainable environment that will respect citizens and visitors.

The tertiary treatment of wastewater at the treatment plant ensures good quality of recycled water which is used for irrigation purposes.

The current stormwater network is being upgraded by the Sewerage Board of Larnaka, the Municipality of Larnaka and the Department of Public Works. A serious effort regarding the maintenance and expansion of the network is taking place, so that the areas have a history of difficulties and failures can deal with the floods and have proper infrastructure available to solve their problems.

Among these vulnerable areas are those of the Prodromou and Sotira. In the Prodromou area, extensive construction project of a new stormwater management system are in progress, while in the area of Sotira works are planned to start very soon, by the Larnaka Sewerage and Drainage Board (LSDB). These projects will be completed in 2013 and 2014 respectively.

In the area of the Kamares River there are problems that relate to the ability of the River to discharge to the sea. A private research organization on behalf of the Public Works Department is studying the nature and the management of this problem.

2.5.1.6 Port and Marina

A key advantage of the Port of Larnaka is without doubt its position. Besides being a natural harbor, it is the nearest European port to the Middle East and the Suez Canal. The development of the Port will benefit the economy of Larnaka and will result in significant employment growth.

The current situation of the Port area separates the seafront from the town of Larnaka. In contrast to this, the Port and Marina could be a unique feature, that includes the people of Larnaka and promotes the cohesion of the City.

2.5.1.7 Airport

Larnaka Airport is the main gateway for entry and exit to the Island. It is build across the Salt Lakes and covers nearly 6 million m². It began its new operation in 2009 and is a modern, technologically advanced and cost effective piece of infrastructure.

The servicing of aircrafts and passengers is adapted according to state of the art best practice in the relevant services. The Airport has the capacity to serve 7.5 million passengers per year, while today it serves just over 5 million passengers per year.

The connections through the national road network, to both the capital and the tourist areas of other neighboring cities (e.g. Limassol, Ayia Napa/Protaras) makes it attractive to airlines investing in the transport of visitors and locals, to and from Cyprus.

The Airport is one of the largest investments in Cyprus that can help the development of the local economy (especially in terms of tourism). Several companies are operating support services to the Airport, offering a vital source of local employment in the Larnaka area.

2.5.1.8 Fuel Terminal
The Fuel Terminal (situated on the Larnaka seafront, north of the Port) comprises of private fuel storage facilities as well as part of the national strategic fuel reserves. The area covering the Terminal reaches half a million m² and has a length of nearly 3 km. It is a strong energy presence in the region and this important economic activity supports other sectors of the economy resulting in a large number of jobs depending on the infrastructure.

The future of this coastal area after the decommissioning of the Fuel Terminal will play a large part in the sustainable future of the City of Larnaka. There are many issues that are related directly or indirectly with the relocation of the fuel tanks. In a City dominated by large and important infrastructure there are opportunities for a new brand of sustainable tourism.
2.5.1.9 Transportation

The Transport Department, in co-operation with the bus company in Larnaka (‘Zenon Limited’), specify the bus routes, the timetables and the level of fares. The Municipality of Larnaka will also participate in setting routes in the future.

The size of the bus fleet is sufficient for current demand in terms of large buses (42 seats) and small buses (9 seats). However, there is a shortage in the number of medium-sized buses (23 seats). There is no data on the average occupancy of each route at different times of the day, so it is currently difficult to determine exact requirements.

The bus fleet consists exclusively of diesel internal combustion engine vehicles. There are currently no vehicles using any other kind of fuel (e.g. LPG, biofuel).

The majority of passengers on bus routes in Larnaka are students from the surrounding communities (mainly travelling to and from school), the elderly (mainly travelling to and from hospitals or the shopping center), foreign workers (mainly travelling to and from work), and tourists who stay in hotels outside the urban center (mainly travelling to and from the city center, and the beaches).

2.5.1.10 Infrastructure of economic importance

There is a plentiful capacity of industrial zones and farming zones that cover a considerable area around the City of Larnaka. They offer an important support and development function to industrial and other economic activities. The efficiency is low but the growth prospects are large. More rational and specialised usage is needed so they can become places of intense activity.

2.5.1.11 Education

The number of schools and the good condition of the building facilities are key elements that can help Larnaka to evolve into a specialised center of education.

The outdoor areas of schools (although generally in good condition) need improvement aimed at the development of green areas and the construction of sports areas with better access and usability. This will be to the benefit not only the students but also the wider community.

The development and use of RES in school buildings within the framework of the National Plan should be promoted as quickly as possible.
2.5.2 Weaknesses

2.5.2.1 Electrical Power Network

Despite the advantages of this important activity, it is noted that these facilities occupy an important part of the coastal front of the town, limiting options for development. The coastal area is covered with generators, tanks, and piping that alter the natural character of the area.

The Vasilikos Power Station is housed among other major infrastructure facilities, in an area where there are new projects planned such as the construction of the new fuel terminal and potentially a natural gas liquefaction and storage plant. These other developments may limit possible plans of expanding the station.

A similar disadvantage lies in the case of the Dhekelia Power Station, which is situated within the Larnaka Bay near the beach of the Cyprus Tourism Organisation (CTO) and in residential areas within the English military bases. The prospects for future expansion of this plant are also very limited.

The dependence of the stations on imported fuels (fuel oil) makes the operating costs of stations significantly more expensive. This cost is passed on to the consumers who pay for some of the most expensive electricity (per kWh) in the European Union.

2.5.2.2 Telecommunications

The current format of the existing network somehow affects the image of the City as a modern and sustainable city. For example, the presence of piles on the pavements, in many cases limits the mobility of pedestrians.

It is an advantage that the network is underground in the commercial center of the City. Efforts are being made towards placing the telecommunications cables underground for the network in all newly developed areas and where reconstruction of existing roads is in progress. The cost of such work is often an inhibitory factor in the replacement of the existing overground network.

The connection speed (of receiving data) compared to other European cities is low. This is a major barrier to growth and development, especially in certain sectors such as communications, education, trade, and research.
2.5.2.3 Water Supply

In times of drought, the coverage of the needs of the City from the LWB’s own sources drops to 2%. It is a weakness that cannot be addressed as Cyprus is an island (there is no border with another country). It is a disadvantage compared to other countries bordering each other. The creation of two permanent desalination plants in Larnaka have given the solution to this important problem.

Improvement and renewal of the water supply network is necessary, particularly in relation to the replacement of asbestos pipes, old iron pipes and old water meters. The plan for the gradual replacement of these aspects is running very slowly. Additionally, the pressure control system within the network requires upgrading, in order to reduce water losses.

It is important to mention that the increase in the total number of water meters in the last four years (2009-2012) is very small. For the first time (in the first period of 2013) this number has decreased compared to the corresponding period of the previous year. This parameter is an important indicator in terms of the growth of the city, but must be cross referenced with planning data (e.g. number of building permits) to obtain a comprehensive picture.

It is worthy of note that there is a relative increase in the number of water meters with a zero reading. They are readings mainly from disused premises, factories, shops or houses. The increase seen is a result of the economic crisis which led to the closure of several small industries and possibly a decrease in foreign residents in Larnaka town (who have moved to other cities in Cyprus or have returned to their countries).

2.5.2.4 Desalination

The desalination plants consume a great deal of electricity, a fact which raises significantly the cost of production and resulting water pricing.
2.5.2.5 Sewerage System, Wastewater Treatment, Stormwater and Flooding

The design of the Larnaka sewerage system had to overcome the difficulty of the topography and geology of the area (see environment, Chapter 3.2). The use of large diameter pipes and the creation of many large pumping stations, increased the amount of excavation needed, and raised the cost of the work (for the LSDB and for the citizens). The operating cost of the plant is high, due to the high consumption of electricity from the plant and pumping stations.

Problems arising during the construction phase of the project such as increased traffic and dust have been minimized as far as possible.

2.5.2.6 Port and Marina

The location of the Port of Larnaka in the middle of the coastal front of the City is likely to limit the potential for increased trade. Simultaneously, the proximity of residential areas reduces the possibility of expansion and the strategic planning of the City.

The technical characteristics of the Port of Larnaka are poor and major changes and interventions are needed upon implementation of the proposals from the consortium. The fact is that both the Port and the Marina in the current form do not make a large contribution to activity in the City. Port equipment and storage facilities are inadequate and the Port operates well below capacity.

2.5.2.7 Airport

The location of the Airport in the salt marshes could be defined as a weakness mainly related to the brutal transformation of the area. The location of construction in this area interrupts the continuity of the coastal front of the Larnaka Bay impairing the natural flow of the area.

The development around the Airport is severely limited, especially because of the restriction in the safe height of potential buildings. Problems are also presented due to the lack of airport equipment for guiding the aircraft in case of bad weather (low visibility).

It is clear that there is a lack of parallel and collateral infrastructure in Larnaka that could support and increase the efficiency and productivity of Larnaka International Airport. For example, the Airport does not have large and modern storage facilities, which limits the possible extension of cargo activities.

Larnaka has less tourists compared to other coastal cities of Cyprus, despite the convenient location of the Airport. The Airport as a piece of infrastructure mainly relies on the tourism industry of the whole Island. Larnaka has just a 10.8% share of the tourism market, while 70% of the tourists visit the Island using Larnaka Airport.

2.5.2.8 Fuel Terminal

The most negative impact of the presence of the Fuel Terminal is in relation to tourism and residential development. The Terminal blocks the continuity the seafront and makes tourism activities in the region and in the Port area impossible.

Additionally, the presence of the Fuel Terminal affects the growth of the Port. Relocating the Fuel
Terminal to a predominantly non-urban industrial area will release a long beach area which will be adjacent to a modern port development.

The timing of the relocation of this very important infrastructure has not yet been determined by the government. The companies that import fuel, have not been committed to such a relocation as they clearly understand the serious economic costs which would be incurred. Besides relocation costs, the cost and duration of the decontamination process is expected to be considerable.

2.5.2.9 Transportation

The use of public transport in the large urban centers is one of the most important pieces of sustainable infrastructure requirements for the future of all cities. In Cyprus, after a sudden period of economic growth over the last 25 years, the market for private vehicles has also boomed on a large scale. Public transport has been left behind and there has been limited use of its facilities and little investment in that time.

Although there has been an upgrading of the bus fleet in recent years, the system cannot operate effectively without adequate supporting infrastructure (e.g. adequate standard of bus stops).
2.5.2.10 Infrastructure of economic importance

The relevant areas and zones occupy a large area encircling the Municipality of Larnaka. In many cases they are next to residential zones, thereby increasing the risk of reaching their capacity quicker than they would otherwise. The nuisance caused by strong smells, noise from operations and transport also reduces the compatibility of residential zones near these areas.

2.5.2.11 Health

The health infrastructure in the City of Larnaka is weak as the public hospital (Larnaka General Hospital) is old and needs to be upgraded. The buildings are damaged and the number of beds are inadequate.

2.5.2.12 Education

Larnaka lags behind other cities of Cyprus (e.g. Nicosia and Limassol) in terms of the development of tertiary education (universities).

Building universities outside the City could be an attractive future possibility. This is especially true in a small place where distances are not a limiting factor and transport is relatively easily.

On the other hand, supporting communities in a creative way, such as including Larnaka in a network of universities, could be a new sustainable activity for the City.

2.5.3 Opportunities

2.5.3.1 Electrical Power Network

The opportunities in the field of energy for Larnaka are substantial and require strategic planning. The exploitation of this advantage to other developments and the establishment of the City as a regional energy center is one of the prospects that could significantly enhance the economic activity in the City and District of Larnaka.

The existing relevant infrastructures and parallel enrichment with new technologies and other support activities could offer Larnaka characteristics similar to other cities that have been recognized internationally as energy centers. These activities can contribute significantly to the transformation of the City into a regional center for innovation and research in the field of energy, both nationally and the wider region.

Support services and facilities would be needed such as hotels, conference centers, and transport systems (more direct and environmentally-friendly), consultancy services centers (technologically sophisticated and sufficiently staffed), airport transportation etc.

Intense activity in the field of energy in the following years will take place. Foreign investment in these activities naturally leads to the prospect of establishing operations of these organizations in the town and the wider area of Larnaka.
The possible increase in maritime activity will create the need for more reliable, attractive and accessible harbors, marinas and quays. This could lead to a marine network of economic activities between the ports of Larnaka and the surrounding areas and ports.

**Electricity consumers in Cyprus pay some of the highest prices in Europe. Cost reduction measures are badly needed. It is possible to use natural gas for the operating needs of parts of the power station of Vasilikos (as an interim solution using a floating platform). This could have a positive impact towards price reduction and would minimize emissions (for which the consumer currently pays extra fees because the EAC has exceeded the EU emission targets).**

Regarding, Renewable Energy Sources (RES), it is obvious that Larnaka plays an important role. With a multitude of applications and authorizations at all levels and type of energy production from renewable sources, the District could obtain a strong and partially self-sufficient energy system. This effort could be extended to education by involving both the private sector, the government, and universities in Cyprus and abroad. Investment in research programs and institutions could establish Larnaka at the center of the relevant scientific community.

It should be noted there is a growing trend for the utilization of wave energy. There are a variety of applications and new technologies that could be considered and applied/adapted to the sea of Larnaka. There is currently an investigation in the Oceanography Center of Cyprus on (the ‘E-Wave Project’) and the results will undoubtedly help towards the use of the energy of waves. **The findings of this survey have been posted on the internet** and are a useful tool to choose the placement for such plant installations.

The Municipality of Larnaka plans to expand the network of street lighting in the commercial center of the City so as to meet the demands of modern lighting open areas and squares. Simultaneously it seeks to reduce the power consumption by replacing fluorescent lamps with affordable LED lights. The use of renewables (to produce energy for street lighting) are creating some small projects that are being implemented in the short term. Proposals have been prepared to reduce the consumption of electricity in the premises of the Municipality and street lighting by up to 50 % by 2020.

The EAC also plans to expand and develop the existing network of optical fiber network, thereby increasing the chances of offering super-fast services to consumers through a high technology platform. The issue of optical fibers is of great concern at the competent bodies of the European Union, who see their extension throughout Europe as a high priority.

In conclusion, Larnaka as the last European city before the Middle East and North East Africa opens up opportunities for partnerships with the wider Eastern Mediterranean, creating an energy bridge between three continents. The expected use of energy sources that are in the sea area of Cyprus enhances the prospect of Larnaka being one of the major energy cities.

### 2.5.3.2 Telecommunications

The European Union has set a goal by 2020 that all citizens will have access to a ‘super-fast internet’ (over 30Mbps). At the present time the optical network compared to conventional copper networks across the European Union is 2%.

Considering the fact that with the use of fiber optic cables, speeds can reach up to 1000Mbps someone understands the competitive advantage they gain the areas that will invest in such a development.

**EAC intends to develop this network through partnerships with telecom operators. Recently the**
government announced its intention to license another private company for telecommunication services through the bidding process.

**The continuous improvement of the services offered in this field is needed. It is an important link in the effort to harmonise and synchronise with global systems and satellite networks.**

The planned upgrade of the networks to fourth generation (fourth generation-4G) is an indication that the efforts to implement new technologies in the field of telecommunications in Cyprus are in line with those of technologically advanced nations.

### 2.5.3.3 Water Supply

The easy connection to the network, the immediate and effective response in case of damages, and the good water quality are some of the advantages that create favorable conditions for new developments.

The water supply network has the capacity to support the growth of the City. The LWB has a contingency plan for a possible increase in the number of tourists, and the possible development of large empty pieces of land (e.g. areas around the Port, the Fuel Terminal, church land etc.) that could attract new visitors and residents to Larnaka, with a consequent increase in population. The LWB has so far managed to meet the need for greater amounts of water and demanding new connections to the system.

### 2.5.3.4 Desalination

The WDD has signed an agreement with EAC to purchase desalinated water from the plants in Vassilikos (Larnaka), which should operate in 2013/14 and will have a capacity of 60,000 m³/day, increasing the possibility of producing desalinated water in Larnaka to 182,000 m³/day.

A significant difference of this plant in relation to the two others, will be the use of photovoltaic systems for the production of energy required for its operation. The ability of the plants of Larnaka and Dhekelia to use RES (PV) is a prospect that will be considered by the WDD in the near future.

### 2.5.3.5 Sewerage System, Wastewater Treatment, Stormwater and Flooding

The sewerage system greatly facilitates new developments as the connection to the network is easy and immediate and avoids the operational problems of septic tanks and effluent absorption pits. It avoids problematic wastewater discharges to the sea, river beds and salt lakes of Larnaka.

The sewerage treatment plant after completion of upgrading works will be able to service up to 100,000 people. This creates the conditions for the further expansion of the system to other areas. Additionally, there is the prospect of using Renewable Energy Sources to cover or contribute to the energy needs of the plant.

The creation of a new overarching agency to manage the network is needed. This would foster cross cooperation not only with the relevant departments but also with the neighboring municipalities. Additionally, a key component to the effort of solving problems that arise is the funding of the solutions. The scientific community dealing with such issues could access funds from the relevant European resources for extensive research and the application of innovative
solutions.

The installation, maintenance and upgrading of drainage and sewerage networks in the Municipality of Larnaka is a major priority. This is difficult as the City suffers from the uncontrolled residential development in catchment areas and rivers. The concept of stormwater management in these areas is a challenge and requires a strategic planning.
2.5.3.6 Port and Marina

The Port of Larnaka is close to the Airport, making it an ideal location for use as a port offering fly and cruise packages, as well as giving the City a distinctive image and a business edge.

The sustainable use of land around the Port for the development of tourist facilities will greatly enhance the City's role in the tourism industry of the Island. The proximity of the Marina creates conditions to attract a distinctive tourist market and investors in residential development. It is very rare to come across such a co-existence with such a favorable urban characteristics. Meanwhile, the connection of these sites to the heart of Larnaka, while challenging, is an opportunity to transform a huge area of the City into a public friendly and accessible area.

The relocation of the Fuel Terminal to an alternative site and the construction of the new Port and Marina must be well synchronised. The involvement of the private sector is a pre-requisite for a possible global response of the project. Without taking mitigating measures on the surroundings and the development of supporting infrastructure, related projects will not create maximum benefit.

2.5.3.7 Airport

The operation of an Airport which is located in a coastal Mediterranean city, located in a strategic point may not be limited to passenger transport. Within the Airport, apart from the possible expansion (Phase B), it is expected that there will be exploitation of the unused area in a way that will promote transit trade. This will develop the Airport as a transit passenger station. There are also possibilities for accomodation and specialised entertainment and of course the resulting local employment effect.

The prospect of the parallel development activities through large investments (transit trade, container terminal, hotel, mall etc) will be part of the sustainable growth of the group of projects for the Port, City and Airport.
2.5.3.8 Fuel Terminal

The decommissioning of this area creates the conditions for possible investment in tourism.

As for the future of this very important infrastructure an agreement between the Municipality of Larnaka and the Government has been achieved for the relocation to Vassilikos and the creation of the new Vasilikos Energy Center, which will include a large fuel terminal. The time of the relocation of this very important infrastructure has not been determined yet.

It should be emphasised that the movement of this infrastructure will mean that the main national fuel terminal is still retained inside the District of Larnaka. The new terminal will be one of the largest and most modern installations of this type in the Mediterranean region. The prospect of using the new terminal as a transit point of energy magnifies the importance, and will give it international recognition.

2.5.3.9 Transportation

Public transport in the City is in urgent need of priority routes for easy and quick transport. Today, illegal parking in narrow streets and the main highways create difficulties for public bus transport. There is a huge need for a solution to this phenomenon to allow public transport to flow through the City.

Appropriate bus stops are needed that offer protection from the weather (rain, wind, sun) and are comfortable. Electronic display of information (with information on arrival times, bus routes etc.) and the signs showing the schedules are just some examples that are needed in Larnaka to create a modern, sustainable, public transport system.

A more comprehensive approach to the issue of public transport is needed in order to be able to meet the modern needs of the citizens of Larnaka, and convert buses into an effective and attractive transport option.

2.5.3.10 Infrastructure of economic importance

The increasing installation of RES on farmland could become an area of investment in research, development and innovation in Larnaka. The same farms can also contribute as biogas power plants.

*Increased production of meat, milk and dairy products, could be realized within the limits of the industrial and manufacturing areas of Larnaka encouraging urban farming.*

Fishing and its promotion through the fishing shelters needs to be revamped in order to create a more modern concept. There are benefits to be realized in converting these terminals to points that attract more citizens. Their functionality and practicality can benefit the fishermen, maintaining the picturesque nature of their location, and could be extended to centers that offer other services (entertainment, catering etc.) with the appropriate configuration and development of related infrastructure.

The presence of a research station of the Fisheries Department of Larnaka could also be expanded into a visiting experience highlighting its roles and activities.

2.5.3.11 Health
The upcoming construction of the new building complex next to the existing building will be an important step of the service improvement.

In addition, there is a role for the private sector in expanding the health services through the development of new infrastructure. For example, specialised hospitals to service specific population groups (elderly, children, etc.) could be established via this route. Incentives for these kind of developments could be created by appointing locations which connect them to the urban environment and could be the starting point to attract investment in this field.

2.5.3.12 Education

The development of new schools in the next few years will complete the puzzle, regarding the standard of premises. Some of the schools which are sited in the center, are listed as preserved buildings and are characterized as a jewel for the City.

2.5.4 Threats

2.5.4.1 Electrical Power Network

The environmental pollution of the land and sea, strong magnetic fields and the probability of accidents are some of the threats and risks arising from the presence of such facilities.

In areas where problems have arisen which are associated with the presence of the network, these should be resolved in order to co-exist with the facilities and the population. For example, siting voltage cables underground in the areas of Pyla, Voroklini and Aradhippou.

The risk of damage in the event of a direct or indirect accident in Vasilikos, with large domino effects, is an issue which arises from the proximity of several major infrastructure facilities (power station, fuel terminals, cement factory, natural gas liquefaction terminal).

Underwater and landsite pipe network of fuels pose a risk of possible leaks with severe environmental impacts. Emissions from the widespread use of fuel oil are burdening the atmosphere, making the need for alternative energy sources such as natural gas, an imperative.

2.5.3.2 Telecommunications

The main threat or danger in expanding the use of telecommunications is the potential burden on the human health through the electromagnetic fields that are created. The size of this risk and the pathway of influencing the public health has still not been clearly determined by the scientific community.

2.5.3.3 Water Supply

The rate of loss (25% in 2012) is similar to other European cities, however for Larnaka as a water
stressed area it is of greater importance given the likelihood of future drought periods. This fact significantly limits the ability to get water from local sources (LWB boreholes) resulting in total dependence on water supply from government sources (WDD) and the possible increase in water pricing. In addition, the prolonged dry seasons adversely affects the quality of water in underground water bodies.

The extensive water network of asbestos pipes could produce dangerous deterioration in water quality in the event of damage and fragmentation of those pipes which could result in the penetration of asbestos fibers in to quantities of drinking water.

2.5.4.4 Desalination

As with every significant intervention in the natural environment, so in the case of desalination, the infrastructure required for their operation is large and therefore interfere significantly with both land and sea. Apart from the fact that desalination consumes a huge amount of electricity it also presents risks to sea water quality and aquatic biodiversity through the disposal of brine. The brine disposal pipe at the Larnaka plant extends around 1.5km to the sea, however the Dhekelia pipe is considerably shorter. The water that returns to the sea contains twice the amount of brine, so therefore to produce one cubic meter of water requires two cubic meters of sea water.
2.5.4.5 Sewerage System, Wastewater Treatment, Stormwater and Flooding

Environmental risks arise in cases of limited usability and storage of produced water in the storage basins and tanks. For example, in the case of storage tank cleaning, some of the effluent is disposed of through a pipeline to the sea. Although the pollution incidents are rare (e.g. algal blooms) there must be clear system of management.

In relation to flood events, difficulties have occurred in the areas of Kamares, Prodromou and Sotira with the resulting designation of APSFR’s.

2.5.4.6 Port and Marina

The lack of progress in the Port and Marina redevelopment project could be a serious obstacle in the efforts to create a strategic and sustainable design for the City. Even the delay in implementing the proposals could threaten the viability of the plan of action. The competition from other Ports in the region is large and the Port and Marina project will need to maximize its competitive advantages.

2.5.4.7 Airport

Environmental risks in relation to the operation of the infrastructure in the area of the salt lake are clearly present. Risks such as the degradation of physical space, as well as issues related to migratory birds that visit in the winter time is obvious. The risks associated with any future accident damage is also multiplied by the proximity of a valuable ecosystem (Salt Lakes), as well as residential areas.

2.5.4.8 Fuel Terminal

There are very serious safety and environmental risks posed continually by the Fuel Terminal’s operation in an urban area. The risk of accidents is high (e.g. Fires, explosions, spills fuel on land and sea) and the effects of any such accident are magnified due to the urban location.

2.5.4.9 Transportation

The lack of a modern bus system restricts the widespread use of public transport resulting in the consumption of large amounts of fossil fuel for transport, and an over-reliance on private vehicles creating a higher burden of exhaust emissions.
CHAPTER 3

ENVIRONMENTAL WEALTH AND ENVIRONMENTAL FACTORS OF LARNACA
3.1 INTRODUCTION

3.1.1 Executive Summary

The low lying topography of Larnaka makes it a vulnerable area to the effects of climate change, such as potential sea flooding, storm surges, and urban flooding. Climate change is evident when looking at temperature data for Cyprus and Larnaka. Cyprus is located in a region where temperatures are increasing above the global average while temperature extremes are also rising. Total rainfall is declining, while both the intensity and frequency of storms is expected to increase.

Given the pressures facing Larnaka for the future, there are opportunities that should be explored in climate change research and monitoring as well as the growth of renewable energy sources. Regarding the former, it is noted that many low lying areas in Europe, given their vulnerability to climate change, have developed highly regarded research establishments on the subject. One strand of developing future educational institutions should include an expert regional center for climatic research in Larnaka, the lowest lying urban coastal area of Cyprus.

The District of Larnaka currently has a 24% share of the island’s photovoltaic power installations (12.8MW in total as of 2012). The District is perfectly placed geographically to take advantage of the inevitable boom in solar photovoltaics in the coming years. The most recent round of tenders for such installations resulted in a selling price of electricity to the main grid of around 7 cents per kWh. This competitive price resulting from the huge growth of Chinese manufacturing removes many of the economic barriers for growth. Larnaka should position itself to create incentives promoting expertise, training and essential infrastructure for this industry.

The Larnaka area is dominated by natural water bodies including wetland habitats (the salt lakes), intermittent rivers, groundwater resources, as well as the obvious wealth of coastline and sea. Risk of urban floods and the over-exploitation of groundwater present a challenge which can be addressed by promoting Sustainable Urban Drainage Systems (SUDS) and finding ways to retain and infiltrate urban stormwater where practical.

The coastline of 12.7km dominates the economic, social and environmental wealth of the city. Sea quality and bathing water is generally good although there are some pockets of pollution risks from the various industrial and infrastructure activities that line the coast. Coastal protection structures along the municipal coastline mean that much of it is in a state of accretion with three major sandy beaches (Mackenzy, Kastella and Finikoudes). However, around 2.8km (22%) of this coastline has eroded since 1963, particularly in the southern part of the Municipality (south of the Airport) and in the north beyond the Fuel Terminal.

The considerable ecological wealth of Larnaka includes the unique wetland habitat of the Salt Lakes which make up 35% of the land area of the Municipality. This prevalence has inevitably created more pressure on the land use of the area which now houses important infrastructure, including the Island’s main airport, a desalination plant, sewerage treatment plant, and tourist developments. Opportunities for the future will have to balance the needs of growing infrastructure and urban development, with ecology, environmental education, and amenity value.

Fragmentation and habitat loss of the Salt Lakes due to the developments mentioned above threaten its very survival as an ecosystem. Climate change and fluctuations in the water balance of
the lakes add to an uncertain future. However, the Salt Lakes could represent the values of ‘sustainable Larnaka’ connecting a unique ecological feature with a thriving urban area. The proximity and accessibility of this natural resource creates a major opportunity for Larnaka to select projects with positive community engagement which support a green city brand, ultimately raising the quality of life in Larnaka.

The unique environmental features of the Salt Lake area must be promoted and protected. Measures should be taken to complement the planned environmental education center and raise awareness of the ecological heritage of Larnaka and the environmental challenges facing us in the 21st century. Habitat corridors to the salt lake area could be re-connected to the north and south, and ways should be explored to connect the salt lakes with walkable ecological corridors into the more urbanised areas. These connections with the City could incorporate urban parks and green areas, sustainable transport routes and re-invent an urban ecosystem at the boundaries of the Salt Lakes.

Air quality concerns in Larnaka mainly focus on particulate matter and ozone pollution which are among the highest levels of urban areas in Cyprus. Sahara dust creates a major transboundary source of particulates which produces levels of PM$_{10}$ far in excess of the EU target level of below 50 mcg/m$^3$. Opportunities for the future are connected with sustainable transport measures to create more traffic free/low traffic zones with a well planted and well ventilated streetscape.

The Municipality of Larnaka has made a great deal of progress in its commitment to reducing greenhouse gas emissions through participation in various European initiatives. A range of opportunities present themselves when looking towards a carbon free future to create neighbourhoods with zero emissions, zero waste and off grid electricity. Successful cities will be ones that are flexible and can handle changing situations. Larnaka can differentiate itself from other cities in Cyprus by not only being a city for the wealthy, but by creating smart low carbon neighbourhoods for the community. This will attract the young people of the country who currently have little incentive to work and live in Cyprus. Larnaka must develop a flexible, modern, and dynamic edge. Potential neighbourhoods should be identified to build a pilot eco-district, using self contained renewable controlled by smart technology and utilising other innovations and best practise.

Municipal waste is sent to a newly constructed Mechanical Biological Treatment (MBT) plant for sorting and disposal Koshi. Around 35% of waste is disposed of in a new sanitary landfill facility on the same site, with the remainder recovered mechanically and recycled. Recycling at source has only been carried out since 2010 and packaging recycling at source currently accounts for around 7% of all municipal solid waste. More recycling at source and innovations in the use of recycled materials (such as energy use) will present multiple opportunities for the future.

The importance of clear, transparent data that is regularly updated and can be benchmarked against other cities, cannot be underestimated. A set of performance indicators should be established in all environmental topics as currently exists for carbon accounting and monitoring as a result of the MEDEAA project. Economic, environmental and social values must complement each other in any successful model of sustainable urban development. Cities that embrace this model have the best quality of life, retain the most talented and dynamic workforces, and create a place people want to work in, live in and visit.
3.1.2 Methodology

This environmental chapter of the diagnostic report for the USUDS project describes the physical environmental characteristics of Larnaka, as well as the main environmental challenges that face us both now and in the future.

The physical characteristics of Larnaka are addressed in terms of the topography, geology and seismic activity, as well as the climatic characteristics. As water is such a prominent part of the fabric of Larnaka, there is a large amount of data relating to the natural water bodies of the area including its lakes, rivers, groundwater, as well as the considerable coastal zone and sea.

The ecological wealth of Larnaka is described in this report in terms of the salt lake area which is such a prominent part of the City. This subject was taken as a central theme for this report as it is a reflection of Larnaka in terms of physical wealth, environmental protection and opportunities of the future.

Further environmental challenges that face Larnaka have been categorised in sections relating to air quality and waste management. The issue of renewable energy sources is addressed in the chapter on air pollution as a mitigating measure for greenhouse emissions.

The full list of topics in this report are summarised below:

- Geomorphology & Climate
- Water
- Biodiversity & the Salt Lakes
- Air Quality
- Waste Management

Information has been collected from a wide range of sources including the relevant government authorities, European institutions and global organisations. The data collected was used together with the local USUDS team, the Municipality of Larnaka Team and the stakeholders of Larnaka to produce the themes of this report. The list of subjects and the content of the diagnostic report is intended to reflect the most prominent environmental issues that face Larnaka. Additional pieces of data that are referred to have been included in the Environmental Appendix.
3.2 GEOMORPHOLOGY AND CLIMATE

3.2.1 Topography

The Troodos range is surrounded by calcareous sediments which primarily make up the coastal plains (see Environmental Appendix for a geological map of Larnaka bay). Larnaka lies in one of the widest areas of coastal plain on the Island and the elevations in the greater urban area of Larnaka are mostly below 200 metres above sea level. In the immediate areas beyond the Municipality (e.g. Avdhellero, Aradhippou, Voroklini) elevations can rise up to 150 meters above sea level. The Municipality of Larnaka is mostly between 0-20 meters above sea level (see Map 3.1). The highest municipal areas are along the north-eastern boundary (up to 35 metres) and further east at the industrial area (50 metres). The lowest lying area is in the south of the Municipality where the Salt Lakes, Airport and urban shoreline are mostly between 0-10 meters. Additionally, some areas of the Salt Lakes are below sea level.

Map 3.1: The topography of the Municipality of Larnaka

Source: Municipality of Larnaka, 2012
3.2.2 Seismic Activity

Cyprus is located at the base of the Anatolian tectonic plate, close to the boundary of the African plate. This boundary (known as the Cyprus Arc) is the main source of seismic activity in Cyprus (see the Environmental Appendix for a map of the Cyprus Arc). The south coast of Cyprus is subject to the highest number, and the most severe earthquakes on the Island. It follows that the Larnaka area is in the highest risk zone used in the national guidelines for the design of structures (again, see the Environmental Appendix for the risk bands of the national guidelines adapted from Eurocode 8).

Map 3.2 shows that many small earthquakes have occurred over the last century although only a few have exceeded 5.0 on the Richter scale. Historically, The District of Larnaka has experienced fewer earthquakes than other areas (such as Limassol) but this is not a reliable prediction of future seismic activity.

Map 3.2: Recorded earthquakes of the District of Larnaka (1896-2010)

The Mediterranean area is vulnerable to tsunamis caused by seismic activity in the sea. This has implications for the low lying coastal area of Larnaka. This issue is discussed more fully in chapter 3.3, along with the coastal geomorphology and coastal protection of Larnaka.
3.2.3 Climate and Climate Change

3.2.3.1 Climate

Air temperature

Cyprus is located in a sub-tropical zone resulting in a long, hot and dry summer period with the vast majority of rainfall occurring in the relatively mild winter months. Cyprus is one of the warmest places in the Mediterranean with an average annual temperature of 19°C, while Larnaka is one of the hottest parts on the island with an average annual temperature of 20.2°C. Temperature extremes of over 40°C may occur in June, July and August. August is the hottest month in terms of average daily temperature (28.3°C).

Figure 3.1: Mean temperature (°C) at Larnaka Airport (2002-2011)

Source: Cyprus Meteorological Service, 2012

Winds

Eastern Mediterranean wind is generally north-westerly in the summertime and westerly in wintertime with light to moderate strength. The Island has on average two Tornadoes every year which start as waterspouts over the sea and move inland as a 'Tornado'. These incidents pose a risk to personal safety and localised damage to buildings.

Rainfall

Coastal areas receive less rainfall than the mountainous parts of the island such as Prodromos
and Saittas (see Figure 3.2). Larnaka is clearly one of the driest parts of the Island receiving an annual average rainfall of 344mm. The ‘normal’ level of rainfall is defined here as the average annual rainfall over a thirty year period between 1961 and 1990.

Figure 3.2: ‘Normal’ rainfall - average annual rainfall by area (1961-1990)

![Graph showing average annual rainfall by area (1961-1990). Source: Cyprus Meteorological Service, 2012.]

Annual rainfall in Larnaka fluctuates significantly around this ‘normal’ level of 344m. Recent years have yielded significantly higher rainfall than normal. The most significant droughts of recent years were in 2008 and 1995, where in both cases annual rainfall was below 200mm.

Figure 3.3: Larnaka rainfall by year (1991-2011)

![Graph showing Larnaka rainfall by year (1991-2011). Source: Cyprus Meteorological Service, 2012.]
3.2.3.2 Climate Change

Changes in air temperature

In general we see that the climate is changing in the following ways in terms of air temperature and rainfall:

- Both average temperature and temperature extremes are increasing
- Average rainfall is declining while extremes in rainfall intensity are increasing

The Intergovernmental Panel on Climate Change expect global temperatures to increase by between 1.8°C and 4°C by the end of the century (IPCC, 2012). In Cyprus, temperatures are increasing slightly above the global average rate in line with the rest of the wider region (Eastern Mediterranean, North Africa and Middle East).

Annual average temperature in Cyprus has increased by 0.5°C over the last century and is predicted to increase by 1-1.5°C by 2030 (Cyprus Meteorological Service, 2012). Temperature extremes are also increasing in Cyprus. There has been an increase of more than 1°C in the average maximum daily temperature compared to the 1980’s, both across the island as a whole, and locally in Larnaka.

Figure 3.4: Change in average maximum daily temperature (°C) in Cyprus and Larnaka Airport

![Graph showing temperature changes]

Source: Cyprus Meteorological Service, 2013

Note: The GIS calculation represents an average across Cyprus, whereas the measurements for Larnaka are physical measurements from one monitoring station (Larnaka Airport).

Changes in rainfall

Average rainfall across Cyprus has been declining since 1941 (see Figure 3.5). Every 30-year hydrometeorological period has shown a decline.
Extremes in rainfall intensity and drought periods are expected to become more pronounced over the coming century. The most recent drought period affecting Larnaka was in 2008 where annual rainfall was 175mm (see Figure 3.3). While there was little data found for Larnaka in terms of increasing storm intensity, this is likely to be a major risk factor over the coming years, especially with increasing urbanisation and more impermeable surfaces.

Summary of the effects of climate change on physical conditions

The Intergovernmental Panel on Climate Change predict that global sea level will rise between 0.2m and 0.6m by the end of the century (IPCC, 2007). Evidence suggests that Cyprus is in fact experiencing land uplift which may offset sea level rise to some extent (EU, 2007). The coastline is vulnerable to surges of the sea towards land during storms, and potential inundation of residential, commercial and industrial facilities. Erratic, unpredictable weather patterns will also create a higher risk of urban flooding from the increased intensity of storms on land.

There is also increasing concern over the risk of desertification on land, and as Larnaka is clearly one of the hottest and driest parts of the Island this must be a major concern when trying to ensure a sustainable future. Higher temperatures and more frequent droughts will increase the frequency of fires and put pressure on soil resources.
3 – ENVIRONMENTAL WEALTH AND ENVIRONMENTAL FACTORS OF LARNAKA

3.3 NATURAL WATER BODIES

3.3.1 Catchment Areas

There are four main catchment areas of the greater Larnaka area (see Map 3.3). The two main (non-perennial) rivers which run through the Municipality of Larnaka are the Archangelos-Kamitsis river to the north, and the Kamares river which runs through the center. Most of the area of the Municipality is in the ‘Salt Lakes catchment area’ (WDD reference: 8-3). The Tremithos catchment (8-4) is the largest catchment (171 km²) in the greater urban area of Larnaka. The Kiti dam was built along the Tremithos river in 1967, in order aid the recharge the Kiti-pervolia aquifer (see Chapter 3.3.2).

Map 3.3: Catchment areas of the greater urban area of Larnaka

The ‘Larnaka Salt Lakes’ catchment area takes up an area of approximately 100km². This includes four sub-catchments over the main path of the Kamares river (Map 3.4). These areas were traditionally used for agriculture, but with the growth of Larnaka and Aradippou there are considerably more impervious surfaces. Zone 1 and 4 have industrial zones, while zones 2 and 3 still have significant agricultural use, mixed with residential and industrial areas.

