Council For Development and Reconstruction Lebanon

Sustainable Urban Mobility Planning Workshop

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The presentation is divided into:

- Post war GBA Transportation Plan 1996
- Achievements so far
- Outcome
- Future - Public Transportation

Post War
Greater Beirut Area Transportation Plan

Post war traffic and transportation conditions

Burnt bus in Furn El Chebbak depot

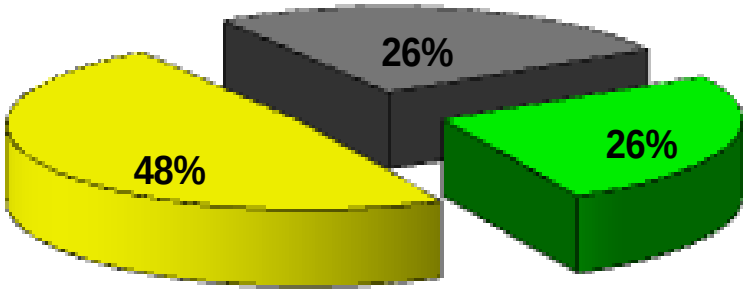
BCD Roads

Pedestrians Sidewalks

Gridlocks & Bottlenecks

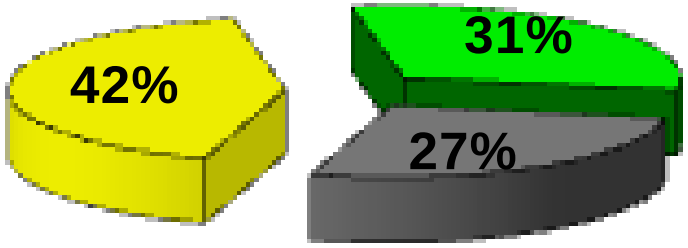
Bottleneck on North Coastal highway.

GBA in travel times
Speed / Delay of 27 routes



Speed

- 30 Kph - 20 Kph
- 20 Kph - 10 Kph
- <10 Kph

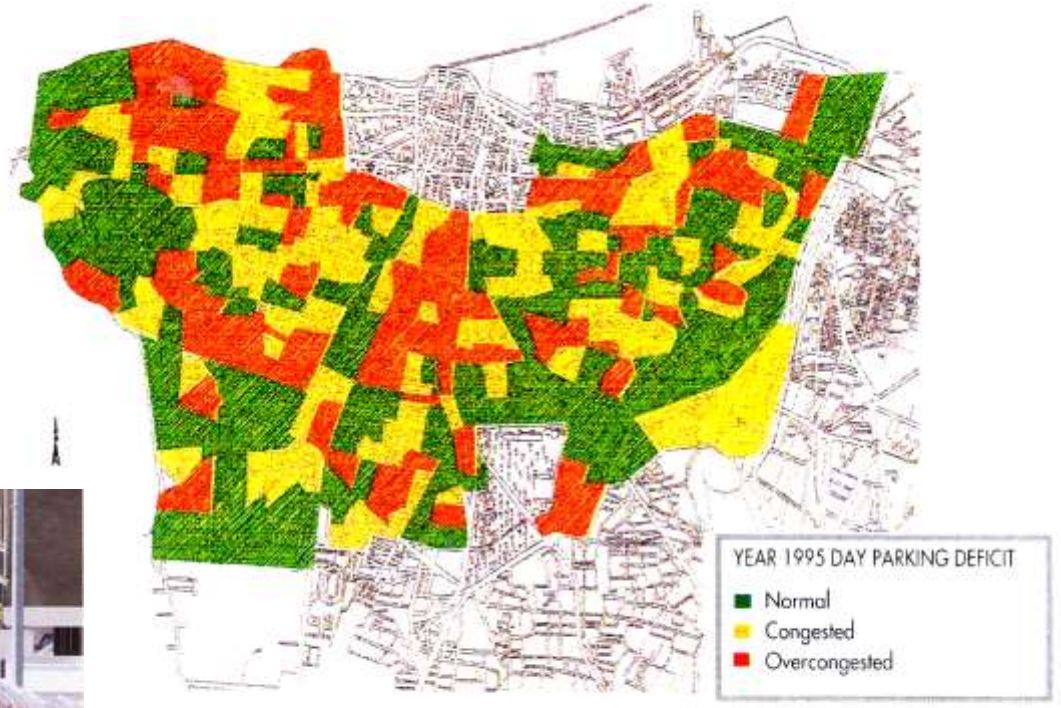


Delay % of travel time

- 25% - 50%
- 15% - 25%
- <15%

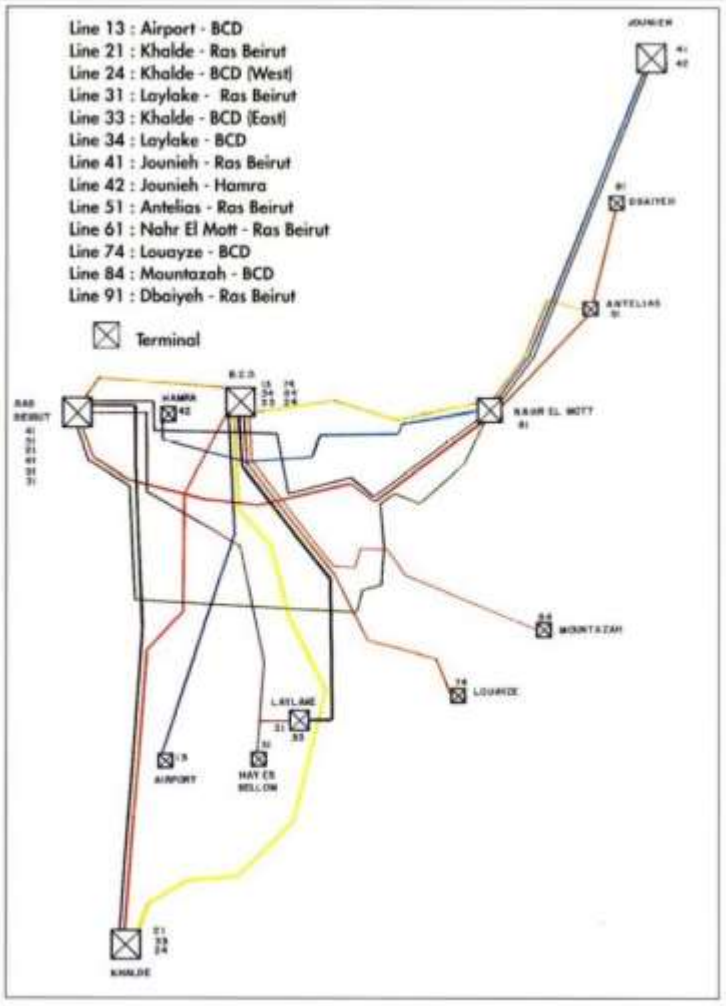
Intersection operation is the main cause of delay

