URBAN TRANSPORT DEVELOPMENT PROJECT

Project Brief

May 2013

مشروط تطوير النقل الحضري

ملخص المشروع

أيار 2013
مشروع تطوير النقل الحضري - الجهة المنفذة

**Administrations Involved**

<table>
<thead>
<tr>
<th>Ministries (Arabic)</th>
<th>Ministries (English)</th>
</tr>
</thead>
<tbody>
<tr>
<td>وزارة النقل العامة والتنقل</td>
<td>Ministry of Public Works / Directorate of Roads</td>
</tr>
<tr>
<td>ووزارة الداخلية والبلديات</td>
<td>Ministry of Interior &amp; Municipalities / Directorate General of Internal Security Forces / Traffic Management Organization (TMO)</td>
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**FINANCING AGENCIES**

<table>
<thead>
<tr>
<th>Agency (Arabic)</th>
<th>Agency (English)</th>
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<tbody>
<tr>
<td>البنك الدولي</td>
<td>World Bank</td>
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<tr>
<td>صندوق أبو ظبي</td>
<td>ADFD</td>
</tr>
<tr>
<td>البنك الإسلامي للتنمية</td>
<td>IDB</td>
</tr>
<tr>
<td>الصندوق الكويتي للتنمية الاقتصادية العربية</td>
<td>KFAED</td>
</tr>
<tr>
<td>الصندوق العربي للتنمية الاقتصادية والاجتماعية</td>
<td>AFESD</td>
</tr>
<tr>
<td>تمويل محلي (الحكومة اللبنانية) ما عدا الاستملاكات</td>
<td>Local (GoL) - without Expropriation</td>
</tr>
</tbody>
</table>

**Total Project Cost (without Expropriation)**

<table>
<thead>
<tr>
<th>Component</th>
<th>Cost (Million USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>زويز برنامج تحسين المحاور الرئيسية</td>
<td>13.4</td>
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<tr>
<td>برنامج إدارة السير وتنظيم الوقوف</td>
<td>8.0</td>
</tr>
<tr>
<td>مشروع الرفاع</td>
<td>15.5</td>
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<tr>
<td>الصندوق العربي للتنمية الاقتصادية والاجتماعية</td>
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<tr>
<td>الصندوق الكويتي للتنمية الاقتصادية العربية</td>
<td>40.0</td>
</tr>
<tr>
<td>تمويل محلي (الحكومة اللبنانية) ما عدا الاستملاكات</td>
<td>44.3</td>
</tr>
<tr>
<td>المجموع (الملايين الدولارات الأمريكية)</td>
<td>249.5</td>
</tr>
</tbody>
</table>

**DISTRIBUTION BY COMPONENT (percentage)**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>زويز برنامج تحسين المحاور الرئيسية</td>
<td>70%</td>
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<td>برنامج إدارة السير وتنظيم الوقوف</td>
<td>27%</td>
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<tr>
<td>مشروع الرفاع ودعم للبلدية</td>
<td>3%</td>
</tr>
<tr>
<td>المجموع</td>
<td>100%</td>
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</tbody>
</table>
Urban Transport Development Project
General Background

Key Figures

1,300,000
Beirut Metropolitan Area Inhabitants

401,000
Beirut Inhabitants

Number of Cars Owned per Household

Number of Motorized Trips

55%

25%

10%

50%

Distribution of Vehicles by Type

Study by Dar Al Handasah - Shair & Partners

After the end of the Lebanese war, numerous programs and plans followed successively for the reconstruction of Lebanon, among which was the urgent rehabilitation program of 1991 adopted by the Government and “Horizon 2000” of 1993; the five-year plan for economic development of 1999; and the development program of 2003-2005. Consequently, since 1992 and until today, the roads transport sector witnessed important rehabilitation works on the entire Lebanese roads network, in addition to opening new roads. Since 1992 and until 2012, projects awarded have reached about US$ 2093.01 million, among which US$ 1245.59 million of executed projects until the end of 2012 and US$ 847.42 million for projects still under execution.

Accordingly, the CDR conducted numerous projects aiming at activating and developing the performance of the transportation on the road network in all Lebanese regions, among these are:

- Coastal expressway project
- Beirut-Syrian border road project
- Penetrator roads for Beirut ring road project
- Urban Transport Development Project (UTDP) for Greater Beirut
- Rehabilitation and upgrading of Beirut roads network and the suburbs
- Rehabilitation project for network of primary and secondary roads in some regions
- Opening of new primary and secondary roads in some regions
The total length of the roads, boulevards and highways developed through the project reached about 117 km.