WDD References

8-1: Voroklini
8-2: Aradippou
8-3: Larnaka Salt Lakes
8-4: Tremithos

Source: Water Development Department (3), 2013
Map 3.4: Sub-catchments of the Kamares river

Sub-catchment references
1. Aradippou industrial zone
2. Rizoelia
3. Pelitiko
4. Kalo Chorio

Source: Municipality of Larnaka, 2012

The Water Development Department (as part of the implementation of the Floods Directive) has identified Areas of Potentially Significant Flood Risk (APSFRs). Both the rivers that run through Larnaka have been designated as an APSFR:

- CY-APSFR 10: Archangelos Kamitsis river
- CY-APSFR 11: Kamares river

As a continuation of the implementation of the Floods Directive, areas of flood risk will be identified through the publication of flood risk maps (WDD, 2012).
3.3.2 Groundwater Bodies

There are two main groundwater bodies surrounding in the greater Larnaka area. These are Kiti-Perivolia aquifer (phreatic) and the Aradippou gypsum aquifer (semi-confined).

Map 3.5: Hydrogeological map of Larnaka (greater urban area)

![Hydrogeological map of Larnaka](source.png)

Lower levels of recharge due to more impervious surfaces in urbanised areas, the building of dams, and the continued abstraction of water for irrigation have affected the quality of all aquifers in Cyprus. Both Kiti-Pervolia aquifer and Aradippou aquifer have been classified as highly vulnerable under the guidelines of the Water Framework Directive (WDD, 2012). Both are suffering significant saltwater intrusion from the sea, nitrate pollution from agriculture and contamination from sewerage water absorption pits. While the Municipality of the Larnaka does not cover a major aquifer there will be smaller isolated areas of groundwater which may suffer from pollution by the above mentioned sources.

The Kiti-Pervolia aquifer is used as a source of water for irrigation and for drinking water supply to the Water Board of Larnaka (see Chapter 2.2). It is estimated that there are around 330 extraction boreholes in the aquifer. Water is being used more quickly than it is being recharged resulting in saltwater intrusion in some coastal areas of the aquifer (Map 3.6).
It has been estimated that there is a shortfall of around 1.1 million m$^3$ per year in the aquifer. The southern conveyor network of water distribution has been used for artificial recharge of the aquifer. Levels of chlorine, nitrates and ammonia are also above recommended levels in some areas (see Environmental Appendix).
3.3.3 The Coastal Environment

The coastline of the Municipality of Larnaka lies in the southern portion of Larnaka bay, a coastline which stretches for 37km from Cape Kiti to Cape Pyla. The Municipality itself has a coastline of 12.5km, reflecting much of the environmental, social and economic wealth of the City. Therefore, there is great significance attached to the physical state of the coastline which is constantly undergoing changes from the action of the sea.

The process of coastal erosion

Coastal erosion is the process by which soil and rock are removed from the earth’s surface by sea water flow, and then transported to other locations. It is estimated that around 30% of the Cyprus coastline is in a state of erosion causing significant environmental, social and economic impacts. Excessive erosion causes problems such as ecological collapse due to loss of the nutrient rich upper soil layers, damage to the man-made structures that exist near the coast, and it leaves coastal areas more vulnerable to sea storms and rises in sea level.

The shoreline erosion in Cyprus and in Larnaka primarily occurs through the action of currents and waves. The sediment is transported along the coast in the direction of the prevailing current (longshore drift). In Larnaka bay this generally occurs in clockwise direction, from Cape Kiti to Dhekelia (see Map 3.7).

Map 3.7: Larnaka bay and the prominent direction of current (longshore drift)

We can separate the physical characteristics of the Municipal coastline into eight coastal areas (see Map 3.8). The following pages describe these areas in more detail.
Map 3.8: Coastal features of Municipality of Larnaka

Source: Adapted from Department of Town Planning, 2011 & Delft Hydraulics, 1992.
Area 1

The natural beach of Larnaka is gravelly as seen in the most northerly part of the Municipality. In this area there are no coastal protection works, and severe erosion has occurred along the coast of this area (see Image 3.1). Further south along the coast and into Area 2, we see the improvised groynes which have been built to protect the installations of the Fuel Terminal. As is often the case, erosion is seen to be more severe beyond these groynes as coastal engineering structures usually cause upstream accretion and downstream erosion according to the direction of the sediment transport.

In Area 1, over a total length of 750m up to the end municipality border, the coastline has retreated around 30m between the years 1963-2008.

Image 3.1: Area 1 & 2 (North)

Image 3.2 shows a petrol station and its seaside wall that used to be part of the land, while today it is the boundary wall to the sea and acting as a seawall). The improvised groynes of the Fuel
Terminal area can be seen in the background.

Image 3.2: Erosion of the gravelly beach in Area 1

Measures currently under study for coastal protection

The area of erosion in the north part of the Municipality of Larnaka (and coastline of Voroklini) was studied by the Laboratory of Harbour Works of the National Technical University of Athens (Design Contract No: PS/D/304 awarded in 2009 by the Public Works Department). The study proposes the construction of 5 breakwaters within the northern portion of the Municipal coast and 9 in Voroklini. The goal of the study was to prevent erosion and accumulate sediment to create a sandy beach, stabilising the coastline to coincide with the time period of relocating the Fuel Terminal (see Chapter 2 for more details).
Area 2

The 2.2km of coastline, north of the Port receded at the rate of 1m per year between 1957 and 1973 (Delft Hydraulics, 1992). A series of improvised revetments and groynes were constructed in order to stop the erosion that threatened fuel pipelines and storage areas. These constructions can be seen to have arrested most of the erosion and have succeeded in causing accretion of sediment since this time (see Image 3.3).

Image 3.3: Groynes & revetments of Area 2

In Area 2, the mouth of the Archangellos-Kamitsis river meets the sea (see Map 3.3). Although non-perennial, this river contributes to the accretion of this area of coastline through nourishment from river sediment. This is an important reason to preserve the original paths of the rivers in Larnaka.
Area 3 & 4

The famous Finikoudes sandy beach was formed after the construction of the Port and Marina which caused accretion upstream and erosion downstream (see Image 3.4). The creation of this, and other sandy beaches is in contrast to the natural gravelly beaches of Larnaka.

Image 3.4: The Marina (built in 1989) and the Port (built in 1973) which have caused the creation of Finikoudes beach updrift.

Source: Department of Public Works, 2013
Areas 5, 6 & 7

The Piale Pashia area (north of the fishing shelter) is characterised by the long sea wall that is protects the City from the wave action. Today, this area shows considerable erosion mainly due to the construction of the Fishing shelter. The Kastella sandy beach on the south side was created due to the accretion (upstream) caused by the fishing shelter.

Image 3.5: The fishing shelter which has caused the creation of Kastella beach downdrift (south) and erosion updrift (north)

Source: Department of Public Works, 2013
Area 8

A long gravelly beach covers the coastline of the salt lakes and the airport (5km in total). There is a spit south of the airport followed by the bay of the airport itself. The spit is extended towards the sea (accreted point) while the bay was a subject of accretion (1963-1993) but more recently has been subjected to erosion (1993-2008).

Image 3.6: The historic coastline development in the south borders of Municipality of Larnaka

Source: Department of Public Works, 2013
3.3.4 Sea Water Quality

**Sea water quality**

The Environment Service is responsible for monitoring bathing water quality in line with the Bathing Water Directive. The District of Larnaka has 27 recognised ‘Bathing Waters’ out of a total of 112 in Cyprus. All beaches in The District of Larnaka have met the required standard for *E.coli* and intestinal enterococci for the last 6 years (Environment Service, 2012). Additionally, the three main bathing waters in the Municipality of Larnaka (Mackenzie, Kastella and Finikoudes) are all designated as Blue Flag beaches (Blue Flag, 2013).

There are three coastal water bodies identified along Larnaka Bay for monitoring purposes:

- Larnaka West (CY19) is the coastal water body that extends from Cape Kiti to the beginning of the Port.
- Larnaka City (CY20) is the coastal water body that extends from the Port through to the Fuel Terminal, terminating at the boundary of the Municipality.
- Larnaka Bay Northeast (CY21) is the most northerly coastal water body that extends from beginning of the Voroklini coastline until Cape Pyla.

**Map 3.9: Coastal water bodies of Larnaka bay**

The three coastal water bodies of Larnaka bay have been classified in terms of their ecological status and chemical status by the department of Fisheries and Marine Research as ‘good’ (WDD, 2010).
Urban wastewater

The Sewerage and Drainage Board of Larnaka (SDBL) treat sewerage wastewater to produce tertiary treated wastewater which is mainly recycled for irrigation purposes in the local area of Larnaka (see Chapter 3.6.3). A small amount of this treated water is discharged into the sea, opposite the old refinery (winter months only).

In addition to discharges of tertiary treated wastewater to sea, there are known to be discharges of poorly treated sewerage, or raw sewerage from marine vessels. Such discharges are illegal and not permitted within coastal waters under current regulations (Marpol, 2013). Ships are required to have a waste treatment plant on board or a containment facility to be used in conjunction with Port facilities.

Brine discharge from desalination

As the process of desalinisation returns concentrated brine to the sea, the salinity of the discharge as well as potential presence of chemical additives and membrane cleaning agents, may harm the marine population in the area of the discharge.

As the Larnaka Desalinisation Plant discharge pipe is 1.5 km long and is 25m deep in the sea there is relatively low risk and indications are that dilution rates are good. The department of Fisheries and Marine research monitor the areas for damage to littoral Flora and Fauna. Additionally, the suction pipe is located 2km away from the discharge pipe to avoid any cross contamination.

Risk of eutrophication

Eutrophication is caused by excess nutrients such as nitrogen or phosphorus from anthropogenic sources entering coastal waters. Eutrophication will often cause algal blooms of phytoplankton which are clearly visible to people using coastal waters. Such events are a problem because they deplete the oxygen that other organisms need to survive. Additionally, some species of phytoplankton release harmful toxins. Potential point sources include: the aquaculture hatcheries of the Larnaka area, agricultural land near the coast, and the discharge point for tertiary treated wastewater in the Fuel Terminal area. Events are monitored by the department of Fisheries and Marine Research.

Marine ecosystem

There are no Marine Protected Areas in the bay of Larnaka, however there are meadows of Posidonia oceanica at depths between 5 and 42 metres (SBLA, 2013). This is an endemic species of the Mediterranean and is a priority species under the EU Habitat Directive (92/43/EEC). This is important because it supports wider biodiversity providing a suitable habitat for many other marine species.
The ancient vegetation type of the greater Larnaka area is that of Thermo-Mediterranean Carob-Oleaster forest cover. Today this habitat of Carob trees (*Carob oleaster*) and Olive trees (*Olea europea*) is rarely seen in its ‘wild’ form, although there are considerable cultivated areas (particularly Olive tree cultivations which cover approximately 25km$^2$ of the District of Larnaka). The land use picture in Larnaka reflects the agricultural heritage and urban development of the area.

In the greater Larnaka area, there are a total of 4 Natura conservation areas which are protected as either a Sites of Community Importance under the habitats directive (Rizoelia National Forest Park, Aradippou) or as a Special Protection Areas for Birds under the birds directive (Koshi, and Lake Voroklini). The Salt Lakes of Larnaka, which make up around 35% of the Municipality are designated both an SCI and an SPA. This report is largely concerned with describing the Salt Lakes which make up such a big part of the history and the future of Larnaka (see also chapter 5.4.1 onwards).

In addition to the salt lake area, the Municipality of Larnaka has approximately 155 local parks. These vary in size but are typically between around 500$m^2$ to 2000$m^3$. Most take the form of small residential parks which are provided for in planning legislation whereby 15% of land is generally set aside as ‘green’ municipal parkland. There are additionally a number of larger urban parks situated in the central areas of Larnaka and used by a wider range of the community. Although the number of local parks is significant there is little connectivity between them in terms of other green spaces or walking and cycling routes. These areas will be an important part of the sustainable future of Larnaka for developing an interconnected urban fabric, able to offer clean air, sustainable transport and higher quality of life.

### 3.4.1 The Salt Lakes

The Salt Lakes of Larnaka are designated as a Natura conservation area and take up a total area of 15.4 km$^2$ (1540 ha). The area qualifies as a Natura site by virtue of being a Special Protection Area for Birds (SPA) and additionally, a Site of Community Importance (SCI) for its habitats. Most of the salt lake area falls within the Municipality of Larnaka, with some other areas in the jurisdiction of Dromolaxia and Meneou. Of the 3,206 ha that make up the Municipality of Larnaka, 34.6% is taken up by the salt lakes.

#### Table 3.1: Area (ha) of the Salt Lakes

<table>
<thead>
<tr>
<th>Area</th>
<th>Lakes only (ha)</th>
<th>Natura 2000 Area: Lakes &amp; surrounding habitats (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Salt Lakes (Alyki)</td>
<td>470</td>
<td>1110</td>
</tr>
<tr>
<td>Southern Salt Lakes (Orfani, Soros, &amp; Spiros)</td>
<td>135</td>
<td>430</td>
</tr>
<tr>
<td>Total</td>
<td>605</td>
<td>1540</td>
</tr>
</tbody>
</table>

*Source: Municipality of Larnaka, 2011*

The Alyki lake in the north (sometimes called the ‘Great Lake’) is separated from the southern lakes of Orfani, Soros and Spyros by the site of Larnaka Airport (see Image 3.2). Alyki is the biggest lake and has a higher salinity than the others (it is the only ‘super salty’ lake in Cyprus). It is a vitally important migratory stopover for many species of birds and as well as being designated a Natura site, Alyki is also a Wetland of International Importance under the Ramsar Convention.
There are approximately 85 species of water birds that visit and inhabit the salt lakes every year, including Flamingos (Phoenicopterus roseus) which winter in their thousands each year (see figure 3.1). The Natura area borders with the urban area of the Municipality of Larnaka.
A history of the salt lakes

The low lying area of the lake use to be connected to the sea and in prehistoric times (around 1700 BC the western part of Alyki was in fact the site of a thriving port (LTB, 2013). Stone anchors have been excavated from the archaeological site where the port was located along from the Haka Sultan Tekke mosque (see section on Planning for a more details on Heritage). Over time, sediment accreted in the area between the lake and the sea, and the town was abandoned around 1050 BC as Alyki became land locked. Although the main lake has been separated from the sea since this time, the salinity is gained from the sea.
Salt mining has been a major part of the history of the salt lakes. It was the main reason for the creation of the pre-historic port and mining continued right up until the 1980's. The Venetians (1489-1571) even diverted the main path of the Kamares river into the sea in order to be able mine more salt. The Kamares river, which originally flowed only into the salt lake, still flows through the path into the sea that was created at this time (see Figure 3.24).

Map 3.11: The Salt Lakes of Larnaka in Venetian times

The recent history of the salt lake area has reflected competing land use pressures of modern times. Although designated as a Natura 2000 area, the area houses vital infrastructure including Larnaka airport, Larnaka sewerage treatment plant, and Larnaka desalination plant (see section 3.3).
3.4.2 The Habitats of the Salt Lakes

The natural climax vegetation of Larnaka’s coastlands is forest land of Carob trees (*Ceratonia siliqua*) and Olive trees (*Olea europaea*). However, because of the saline conditions at the salt lakes, the natural habitat here is characteristic of a unique halophytic ecosystem. Around the coastal lagoons and salt marshes that make up much of the salt lake conservation area we see Glassworts (*Salicornia spp.*), Shrubby Seablite (*Sueda vera*) and *Halocnemum strobilaceum* which make up a district halophyllous scrubland (Image 3.8)

*Image 3.8: Halophytic habitat of the salt lake area*

Forest areas of the salt lakes

Around the Alyki Lake, there are several important pockets of forest land, contributing to the ecosystem and acting as a buffer zone to the adjoining airport and urban area of Larnaka. Mainly these are plantations of Conifers (e.g. *Pinus spp.*, *Cupressus spp.*), and exotics such as Eucalyptus (*Eucalyptus spp.*) and Acacia (*Acacia spp.*). The forested areas maintained by the Department of Forests are as follows:

- Aerodromio forests A, B, C (see Image 3.9)
- Alyki forest
- Pattichion park
- Petraki Kyprianou park

*Image 3.9: Aerodromio forest*
All these forested areas serve an important function as a buffer zone for the protection of the salt lakes adding to the diversity of the area. The Aerodromio forests border the salt lakes with the main airport while Alyki borders the main urban area with the salt lake to the north. Additionally there is a dense forest behind the Hala Sultan Tekke Mosque. Many Orchid species can be found in these areas including the endemic Cyprus Bee Orchid (*Ophyrys kotschi*) which grows in very small numbers (MOA, 2011). This plant is listed in Appendix II of the Habitats directive and considered to be of special European importance.

Image 3.10: Cyprus Bee Orchid (*Ophyrys kotschi*)

A full list of important species of the salt lakes in accordance with the Habitats Directive is provided in Appendix 1.2. The different habitats of the salt lakes are shown in table 3.2 below:

Table 3.2: Habitats of the salt lakes

<table>
<thead>
<tr>
<th>Natura 2000 Code</th>
<th>Habitat*</th>
<th>% Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>N02</td>
<td>Coastal lagoons</td>
<td>37</td>
</tr>
<tr>
<td>N03</td>
<td>Salt marshes, steppes and pasture</td>
<td>23</td>
</tr>
<tr>
<td>N023</td>
<td>Other land (Incl. roads and ind. sites)</td>
<td>23</td>
</tr>
<tr>
<td>N15</td>
<td>Other arable land</td>
<td>12</td>
</tr>
<tr>
<td>N20</td>
<td>Artificial forest monoculture</td>
<td>3</td>
</tr>
<tr>
<td>NO5</td>
<td>Shingle, inlets</td>
<td>1</td>
</tr>
<tr>
<td>N09</td>
<td>Dry grassland, steppes</td>
<td>1</td>
</tr>
</tbody>
</table>

*There are some smaller areas of reed beds, phrygana and sand dunes

Source: Environment Service, 2012
3.4.3 Fauna

The site is an essential migratory passage for avifauna with 85 species of water birds present during the year (Birdlife International, 2013). Flamingos (*Phoenicopterus roseus*) who are also believed breeding in the salt lakes (Environment Service, 2012) are the most well known of these due to their high numbers and distinctive features. The site is also an important migratory stopover for the Black Winged Stilt (*Himantopus himantopus*) and the Western Snowy Plover (*Charadrius alexandrinus*). All the above mentioned birds are listed in Appendix I of the Birds Directive (see Appendix 1.2 for full list). Altogether there are 32 different species of Appendix I birds present in the salt lakes, and are therefore considered endangered or in need of special protection measures.

There are 19 recorded vertebrate fauna (reptiles and amphibians) including 3 different species of frog and there are 63 invertebrate fauna recorded of which 35 are endemic to Cyprus. This includes 8 land snails (see Appendix 1.2 for full list).

3.4.4 The cyclical nature of the salt lake ecosystem

As well as having a rich and interesting history that has changed over the centuries, the salt lake ecosystem too is always changing and adapting. We have already seen how the lake used to be connected to the sea and is now land locked for example. Seasonal variations also affect the salt lakes dramatically, but even when it looks barren in the summer time the lakes are continually active.

*Image 3.11: Alyki drying out in the summer time to leave a crust of salt*

Source: USUDS Larnaka, 2013

The salt lakes are inhabited by two species of shrimp which form the basis of the food chain. Brine Shrimp (*Artemis salina*) are the major food source for the thousands of wintering flamingos. As the lake empties in the summer due to evaporation it leaves a crust of salt (see Figure 3.29). In early summer the shrimps lay cysts which stay viable until the lake fills up again with water in the winter.

The ecology of the area is highly sensitive to fluctuations in the water balance. Recharge of the salt lakes is mostly from rainfall although some sea water recharge is also possible in Orfani. Minimum salinity must be maintained for Shrimps to hatch (and therefore they need freshwater input). Periods of drought and lower rainfall therefore represent one of the biggest threats to the salt
3.4.5 Land use in the Salt lakes

The development of Larnaka airport, sewerage treatment plant, desalination plant, building of roads, and construction of tourist developments have resulted in habitat loss, fragmentation, disruption of water cycle and invasion of foreign vegetation. The imprint of these developments is particularly stark when looking at aerial photography (Image 3.12).

Image 3.12: The Municipality of Larnaka and the Salt Lakes

In addition to the integration of infrastructure into the area there are also conflicting land uses in terms of conservation and amenities. While the area is protected for its habitats attracting birdwatchers and ecologists, it serves various functions as a park for walking, cycling, picnicking etc. A challenge for the sustainable Larnaka will be to re-invent the salt lakes, maximising
conservation in an undeniably urban context.

Image 3.13: Part of the E4 European path leading past the Mosque of Hala Sultan Tekke

Currently, there is a pedestrian pathway connected to the Airport, leading through the salt lakes, passing the mosque of Hala Sultan Tekke and the Kamares viaduct. This path is part of the European E4 pathway enabling a full walking route around Europe. Incoming passengers into Larnaka Airport have the option of walking out of the arrivals lounge, into the salt lakes and beyond.
3.5 AIR QUALITY

3.5.1 Air Pollution as a Human Health Risk

At present, Particulate Matter (PM’s) and Ozone are identified as Europe’s most problematic pollutants. In Cyprus, the existing data supports this as levels of SO\textsubscript{2}, NO\textsubscript{x}, CO are all significantly within EU target levels, whereas the levels of Ozone and Particulates are more concerning.

In Larnaka there are two monitoring stations (one traffic monitoring station and one residential monitoring station) where PM\textsubscript{10} and PM\textsubscript{2.5} are measured frequently. In 2010, there were 141 exceedences of the EU limit for PM\textsubscript{10} at the traffic site of Larnaka.

A major source of particulate pollution is from Sahara dust, however pollution from this source can usually be separated into events so that other sources can be monitored. PM pollution is of natural and man-made sources which include vehicle exhaust emissions, dust re-suspension, domestic heating, power generation, and sea spray.

Table 3.3: European Union limits for PM’s

<table>
<thead>
<tr>
<th>Type</th>
<th>24 Hr Mean</th>
<th>Annual Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM\textsubscript{10}</td>
<td>50 mcg/m\textsuperscript{3}</td>
<td>40 mcg/m\textsuperscript{3}</td>
</tr>
<tr>
<td>PM\textsubscript{2.5}</td>
<td>30 mcg/m\textsuperscript{3}</td>
<td>25 mcg/m\textsuperscript{3}</td>
</tr>
</tbody>
</table>

Source: Department of Labour Inspection

While local sources of PM’s are problematic in Larnaka and frequently cause the EU limits to be exceeded, the transboundary problem of Sahara dust increases recorded levels to enormous extremes. For example, an ‘average’ Sahara dust event can easily cause PM\textsubscript{10} levels reach over 250 mcg/m\textsuperscript{3} (see Appendix1.2). This has serious implications for human health, economic productivity, tourism and quality of life.

In addition to the above, the Municipality of Larnaka participates in the National Technical Committee for Air Quality and applies several mitigating measures that are included in the Municipality of Larnaka Air Quality Action Plan (SMAP, 2004). For example, the improvement of the municipal heavy duty vehicle fleet (rubbish trucks, diggers, etc), the mechanical (instead of manual) cleaning of non paved plots, the prohibition of truck traffic through the city center, and the evaluation and readjustment traffic light operation (SMAP, 2004).

3.5.2 Air Pollution Contributing To Climate Change

The global trend towards accountability for greenhouse gas emissions increases in significance year by year. The Municipality of Larnaka has available, a detailed inventory of carbon dioxide emissions thanks to two separate initiatives:

- Pact of Islands agreement
- Covenant of Mayors agreement

These two developments have led to the creation of a Sustainable Energy Action Plan (SEAP) which in the first instance identified the levels of carbon dioxide (CO\textsubscript{2}) emissions from within the Municipality. Total CO\textsubscript{2} emissions for the Municipality in the baseline year (2009) were 422
thousand tonnes in total. For the same year the International Energy Agency estimated that Cyprus emitted 7,460 tons in total. Therefore the Municipality accounts for approximately 6% of Cypriot carbon dioxide.

Transportation accounts for 42% of total CO\(_2\) from the Municipality (177 thousand tons). The SEAP has identified local measures (in addition to national measures) that can be implemented at Municipality level, including: the promotion of low CO\(_2\) emission cars, lower CO\(_2\) emissions from the Municipal fleet, upgrading of the Cycling network, promotion of a bicycle rental system, free parking for low CO\(_2\) emission cars (since 2007) and the creation of 5 electric vehicle charging points.

Figure 3.6: Carbon dioxide emissions of the Municipality of Larnaka (2009)

The residential sector accounts for around 24% of total carbon dioxide emissions. This, combined with the secondary (4%) and tertiary (29%) sectors make up the total emissions from non-transport sources (built environment). In all, these non-transport sources emitted 244 thousand tons of carbon dioxide in 2009 (211 thousand tons from electricity).

The SEAP has identified local measures (in addition to national measures) for the reduction of non-transport sources of CO\(_2\):

- Energy efficiency measures for public buildings
- Awareness raising campaigns for householders and for industry
- Tree planting in green spaces
- More efficient street lighting
- Investments in photovoltaic parks
The Municipality has budgeted 3.5 million Euros towards implementing measures until from the beginning of project to 2020.
3.5.3 Status of Renewable Energy Sources (RES)

The Renewable Energy Directive (2009/28/EC) has led to the creation of the National Renewable Energy Action Plan for Cyprus. This includes a 13% target for gross final consumption of energy from Renewable Energy Sources (RES) by 2020. In 2011 this was figure was approximately 6% with by far the biggest contribution from solar thermal energy sources (Ministry of Commerce, Industry and Tourism, 2012). Cyprus is one of the world leaders in the production of energy from solar thermal sources per capita.

Table 3.4: Final consumption of Energy from RES

<table>
<thead>
<tr>
<th>Position</th>
<th>Renewable Energy Source</th>
<th>Tonnes of oil equivalent (toe)</th>
<th>% of Total RES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Solar thermal</td>
<td>62,991</td>
<td>56%</td>
</tr>
<tr>
<td>2</td>
<td>Biomass (not including Biomass for electricity)</td>
<td>17,985</td>
<td>16%</td>
</tr>
<tr>
<td>3</td>
<td>Biofuels / Βιοκαύσιμα</td>
<td>16,012</td>
<td>14%</td>
</tr>
<tr>
<td>4</td>
<td>Electricity from wind</td>
<td>9,831</td>
<td>9%</td>
</tr>
<tr>
<td>5</td>
<td>Electricity from biomass</td>
<td>4,438</td>
<td>4%</td>
</tr>
<tr>
<td>6</td>
<td>Geothermal</td>
<td>1,045</td>
<td>1%</td>
</tr>
<tr>
<td>7</td>
<td>Electricity from photovoltaics</td>
<td>1,027</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Final Consumption of RES</strong></td>
<td><strong>113,329</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>


Electricity consumption from wind, photovoltaics and biomass is only 14% of the total energy consumption from RES. Despite their being many more small photovoltaic installations in Cyprus, it is wind farms that deliver the biggest proportion of electricity from RES. There are currently five wind farms linked to the national electricity grid, of which three are in Larnaka: Santa Anna (20MW), Alexigros (31.5MW), Koshi (10.8MW).

Table 3.5: RES linked to the national electricity grid

<table>
<thead>
<tr>
<th>District</th>
<th>Wind</th>
<th>Photovoltaics</th>
<th>Photovoltaics (Public Buildings)</th>
<th>Biomass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicosia</td>
<td>1</td>
<td>327</td>
<td>16</td>
<td>5</td>
</tr>
<tr>
<td>Limassol</td>
<td>0</td>
<td>190</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Larnaka</td>
<td>3</td>
<td>233</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Paphos</td>
<td>1</td>
<td>117</td>
<td>14</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Electricity Authority of Cyprus, 2012
3.6 WASTE MANAGEMENT

3.6.1 Municipal Solid Waste

The Municipality of Larnaka produces approximately 36.5 thousand tonnes of Municipal Solid Waste (MSW) every year which equates to around 710kg per person (approximately 10% above the European average).

Table 3.6: Municipal Solid Waste from Municipality of Larnaka (2011)

<table>
<thead>
<tr>
<th>Type of Municipal Waste</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal Waste Collection</td>
<td>31,284,810</td>
</tr>
<tr>
<td>Green Dot Recycled Material</td>
<td>2,308,444</td>
</tr>
<tr>
<td>Bulky Waste (Estimate)</td>
<td>1,500,000</td>
</tr>
<tr>
<td>Green Waste (Estimate)</td>
<td>1,500,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36,593,254</strong></td>
</tr>
</tbody>
</table>

*Waste per Capita (kg) 710

Source: Municipality of Larnaka, 2012

Approximately 7% of MSW is recycled at source (Glass, PMD and Paper) with a recycling service being operated in the Municipality since only 2010. The remaining amount of MSW is transferred to a modern waste treatment plant in Koshi where there is a high tech system of mechanical sorting which further recovers recyclable material. There is no organised composting at source at the present time.

Larnaka is one of the few areas in Cyprus where seaweed is washed up on the beach in huge quantities. From November to May, approximately 2000 loads of seaweed, of 16-17 m³ each, are collected from the coastline of Finikoudes to Spyros Beach. That is 32,000-34,000 m³ of seaweed annually. If the loads are wet their weight comes up to 16,000 tons and if they are relatively dry then their weight comes up to 13,000-14,000 tons. For the time being the seaweed is disposed along with green waste but other options regarding their exploitation and management are also under consideration.
The Landfill site at Koshi complies with the Landfill directive up to the required, modern engineered standards. If plans materialise to produce Secondary Recovered Fuel on a large scale from the plant, this will significantly reduce the current landfill rate of 36%.

### 3.6.2 Industrial Waste

Industrial waste is produced in Larnaka from food processing, chemical industries, metal industries as well as various light industrial processes. Industrial wastewater is either treated on-site, left untreated, or taken to a central treatment facility by tanker. In addition to the two industrial zones in the Municipality of Larnaka, industrial effluent must be controlled and monitored from the desalination plant (brine disposal), and aquaculture hatcheries (eutrophication).

The Fuel Terminal in the north of the Municipality operates only for oil storage purposes having ceased to operate as a refinery since 2004. The area of the refineries still house storage capacity for petroleum products. In total the Fuel Terminal area holds around 300,000 million tonnes of petroleum products. Therefore, the major hydrocarbon pollution hazards are that of stormwater run-off and spillages, as well as the obvious risks of the location of the tanks in an urban area in case of accident, natural or man-made disaster (see Chapter 5, Figure 5.9).
3.6.3 Urban Wastewater

A summary of the fate of urban wastewater in Larnaka is shown in Table 3.7. Tertiary treated wastewater used for irrigation or for discharge into the sea, are governed by their respective permits which control the quality of the water that can be used for these purposes. Appendix 1.2 shows the parameters that must be met for water used for irrigation. Standards for water released into the sea must comply with more stringent zinc and chlorination standards, than that used for irrigation.

Table 3.7: Tertiary treated wastewater disposed of at sea

<table>
<thead>
<tr>
<th>Type of Wastewater</th>
<th>2010 (m³)</th>
<th>2011 (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming sewerage</td>
<td>3,059,135</td>
<td>2,969,896</td>
</tr>
<tr>
<td>Treated wastewater used for irrigation</td>
<td>2,021,626</td>
<td>2,198,119</td>
</tr>
<tr>
<td>Treated wastewater discharged to the sea</td>
<td>287,847</td>
<td>382,750</td>
</tr>
<tr>
<td>Residual sewerage sludge</td>
<td>5,820</td>
<td>3,820</td>
</tr>
</tbody>
</table>

Source: Sewerage and Drainage Board of Larnaka, 2012

3.6.4 Remediation of uncontrolled disposal areas

The Larnaka-Famagusta region has 16 old landfill sites under investigation for their safety and essential remediation. There are no recorded sites within the Municipality of Larnaka. The sites in the greater Larnaka area are listed in Table 3.8.

Table 3.8: Uncontrolled disposal sites in the greater urban area of Larnaka

<table>
<thead>
<tr>
<th>Landfill</th>
<th>Years of Operation</th>
<th>Volume (m³)</th>
<th>Risk Category Rating#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tersefanou</td>
<td>1978-2010</td>
<td>1,662,650</td>
<td>C</td>
</tr>
<tr>
<td>Dromolaxia</td>
<td>1975-2009</td>
<td>600,000</td>
<td>C</td>
</tr>
<tr>
<td>Avdhellero</td>
<td>1985-2010</td>
<td>55,000</td>
<td>B</td>
</tr>
<tr>
<td>Voroklini</td>
<td>1978-2004</td>
<td>76,000</td>
<td>B</td>
</tr>
<tr>
<td>Kellia</td>
<td>1995-2010</td>
<td>148,000</td>
<td>B</td>
</tr>
</tbody>
</table>

# General risk rating given from initial investigations A – Low Risk, B – Intermediate, C – High Risk (Enviropian, 2010)

Source: Ministry of Interior, 2012

These uncontrolled disposal areas were operated in the course of their life cycle without particular controls. Therefore these sites pose a somewhat unknown amount of risk in terms of soil contamination, surface water and groundwater contamination from leachate, as well as methane production as a component of landfill gas. At present there is work being undertaken to assess the state of these sites, and put in place a reclamation program. Landfill gas will be monitored as part of this process and energy from waste possibilities will be explored if practical in the future.
3.7 EVALUATION AND CONCLUSIONS

3.7.1 SWOT analysis for Geomorphology and Climate

3.7.1.1 Strengths

The Municipality of Larnaka has 12.7km of coastline, while the whole of Larnaka bay from Cape Kiti to Cape Pyla is around 37km. The ecological value, heritage value and economic value is closely related with this extensive shoreline. The island’s main airport and other infrastructure, commercial centers, fuel storage facilities, the Port, government offices, hotels and accommodation, bathing waters and beaches, all line the coast of Larnaka.

These features have been located along the coast because of the practical availability of water of the aesthetic attractiveness of the sea. In the case of Larnaka this has been an advantage in the development of a tourist product, and a successful airport, but a weakness in terms of a developing conflicting land uses which now sandwich the Municipality to the north and south.

As Larnaka is mainly a flat area, land uses are flexible as projects are not restricted by difficult access. Walking and cycling is made both more achievable by users and it is easier to construct routes. The same is true for road transport with little cut and fill required for construction. Therefore sustainable transport systems in the future have a significant opportunity for smoother implementation (see opportunities below).

In terms of other infrastructure, the topography of Larnaka is beneficial in terms of water distribution as this can be carried only using gravity as the water reservoir tanks are kept at a high point (Tersefanou drinking water plant). Conversely, the stormwater network from roads infrastructure is more expensive as larger conduits must be used to transfer water effectively down the shallow gradient, and pumping is necessary.

The low lying topography has in fact advantages as it has created wetlands of international importance. Without this topography it would not be possible to have a wetland such as the Salt Lakes. The favourable topography also makes the salt lakes more accessible making them more vulnerable as they are in close proximity to the urban center and attractive for other commercial, residential or industrial uses.

Agricultural land is also under pressure and undergoing changes across the Larnaka area. The urban growth of Larnaka and reliance on imported food has made this less of a strength of Larnaka in recent years, however current pressures may see increased opportunities in the future. Higher demand for locally sourced food is already encouraging more small scale urban production for example.

Larnaka’s flat topography in general helps crop production as it has fertile alluvial soils, it is easier to irrigate, does not suffer from water erosion as is the case on slopes. Conversely, groundwater that has been used to irrigate crops near the coast of Larnaka has been subject to saline intrusion making the water unusable. In general, saline intrusion will be more likely in flat areas as the water table is lower.

The climate of Larnaka is favourable to tourists who seek clear skies and warm conditions. With 300 days of sunshine per year they are not usually disappointed. This climate together with the coastal topography, have been a major factor of the growth of the tourism sector.
3.7.1.2 Weaknesses

While conditions in Larnaka (favourable climate and accessible areas) facilitate a high quality of life, the flat topography is generally less aesthetically pleasing than an undulating or mountainous landscape. The hot climate means that temperatures in excess of 40°C at the height of the summer may also be a weakness as it is too hot for many activities and can reduce general quality of life during those times.

3.7.1.3 Opportunities

Larnaka has the potential to brand itself as a green city, attractive to visitors and residents and way different to other towns in Cyprus. The coastal area could be more accessible using sustainable transport operating up and down the coast. New walking and cycling routes can be more easily planned and constructed because of the flat topography. The industrial installations to the north are the obvious barrier to this, along with the airport to the south. However, this also presents an opportunity to develop an effective ‘circular’ system of sustainable transport.

Larnaka as a vulnerable area to the effects of climate change can be an area where pilot projects for adaptation and mitigation are carried out. Similarly, Larnaka would be well suited as a regional center for climate change research and education. Vulnerable locations in other countries have developed institutions which provide best practice and expertise in this subject area. For example, the Climatic Research Unit of the UK is a leading global authority and is based at the University of East Anglia, the lowest lying area of the UK. Institutions in the Netherlands are the leaders in developing coastal protection structures from sea walls, due to the need to protect the lowest lying country in Europe.

Larnaka as a city with over 300 days of sunlight a year should benefit from the expected growth of photovoltaic energy systems. Since these photovoltaic systems are now economically viable there could be a huge growth in the island’s industry and Larnaka could place itself to take advantage of the opportunities in the infrastructure that will be needed such as installers, training facilities, events and seminars. The growth in the renewable sector should be coupled with the establishment of a new green economy in Larnaka potentially creating high numbers of new jobs.

3.7.1.4 Threats

Larnaka is a vulnerable area to the effects of climate change and as a low lying area is at most risk in Cyprus from the potential effects of sea flooding from storm surges. While sea level rise is not thought to constitute a major immediate threat to the area, an unpredictable and more extreme climate presents more risk of storm surges especially in eroded stretches of coastline. Given that almost 50% of the Municipality is below 4m and that most of the economic wealth is based in the area, then this constitutes a significant risk.

Cyprus faces considerable risk of desertification in general, and Larnaka as one of the hottest and driest areas of the island, is particularly vulnerable. Groundwater abstraction, dam building and impervious urban landscape speed up the process of desertification. Implementation and development of eco-tourism plan and ecologically sensitive farming that promotes planting of native species and groundwater recharge are examples of mitigating measures and opportunities. However, there is a threat that immediate economic needs may override this kind of long term thinking. Incentives for higher building coefficients in tourist zones could increase the environmental impact of such developments.

Increased storm intensity will increase the risk of urban flooding with both rivers in Larnaka considered as an Urban Flood Risk. Extremes in weather also reduce quality of life for inhabitants and tourists alike. Although the stormwater system is now upgraded, there is a need for a pilot
study to apply Sustainable Urban Drainage Systems (SUDS) in Larnaka (see section on water).
3.7.2 SWOT analysis of the Water Bodies of Larnaka

3.7.2.1 Strengths

There is a huge wealth of natural water bodies in Larnaka with rivers, groundwater resources, an internationally recognised wetland, and 12.7 km of coastline.