GBA Parking

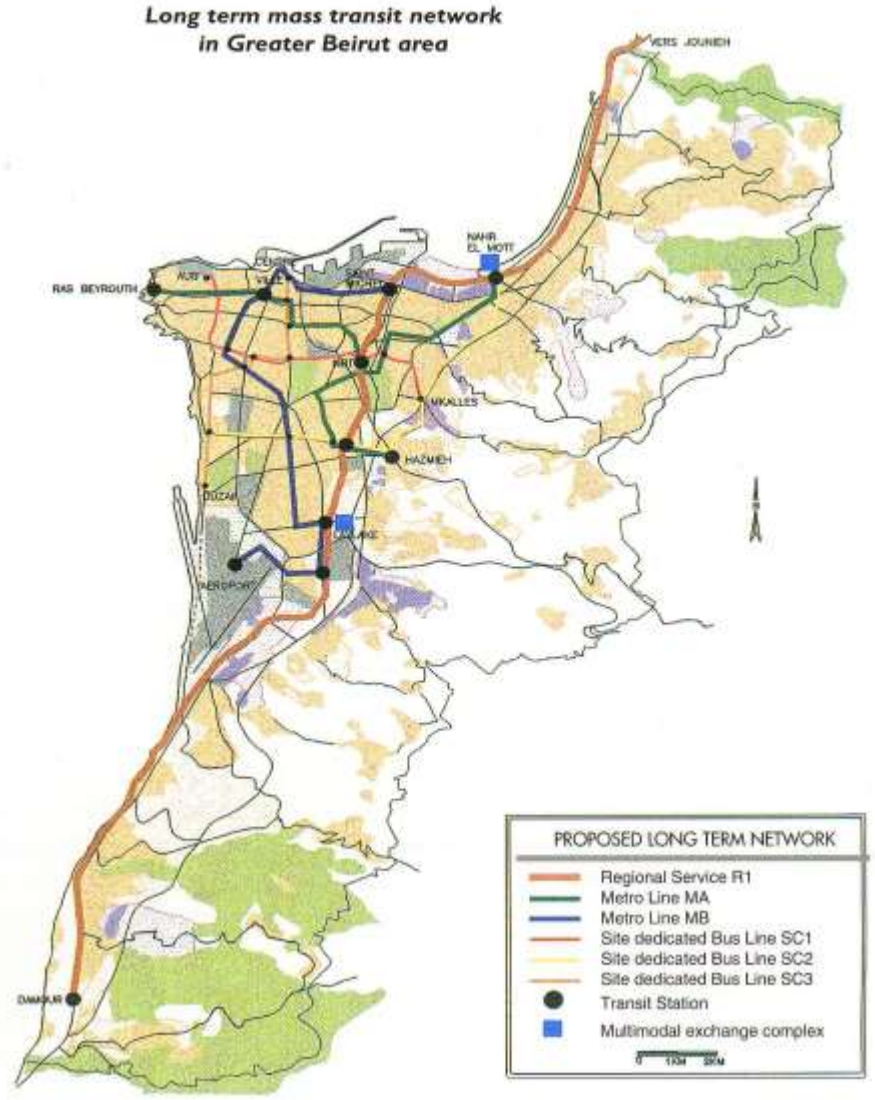


Parking Deficit Areas in Beirut City, 1995

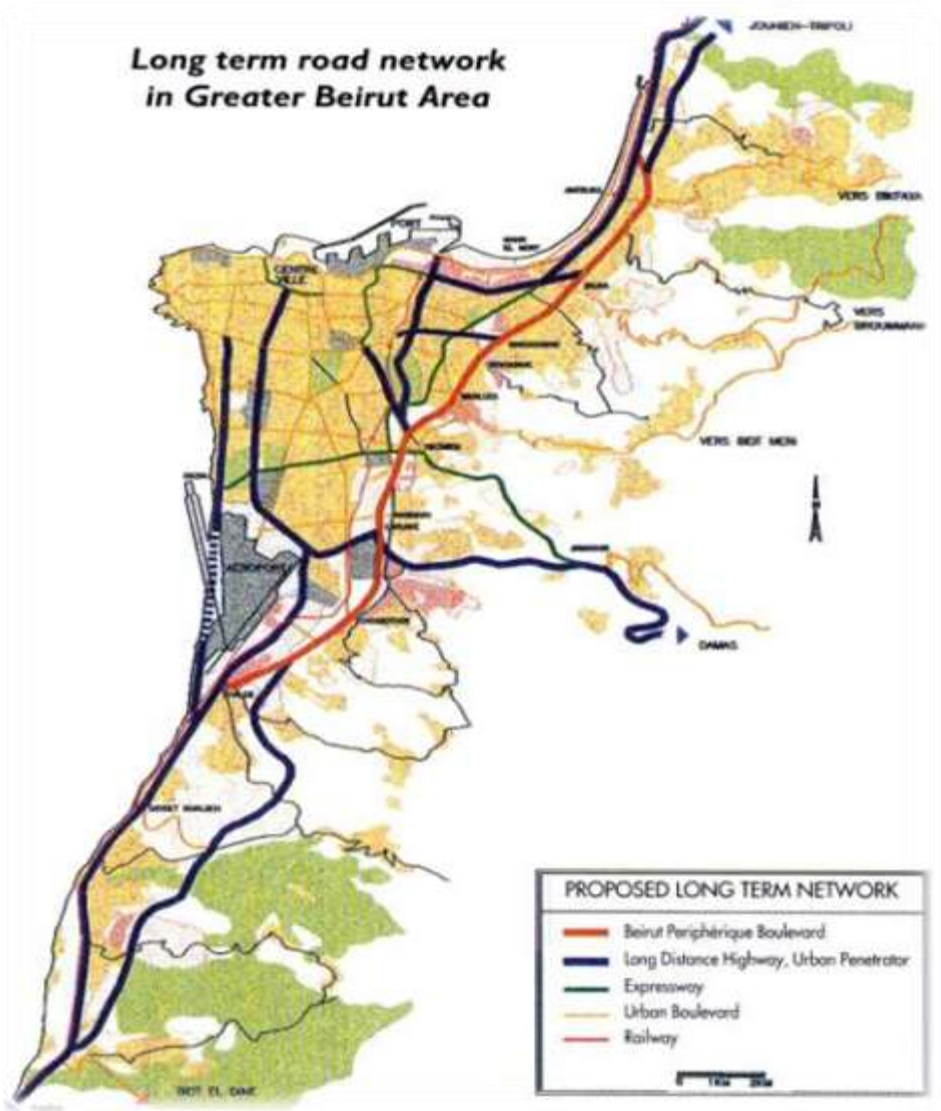
Long term mass transit network in Greater Beirut Area – Bus & Metro



Proposed bus trunk network



Re-establishing Penetrator roads (Entrances)

