# Melbourne Inner Core Improvements Study

**NETWORK:**
Melbourne metropolitan rail network

**CLIENT:**
Victorian Department of Infrastructure

**DATE:**
November 2004 to April 2005

Systemwide considered future capacity constraints in the inner-core of the Melbourne metropolitan network and provided recommendations on how they could be alleviated.

## The Challenge

Melbourne has a radial railway network with all lines converging in the CBD area. This is known as the inner-core of the network. Due to a planned increase in train numbers from each radial line (to cater for expected growth), this inner core will reach its capacity in the near future and must be upgraded.

In response to these expected capacity constraints the Department of Infrastructure developed a set of draft Management Plans which included examining infrastructure upgrades and operational changes to increase the capacity of the inner core to accommodate anticipated growth to 2020.

Systemwide was engaged to advise on the suitability of a number of possible Management Plans to support growth, taking into account the need to maintain and improve existing on-time reliability and service levels.

## Our Approach

As a first step, Systemwide verified the Management Plans using high-level parametric analysis.
This technique allowed Systemwide to gain an initial appreciation of the key issues and to recommend some changes including altering the routing of the trains through the inner-core, changes to operational practices to reduce dwell times at stations, and further infrastructure upgrades.

The capacity benefit of each component of the Management Plan was then determined using RailSys (SIMU++).

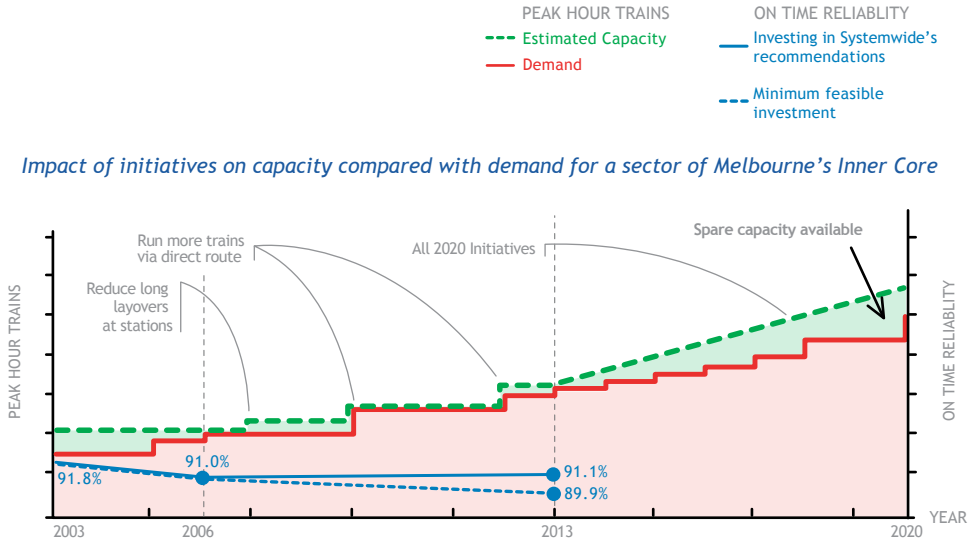
Finally, where the RailSys simulations showed that the Management Plans provided insufficient capacity, further measures were recommended to ensure the Management Plans would cater for growth up to the year 2020. This included further operational changes and additional track works.

## The Benefits

The analysis and recommendations provided by Systemwide enabled the Department of Infrastructure to confidently consider the merits of each Management Plan and associated infrastructure program to accommodate future growth within the inner core. Seventeen capacity enhancing projects were successfully set up following the outcomes of this project. This provided a sound basis to progress to detailed design.

"Systemwide has made a substantial contribution to the Department of Infrastructure towards gaining a better understanding of the rail system operation and dynamics. Their professional conduct and expertise both in the RailSys model and understanding of Melbourne's railway, and particularly in the interpretation and presentation of complex data made it much easier to focus on material issues and scenario testing".

*-Manager, Project Planning & Development, DoI-*




*Impact of initiatives on capacity compared with demand for a sector of Melbourne's Inner Core*

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