The Rivers of the Municipality cover a relatively small catchment area and as a result have not been the subject of dam building and still follow their original path. This is beneficial for the recharge of groundwater, replenishment of sediment where the rivers meet the sea. This is also an advantage in terms of conservation of the riparian areas of which there are many benefits including ecological wealth and quality of life for inhabitants. For example, the river catchment area of the salt lakes fully supports the biodiversity of this ecosystem. Riparian areas are under pressure from the developing urban areas, exacerbated by the non-perennial nature of the rivers.

Groundwater provides a useful resource for drinking water and irrigation. However, both quantity and quality of groundwater have declined. However, groundwater both in Kiti-Pervolia and Aradippou aquifers is seen to have both saline intrusion as well as high concentrations of nitrate.

The expanse of coastline creates huge benefits in terms of potential development of the city. The construction of the Marina/Port and the Fishing Shelter have resulted in the creation of two wide sandy beaches (Finikoudes and Kastella respectively). These beaches are regarded a great asset for an area in which the beach was historically gravelly. However, this has been a weakness in terms of coastal erosion that must be remedied with expensive engineering solutions needing to be continually monitoring and updated. Future engineering works are in place in the north of the Municipality, which will help realise the potential of this area for purposes other than industry.

The sewerage system prevents pollution of surface and groundwater through centralised collection and treatment. The sewerage treatment plant (which is being upgraded) produces tertiary treated wastewater which is largely used for irrigation. As the quality of this water increases, so it can be used for a wider range of purposes (e.g. groundwater recharge).

Desalinated water now provides a large proportion of drinking water, servicing increasing demand and taking pressure off groundwater as a supply source. Currently, a major disadvantage of desalination is the high energy demand which is met primarily through electricity from fossil fuels. Technological advancement in the future could make solar powered production of desalinated water a reality (see opportunities).
3.7.2.2 Weaknesses

The low rainfall of Larnaka has created stress on all types of water body. Both local aquifers are seen to have both saline intrusion as well as high concentrations of nitrate. The non-perennial nature of the rivers makes them more vulnerable to development, as encroachment into riparian areas is more likely.

The water recharge of the salt lakes is mainly through rainfall. The water balance of the salt lakes is very important for the ecology of the area. Therefore, any changes that are made to the water balance can have a big impact on the lake. Any new management plan for the salt lake should account for these factors as fully as possible. The freshwater flow and the salinity of the water must be fully understood, modelled and monitored, and to maximise the health of the lake and to minimise any future environmental impact in the future (see the Chapter 3).

The construction of the Marina/Port and the Fishing Shelter have resulted in erosion in their downdrift areas. This will be reversed by the proposed construction of the 5 breakwaters north of the Port and the Coastal Protection works as part of the Piale Pasia regeneration. Coastal erosion is a problem that must be remedied with expensive engineering solutions needing to be continually monitoring and updated.

The stormwater control system prevents flooding by collection in the road network and diverting it straight out to sea. The stormwater system will mean that less stormwater is dealt with in the natural rivers, having a negative impact on the salt lakes freshwater recharge. Additionally, this means that groundwater recharge is not optimised and contamination by saline water and other sources is more likely due to depletion. As urbanisation continues and creates more and more impervious surfaces this problem is likely to increase.
3.7.2.3 Opportunities

Preservation of original river paths, riparian areas, groundwater resources, and the coastline increase the quality of life and safety of city dwellers, and make for a sustainable future. To fully include these kinds of commitments in a sustainable development strategy can directly benefit the image of the city and create a place of interest where people want to live and work (and a place where investors will invest).

The need for water recycling systems both for stormwater use and domestic use is evident. Sustainable uses of stormwater, from the point of reception to the point of discharge and infiltration, can be used more frequently (e.g. green roofs, cisterns and vegetated swales etc). Existing absorption pits can be used for slower stormwater infiltration and the need for other sustainable urban drainage systems (SUDS) can be incorporated into overall development, infrastructure projects and landscaping. SUDS could be incorporated into projects relating to the salt lakes and the Kamares River, in order to complement the freshwater recharge of the salt lake. Additionally, such measures could be incorporated into planning legislation (for example, an impervious surface co-efficient).

Improved technology that yields better quality tertiary treated wastewater will expand the options for re-use. For example, treated sewerage water is already being used in some countries to recharge groundwater.

Solar powered desalination will remove the major barrier of a process which currently has a huge energy demand met from fossil fuels. The production of desalinated water, while creating huge benefits should not undermine the need to preserve natural water bodies.

The sustainability of Larnaka relies on a healthy coastline. Given that almost 50% of the coastline is below 4m then coastal erosion presents a significant risk. It jeopardises man-made structures, nutrient rich upper soil layers, and it leaves coastal areas more vulnerable to sea storms and rises in sea level. Larnaka as a low lying area is at most risk in Cyprus from the effects of sea flooding from storm surges. Additionally, an earthquake in the Mediterranean Sea close to Cyprus could trigger a tsunami reaching the in a very short time. This would give very little time for evacuation of coastal areas such as Larnaka.

3.7.2.4 Threats

There is increasing pressure on the natural water bodies of Larnaka created through groundwater abstraction for irrigation, expansion of impervious surfaces in urban areas, weak protection of original river paths, and steadily declining levels of rainfall. Riparian areas are under pressure from the developing urban areas, exacerbated by the non-perennial nature of the rivers.

Larnaka will inevitably undergo another strong development cycle in the future. There is a risk that the original water paths are not respected, coastal management is not implemented, and the reliance on solar powered desalinated water undermines the protection of groundwater. The sustainability of natural water bodies will require robust governance in a future strategy.
3.7.3 SWOT analysis for Biodiversity

3.7.3.1 Strengths

The salt lake area takes up 1110 ha of the Municipality of Larnaka, which represents around 35% of the municipal land area. The salt lakes are also extremely accessible having a long direct border with the urban area of Larnaka. Amenity value and ultimately quality of life for inhabitants and visitors is generally higher because of these factors.

The salt lakes are valuable ecologically because they have a rare ecosystem that has developed from localised saline conditions. These conditions attract site specific vegetation and thousands of wintering birds. The many designations as a European and international conservation site reflect the importance of the area. This attracts visitors locally and internationally, encourages investment in conservation, but also reflects the values of the host city and country. A reputation for good stewardship of special environmental features should benefit all aspects of a sustainable city. The ecological value together with landscape features of the salt lake are a signature of Larnaka and the conservation of such a resource can reflect the health and intentions of the city at large.

3.7.3.2 Weaknesses

The size of the area is an ecological strength as this encourages biodiversity, but the fragmentation of the area reduces it. However, an ecologically diverse area in close proximity to an urban areas, can also be seen as undesirable because of pests such as snakes and mosquitoes.

The size and accessibility of the area are also weaknesses in terms of land use conflicts, attracting interest for more urban development, infrastructure and tourism projects. This has led to different strands of development without a coherent policy direction.

Despite the large size of the salt lakes their natural state are in fact divided by the construction of the Airport. This land take separates an otherwise connected series of lakes which inevitably has caused habitat loss and fragmentation. There are also many impacts of the airport itself from noise, traffic, direct mortality such as bird strike, and air and water pollution.

The sewerage treatment plant and desalination plant also have a mostly negative ecological impact, although this can be unclear sometimes. For example, the tertiary treated water storage ponds in southern area of the salt lake attract a huge amount of birdlife.

Designated areas of conservation may be seen as a disadvantage in terms of urban development as it affords protection of an area that may otherwise be suitable for residential, commercial or industrial projects. They may also restrict amenity value in terms of freedom of access to certain sensitive areas, and the type of activity that may be appropriate. It is unclear in the salt lakes as to which areas may or may not be appropriate for walking, driving, cycling, bird watching, eating. Additionally, the prohibition of activities such as hunting, making fires, kite surfing may be unclear. This lack of clarity not only lowers the value in terms of usability but encourages degradation of the salt lakes through pollution, waste dumping and habitat loss.

3.7.3.3 Opportunities

Building awareness of biodiversity will be an important part of a sustainable Larnaka with a green economy. The salt lakes should represent the values of sustainable Larnaka connecting a unique ecological feature with a thriving urban area. The proximity and accessibility of this natural resource creates a major opportunity for Larnaka to select projects with positive community...
engagement which support a green city brand raising the quality of life in Larnaka.

Existing monitoring of the species and habitats of the area could become better known to the public with the opening of the new environmental education center. The wetland as an attraction for visitors to the island and ecological amenity value should be understood, and the seasonal cycles must be reflected in the use of the area.

Awareness raising, engagement with the community and eco-tourism could be enhanced further with measures such as the creation of a botanical gardens in which to promote and protect the endemic species of both the salt lake and the island. This would complement the planned environmental education center, raise awareness of the ecological heritage of Larnaka and the environmental challenges facing us in the 21st century. This may also provide an effective buffer zone to the more ecologically sensitive areas of the lakes, as well as providing opportunities for the growth in the green economy.

The unique wetlands have opportunities for economic and social benefit if environmental concerns are also met. The three goals of sustainability must be seen as complimentary. For example, institutions such as the airport, sewerage plant and desalination plant could offset some of their impacts through sponsoring projects and activities such (e.g. tree planting programs) and other conservation efforts. There is a need to build a modern and comprehensive working model of conservation in an ecologically valuable area that must embrace a future with layered, but sustainable land use.

Although this diagnostic report has focused on the opportunities and threats associated with the salt lakes, this theme is central to the development of the city rather than a separate measure. The common trend for the future of our sustainable cities will see people want to re-connect with natural physical elements such as conservation areas.

There is real opportunity in Larnaka to create a walkable, connected conservation area that is protected and monitored. This connection would not only be with the urban space but also to have those elements in the urban ecosystem as well. The salt lake area, rather than increasingly fragmented and areas lost, should be expanded and reconnected. Habitats in the urban environment can attract butterflies. The conservation of riparian areas and protection of all existing river paths. Green spaces can promote native species of plants. Botanical gardens can increase amenity value at the same time as increasing people’s awareness of environmental heritage and the legacy for future generations.

However, the salt lakes could represent the values of sustainable Larnaka connecting a unique ecological feature with a thriving urban area. The proximity and accessibility of this natural resource creates a major opportunity for Larnaka to select projects with positive community engagement which support a green city brand, ultimately raising the quality of life in Larnaka.

The unique environmental features of the salt lake area must be promoted and protected. Measures should be taken to complement the planned environmental education center and raise awareness of the ecological heritage of Larnaka and the environmental challenges facing us in the 21st century. Habitat corridors to the salt lake area could be re-connected to the north and south, and ways should be explored to connect the salt lakes with walkable ecological corridors into the city. These connections with the city could incorporate urban green areas and could physically create an urban eco-system.

Complementary projects could also be incorporated in the surrounding area of the salt lakes creating a buffer zone to ecological sensitive areas while contributing to a green city. Such projects could include, the creation of pilot projects to create an eco-Districts in surrounding neighbourhoods and the creation of a botanical gardens on the outskirts of the area to promote endemic and native species of the local area and of Cyprus.
The salt lakes are located close to the urban center of Larnaka making them more vulnerable to man-made activities. For example, as infrastructure needs continue to be met through the Natura zone this could set a dangerous precedent for continued expansion of such facilities. The close proximity of the salt lakes to various industrial activities is a threat in terms of air and water pollution, waste and noise, and habitat loss. However, it is also an opportunity in terms of the balancing conflicting interests by a layered approach to sustainable development. Modern land use patterns show a layered structure rather than a traditional use of zones. The pressures on the salt lakes from a changing climate also present opportunities for environmental education, research and monitoring.

The delicate balance of freshwater recharge means that climate change which will create more weather extremes threaten the delicate balance of the salt lakes wetland ecology. There are opportunities to combine many of the needs of Larnaka through Sustainable Urban Drainage Systems. This would help flood control, recharge groundwater, preserve the integrity of soil and support a vegetated habitat. It could also be done in order to treat run-off from potential sites of pollution.

Fragmentation and habitat loss of the salt lake due to the developments mentioned above threaten its very survival as an ecosystem. Climate change and fluctuations in the water balance of the lakes add to an uncertain future.

As the uses of the salt lake are often not clearly defined in terms of amenity, conservation and education. Planning guidelines have the opportunity to incorporate these accepted uses through green tourism developments in the areas close to the salt lakes. Certain areas could be targeted to benefit from growth of eco-tourism. However, economic pressures to create tourist developments quickly and cheaply may not complement biodiversity and sustainable tourism.
3.7.4 SWOT analysis for Air Quality

3.7.4.1 Strengths

There are many important pieces of infrastructure in Larnaka but there is little heavy industry. Although particulate matter has been identified as a problem for Larnaka, other air quality parameters are below the target EU threshold.

3.7.4.2 Weaknesses

There are many negative health risks associated with exposure to particulates. Cities with higher levels of particulates also have higher mortality rates. There is an increased incidence of lung disease and heart disease, and special populations such as the elderly and the very young have been shown to be significantly vulnerable.

Sources of particulates can difficult to identify as both PM10’s and PM2.5’s are known to have a number of sources. The SMAP project undertaken by the Municipality of Larnaka identified important point sources in the urban area such as petrol stations, the industrial areas, the Airport and the Port. Traffic is also a major contributing factor making mitigating measures intrinsically linked with sustainable transport measures (see opportunities, below).

Sources of particulate matter are made more difficult to control as a major source in Larnaka is transboundary. Sahara dust can elevate levels up to forty times the target level set by the European Union. This not only has a detrimental effect on human health, but presents a wider problem to sustainable Larnaka (see threats below).

The development of Larnaka city center has created areas with poor ventilation paths. Those areas with smaller air exchange are more likely to have poor air quality.

3.7.4.3 Opportunities

The opportunities for the future are related to sustainable and clean transport as well as the planting of appropriate trees and vegetation to mitigate the effects of particulates. The development of more pedestrianised areas as well as a studying ways to utilise predominate wind directions and passive ventilation would both be measures that would help reduce the impact of particulates.

Opportunities relating to carbon dioxide pollution revolve around the creation of Larnaka’s green economy where renewable energy sources appear to have the great potential for expansion. Larnaka already shows a favourable tendency towards renewable energy sources. Incentive schemes to base training organisations and other essential infrastructure for the sector could be fully explored.

The municipality of Larnaka has made great strides in its commitment to reducing greenhouse gas emissions through participation in various European initiatives. A range of opportunities present themselves when looking towards a carbon free future to create neighbourhoods with zero emissions, zero waste and off grid electricity. Successful cities will be ones that are flexible and can handle changing situations. Larnaka can differentiate itself from other cities in Cyprus by not only being a city for the wealthy, but by creating smart low carbon neighbourhoods for the community. This will attract the young people of the country who currently have little incentive to work and live in Cyprus. Larnaka must develop a flexible, modern, and dynamic edge. Potential neighbourhoods should be identified to build a pilot eco-District, using self contained wind turbines.
photovoltaics, and other renewable energy sources.

3.7.4.4 Threats

Sahara dust events present a significant threat to Larnaka in terms of environmental, social and economic impact. The economy can be less productive as mobility of people and the workforce is reduced, the ability to carry out certain outdoor jobs, and tourism is threatened as visitors become aware of the uncomfortable conditions.

In uncertain economic times it is difficult for any investment in development to be turned away. The need for jobs can often outweigh any other need. However, this can threaten an otherwise sound sustainable development strategy that needs a change in the urban landscape. In the case of air quality this means more vegetated areas and a totally sustainable transport system. The threat of short-term development must be substituted for sustainable development.
3.7.6 SWOT analysis for Waste Management

3.7.6.1 Strengths

The Mechanical Biological Treatment (MBT) plant at Koshi delivers modern treatment technology and recycles a high proportion of material. The quality of recycled material and the variety of uses can be increased in the future. Waste that goes to landfill from the MBT plant is disposed of in a modern sanitary landfill which minimises the effects of landfiling waste.

The recycling of municipal waste has been taking place since 2010 in Larnaka, therefore it is a recent practise which take time to establish itself further. The fact that it exists and provides a starting point for improvement is strength.

3.7.6.2 Weaknesses

Unregulated disposal areas operated in a previous era present risks of soil contamination, surface and ground water contamination through leachate, explosive risk and climate change burden through landfill gas production.

The presence of the MBT plant, while being a state of the art facility, also creates extra cost in processing waste which are passed on to the consumer.

3.7.6.3 Opportunities

Recycling at source creates opportunities for cost reduction, a smaller ecological burden, and a wider variety of recycling and re-use opportunities. The future of waste will revolve around waste as a resource and not as a cost. Innovations specific to Larnaka could be created such as developing a way to use the large amount of seaweed collected every year from the coastline as a fertiliser.

There are future plans in place to develop a plant to create secondary recovered fuel from composted material and packaging waste. Energy from waste plant to use such a product would further decrease the ecological burden on landfill, although there are the obvious health concerns of local residents involved in such a scheme.

3.7.6.4 Threats

Uncontrolled disposal sites create a problem for our generation to manage as well as future generations. Higher proportions of landfilled material today exacerbate this problem creating a more dangerous problem for future generations in terms of land use, methane production and water contamination.

The presence of the MBT plant can also create complacency whereby citizens assume the job of recycling is done for them. This is a threat to the benefits of recycling at source mentioned in 3.7.6.3. The expense of an MBT plant also creates pressure to run the facility at capacity (again creating difficulties for recycling at source).
4.1 INTRODUCTION

The following diagnostic report was prepared by the Department of Research and Development at PA College in Larnaka, Cyprus. The aim of this report is to identify the socioeconomic Strengths, Weaknesses, Opportunities and Threats (SWOT) that characterise the town of Larnaka as a means of assisting local policy makers in their task. This report is the product of two presentations that were conducted on the 26th of March 2013 under the USUDS workshop project.

Ms. Constantina Constantinidou, one of the Larnaka USUDS co-ordinators, presented socio-economic data on the local economy, labour market, economic sectors, tourism, accommodation and athletic tourism. The data was derived from the statistical service of Cyprus, Eurostat and the Cyprus Tourism Association.

Dr. Constantinos Charalambous, head of the Department of Research and Development at PA College in Larnaka, presented the results of the shift and share analysis model with data derived from the statistical service of Cyprus.

The results from both presentations and the discussion which followed, (available as a recording), were used to conduct a SWOT analysis for the town of Larnaka. This report is comprised of six parts: the introduction and methodology used in data analysis, identification of strengths, identification of weaknesses, identification of opportunities, identification of threats and finally the conclusion.

4.1.1 Methodology Used

In order to facilitate discussion and identify the economic positioning of the town of Larnaka, two approaches were used. Firstly, all data was presented in the form of frequencies as well as pie charts for visual comparison between the characteristics of the town of Larnaka as these compare to the national data. The data spanned over a period of ten years using standardized figures from 2001-2010. Presentation of the data was divided into six sections.

The first section presented data on the local economy and more specifically national Gross Domestic Product (GDP) and number of businesses operating nationally and locally in all 21 sectors as these are identified from the Statistical Service of Cyprus. The economic sectors are the following:

<table>
<thead>
<tr>
<th>Economic Sector</th>
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<tbody>
<tr>
<td>A    Agriculture, Forestry and Fishing</td>
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<tr>
<td>B    Mining and Quarrying</td>
</tr>
<tr>
<td>C    Manufacturing</td>
</tr>
<tr>
<td>D    Electricity, Gas, Steam and Air Conditioning Supply</td>
</tr>
<tr>
<td>E    Water Supply, Sewerage, Waste Management</td>
</tr>
<tr>
<td>F    Construction</td>
</tr>
</tbody>
</table>
In the second section, data on the labour market was presented. More specifically, the number of employed labour and the unemployment rate were explored. The third section presented data on trade, construction and manufacturing, three important sectors which constitute a major proportion of the national GDP. Tourism data on revenues, travel and number of tourist visitors was presented in section four. In section five, tourist accommodation data was presented in the form of number of units operating in Larnaka and nationally, accommodation capacity and accommodation occupancy levels. In the sixth section athletic tourism data was broken down by sport, district of accommodation, season of arrival and country of arrival.

The second approach employed quarterly labour data between the years 2007-2010 in order to derive the location quotient model and the shift and share analysis model. Looking at the location quotient model first, it will help with the identification with those sectors of the economy that are exporting sectors. These are the sectors that supply the rest of the cities of Cyprus with goods and services. Isserman best described the calculation of the location quotient in terms of supply and demand: He asserts that the mathematical terms in the location quotient equation describe 1) "the region's share of the total production, or quantity supplied, of the products of industry i available to the nation, and 2) the region's share of the nation's consumption or quantity demanded. Then if their difference is positive, the region produces a greater share of the nation's production than it consumes and the excess is assumed to be exported" (Isserman, 1977).

Galambos and Shreiber (1978) also described the location quotient analysis as having its foundations in the employment record of the region under investigation. If an industry in the specific region has a greater percentage of total employment than the nation as a whole then it is obviously exporting. The equations that will be used for the calculation of the location quotient for each of the sectors described above are the following:

\[ LQ = \frac{(R_i/R)}{(R_i/R)} \]

Where:

<table>
<thead>
<tr>
<th>Sector</th>
<th>Description</th>
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<tbody>
<tr>
<td>G</td>
<td>Wholesale and Retail Trade</td>
</tr>
<tr>
<td>H</td>
<td>Transportation and Storage</td>
</tr>
<tr>
<td>I</td>
<td>Accommodation and Food Service Activities</td>
</tr>
<tr>
<td>J</td>
<td>Information and Communication</td>
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<tr>
<td>K</td>
<td>Financial and Insurance Activities</td>
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<td>L</td>
<td>Real Estate Activities</td>
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<td>M</td>
<td>Professional Scientific and Technical Activities</td>
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<tr>
<td>N</td>
<td>Administrative and Support Service Activities</td>
</tr>
<tr>
<td>O</td>
<td>Public Administration and Defense</td>
</tr>
<tr>
<td>P</td>
<td>Education</td>
</tr>
<tr>
<td>Q</td>
<td>Human Health and Social Work Activities</td>
</tr>
<tr>
<td>R</td>
<td>Arts, Entertainment and Recreation</td>
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<tr>
<td>S</td>
<td>Other Service Activities</td>
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<td>T</td>
<td>Activities of Households</td>
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<td>U</td>
<td>Activities of Extraterritorial Organizations</td>
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</tbody>
</table>
In their discussion, Galambos and Shreiber define the shift and share analysis in light of three variables that need to be calculated: national growth, industry mix and competitive share. For the purposes of this study, each of the variables will be calculated over a period of five years using yearly data. As such we will be in a position to compare the different figures over this period and observe the dynamic change of the variables.

Esteban Marquillas defines homothetic employment as, "the employment that sector i of region j would have if the structure of the employment in such a region were equal to the national structure." (Esteban-Marquillas, 1972: 251) The equations used for this type of analysis are the following:

\[ b'ij = b_0j \left( \frac{b_{io}}{b_{oo}} \right) \]

where \( b'ij \) = homothetic employment in sector i of region j
where \( b_0j \) = total employment in region j
where \( b_{io} \) = national employment in sector i
where \( b_{oo} \) = total national employment

The same author introduces the allocation effect, a variable that will show whether the region specializes in the sectors that it enjoys competitive advantage in. The equations and variables needed for the allocation effect are:

\[ a_{ij} = (b_{ij} - b'ij)(r_{ij} - r_{ia}) \]

where \( a_{ij} \) = the allocation effect in sector i of region j
where \( b_{ij} \) = effective employment in sector i of region j
where \( b'ij \) = homothetic employment in sector i of region j
where \( r_{ij} \) = growth rate of sector i of region j
where \( r_{ia} \) = national average rate of growth of sector i

The two approaches described above aim at describing the economic positioning of Larnaka and identifying the economic sectors that can sustain the local economy and where Larnaka possesses some degree of competitive advantage.
In the first section, GDP data in the different economic sectors was presented in the form of frequencies for visual comparison between the local economy and the national economy. Larnaka was identified as an important producer since it constitutes the geographical base for a significant number of businesses in the following four sectors:

Figure 4.1: Percentage of businesses according to district (2010)

Source: Statistical Service of Cyprus

In the case of trade for example, 16% of the total number of businesses specialising in trade are located in the town of Larnaka. In the case of construction, Larnaka is the location of choice of 19% of the businesses, 17% in the case of manufacturing and 18% in the case of transportation.

Overall Larnaka seems to follow the national trend as far as the number of businesses that
operate out of the district as compared nationally. When comparing the number of businesses locally and nationally between 2005 and 2010 we observe the following:

Figure 4.2: Percentage increase in the number of businesses operating nationally and in Larnaka

There is an obvious increase in the number of businesses specialising in construction compared to the increase in the same sector on a national level. Given that the construction sector constitutes 9% of the total national GDP the increase in the number of operating units in the locality of Larnaka is deemed to be extremely important.

Source: Statistical Service of Cyprus
4.2.2 JOBS AND UNEMPLOYMENT

In the second section data on the local and national labour market and unemployment was explored. The data shows that Larnaka is the third largest employer in Cyprus with 16% of the total employment percentage.

Figure 4.3: Percentage of total employment

Larnaka employs 24% of the labour employed in trade, 18% of the labour employed in manufacturing and 17% of the labour employed in construction, the three main sectors that were identified in the previous section as being of grave importance for the local economy.

When compared to the national data on employment it is clear that Larnaka demonstrates increasing employment in eight sectors where total national employment only increases in four sectors:
Figure 4.4: Percentage increase in employment according to sector

Subsequently, Larnaka is demonstrating a decrease in unemployment in a number of important sectors when compared to national unemployment:

Figure 4.5: Percentage decrease in unemployment according to sector nationally

Source: Statistical Service of Cyprus
More specifically national data shows decreasing unemployment and hence increasing employment in manufacturing, services and new entrants in the labour market, where Larnaka demonstrates decreasing unemployment in manufacturing, trade, transportation, accommodation as well as new entrants in the labour market. The decreasing unemployment is a signal that the local economy in Larnaka is gaining competitive advantage against other districts in Cyprus.
In the third section of the presentation national data on trade, construction and manufacturing was analysed. Unfortunately the Statistical Service of Cyprus does not report GDP according to geographical districts. On a national level, there is a clear increase of GDP in the trade sector. In the case of construction, an important sector for Larnaka, there appears to be an increase in the number of construction licences issued between the years 2000 and 2010.

**Figure 4.7: Construction licences issued nationally**

<table>
<thead>
<tr>
<th>Year</th>
<th>Ammochostos</th>
<th>Paphos</th>
<th>Larnaka</th>
<th>Limassol</th>
<th>Nicosia</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>257</td>
<td>922</td>
<td>963</td>
<td>1.884</td>
<td>2.333</td>
</tr>
<tr>
<td>2001</td>
<td>328</td>
<td>966</td>
<td>943</td>
<td>1.690</td>
<td>2.169</td>
</tr>
<tr>
<td>2002</td>
<td>354</td>
<td>1.213</td>
<td>1.080</td>
<td>1.861</td>
<td>2.348</td>
</tr>
<tr>
<td>2003</td>
<td>455</td>
<td>1.337</td>
<td>1.219</td>
<td>2.040</td>
<td>2.497</td>
</tr>
<tr>
<td>2004</td>
<td>447</td>
<td>1.672</td>
<td>1.359</td>
<td>2.237</td>
<td>2.537</td>
</tr>
<tr>
<td>2005</td>
<td>422</td>
<td>1.907</td>
<td>1.489</td>
<td>2.385</td>
<td>2.895</td>
</tr>
<tr>
<td>2006</td>
<td>468</td>
<td>2.063</td>
<td>1.552</td>
<td>2.423</td>
<td>3.288</td>
</tr>
<tr>
<td>2007</td>
<td>500</td>
<td>1.876</td>
<td>1.620</td>
<td>2.461</td>
<td>3.064</td>
</tr>
<tr>
<td>2008</td>
<td>378</td>
<td>1.845</td>
<td>1.390</td>
<td>2.327</td>
<td>2.956</td>
</tr>
<tr>
<td>2009</td>
<td>535</td>
<td>1.421</td>
<td>1.327</td>
<td>2.556</td>
<td>3.111</td>
</tr>
<tr>
<td>2010</td>
<td>474</td>
<td>1.441</td>
<td>1.371</td>
<td>2.600</td>
<td>2.891</td>
</tr>
</tbody>
</table>

**4.2.3 TOURISM**

The percentage of tourists visiting other districts has remained relatively constant from 2008-2011 and has even decreased in some notable cases. Larnaka has not only kept its share, it has increased the percentage of visiting tourists by 1% between these years.
With regards to accommodation, Larnaka has 24 hotels hosting 4,321 beds. Further it has 16 hotel apartment complexes with 980 beds and 58 other tourist units hosting 787 beds. Comparing to the national data, Cyprus has a total of 221 hotels with 52,105 beds, 138 hotel apartment complexes with a total of 21,354 beds, 21 tourist villages hosting 6,800 beds and 395 other units capable of accommodating 13,571 tourists.

Larnaka has the large majority of Deluxe hotel apartments as is illustrated from the following chart:

**Figure 4.8: Percentage of tourist visits per district**

The percentage of tourists visiting other districts has remained relatively constant from 2008-2011 and has even decreased in some notable cases. Larnaka has not only kept its share, it has increased the percentage of visiting tourists by 1% between these years.

With regards to accommodation, Larnaka has 24 hotels hosting 4,321 beds. Further it has 16 hotel apartment complexes with 980 beds and 58 other tourist units hosting 787 beds. Comparing to the national data, Cyprus has a total of 221 hotels with 52,105 beds, 138 hotel apartment complexes with a total of 21,354 beds, 21 tourist villages hosting 6,800 beds and 395 other units capable of accommodating 13,571 tourists.

Larnaka has the large majority of deluxe hotel apartments as is illustrated in Figure 4.9:

**Figure 4.9: Percentage of apartments per district**

*Source: The Cyprus Tourism Organisation*
Larnaka holds also a large proportion of the traditional apartment accommodations with 46% of the total in 2011.

Figure 4.10: Percentage of traditional apartments per district

With regards to sport tourism, Larnaka is among the leading districts that traditionally accommodates athletes from around the world. More specifically in 2010, 25% of tourists associated with sports visited Larnaka:
Figure 4.11: Percentage of sports tourist visitors per district

Furthermore, tourists visited Larnaka for the longest time period (12.8 nights) compared to other districts. Athletes involved in triathlon and bicycle racing seem to choose (in their vast majority) Larnaka as it offers the appropriate accommodations in order for the athletes to train.
These athletes mostly visit Larnaka in February and March every year. This is the season that Larnaka demonstrates the largest percentage of athlete visitors compared to other districts.

### 4.2.4 ANALYSIS OF IMPORTS/EXPORTS

In deriving the relevant strengths of Larnaka, it is important to look past the numbers and use relevant analysis models in order to identify the sectors that are most important for the local economy.

The export base analysis is used in order to decide whether a sector is an exporting sector or an importing sector. An exporting sector is one that produces goods and services that are sent to other towns in Cyprus and/or abroad. These sectors are important for the local economy because they are the sectors that bring in cash in the local area. They are considered to be the driving force of the local economy and are very important to the policy makers.

Importing sectors on the other hand are those parts of the economy that are bringing products and services from other towns in Cyprus and/or abroad. Because of these sectors money flows from the local economy to other parts of Cyprus and these sectors cause damage to the local economy. Policy makers must make sure that the importing sectors become exporting in some way and the exporting sectors are reinforced.

The location quotient is the variable that helps identify the exporting sectors of the economy. When the location quotient has a value of less than one then the sector is an importing sector. When the location quotient has a value greater than one, then the sector is an exporting sector. Table 4.2 presents the results of the location quotient model when applied to the City of Larnaka:
Table 4.2: Location quotient and importing and exporting sectors in Larnaka

<table>
<thead>
<tr>
<th>Economic Sector</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Agriculture, Forestry and Fishing</td>
<td>0.797836</td>
<td>0.536944</td>
<td>0.574616</td>
<td>0.732268</td>
</tr>
<tr>
<td>B Mining and Quarrying</td>
<td>0.524728</td>
<td>0.720981</td>
<td>2.683453</td>
<td>1.905561</td>
</tr>
<tr>
<td>C Manufacturing</td>
<td>1.072892</td>
<td>1.216982</td>
<td>1.087815</td>
<td>1.112732</td>
</tr>
<tr>
<td>D Electricity, Gas, Steam and Air Conditioning Supply</td>
<td>1.648283</td>
<td>1.665711</td>
<td>1.906786</td>
<td>1.497932</td>
</tr>
<tr>
<td>E Water Supply, Sewerage, Waste Management</td>
<td>1.915158</td>
<td>2.162523</td>
<td>1.586627</td>
<td>0.943912</td>
</tr>
<tr>
<td>F Construction</td>
<td>1.04004</td>
<td>1.104615</td>
<td>1.049767</td>
<td>1.06998</td>
</tr>
<tr>
<td>G Wholesale and Retail Trade</td>
<td>1.10047</td>
<td>1.089131</td>
<td>1.128628</td>
<td>1.092913</td>
</tr>
<tr>
<td>H Transportation and Storage</td>
<td>1.785368</td>
<td>1.599134</td>
<td>1.314542</td>
<td>1.39263</td>
</tr>
<tr>
<td>I Accommodation and Food Service Activities</td>
<td>1.075369</td>
<td>0.936225</td>
<td>1.027746</td>
<td>1.122285</td>
</tr>
<tr>
<td>J Information and Communication</td>
<td>0.505001</td>
<td>0.507282</td>
<td>0.765106</td>
<td>0.419186</td>
</tr>
<tr>
<td>K Financial and Insurance Activities</td>
<td>0.831786</td>
<td>0.836364</td>
<td>0.862811</td>
<td>0.996474</td>
</tr>
<tr>
<td>L Real Estate Activities</td>
<td>1.190136</td>
<td>1.380842</td>
<td>1.395871</td>
<td>1.092907</td>
</tr>
<tr>
<td>M Professional Scientific and Technical Activities</td>
<td>0.983755</td>
<td>0.813617</td>
<td>0.677932</td>
<td>0.595445</td>
</tr>
<tr>
<td>N Administrative and Support Service Activities</td>
<td>0.560403</td>
<td>0.582172</td>
<td>0.806781</td>
<td>1.343018</td>
</tr>
<tr>
<td>O Public Administration and Defense</td>
<td>0.697295</td>
<td>0.740736</td>
<td>0.816708</td>
<td>0.75284</td>
</tr>
<tr>
<td>P Education</td>
<td>1.017002</td>
<td>0.982248</td>
<td>0.984217</td>
<td>0.940801</td>
</tr>
<tr>
<td>Q Human Health and Social Work Activities</td>
<td>0.970255</td>
<td>0.989501</td>
<td>0.844531</td>
<td>0.837059</td>
</tr>
<tr>
<td>R Arts, Entertainment and Recreation</td>
<td>0.649455</td>
<td>0.973461</td>
<td>0.812731</td>
<td>0.940016</td>
</tr>
<tr>
<td>S Other Service Activities</td>
<td>1.073407</td>
<td>1.120517</td>
<td>1.137657</td>
<td>0.761928</td>
</tr>
<tr>
<td>T Activities of Households</td>
<td>0.785018</td>
<td>0.934375</td>
<td>1.072881</td>
<td>1.238998</td>
</tr>
<tr>
<td>U Activities of Extraterritorial Organizations</td>
<td>1.200563</td>
<td>1.173469</td>
<td>0.866017</td>
<td>0.525182</td>
</tr>
</tbody>
</table>
In the Table 4.2, the exporting and importing sectors of Larnaka are identified. The sectors that are exporting sectors in 2010 are identified with a green colour and sectors that are importing sectors in 2010 are identified with a red colour. The table above also suggests that there are some sectors that are traditionally importing sectors throughout the years and that the situation is rather stable during the period of this research. Examples include sector A, Agriculture, Forestry and Fishing and sector J, Information and Communication. Similarly, there are sectors that are traditionally exporting sectors like sector L, Real Estate Activities and sector H, Transportation and Storage. There are also sectors that have been exporting but have since moved to importing such as sector E, Water Supply and Sewage and sectors that were primarily importing but have become exporting such as sector T, Activities of Households. All twenty one sectors fall under these four categories. In 2010, eleven of the sectors were identified as importing sectors (given in red) and ten sectors were identified as exporting sectors (given in green).

It was mentioned before that exporting sectors are important because they provide cash inflows for the local economy. It is also the case that they provide positions of employment for the local people and thus the next step is to calculate the export employment variable. The export employment variable will estimate the number of jobs that exist in order to satisfy the needs of other cities in Cyprus and/or foreign needs.

The export employment model is calculated as part of the export base analysis and exists in order to complement the location quotient calculation. From the data that exists about the town of Larnaka the export employment was calculated and is presented in Table 4.3.

Table 4.3: Export employment for exporting sectors

<table>
<thead>
<tr>
<th>Economic Activity</th>
<th>X 2007</th>
<th>X 2008</th>
<th>X 2009</th>
<th>X 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Mining and Quarrying</td>
<td>-36.23</td>
<td>-19.737</td>
<td>183.8123</td>
<td>95.04403</td>
</tr>
<tr>
<td>C Manufacturing</td>
<td>401.9316</td>
<td>1138.413</td>
<td>466.355</td>
<td>591.9622</td>
</tr>
<tr>
<td>D Electricity, Gas, Steam and Air Conditioning Supply</td>
<td>264.303</td>
<td>246.5877</td>
<td>455.5839</td>
<td>125.6522</td>
</tr>
<tr>
<td>F Construction</td>
<td>265.2577</td>
<td>685.3937</td>
<td>336.3583</td>
<td>493.2673</td>
</tr>
<tr>
<td>G Wholesale and Retail Trade</td>
<td>1010.205</td>
<td>870.0039</td>
<td>1410.585</td>
<td>1107.561</td>
</tr>
<tr>
<td>H Transportation and Storage</td>
<td>1772.762</td>
<td>1250.621</td>
<td>787.9442</td>
<td>1002.557</td>
</tr>
<tr>
<td>I Accommodation and Food Service Activities</td>
<td>267.4493</td>
<td>-232.696</td>
<td>118.1382</td>
<td>548.8366</td>
</tr>
<tr>
<td>L Real Estate Activities</td>
<td>93.6195</td>
<td>152.2439</td>
<td>142.3678</td>
<td>30.77322</td>
</tr>
<tr>
<td>N Administrative and Support Service Activities</td>
<td>-711.478</td>
<td>-575.599</td>
<td>-336.727</td>
<td>532.5263</td>
</tr>
<tr>
<td>T Activities of Households</td>
<td>-501.43</td>
<td>-157.395</td>
<td>187.0129</td>
<td>786.2459</td>
</tr>
</tbody>
</table>

In the table above it is clearly shown that for sector B, Mining and Quarrying, for example, ninety five positions exist to satisfy the non local demand. Therefore, ninety five workers are producing
goods that are exported to other cities in Cyprus and/or abroad.
Also part of the export base analysis model is the export employment multiplier. This variable can provide the new job openings in importing sectors if one more person is employed in an exporting sector. This variable is extremely important for policy makers because it identifies the impact on employment in the case where money and resources are allocated to an exporting sector.