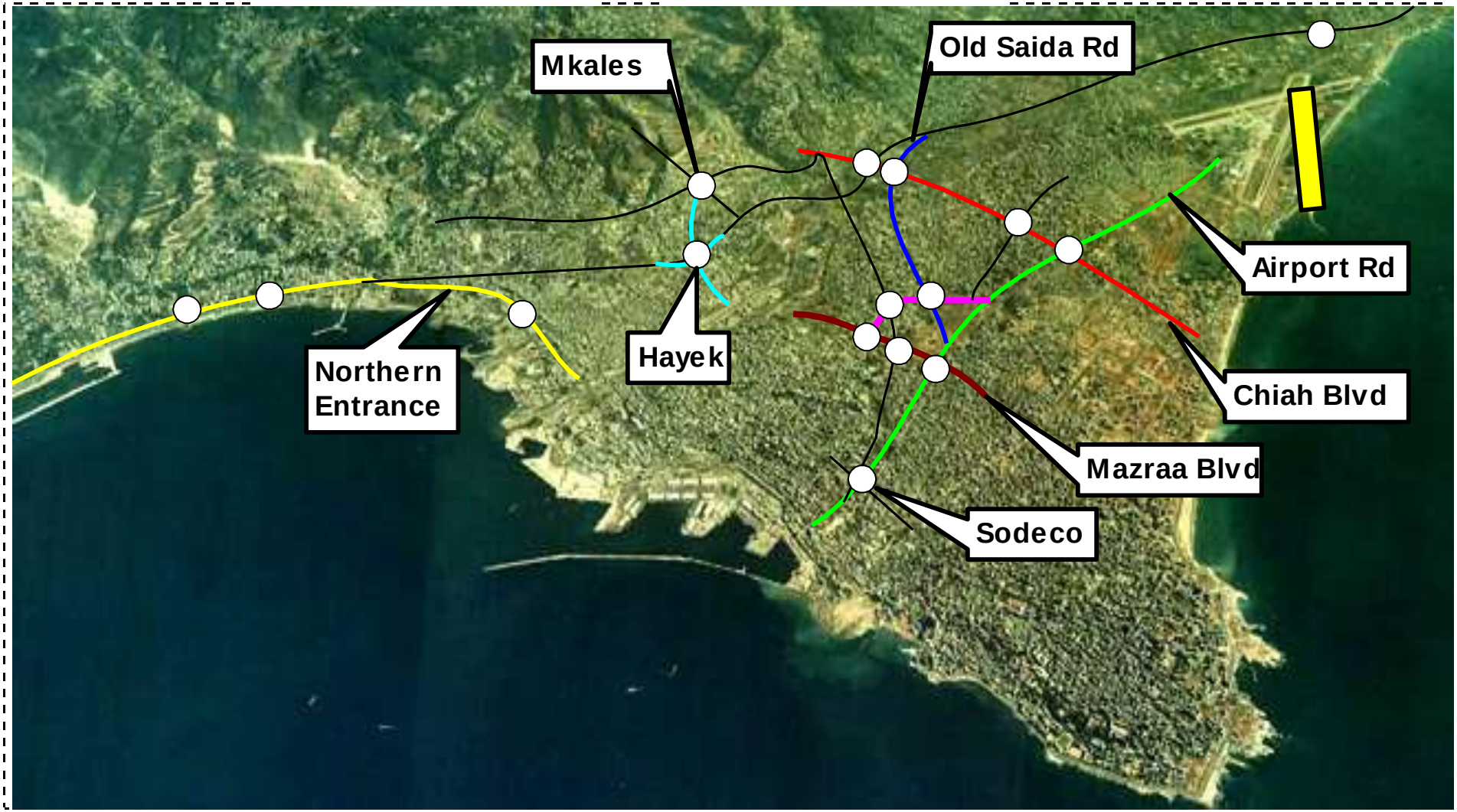


Achievements So Far

BCD Roads

Tunnel crossing on the northern entrance

Grade Separations at major Junctions – Urban Transport Development Project



Urban Transport Development Project
Roads Improvement: Mar Mekhael Underpass

Urban Transport Development Project
Roads Improvement: Museum Underpass

Urban Transport Development Project
Roads Improvement: Hayek Overpasses

Urban Transport Development Project
Roads Improvement: Musharrafiyeh Overpass

Urban Transport Development Project
Roads Improvement: Tayounneh Underpass

Urban Transport Development Project
Roads Improvement: Nahr El Mott Interchange

Rehabilitation of Hazmiyeh – Saoufar Road: Hazmiyeh – Jamhour Section

Rehabilitation of Hazmiyeh – Saoufar Road: Hazmiyeh – Boulevard Camille Chamoun Section

Pan Arab Highway: Mdeirej – Taanayel Section

Penetrator roads

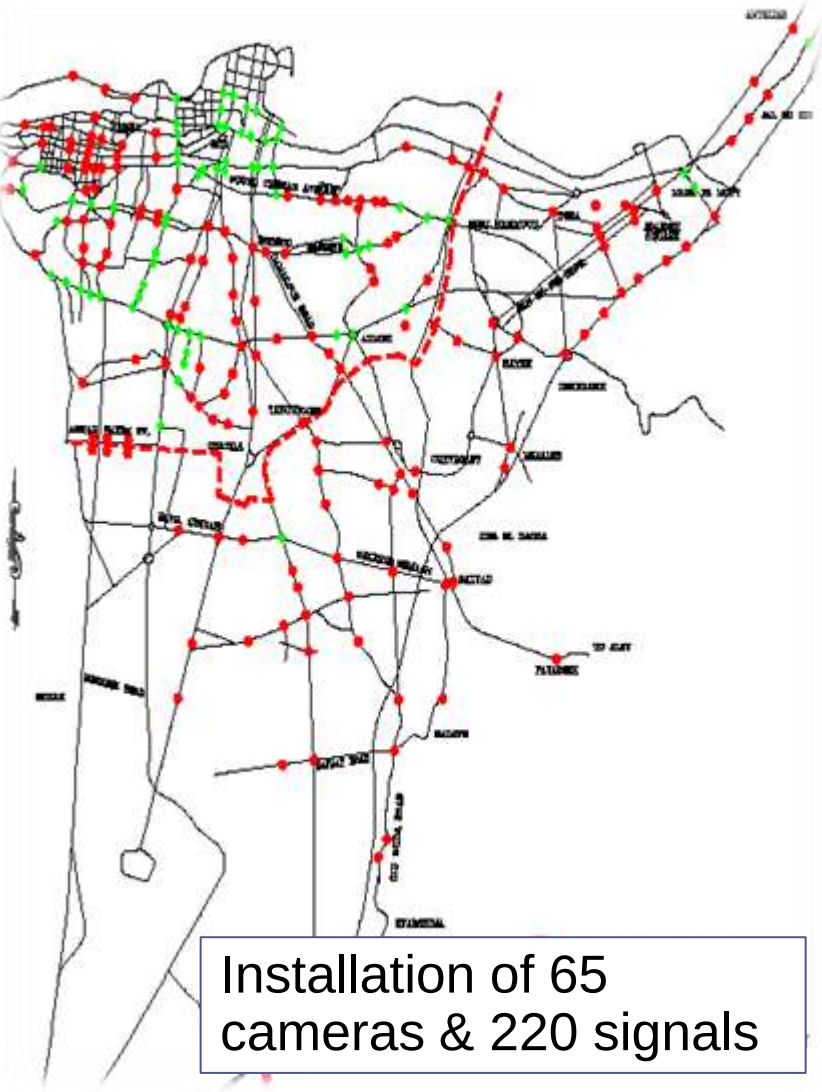
Eastern Entrance

Southern Entrance

UTDP – Traffic Management

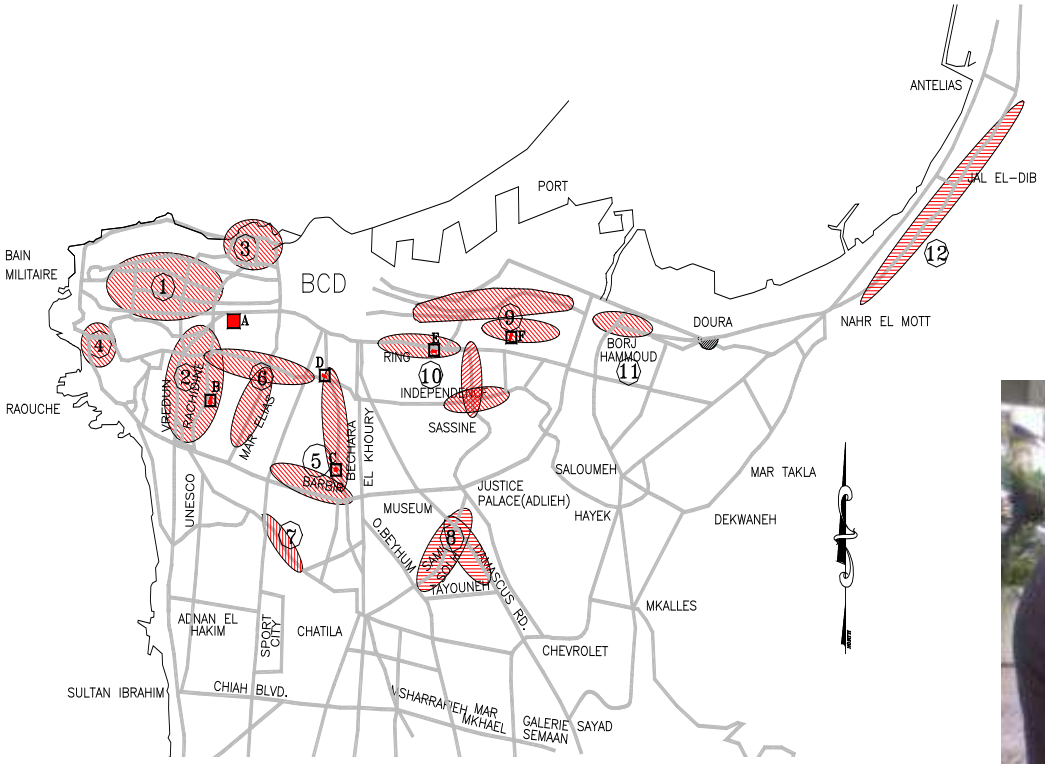
Creation of Traffic Management Organization