The objective of the Urban Transport Development Project (UTDP) is to improve the operational and economic efficiency of Beirut’s urban transport system, and facilitate the traffic flow within the Greater Beirut area. The UTDP consists of the following components:

- Traffic management program, installation of 199 traffic lights and 55 traffic-monitoring cameras, traffic signs, road markings, and improving the pedestrian walkways. The creation of a monitoring and management center for traffic circulation, and connect it to 120 traffic lights via DSL technology, and installing a 45 km network of fibre-optics to connect the traffic lights and the traffic monitoring cameras to the center. Installing red light enforcement cameras on 10 intersections;

- On-street parking management program, with parking meters for 7,500 parkings;

- Technical assistance for transport planning, public transport regulation, air quality management and transport feasibility studies;

- Project management;

- Improvement of main traffic junctions, which includes the construction of bridges and tunnels at 19 intersections and the execution of related works along main roads:
Adlieh Roundabout

Underpass

Underpass under Adlieh Roundabout consists of two lanes for traffic coming from Cornish Pierre Gemayel towards Mathaf and another two lanes for the opposite direction, also the construction of side roads, landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.

Sami Solh Avenue - Damascus Road Intersection

Underpass

A Y-shaped underpass under the intersection for traffic coming from Tayouneh Roundabout towards Adlieh Roundabout on one hand, and towards the Old Damascus Road on the other hand, in addition of side roads, landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.

Airport Road / Shiyah Boulevard Intersection

Underpass and bridge

A prestressed reinforced concrete Y-shaped bridge on Shiyah Boulevard axis above the Airport road, for traffic coming from the west in the direction of Galerie Semaan and Chatila Roundabout, in addition of side roads, landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.

Mucharrafieh Intersection

Bridge

A prestressed reinforced concrete bridge, with two lanes for traffic in both directions, on Shiyah Boulevard axis above Hadi Nasrallah Avenue, for west bound traffic towards the Kuwaiti Embassy, and east bound towards Mar Mikhael intersection, in addition of side roads, landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.

Dora Roundabout

Bridge

Removing the existing steel bridge, and constructing two prestressed reinforced concrete bridges of three lanes each, for north bound and Beirut bound traffic, also constructing a roundabout and side roads, landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.
Mkalles Roundabout

Bridge and underpass

Development of the Mkalles Roundabout, to connect al Mansourieh and Sin el Fil, and constructing an underpass with two lanes in each direction under the roundabout to connect traffic coming from Hayek Roundabout towards Jisr el Bacha and vice versa, in addition of constructing side roads, landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.

Abdullah Yafi and Damascus Road

Intersection: Museum

Underpass along Abdullah Yafi under the intersection with Damascus Road, with two lanes for traffic coming from Barbir towards Adlieh Roundabout and another two lanes for the opposite direction, in addition of side roads, landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.

Tayounneh Roundabout

Underpass

Underpass under Tayounneh Roundabout along Old Saida Road – Omar Beyhum Street axis, with two lanes in each direction, for traffic between downtown Beirut and Mar Mikhail intersection, in addition to side roads, landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.

The traffic flow on the southern entrance of Beirut (in both directions) in 1998 was 65,000 vehicles per 24 hrs. In 2011 it reached 110,000 vehicles.
Dekwaneh Square Roundabout
Upgrade
Developing a roundabout connecting seven roads serving the following areas: Dekwaneh, Mkalles, Deir Mar Roukoz, Rawda, Baouchrieh, Jdeideh, Bourj Hammoud and Sin el Fil, in addition to landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.

Bechara El Khoury Street & Omar Beyhom Street Intersection: Bayt al Atfal
Underpass
Expanding and increasing the length of the existing underpass in both directions between Chatila Roundabout and downtown Beirut, and constructing a ramp over the underpass for traffic coming from downtown Beirut towards Tayyouneh, in addition of landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.

Hayek and Saloumeh Roundabout Intersections
Bridge, Upgrading the intersections and unifying traffic directions
A prestressed reinforced concrete Y-shaped bridge over Hayek Roundabout for traffic coming from Jisr el Wati and the Metropolitan Roundabout towards Dekwaneh and Sin el Fil Boulevard in one direction, also the adoption of a one direction traffic from Sin el Fil Boulevard towards Saloumeh Roundabout all the way to Hayek intersection, in addition to side roads, landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.