This variable is also important in times of economic crisis because it helps policy makers fight unemployment. As it was shown in table 1, unemployment has been increasing, not only in Cyprus but in the local economy as well. In order to fight unemployment, local authorities must not only identify the exporting sectors of the local economy shown by table 2, but must also redirect resources to those sectors and clearly identify the impact of new job openings created in these important sectors. Through the export employment multiplier, calculated for the City of Larnaka, policy makers are in a position to know the exact impact on employment should they proceed with investments in these exporting sectors. The export employment multiplier for the exporting sectors in Larnaka is calculated in Table 4.4.

Table 4.4: Export employment multiplier for the exporting sectors of Larnaka

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>B Mining and Quarrying</td>
<td>-1.10406</td>
<td>-2.58398</td>
<td>1.594017</td>
<td>2.104288</td>
</tr>
<tr>
<td>C Manufacturing</td>
<td>14.71892</td>
<td>5.608684</td>
<td>12.38756</td>
<td>9.870563</td>
</tr>
<tr>
<td>D Electricity, Gas, Steam and Air Conditioning Supply</td>
<td>2.542536</td>
<td>2.502153</td>
<td>2.102796</td>
<td>3.008305</td>
</tr>
<tr>
<td>F Construction</td>
<td>25.97474</td>
<td>10.55889</td>
<td>21.09358</td>
<td>15.28989</td>
</tr>
<tr>
<td>G Wholesale and Retail Trade</td>
<td>10.95323</td>
<td>12.21948</td>
<td>8.774371</td>
<td>11.76278</td>
</tr>
<tr>
<td>H Transportation and Storage</td>
<td>2.273289</td>
<td>2.669074</td>
<td>4.17923</td>
<td>3.546929</td>
</tr>
<tr>
<td>I Accommodation and Food Service Activities</td>
<td>14.26812</td>
<td>-14.6801</td>
<td>37.04137</td>
<td>9.177595</td>
</tr>
<tr>
<td>L Real Estate Activities</td>
<td>6.25938</td>
<td>3.625762</td>
<td>3.526078</td>
<td>11.76348</td>
</tr>
<tr>
<td>N Administrative and Support Service Activities</td>
<td>-1.27481</td>
<td>-1.39333</td>
<td>-4.17549</td>
<td>3.9153</td>
</tr>
<tr>
<td>T Activities of Households</td>
<td>-3.65156</td>
<td>-14.2381</td>
<td>14.72091</td>
<td>5.184129</td>
</tr>
</tbody>
</table>

Table 4.4, shows the jobs that can be created in importing sectors when one more job position is filled in the exporting sectors identified above. For example, in the case of sector C, Manufacturing, almost ten new job positions will be created in other importing sectors if one more person is hired in this exporting sector. Sector F, Construction is of particular importance because if one more person is hired, fifteen job openings will result in other importing sectors. It is now clear that the export employment multiplier is an important variable for local planners because it pinpoints the impact on local employment if more job positions are filled in exporting sectors.
Shift and share analysis is mainly used to compare the local economic sectors identified in table with similar sectors in other localities and in the whole of Cyprus. Shift and share analysis can be used to calculate the growth rate of the local sectors and pinpoint the ones that are not performing as they should. In the shift and share analysis model, two variables are of interest: that of national growth and that of competitive share.

The variable national growth, is used to calculate the percentage growth of a local industry when compared to the same industry located in the rest of the country. Table 4.5 shows the calculated variable for all twenty one sectors.

<table>
<thead>
<tr>
<th>Economic Activity</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Agriculture, Forestry and Fishing</td>
<td>-27.1285</td>
<td>-5.45995</td>
<td>17.47553</td>
</tr>
<tr>
<td>B Mining and Quarrying</td>
<td>-1.1221</td>
<td>-1.21378</td>
<td>2.007528</td>
</tr>
<tr>
<td>C Manufacturing</td>
<td>-140.483</td>
<td>-23.9318</td>
<td>58.64992</td>
</tr>
<tr>
<td>D Electricity, Gas, Steam and Air Conditioning Supply</td>
<td>-13.5752</td>
<td>-3.96861</td>
<td>3.794227</td>
</tr>
<tr>
<td>E Water Supply, Sewerage, Waste Management</td>
<td>-12.7612</td>
<td>-1.4002</td>
<td>3.191969</td>
</tr>
<tr>
<td>F Construction</td>
<td>-159.229</td>
<td>-29.3918</td>
<td>75.70386</td>
</tr>
<tr>
<td>G Wholesale and Retail Trade</td>
<td>-233.904</td>
<td>-51.273</td>
<td>130.7703</td>
</tr>
<tr>
<td>H Transportation and Storage</td>
<td>-73.4428</td>
<td>-13.6416</td>
<td>35.69384</td>
</tr>
<tr>
<td>I Accommodation and Food Service Activities</td>
<td>-75.1589</td>
<td>-18.128</td>
<td>50.55958</td>
</tr>
<tr>
<td>J Information and Communication</td>
<td>-14.5213</td>
<td>-4.01833</td>
<td>5.621077</td>
</tr>
<tr>
<td>K Financial and Insurance Activities</td>
<td>-51.0447</td>
<td>-10.3151</td>
<td>31.56837</td>
</tr>
<tr>
<td>L Real Estate Activities</td>
<td>-12.1451</td>
<td>-2.07959</td>
<td>3.633625</td>
</tr>
<tr>
<td>N Administrative and Support Service Activities</td>
<td>-17.6456</td>
<td>-5.8245</td>
<td>20.92847</td>
</tr>
<tr>
<td>O Public Administration and Defense</td>
<td>-70.6265</td>
<td>-14.9631</td>
<td>35.41279</td>
</tr>
<tr>
<td>P Education</td>
<td>-83.1456</td>
<td>-15.6798</td>
<td>41.82684</td>
</tr>
<tr>
<td>R Arts, Entertainment and Recreation</td>
<td>-13.0252</td>
<td>-2.75069</td>
<td>10.85069</td>
</tr>
<tr>
<td>S Other Service Activities</td>
<td>-37.2934</td>
<td>-7.4194</td>
<td>12.7478</td>
</tr>
<tr>
<td>T Activities of Households</td>
<td>-49.3065</td>
<td>-11.4046</td>
<td>40.91341</td>
</tr>
<tr>
<td>U Activities of Extraterritorial Organizations</td>
<td>-9.57088</td>
<td>-1.24692</td>
<td>1.686323</td>
</tr>
</tbody>
</table>
As can be seen from the table above, in 2008 and 2009, national growth in the rest of Cyprus was higher than the growth rate of local sectors. This can be identified by the negative sign in front of the calculated variable for all twenty one sectors during this time. Then, in 2010 there is a reversal of the growth rate as it appears that the local sectors are growing at a higher rate than the rest of Cyprus. For example, sector R, Arts, Entertainment and Recreation for example, is growing at a rate of 10% faster than the same sector in the rest of Cyprus. Wholesale and Retail trade for example, is growing at a rate of 130% faster in Larnaka than the rest of Cyprus. Even though this number seems unreal, it must be noted that it may not be the case that the local Larnaka sector is growing while the sector in the rest of Cyprus remains constant. It may be the case that the sector nationally is showing negative growth while the local sector in Larnaka is showing positive growth. Since shift and share analysis compares these two sectors in different geographical locations the 130% is actually a combined number comprised of the growth percentages of the local and national sector.

Indeed in the case of Larnaka, all twenty one sectors are showing positive growth when compared with similar sectors in the rest of Cyprus. This is not because of an increase in productivity during 2010 as it will be shown in the next section of the paper. It is because growth in the rest of the cities in Cyprus is slowing down at a faster rate than that of Larnaka. This fact results to a positive national growth percentage shown by the table.

The second variable in the shift and share analysis is that of competitive share. The competitive share variable is described as the most important variable for policy makers because it shows whether a local Larnaka sector is gaining or loosing competitive advantage when compared to the rest of Cyprus. When the variable competitive share is positive then the local sector is gaining competitive advantage when compared to the sectors nationally. When the variable is calculated to be negative then the local sector is losing competitive advantage. A local sector that is gaining competitive advantage will most likely show positive growth in the years to follow and a local sector that is losing competitive advantage will show negative growth. Table 4.6 shows the variable competitive share as this was calculated for the local sectors in Larnaka.

### Table 4.6: Competitive share for local sectors in Larnaka

<table>
<thead>
<tr>
<th>Economic Sector</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Agriculture, Forestry and Fishing</td>
<td>-683.746</td>
<td>174.7405</td>
<td>452.9226</td>
</tr>
<tr>
<td>B Mining and Quarrying**</td>
<td>12.16732</td>
<td>219.9238</td>
<td>-65.5441</td>
</tr>
<tr>
<td>C Manufacturing**</td>
<td>495.8909</td>
<td>-222.426</td>
<td>457.3795</td>
</tr>
<tr>
<td>D Electricity, Gas, Steam and Air ConditioningSupply**</td>
<td>-21.7545</td>
<td>181.142</td>
<td>-75.6669</td>
</tr>
<tr>
<td>E Water Supply, Sewerage, Waste Management</td>
<td>42.6114</td>
<td>-89.6427</td>
<td>-185.971</td>
</tr>
<tr>
<td>F Construction**</td>
<td>108.2277</td>
<td>164.7547</td>
<td>565.4691</td>
</tr>
<tr>
<td>G Wholesale and Retail Trade**</td>
<td>-607</td>
<td>1289.77</td>
<td>343.3502</td>
</tr>
<tr>
<td>H Transportation and Storage**</td>
<td>-560.932</td>
<td>-425.611</td>
<td>391.2752</td>
</tr>
<tr>
<td>I Accommodation and Food Service Activities**</td>
<td>-688.987</td>
<td>675.5877</td>
<td>687.9949</td>
</tr>
<tr>
<td>J Information and Communication</td>
<td>-27.39</td>
<td>372.9941</td>
<td>-403.691</td>
</tr>
<tr>
<td>K Financial and Insurance Activities</td>
<td>-93.9085</td>
<td>249.4358</td>
<td>577.5251</td>
</tr>
<tr>
<td>L Real Estate Activities**</td>
<td>54.25301</td>
<td>41.02128</td>
<td>-73.9193</td>
</tr>
<tr>
<td>N Administrative and Support Service Activities**</td>
<td>-5.6813</td>
<td>464.1988</td>
<td>904.0931</td>
</tr>
<tr>
<td>O Public Administration and Defense</td>
<td>48.63278</td>
<td>570.9529</td>
<td>-80.5079</td>
</tr>
</tbody>
</table>
The table above shows the sectors that have positive competitive share in 2010 in green and sectors that have negative competitive share in 2010 in red. As can be seen from the table, twelve sectors are gaining competitive share and are becoming more competitive when compared to the same sectors in other cities of Cyprus. Further, the higher the competitive share variable, the more competitive advantage the local sector is gaining.
4.3 WEAKNESSES

It is of vital importance to outline the weaknesses that characterise the town of Larnaka so as policy makers take the necessary steps to improve local economy. The same outline that was used for the strengths section will be used here as well. Namely, the data from the six sections of focus will be presented in the form of frequencies and the results of the location quotient and shift and share analysis will be offered.

With regards to GDP and the percentage of businesses operating from the town of Larnaka, important sectors that constitute a large percentage of national production such as real estate social insurance and education are lacking presence within the town of Larnaka. The following two charts show the percentage of GDP attributed to the different sectors and the percentage of business share that are located in Larnaka:

**Figure 4.13: National GDP per economic sector**

![National GDP per economic sector chart](chart.png)

Source: Statistical Service of Cyprus
With regards to labour data, Larnaka is witnessing a decrease in employment in the manufacturing, real estate and administration sectors:

**Figure 4.15: Percentage decrease in employment**

The decrease in the manufacturing sector employment is over and above the national employment decrease. Given that the manufacturing sector is of particular importance and was identified as an exporting sector from the location quotient analysis in the previous section, this can be costly in both production and employment terms in the case of Larnaka.

Along the same lines, there is an increase in the unemployment rate in the construction sector in Larnaka. Specifically, in 2010 there was an increase in local unemployment in the particular sector of 17% compared to the 15% increase in the construction unemployment nationally. Again, given that the sector was recognized as an exporting sector from the location quotient analysis, additional loss of jobs and production may be expected. Finally, unemployment for new labour that is entering the job market is well above the national average. New labour national unemployment is at 15%...
where in Larnaka the same figure rises to 20%.

In the case of trade the export of chemical products brought in €262,6 million nationally in 2010, however Larnaka does not have a significant chemical industry. Further, in 2009 the largest percentage of foreign direct investment was directed towards financial institutions, a sector which accounts for 4% of the total business activities in Larnaka and which has been identified as an importing sector from the location quotient analysis. It is thus no surprise that Larnaka has not benefited from these investments.

Looking back at Figure 4.8, it is easy to observe that Larnaka is the fifth destination of choice for tourists as most prefer to visit Paphos and Polis, Paralimni, Ayia Napa and Limassol despite of the existence of the international airport of Larnaka. There is obviously a problem in attracting the tourists to remain in Larnaka even though the town acts as a gateway to Cyprus because of the airport. This is mostly because of the lack of adequate accommodation which can act like an attraction point for tourists.
Figure 4.16: Percentage of hotels per district.

Source: The Cyprus Tourism Organisation

Figure 4.16 shows that there is a lack of three and five star hotels located in Larnaka. As tourists are on the lookout for more affordable accommodation, the lack of such units may be a prohibitive factor to attracting tourists to stay in Larnaka. Further, the occupancy rate is low in Larnaka as illustrated in Figure 4.17.
In addition to this, Larnaka does not boast any tourist villages or tourist villas that attract more wealthy tourists around the island.

Finally, in the case of sport tourism, Larnaka fails to attract golf athletes due to the lack of golf courses in the district. This is a major weakness as golf athletes stayed for a total of 4,123 days in 2010 with an average stay of 6 days. The development of golf courses may be an attraction point for future golf athletes.

According to Table 4.2, Larnaka has 10 importing sectors which are represented with the red colour. As such the town is losing revenue from these importing sectors some of which are of particular importance with regards to employment. For example the education sector has an export employment multiplier of 15 which means that potential job positions are wasted because of the inability to attract students to Larnaka.

In addition, 9 economic sectors are losing competitive share as can be observed from Table 4.6, causing loss of revenue and job positions. This issue will be discussed further under the threats section of the report.

Source: The Cyprus Tourism Organisation
It is important to mention before proceeding with the discussion on opportunities for the town of Larnaka that the current decisions of the Eurogroup and the new Memorandum of Understanding between Cyprus and the European Union is an exogenous factor which must be considered and studied extensively.

Construction is a very important exporting sector as this was identified in table 2. Chart 2 also designates that there is an increase in the number of businesses in Larnaka in the construction sector. This outcome is encouraging for the town as there are future potential economic gains in the form of production and labour employment.

With regards to employment, there is an opportunity for foreign investments in health retreats from Israel as the country is looking for sunny locations that can accommodate such demand.

**Figure 4.18: Percentage of Labour employed in Larnaka according to sector**

Figure 4.18 illustrates that only 4% of total Larnaka labour is employed in the health services. Similarly only 5% of labour is employed in the financial sector. Given the restructuring of the financial sector that is coming in the foreseeable future, it is the opportunity for policy makers to make Larnaka more attractive and capture a significant piece of the foreign direct investment that is reinforcing the financial sector every year.

The mining sector was recognised as an important exporting sector for the town of Larnaka. Given that mining products yield €174,71 million every year in exports and is the second largest export in...
Cyprus, there is an opportunity to grab a large proportion of that revenue or even expand exports with the use of appropriate strategies.

**Figure 4.19: Revenue resulting from exports nationally**

![Graph showing revenue from exports](https://example.com/graph.png)

Tourist packages are also of grave importance as visitors can play a vital role for the local economy of Larnaka. The town should promote cooperation between tour operators and hotel owners in order to boost accommodation and occupancy rates. A large proportion of tourists mostly arrive from the United Kingdom but during the last few years, Russian tourists visit Cyprus more often. Unfortunately Larnaka is not their destination of choice, however, this can change quickly with the completion and operation of the Marina in Larnaka as well as the privatisation of Cyprus Airways.

A potential privatisation of Cyprus Airways will most likely end the rout monopoly that plagued the Larnaka airport during the last few years and will give the opportunity to budget airlines to offer lower air prices to potential tourists. Such move will result to a dramatic rise in the number of tourists that use Larnaka airport as a gateway to the island. Appropriate marketing or promotion with tour operators will most likely lead to increasing tourism for Larnaka.

The need to accommodate such an increase, however, lays in the construction of three star budget hotels and tourist villages that Larnaka is lacking. The Cyprus Tourism Organisation reports that there is increasing demand for three star budget hotels located near the beach. Larnaka has the potential to take advantage of this increased demand because of its location but only if the petroleum refineries are relocated and new hotels are erected.

**Figure 4.20** demonstrates that there is a high demand for A class tourist apartments in Paralimni and Ayia Napa. Even though Larnaka has some share in this market, there is a potential for development and capturing a share of this market.
Only 2% of the class A tourist apartment establishments are located in Larnaka where Paralimni enjoys a 104% occupancy rate according to Figure 4.9.

Turning to the sport tourism, Larnaka has the potential of capturing more football related tourists as two of the Cypriot football teams that earned European qualification next year are based in the town of Larnaka. Hopefully, this representation will result to increasing sport visitors.

According to the location quotient analysis, four rather important sectors are marginally importing sectors for Larnaka (index is slightly lower than unit). The financial and services sector as well as the education sector boast a high export employment multiplier of 15. This means that 15 more job positions will be created from the hiring of one more educator or one more worker in the financial and insurance sector. Through growth, sectors that have been previously identified as importing sectors can become exporting sectors and can lead to cash inflows for the city of Larnaka.

Table 4.6 also illustrates that Larnaka is gaining competitive advantage in the manufacturing, trade, transportation and construction sectors. As these are exporting sectors for Larnaka, there is a potential for capturing an even higher market share if they continue that streak in the future as well.

4.5 THREATS

It becomes apparent from the discussion in the previous sections of the report that Larnaka is faced with many challenges. Although Larnaka acts as a gateway for tourists visiting the island because of the airport there is clearly a problem in convincing tourists to use the town as their base during their visit. Instead, newly constructed hotels, hotel apartments and villas in Paralimni, Ayia Napa, Paphos and Limassol threaten already small percentage of tourists that choose Larnaka as their final destination. The town may be visited by an increased number of tourists every year, however, this is mostly because the total number of foreigners visiting Cyprus has been increasing.

Table 4.6 identified the sectors of Larnaka that are gaining competitive advantage compared to similar sectors in other districts. The sectors that are gaining competitive advantage appear in green, where sectors losing competitive advantage are represented in red. Table 6 also combines information from Table 4.1 in that it represents exporting sectors with two asterisks. Exporting sectors are the base of the local economy because they are the ones that bring in revenue and also account for a significant (if not the majority) percentage of local workers. It is thus not to the best interest of Larnaka to have an otherwise exporting sector, losing competitive advantage. Shift and share analysis identified three sectors that are losing competitive share and are exporting sectors. These are mining and quarrying, electricity gas steam and air-conditioning supplies and
real estate activities.

The loss of competitive advantage in these exporting sectors will most likely result to loss of jobs which, will in turn, have a negative multiplier effect on other sectors. For example, real estate activities has an export employment multiplier of 11.7 which means that a job loss in this sector will result to other 11.7 jobs being lost in other sectors due to the multiplier effect.

4.6 CONCLUSION

Export base analysis, shift and share analysis and input output models were used in order to determine the economic positioning of Larnaka. The results appear optimistic for Larnaka as all sectors are showing positive growth and the majority of sectors are gaining competitive advantage. Special attention by policy makers must be given to sectors that are losing competitive share but are identified as exporting sectors. These sectors run the danger that if they are allowed to lose their competitive edge, people will start losing their jobs. If loss of jobs occurs in these sectors, the export employment multiplier will actually work in reverse. A loss of a job position in an exporting sector will result to further loss of jobs in other importing sectors.

The value added of this research is in fact targeted towards local policy makers. The economy of Larnaka is relatively small when compared to that of Nicosia and Limassol and has been growing at a slower rate than these local economies during the past decade. In 2010 there is evidence to suggest that the local economy of Larnaka is growing compared to the other cities, however this might also be because of the economic crisis and the slowdown of the other local economies in Cyprus.

Policy makers need to reallocate resources to the sectors that have been identified as significant sectors for the economy of Larnaka. These exporting sectors are the ones that are backing up the local economy. It is through these sectors that Larnaka can become more competitive and continue to grow. If more job positions are opened in these sectors this will lead to a multiplier effect where more jobs will be created and filled in other importing sector. Through growth, sectors that have been previously identified as importing sectors can become exporting sectors and can lead to cash inflows for the city of Larnaka.

Also, policy makers need to take care when dealing with sectors that have been identified as exporting sectors by the Export Base analysis but are losing competitiveness according to the Shift and Share analysis. These sectors need to become more competitive otherwise failure of this will lead to loss of jobs which will have a negative effect through the employment multiplier on other importing sectors as well. This means that due to the multiplier effect, more jobs will be lost in other sectors of the local economy.

Finally, the input output model is necessary so that policy makers know the exact impact that each sector can have on other sectors of the local economy. As can be seen from the data analysis there is a strong relationship which is statistically significant between the primary and secondary sectors in employment, and there is evidence to suggest that the secondary and tertiary sectors are competing for job positions. An increase in job positions in the secondary sector for example will lead to a decrease in job positions in the tertiary sector. This negative relationship however is not statistically significant.

The input output model in production also shows a positive relationship between the three sectors. Again there is a larger positive relationship between the primary and secondary sectors when compared to the tertiary sector, however this relationship is not statistically significant. Overall, policy makers can understand that increasing production in one sector of the local economy will lead through a multiplier effect to an increase in production in other sectors as well. In theory, this can be explained as increasing production in one sector, will lead to more job positions being filled.
in that sector, more people will have work and thus more people will have more money to spend. The increase in spending will lead to an increase in production in other sectors of the local economy. For these reasons, this research is very useful to policy makers.

4.6.1 LIMITATIONS

During the course of this research there were some problems that needed to be solved. The first problem that was faced was that at the time that the research started the statistical service of Cyprus only has data up to 2010. Data for 2011 has not been made available yet. As a result the results shown in this report apply up to the year 2010.

The second problem that was faced was the fact that the number of sectors identified for employment purposes was different than the number of sectors for production. Also, the number of sectors before 2007 was lower than the number of sectors in a local economy after 2007. This was because the statistical service revised the way it defined these sectors. So it is not possible to compare the data after 2007 with the data before 2007.

Finally the signing of Memorandum of Understanding between Cyprus and the European Union as well as the latest decisions of the Eurogroup constitute external factors that will undoubtedly affect both the national and local economy of Larnaka. The exact impact of these factors must be studied extensively as a means of assisting local policy makers.

4.6.2 SUGGESTIONS FOR FURTHER WORK

Further analysis can be conducted to define the economic positioning of Larnaka using the input output model. The input output model illustrates how each of the sectors is affected by the other sectors present in a regional economy. The demand for the products and services produced in these sectors is guided by the total value of sales and production in a specific period. It can be assumed that although not extremely accurate, total production can in a sense resemble demand. Denote the observed monetary value of the flow from sector i to sector j by \( z_{ij} \). Sector j’s demand for inputs from other sectors during the given time period will have been linked to the quantities of goods produced by sector j over that same year (Miller and Blair, 1985).

If we thus divide the economy into n sectors we can denote by \( X_i \) the total output of sector i and by \( Y_i \) the total final demand for sector i’s product, we can write

\[
X_i = z_{i1} + z_{i2} + \ldots + z_{ij} + \ldots + z_{in} + Y_i
\]

and \( z \) represents the inter-industry sales for each sector i. Running a regression equation will reveal the coefficients for each industry and illustrate the interconnections which exist within the different sectors. We would expect a positive correlation with the subsectors belonging to the primary, secondary and tertiary main sector categories respectively.
5.1 INTRODUCTION

5.1.1 Scope

This chapter will outline the current situation regarding urban planning and identifies strengths, weaknesses, opportunities and threats that will lead to sustainable development strategies in the following areas:

- Design
- The Planning System
- Land Use
- Planning Zones
- Systematic development of land
- The Road network
- Ownership
- Conservation
- Trade centers
- Sustainable Development

5.1.2 Methodology

The methodology describes the institutional framework of Cyprus, as developed to date. This includes reference to all of the applicable laws, the current situation in the District of Larnaka, and specific reference to the Municipality of Larnaka and the associated quarters. Subsequently, this information will be used to identify Strengths, Weaknesses, Opportunities and Threats (SWOT analysis) regarding urban planning.

5.1.3 Sources

The sources used to gather the necessary data for the diagnostic study include, the Department of Town Planning, the Municipality of Larnaka, literature and articles discussing urban planning, and further information from websites and relevant publications. The following section includes charts within the text (see Urban Planning Appendix for additional information).
5.1.4 Basic Guidelines

As urbanisation progresses over time, so the needs of humans change and the design model is amended and the resources available altered. These changes create the need for new social and technical infrastructures which were not foreseen in the original design. The requirements of the City diversify, the urban fabric becomes layered, and the existing built environment must be conserved, re-designed and renovated.

New priorities were introduced into urban planning in recent decades at the global and European level (such as sustainability, energy efficiency, rapid economic growth, sustainable mobility etc.). These concepts nest with longer established concepts such as functionality, adequacy of premises which are also evolving over time.

Larnaka, in recent years has gone into a new development period with the construction of the new terminal building at the international Airport, which is now a vital hub in the Eastern Mediterranean region. Furthermore, the modern national and urban roads and the planned development in the Port and Marina have formed a new impetus to the development of the city and strengthen the agglomeration of Larnaka as the main gateway to Cyprus and connective node of the country with the rest of the world. Therefore, Larnaka could be the major center and provider of services and facilities to the country.
5.2 PLANNING

5.2.1 Definition

The definition of planning can be summarised in the following statement:

‘Design is a very logical process to achieve a situation which has some desired features’

5.2.2 Planning Typologies

5.2.2.1 Traditional Planning

Traditional design (or traditional planning) was outlined by Geddes (1915) and proposed a simple procedure that has remained classic. This concept essentially consists of data collection, followed by analysis and suggestion. This type of planning over the years has had drawbacks mainly because changes have simply been too quick and complex for the model to keep pace with development.

5.2.2.2 Rational Planning

The new kind of design that seemed to provide improvements in this area was the rational design theory which emerged in the late 1960s. It emphasised the importance of the process (rather than a predetermined final product) and provided the opportunity to interact between different phases. The process can be summarised as: description of the system and statement the problem, formulation and analysis of alternatives, evaluation and selection, implementation, feedback from the previous stages, and finally the review process. (Aravandinos Athanasios, NTUA, 1997/2007 - Wassenhoven Louis NTUA, 2002).
5.2.2.3 Strategic Planning

Strategic planning emerged as another alternative to rational design. Historically, strategic planning as a model aims to assess alternative options and scenarios. The method originates from the military environment and was then utilised in the world of business. Strategic planning identifies achievable targets and implements strategies with applications in various fields of development actions, such as: the participation of public and private stakeholders to develop initiatives (e.g. local economic development), promotion of the area in relation to other competitors through comparative advantages, and finding strategies for the development of internal capabilities to organize the exploitation of opportunities in the environment (Kilter, 1999 & Sandhusen, 1993).

Key tools of strategic planning are the SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) and PEST analysis (Political, Economic, Social and Technological) which relate to diagnostic studies of the issue that is being looked at, both inside and outside the immediate environment.
5.3 THE PLANNING SYSTEM

5.3.1 General

Through the processes and mechanisms of the planning system, it is ensured that any use of land or any building is sited properly in a particular space, whether in the city or in the countryside. The system aims for the rational planning and design when locating all operations and uses: new housing developments, industrial installations, commercial developments, offices, schools, leisure, entertainment and tourist facilities of various types, roads, livestock buildings, etc. At the same time the planning system must guarantee the protection of the natural and built environment.

The design and consequently the control of development in our country are relatively new procedures since the legislation governing the planning system was only implemented in December 1990. Particularly important is the fact that the built environment is to a large extent, a creation of the 1980s. This was a decade of rapid development in Cyprus, and followed shortly after the upheaval of the 1974 invasion. In summary, urban consciousness in Cyprus did not have an established historical base.

The improvement and modernisation of the planning system is under constant review. Today in Cyprus there are various amendments to planning legislation including: recommendations of the central Town Planning Board for the preparation of the Island Plan, the abolition of the policy statement for the outdoors, the development of regional spatial plans of urban regional councils, and the preparation of local area plans and projects from the planning authorities at the local level.

According to the current planning system, the concept of strategic planning at the city level does not exist. Instead of strategic planning is carried out for the Island Plan, while cities rely on the Local Plans.

5.3.2 Statutory Framework

The planning system in Cyprus is based on two laws: the ‘Town and Country Planning Act’ of 1972 and ‘The Streets and Buildings Regulations Law (Article 96).’ See Figure 5.1 for details.
5.3.2.1 The Streets and Buildings Regulations Law

Since the mid 1940s, developments have been governed by ‘The Public Roads and Buildings Act’, the basic provisions of which determine that any development should have:

- Official access
- Water supply
- Be in the context of published Urban Areas

5.3.2.1 The Town and Country Planning Act

The planning system was found to have gaps where there was no control related to uses, therefore the ‘Town and Country Planning Act’ of 1972 was created.

The basis of the Act is the promotion and the control of development in all areas of the Island (including both urban and rural areas) ensured by implementing published development plans.

For any development, it is necessary in advance to grant planning permission from the relevant planning authority (except in the cases that are described in the General Development Orders).

The Act provides for the preparation of four types of development plans: the Island Plan, Local Plans, Area Plans, Rural Planning Policy (Figure 5.2).
All Development Plans contain two parts: written text which sets out the general and specific policy measures in force for the area they cover, and drawings and maps which define the current planning zones and land uses that are permitted in any part of the plan area.

These plans set out the current planning zones and land uses that are permitted in any part of the area of the plan, for example important road networks, the cycling network, land use plans etc.

The Island Plan is a document used to plan the socio-economic development of the entire country and the Minister of Finance is responsible for its development. So far the Plan has not been implemented, due to the unstable situation caused by the Turkish invasion and occupation.

The Local Plans include a wide range of provisions and policy measures that refer to a variety of development types, infrastructure networks, standards, allowable sizes and intensity of development. Local Plans typically involve geographical areas that act as unitary urban sets. Today the Local Plans of four major conurbations (Nicosia, Limassol, Larnaka, and Paphos) are published as well as for some additional Municipalities of free Cyprus (Lefkara, Agia Napa, Athienou, etc.).

The Area Plans include policy measures and provisions considerably more detailed than those contained in Local Plans, and typically involve smaller geographic areas. So far two project areas (center of Limassol and the old center of Strovolos) have been published.

The Policy Statement (for rural planning) refers to the whole country, with the exception of areas that the Local and Area Plans are applicable, the British Bases and the occupied part of Cyprus. The Minister of Interior has all the powers set out in the Law in relation to the Policy Statement.
5.3.3 Preparation, revision and amendment of development plans

For the development and initial publication, the revision and amendment of the Local Plans and Area Plans, the legislation provides the procedure described in Figures 5.3 - 5.6.

**Figure 0.3: Review/Amendment Procedure for Local Plans & Area Plans**

1. Publishing Report on the revision of the Plan
2. Appointment and tasks of a joint council → Consultation / application submittal / suggestions → Public hearing
3. (α) Report of the Joint council Chairman
   (β) Representations
   (γ) Results of the public hearing
4. Environmental impact assessment procedure
5. Plan Debate at the Planning Board
6. Submittal of a complete proposal for the amendment of the Plan
7. Approval by the Minister of the Interior and publication of the amended Plan

*Source: Department of Town Planning and Housing*
FIGURE 0.4: PROCEDURE FOR EXAMINING OBJECTIONS LODGED AGAINST THE PROVISIONS OF THE LOCAL PLANS & AREA PLANS

1. Submittal of appeals

2. Examination of appeals by the Appeals Committee (AC) and the Planning Council

3. Consignment of suggestions of the Appeals Committee and the Planning Council to the Minister of the Interior

4. Formulation of suggestions by the Minister of the Interior and submittal of proposal to the Council of Ministers

5. Decision of the Council of Ministers

6. Publication of the approved Plan

Source: Department of Town Planning and Housing
5 - URBAN PLANNING AND URBAN PARAMETERS OF LARNAKA

**Figure 0.5: Review/Amendment of the Rural Planning Policy**

- Publication of the report produced by the Minister of the Interior
- Consignment of the report and amendment form to the Municipalities and Community Councils
- Invite by the District officers to the Municipalities and Community Councils to submit suggestions and ideas
- Organization of open debates to discuss proposals, publication / posting of proposals and submittal to the relevant District Administration Office
- Boundaries for development / zoning ordinances
- Rural Planning Policy text
- Examination of submitted proposals by the committees for the amendment of the boundaries for development / zoning ordinances
- Study of suggestions and formulation of proposals for provisions and policy measures by the Central Advisory Committee
- Submission of the Trustees suggestions to the Minister of the Interior for the amendment of the boundaries for development / zoning ordinances
- Submission of suggestions by the Central Advisory Committee to the Minister of the Interior
- Approval by the Minister of the Interior
- Publication of the amended boundaries for development / zoning ordinances
- Publication of the amended Rural Planning Policy text

*Source: Department of Town Planning and Housing*
### Figure 0.6: Objections

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission of objections to the Minister of Interior</td>
<td></td>
</tr>
<tr>
<td>Registration and classification of objections by the Ministry of Interior and forwarding to the Department of Planning and Housing</td>
<td></td>
</tr>
<tr>
<td>Preparation of the objection study form from the Department of Planning and Housing</td>
<td></td>
</tr>
<tr>
<td>Forwarding of objection study form and one copy to the Mayor or the President of the Community Council</td>
<td></td>
</tr>
<tr>
<td>Review of objections by Appeals Study Committee (ASC)</td>
<td></td>
</tr>
<tr>
<td>Forwarding of suggestions by the ASC to the Minister of Interior</td>
<td></td>
</tr>
<tr>
<td>Comments and suggestions by the Director of the Department of Planning and Housing</td>
<td></td>
</tr>
<tr>
<td>Formulation of suggestions by the Minister of Interior and submittal of proposal to the Council of Ministers</td>
<td></td>
</tr>
<tr>
<td>The Council of Ministers' Decision</td>
<td></td>
</tr>
<tr>
<td>Publication of approved development boundaries / zoning ordinances</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Department of Town Planning and Housing*
5.3.4 Allocation of responsibilities

Urban planning controls operate through the powers that have been assigned by the Minister of Interior to the Head of Planning, the district Planning Officers, together with the four municipalities of Nicosia, Limassol, Larnaka and Paphos (see Figure 5.7).

**Figure 0.7: Urban Planning Control**

![Urban Planning Control Diagram](source: Department of Town Planning and Housing)

An essential difference of the current control system of development within the implementation of the urban law is the nature of planning permission. With the ‘Town and Country Planning Act’, planning decisions have two characteristics:

- The technical part, which calculates the intensity of development, problems that may occur with circulation, heights and widths etc.

- The political part, in the sense of policies pursued by the political actors. Through the planning decisions shall be specified the redistribution of wealth, and other targets.
5.3.5 The Local Plan of Larnaka

The Local Plan of Larnaka aims to define and implement the appropriate terms of the urban policy framework that will allow the rational development of Larnaka until 2018 and beyond (defined as the horizon year of the Local Plan).

The Local Plan of Larnaka was published according to the provisions of the Town and Country Planning Act for the first time on December 1, 1990. This has been amended several times until today, through the consideration of objections against any published Local Plan or by regular reviews and modifications. The latest version of the Local Plan of Larnaka is the approved Local Plan of 2013 (published in January 2013). In Figure 5.8 the various revisions and finalisation of the Local Plan of Larnaka are listed chronologically.

![Figure 0.8: Amendments & Approvals of the Local Plan of Larnaka](image)

Source: Department of Town Planning and Housing

The primary objective of the Local Plan is not only to implement policies and planning arrangements that lead to holistic consideration of the weaknesses and resolve the problems of the wider city area, but also to continue and strengthen the new development that is on the way.

The Local Plan includes the municipalities of Larnaka, Aradhippou, and the community councils of Levadia, Dromolaxias and the seafront of the community councils of Voroklini and Pyla as well as part of the area of Kalo Chorio.

The extent of the area of the Local Plan is 121,550,000 m² and includes a population of 84,279 (October 1, 2011). The area occupied by the Municipality of Larnaka covers 33,049,870 m² with a population of 51,468 (see Map 5.1).
The main objectives of the Local Plan of Larnaka are:

a) Ensuring the streamlining of key urban functions and the rational allocation of land use.

b) The conservation of natural resources, preservation of the natural environment and the creation of an integrated and hierarchical model of free and green areas.

c) Maintaining a balanced variety of compatible uses and the separation (as far as possible) of non-compatible uses.

d) The gradual upgrading of facilities, quality of life and level of service citywide.

e) The rationalisation of the residential areas so as to achieve the functional correlation of population distribution of job opportunities and services and the creation of appropriate conditions for the implementation of residential development.

f) The implementation of a modern multi-dimensional traffic policy, which addresses both the current and the future operational needs of the city.

g) The implementation of policy measures that will help to protect and enhance the crucial role of the urban center as the operational center of the conurbation and the wider region.
h) Safeguarding areas of special, historical, cultural and architectural interest and the adoption of a protection program for the preservation, restoration and revitalisation of the historic center, so that these areas will be upgraded benefitting residential areas, working areas and those for cultural activities.

5.4 LAND USE

5.4.1 General

Through its various policies for allocation of land uses, the Local Plan of Larnaka (per sector of development) aims for rational development so as to ensure that:

- There is sufficient land to meet the needs of the population for each economic activity, both in the present and the future.

- There is comfort and quality of life for residents within the geographical separation of land uses that cause any nuisance.

Map 5.2 shows the main land uses within the Local Plan of Larnaka. Certainly, the provisions of the Local Plan of Larnaka, are not described in the physical geography presented in map 5.2 but in the policy measures that direct and control the development in detail for any financial and/or other activity.
5.4.2 Industry and Manufacturing

The broader government policy is contained in the Strategic Development Plan 2007-2013 which sets out inter alia strategic objectives that are associated with the processing and storage of products. The goal is the growth of the productive capacity of the economy, improving productivity by empowering high value added activities, enhancement of productive innovation, research and development, and the promotion of new technologies. At the same time it seeks to protect the environment and improve quality of life.

To achieve the above objectives, a number of axes of development are specified. For example, the improvement of entrepreneurship and the overall business climate to attract investment. It also seeks to strengthen competition and technological upgrading.

Industry and craft are key growth sectors of the Local Plan of Larnaka, both in terms of employment, and of the products produced as a contribution to the aggregate gross revenue of the country.
It is therefore important to ensure the provisions of the Local Plan in relation to industry and crafts, ensuring the adequacy of space and infrastructure in appropriate locations to meet the current and future needs of these sectors as ‘dynamic’ sectors which evolve and diversify over the years as a result of technology.

The Local Plan of Larnaka provides three types of industrial areas within which the industrial units, warehouses and factories are sited. The three types of industrial areas are:

(a) Industrial development: Class A, Class B and Class C.

(b) Craft developments: Class A, Class B and Class C.

(c) Storage developments: Class A and Class B.