Traffic Management Center



Installation of 65 cameras & 220 signals

UTDP – On-Street Paid Parking Program
Pay & Display Parking Meters



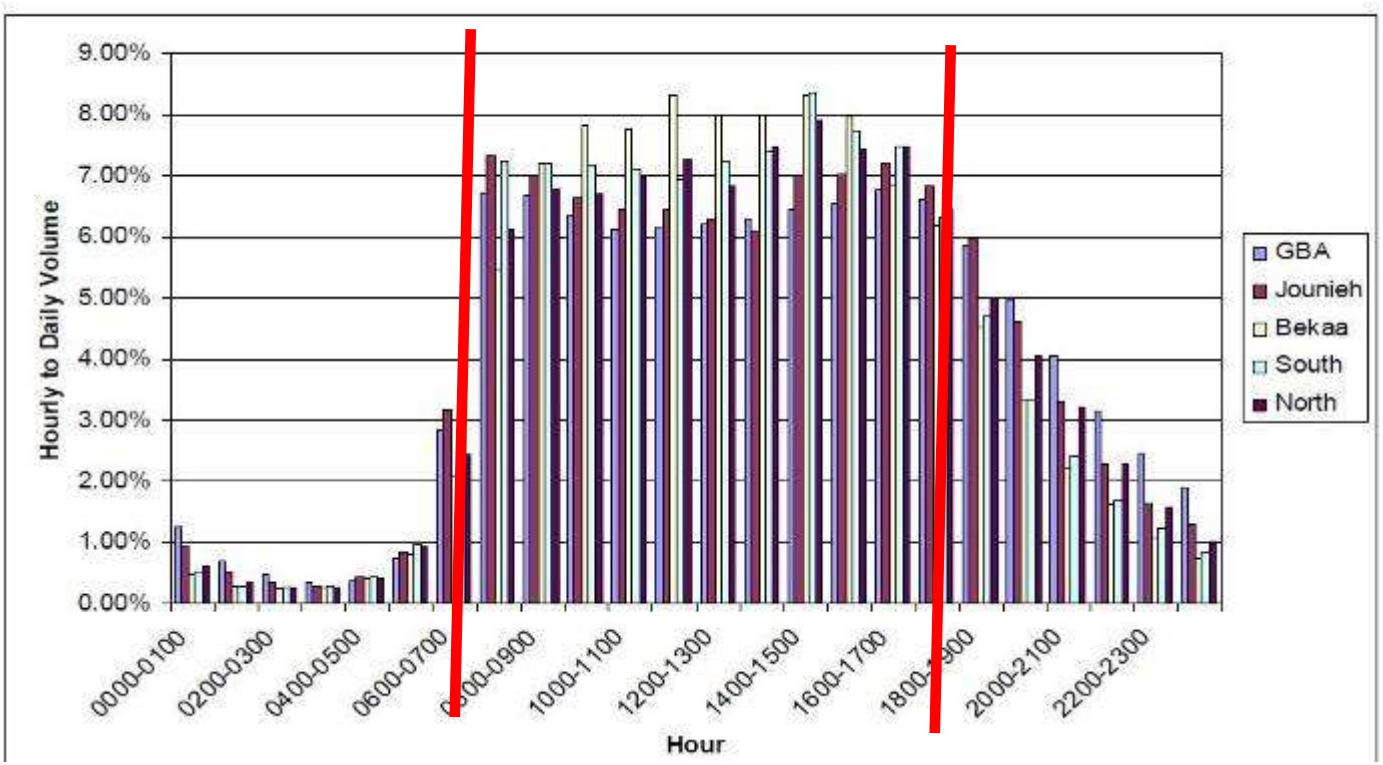
Installation of 937 Parking Meters (Pay & Display) for 8500 curb side parking

The outcome

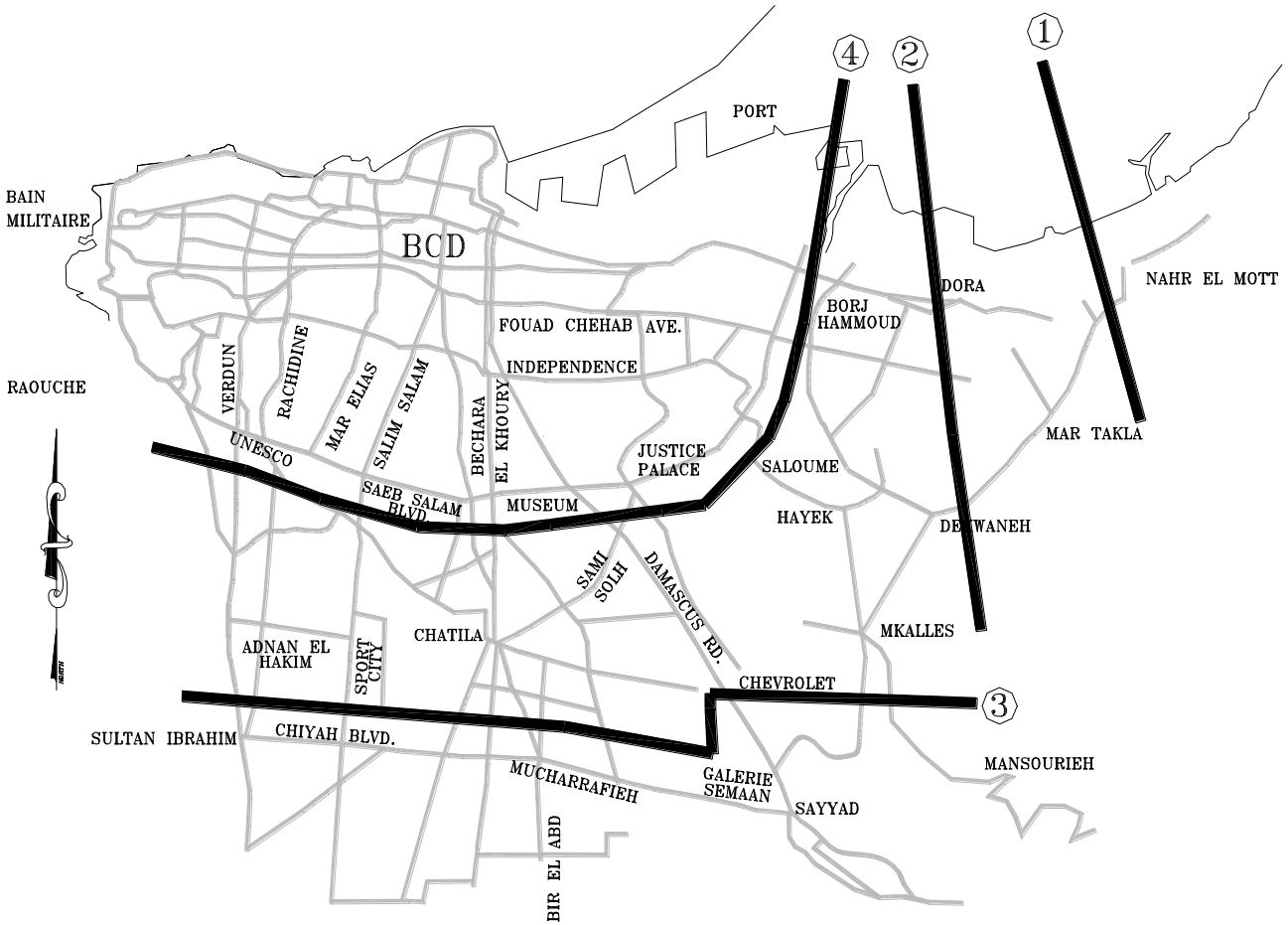
Traffic Flow

Very high level of congestion is recorded on major corridors thought-out most hours of the day