Bechara El Khoury Street & Omar Beyhom Street Intersection: Bayt al Atfal
Underpass

Hayek and Saloumeh Roundabout Intersections
Bridge, Upgrading the intersections and unifying traffic directions

Dekwaneh Square Roundabout
Upgrade

Bechara El Khoury Street & Omar Beyhom Street Intersection: Bayt al Atfal
Underpass

Hayek and Saloumeh Roundabout Intersections
Bridge, Upgrading the intersections and unifying traffic directions
The average speed on the northern entrance of Beirut in 1998 was no more than 15 km/h, now we achieved an average of 35 km/h.
Projects under construction

- Airport Road/Shiyah Boulevard bridge and underpass
- Tawounneh Roundabout underpass
- Bchamoun-Aramoun gyratory
- Hayek bridge
- Installation of 199 traffic light and 55 traffic-monitoring cameras
- Installation of 937 parking meters

Projects under preparation

- Training three groups of ISF traffic squadrons
- Organize and launch an awareness campaign
- Future project

Projects being awarded

- Installation of 199 traffic light and 55 traffic-monitoring cameras
- Installation of 937 parking meters

Accomplished Projects

- Installation of 937 parking meters
- 2013 as of early 2013

In Brief

- Two prestressed reinforced concrete bridges, one provides a direct connection between the eastbound lane of Pierre Gemayel Boulevard and the eastern lane of Emile Lahoud highway for traffic going to Adlihe Roundabout, in addition to side roads, landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.

Chamoun and Aramoun Intersections

Gyratory Development of a one way gyratory road connecting the Old Saida Road to Chamoun and Aramoun for traffic coming from the south and north, from and to Chamoun and Aramoun, to be connected later to the proposed Airport Expressway, in addition of side roads, landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.

Where is the project now?

Nahr Al Mott Interchange

Bridges and interchange

Removing the old steel bridge and constructing two prestressed reinforced concrete bridges, the first connects the westbound lane of the Northern highway with Jddahk and Sin Al Fit through Sin Al Fit Boulevard, with a half circular bridge branching out of it for traffic going towards Zain – Amaret Chalhoub and the Northern Math areas. While the other bridge connects the eastbound lane of the Northern highway and the eastern lane of Sin Al Fit Boulevard with Metn expressway, with a half circular bridge branching out of it for traffic going towards Sin Al Fil Boulevard with Metn expressway, with a half circular bridge branching out of it for traffic going towards Dora and Beirut. In addition to side roads, landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.

Bchamoun and Aramoun Intersections

Gyratory

Development of a one way gyroty road connecting the Old Saida Road to Chamoun and Aramoun for traffic coming from the south and north, from and to Chamoun and Aramoun, to be connected later to the proposed Airport Expressway, in addition of side roads, landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.

Nahr Al Mott Interchange

Bridges and interchange

Removing the old steel bridge and constructing two prestressed reinforced concrete bridges, the first connects the westbound lane of the Northern highway with Jddahk and Sin Al Fit through Sin Al Fit Boulevard, with a half circular bridge branching out of it for traffic going towards Zain – Amaret Chalhoub and the Northern Math areas. While the other bridge connects the eastbound lane of the Northern highway and the eastern lane of Sin Al Fit Boulevard with Metn expressway, with a half circular bridge branching out of it for traffic going towards Dora and Beirut. In addition to side roads, landscaping works, upgrading and rehabilitation of the infrastructure network, including drainage network, potable water pipes and street lights network.
In 2010, the Traffic Control Center was launched to monitor traffic on four main intersections using special traffic-monitoring cameras, the intersections are:

1. Northern entrance of Beirut (Dbayeh – Beirut city center) Sin el Fil Boulevard (Nahr al Mott – Mkalles)
2. Cornich al Mazraa
3. Southern entrance of Beirut (Sport City – City Center)
4. Eastern entrance of Beirut (Janhour – Sayad – Port of Beirut)

The Traffic Control Center tasks include:
- Insure road safety (pedestrians & vehicles);
- Timing the traffic lights, monitoring the green light traffic flow and monitoring any malfunctions;
- Constant monitoring, directing and controlling traffic flow through the traffic-monitoring cameras;
- Receiving traffic information, comments and complaints through wired and wireless communications;
- Coordinating with the traffic squadron through traffic plans to facilitate the traffic flow;
- Solving and directing traffic jams and traffic operations, whether the customary or emergencies, and give orders directly to the police in charge of traffic control regarding the situation;
- Collecting data and information to be used in finding solutions, conducting studies and suggesting plans aimed at improving traffic conditions.