See Appendix 5.1-5.5 for specific details on the types of development that fall into the above categories.

Figure 5.0 and Table 5.0 show the location of industrial zones and the areas they occupy, respectively. Overall, the industrial zones in the Local Plan occupy 4% or 4,922,549 m² of the total area of the Local Plan.

Note that the zones for industrial and craft activity are subdivided into two main categories:

- The industrial or craft zones that are government plots in which a developed infrastructure exists and within which different types of industrial activities are housed.

- Industrial or craft zones that are specified areas of private property, which are intended to establish industrial units in which the infrastructure (roads, pavements, electricity, water, etc) is provided gradually according to the issuing of licenses for development.

5.4.2.1 Adequacy of infrastructure in industrial zones

The existing services of the industrial zones in terms of electricity, water supply and telecommunications, are shown via the Local Plan to have adequate standards. In contrast, the adequacy of accessibility (in terms of road network) at specific points in the industrial zones is fragmented. This creates problems in the rational development of the areas, restricting vehicles
and also creating incomplete utilities such as stormwater drains (see Figure 5.1-5.6).

The problems that have been outlined occur mainly at the following industrial zones:
5.4.2.2 Spatial location of Industrial zones

The siting of industrial zones in the Local Plan area is the result of piecemeal decisions taken without reference to spatial planning. With the implementation of the ‘Town and Country Planning Act 1990’ the existing industrial zones have adopted different approaches and particular areas have specific provisions for the gradual dismantling and relocation of industrial units.

The economic development of the 1980’s and 1990’s led to widespread building activity and resulted in the creation of incompatible land uses. Assessing the current situation according to the siting of industrial and craft zones it is found that:

The industrial zones and craft zones of the Municipality of Larnaka (Figure 5.11) are sited within residential areas, and are in close proximity to the urban shopping center. They are also found in areas of special character and on the boundaries of the Natura area of the salt lakes.

This creates problems such as:
- Noise nuisance
- Environmental contamination
- Traffic congestion
- Pollution of subsoil
- Decomposition of the urban fabric

Such issues hinder the rational development of the urban area as a whole. The special zone of the Fuel Terminal and the economic zone of Larnaka are sited along the coastal region of the bay of Larnaka, breaking the continuity of the coastal front. The siting of these installations, which date back to the late 1960’s, has resulted in only limited development of the tourism sector that would have otherwise been more prevalent along the seafront of Larnaka. Rapid economic development has enclosed the industrial zones, forcing the co-existence of high-risk industrial activities with housing and other social infrastructure (e.g. schools).


The aim of the Seveso II Directive is twofold:

1. The Directive aims to prevent major accidents involving dangerous substances.
2. As accidents continue to occur, the Directive aims to reduce the consequences of such accidents not only for man (health and safety), but also for the environment (environmental protection).
The scope of the Seveso I Directive was more focused on the protection of individuals rather than the protection of flora and fauna. The Seveso II Directive, includes for the first time, the substances classified as dangerous for the aquatic environment within its scope.


To align the Cyprus legislation with the Seveso II Directive, the national Council of Ministers has issued regulations referred to as the ‘town and country planning regulations (accidents involving dangerous substances)’ of 2003 and 2008. This policy aims to impart land use policies to prevent major accidents involving dangerous substances and limit their consequences.

For any installations of such units in the Local Plan, the appropriate distances between establishments and existing or planned residential areas, buildings and areas of public use, major roads, recreational areas, and areas with particular natural sensitivity or special interest should be maintained.

Table 5.1 shows the indicative distances that define the risk level around each class of units from the Town Planning Authority consultation with the Director of the Department of Labour Inspection.

Figure 5.9 shows the map of the environmental threats where there are areas with potential accidents involving toxic substances.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>INDICATIVE DISTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPG (Liquid Petroleum Gas): Above ground storage</td>
<td>600</td>
</tr>
<tr>
<td>LPG (Liquid Petroleum Gas): Underground or covered storage</td>
<td>100</td>
</tr>
<tr>
<td>LPG (Liquid Petroleum Gas): Υπόγεια ή καλυμμένη αποθήκευση &gt; 100t</td>
<td>200</td>
</tr>
<tr>
<td>Refinery</td>
<td>1.500</td>
</tr>
<tr>
<td>Ammonia</td>
<td>2.000</td>
</tr>
<tr>
<td>Storage for Chemicals</td>
<td>700</td>
</tr>
<tr>
<td>Storage of flammable materials - in bulk</td>
<td>300</td>
</tr>
<tr>
<td>Storage of toxic materials - in bulk</td>
<td>700</td>
</tr>
<tr>
<td>Chemical procedure: flammable, or toxic substances</td>
<td>1.000</td>
</tr>
<tr>
<td>Chemical procedure: risk of dust explosion</td>
<td>300</td>
</tr>
<tr>
<td>Manufacture of explosives</td>
<td>1.00</td>
</tr>
</tbody>
</table>
The Industrial Zone C west of the Fuel Terminal was created with the implementation of the ‘Town and Country Planning Act, 1990’, forming industrial plots around the area of the refineries. The obvious thought of creating this zone was based on the proximity to the Fuel Terminal because these plots had disadvantages that could not be used for residential purposes or otherwise. The problem that exists today (with the prospect of moving the oil and gas facilities) is the fact that
Industrial Zone C will remain in the middle of an area that offers significant growth prospects and will be the subject of special design.
5.4.2.3 Capacity of Industrial zones

The capacity of the industrial zones is an important factor in assessing the current situation because it determines the extent to which the existing arrangements can meet future demand. The capacity assessment based on satellite photographs of the areas connected to the LTM coordinates. Based on this analysis (see Figures 5.10-5.18, Tables 5.2-5.11 and Appendix 5.6) the situation of each zone is displayed with reference to its capacity.
Clear differences exist between the industrial zones created before 1960, where technological development (especially in environmental protection was lacking). Post 1960 there are more specialty industrial units and in most of the industries, workshops and warehouses, the co-existence in the city's fabric is more effectively treated with the use of technology and is creates a more desirable urban environment.

**Figure 0.10: Industrial and Craft Zones / Areas within the Larnaka Local Plan**

**Table 0.2: Industrial and Craft Zones / Areas within the Larnaka Local Plan**

<table>
<thead>
<tr>
<th>Industry / Manufacturing within the Municipality of Larnaka</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area 1</td>
</tr>
<tr>
<td>Area 2</td>
</tr>
</tbody>
</table>

**Industry / Manufacturing outside Municipality of Larnaka and within the Local Plan area:**

| Area 3 | Southwest on George Grivas Digeni, Larnaka and Aradhipou Municipalities |
| Area 4 | Southwest on A3 motorway to Kalo Chorio, and Aradhipou, and Dromolaxia- Meneou Municipalities |
| Area 5 | West on the Motorway to Dromolaxia |
| Area 6 | North on the motorway to Ayia Napa, Livadia |
| Area 7 | South on the motorway to Ayia Napa |
| Area 8 | North on the motorway to Ayia Napa |

**Table 0.3: Total area of Industrial and Craft Zones / Territories within the Local Plan of Larnaka**

| 1. | Industrial Zone Category A | 2,710,000 m² |
| 2. | Industrial Zone Category B | 16,440,000 m² |
| 3. | Industrial Zone Category C | 1,550,000 m² |
5.4.2.3.1 Industry and Manufacturing within the Municipality of Larnaka

**Figure 0.11: Industry/Manufacturing within the Municipality of Larnaka (Area 1)**

<table>
<thead>
<tr>
<th>No</th>
<th>Industrial / Manufacturing area / Zone</th>
<th>Area</th>
<th>Developed area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Manufacturing Area of Larnaka Category B</td>
<td>26.931m²</td>
<td>26.931m² 100%</td>
</tr>
<tr>
<td>2</td>
<td>Manufacturing Zone of Larnaka Category B</td>
<td>22.979m²</td>
<td>5.163m² 22%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>49.910m²</td>
<td>32.094m² 64%</td>
</tr>
</tbody>
</table>

**Source:** Department of Town Planning and Housing
Figure 0.12: Industry / Manufacturing within the Municipality of Larnaka (Area 2)
Coastal area facilities / fuel storage tanks and LPG

COMPLETE COVERAGE

Industrial Zone of Larnaka Category C
SPACE FOR DEVELOPMENT = 87%

Source: Larnaka Local Plan 2011, Department of Town Planning and Housing

Table 0.5: Capacity of Industrial / Manufacturing area within the Municipality of Larnaka (Area 2)

<table>
<thead>
<tr>
<th>No</th>
<th>Industrial / Manufacturing Area / Zone</th>
<th>Area</th>
<th>Developed area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Industrial Zone of Larnaka Category C</td>
<td>165.144 m²</td>
<td>164.093 m² 99%</td>
</tr>
<tr>
<td>2</td>
<td>Financial Activities Zone of Larnaka (coastal area facilities / fuel</td>
<td>201.706 m²</td>
<td>201.706 m² 100%</td>
</tr>
<tr>
<td></td>
<td>storage tanks and LPG)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>366.850 m²</td>
<td>365.799 m² 100%</td>
</tr>
</tbody>
</table>

Source: Larnaka Local Plan 2011, Department of Town Planning and Housing

5.4.2.3.2 Industry and Manufacturing outside Municipality of Larnaka and within the Local Plan area

Figure 0.13: Industry / Manufacturing outside Municipality of Larnaka and within the Local Plan area (Area 3)
Table 0.6: Capacity of Industrial / Manufacturing area outside Municipality of Larnaka and within the Local Plan area (Area 3)

<table>
<thead>
<tr>
<th>No</th>
<th>Industrial / Manufacturing Area / Zone</th>
<th>Area</th>
<th>Developed area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Governmental Industrial Area of Aradippou Category B</td>
<td>563.404m²</td>
<td>501.289 m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>89%</td>
</tr>
<tr>
<td>2</td>
<td>Industrial Zone of Aradippou Category A</td>
<td>274.538m²</td>
<td>86.894 m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>32%</td>
</tr>
<tr>
<td>3</td>
<td>Industrial Zone of Aradippou Category B</td>
<td>917.013m²</td>
<td>418.930 m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>46%</td>
</tr>
<tr>
<td>4</td>
<td>Mixed Zone of Aradippou for Industrial Developments Category B and Financial Activities</td>
<td>102.141m²</td>
<td>78.451 m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>77%</td>
</tr>
<tr>
<td>5</td>
<td>Craft Zone of Aradippou Category B</td>
<td>293.899m²</td>
<td>84.132 m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>29%</td>
</tr>
<tr>
<td>6</td>
<td>Mixed-use Zone of Aradippou for Industrial Developments Category B and Financial Activities</td>
<td>139.219m²</td>
<td>43.148 m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>2,290.214m²</strong></td>
<td><strong>1,212.844 m²</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>53%</strong></td>
</tr>
</tbody>
</table>

Source: Larnaka Local Plan 2011, Department of Town Planning and Housing
Figure 0.14: Industry / Manufacturing outside Municipality of Larnaka and within the Local Plan area (Area 4)

Area: 1,449,618 τ.μ.

SPACE FOR DEVELOPMENT = 78%

Source: Larnaka Local Plan 2011, Department of Town Planning and Housing

Table 0.7: Capacity of Industrial / Manufacturing area outside Municipality of Larnaka and within the Local Plan area (Area 4)

<table>
<thead>
<tr>
<th>No</th>
<th>Industrial / Manufacturing Area / Zone</th>
<th>Area</th>
<th>Developed area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kalo Chorio duty-free governmental industrial area Category B</td>
<td>459.712m²</td>
<td>111.034m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>24%</td>
</tr>
<tr>
<td>2</td>
<td>Aradhippou governmental industrial area Category B</td>
<td>297.969m²</td>
<td>103.709m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>35%</td>
</tr>
<tr>
<td>3</td>
<td>Aradhippou industrial zone Category B</td>
<td>533.103m²</td>
<td>73.772m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>14%</td>
</tr>
<tr>
<td>4</td>
<td>Aradhippou mixed-use zone for industrial development category B and financial activities</td>
<td>168.695m²</td>
<td>36.919m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>22%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>1.459.479 m²</strong></td>
<td><strong>325.434m²</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>22%</td>
</tr>
</tbody>
</table>

Source: Department of Town Planning and Housing

Figure 0.15: Industry / Manufacturing area outside Municipality of Larnaka and within the Local Plan area (Area 5)

Table 0.8: Capacity of the Industrial / Manufacturing area outside Municipality of Larnaka and within the Local Plan area (Area 5)
LOCAL PLAN AREA (AREA 5)

<table>
<thead>
<tr>
<th>№</th>
<th>Industrial / Manufacturing Area / Zone</th>
<th>Area m²</th>
<th>Developed area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dromolaxia Manufacturing Zone Category B</td>
<td>112.260</td>
<td>2.116m² 2%</td>
</tr>
</tbody>
</table>

SPACE FOR DEVELOPMENT = 98%

Source: Department of Town Planning and Housing

Figure 0.16: Industrial / Manufacturing area outside Municipality of Larnaka and within the Local Plan area (Area 6)

Table 0.9: Capacity of the Industrial / Manufacturing area outside Municipality of Larnaka and within the Local Plan area (Area 6)

<table>
<thead>
<tr>
<th>№</th>
<th>Industrial / Manufacturing Area / Zone</th>
<th>Area m²</th>
<th>Developed area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Livadia Industrial Zone, Category B</td>
<td>209.972</td>
<td>61.213m² 29%</td>
</tr>
</tbody>
</table>

SPACE FOR DEVELOPMENT = 71%

Source: Department of Town Planning and Housing

Source: Department of Town Planning and Housing
5 - URBAN PLANNING AND URBAN PARAMETERS OF LARNACA

**Figure 0.17: Industrial / Manufacturing area outside Municipality of Larnaka and within the Local Plan area (Area 7)**

**Table 0.10: Capacity of the Industrial / Manufacturing area outside Municipality of Larnaka and within the Local Plan area (Area 7)**

<table>
<thead>
<tr>
<th>No</th>
<th>Industrial / Manufacturing Area / Zone</th>
<th>Area m²</th>
<th>Developed area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aradhippou Manufacturing Zone Category B</td>
<td>257.750</td>
<td>10.347 m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4%</td>
</tr>
</tbody>
</table>

SPACE FOR DEVELOPMENT = 96%

*Source: Department of Town Planning and Housing*

**Figure 0.18: Industrial / Manufacturing area outside Municipality of Larnaka and within the Local Plan area (Area 8)**

**Table 0.11: Capacity of the Industrial / Manufacturing area outside Municipality of Larnaka and within the Local Plan area (Area 8)**

<table>
<thead>
<tr>
<th>No</th>
<th>Industrial / Manufacturing Area / Zone</th>
<th>Area m²</th>
<th>Developed area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aradhippou Manufacturing Zone Category B</td>
<td>257.750</td>
<td>95.516 m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>37%</td>
</tr>
</tbody>
</table>

SPACE FOR DEVELOPMENT = 63%

*Source: Department of Town Planning and Housing*
5.4.2.3.3 Industrial development in the Pamboula area

The continuous operation of industrial developments on public land in the 'Pamboula' area creates environmental problems and inhibits the programmed siting in this location of the district government offices (see Figure 5.7).

**IMAGE 0.7: INDUSTRIAL DEVELOPMENT IN THE 'PAMBOULA' AREA**

Source: www.blomurbex.com

5.4.2.3.4 Fuel storage tanks and LPG

The existence and operation of fuel storage and LPG (the Fuel Terminal) on the coastal Larnaka-Dhekelia road create serious problems of environmental pollution and degradation (see Figure 5.8).

**IMAGE 0.8: FUEL STORAGE TANKS AND LPG**
5 - URBAN PLANNING AND URBAN PARAMETERS OF LARNAKA

Source: www.blomurbex.com

**Image 0.9: Craft Area and Zone of Larnaka**

**Image 0.10: Craft Area and Zone of Larnaka**

**Image 0.11: Scattered Craft Industries within the Municipality of Larnaka**

**Image 0.12: Scattered Craft Industries within the Municipality of Larnaka**
5.4.3 Tourism

5.4.3.1 General

Tourism as an economic activity is one of the key factors contributing to employment, balance of payments and the Gross Domestic Product (GDP). Figures 5.19-5.21 indicate the extent to which tourism contributes to the economy of Cyprus.

Figure 5.19 represents service activities providing accommodation and catering services as a percentage of Gross Domestic Product (GDP). Tourism accounted for 7% of GDP in 2011, indicative of the importance of the sector to economic growth.
Figure 0.19: Accommodation service activities and catering services as a percentage of the Gross Domestic Product (GDP) at constant market prices 2005 for the years 2001-2011 (€million)

Source: Department of Statistics

Figure 0.20 presents the global tourism revenues recorded in Cyprus. In absolute terms, revenue grew 12.8% and is estimated at €1,749.3 million in 2011 compared to €1,549.8 million in 2010. The revenue of the years 2000, 2001, 2002 and 2007 exceeded the average income (2000 to 2011).

Source: Department of Statistics
Figure 5.21 presents the tourism statistics for the year 2011.

**Figure 0.21: Tourism statistics for 2011**

In a competitive environment, Cyprus faces problems that have accumulated from the one-dimensional development and standardisation of the tourism product. This has resulted in increased stress on the natural environment and the quality of services offered. Consequently, there is a need to re-assess the planning policies relating to tourism development and introduce policies and incentives that will help to recover and improve the competitiveness of the tourism product.

The tourism activity throughout Cyprus is sited primarily along the coast. This is documented by the distribution of tourist accommodation throughout Cyprus as shown in Figure 5.22.

**Figure 0.22: Allocation of tourist accommodation in Cyprus**
In Larnaka, tourism is arguably one of the most important economic activities, expanding rapidly over the past quarter century, currently employing about four thousand people, representing 7% of the economically active population of the District of Larnaka.

The District of Larnaka’s share of tourist beds lags behind that of other regions. The District of Larnaka is the fifth biggest tourist destination with only 7% (according to the statistics of 2011, see Figure 5.23) of the island wide total tourist beds in Cyprus. It is worth noting that at the same time the rest of the major tourist areas had shares of tourist beds as follows:

- Limassol 14%
- Paphos 35%
- Ayia Napa 22%
- Paralimni 17%

**Figure 0.23: Capacity of tourist accommodation by district - Beds in operation for the year 2012 (%)**
The share of tourist beds in Larnaka can only be compared with the corresponding share of Nicosia and the mountain resorts. Given the importance of tourism to economic growth, the shortcomings of Larnaka in this sector reflect the state of the local economy. In recent years there has been stagnation in new developments, combined with trends of changing the use of hotel units, thus reducing substantially all of the offered tourist beds.

Source: Department of Statistics
5.4.3.2 Spatial location of Tourist Zones

The Local Plan identifies the following areas that may be sited for tourism development in conjunction with other deployments (Figure 5.24). The tourist development zones are sited along the coastal region of the Local Plan of Larnaka (Areas 1 & 2) and in the Urban Shopping Center (Figures 5.24-5.27). Along the coastal area the tourist zones are presented in the following maps:

**Figure 0.24: Tourist Development Areas**

Land area: 4,766,530 m², or 4% of the Local Plan area

Areas 1, & 2 on the map, excluding the extent of the area for urban hotels (areas 3, 4 & 5)

Source: Department of Town Planning and Housing
5.4.3.3 Capacity of tourist zones

(a) The coastal tourist area north-east of the Municipality in Voroklini and Pyla is referred to as Area 1 (Figure 5.25) and the tourist zone west of the small Saltmarsh to the south of the Municipality is referred to as Area 2 (Figure 5.26).

Figure 0.25: Coastal Tourist Zones (Area 1)

Table 0.12: Capacity of Coastal Tourist Zones (Area 1)

<table>
<thead>
<tr>
<th>No</th>
<th>Tourist Zone</th>
<th>Area</th>
<th>Developed Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>T1γ1</td>
<td>179.216 m²</td>
<td>150.267 m² 83%</td>
</tr>
<tr>
<td>2</td>
<td>T1γE</td>
<td>91.690 m²</td>
<td>41.417 m² 45%</td>
</tr>
<tr>
<td>3</td>
<td>T1ε</td>
<td>91.690 m²</td>
<td>41.417 m² 45%</td>
</tr>
<tr>
<td>4</td>
<td>T3β</td>
<td>1.076.436 m²</td>
<td>577.949 m² 54%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1.439.032 m²</td>
<td>811.050 m² 56%</td>
</tr>
</tbody>
</table>

SPACE FOR DEVELOPMENT = 44%

Source: Department of Town Planning and Housing
The central tourist zones of the Plan are within the Municipality of Larnaka (Areas 3, 4 & 5) which encourages the growth of urban hotels (Figure 5.27-5.29).

Area 3 covers the central area of the city to the sea that is surrounded by Grigori Afxentiou and Artemidos avenue. This includes:

- the coastal traditional area of Scala and Zones Ka3 and Eb south (the area of Mackenzie beach)

- the coastal strip north up to the Spyrou Kyprianou Avenue (the area between the Port, Marina, Pavlou Valdaseride and Zakynthos street)
Tourism development of special types is permitted in the special area of Agios Ioannis (Area 4, see Figure 5.28) and the northern fringes of the large salt lake (Area 5, see Figure 5.29). Specifically, the planning zones in the above areas are set out as the following:

(ii) **Area 4**: St. John Area of Special Character (Zone Pa8a, Figure 5.28)
(iii) **Area 5**: Two sections of residential areas Ka8, that are located to the north of Great Salt Lake (Figure 5.29)

### Table 0.16: Capacity of the Larnaka Central Region for Urban Hotels (Area 5)

<table>
<thead>
<tr>
<th>No</th>
<th>Zone</th>
<th>Area</th>
<th>Developed Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ka8</td>
<td>57.270 m²</td>
<td>6.762 m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12%</td>
</tr>
<tr>
<td>2</td>
<td>Ka8</td>
<td>24.055 m²</td>
<td>5.282 m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>22%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>81.325 m²</strong></td>
<td><strong>12.044 m²</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>15%</strong></td>
</tr>
</tbody>
</table>

**Figure 0.29: Larnaka Central Region for Urban Hotels (Area 5)**
In these areas, the tourism development is associated with the central functions of the City and contributes to the revitalisation and upgrading of the urban area, serving a particular category of visitors with commercial, social, religious, cultural or nature interests. Of particular note in these areas are: the project for the utilisation of the Marina and Harbour area, the Castle, the Archaeological Museum, the traditional neighborhoods, the squares and shopping streets, the remarkable buildings, the Foinikoudes seafront and the proximity to the archaeological sites, the Municipal Gardens, Library and Theatre, Pattichion Amphitheatre and the cluster of salt lakes.

Besides the above tourist areas, specific provisions of the Local Plan of Larnaka in relation to the right to build tourist units shall set out below:

(a) **Areas of special facilities of the Airport ΕΔΑ1 and ΕΔΑ1α at Meneou (Region 6):** In these regions, the development of tourism in the form of an urban hotel is directly associated with the operation of the Larnaka International Airport (Figure 5.30).

<table>
<thead>
<tr>
<th>No</th>
<th>Zone</th>
<th>Area</th>
<th>Developed Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ΕΔΑ1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>ΕΔΑ1α</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>276.423</td>
<td>7.238 m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>26%</td>
</tr>
</tbody>
</table>

**Figure 0.30: Zones for special airport facilities ΕΔΑ1 and ΕΔΑ1α of Meneou (Area 6)**

**Table 0.17: Capacity of Zones for special airport facilities ΕΔΑ1 and ΕΔΑ1α of Meneou (Area 6)**
(b) **Areas Outside the boundaries of development:** Primarily in areas of special development where integrated tourist complexes can be sited. In the above mentioned areas and conditions, accommodation can be a complementary use of a specialised medical diagnostic center or research center. The developments are meant to enrich the tourist product and include a wide range of facilities, services and infrastructure.

(c) **Tourist developments of listed buildings and traditional settlements:** Tourism development is also the development and maintenance of traditional settlements to be used by tourists. A map of listed and traditional settlements is presented in the chapter on "Conservation".

(d) **Unified development of large and complex urban uses:** Tourism development in the form of hotels connected to a private hospital of international standards or to a commercial park.

The total area of all Larnaka’s tourist zones amounts to 4,766,530 m² or 4% of the Local Plan area of Larnaka. The details of the growth rates provided in the Local Plan of Larnaka per urban area and the type of permitted tourist and recreation development are detailed in Tables 5.18-5.19
### Table 0.18: Permitted Uses and Growth Coefficients in Urban Zones / Areas for Tourist Activities within the Local Plan of Larnaka

<table>
<thead>
<tr>
<th>Zoning Ordinance</th>
<th>Authorized Development for tourist accommodation</th>
<th>Maximum Building Coefficient</th>
<th>Maximum Percentage for Coverage</th>
<th>Number of floors</th>
<th>Maximum Height (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tourist Zone T1ε</td>
<td>• Hotels&lt;br&gt;• Touris villages&lt;br&gt;• Tourist villas&lt;br&gt;• Organised apartments&lt;br&gt;• Enhancing projects in tourist units&lt;br&gt;• Other developments</td>
<td>0.50:1 (Ξ)&lt;br&gt;0.45:1 (T.X., T.E.)&lt;br&gt;0.45:1 (Ο.Δ.)&lt;br&gt;0.30:1 (Κ)&lt;br&gt;0.30:1 (γ)</td>
<td>0.25:1&lt;br&gt;0.25:1&lt;br&gt;0.20:1&lt;br&gt;0.20:1&lt;br&gt;0.20:1</td>
<td>3&lt;br&gt;2&lt;br&gt;2&lt;br&gt;2&lt;br&gt;2</td>
<td>13.50&lt;br&gt;10.00&lt;br&gt;10.00&lt;br&gt;10.00&lt;br&gt;10.00</td>
</tr>
<tr>
<td>Tourist Zone T1γ1</td>
<td></td>
<td>0.50:1 (Ξ)&lt;br&gt;0.45:1 (T.X., T.E.)&lt;br&gt;0.45:1 (Ο.Δ.)&lt;br&gt;0.30:1 (Κ)</td>
<td>0.25:1&lt;br&gt;0.25:1&lt;br&gt;0.20:1&lt;br&gt;0.20:1</td>
<td>3&lt;br&gt;2&lt;br&gt;2&lt;br&gt;2</td>
<td>13.50&lt;br&gt;10.00&lt;br&gt;10.00&lt;br&gt;10.00</td>
</tr>
<tr>
<td>Tourist Zone T1γ(Ε)</td>
<td></td>
<td>0.50:1 (Ξ)&lt;br&gt;0.45:1 (T.X., T.E.)&lt;br&gt;0.45:1 (Ο.Δ.)&lt;br&gt;0.30:1 (Κ)</td>
<td>0.25:1&lt;br&gt;0.25:1&lt;br&gt;0.20:1&lt;br&gt;0.20:1</td>
<td>3&lt;br&gt;2&lt;br&gt;2&lt;br&gt;2</td>
<td>13.50&lt;br&gt;10.00&lt;br&gt;10.00&lt;br&gt;10.00</td>
</tr>
<tr>
<td>Area Type</td>
<td>Zoning Category</td>
<td>Development Coefficients</td>
<td>Residential Coefficients</td>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>Tourist Zone T3β(E)</td>
<td></td>
<td>0,25:1 (Ξ) 0,20:1 (T.X., T.E.) 0,20:1 (O.Δ.) 0,15:1 (K)</td>
<td>0,15:1 2 10,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourist Zone T3β</td>
<td></td>
<td>0,30:1 (Ξ) 0,25:1 (T.X., T.E.) 0,20:1 (O.Δ.) 0,20:1 (K)</td>
<td>0,20:1 3 13,50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial Activity Axis Category IV (Εβ)</td>
<td></td>
<td>Tourist facilities / services (small offices) other developments</td>
<td>The development coefficients for housing of the adjacent zone are valid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural Zone (Γα2)</td>
<td></td>
<td>Integrated Tourist Complexes other developments</td>
<td>0,06:1 2 ,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural Zone (Γα4)</td>
<td></td>
<td></td>
<td>0,10:1 2 ,00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Airport Special Facilities Zone (ΕΔΑ1α)</td>
<td></td>
<td>Urban Hotels other developments</td>
<td>0,90:1 2 0,00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 0.19: Permitted Uses and Growth Coefficients in Urban Zones / Areas for Leisure Activities within the Local Plan of Larnaka

<table>
<thead>
<tr>
<th>Zoning Ordinance</th>
<th>Authorized Development for recreation</th>
<th>Maximum Building Coefficient</th>
<th>Maximum Percentage for Coverage</th>
<th>Number of floors</th>
<th>Maximum Height (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tourist Zone T1ε</td>
<td>• Mild recreational facilities&lt;br&gt;• Recreational facilities of standard form&lt;br&gt;• Obtrusive recreational facilities&lt;br&gt;• Autonomous banquet halls&lt;br&gt;• Thematic parks&lt;br&gt;• Centers of multiple sports / leisure activities&lt;br&gt;• Other specialised leisure and entertainment facilities (golf courses, minigolf, waterparks, amusement parks, equestrian centers, aquariums, etc.)</td>
<td>0,50:1 (Ξ) 0,45:1 (T.X., T.E.) 0,45:1 (O.Δ.) 0,30:1 (K) 0,30:1 (γ)</td>
<td>0,25:1 0,25:1 0,25:1 0,20:1 0,20:1</td>
<td>3 2 2 2 2</td>
<td>13,50 10,00 10,00 10,00 10,00</td>
</tr>
<tr>
<td>Tourist Zone T1γ1</td>
<td>• Cultural activities&lt;br&gt;• Other developments</td>
<td>0,50:1 (Ξ) 0,45:1 (T.X., T.E.) 0,45:1 (O.Δ.) 0,30:1 (K)</td>
<td>0,25:1 0,25:1 0,25:1 0,20:1</td>
<td>3 2 2 2</td>
<td>13,50 10,00 10,00 10,00</td>
</tr>
<tr>
<td>Tourist Zone T1γ(E)</td>
<td></td>
<td>0,50:1 (Ξ) 0,45:1 (T.X., T.E.) 0,45:1 (O.Δ.) 0,30:1 (K)</td>
<td>0,25:1 0,25:1 0,25:1 0,20:1</td>
<td>3 2 2 2</td>
<td>13,50 10,00 10,00 10,00</td>
</tr>
<tr>
<td>Tourist Zone T3β(E)</td>
<td></td>
<td>0,25:1 (Ξ) 0,20:1 (T.X., T.E.) 0,20:1 (O.Δ.) 0,15:1 (K)</td>
<td>0,15:1 0,15:1 0,15:1 0,15:1</td>
<td>2 2 2 2</td>
<td>10,00 10,00 10,00 10,00</td>
</tr>
<tr>
<td>Area Description</td>
<td>Development Coefficients</td>
<td>Note</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourist Zone Τ3β</td>
<td>0.30:1 (Ξ) 0.25:1 (T.X., T.E.) 0.25:1 (Ο.Δ.) 0.20:1 (Κ) 0.20:1</td>
<td>3 13.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Commercial Area (CCΑ) (ΚΕΠ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Shopping Center (RSC) (ΠΕΚ) of Aradippou</td>
<td>Recreational facilities of mild, standard, and obtrusive form Other developments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial Activity Axis Category I (Εβ1)</td>
<td>Recreational facilities of mild, standard, and obtrusive form Other developments</td>
<td>2,00:1 0,50:1</td>
<td>6 4.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial Activity Axis Category III (Εβ5)</td>
<td>Recreational facilities of mild form Other developments</td>
<td>1,20:1 0,50:1</td>
<td>3 3.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial Activity Axis Category IV (Εβ)</td>
<td>Recreational facilities of mild form Recreational facilities of standard form Other developments</td>
<td></td>
<td>The development coefficients for housing of the adjacent zone are valid</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Rural Zone (Γα) | Recreational facilities of obtrusive form  
| | Autonomous banquet halls  
| | Centers of multiple sports / leisure activities  
| | Other specialised leisure and entertainment facilities (golf courses, minigolf, waterparks, amusement parks, equestrian centers, aquariums, etc.)  
| | Other developments  |
| Rural Zone (Γα2) | Centers of multiple sports / leisure activities  
| | Thematic parks  
| | Other developments  |
| Rural Zone (Γα4) | Centers of multiple sports / leisure activities  
| | Thematic parks  
| | Other developments  |
| Commercial Area in the core of the settlement (Πα/Εβ) | Recreational facilities of mild form  
| | Other developments  |
| Πα2 | 3,50:1  
| | 0,70:1  
| | 7  
| | 25,30  |
| Πα4 | 2,40:1  
| | 0,70:1  
| | 4  
| | 13,10  |
| Πα5 | 2,10:1  
| | 0,70:1  
| | 3  
| | 10,00  |
| Πα6 | 1,80:1  
| | 0,70:1  
| | 3  
| | 10,00  |
| Πα7 | 1,60:1  
| | 0,70:1  
| | 3  
| | 10,00  |
| Πα8 | 1,40:1  
| | 0,70:1  
| | 3  
| | 10,00  |
| Πα8α | 1,40:1  
| | 0,70:1  
| | 2  
<p>| | 8,30  |</p>
<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Airport Special Facilities Zone (ΕΔΑ1)</strong></td>
</tr>
<tr>
<td>▪ Mild recreational facilities as part of an organised commercial center, or mixed commercial development, or a supermarket</td>
</tr>
<tr>
<td>▪ Other developments</td>
</tr>
<tr>
<td><strong>Airport Special Facilities Zone (ΕΔΑ1α)</strong></td>
</tr>
<tr>
<td>▪ Mild recreational facilities as part of an organised commercial center, or mixed commercial development, or a supermarket</td>
</tr>
<tr>
<td>▪ Other developments</td>
</tr>
</tbody>
</table>

*Source: Department of Town Planning and Housing*
The provisions of the ‘Hotels and Tourist Establishments Law’ and the related ordinances regulating tourism development control the construction of tourist facilities in Larnaka.

Note that both the provisions of the Local Plans and the provisions of the ‘Hotels and Tourist Establishments Law’ govern the whole of Cyprus and are not differentiated for the benefit of specific areas. Consequently, the lack of tourist accommodation in Larnaka should be attributed to the following factors:

- The availability of sufficient sports fields in tourist zones.
- The conflicting developments affecting the attractiveness of tourist areas.
- The inadequacy of complementary and enriching projects.
- The reduced investor interest due to other factors.

Although Larnaka has a comparative advantage over other Cypriot cities due to the siting of an international airport close to the city center, a marina and a port within the urban center, and the new national road network that makes the connection with other cities easier, tourism has not developed to the extent that it should have.

Appendix 5 contains further data and statistics about the tourism industry of Larnaka.

### 5.4.4 Commercial development - Offices

#### 5.4.4.1 General

The implementation of the ‘Town and Country Planning Act’ and better regulation of the siting of new commercial developments has greatly reduced the problems of incompatible uses in residential areas, having a positive impact on living standards and the amenities of local residents. Previous years had seen scattered commercial uses with adjustments to the previous laws being unsuccessful.

The existing commercial uses in residential areas are still in place, such as converted to warehouses, workshops or other developments and cause problems to amenities and residents. The incentives provided in the Local Plan Larnaka to convert stores in housing units did not bring the expected result and should be studied again.

The Local Plan of Larnaka allows the planning authority the discretion to site special categories of
commercial and office developments in the residential areas. This allowance should be made to serve the direct and daily needs of the local residents in a way that will not affect other planning provisions of the Local Plan or threaten the competitiveness of the designated commercial areas.

The use of this discretion by the planning authority is broadly characterised as successful with some individual exceptions.

One of the key responsibilities of urban planning is to have the flexibility to adjust to the changing needs and requirements of commercial environment. This is especially true in recent years with the liberalisation of various markets, and the proliferation of the internet and the need to solve environmental through technological means. Planning policies should be continually updated to provide solutions for specific types of commercial activities.

Finally, the capacity of the existing defined commercial areas is 3,660,736 m2, which corresponds to 3% of the total area of the Local Plan.

**Figure 0.31: Commerce as a percentage of the Gross Domestic Product (GDP) at constant market prices 2005 for the years 2001-2011 (€Million)**

Source: Department of Statistics
5.4.4.2 Spatial location of commercial zones

Areas used for commercial and office development under the current Local Plan of Larnaka are:

5.4.4.2.1 Central Commercial Area

The Central Commercial Area is the functional center of the Local Plan with a wide area of services, and therefore is the connection of the urban area and the general multi-functional urban center. In this area are housed Large-scale commercial and office developments along with a large range of other important uses and central functions covering administration, culture, tourism and recreation.

5.4.4.2.2 Regional Shopping Centers (SBC)

Regional shopping centers are defined in the Local Plan based on urban planning and land use criteria. This is done in order to establish at least one center of significant scale for each unit of the city.

5.4.4.2.3 Local Shopping Centers (ECF) and commercial areas the core of Settlements

The local commercial areas are usually centers of commercial and/or community facilities. Their aim is to service the residential areas and some of them coincide with areas designated for that purpose.

5.4.4.2.4 Commercial Activity Axes Category I

Activity Axes Category I, are linear commercial concentrations that are developed along parts identified key roads.
5.4.4.2.5 Commercial Activity Axes Category II

Activity Axes Category II, are set out along parts of a road network of significance. In these areas are predominantly sited showrooms and other considerations, as described in the relevant chapters of the Local Plan.

5.4.4.2.6 Commercial Activity Axes Category III

Axes Activity Category III lies along parts of the secondary road network where local shopping centers may be permitted.

5.4.4.2.7 Commercial Activity Axes Category IV

Axes Activity Category IV is part of the coastal Larnaka-Dhekelia road and has the main objective of serving the tourist areas of the coastal front.

5.4.4.2.8 Residential and office zones

In the identified residential and office zones mixed residential and offices development, and other facilities are permitted (as described in the relevant chapters of the Local Plan). The location of these areas is very much connected to the urban fabric acquired over the last 40 years in close proximity to areas with central functions.

The spatial policy also varies depending on the type or category of the commercial or office development. The Planning Authority has the discretion to handle specific problems by siting a specific type of development outside of the above areas.

5.4.4.3 Categories for Commercial Activity

The various categories of commercial and office activities in accordance with the Local Plan of Larnaka are:
5.4.4.3.1 Retail stores

This refers to any building or other real property used for retail or the retail sale of goods, and includes any building or other real property used as a barber or hairdresser, dry cleaning shop, or general repair shop. It does not include building or other real property used as a center for games, amusement parks, repair of motor vehicles, washing machines, gas oil tanks, offices, hotels, restaurants, snack bars, cafeterias, coffee shops or bars.

5.4.4.3.2 Retail stores for daily service

This includes any building or other real property used for retail or retail sale of goods and rendering of services which are necessary for the daily service of the adjacent residential building or other areas (e.g. store food and other household products, barbershop or hairdresser, beauty salon, pharmacy, bookstore, florist, branch and kiosk) with a gross area of 250 m².

5.4.4.3.3 Superstores

This refers to stores with a gross area greater than 750 m² selling household, garden and DIY products in a single building. It also refers to functional superstores which house retailers under a single management, where the available products specialise in items for the home, garden or DIY.