Figure 1. 2008 Hourly Peaking Factors by Region



GBA Traffic Volumes 2014

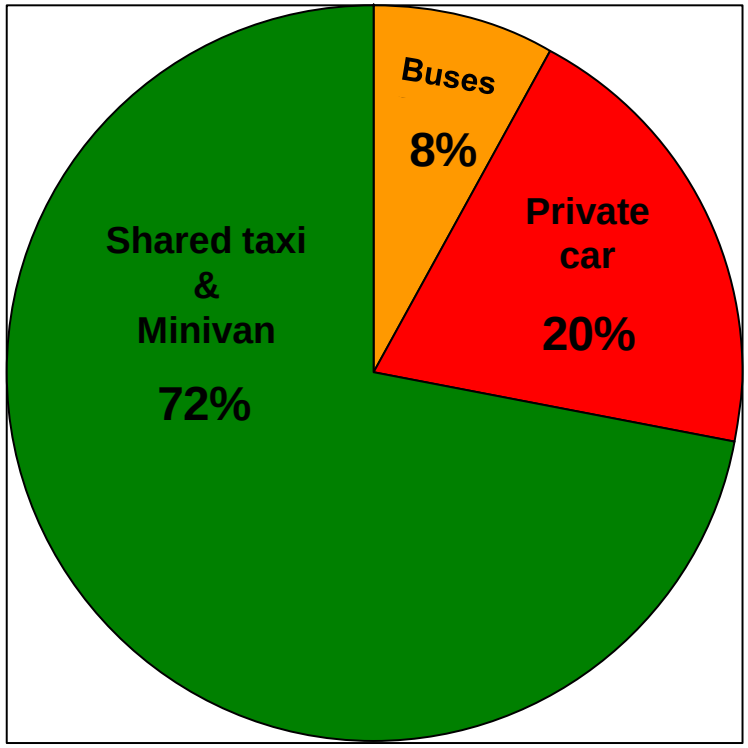


Volume at Screenline 1 = (289,400)
Volume at Screenline 2 = (273,300)
Volume at Screenline 3 = 522,300
Volume at Screenline 4 = 697,000

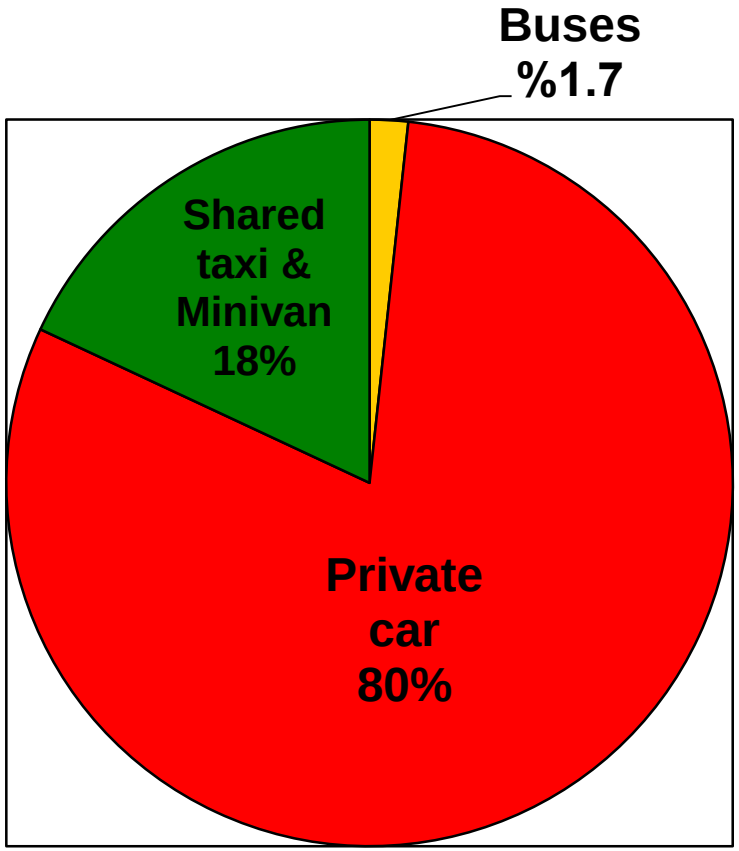
Main Arterials in 2011 – AM Peak

Main Arterials in 2035

Share of various modes of Transport



Greater Beirut Area 1970



Greater Beirut Area 2009

Increase in the number of vehicles 60,000 in year 1970 to 1,200,000 by 2009.

Public Transport Operation

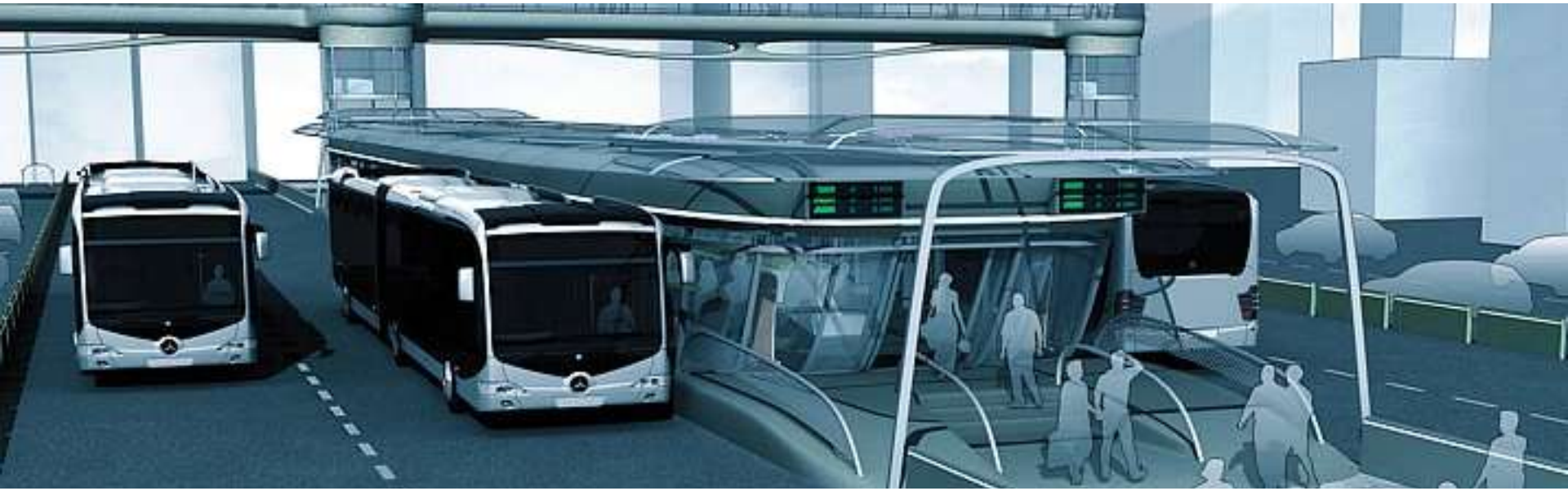
- Transportation demand remains high and private
  - vehicle dependency increasing
  - Car occupancy : 1.9 in 2009 vs. 8.5 in 1970

- High ownership & Low operation costs of private cars
  - 25% of household own at least 2 cars
  - 50% of household own 1 car

