



El Metro and the Impacts of Transportation System
Integration in Santo Domingo, Dominican Republic

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INTRODUCTION

Santo Domingo's rapid growth and largely informal public transportation system have left the city with inadequate capacity, substantial congestion, pollution and safety problems. The city's system inefficiencies and limited accessibility to job and population centers are typical in developing countries.

In response to these issues, the Dominican Republic is undertaking an extensive transportation infrastructure, reform and integration project with ambitious spirit and urgency. The country's efforts are consistent with the policy guidelines set forth in Agenda 21 – to recognize the important role transportation plays in poverty alleviation, while mitigating its adverse effects on health and the environment. The country's leadership is committed to playing its due part in international efforts to achieve the sustainability objectives the global community has set forth, while ensuring that the Dominican Republic remains on the path to growth and prosperity.

Metro Line One opened in February 2009 and is the first phase of Dominican President Leonel Fernández's "Master Plan" for sustainable transportation in the city. The Metro offers substantial time savings and mobility to users and reduces congestion along its corridor. In addition, there is a large set of potential secondary benefits which the Metro has brought about – including pollution and accident reductions, local economic stimulus and technology transfer – but these are speculative in some cases and difficult to quantify. Generally speaking, much ridership growth is needed in the coming years for the combined benefits of the project to outweigh the tremendous costs.

The "pilot plan" of feeder bus routes currently being implemented at the northern end of Metro Line One has great potential to enhance overall system ridership – thereby adding to time-savings, accessibility and congestion reduction benefits – but there are a great many unknowns and risks inherent in the project. Besides general uncertainty about the effect on ridership, the biggest risk is

unsuccessful negotiation with the existing bus operators in Santo Domingo. Existing operators have an interest in maintaining the status quo and have the ability to greatly disrupt traffic in the city if they are provoked.

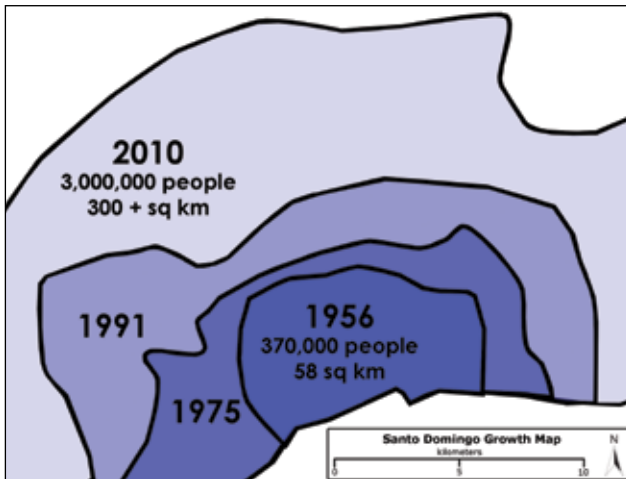
There are also risks inherent in making design changes to the existing transportation system of services and routes. Among these are a (real and perceived) degradation of service quality, imposition of transfers and indirect routing.

In the final analysis, it is clear that Metro Line One in Santo Domingo is making progress towards the sustainable development goals of the Dominican Government. With careful integration of the feeder bus system and a continued focus on achieving ridership growth, the benefits of the Metro – to the people of Santo Domingo and to the environment – will surely be improved.

PART I: SANTO DOMINGO AND ITS TRANSPORTATION ISSUES

Up until the late twentieth century, Santo Domingo was characterized by slow growth, with most of the country's population living in rural areas (Cajiao et al, 2008). Since 1956, the size and population of the metropolitan area have grown from about 58 km² (22.4 mi²) and 370,000 people to an area of over 300 km² (116 mi²) and an estimated population of just under 3 million. The population growth rate has averaged 1.9% annually since 2000 (ONE, 2010). Employment growth in Santo Domingo has also been rapid, increasing 16% from 2003 to 2008 – from 1,050,000 to 1,217,000 jobs (Cajiao et al, 2008).

IMAGE 1
SANTO DOMINGO GROWTH MAP



In addition to population growth and development sprawl, GDP growth of 7% per year from 2003 to 2007 (Geaneotes and Lansberg-Rodriguez 2009) has spurred a country-wide annual increase in privately-owned automobiles on the road of 4.5% and an annual increase in total motorized vehicles of over 8.25% from 2000 to 2008 (ONE, 2009). Physical sprawl

and motorization in Santo Domingo are mutually reinforcing - causing increased numbers of trips, increased trip lengths, and further “militat[ing] against adequate public transportation service supply” and generating more auto dependence (World Bank, 2002).

In Santo Domingo, there was an excess of 3 million motorized trips made every day in 2004. 280,000 of these motorized trips occurred during the peak hour – and over 70% (196,000) of these were on some form of public transit (OPRET, 2004). The existing “public” transportation system in Santo Domingo is comprised of an assortment of modes, only a few of which are actually publically owned. Before the Metro was built, the national bus service, OMSA, was the only true public intra-urban system in Santo Domingo. OMSA provides service on voladores (high-capacity buses carrying around 76 passengers) to between 1.8 million and 2.9 million passengers per month (between 60,000 and 93,000 passengers per day) and keeps from 110 to 165 buses in operation each month (OMSA, 2009).

The remainder of the public transit system is based on privately-owned “micro-buses,” which hold between 7 and 15 passengers, guaguas (“mini-buses,”) which carry 16 to 30, and conchos or carro publicos (public cars), which fit 5 or 6 passengers.

Congestion is probably the most widely-felt problem in the city’s transportation system. It is the result of the growth in private automobiles, sprawl, and increased trips in the city, together with a public vehicle fleet that is inefficient and in over-supply.