5.4.4.3.4 Showrooms

This refers to any building or other real property used for retail sale of goods that are not needed for daily servicing of the population. This means that the total number of vehicles and frequency of movements that the premises attracts, especially compared to commercial establishments, is relatively limited. This category may refer to dealerships of cars bicycles, motorcycles, boats, farm vehicles and machinery, furniture, sanitary ware and tiles, curtains and carpets, lighting, and household appliances.
5.4.4.3.5 Department stores

This refers to a single complex which houses retailers where the building and exterior are operationally under a single management, where there is normally available a wide variety of products, but there is no specialisation in any type of product. A department store can include a supermarket, provided that the size of the sales area does not exceed 1,500 m.

5.4.4.3.6 Supermarkets

This refers to a single commercial development which houses retail business involving the sale of food and other household products. It may be enabled in combination with small-scale facilities of entertainment and number of shops which are ancillary to the main use.

5.4.4.3.7 Planned shopping centers

This refers to a building complex which houses together retailers that are functionally independent or independent businesses, regardless of the total number and size, or the management and ownership of the complex. They can house a superstore, supermarket or department store, and small scale recreation facilities and entertainment (cafeterias, restaurants, etc).

5.4.4.3.8 Mixed commercial developments

This refers to a large-scale commercial development, made up of individual relatively small scale stores and a large single commercial enterprise, which may include a commercial center, supermarket, department store, as well as a wider range of leisure and entertainment facilities.

5.4.4.3.9 Offices

It includes bank and premises used by cooperative savings bank, credit company, real estate companies or business development, or solely as an office for a taxi company, car rental office, driving school office, travel agency or agency ticketing office. The term ‘agency’ does not include
buildings used as a taxi station, parcel station, car rental business, or betting company.

5.4.4.3.10 Special services enterprise

This refers to any building or other real property used as a taxi station, parcel station, car rental business, or betting company.

Table 5.20 summarises the Local Plan of Larnaka regarding commercial deployments.
<table>
<thead>
<tr>
<th>TYPE/CATEGORY</th>
<th>PERMITTED ZONE/ TERRITORY</th>
<th>REMARKS/CONDITIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Store</td>
<td>Central Commercial Area</td>
<td>Irrespective of the area</td>
</tr>
<tr>
<td></td>
<td>Regional Shopping Centers</td>
<td>Irrespective of the area</td>
</tr>
</tbody>
</table>
|                    | Local Shopping Centers and commercial areas the core of Settlements | Retail store of daily service with gross area up to 250 m²  
Retail store of daily service as above, a single unified company of a grocery store in combination with goods of household and personal use, usable space of the sales area up to 350 m² |
<p>|                    | Commercial Activity Axis Category I                          | Irrespective of the area                                                                                                                                 |
|                    | Commercial Activity Axis Category II                         | Minimum ground floor sales area 150 m², excluding Retail store of daily service                                                                                                                                 |
|                    | Commercial Activity Axis Category III and IV                  | Retail store of daily service only with gross area up to 250 m²                                                                                                                                               |
|                    | Airport Special Facilities Zones EΔA1 and EΔA1α               | Retail store with gross area over 250 m²                                                                                                                                                                      |
|                    | Zones for Residential development                             | Retail store of daily service with gross area up to 50 m² located at least on a secondary road (conditional on distance from a specified commercial area) Small kiosk of gross area 25 m²      |
| Showroom           | Central Commercial Area                                       | Irrespective of the area                                                                                                                                                                                        |
|                    | Regional Shopping Centers                                     | Irrespective of the area                                                                                                                                                                                        |
|                    | Commercial Activity Axis Category I and II                    | Irrespective of the area                                                                                                                                                                                        |
|                    | Mixed zones for Industry Category B and Economic activities plus | As part of a large unified company                                                                                                                                                                             |</p>
<table>
<thead>
<tr>
<th>Economic activities zone</th>
<th>Central Commercial Area</th>
<th>Irrespective of the area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department Store</td>
<td>Central Commercial Area</td>
<td>Irrespective of the area</td>
</tr>
<tr>
<td>Regional Shopping Centers</td>
<td>Central Commercial Area</td>
<td>Irrespective of the area</td>
</tr>
<tr>
<td>Commercial Activity Axis</td>
<td>Central Commercial Area</td>
<td>Irrespective of the area</td>
</tr>
<tr>
<td>Category I</td>
<td>Central Commercial Area</td>
<td>Irrespective of the area</td>
</tr>
<tr>
<td>Airport Special Facilities Zones</td>
<td>Central Commercial Area</td>
<td>Irrespective of the area</td>
</tr>
<tr>
<td>EΔA1 and EΔA1α</td>
<td>Central Commercial Area</td>
<td>Irrespective of the area</td>
</tr>
<tr>
<td>Supermarket</td>
<td>Central Commercial Area</td>
<td>Maximum area of sales 2,000 m²</td>
</tr>
<tr>
<td>Regional Shopping Centers</td>
<td>Central Commercial Area</td>
<td>Maximum area of sales 2,000 m²</td>
</tr>
<tr>
<td>Commercial Activity Axis</td>
<td>Central Commercial Area</td>
<td>Maximum area of sales 2,000 m²</td>
</tr>
<tr>
<td>Category I</td>
<td>Central Commercial Area</td>
<td>Maximum area of sales 2,000 m²</td>
</tr>
<tr>
<td>Commercial Activity Axis</td>
<td>Central Commercial Area</td>
<td>Maximum area of sales 1,500 m²</td>
</tr>
<tr>
<td>Category IV</td>
<td>Central Commercial Area</td>
<td>Maximum area of sales 2,000 m²</td>
</tr>
<tr>
<td>Airport Special Facilities Zones</td>
<td>Central Commercial Area</td>
<td>Maximum area of sales 2,000 m²</td>
</tr>
<tr>
<td>EΔA1 and EΔA1α</td>
<td>Central Commercial Area</td>
<td>Maximum area of sales 2,000 m²</td>
</tr>
</tbody>
</table>

The construction of a supermarket with a sales area larger than 5,000 m² is not allowed - Local Plan policy of strategic importance.

<table>
<thead>
<tr>
<th>Souperstore</th>
<th>In the designated areas depending on the category of superstores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superstore for home and garden goods, and other related articles</td>
<td>Central Commercial Area</td>
</tr>
<tr>
<td>Regional Shopping Centers</td>
<td>Central Commercial Area</td>
</tr>
<tr>
<td>Commercial Activity Axis</td>
<td>Central Commercial Area</td>
</tr>
<tr>
<td>Category I</td>
<td>Central Commercial Area</td>
</tr>
<tr>
<td>Mixed zones for Industry Category B and Economic activities plus Economic activities zone</td>
<td>Based on the building coefficient of the Zoning ordinance</td>
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<td>Airport Special Facilities Zones</td>
<td>Central Commercial Area</td>
</tr>
<tr>
<td>EΔA1 and EΔA1α</td>
<td>Central Commercial Area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shopping center</th>
<th>Central Commercial Area</th>
<th>Irrespective of the area</th>
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</thead>
<tbody>
<tr>
<td>Regional Shopping Centers</td>
<td>Central Commercial Area</td>
<td>Irrespective of the area</td>
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<tr>
<td>Commercial Activity Axis</td>
<td>Central Commercial Area</td>
<td>Maximum gross area 2,000 m²</td>
</tr>
<tr>
<td>Category I</td>
<td>Central Commercial Area</td>
<td>Maximum gross area 2,000 m²</td>
</tr>
<tr>
<td>Airport Special Facilities Zones</td>
<td>Central Commercial Area</td>
<td>Irrespective of the area, but with</td>
</tr>
<tr>
<td>Category</td>
<td>Activity</td>
<td>Details</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-----------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Mixed Commercial Development</td>
<td>EΔΑ1 and EΔΑ1α</td>
<td>mild leisure and entertainment facilities and movie theaters only</td>
</tr>
<tr>
<td>Offices</td>
<td>Central Commercial Area</td>
<td>Depending on the synthetic components and the relevant policy</td>
</tr>
<tr>
<td></td>
<td>Regional Shopping Centers</td>
<td>Depending on the synthetic components and the relevant policy</td>
</tr>
<tr>
<td></td>
<td>Airport Special Facilities Zones</td>
<td>Irrespective of the area, but with mild leisure and entertainment</td>
</tr>
<tr>
<td></td>
<td>EΔΑ1 and EΔΑ1α</td>
<td>facilities and movie theaters only</td>
</tr>
<tr>
<td>Offices</td>
<td>Central Commercial Area</td>
<td>Irrespective of the area</td>
</tr>
<tr>
<td></td>
<td>Regional Shopping Centers</td>
<td>Irrespective of the area</td>
</tr>
<tr>
<td></td>
<td>Office zone at Meneou</td>
<td>Irrespective of the area</td>
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<tr>
<td></td>
<td>Local Shopping Centers and</td>
<td>Maximum gross area 200 m²</td>
</tr>
<tr>
<td></td>
<td>commercial areas the core of</td>
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<tr>
<td></td>
<td>Settlements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Commercial Activity Axis Category I</td>
<td>Irrespective of the area</td>
</tr>
<tr>
<td></td>
<td>Commercial Activity Axis Category II</td>
<td>Minimum gross area 200 m²</td>
</tr>
<tr>
<td></td>
<td>Commercial Activity Axis Category III</td>
<td>Maximum gross area 200 m²</td>
</tr>
<tr>
<td></td>
<td>Commercial Activity Axis Category IV</td>
<td>Maximum gross area 200 m² (part of mixed development)</td>
</tr>
<tr>
<td></td>
<td>Airport Special Facilities Zones</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EΔΑ1 and EΔΑ1α</td>
<td></td>
</tr>
<tr>
<td>Zones for Residential development</td>
<td>Zones for Residential development</td>
<td>Maximum gross area up to 130 m² in conjunction with the owner's</td>
</tr>
<tr>
<td></td>
<td></td>
<td>residence located along secondary roads (collector roads)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum gross area up to 200 m² located along primary roads. Larger</td>
</tr>
<tr>
<td></td>
<td></td>
<td>scale for properties with area 1.000 m² along primary roads</td>
</tr>
<tr>
<td></td>
<td>Mixed zones for Industry Category B and Economic activities</td>
<td>As part of a large unified company</td>
</tr>
</tbody>
</table>
The evaluation of the effectiveness of the policy of the Local Plan of Larnaka in relation to commercial and office areas essentially focuses on whether:

a) The policy resulted in the differentiation of the quality of life in the existing residential areas.

b) The policy gave locational solutions in modern and demanding commercial developments especially when this sector varies constantly in characteristics.

c) The areas defined by the Local Plan for the location of commerce and office premises have sufficient capacity to adequately serve future needs.

d) The use of discretion by the planning authority was effective to solve problems of the planning system.

### Table: Urban Parameters of Larnaka

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial zones/ territories</td>
<td>Exclusively as part of the enterprise (maximum size up to 30% of the total area)</td>
<td></td>
</tr>
<tr>
<td>Enterprise (Office) for Specialised Services</td>
<td>Central Commercial Area</td>
<td>Excluding Centers /axes, which are primary roads. Provided that the appropriate section of significant area is configured for parking</td>
</tr>
<tr>
<td></td>
<td>Regional Shopping Centers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Local Shopping Centers and commercial areas the core of Settlements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Commercial Activity Axis Category I, III and IV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Airport Special Facilities Zones EΔA1 and EΔA1α</td>
<td></td>
</tr>
</tbody>
</table>

Source: Department of Town Planning and Housing
The existing commercial uses in residential areas have in some cases converted premises illegally into warehouses, workshops or other developments that create problems to residents. The incentives provided in the Local Plan of Larnaka to convert stores into houses did not bring the expected results and needs to be re-addressed.

### 5.4.4.4 Capacity of commercial zones

The Local Plan identifies the following areas that may be sited for commercial development in conjunction with other deployments (see Figure 5.32)
5 - URBAN PLANNING AND URBAN PARAMETERS OF LARNACA

Figure 0.32: Areas for Commercial Development

Source: Larnaka Local Plan 2011, Department of Town Planning and Housing

Table 0.21: Total Area for Commercial Zones within the Larnaka Local Plan

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Core</td>
<td>542,484 m²</td>
</tr>
<tr>
<td>Commercial Activity Axis I</td>
<td>477,678 m²</td>
</tr>
<tr>
<td>Commercial Activity Axis II</td>
<td>715,930 m²</td>
</tr>
<tr>
<td>Commercial Activity Axis III</td>
<td>708,388 m²</td>
</tr>
<tr>
<td>Commercial Activity Axis IV</td>
<td>249,635 m²</td>
</tr>
<tr>
<td>Commercial Activity Axis V</td>
<td>3,552 m²</td>
</tr>
<tr>
<td>Local Shopping Centers</td>
<td>269,172 m²</td>
</tr>
<tr>
<td>Regional Shopping Centers</td>
<td>52,255 m²</td>
</tr>
<tr>
<td>Larnaka Local Shopping Center</td>
<td>29,255 m²</td>
</tr>
<tr>
<td>Community Shopping Center Boundaries</td>
<td>244,752 m²</td>
</tr>
<tr>
<td>Tourist - Commercial area of the Municipality of Larnaka</td>
<td>151,787 m²</td>
</tr>
<tr>
<td>Residential Development - Offices (Meneou)</td>
<td>5,204 m²</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Residential Development - Offices (Municipality of Larnaka)</td>
<td>210,644 m²</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3,660,736 m²</strong></td>
</tr>
</tbody>
</table>

Source: Larnaka Local Plan 2011, Department of Town Planning and Housing

**Figure 0.33: Central Commercial Area**

LARNAKA LOCAL COMMERCIAL CENTER

AREA: 29,255 m²

Source: Department of Town Planning and Housing

**Figure 0.34: Regional Shopping Centers (RSC)**

TOTAL AREA: 52,255 m²

**Figure 0.35: Regional Shopping Centers (RSC)**
Source: Department of Town Planning and Housing
5 - URBAN PLANNING AND
URBAN PARAMETERS OF LARNACA

Figure 0.36: Local Shopping Centers (LSC) and Commercial Areas in the Core of Settlements

Local Shopping Centers

Total Area: 269,172 m²

Commercial Core

Total Area: 542,484 m²

Source: Department of Town Planning and Housing
Figure 0.37: Commercial Activity Axes Category I

Total Area: 477,678 m²

Source: Department of Town Planning and Housing
5 - URBAN PLANNING AND URBAN PARAMETERS OF LARNAKA

Figure 0.38: Commercial Activity Axis Category II

COMMERCIAL ACTIVITY AXES
CATEGORY II

TOTAL AREA: 715,930 m²

Source: Department of Town Planning and Housing

Figure 0.39: Commercial Activity Axis Category III

COMMERCIAL ACTIVITY AXES
CATEGORY III

TOTAL AREA: 708,388 m²
Figure 0.40: Commercial Activity Axis
Category IV

Source: Department of Town Planning and Housing

COMMERCIAL ACTIVITY AXES
CATEGORY IV

AREA: 249,635 m²
Figure 0.41: Commercial Activity Axis Category V

Area: 3,552 m²

Source: Department of Town Planning and Housing
Figure 0.42: Mixed-use - Residential Development and Office Zone

Tourist - Commercial Development within the Municipality of Larnaka

Total Area: 151,787 m²

Figure 0.43: Mixed-use - Residential Development and Office Zone

Residential Development - Office Development within the Municipality of Larnaka

Area: 210,644 m²

Figure 0.44: Mixed-use - Residential Development and Office Zone

Residential Development - Office Development (Meneou)

Area: 5,204 m²
The intensity of commercial and office development in Larnaka has traditionally been focused on the area of ‘Scala’ identified as the Urban Center (Figure 5.17).

The traditional areas of commercial activities in the Urban Shopping Center of Larnaka were focused on two streets, Ermou and Zinonos, Kitieos Street, parallel to the coastline. Makarios Avenue is the extent of Zinonos Kitieos Street, while perpendicular to that, Afxentiou street, divides the market into two sections. On Zenon Kitieos Street, small retail outlets and individual businesses are developed while the market on Makarios III Avenue consists of larger shops and offices. The Ermou and Zenon Kitieos Market mainly specialises in clothing and footwear, while a network of roads, vertical and parallel to it, has developed a set of commercial activities and services, such as offices, restaurants, recreation, gas and oil stations etc.

The main recreational area of Larnaka is the historical center, and in particular, Athens Street, where there are restaurants, cafes and nightclubs. Also small shops, local business and taverns are predominantly seen around the public market.

The Urban Center of Larnaka is located east of the beachfront extending from the traditional center of ‘Scala’ (the old Turkish Cypriot district) to the roundabout next to the Harbour and towards an inland direction. The area includes the area of Pampoula, the Archaeological Museum, the old Hospital, the American Academy, the Municipal Gardens and Theatre, the central commercial area, Grigori Afxentiou, Artemidos, Faneromenis and the special area of Skala. The area seems to reinforce the identity of Larnaka and compliments in the future development of the City.
5 - URBAN PLANNING AND
URBAN PARAMETERS OF LARNAKA

**Image 0.17: Urban Commercial Center (UCC)**

**Map 0.3: Urban Center (UC)**

*Source: www.blomurbex.com*
Figure 0.45: Central Commercial Area of the Urban Center

Source: Department of Town Planning and Housing
The problems that the Urban Center is facing are described in the Local Plan of Larnaka and the Area Plan prepared by ‘Politia Armos’ in 2005.

Specifically, the main issues can be summarised as:

(a) **Accessibility:**

The commercial center provides quick access for cars. In contrast, the public transport is limited and faces problems in terms of comfort, frequency and operating time. Compared to the cars, their entry is easy, but the internal circulation of traffic is difficult caused by the poor geometric characteristics of the road network and the unnecessary ability to drive from one side of the area to the other. The use of public transportation is difficult due to the lack of adequate infrastructure, i.e. pavements, walkways, bicycle paths, except on the Foinikoudes seafront and the new Ermou St Lazarus square.

(b) **Parking:**
The random siting of private and public parking spaces inhibits the attractiveness of the Urban Center. The parking spaces were created not as planning options, but randomly based on market conditions and the choices of landowners.

The roadside parking areas are sited on the existing geometry of the road network and are not a result of urban and traffic arrangements.

(c) **Commerciality - Competitiveness:**

The Urban Center has poor records on the issue of commercial and office activity. Regarding commercial business it is clear that the District of Larnaka lags behind the other cities especially in the urban center. Although administration offices are located within the City (District Administration, City Hall, etc.) they have had no effect in further attracting business activities or creating an attractive business environment. The decentralisation of important offices, such as Land and Surveys, Urban Planning, Courts, has been a factor in weakening of the role and importance of urban centers.

Weaknesses are also apparent in terms of the identity of the urban center that is offers a range of consumer goods, cheap options and luxury goods. Modern urban centers must be versatile and meet modern consumer demands with the presence of either large department stores or small specialised shops and is an area where Larnaka is not considered successful.

(d) **Recreation - Entertainment**

In the leisure sector, the urban entertainment center is the leading development in the Municipal area. The recent installation of specialised and stylish entertainment centers has contributed significantly to the attractiveness of the urban centers with significant results in improving the level of service.

The leader in the field of recreation and entertainment is normally the Foinikoudes seafront. Although the contribution of this seafront to the City's economy and the development of the urban center is undeniable, the infrastructure and the premises that make it up are old and require reconstruction.
(e) **Culture**

The Urban Center includes the historic center of ‘Skala’. The region has a unique comparative advantage with many buildings, monuments and features associated with ancient civilization. The majority of designated ancient monuments and listed buildings are located in the vicinity of the Urban Center which indicate the area’s importance as a center of literature and science.

The physical deterioration of the Urban Center, the wear of remarkable buildings of traditional architecture and modern misguided interventions at several points, are limiting the opportunities to promote the Urban Center and disrupts historical continuity.

(f) **Residential**

Assessing the current situation and performance of the Urban Center on the issue of the residences, a declining performance is observed with the exception of specific areas (Foinikoudes seafront and the residential area around the old GSZ stadium).

The concentration of foreign and economic migrants in specific areas of the Urban Center is commonplace in today’s Larnaka. This phenomenon is a global trend in cities and can add to the cultural character of the urban center and could contribute to its attractiveness. The promotion of specific policies and planning interventions is required to discourage the phenomenon of ghettoisation. Building and operating characteristics of the residential units in the Urban Center are lagging behind that of other residential areas. Apartments for example reflect the housing needs and building technologies of the 1970’s and 1980’s and do not meet the needs of modern living.

The modernisation of the existing housing stock and the adaptation to the new data is not taking place at a satisfactory pace mainly due to the lack of real planning tools and financial incentives.
5 - URBAN PLANNING AND URBAN PARAMETERS OF LARNACA

IMAGE 0.20: PIER AT PHINIKOUDES
IMAGE 0.21: PHINIKOUDES

IMAGE 0.22: STREET WITH TRADITIONAL MANUFACTURING
IMAGE 0.23: COMMERCIAL CENTER

Source: Municipality of Larnaka
5.5 PLANNING ZONES

5.5.1 Definition

Planning zones are special building regulations approved in accordance with the relevant provisions and define the specific terms of layout, public and buildable areas and the permitted uses in each zone or part of the settlement.

5.5.2 Construction growth

The volume and density of the building development are extremely important for the overall organization of the structure of the Local Plan. They are also the tools that maintain and achieve the appropriate image of urban character. The volume and density of development are controlled by applying the urban parameters such as the maximum rate of construction, the coverage, the height, the maximum number of floors and the minimum size of residential units.

Controlling the density of use is ensured indirectly through the Building Co-efficient that is intended to guarantee the desired urban environment for each region. The Building Co-efficient calculates the needs of land and facilitates planning of the necessary infrastructure, services and public facilities.

The extent of the municipal limits of Larnaka are:

Municipality of Larnaka borders ~ 32,950,597 m²
Salt lakes (lakes only) ~5,790,000 m²
Natura zones ~6,080,000 m²
Special zones ~5,850,000 m²
(Port, Marina, Airport)

Road surface ~2,760,000 m²
(250km x 11m average width of road)

Other zones of development ~12,480,000 m²

The map of urban areas is the tool of the planning authorities to implement urbanisation, and also provides guidelines in the planning stage (Map 5.4 and Figure 5.46).

The following tables (5.22-5.24) show the urban areas of the Municipality of Larnaka that are examples of how calculations can be made for the possibility of developing a site to specific specifications.

Density is a tool which can be used for the development of a region. Larnaka is divided into quarters (Map 5.5) so using the population and the size of each quarter, we can simply calculate the density of each quarter and to compare it with the others. For example, according to Figure 5.47, where the densities are shown for each Quarter after the census population on 2011 (population on 10.01.2013), we can see that the Kokkines Quarter is the most populous compared to the others. This is due to the settlement to be implemented within this quarter.

Also apparent from Figure 5.47, is that although the ‘Skala’ quarter includes the Urban Center, it nevertheless has the lowest density. There are several reasons for this: mainly because the urban commercial area is more used as a working place and not as a residence of citizens, but also should be noted that the quality of the buildings is very low so the population prefers to live in other quarters. Furthermore, the Turkish-Cypriot district within this quarter can only accommodate certain uses by law, a factor which hinders the regeneration of these areas.

**MAP 0.4: PLANNING ZONES**
Source: Larnaka Local Plan 2011, Department of Town Planning and Housing
## Figure 0.46: Planning Zones map legend

<table>
<thead>
<tr>
<th>ZONE</th>
<th>AGRICULTURAL ZONES</th>
<th>RESIDENTIAL ZONES</th>
<th>COMMERCIAL</th>
<th>INDUSTRIAL</th>
<th>PUBLIC BUSINESS</th>
<th>SPECIAL ZONE</th>
<th>RECREATIONAL &amp; SPORTS</th>
<th>TOURISTIC</th>
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<tbody>
<tr>
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</tbody>
</table>

### Notes

- **Public Business**: Public function of industrial activities.
- **Special Zone**: Special zones are regulated by urban planning laws.
- **Touristic**: Tourist zones are designated for tourism-related activities.
- **Recreational & Sports**: Recreational zones are designated for leisure and sports activities.
- **Agricultural Zones**: Agricultural zones are designated for agricultural activities.
- **Residential Zones**: Residential zones are designated for residential activities.
- **Commercial**: Commercial zones are designated for commercial activities.
- **Industrial**: Industrial zones are designated for industrial activities.

### Map Legend

- **Planning Zones**: The map shows planning zones with their respective designations.
- **Legend**: The legend explains the symbols and colors used in the planning zones map.

---

**Legend**

- **Planning Zones Map**: The map is a representation of planning zones in the area.
- **Legend Symbols**: Symbols are used to denote different types of zones.
- **Color Coding**: Different colors are used to distinguish between various zones.

---

**Map Details**

- **Scale**: The scale of the map is indicated at the bottom.
- **Legend**: The legend is placed at the bottom of the map.
- **compass rose**: The compass rose is used to indicate the direction.

---

**Map Attributes**

- **Map Title**: The title of the map is indicated at the top.
- **Map Projection**: The projection used for the map is noted.
- **map scale**: The scale of the map is noted.
- **map orientation**: The orientation of the map is noted.
- **directional compass**: The compass is used to indicate direction.

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**Map Notes**

- **Map Annotations**: Annotations are used to highlight important features.
- **Map Scale**: The scale of the map is noted.
- **Map Orientation**: The orientation of the map is noted.
- **Directional Arrow**: A directional arrow is used to indicate orientation.

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**Map Credits**

- **Map Author**: The author of the map is noted.
- **Map Publisher**: The publisher of the map is noted.
- **Map Copyright**: The copyright of the map is noted.

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**Map Reference**: The reference for the map is noted.
### TABLE 0.22: PLANNING ZONES - MUNICIPALITY OF LARNAKA AREAS

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>PLANNING ZONE</th>
<th>AREA*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other public uses (Stadiums, schools, government buildings)</td>
<td>Αα</td>
<td>1.105.874</td>
</tr>
<tr>
<td>Industrial zone Category C (very limited degree of nuisance)</td>
<td>Βαα2</td>
<td>24.520</td>
</tr>
<tr>
<td>Economic Activities Zone</td>
<td>Βε1</td>
<td>418.410</td>
</tr>
<tr>
<td>Manufacturing zone Category B (limited degree of nuisance)</td>
<td>Βδ2</td>
<td>23.210</td>
</tr>
<tr>
<td>Manufacturing zone Category B (limited degree of nuisance)</td>
<td>Βστ1</td>
<td>26.700</td>
</tr>
<tr>
<td>Rural zones</td>
<td>Γα4</td>
<td>107.955</td>
</tr>
<tr>
<td>Protection Zones (green open spaces, parks, recreational fields, forest land, forest parks, recreation and entertainment facilities, archaeological sites, places of natural beauty, and buffer zones)</td>
<td>Δα</td>
<td>6.075.768</td>
</tr>
<tr>
<td>Commercial and other related activities outside the Central Commercial Area</td>
<td>Εβ</td>
<td>1.294.620</td>
</tr>
<tr>
<td>Areas where Housing is the predominant use</td>
<td>Κα</td>
<td>10.595.337</td>
</tr>
<tr>
<td>Areas where Housing and offices are the predominant uses</td>
<td>ΚΓ3</td>
<td>209.320</td>
</tr>
<tr>
<td>Core area (continuous building system)</td>
<td>Πα</td>
<td>935.176</td>
</tr>
<tr>
<td>Special zone for the airport</td>
<td>ΕΑ</td>
<td>5.311.185</td>
</tr>
<tr>
<td>Special zone for the oil refinery</td>
<td>ΕΔ</td>
<td>211.956</td>
</tr>
<tr>
<td>Special zone for the port</td>
<td>ΕΛ</td>
<td>430.996</td>
</tr>
<tr>
<td>Special zone for the yacht club</td>
<td>ΕΜ</td>
<td>106.896</td>
</tr>
<tr>
<td>Tourist zone</td>
<td>Τ</td>
<td>2.319.836</td>
</tr>
<tr>
<td>Area B</td>
<td>AREA B</td>
<td>281.137</td>
</tr>
<tr>
<td>Saltlake</td>
<td>SALTLAKE</td>
<td>5.791.537</td>
</tr>
<tr>
<td><strong>ΣΥΝΟΛΟ</strong></td>
<td></td>
<td>35.270.433</td>
</tr>
</tbody>
</table>

* Larnaka Municipal Boundary Areas - excluding the Tourist Zone, i.e. the Voroklini, Pyla and Pervolia areas

Source: Municipality of Larnaka

### TABLE 0.23: CAPACITY OF URBAN ZONES IN SQUARE METERS

<table>
<thead>
<tr>
<th>ZONING</th>
<th>CAPACITY m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade and other related activities outside the main shopping area</td>
<td>513.499</td>
</tr>
<tr>
<td>Areas where residential development is the predominant use</td>
<td>8.744.444</td>
</tr>
<tr>
<td>Areas where residential development and offices are the predominant uses</td>
<td>65.936</td>
</tr>
<tr>
<td>Residential core areas (continuous building system)</td>
<td>500.118</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>9.823.997</td>
</tr>
</tbody>
</table>

Source: Municipality of Larnaka

### TABLE 0.24: CAPACITY OF URBAN ZONES IN RELATION TO THE POPULATION AND
### Households

<table>
<thead>
<tr>
<th>Zoning</th>
<th>Capacity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade and other related activities outside the main shopping area</td>
<td>3,423</td>
<td>8,968</td>
</tr>
<tr>
<td>Areas where residential development is the predominant use</td>
<td>58,296</td>
<td>152,736</td>
</tr>
<tr>
<td>Areas where residential development and offices are the predominant uses</td>
<td>440</td>
<td>1,153</td>
</tr>
<tr>
<td>Residential core areas (continuous building system)</td>
<td>5,001</td>
<td>13,103</td>
</tr>
</tbody>
</table>

**Total**  

|       | 67,160 | 188,720* |

* Based on the census of 2011 the population of the Municipality of Larnaka on 01.10.2011 was 51,468 people and the number of households 19,649

**Map 0.5: Municipality of Larnaka Quarters**
FIGURE 0.47: QUARTER DENSITIES WITHIN MUNICIPALITY OF LARNAKA

Source: Larnaka Local Plan 2011, Department of Town Planning and Housing

Note: In the Scala quarter the space occupied by the Larnaka International Airport, and in the Agios Nikolaos quarter the area occupied by the Larnaka Salt
Lake have not been included in the land area for the estimation of densities.

Source: Department of Town Planning and Housing, Department of Statistics
### Table 0.25: Property values 2012

<table>
<thead>
<tr>
<th>REGION QUARTERS</th>
<th>BUILDING PLOTS €/μ</th>
<th>HOUSING UNITS €/μ</th>
<th>APARTMENT UNITS €/μ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scala – Urban Commercial Center</td>
<td>850-2000</td>
<td>1500-2000</td>
<td>1500-1700</td>
</tr>
<tr>
<td>Scala – Except from the Urban Commercial Center</td>
<td>500-600</td>
<td>1500-2000</td>
<td>1000-1500</td>
</tr>
<tr>
<td>Scala - Seafront (Athenon Ave.)</td>
<td>7000</td>
<td>–</td>
<td>5000-6500</td>
</tr>
<tr>
<td>Chrysopolitissa</td>
<td>400-600</td>
<td>1500-1700</td>
<td>900-1350</td>
</tr>
<tr>
<td>Sotiros</td>
<td>400</td>
<td>1500-1700</td>
<td>900-1350</td>
</tr>
<tr>
<td>(1500 Πολυτελή)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arch. Makarios III</td>
<td>350-400</td>
<td>1300-1600</td>
<td>900-1200</td>
</tr>
<tr>
<td>Tsiakilero</td>
<td>350-400</td>
<td>1300-1600</td>
<td>900-1200</td>
</tr>
<tr>
<td>Kokkines</td>
<td>350-400</td>
<td>1300-1600</td>
<td>900-1200</td>
</tr>
<tr>
<td>Ayios Nikolaos</td>
<td>500-700</td>
<td>1500-2000</td>
<td>1000-1500</td>
</tr>
<tr>
<td>Ayios Nikolaos - Vergina</td>
<td>350</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Ayios Nikolaos - Faneromeni</td>
<td>700</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Ayios Nikolaos - Pavlimbei</td>
<td>450</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Ayioi Anargyro I</td>
<td>350-400</td>
<td>1300-1600</td>
<td>900-1200</td>
</tr>
<tr>
<td>Ayioi Anargyro II</td>
<td>350-400</td>
<td>1300-1600</td>
<td>900-1200</td>
</tr>
<tr>
<td>Kamares</td>
<td>350-400</td>
<td>1300-1600</td>
<td>900-1200</td>
</tr>
<tr>
<td><strong>PRIMARY AXES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Makariou Ave., Spyrou Kyprianou Ave., Grigori Afxentiou Ave., Griva Digeni Ave.</td>
<td>2000</td>
<td>–</td>
<td>1500-1800</td>
</tr>
<tr>
<td>Artemidos Ave. – Faneromeni Ave.</td>
<td>1300-1500</td>
<td>–</td>
<td>1500</td>
</tr>
<tr>
<td>Chrysopolitissa – Arch. Kyprianou</td>
<td>800</td>
<td>–</td>
<td>900-1500</td>
</tr>
<tr>
<td>Scala - Seafront (Athenon Ave.)</td>
<td>7000</td>
<td>–</td>
<td>5000-6500</td>
</tr>
</tbody>
</table>

Note: Prices listed above were collected from the property market of 2012. For 2013, due to the economic crisis, prices...
have declined.

Source: Municipality of Larnaka
5.5.3 Ownership

5.5.3.1 General

The scattered development of Larnaka and the mix of the land use had resulted in the creation of empty plots. Types of tenure for land has not left much room for uniform and organised development.

The lack of effective planning legislation, the strong demand for land, coupled with the tendency for retention of a significant proportion of that land, has created conditions that have deteriorated of the quality of life for a large part of the population. The phenomenon is reflected by scattered residential development with plenty of empty plots, mixing incompatible land uses and various construction types, heights and volumes. While all the above are features of the area of the Local Plan, the inability of low-income groups to secure land for housing purposes in the mainly residential areas, remains the most fundamental problem and a cause of many other problems in the Local Plan.

5.5.3.2 Types of ownership

Four types of ownership exist:

Private plots: Those are owned by Greek Cypriots, or by people of any other nationality other than Turkish Cypriots. These plots have no problem in their use, nevertheless several other reasons may have prevented their development (see Figure 5.49).

Plots owned by the Church: (see Figure 5.51)

Plots owned by the government: These can be developed under certain conditions (see Figure 5.48).

Turkish Cypriot plots: Although they are private plots, the development right of the owners has been suspended temporarily. The management is conducted by the Ministry of Interior. These plots can be rented for specific purposes by the Fund Management of Turkish Cypriot Properties (see Figure 5.50).
5 - URBAN PLANNING AND URBAN PARAMETERS OF LARNAKA

Figure 0.48: Government ownership
5 - URBAN PLANNING AND URBAN PARAMETERS OF LARNAKA

Source: maps.google.com, Municipality of Larnaka

Figure 0.49: Greek-Cypriot ownership
Figure 0.50: Turkish-Cypriot ownership
Source: maps.google.com, Municipality of Larnaka
Figure 0.51: Church Ownership

Source: maps.google.com, Municipality of Larnaka

Figure 0.52: Land belonging to Muslim organisations and institutions
5.5.3.3 Non-developed plots

The non-developed plots can be divided into four categories:

- Government plots
- Turkish Cypriot plots
- Enclosed plots (Landlocked with no access)
- Greek-Cypriot plots
  Plots where various reasons prevent their development, for example if there are many small owners, or the owners wait the best time for their development.

5.5.3.4.1 Large empty plots
Figures 5.53-5.59 show big empty plots.

**Figure 0.53: Large empty plots within the Scala quarter**

Source: maps.google.com, Municipality of Larnaka

**Figure 0.54: Large empty plots within the Chrysopolitissa quarter (Area 1)**
Figure 0.55: Large empty plots within the Chrysopolitissa quarter (Area 2)
Figure 0.56: Large empty plots within the Sotiros quarter
**Figure 0.57: Large empty plots within the Agios Nikolaos quarter (Area 1)**

Source: maps.google.com, Municipality of Larnaka
FIGURE 0.58: LARGE EMPTY PLOTS WITHIN THE AGIOS NIKOLAOS QUARTER (AREA 2)

Source: maps.google.com, Municipality of Larnaka

FIGURE 0.59: LARGE EMPTY PLOTS WITHIN THE ARCHBISHOP MAKARIO III QUARTER

Source: maps.google.com, Municipality of Larnaka
Source: maps.google.com, Municipality of Larnaka
5.6 TRAFFIC

5.6.1 Road network

The road network of the region of Larnaka is described in accordance with the general provisions of the Local Plan of Larnaka, into categories according to their geometric characteristics and there importance in terms of transport.

The hierarchy is described as follows:
- Inter-Urban Roads
- Major Main Roads
- Secondary-Minor Roads
- Collector Roads
- Roads of Local Significance
- Cycling Roads
- Pedestrian Roads

The design of the road network in terms of the geometrical and technical characteristics is of the standards set out by the Public Works Department (part of the Ministry of Communications and Works).

5.6.1.1 National road network

Cyprus has a well designed and well developed road network that serves the national interests and ensures safe, fast, effective and efficient transport of people and goods.

The main interurban road of Larnaka has a high level of quality and service, covering adequately the needs are the City. Larnaka is connected with other urban centers in Cyprus with a national network which was implemented and maintained by the Department of Public Works.

Map 5.6 shows the main roads of Cyprus.
Larnaka with its central position in Cyprus minimizes the distances between all other cities and regions (Nicosia, Limassol, Paphos, Ayia Napa, and Paralimni).

Table 5.26 presents the distances between towns and proves that Larnaka holds the most advantageous locations on the Island.

**TABLE 0.26: Distances between cities (kilometers)**

<table>
<thead>
<tr>
<th>City</th>
<th>Nicosia</th>
<th>Limassol</th>
<th>Larnaka</th>
<th>Paphos</th>
<th>Troodos</th>
<th>Agia Napa</th>
<th>Paralimni</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicosia</td>
<td>---</td>
<td>83</td>
<td>45</td>
<td>146</td>
<td>71</td>
<td>80</td>
<td>84</td>
</tr>
<tr>
<td>Limassol</td>
<td>83</td>
<td>---</td>
<td>66</td>
<td>68</td>
<td>45</td>
<td>106</td>
<td>110</td>
</tr>
<tr>
<td>Larnaka</td>
<td>45</td>
<td>66</td>
<td>---</td>
<td>135</td>
<td>111</td>
<td>41</td>
<td>45</td>
</tr>
<tr>
<td>Paphos</td>
<td>146</td>
<td>68</td>
<td>135</td>
<td>---</td>
<td>113</td>
<td>175</td>
<td>179</td>
</tr>
<tr>
<td>Troodos</td>
<td>71</td>
<td>45</td>
<td>111</td>
<td>113</td>
<td>---</td>
<td>152</td>
<td>156</td>
</tr>
<tr>
<td>Agia Napa</td>
<td>80</td>
<td>106</td>
<td>41</td>
<td>175</td>
<td>152</td>
<td>---</td>
<td>4</td>
</tr>
</tbody>
</table>
5.6.1.2 Major Main Roads

In accordance with the relevant provisions of the Local Plan of Larnaka, the Major Main Roads have the goal to define the environmental areas and to facilitate the traffic through those areas.