Public Transport Operation

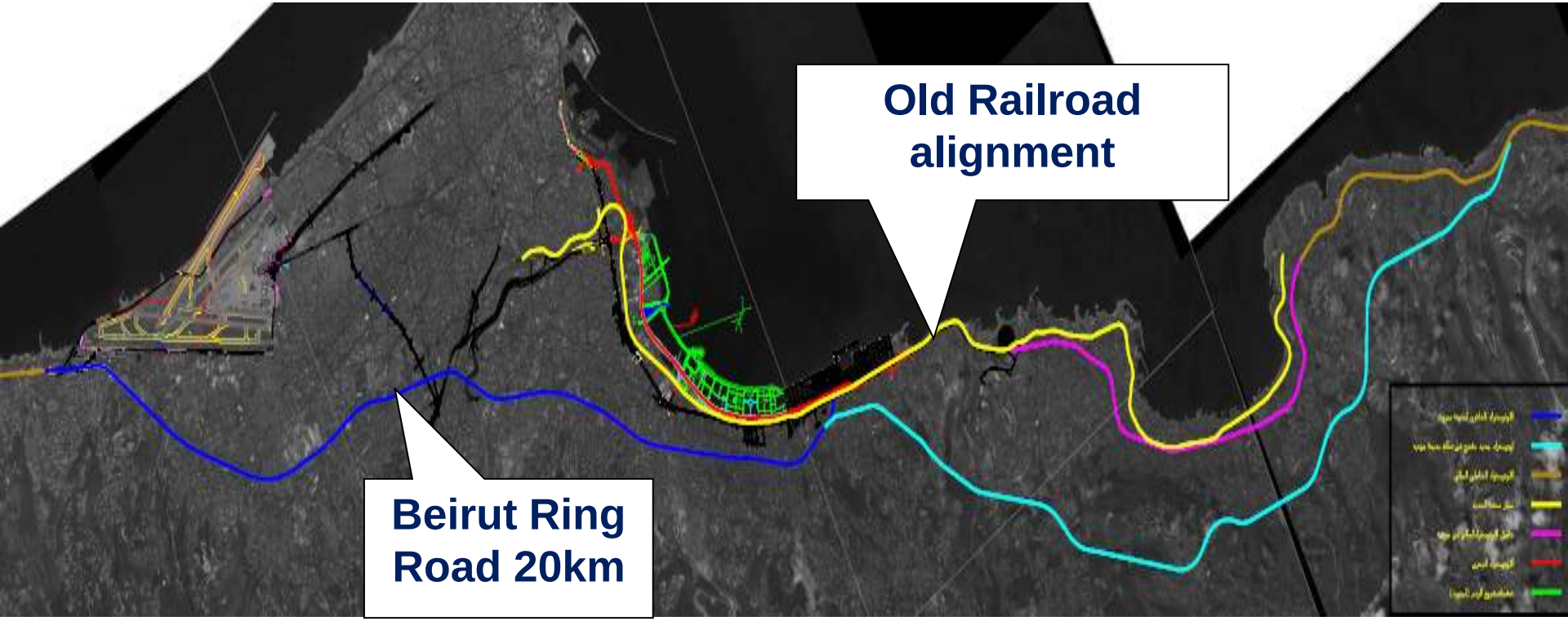
Prevalence of quantity over quality in licensed PT vehicles operating in one region led to a decline in the number of passengers to **1.2** pass / shared taxi & **13** pass / bus

Increased demand in transportation needs has been met with weak provision (supply, coverage & operation) of PT



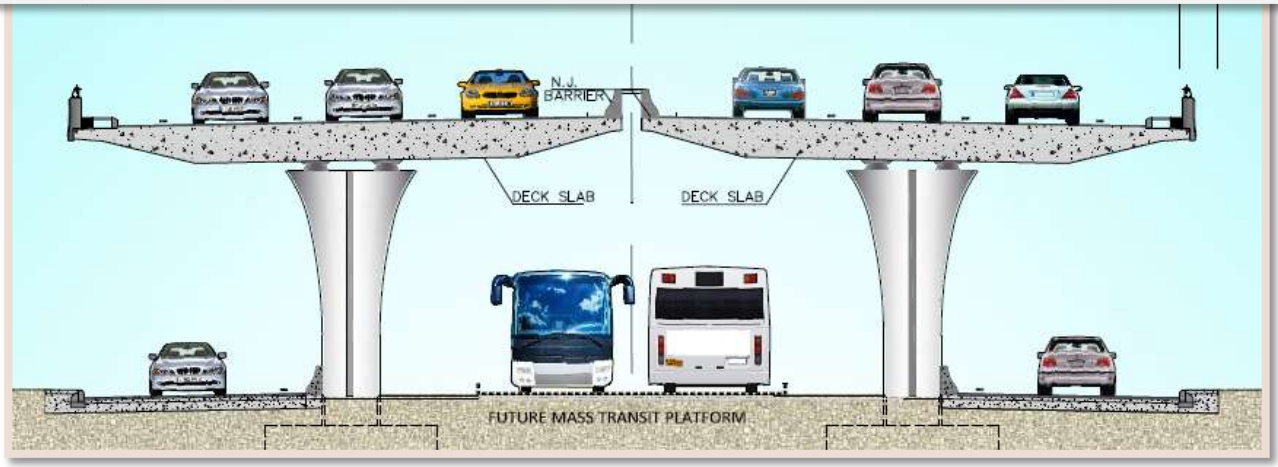
Future Public Transport

GBA and Northern Suburbs



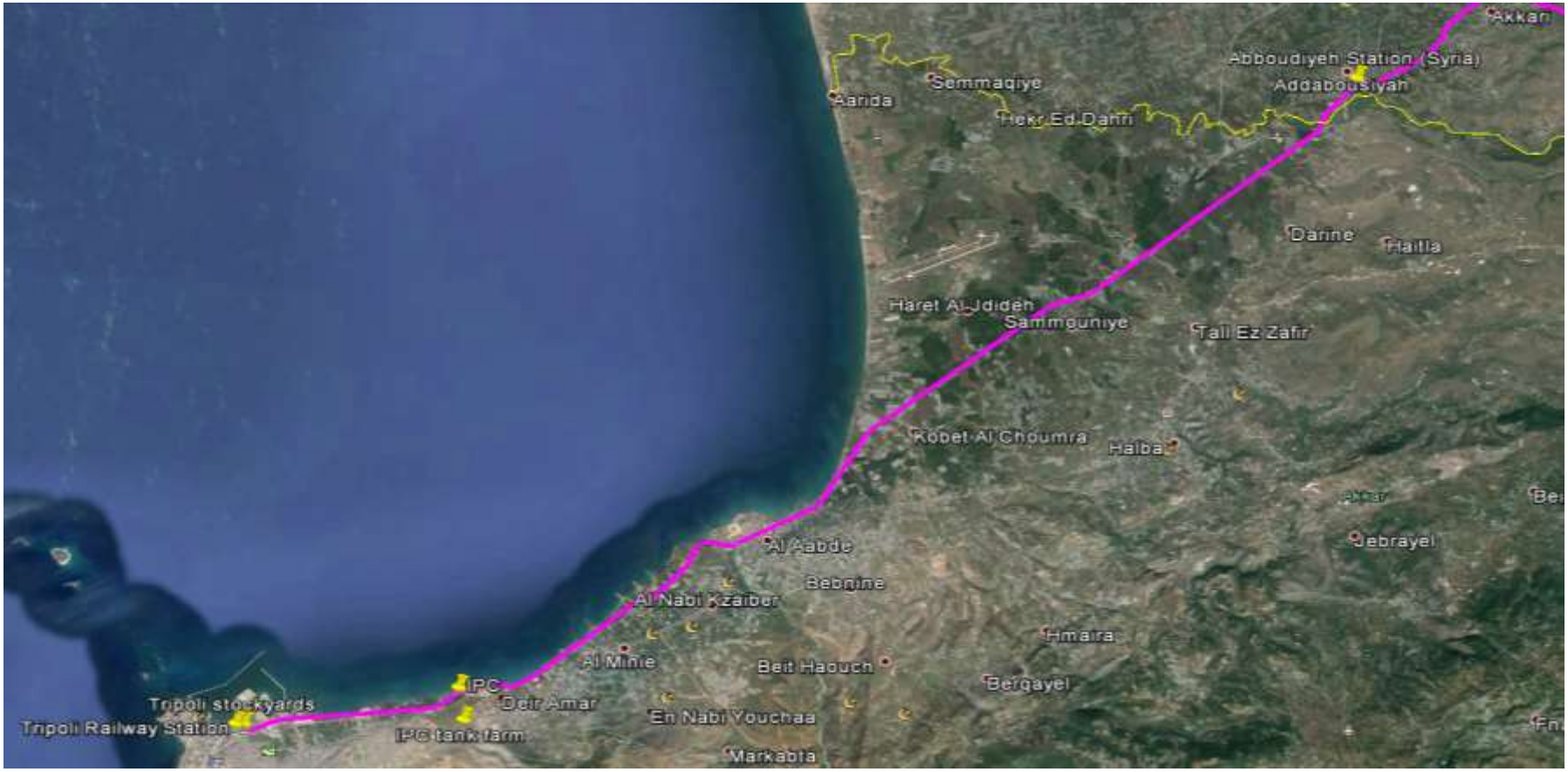
- Beirut Ring Road re-configured to include BRT (Concept Design)
- Old Railroad alignment to include LRT (Feasibility)

