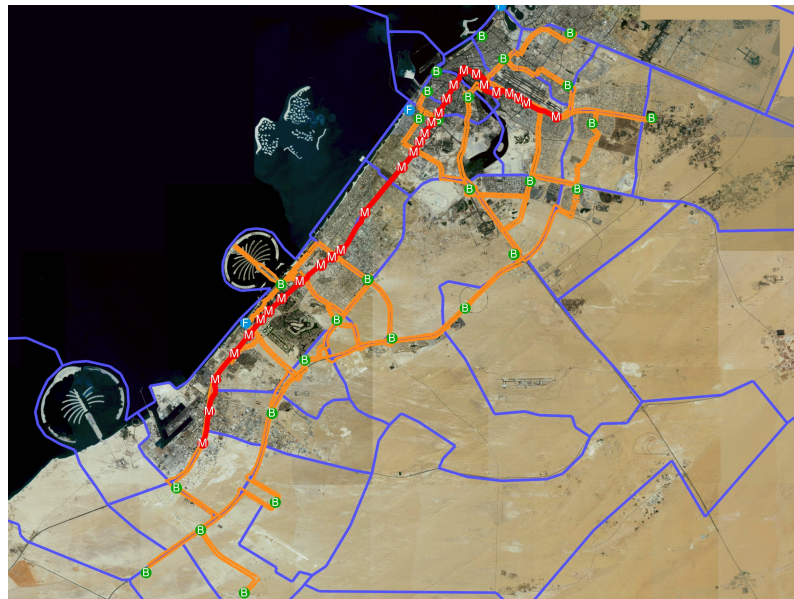


# International Case Study Middle East

## Dubai Bus Master Plan

1<sup>st</sup> PTV Vision Asia-Pacific User Group Meeting,  
Brisbane, 13 – 14<sup>th</sup> November 2008



# Bus Master Plan Dubai

## 1 Introduction

Along with the distinction of being one of the world's fastest-growing urban cities, Dubai faces a plethora of new opportunities and challenges. One result of Dubai's rapid growth is the decentralisation of its main activity centres, which currently consist of Bur Dubai and Deira. Further, the growing demand for land space, will lead to new developments outside the existing residential and commercial areas, especially in the southern parts of Dubai. As a result, the travel pattern is expected to change significantly over the next few years.

Today in Dubai, about 700 new vehicles are being registered daily and one out of two persons owns a vehicle. By 2020, when Dubai will have more than 5 million inhabitants, the five million car trips currently being generated daily is anticipated to increase to 20 million per day. Traffic congestion has become a part of every day life in Dubai and is a growing problem threatening the overall quality-of-life and economic prosperity of the region.

## 2 Background and Objectives

The Roads and Transport Authority (RTA) which coordinates, organizes and operates all form of transport in Dubai is well aware of the traffic situation and has established following guiding principles as stated in the Strategic Plan 2007-2009<sup>1</sup>:

- ▶ Integrated land use and transportation plans.
- ▶ Optimal, integrated and balanced transportation system that meets the needs of all social sectors.
- ▶ World-class transportation service and safety levels which meets user expectations.
- ▶ High transportation awareness and education among Dubai residents.

Under these guidelines, RTA is working on upgrading and expanding the road network. To reduce and compensate for the rapid growth of private transport, RTA's aim is to ensure a world class, comprehensive public transport system that meets the needs of Dubai's travelling public.

This integrated public transport system will comprise Rail, Bus and Ferry services. Currently, much attention is being given to the prestigious, multi-billion Dirham Metro project which is targeted to begin operation in 2009. However, only 5% of Dubai's residents are living within metro station catchment areas, and less than

10% of Dubai's work force is working within these areas. In order to maximize Metro's contribution towards solving Dubai's traffic problem, a road-based public transport service is needed to feed and, thereby complement rail service

### 3 The Planning Process

The cornerstone of the planning process for an integrated transportation system is the Bus Master Plan (BMP) project, being conducted under the guiding principle that Dubai's public transport system will develop into a world-class transportation system. This includes meeting the following transportation objectives:

- ▶ for the overall urban transportation system to provide safe and smooth transport for all;
- ▶ for public transport services to carry 26% of all motorised person trips by 2010 and
- ▶ for bus, rail and water transports to be integrated and complement one another.

The overall direction of the BMP is to provide the Roads & Transport Authority (RTA) with a comprehensive bus system, which will integrate the future public transport system, to sustain Dubai's transportation needs. The key steps in this study include

- ▶ reviewing the existing bus network;
- ▶ benchmarking its performance against other world-class systems;
- ▶ developing a set of bus network planning and service-level guidelines;
- ▶ determining the network planning process and
- ▶ measuring the performance of the new bus network.

Planning guidelines are developed to direct the delivery of a bus network that addresses the main drivers of patronage. Through this approach, bus networks for 2007, 2008, 2009, 2015 and 2020 are established. The recommended bus network consists of a hub-and-spoke structure, where local service areas will be served by feeder buses to bring them to the main activity centres within the areas. Passengers can transfer to high-speed systems like express bus or metro to quickly reach their destinations.

The planning process was completely carried out in VISUM. On the one hand VISUM was used as a database and GIS. All relevant data for all planning scenarios were stored in this database, including e.g. land-use data, travel demand data or measured bus travel speed. On the other hand VISUM was used as a network planning tool, starting with a comprehensive analysis of the current transportation system, supporting the definition of the strategic network approach and develop and evaluate several network scenarios for several planning horizons.

Efficient scenario management with VISUM was crucial to allow a study period of 9 months only. With the help of VISUM it was possible to provide a wide range of indicators at the push of a button, e.g. network topology indicators, operational indicators, financial indicators or key performance indicators, that have been defined to guide the whole planning process and – last but not least – benchmarks.

Today in Dubai a one-hour journey by car takes about two and a half hours by bus. In Moscow where much more people use the public transport network, the difference is almost zero. The number of bus place kilometres is one of the lowest values worldwide and around 1,800 per inhabitant. These indicators will improve drastically with the introduction of the Metro Red Line in 2009 and a setup of a completely restructured bus network according to the Bus Master Plan.

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<sup>i</sup> Strategic Plan 2007-2009 Roads and Transport Authority, approved in the Board of Directors Meeting on December, 7, 2006, 5