The roads of major importance are essentially the four-lane roads with or without a central barrier and have limited, where possible, direct contributing roads.

In the Local Plan of Larnaka the main road network follows a rectangular array (Hippodameios system) and consists of existing main roads and proposed new roads.

Map 5.7 shows the main road network of the Local Plan of Larnaka and map 5.8 shows the degree of implementation of those roads.

**MAP 0.7: ROAD NETWORK HIERARCHY IN LARNAKA**
Source: Larnaka Local Plan, Department of Town Planning and Housing
5 - URBAN PLANNING AND URBAN PARAMETERS OF LARNAKA

MAP 0.8: DEGREE OF COMPLETION OF THE ROAD NETWORK

Source: Municipality of Larnaka

IMAGE 0.24: COMPLETED ROAD NETWORK  IMAGE 0.25: COMPLETED ROAD NETWORK
5 - URBAN PLANNING AND URBAN PARAMETERS OF LARNAKA

Source: www.blomurbex.com

Source: Municipality of Larnaka
5.6.1.3 Secondary Roads

According to the relevant provisions of the Local Plan of Larnaka Secondary Roads were designed to deliver the traffic securely in each environmental area to the main roads. In contrast with Main Roads, Secondary Roads vary in terms of their geometric characteristics and the majority of these consist of existing routes that serve high levels of traffic.

Map 5.7 shows the Secondary Roads of the Local Plan of Larnaka. It can be noted that in several protected areas, the map does not show the Secondary Road. In such cases, in each protected region the existing roads have this goal.

5.6.1.4 Collector Roads and Roads of Local Significance

The Roads of Local Significance, collectors or not, are the lowest rank in the hierarchy of the road network of the Local Plan of Larnaka. Essentially the local roads serve each property and organize the traffic within each area in a manner that ensures the efficiency and safety of transport.

The roads of local importance were primarily created through urban control when the authorities licensed that land can become plots. The geometrical characteristics of these roads are 11 meters wide with 2 meters wide pavement on both sides.

5.6.1.5 Cycling and pedestrian routes

Regarding the cycle network, the Larnaka Local Plan provides the creation of an integrated network, which is the result of a special study commissioned by the Department of Town Planning and Housing for the European Programme, ‘LIFE’.

This provision is implemented progressively together with the design and construction of new roads and reconstruction of the roadway and the pavement. Regarding the reallocation of uses in the roadway and the pavement it is noted that the approval of the relevant regulations and standards is needed before the construction.

Map 5.9 shows the cycle network of the Local Plan of Larnaka and Figure 5.60 shows the progress of implementation and construction.


Map 0.9: Cycling network hierarchy

Figure 0.60: Degree of completion of cycling network

Sources: Department of Town Planning and Housing
The pavements of the Local Plan of Larnaka are divided into two categories.

The first category includes the pavement network within the residential areas which emerged through the permission of dividing land into plots. In the new residential areas the pavement network is in good condition and adequately serves the pedestrians, connecting the individual residences with other important functions e.g. schools, churches, etc.

The second category includes the pavements that are created under the implementation of the road network of primary or secondary importance and redevelopment projects of areas, such as central urban areas, coastal fronts and areas of natural beauty.

A big part of the pavements have already been created in Larnaka and will be completed in parallel with the completion of individual projects in the redevelopment areas.

5.6.2 Roadworks under reconstruction and upgrading
5.6.2.1 Upgrading of the Piale Pasia coastal road

In September 2012, the upgrading works of the Piale Pasha road began, which will connect the Foinikoudes area and the Castle with the tourist area of Mackenzie and Artemidos Avenue (leading to Larnaka Airport) (see Figure 5.61, and Images 5.26 and 5.27).

The project covers a total length of 2 km and can be divided into two sections. The first section is 1 km in length, lying from the Castle to the fishing shelter, and will become a public square using granite on the road surface and will be one way road. Along this section there will also be pavements by the sea (width 5.5 m).

This second section, from the fishing shelter to the exit to the Mackenzie beach, is of 1 km in length and includes two lanes with a roundabout to be constructed at the junction that connects to Mackenzie beach.

The entire project will provide pavements and walkways with provisions for the safe movement of people with disabilities as well as cycle roads. Modern street lighting will also be placed and landscaping will take place after transplanting the existing palm trees. The project includes the system upgrade of stormwater and works for undergrounding the telecommunications network of the area.

The total cost of the project is 7.8 million euros and the construction period will be 18 months. The project is mostly financed by the European Regional Development Council of the European Union, the Republic of Cyprus and the Municipality of Larnaka. The Contracting Authority is the Municipality of Larnaka and the Master Plan was prepared by the Department of Town Planning and Housing. The contractor is the construction company 'Nemesis', while the supervision of the work is undertaken by the Department of Public Works.
In March 2013 the construction for the extension of the Georgios Christodoulides Avenue
(Faneromenis) began. This urban project is considered as a vital to mitigate the traffic on the main roads of Larnaka (Figure 5.28, Figure 5.62).
The extension of Avenue G. Christodoulides is expected to provide access for the vehicles to Larnaka General Hospital, to local schools and to the GSZ Stadium. Essentially it will connect, two busy highways, the Larnaka-Nicosia highway and the Larnaka-Limassol highway, while it will relieve the traffic on Griva Digeni and Afxentiou Avenue.

The project starts from the junction of the Faneromenis Avenue and Limassol Avenue next to KCineplex, and will end at the roundabout next to the GSZ stadium.

The roads will include four lanes with a center barrier, green lanes and pavements. The project involves the reconstruction of the existing interchange near the KCineplex creating a new roundabout, while another roundabout will be created at the intersection of G. Christodoulides Avenue and United States of America Street, where there is an excessive daily traffic load that often causes accidents.

**Figure 0.62:** Expansion of Georgios Christodoulides Avenue
Source: Municipality of Larnaka
5.6.3 Major roads that have not been implemented

5.6.3.1 Alexander Panagouli’s Avenue

Figure 5.63 shows the re-construction of Alexander Panagouli Avenue, and the two perpendicular roads to this (phase B of this project).

Figure 0.63: Alexander Panagouli’s Avenue

Sources: www.blomurbex.com, Municipality of Larnaka

5.6.3.2 Larnaka-Dhekelia Avenue

Improve and upgrade the Larnaka-Dhekelia avenue by the sea and two perpendicular roads to that travel towards Voroklini and Pyla (C and D phases).

Figure 0.64: Larnaka-Dhekelia Avenue (section 1)
5.6.3.3 Faneromenis Avenue

Improvement of the eastern part of the Faneromenis Avenue and parts of its perpendicular roads.
5.6.3.4 Gregory Afxendiou and Griva Digeni Avenue

Improvement of the eastern part of the main road linking the Larnaka to Nicosia road, Grigori Afxentiou and Griva Digeni Avenues.

**Figure 0.67: Gregory Afxentiou Avenue and Griva Digenis Avenue**

Sources: maps.google.com, Municipality of Larnaka

5.6.3.5 Touz Hane Street

Improvement of the Touz Chane street at the Turkish-Cypriot neighborhood.

**Figure 0.68: Touz Hane Street**

Sources: maps.google.com, Municipality of Larnaka
5.6.3.6 Lysos Santama Street

Extension of Lysou Santama street and connection with Alexandrou Panagouli Avenue.

**Figure 0.69: Lysos Santama Street**
5.6.3.7 Larnaka-Dhekelia Avenue

This involves the construction of a part of the road that connects Voroklini and Pyla parallel to the Larnaka-Dhekelia Avenue.

**Figure 0.70: Larnaka-Dhekelia Avenue**

5.6.4 Sustainable transport - public transport

Please refer to Chapter 2.4.1 on ‘Transport’.

5.6.5 Road safety

Cyprus has improved in recent years in the number of traffic accidents. The vast majority of road accidents happen due to human factors. This conclusion is confirmed through research showing that the levels of the driving behavior and consciousness of Cypriots and other drivers, is still low compared to the leading road safety EU countries. The road safety is a priority for the government, which has adopted the Strategic Action Plan for the Road Safety 2005-2010, under which the
The Municipality of Larnaka taking into account the areas in which most accidents occur has co-operated with the Department of Public Works to improve such areas. It is of note that, as a result of these interventions the reduction of accidents has been significant.
5.6.7 Public Parking

90% of the organized car parks in Larnaka are concentrated in the Urban Center (Figures 5.71, 5.72, and 5.73)

**Figure 0.71: Public parking at the Commercial Center**

Sources: maps.google.com, Municipality of Larnaka
5 - URBAN PLANNING AND URBAN PARAMETERS OF LARNACA

**Figure 0.72: Public parking in the Urban Commercial Center**

Source: Municipality of Larnaka

**Figure 0.73: Public parking in the Urban Commercial Center**
The History and Culture of Cyprus is one of the oldest in the world. Most towns and villages in Cyprus have historical data sets relating to sequential historical periods.

Larnaka, the oldest city in Cyprus is very rich in its cultural heritage. The Larnaka of today originates from the ancient city of Kition and the famous philosopher ‘Zenon’ was born here in 333 BC. The impressive church of Saint Lazarus is situated in the center of the old town and several important antiquities are found within the Municipality and the District of Larnaka (for example, the Neolithic settlement of Choirokitia, which has been designated a World Heritage Site by UNESCO).

This makes Larnaka an area archaeologically alive with a great deal of evidence that Larnaka has a history as a very strong urban center. All these historic features must be taken into account during the urban design process to establish a policy in relation to the future conservation in Larnaka. This need is perhaps obvious, however a more important question is what is done in the
future to promote such a rich heritage, and turn the story of Larnaka into a competitive advantage.

Today, in the early 21st century it appears that there is little convergence between urban planning and the policy of protection of urban heritage. This phenomenon is complicated by the fact that urban planning in Cyprus has only a short history and several peculiarities.

Through the new design of the City, particular attention should be given towards how to handle ancient monuments. Either they will be considered as closed islets, archaeological sites, or they will be integrated and incorporated within the City. The Department of Antiquities with limited resources tries to manage and promote these places starting from the District Museum. Renovation and extension of the Museum has begun, which will add capacity to house important new discoveries from Daidalou street (an archeological effort of George Georgiou that began in recent years). This will significantly upgrade the Museum which despite being outdated, is still well visited and given good reviews on the evidence of the museum guestbook.

**Figure 0.74: Laws which protect the antiquities, listed buildings and protected areas**

**5.7.2 Ancient Monuments**

An ancient monument is defined as a building that was constructed before 1850. Map 5.10 shows the ancient monuments of Larnaka.

**Map 0.10: Ancient Monuments in Larnaka**
Source: Department of Town Planning and Housing
5.7.2.1 Ancient monuments in the District of Larnaka

5.7.2.1.1 Choirokitia

Choirokitia is the best preserved prehistoric settlement in Cyprus, dating from the later phase of the pre-pottery Neolithic period (around 7000 BC). In 1998, it was declared a World Heritage Site by UNESCO.

The settlement is built on a steep hillside, located in the hinterland of Larnaka, on the western bank of the Maroni River, 6km away from the sea. It is one of the most impressive examples of early permanent populations on the Island. In the west, where the settlement is not naturally fortified, wide wall fencing was constructed. The construction involved a large collective effort, and suggests the presence of complex social organization (Figures 5.29 & 5.30).

The dwellings of Neolithic Choirokitia are simple circular buildings. The foundations and lower parts were made up of stones of the river, while the upper materials are lighter, such as clay and sun-dried bricks. The thresholds were raised, and the doorways were small in order to protect against flooding. The floors were made of clay and the roof was vaulted or flat. The roof was formed by beams upon which there were reeds and twigs, and again covered with clay. In the middle of the
house there was a cooking area for food, lighting and heating. It seems that the interiors of the houses had murals. As revealed by the excavations, many such circular buildings were located around a small yard where a mill for grinding grain crops existed (Figures 5.31 & 5.32).
We can see houses with vaulted ceilings, small workshops and a main road made of stones that crosses the village.

Source: Google images

The site was discovered in 1936 by Dr. Porphyry Dikeo, Director of the Cyprus Department of Antiquities, and since 1976 the excavations continued by a French archaeological mission under the direction of Alain Le Brun.

In an effort to educate visitors (and also to protect the ancient settlement) the Department of Antiquities re-constructed five examples of the circular buildings and a portion of the fortification wall around the site entrance. Traditional materials and construction methods were used, while in the interior of the buildings, authentic Neolithic objects were placed (Figures 5.33 and 5.34).
IMAGE 0.33: CHIOROKITIA, REPRESENTATION OF HOUSING

Source: Department of Antiquities

IMAGE 0.34: CHIOROKITIA, REPRESENTATION OF HOUSING

5.7.2.2 Ancient Monuments in the Municipality of Larnaka

5.7.2.2.1 Ancient Kition

The ancient city of Kition was an ancient Greek kingdom of Cyprus and was situated in the center of what we now know as Larnaka (Figures 5.35 to 5.38). In this area of the City there were prehistoric settlements where later Achaean colonists used to live. The City is mentioned since the 12th century in Egyptian inscriptions, and later in the Bible. In the 9th century BC the colony of the Phoenicians was founded and named as Kartichasta meaning ‘new town’. In the 7th century BC Kition became Assyrian, and in the 5th century BC as the whole of Cyprus became the possession of the Egyptians and then the Persians kings. Kition participated in the siege of Tyre on the side of Alexander. In 58 BC the town passed to the Romans and was still the most important and main port of Cyprus. The city continued to flourish until the early years of the Franks but gradually lost its glamour and was abandoned. Phoenicians used to live in the city from the 3rd to the 8th century together with the Greeks who lived in the southern part. Overall, the City can count 32 centuries of Greek culture.

Kition was well known in ancient years because of its harbor, from which many agricultural products were exported to the eastern Mediterranean, Egypt and the Aegean. Additionally, its strategic position was perfect to become a naval base. French excavations unearthed shipyard at the foot of the hill of Pampoula.

The ancient site of Kition, which includes both the Kathari and Pampoula areas, is located within the Municipality of Larnaka. From the 18th until the 20th century, excavations by foreign travelers and grave robbers unearthed several findings, including the famous Assyrian stele of King Sargon II, which is currently in Berlin. A plaster cast of the stele is exhibited in the Museum of Larnaka. The first systematic excavations began in 1929 by the Swedish Archaeological Expedition, under the direction of Einar Gjestad. Since 1959, the Department of Antiquities, directed by Vassos Karageorghis, began excavating the Kathari area, while the responsibility of the excavations in the Pampoula area are taken by the French Expedition of the University of Lyon, which until 1974 had been excavating the area of Salamis.

During the Classical period, big projects took place in the city of Kition, such as large-scale urban projects that are part of a major program of construction of public buildings. Within this project the drainage of the bog in the neighborhood of Pampoula was carried out, the construction of the drainage system of the City and the construction of trading and war ports. So far, excavation at the war port has unearthed ramps that were used to dock ships which were to be repaired.

Sources: (1) Department of Antiquities, (2) Cyprus Tourism Organization, (3) Wikipedia, (4) www.aboutcyprus.org.cy

Image 0.35: Kition, Archaeological site
5.7.1.2.2 Fortified harbor
The ancient city was walled, but the walls were demolished by the Romans. The port of the ancient city was discovered recently within the modern city, indicating that in the ancient years, there was a sea inlet in central Larnaka.

During the Frankish period (1192-1489) Larnaka was not an important city but begun to develop as a port after 1373, when the main port of Cyprus in that period (Famagusta) was occupied by the Genoese.

Larnaka was an important port during the Ottoman-Turkish period (1570-1878), when part of the town was known as ‘Skala’, because it was where the ships docked. Many Cypriots, Greeks and foreign dealers used to live in Larnaka during the Ottoman period. Many of them were consuls, sub-consuls or commercial agents of different countries (England, France, Russia, America, Austria, and others). Due to the port and the many traders who lived in ‘Skala’, the markets had a great variety of products from Europe and the wider eastern Mediterranean. So Larnaka was, during this period, the city of consulates and traders and was therefore the most developed of all Cypriot towns.

Like the whole of Cyprus, Larnaka developed rapidly after the independence of Cyprus (1960). After the Turkish invasion of 1974, the development of Larnaka has been more rapid and impressive. The closure of Nicosia International Airport, due to the invasion, led to the construction of the international airport of Larnaka in the salt lake area. This is currently the largest and most important Cypriot airport and is a vital interchange between Europe and the Middle East. In addition, the loss of the main commercial port of Cyprus (Famagusta) by the Turkish invasion and occupation, has resulted in a significant upgrading of the port of Limassol and also to that of Larnaka. Finally, the loss of traditional tourist areas of Cyprus (Famagusta, Kyrenia) also resulted in the tourist development of other areas of Cyprus including Larnaka, which has built many modern and luxurious hotels. Near the town, the main fuel storage depots of Cyprus are situated. For all these reasons, the city of Larnaka is today an important and developed part of the Island.

*Source: Department of Antiquities*

**IMAGE 0.39: 'THE PORT OF SALINA AND ERNIKA'**

**IMAGE 0.40: INAUGURATION OF THE PIER**
Map of the port of Skala and Larnaka, marked with the inscription ‘The port of Salina and Ernika’, from The New Mediterranean Pilot, of William Heather (London 1802).

Source: Municipality of Larnaka

IMAGE 0.41: COMMERCE IN LARNAKA

Source: Municipality of Larnaka

IMAGE 0.42: PIER IN LARNAKA

Source: Municipality of Larnaka
5 - URBAN PLANNING AND URBAN PARAMETERS OF LARNAKA

**IMAGE 0.43: THE PIER, THE WHERRIES, AND THE ANCHORED SHIP**

The wherries served commerce until 1973, when the harbor was built (photo: Renos Evriviades)

Source: http://Larnakainhistory.wordpress.com

**IMAGE 0.44: VIEW OF THE PORT AS IT IS TODAY**

Source: Google images

5.7.1.2.3 The Frankish Castle

The castle that dominates the southern end of the coastal front of the historic center of the city of Larnaka is an Ottoman building of 1625 AD, as confirmed by the inscription above the entrance (Figures 5.45 and 5.46).

**IMAGE 0.45: LARNAKA CASTLE**

Castle and vicinity (beginning of 20th century)

Source:http://larnaka.wordpress.com

**IMAGE 0.46: LARNAKA CASTLE**

Source: Municipality of Larnaka

The castle was built in the late 14th century AD by the Louisinian King of Cyprus, Jacob I (1382-1398). It was part of the defenses which were used to monitor and protect the south-eastern coast.
stretching from the Gulf of Pyla to Akrotiri Bay in Limassol.

Details of the original building on the site of the castle are not known. Some elements of medieval architecture were incorporated into the Ottoman building and are visible in the southern and eastern parts of the castle.

During the Venetian occupation the castle was strengthened within the context of upgrading the port of Larnaka, not only in relation to the salt trade but also the trade of other goods to and from the neighboring Syrian and Palestinian coast, and of course with the West. By the end of the Venetian occupation and close to the Ottoman attack of 1570, the Venetians had chosen to defend around the Famagusta-Nicosia-Kyrenia area and so left the castle of Larnaka. It is reported that the Ottomans landed near the castle and chose the port of Larnaka to be their base for their fleet. The castle was rebuilt in 1625 by the Ottomans and it was repaired and equipped with canons. Since at least the mid 18th century, however, the castle fell into decline and its main role was throwing shot greetings to the passing ships.

Since the beginning of British occupation the castle was used as a police station and jail until the mid 20th century. The western entrance hall was used by the British for executions of convicts by hanging. Between 1948 and 1969 the Castle was the Archaeological Museum of the District, until the launch of the current District Museum.

The first floor of the main building of the entrance, which dates from the Ottoman period, today houses a small museum consisting of three rooms. Room I displays antiquities dating back to the early Christian period. There are also photographs related to early Christian, Byzantine and post-Byzantine monuments of Cyprus. In the Room II there are photographs related to the Byzantine art of Cyprus. In Room III there are representative examples of Byzantine, medieval and Islamic glazed pottery, metal utensils, guns, helmets and swords. The exhibition is accompanied with many photographs related to the Byzantine and medieval fortifications and medieval architecture. The eastern end of Room III is furnished in an authentic style of a selected period.

The inner courtyard of the castle houses an exhibition of cannons, some of which date back to the medieval period. The courtyard is also used as a location for cultural events.

**Image 0.47: Executions at the Larnaka Castle (1910)**  
**Image 0.48: View of the Castle Courtyard as it is today**
5.7.2.2.4 St. Lazarus Church

The church of Saint Lazarus is built in the coastal area of Larnaka (Figures 5.49 & 5.50).

Saint Lazarous had a close relationship with Cyprus. After his resurrected, he resorted to Cyprus where he met Saint Paul and Varnavas, who ordained him as Bishop of Kition. It is believed that his remains were contained in a marble urn on which was written ‘Lazarus, the four-day friend of Jesus’. Emperor Leo VI ordered that the relics of Saint Lazarus be transferred from Kition to Istanbul. According to the tradition, the construction of the church is part of the same period (early 10th century) and was performed by an imperial sponsorship in exchange for the transfer of the relics to Istanbul (Figures 5.51 & 5.52).
The church of St. Lazarus, the fortified port and the Frankish castle, during the medieval and recent years were the grandest buildings in Larnaka. By the early 20th century the church was surrounded by cells which were rented by dealers, travelers and artisans. Over the years, the church became the urban center, around which the harbor district of the city was developed.

The excavations made at the temple revealed the earliest remains of two churches, above which the existing church was built. The excavations in the grounds and inside the temple unearthed graves, some of which are shown in the crypt of the church. According to travel texts of the 16th century, a ditch under the altar was worshiped as the tomb of Saint Lazarus and was an Orthodox pilgrimage.

The architectural style of the church is a composite cruciform with a dome. During the 15th-16th century a Gothic portico was added along the south wall of the church. There is a possibility that at the same time the church was converted into a Catholic monastery and the courtyard into a cemetery. During the Ottoman period, the temple was converted into a mosque but in 1589 was sold to the Orthodox community. Until 1784 the church was used by Catholics, who used the temple only two days per year. The spire of the church was built in 1857 with new-Gothic and new-classical elements (Figure 5.50). Today, the church houses a museum which displays relics from the church of St. Lazarus, icons, and crosses. The outbuilding on the west side of the church operated from 1858 until 1910 as a school and is now used as a room for events.
5.7.2.2.5 Water supply of Larnaka (the Arches of the Kamares)

The water supply in Larnaka was first achieved by a chain of wells of a length of about two miles. The system was created in 1745 by Abu Bekir Pasha and donated by him to be used by the City. Under the terms of the donation, the management of water supply would belong exclusively to the part of Evkaf.

From the point where the wells are (3.5 miles outside Larnaka) the water was channeled to the city by a stone aqueduct, which used arches in three lowland points. However, over time the system was damaged and had large losses of water, causing serious risks to public health due to contamination throughout the length of the plant. For these reasons in 1938 a replacement system began to be established.

The Arches of the Kamares are the most famous part of the old aqueduct of Larnaka. Today the entire surrounding area is named after the aqueduct.

Source: Official issue of 1940
5.7.2.2.6 The Saltlake

The Larnaka Salt Lake is located in the southwest of the city of Larnaka and to the east of the villages Meneou and Dromolaxia. The cluster of Larnaka Salt Lakes is one of only two wetlands available in Cyprus, and is of international interest because of the areas great ecological value. The wetland includes the four main lakes, Alyki, Orfani, Soros and the small lake at the airport, which was part of Orfani excised with the construction of the airport channel. The wetland also includes extensive halophytic communities of the edges of lakes and forest Tekke in the west and the forest to the east of the Salt Lake.

Based on archaeological findings, the area of the salt lake and the nearby mosque was inhabited in Neolithic times. The lake in the prehistoric period was the port of the city discovered at the archaeological site of the mosque of Hala Sultan. The City was one of the major urban centers of Cyprus during the Late Bronze Age (1650–1050 BC). When the City was abandoned, the bay of the port closed, the natural port was destroyed saltmarsh began to develop. The ruins of the port found in the region of Hala Sultan Tekke, along with many stone and bronze anchors, findings that date back to the Middle Bronze Age, prove that the salt lake used to be a bay.

The Franks and Venetian conquerors were impressed by the salt lake, so much so that they did not refer to area by the ancient name of Kition, and called the village in the area ‘Salines’ (meaning salt lakes).

According to the Legend the lake got its salinity by Saint Lazarus, who, when an old woman refused to give him food and water, replied ‘Let the vines dry and let it become saltmarsh forever.’ A more scientific explanation is that the salt water penetrates the rock between the lake and the sea, making the water giving salinity to the wetland.
The salt was for many centuries one of the most important exploitable products of the salt lake. In the summer time the water evaporates and the white surface sparkles in brilliant sunshine, providing a plentiful source of salt. Salt was gathered and loaded on donkeys and was exported until the mid 1980s when the activity became prohibited.

The nature trail in salt lake connects the area with the Aphrodite Cultural Route. The wetland is a great spot for bird watching, offering an area for feeding and nesting for 80 species of birds. Alyki is a landmark for thousands of migratory birds, ducks and other aquatic birds and is particularly known for Flamingos (*Phoenicopterus roseus*) that stopover in winter and eat shrimps from the saltwater. To the beauty of the area adds the water that shimmers with pink accents, and the Hala Sultan Tekke, one of the holiest Muslim sites.

5.7.2.2.7 Hala Sultan Tekke Mosque (Umm Haram)

The mosque of Hala Sultan Tekke is situated on the western shore of Salt Lake, about 6 km west of Larnaka. Inside the building a tomb exists, which according to the tradition belongs to Umm Haram, the wife of the General of the Moravia during the first Arab invasion of the Island in 649 BC. Umm Harem was killed on the spot when falling from her horse, as soon as she landed on the Island. At first it was a simple tomb, but later was converted into a mosque. Some archaeologists believe that the tomb of Umm Haram is in fact a monolithic tomb of the Prehistoric period (1700-1500 BC).

The Hala Sultan Tekke is one of the most important places of worship in the Muslim religion and is visited by thousands of pilgrims every year. It is the fourth most important mosque after Mecca, Medina and Al Aksia. The mosque was renovated in 1816 and in 2002 further reconstruction was done with the support of UNOPS.
5.7.2.2.8 Evanthia Pierides' Townhouse
Note: On the right, the white building is the former City Hall and on the left is Ousmiani's house.
Source: Larnaka USUDS local team

Source: Larnaka USUDS local team
5.7.3 Listed Buildings

Map 0.11: Listed Buildings
5.7.3.1 Listed Buildings in the Municipality of Larnaka

5.7.3.2.1 The church of the Virgin Mary Chrisopolitissa

This church is located at the corner of Archbishop Kyprianou Street and Chrysopolitissa Street on the hill of the prehistoric cemetery of the 13th–12th century BC. The temple is dedicated to the Virgin Mary Chrysopolitissa because of the rich offerings of gold at the prehistoric tombs.

The temple dates back to the Byzantine years, when in 1765 the church was destroyed and the repair reconstructed it in the present form. In 1851 there was a renovation and the church acquired its current carved wooden, gilded and the exquisite art temple. Most of the paintings and many of the church’s furniture date back to the 16th-17th century. The beautiful bell tower was built in 1857, together with St. Lazarus’ and St. John’s church, and was built after a change in Turkish policy which resulted from the defeat in the Crimean War and the relevant conditions imposed by the Russians. The church was renovated in 2004.

Source: Official website of Panayia Chrysopolitissa Church
5.7.3.2.2 Pierides’ Museum - Laiki Group

At Zinonos Kitieos Street the Pierides Museum presents a fascinating collection of ancient art, which covers 9000 years of the history of Cyprus. This collection was acquired by the members of the Pierides family, over five generations beginning in 1839. The famous Pierides family of Larnaka lived over many generations at the luxurious mansion that today houses the museum. The collections cover rare, unique and valuable exhibits from the Neolithic, Bronze Age, Mycenaean, Classical, Hellenistic, Roman, Frankish, Ottoman and Byzantine periods.

Source: Google images

5.7.3.2.3 Europe Square – Warehouses of the British Customs

At the beginning of Athens Avenue, Europe Square is situated. It hosts the first colonial buildings built by the British in 1878, the first year of their arrival on the island. Since Larnaka was the main port and urban center of Cyprus, the English began from here housing their services and built Headquarters, bonded warehousing and offices of the chief of the customs and Harbormaster of Larnaka.

The buildings that housed those services were restored by the Municipality of Larnaka and now host the Municipal Gallery, the Museum of Paleontology, the Historical Museum of the City and the Cultural Services of the Municipality of Larnaka (Figures 5.76 and 5.77). The reconstruction of the colonial Customs Warehouse won a Europa Nostra prize in 1996. The sculpture ‘Gulls in Flight’, created by the artist Papagianni in 1996 is very prominent in the square (Figures 5.78 and 5.79). The same year, the Municipal Council of Larnaka gave the name Europe Square to commemorate the European Union.
IMAGE 0.76: WAREHOUSES OF THE BRITISH CUSTOMS – NOWADAYS THE MUNICIPAL GALLERY

Source: Google images

IMAGE 0.77: THE INTERIOR OF THE MUNICIPAL GALLERY

Source: Google images
The architecture was introduced by the British from the early years of their arrival and was based on the needs of colonial public administration. Using the same architecture in many of the colonies of England was very common and distinctive in style. Good examples of this architecture in Larnaka are the building of the British Governor (Figure 5.80), the warehouses of the English Customs at Europe Square, the Central Police Station (Figure 5.81), the Tourist Information Office at King Paul Square (Figure 5.82) and finally the old Larnaka Hospital (Figure 5.83).
5.7.3.2 Financial incentives for listed buildings

The Financial incentives for listed buildings are essentially divided into three categories:

A. Financial incentives - Direct sponsorship given by the government to the owner for the comprehensive maintenance and conservation of the listed building. For partial maintenance, building incentives are not given.

B. Transfer of Building Co-efficient – Owners are eligible to receive an allocated amount of building co-efficient which they may sell on the domestic market.

C. Tax Incentives - Owners can be eligible for tax reductions for the maintenance of the building that has been preserved in accordance with the principles of conservation.

5.7.3.3 Status of Listed Buildings (year 2009)

Figure 0.75: Status of Listed Buildings (year 2009)

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Table 0.27: Status of Listed Buildings (year 2009)

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Source: Municipality of Larnaka

Figure 0.76: Status of Listed Buildings (year 2009)

![Pie chart showing status of listed buildings]

Source: Municipality of Larnaka

Table 0.28: Use of Listed Buildings (year 2009)

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<td><strong>TOTAL</strong></td>
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Source: Municipality of Larnaka
5.7.3.4 Grant approval for listed buildings

**Figure 0.77: Grant approval for listed buildings**

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<td>2012</td>
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</tr>
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</table>

Source: Department of Town Planning and Housing

**Table 0.29: Grant approval for listed buildings**

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<td>59</td>
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Source: Department of Town Planning and Housing

5.7.4 Areas of Special Character
5.7.3.1 St. John (Ayios Ioannis) settlement

**Figure 0.78: Ayios Ioannis Settlement**

Sources: maps.google.com, Department of Town Planning and Housing

5.7.4.2 Turkish-Cypriot district

**Figure 0.79: Turkish-Cypriot district**
5.7.5 Traditional occupations

5.7.5.1 Historical overview of traditional manufacturing and professions in Cyprus

The study of traditional professions and occupations cover a wide variety of activities past and present.

Cypriot folk art which flourished mainly in the 18th and 19th century was a continuation of the previous periods and was also the most important artistic expression that was available during the Turkish occupation. The geographical location of Cyprus, at the crossroads of East and West, has certainly had a strong influence on folk art.

The fact that Cyprus had an important trading position and was rich in natural resources has attracted many conquerors. Successive conquerors of course, sought to affect Cypriot folk art in order to control the country more effectively. Although the folk art assimilated foreign elements, its national and conservative character was maintained, reflecting the Greek qualities of creativeness, and the ability to regenerate and assimilate ideas. Therefore, Cypriot folk art manages to use foreign cultural elements to create genuine Greek art.

During Turkish rule, the majority of people were farmers owning small plots of land and money, but due to the unstable agricultural income and the obligatory payment of one tenth of their products,
extra economic streams were created. For these reasons, a mixed agricultural and handicraft economy was created, producing weaving, embroidery and ironwork products. Trade of such products took place in the Cities, often through organized corporations known as ‘isnafia’ in which the craftsmen had their shops in certain streets, which were also used as there workshops.

One of the main reasons of the development of the various professions of Cyprus was that, apart from the consummate skill of the handicraftsmen (craftsmanship of artisans), there was an abundance of raw materials such as cotton, flax, silk, wool, pine, walnut woodwork, soil for pottery, and reeds for basketry.

The passage of the British in 1878 was crucial and influenced the professions that existed on the Island. Since then, the industrial products were channeled to England and gradually displaced the local handmade professions. With the introduction of industrial technology, these professions gradually became less common and in the most recent period, products of mass production flooded the market of Cyprus.

Finally, the Turkish invasion of 1974 destroyed along with many artifacts of our cultural heritage, the folk art of inestimatable value. These were mostly family heirlooms that the families kept as generations changed, in almost all houses of the now occupied region of Karpasia, Kyrenia, Morphou and Mesaoria, which were some of the most important centers of folk art in Cyprus. Workshops of great craftsmen in these areas were destroyed, such as the famous potteries of Lapithos. Therefore both private and public collections of folk art found in Cyprus are particularly important, since it is the only evidence of cultural and national identity.

The main branches of Cypriot folk art are weaving, embroidery, pottery, carpentry, metal work and basketry. The revolution in the industry and the parallel development of urban centers with all their consequences radically affected the traditional professions. The mass production of standardised products replaced the uniqueness of handmade items. The marketability of the product has replaced the artistry. Today, very little of the traditional arts are still alive in their old format.
5 - ΠΟΛΕΟΔΟΜΙΚΟΣ ΣΧΕΔΙΑΣΜΟΣ ΚΑΙ ΠΟΛΕΟΔΟΜΙΚΟΙ ΠΑΡΑΜΕΤΡΟΙ ΤΗΣ ΛΑΡΝΑΚΑΣ
5.8 EVALUATION AND CONCLUSIONS

5.8.1 Strengths and Opportunities

See Urban Planning Appendix (Volume II) for a table presenting the major advantages of Larnaka which are analysed and documented below.

5.8.1.1 The geographical location

The central location of Larnaka in Cyprus, the direct access to highways and main roads, the immediate proximity to other major cities (Nicosia 45km, Limassol 66km, Ayia Napa 41km, Paralimni 45km) and the relative proximity to other districts (Paphos 135km, Troodos 111km) is one of the main advantages of Larnaka. Although the distance from Larnaka to other major cities is small, Larnaka is an independent city which has developed a relative autonomy and become an economic center utilising this strategic geographical position.

Cyprus geographically belongs to Asia but for cultural and political reasons, it is a European country. Cyprus is strategically located at the far eastern end of the Mediterranean basin and at the crossroads of three continents: Europe, Africa and Asia. It is close to the major trade routes linking Europe with the Middle East, Russia, Central Asia and the Far East. Larnaka, due to the existence of the international airport and the port facilities is the eastern gateway to the EU.

Cyprus as an Island has an extensive coastline and contains large coastal cities with a strong connection to the sea. One of the fields in which the most intense pressure appears (both in Larnaka and the other coastal towns) with respect to the natural and human environment is the zone between the land and the sea (the coastal zone). The increased interest in this particular zone tends to clearly reflect not only the image and character of the landscape but also the relative values of properties. The sea attracts people, due to its vastness, the evening breezes and the emotions it causes which cannot be compared with other elements of the natural or man-made environment.

5.8.1.2 Institutional framework of development

The institutional framework governing the development in Cyprus consists of two laws, the first is
The ‘Town and Country Planning Act’ and the second is the ‘Streets and Buildings Regulation Law’.

The Department of Urban Planning and Housing in the publication of the new generation of Development Plans 2006-2012 has realized certain achievements in the creation of a sustainable, natural and built environment:

(a) The application of transparent, participatory and democratic processes.

(b) The implementation of planning incentives (building coefficients, building height, etc)

(c) The promotion of modern and innovative methods (urban land consolidation, the transfer of development factors, and the fee for urban renewal).

(d) To introduce the method of self-checking quick handling of the planning applications.

The operation of the local authorities in Cyprus is generally functional and well balanced. It is important that the local authorities contribute to developmental, environmental and social policy. Examples in the field of development and environment are the practical co-operations between neighboring Local Authorities through partnerships. For example, creating development corporations for entrepreneurship or development actions. Additionally, there is co-operation between neighboring municipalities and communities to manage waste collection. In terms of social policy in Cyprus, it is worth noting the strong presence of volunteers on social policy programs, such as the Cyprus Volunteerism Council and the Welfare Community Councils, which have a broad social representation and political legitimacy.

5.8.1.3 Planning zones

Regarding the planning zones, the revised local plan allows some exceptions for development in certain areas due to space constraints. For example, certain tourist areas are permitted to use housing for tourism purposes. The aim of this measure is to increase the accommodation units in the related tourist zone.

5.8.1.4 Natural and urban characteristics

One of the comparative advantages of the region is the geographical position and the Mediterranean climate. In addition, the natural environment has features such as a long seafront, flat areas, interesting inland areas and a natural harbor.
The spatial plan is a crucial factor to the sustainable development of the Municipality and the region that it influences. The way in which residences are developed, the quality and location of the key infrastructure and services, and the general issues of spatial planning have a key role in the development of the region and the quality of life for residents.

5.8.1.5 Transportation

Larnaka can be classified as a highly accessible city. It is connected to all national transport infrastructures and has the capability for direct national and international connections (airport, harbor and marina) as well as transport using road and sea. This makes Larnaka a major interchange of Cyprus and contributes to the development of modern activities which rely on such connections.

Public transport in Cyprus in 2011 served an estimated 838,897 residents and visitors to the Island. However, currently in Cyprus only around 2% of people use the bus (the only public transportation that exists and operates on the Island). The 2% includes 100% of the students from villages and 46% of the students from urban areas. Even in the mid 20th century, public transport for most residents in Cyprus is inaccessible, without sufficient operation and support infrastructure of the service.

As part of the effort of the Ministry of Communications and Works to promote a new era for public transport in Cyprus, solutions have been applied for the development of public transport, which included:

- The gradual renewal of the bus fleet with new, modern vehicles accessible for everyone.
- The introduction of night routes to accommodate tourists and residents.
- The introduction of peripheral routes within cities.
- The consistency in schedules and the operation of more frequent routes.
- A regular connection between the center and wider urban area.
- The operation of more frequent intercity routes.

5.8.1.6 Economic activities

Important infrastructure like the Airport, the Port, the Fuel Terminal and the specified areas such as the Free Trade Zone and the industrial areas of Larnaka offer a variety of options for the installation of economic activities. The economic developments in Europe and in Cyprus in recent years and especially this year, call for the adaptation of the spatial development policy of the District to create the conditions to attract new investment in sustainable areas.
5.8.1.7 Environment

The major advantage of the City is the quality of life which results from the quality of the natural, cultural and built environment.