Beirut Ring road / BRT Line (Concept Design)

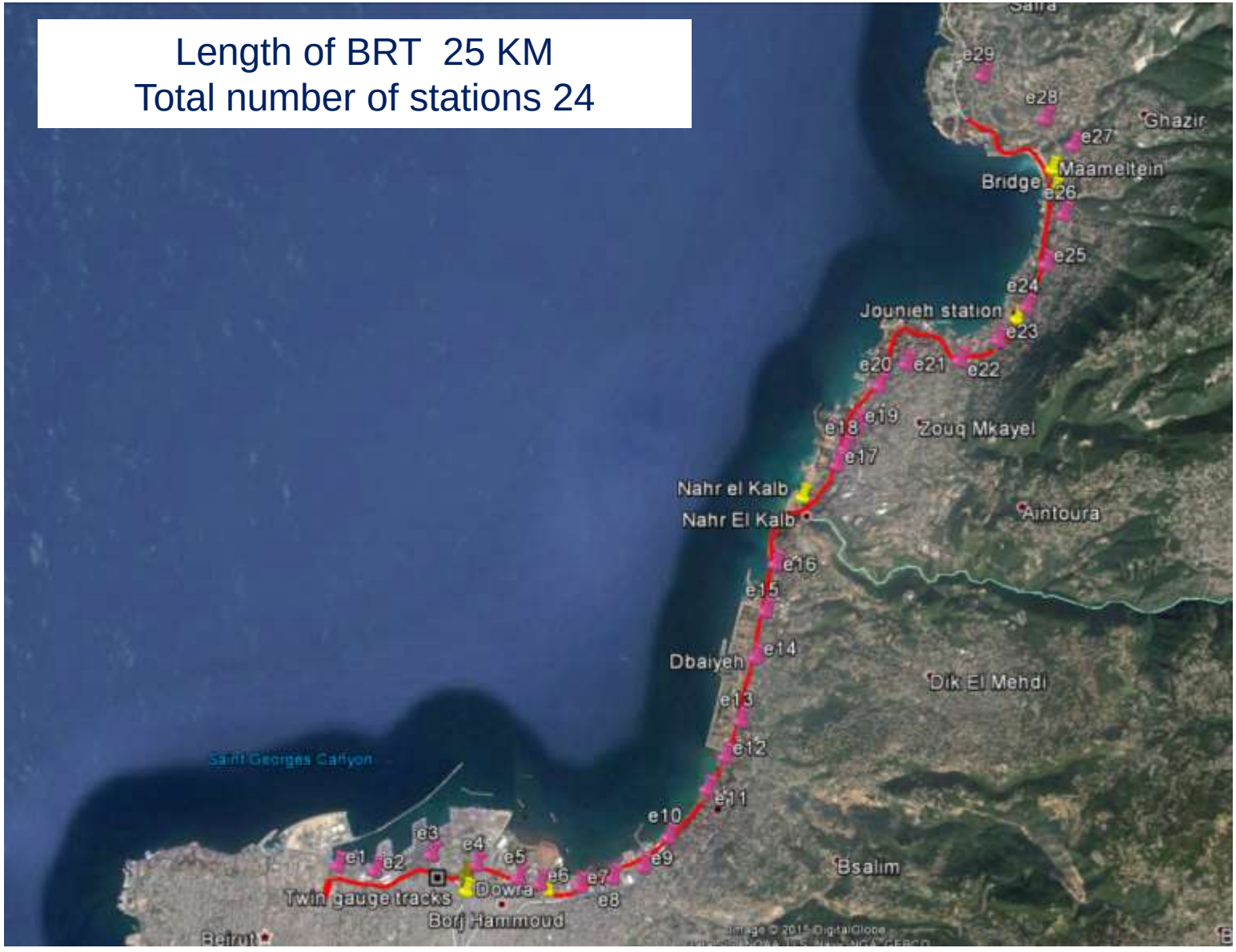


Freight Train: Tripoli – Abboudieh

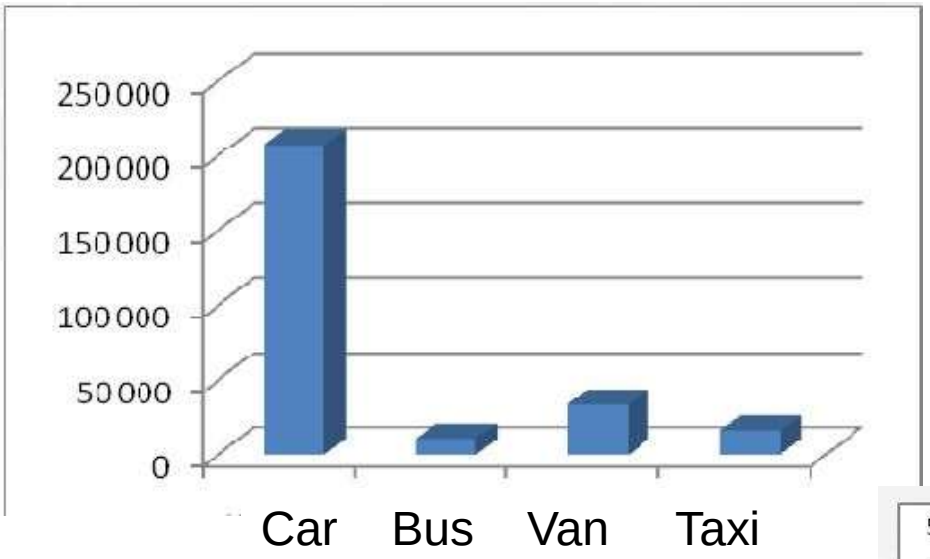
35 KM linking Port of Tripoli in the north to the Syrian Railway network with provisions for 5 passenger stations and link to an existing airport