Larnaka has an extensive and largely developed sea front and salt lakes which are considered as wetlands of international importance, protected by the Ramsar Convention since 2001, and designated as a Special Protection Area and Site of Community Importance. In addition there is an interesting and diverse wider region (e.g. Choirokitia, Lefkara and Stavronouni) and a microclimate with relatively high temperatures even during the winter months. Many environmental issues are under partial or total harmonization with EU policies. The growing environmental interest of the society is the main driver towards sustainable and green development, using the existing infrastructure to minimize environmental risk.

One of the remarkable features of the city is the rich cultural heritage. This is true in terms of archaeological and Byzantine monuments, and of the younger and contemporary culture. Cultural activities are which promote through exhibitions, festivals of music, dance, musical theater etc. These activities often occur in regulated infrastructure (archaeological sites, museums, theaters, workshops and cultural sites) which are plentiful in the city.

Similarly, the existence and operation of production facilities such as reception organized industrial activities, especially domestic production. The local industry is based on relatively small industrial plants that are expanding in the manufacturing field; on the considerable expertise (cheese factory at Athenaeum) and experienced workforce with the industrial way of thinking that enhance the attractiveness of the region and its prospects for growth.

Larnaka has remarkable cultural and archaeological resources contributing hugely to the history of Cyprus. Larnaka is one of the most important archaeological centers (locally and internationally) that attract Cypriots and foreign nationals alike.
Moreover, Larnaka has a rich wider area of historic settlements and traditions. Choirokoitia is one of the best preserved prehistoric settlements in Cyprus, dating from the later phase of the Neolithic period (around 7000 BC). In 1998, it was declared as a World Heritage Site by UNESCO. Christianity also plays an important role in the development of Larnaka. Important contributions to traditional folk art have come from the village of Lefkara, famous for embroideries. These combined cultural strengths give an opportunity to develop actions that can promote the history of Larnaka.
5.8.2 Drawbacks and weaknesses

The table in the Urban Planning Appendix (Volume II) presents the major disadvantages of Larnaka which are analysed and documented below.

5.8.2.1 Location

The relationship between Cyprus and the European Union (EU) dates back to 1972, when Cyprus signed an association agreement with the European Economic Community (EEC). By the late 1980s, the links between Cyprus and the EEC were mainly commercial. The entry of Cyprus in the EU was part of the overall objective of the EU to extend throughout the Mediterranean, maintaining stability, security and cooperation in the area. By joining the European Union on 1 May 2004, a new era begins for Cyprus. However, a disadvantage is the non-central position of Cyprus in the European Union regarding the four freedoms of the single market: the free movement of persons, goods, services and capital.

5.8.2.2 Institutional framework of Development

The main weakness is the inflexible nature of the institutional framework with time consuming revisions and updates based on regulations without taking into account the local character of areas. In the study area (Larnaka) the absence of a national plan and the lack of sufficient coordination together with the inadequate scheduling of various sectors (e.g. ministries, services) are recorded and lead to complex and time consuming licensing processes for the developments. To reduce the impact of this weakness, integrated regional planning and the non-adoption of polycentric spatial policy are needed. Those two important urban planning tools do not exist in Cyprus.

The design of the development is the basis for the planned development in the public and private sectors. This is expressed both through the Development Plans (Local and urban) and the Policy Statement. In 2006-2012 a new generation Development Plans was published that incorporates strategies and policies based on European guidelines and contemporary international perceptions. The Local Plans include a wide range of provisions referring to a variety of development types, networks of infrastructure, and other standards. Typically the local plans, affect large areas, such as Nicosia, Limassol, Paphos, Larnaka, etc. However these plans are prepared by the Planning Board with the technical support of the Department and not by the Municipality. The hierarchical and the top-down decision-making processes restrict the Urban Plan responsibilities of the local authorities, while small Communities and Municipalities fail to achieve their planning responsibilities. The existence of two planning authorities (Department of Urban planning and
Housing) and the four large Municipalities causes confusion as each one implements different standards. Moreover, the lack of local urban councils excludes from the participation process the local authority and therefore the citizens, in the planning process.

For the preparation of the new Local Plans, new transparent and participatory democratic processes were implemented that ensured immediate information and citizen participation at every stage of this complex process. The new process features the timely and institutionalized submittal of suggestions and ideas, as well as public participation.

The administrative division of the city in many Municipalities creates ‘polyarchy’, with conflicting policies, rivalries and inefficiency with a comparatively high cost of service to citizens (whose range of services could be improved if there was a larger municipality). Moreover, the administrative fragmentation can be an obstacle in the implementation of any development strategy of the city.

Besides the above weaknesses, the local authorities of Cyprus face many fundamental weaknesses in relation to administration that can be an obstacle to their efforts. Many small and ultimately unsustainable communities cannot offer basic services and infrastructure to their citizens. The lack of adequate funding, the contradiction in relation to the role of the municipalities and communities, the mismatch of institutions with operational geographical units, and the intense and multidimensional government intervention, especially in communities with administrative weaknesses, are the major problems encountered in the administrative structure of local authorities.

Another serious drawback of local authorities is the low income compared to most other European Union countries. The income of the communities, indeed, is even lower than that of the municipalities, thus intensifying the institutional and administrative differences. Therefore, investments by local authorities are financed exclusively through special grants and loans.

The aim of European regional policy is to achieve solidarity in the European Union by ensuring economic and social cohesion, a condition of which is to reduce disparities between the regions. The ultimate goal is to empower regions to contribute to the growth and competitiveness and to exchange ideas and best practices.

In relation to the development of Cyprus, the failure to implement regional convergence policies occurs due to competing policies. The municipalities and communities do not have many opportunities to formulate and implement appropriate developments because of limited cooperation with other municipalities or the private sector. For example, Larnaka, in collaboration with other partners from Spain, Lebanon and Tunisia participates in the European project USUDS which has been approved by the European Programme ENPI-CBC MED. The purpose of the program is to develop a Strategic Plan for Sustainable Development in Larnaka which will include and evaluate
economic, environmental and social aspects of the City. The involvement of other cities of Cyprus would have likely contributed to the conduct of the collective rather than individual projects and activities that will contribute to the sustainable development of cities.

### 5.8.2.3 Planning zones

The planning system aims mainly to control building and land use, for the benefit of the citizens. The specific terms of building, the public places and the permitted uses are specified in each zone of settlement. The urban areas are included in the approved Development Plans under the Town and Country Planning Law. Unfortunately, some areas of Larnaka that are set out as industrial and tourist zones are already developed, which restricts future planning.

### 5.8.2.4 The use of land

The opportunity for hierarchical recourse against a decision of the Town Planning Authority guarantees the right of citizens for a comprehensive review of the application or the examination of the Enforcement Notice served to him. This is done by a body other than the one which took the original decision. The Council of Ministers shall examine the hierarchical recourse under the provisions of the current development plans, urban planning and land management policies and other essential factors associated with the development and reach a final decision. If the decision is not satisfactory to the applicant, then he has the option to file an appeal to the Supreme Court, which decides on the legitimacy of the planning decisions. Although the examination of the Hierarchical Recourse is a time consuming and cost demanding process, the owners of land exert enormous pressure on the responsible officers of the Town Planning Authority and submit Hierarchical Recourses.

The difficulties in the development of landlocked pieces of land highlight deficiencies in the planning system. Landlocked properties are not adjacent to a public road and do not have sufficient suitable, convenient and secure public access. A serious drawback is the inability to handle the issue due to an impending vote on the implementation of Urban Land Consolidation proposals, through which thousands of residential pieces throughout Cyprus could be extricated. Land consolidation is the consolidation and distribution of all or part of the area enclosed within the administrative boundaries of one or more plots. It is desirable that each owner will concentrate their land in one, two or three of the plots, which are approximately equal to the property held before the consolidation. The design of land consolidation in Cyprus will be applied by democratic processes, since it requires the active participation of the owner of the land in each stage and a process of providing sufficient rights.

### 5.8.2.5 Natural and urban characteristics
In Larnaka, extensions and modifications of the Urban Plan are taking place within the limits of the approved plan. The new city street plan is characterized by rectangular geometric arrangement with directions perpendicular and parallel to the sea.

Large developments are made more difficult as there is an extensive fragmentation of urban land into small plots so that there is a lack of large vacant pieces. The discontinuities in the Urban Plan are due to the existence of technical barriers (e.g. the industrial zones, the Fuel Terminal, the Airport, the Port) and is one of the main drawbacks of the City. The fragmentation of the urban plan can intensify the spatial separation (with consequent social implications) and depriving the City of potential urban development and redevelopment.

The lack of quality in the built environment in Larnaka is a result of the ideology that governed the urban regeneration and planning interventions through the years, which encouraged these fragmentary deployments.

The land is perhaps the greatest good and the main factor that allows production, as it is the basis for all human activity and is the main part of the activities of the society. It provides humans with food, water and housing, while offering considerable wealth. The establishment of private ownership in land is one of the most important steps, but restrictions to development may occur due to the ownership status of the piece of land. An example is the Turkish Cypriot area, which occupies a significant area by the sea in Larnaka and is difficult to be developed due to political issues. Good land management promotes economic and social progress, in both urban and rural areas as land is the major factor in production, on which the whole of our economic activity is based.

5.8.2.6 Transport

The population size, poor urban planning, the reduced use of public transport, the narrowness of most pavements, and the lack of cycling routes, cause the city problem of traffic congestion (especially in the city center) and difficulty in the movement of pedestrians and bicycles. There is also a serious parking problem due to the continuing shortage of parking spaces.

At the level of public transport, the City has weaknesses related to deficiencies in transport (such as the lack of public transport links between the airports of Larnaka and Paphos) and insufficient and bus routes. The use of the Port facilities is also very low and has a strong need for modernisation in order to access international markets and the development of maritime transport at regional, national and international level.

Unfortunately, the absence of a local authority in Larnaka in deciding the upgrading of public
5.8.2.7 Economic activities

A critical issue to resolve is the conflicts over land use especially in coastal areas, where uses such as tourism, commerce, and recreation often dominate over other uses such as residential and charitable. In addition they threaten the particular quality of the non-urban area such as the biodiversity and the natural landscape. Most of the tourist areas are sited on the waterfront of Larnaka with insufficient tourist accommodation and a shortage plots for development.

Due to the sensitivity of the coastal area of the City, the uses that should be allowed should be more strongly controlled. The Fuel Terminal, which occupies a large area of the coastal front of Larnaka, is contraindicated because it degrades the landscape and in general, the industrial zones have difficulty in their appropriate siting.

The Marina links the urban areas with the coastal landscape. The location of the Larnaka Marina offers an easy way to escape from the City towards the sea. However, the Marina has several weaknesses both in terms of equipment and in terms of management. The old docks of the Larnaka Marina have been damaged over the years and so it is dangerous to use them. After the recent installation of the new pontoons, the Larnaka Marina will have 120 to 130 berthing places. The modernisation of the Marina has the goal to ensure safe anchorage and also implements a number of factors necessary that contribute to environmental protection. Finding the optimum aesthetics and functionality of the Marina is vital for it to become a sustainable operation.

Larnaka experienced excellent growth rates, especially after the entry of Cyprus into the EU in 2004. Unfortunately, during this time the economic activities and infrastructure which was built was not enough to become a competitive and reputable business center.

5.8.2.8 Environment

Continued population growth since 1974, changes in lifestyle, the tertiarisation of the economy and the needs of siting the productive activities of tourism, higher education, and other services, have created an intense pressure on the urban area. This has resulted in the fragmentation of the natural wealth and the separation of the salt lakes by the construction of the Airport).
Environmental research is an essential tool for the effective protection of natural wealth, along sustainable guidelines. It is a real danger to lose contributions from various stakeholders regarding environmental matters, biodiversity, sustainable development, renewable energy and water management, which operate independently without joining into a single operator for the environment.

The increase in traffic volume, urban wastewater (industrial and residential), noise pollution and reduced air quality, combined with the lack of organized public and private green areas contribute to environmental degradation and are matters of priority for the City. In particular, the operation of polluter industries in close proximity or within residential areas has serious effects on the environmental quality and the quality of life. Apart from the production process that reduces air quality, the transportation impact effects an already overstretched urban environment with traffic congestion, noise, and pollution.

Urban sprawl in areas that have water are at increased risk of contamination. The importance of the issue resulted in the elaboration of specific policies both within the European Union and the national arena for the rational management of public areas and ensuring the urban character.

The lack of public and green areas is a major issue for the City. The regeneration and reuse of derelict urban areas has taken place in recent years, and must satisfy both the requirements for structured use and for public areas.

The incomplete utility infrastructure needs upgrading and integration, such as the road network and the sewerage system. Problems are present particularly in the countryside, where networks cannot be constructed as long as there is no town planning and public roads. There are no urbanised areas for the population scattered in the countryside, due to the absence of planning tools that will be used for industry, commerce and tourism.

It is well known that the geographic location and the historical circumstances experienced by the Island through the centuries, led to the creation of a civilization that left a rich archeological trail. Larnaka has a small sample of this archaeological heritage, because of the physical destruction and the recycling of materials from the ancient inhabitants to create new cities. The archaeological areas that remain attract only a few visitors.

By preserving architectural heritage, each nation preserves its historical memory and improves quality of life. Today, the low degree of maintenance and in some cases, the abandonment of important traditional buildings, inappropriate tourist exploitation and alterations, poses a serious risk to cultural heritage. However, the social perception of the value of it has increased. Moreover,
it has been found that the rescue of traditional buildings will help to conserve our natural resources and reduce waste, complementing some of society’s most important issues.

The analysis and evaluation of the rich surrounding area (Choirokitia, Lefkara and Stavronouni) concluded that there are high-quality resources that can support tourism and must be promoted. Such resources are:

- The rich and diverse natural environment (climate, fauna, flora, paths, etc.)
- The unique culture (archaeological sites, monasteries, museums, mythology, local history and tradition, daily life events and activities, traditional crafts)
- Local products and Cypriot cuisine (halloumi, zivania, commandaria etc.)
- Cypriot hospitality
- The feeling of security

Theatrical performances or historical re-enactments reflect the historical development of human societies, and were always important in linking the City with its culture. Larnaka offers a variety of recreational activities, however many of these do not produce culture any more but simply re-cycle the old. The urban area of Larnaka has few thematic sites for these shows or for other specific events (conference centers, theme museums).

In Larnaka most of the traditional professions have been lost but the older inhabitants still remember them (or practice them). The disappearance of traditional craftsmen is a result of industrialization and technological progress, the expansion of export trade, and the establishment of new craft workshops and industrial units combined with a parallel increase of mass production of products.

The mass production of standardised products has replaced the uniqueness of handmade works. Additionally, technological evolution has improved the living conditions prevailing today, replacing the straightforward survival needs that people used to have. As a result, large built-up settlements have become specialised in activities of craftsmen whose products not only satisfy the needs of the local community, but can also be exported.
5.8.3 Opportunities

The table in the Urban Planning Appendix (Volume II) presents the major opportunities of Larnaka which are analysed and documented below.

5.8.3.1 Geographic location

The development of modern needs, especially services (such as logistics), industry, commerce and tourism (such as conferences, gastronomy, sports, education, medical, and environmental) is an opportunity for the City that has a perfect location and comparative advantages, to be active in and gain a considerable market share.

Multiple opportunities are presented with other countries because of their proximity to Cyprus. For example, the deal for the telecommunications link between Cyprus and Lebanon Lebanese by constructing an undersea fiber optic network. There is also a co-operation between Cyprus and Lebanon for the use of gas and its development and the possibility of constructing highway bridges to connect Cyprus with the neighboring countries.

5.8.3.2 Institutional framework of Development

Larnaka is undoubtedly a special place, beyond the narrative of historical texts and numbers and can only be understood by the experience of visiting or living in the City. If properly used, the uniqueness of Larnaka can create a competitive advantage for the Larnaka and create a sustainable future for the inhabitants.

Flexible spatial planning can solve problems and is directly applicable and effective via integrated, simplified control mechanisms for compliance with the law and the strict timelines.

Larnaka used the opportunity to absorb finance from European funds for the creation of the Strategic Development Plan of the City (USUDS) aimed at changing the approach of the City and a reinventing of identity. The Program aims to promote public participation and of particular importance was the establishment of a representative group of stakeholders, often called ‘involved social bodies’. To minimize the risks associated with public participation all the key stakeholder groups are involved early in all stages of the program.
The decentralization and strengthening of local powers are a new form of collective action and organization of power to local government. Significant opportunities for local development are expected to arise from the development of Local Plans of planning authorities at the local level and not by the Central Planning Board. In this way, there will be more direct involvement of locally elected parties and their role in decision making is enhanced. Local participation in governance socializes the political power, gives the city the ability of self-renewal and regeneration, allows innovation and revitalisation more easily.

Despite the weaknesses listed about the operation of Cypriot local government, the prospect of restructuring the current system of municipalities and communities within the new European project, is expected to strengthen the role of local authorities and democratic legitimacy, as well as equipping them with more responsibilities and resources. The extent and complexity of the changes required will depend on the final shape of reform and it is almost certain that the restructuring by combining municipalities will greatly increase the efficiency, effectiveness, cease their competition and improve economic, social and spatial cohesion.

The metropolis is an ancient Greek term meaning, ‘mother city’. This name was used for the strong cities which had an economic and political influence in the other cities. The traditional metropolises were the economic, political and cultural centers of large geographical areas. The metropolitan policy was adopted and implemented with the aim of better management of the demographic, economic and political power and vice versa. The great opportunity for the local government after the restructuring of the Local Authorities to create metropolitan municipalities, lies in the new spatial units that will be formed per district based on criteria (demographic, geographic) to achieve sustainability and better serve the society.

The concentration of production in a few large metropolitan municipalities will bring many benefits, such as the bargaining power, administrative savings for the administrative staff and research economies using expertise.

Community and national resources as allocated to the plans of ministries and community initiatives, can be an ideal opportunity for a series of actions aimed to have urban development. This can relate to the upgrading of infrastructure and networks, the promotion of local entrepreneurship, the reconstruction of urban areas, improvements in quality of life, improvements in human resources, increases in employment and the reduce social inequalities. The ability to network with other urban centers is a valuable perspective for the resource utilization.

The conclusion of a new development and investment law in line with European standards, which provide incentives for private investment projects, supports the growth of new enterprises, with the aims to increase employment and entrepreneurship in the region. Moreover, it can work positively in attracting investors and creating a positive investment environment with multiple benefits for the
5.8.3.3 Planning Zones

One of the measures for urban intervention is the zoning of restoration areas, the renewal of buildings and the promotion of undeveloped areas, which are granted special aid and incentives. Examples of new socio-economic areas are the Social Percentage Zone and Special Financial Assistance Zone. In areas designated for housing or social interest, the building co-efficient can be increased. This increased co-efficient is determined by reasoned assessment of urban and housing conditions and the housing needs in the area under urban study.
5.8.3.4 Land use

The decline of industry (de-industrialization) in many countries has affected the urban landscape so that cities now face a new reality with new challenges of economic, urban, social and environmental nature, to which they have to adapt. The spatial impact of these major changes was expressed with the abandonment of industries mainly in central areas with consequent ghettoisation, devaluation of areas, the break in continuity of the urban area and the degradation of the buildings. The strategies that sought to revitalize former industrial areas mainly center around cultural and entertainment uses. In this way, Larnaka must also adapt to new realities under the new conditions imposed by the evolution. **The transition from industrial to post-industrial city, was and is, a planning challenge.**

Uses that have evolved today and are seen as totally incompatible with the character of the areas (e.g. the Urban Shopping Center) should be removed gradually using relevant measures and incentives.

5.8.3.5 Natural and urban characteristics

The model of the compact city is proposed as an alternative to the urban development against the anarchic urban sprawl, because it is able to support the needs of future sustainable urban development.

The real city borders are not merely restrained to the physical expansion of the urbanised areas. The urban area has also extended into undeveloped rural areas, resulting in ‘urban sprawl’.

In recent decades, where a rapid period of urban growth was seen, residential expansion of the cities did not happen in the well planned or controlled way causing the existing problems to worsen. However, in Larnaka the phenomenon of urban sprawl was not as big as in the other cities, since the distribution of the population shows no significant difference in urban and rural areas.

As discussed above, urban sprawl is in complete contrast with the new principles and approaches that consider the city as part of a social and ecological system of low impact. The reaction to the evolution of urbanisation resulted from the growing importance of sustainability.

Larnaka now embraces the principle of compact city, proposing measures and policies that will define the city as a distinct entity and curb the indiscriminate diffusion of the urban uses in the
countryside. The prospects of this model are based on the retention of the production within the residential area of Larnaka and the correction of the urban structure from several interventions. In this direction, the city will focus on two guidelines:

- The use of the location, the beach front, the topography, the microclimate and the water bodies.
- The use of the government, the Church and the Municipality property to meet the needs of urbanisation, expansion and redevelopment.

Regarding urban sprawl, the results of the fragmented urban interventions of recent years are obvious in the urban structure which has been converted into a mosaic of heterogeneous and contrasting uses. There is an opportunity to correct the urban structure with compact growth, which will retain the social and functional diversity of the city with interesting links and paths.

As it is known, the cities or larger geographical and administrative regions compete in order to attract three factors: (a) tourists, (b) investment and (c) the ‘talent’ (individual persons that can bring goodwill in manpower in the city or region). As part of this competition, cities have to evolve in such a way that they remain attractive. In this process, a potential danger is for the town to lose its identity, for example, by losing its important references. The strategy of promoting cities, regions and city branding refers to all the activities that have been submitted in order for the city to become a destination and not only being a location. Robert Jones, consultant of Wolff Loins says ‘The successful promotion can turn a city into a place where people want to live, work and visit.’ The creation and promotion of a distinct identity for Larnaka is a challenge to form new attractive prospects for development and investment.

5.8.3.6 Network and transport

The biggest challenge for sustainable transport, is finding the right balance between economic and environmental parameters. The needs in transporting people and goods are increasing at a higher rate than the economy and population, and based on this data, the existing transport network is not sustainable in the long term.

Despite all the evidence of the increased negative impact of transport in recent years, there has been the emergence of the goal for sustainable mobility of people and goods by the application of new technologies, both at European and local level. An important goal is to change the behavior and attitudes of citizens, both in terms of the pressure required in order to introduce and improve the public transport, with a consequent reduction of private vehicles, and by encouraging the use of public transport, where available.

As the city is part of the national and international transportation networks and development, this can be a major element for the city to become a center of commercial, informational, technological,
To date, the transport infrastructure is well developed in the European Union. However, it remains fragmented, both geographically and by type. Many European terminals, passenger stations, inland ports, seaports, airports and urban interchanges do not fulfill the mission of setting up multi-modal connections. As these interchanges have not multimodal capabilities, the potential of multimodal transport and the ability to eliminate bottlenecks and provide the ‘missing links’ are not efficiently used. Missing links, especially in border areas constitute a major obstacle to the free transport of goods and passengers within and between countries and their neighbors. Moreover, the inequalities are significant and continuous for the quality and availability of infrastructure between and within Members of EU.

The port facilities should be improved by the creation of new transport infrastructure, maintenance services, or upgrading of the existing infrastructure towards increasing the degree of service of trade and tourism (e.g. fly and cruise).

The traffic policy of the Local Plan encompasses a complex and multidimensional policy package and among other things it includes (a) the discouragement of the use of private cars for inner-city transport, especially in the urban center and historic center, (b) substantial upgrade of the importance, the role and efficiency of public transport. In this context, we propose measures of traffic management, the capabilities to create pedestrian and bicycle paths and parking places, especially in the city commercial center.

Cyprus supports the principles of the European Directive ‘for the principle of equal treatment between persons irrespective of religion or belief, disability, age or sexual orientation.’ People with disabilities have the right to enjoy their autonomy, occupational integration and participation in the social, economic and political life of the country. The belief that Larnaka is less accessible than Nicosia or Limassol, is due to the failure to obtain the basic facilities provided for the convenience of people with special educational needs, both in buildings and in public places. The challenge is to create an accessible chain, which will be linked with accessible pavements and intersections along a given route.

Awareness of public transport issues in Cyprus is prominent as the quality of life is affected by the loss of an adequate transport system. The involvement of local government in deciding to upgrade public transport is imperative to ensure the operation of services of general interest (i.e. safer, higher quality and less expensive). An efficient public transport system is required to achieve three main goals: (a) adequate road infrastructure, (b) the necessary transport and (c) the required routes.

Larnaka, as with all cities, has to monitor, update and adopt new practices, techniques and
technologies that can help to address urban problems (environmental, traffic, etc.) and the effective management of the urban area, increasing employment and more generally resulting in sustainable development of the region. The development of transport infrastructure and an integrated system (Integrated Transport System) implies promoting alternative energy, the application of new technologies for urban transport, and the introduction of an intelligent transport network.

5.8.3.7 Economic activity

European integration, the internationalization of the economy and the opening of the neighboring markets, contribute to the easier transport of goods and the factors of production (money and human resources). These are the biggest challenges for the local economy and society has two implications. Firstly, there are opportunities for the local businesses (through investment, exports of goods, services, expertise etc., but also there are imports of cheaper raw materials. Secondly, it is necessary to establish a strategy at the local level in order to attract investment in the city (through projection of comparative advantages, and remodeling of structures and institutional framework).

The significant opportunity given to Larnaka is the development of specific sectors in which the city has a comparative advantage. The combined development of all productive sectors of the economy with emphasis on the development of the most dynamic has to be achieved. The development of the tourist identity of the city, the establishment of Larnaka as an important tourist destination with the utilization of sports infrastructure, culture, natural environment of the region and the development of recreation and leisure time will evolve in the future. Apart from tourism, manufacturing is another important sector. Prospects occur for strengthening the industrial power and identity of the city and its connection with research and development mechanisms of technology and support for innovation and quality.

Public-private partnerships are a practical alternative for the effective implementation of infrastructure and providing better services to citizens using the right mixture of public and private initiative. International experience confirms that you can give new impetus to local development and to ensure the quick and proper completion of many necessary infrastructures, while also freeing up resources for more investment from the local authorities which may also contribute to the implementation of social policy.

To address the current problem of the weakening manufacturing base in Larnaka, it is necessary to better assimilate the technological developments and needs. The result would be the modernisation of productive activities while increasing productivity and competitiveness of businesses in the primary, secondary and tertiary services.
5.8.3.8 Environment

The development options in terms of sustainability can make it possible that the uniqueness of the area will be respected in a sustainable way, following a different model than that followed by all the coastal cities of Cyprus in the development of trade, manufacturing and tourism. After the relocation of the Fuel Terminal there is the potential to use the coastal zone to further the sustainable development of that area.

The aim of Larnaka is to strengthen its presence internationally through public and private initiatives and the preservation of its character as a city of environmental character and unique social characteristics. The transition of the salt lakes to be more connected to the urban fabric of Larnaka while enhancing the conservation value can be the starting point of a strong identity for the City. Creating a strong ‘brand name’ internationally, urban biodiversity will focus on strengthening the image of the island and creating a new approach to people’s relationship with the landscape.

One of the most important issues for both European and the National Strategy for Sustainable Development is that of the climate change and the pursuit of clean energy. Efforts are focused on increasing the use of renewable energy, and developing new, innovative and environmentally friendly technologies to increase energy efficiency and conservation, while increasing the amount of energy produced. The biggest challenge in the field of clean energy for Cyprus, an island that is rich in natural resources, is the development and improvement of the energy network towards the self-sufficiency and autonomy, utilising the geothermal, wind and water potential of the island.

More independent actors are needed to provide a more de-centralized approach to design and planning and there is a need for the establishment for strong environmental research and development organisations. Furthermore, the decentralization of the services of the environmental department would mean that the monitoring of the salt lakes can be conducted by a Larnaka based committee.

Given the difficulty of protecting preserved buildings administratively and economically, the urban tools should provide strategic and more promising incentives to individuals and owners, in order to rescue and effectively protect this important part of our cultural heritage. The Department of Building and Housing participates in European programs, activities and networks in collaboration with other government departments, the Department of Antiquities, and other countries. Despite different political status, history, economic development, education and culture, these countries follow a common practice in the design and implementation of policies for the protection of the cultural heritage.
In order to promote the natural and cultural aspects of the City, \textit{green and cultural routes} will be established for educational programs for school groups and families, lectures and information sessions, and traditional craft workshops. The aim of these tours is to promote the cultural identity and the historical tradition, protect the natural environment and biodiversity, mobilise social groups and promote tourism development.
5.8.3 Threats and Risks

The table at the end of subchapter presents the key threats of Larnaka, which are analysed and documented below.

5.8.4.1 Geographic location

The Cyprus problem is an issue of international law because of the illegal military occupation of the northern part of the Republic of Cyprus by Turkey. Turkey has claimed unsuccessfully in international circles that the northern part of the Island is a separate, independent Turkish Cypriot state.

After the ceasefire in August 1974, there have been many attempts to reunite the island, but they were not successful. A possible solution to the national issue would shift the ‘center of gravity’ regarding the spatial distances between cities. As a result, the concentration of investments will be in the island's capital, Nicosia, and the disparities in development will become more intensive.

Larnaka is a city on the southeastern coast of Cyprus and is one of the six districts of Cyprus. The Municipalities of Larnaka are:

- Municipality of Larnaka
- Aradippou Municipality
- Municipality of Athienou
- Lefkara Municipality
- Municipality Levadia
- Municipality Dromolaxia-Meneou

The administrative division is still the same throughout the years, but the predominant scenario of transformation and aggregation of the municipalities seems to be possible. The combination of the neighboring municipalities surrounding the Municipality of Larnaka poses a great danger for the expansion and development of the Municipality of Larnaka. Encouraging the municipalities of Aradhippou, Dromolaxia and Levadia for co-operation in providing beneficial services (e.g. waste management, etc.) helps to plan for the population growth of these neighboring municipalities and it is an opportunity to operate in co-operation with a view to being united after some years.

5.8.4.2 Institutional framework of Development

The promotion and control of development in all areas of the island (including urban and rural
areas) is carried out on many levels (Minister of Interior, Director of Planning, City Council, Council Study deviation). The lack of unified planning authorities or uniform principles of development control causes many problems with major delays due to workload and complex processes. The feasibility of establishing a single body should be addressed, along with the implementation of a new procedure for preliminary planning permission, in order to facilitate the planning and promotion of large and important private developments without lengthy delays.

The scenario of radical change and the restructuring of municipalities includes radical reforms towards the restructuring of local authorities, such as uniting the municipalities, giving responsibilities and resources to local authorities and creating metropolitan governance. However, the politicized planning without technocratic input creates barriers to these efforts, resulting in a reduced meritocratic and rational review of decision-making.

The city is a vital organisation that comes from the past, lives in the present and gets prepared for the future. Maintaining the character of the City sometimes contrasts with the demands of the society.

The orientation of the restructuring of the Cypriot local authorities and uniting the Municipalities should take into account the particular characteristics of the different regions utilise specialised treatment of various categories. As a result there will be no loss of the characteristics of the different regions, and will protect its character and differences.

5.8.4.3 The Land use

The transition from industrial to post-industrial city has led to regeneration efforts and the upgrade of the urban fabric by strengthening cultural activities and removing the disturbing activities. The Dhekelia fuel terminal is an example of a de-industrialized area in the beach front and its removal is in the process while its use will be transformed without having yet having a new identity.

The facilities at the Dhekelia terminal were used so far for unloading fuel tankers for the needs of the power station. The government's proposal of removing the terminal stations will cost a lot for decontamination of both freshwater and the site. The detection of pollution and the use of appropriate control measures and decontamination is a priority. Under the protection of the natural environment, the proposal to tax the exemptions and activities that are harmful to the environment will raise money to use for decontamination and de-bottlenecking projects.
5.8.4.4 Natural and urban characteristics

The demand for natural resources is growing rapidly, both globally, in Europe and at the national level. The pressures on the atmosphere, forests, water resources, marine resources, coastal areas, agriculture and biodiversity is increasing without evidence of reversing or slowing down.

5.8.4.5 Road Network/ and transport

In terms of the Port infrastructure in Larnaka, both the harbor and the marina, have to meet the travel needs of passengers and cargo at local, national and international level. Climate change will have a direct impact on transport infrastructure and needs to take protective measures in maintaining the existing infrastructure. The occurrence of natural disasters would create the need for reconstruction and restoration of transport infrastructure, so that the transport network could function reliably without delays and changes to routes and services.

The Ministry of Communications and Works, together with the Local authorities considers it necessary to build an integrated urban road network fully equipped in accordance with the relevant provisions of the Local Plan of Larnaka. The road network having an increased capacity and functionality is geared to safe traffic conditions for all modes of traffic and pedestrians. As part of the upgrade this requires large municipal costs for the conversion of roads into a viable and sustainable road network.

5.8.4.6 Economic activities

In Larnaka, as in the rest of Cyprus, more than 99% of businesses are small to medium sized. The small economy of the Island, which is almost exclusively based on the service sector, acts as an obstacle to research interests. Therefore, the reduced industrial infrastructure does not promote the application of new technologies, which requires large investment funds. This prevailing perception, combined with the current economic situation, fails to attract local and foreign investment.

The increased mobility of goods, money, business and labour, due to the internationalization of the economy and European integration, and the resultant increase in competition from cities with low costs, high technology or other comparative advantages (e.g. quality life, human resources, institutional framework) represent a real threat to the city. This makes it necessary for the city to seek and enforce its own comparative advantages to strengthen its position on the national and
European stage against other competitors.

Reducing public sector funding in order to remediate the economy together with the reduction of European funds that are gradually directed to the new EU members may influence negatively the possibility of financing major projects and thus create difficulties and obstacles to the development perspective of the City.

5.8.4.7 Environment

The environmental risks that occur not only locally in Larnaka, but also in the surroundings are expected to intensify. The problem of water pollution (surface and underground) is still important. In addition, the coastal erosion, the desertification due to the weather conditions and the pollution mainly due to the industrial developments or the airport and other impacts of urban development threaten the city. For this reason, projects and protective measures (such as tree planting, the expansion and improvement of the stormwater network, etc.) are needed.

Nowadays, the global community has to solve energy issues such as inadequate and insecure energy supply, and that of the adverse environmental impacts of the intense exploitation of energy resources. The energy consumption is associated with the following factors:

- Increase in population
- Economic growth
- Reduction of stocks of fossil fuels
- Impacts on the natural environment

As these problems intensify there is an obvious need for an institutional response to conservation and protection issues. Cyprus was late to realize the need for a coherent policy for the protection of the environment. Due to this, the provisions of the Local Plan are not fully harmonised with international standards and regulations and allow developments in sensitive environmental areas.

The Over-exploitation of urban land in the pursuit of profit, imposed by the socio-economic framework, has lastingly altered the built area and types of uses in cities. Accordingly, serious pressures on urban heritage have resulted, such as:

- The overexploitation of urban land.
- The arbitrary extensions of urban centers with a devastating impact on the natural and cultural environment.
- The economic factors that are hindering the restoration of ancient monuments.
- The ownership that is now the most dangerous threat to any type of landscaping to expose and highlight the antiquities.
Individual buildings or parts of buildings and elements of the landscape, can be classified as protected because of their special significance. The protected buildings, as part of the cultural heritage of the country, are constitutionally protected by preservation orders. When a building is classified as an ancient monument, the owners have to pay most of the cost for the repair or reconstruction of the building. The maintenance and restoration generally require specialised work involving excessive costs. Usually the owners prefer to get the permission to demolish the buildings in order to declassify them, rather than getting involved in a costly and time consuming process.

Traditional professions reflect the local traditions of societies. These professions, which through the years were a precondition of survival and self-preservation, still retain their artisan character, but today they have been sidelined due to industrial type standard occupations. However, the use of materials and techniques through the years has led to knowledge and cultural wealth, with particular value to folklore. Examples of these traditional arts and crafts that are still practiced today are: Pottery (especially at Kornos), Quilt manufacturing, Barbering, Tailoring, Shoemaking, Furniture manufacturing, Ironmongery (Comodromos), Basketry, Chandlering, Sculpting (Taliadoros), and Weaving (Lefkaritika embroidery).
CONCLUDING REMARKS ON URBAN DESIGN OF LARNAKA

Taking into account the size of the City, and the relative position in the hierarchy of urban centers in the country, its features and the positive and negative factors that affect Larnaka, the town undoubtedly ranks among the favored cities of Cyprus.

Larnaka has an extensive and significantly developed waterfront, the salt lake, which is considered as an international wetland, an interesting diverse wider area (e.g. Choirokitia, Lefkara, and Stavronouni) and a climate of high temperature even during the winter months. Its central location in Cyprus and the direct access to highways and main roads is one of the main advantages of Larnaka.

Due to the population size, the poor design of urban planning, the reduced use of public transport, the narrowness of most pavements, the lack of bike paths, the city faces problems of traffic congestion (especially in the center) and presents difficulties to pedestrians and bicycles to move around the city. There is also a serious parking problem due to the lack of parking places off the streets. However, Larnaka does have strengths in terms of accessibility. It has good connections with all national transport infrastructure and the ability for direct international connections (airport, harbor, and marina). Good combined transport using all modes is also effective to and from Larnaka (road, sea, air).

The large critical infrastructure, such as the Airport, the Port and Marina, the Fuel Terminal and the specified spatial organizations, such as the free trade zone and industrial areas of Larnaka, all offer a variety of options for the location of economic activities. Most tourist areas are sited along the Larnaka seafront with insufficient tourist accommodation and lack of plots for development.

The design for development for the District of Larnaka is expressed through the Local Plan of Larnaka and the Privacy Policy. The existing institutional development can be characterized as non-flexible having time consuming revisions and updates without taking into account the local character of areas.

Larnaka offers a variety of recreational activities. Although many of them are repeating events they do not necessarily produce cultural benefits. The urban area of Larnaka has no major show areas for specific events (e.g. conference centers).

Larnaka has to endorse the principle of the compact city, proposing measures and policies that will highlight the city as a distinct entity and curb the indiscriminate urban uses in the countryside. The
prospects of this model are based on the retention of the production within the residential area of Larnaka and the correction of the urban structure from several interventions. In this direction, the City will focus on two guidelines:

- The use of the location, the beach front, the topography, the microclimate and the water bodies.
- The use of the government, the Church and the Municipality property to meet the needs of urbanisation, expansion and redevelopment.
REVIEW

Taking into account both the size of the city and its relative position in the hierarchy of urban cities in the country, and the positive and negative factors affecting it, it is concluded that Larnaka undoubtedly ranks among the favored cities of Cyprus. While weaknesses are numerous and significant, these are similar for all of the Cyprus cities and not only Larnaka. Conversely, most of the advantages of the City are not the same for the other cities in Cyprus, but are elements that differentiate Larnaka from most of the other cities and should be exploited in the best possible way. This should be the role of an integrated strategy: taking into account the difficulties, limitations and new national and international trends, to make the best use of existing sources and continually create new comparative advantages for the balanced development of the City.

What is our dream for Larnaka, for us and for the future generations? We envision Larnaka to be a dynamic innovator in science and technology. We envision a productive Larnaka, where there will be jobs for all, an inclusive Larnaka, where there is health coverage for patients, the elderly and people with disabilities. A fair Larnaka, without discrimination, where everyone has the right to work and be educated, Larnaka without air pollution, which respects the environment and is actively involved in addressing the serious global problems, a Larnaka with values that everyone will share and everyone will defend. This is the Larnaka we desire, and our vision can become reality.