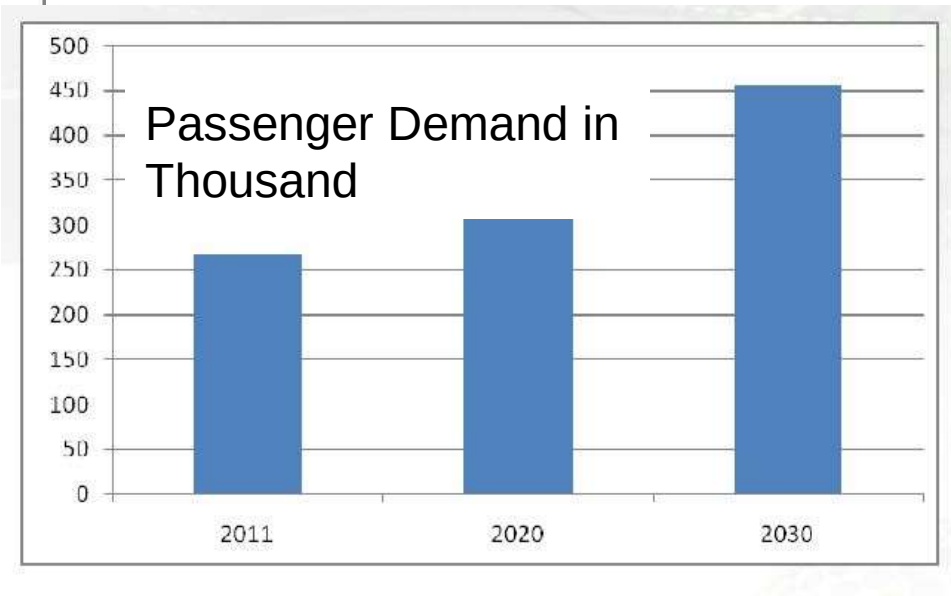


BRT Path: Beirut - Tabarja

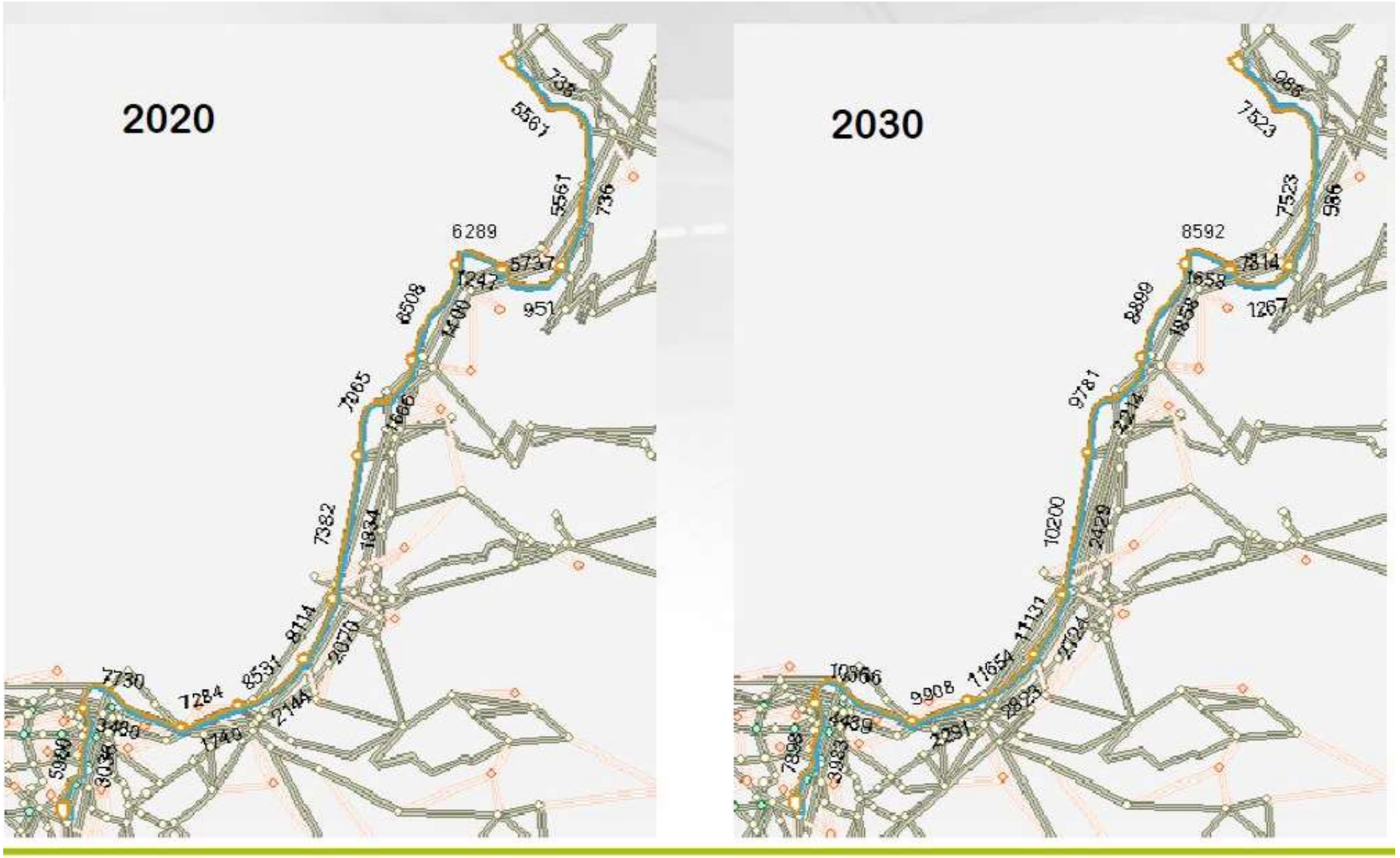


Modes vs. Demand



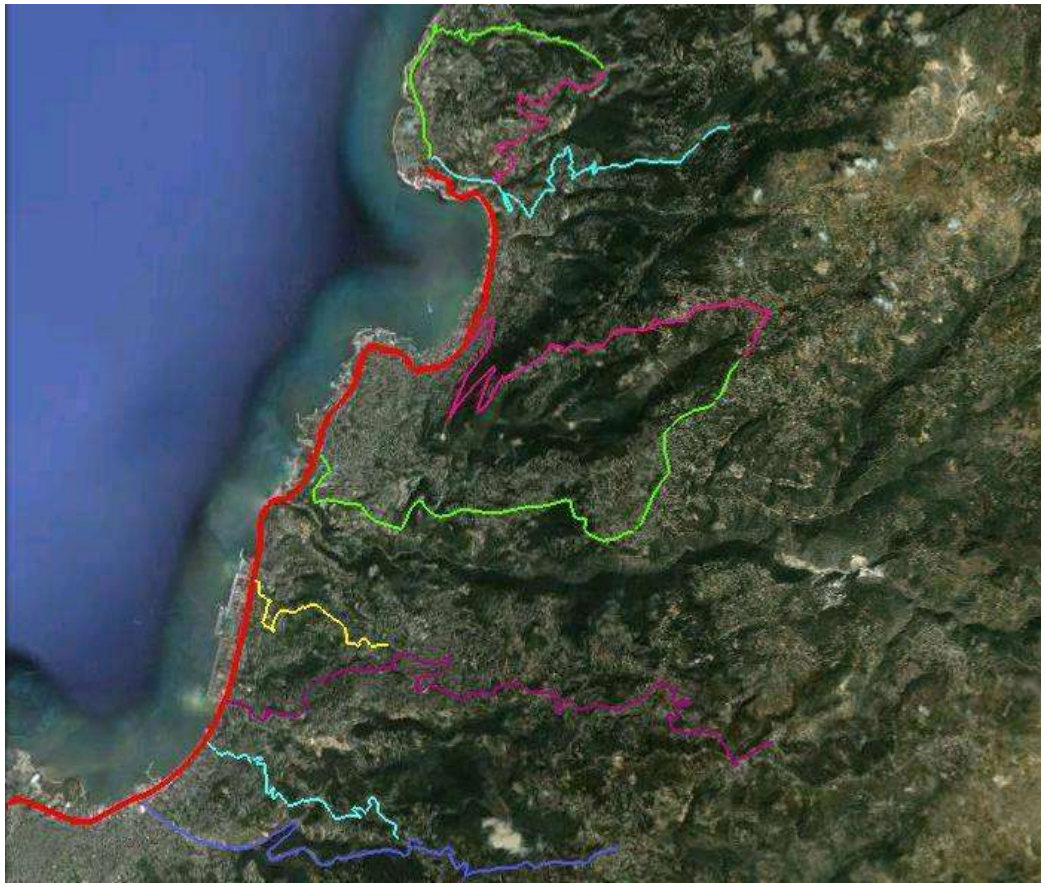


Ridership Forecast



Feeders Lines

- The availability of a feeder bus increase the willingness to take the BRT by 12%.
- 9 bus feeder lines to link between the BRT stations and the adjacent mountainous area are proposed.



Park And Ride Sites

– The availability of a P&R site increases the willingness to take the BRT by 14%.

– 9 Park and Ride sites are proposed along the BRT route to cater for commuter accessing the BRT stations

Demand and Analysis

Number of Car parking spaces required for the proposed P&R

	Passagers		Véhicules	
Gare	**2020**	**2030**	**2020**	**2030**
NBT	885	1051	443	526
Saint Michel	655	777	327	388
Dora	222	266	111	133
Nahr El Mott	619	707	309	353
Antelias	352	408	176	204
Dbayeh	83	90	41	45
Nahr El Kelb	566	759	283	379
Jounieh Stade	177	227	89	113
Tabarja	729	828	365	414