

MALTA NATIONAL TRANSPORT MODEL (NTM)

OBJECTIVE:

OVERVIEW OF THE MODELLING FRAMEWORK

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Bs. Civil Engineering

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Ph.D. Environmental Science

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Transport Malta

April 2018



Joseph GALEA



David Sutton, Stephen Camilleri,
Patrick Cachia Marsh





Outline of the Presentation

- 1. Statistics About Malta**
- 2. Background**
 - 1. Transport demand**
 - 2. Transport Supply Network**
 - 3. GIS-based modelling in Cube Voyager Suite**
 - 4. Outputs of modelling**
- 3. Limitations/difficulties encountered**

Outline of the Presentation

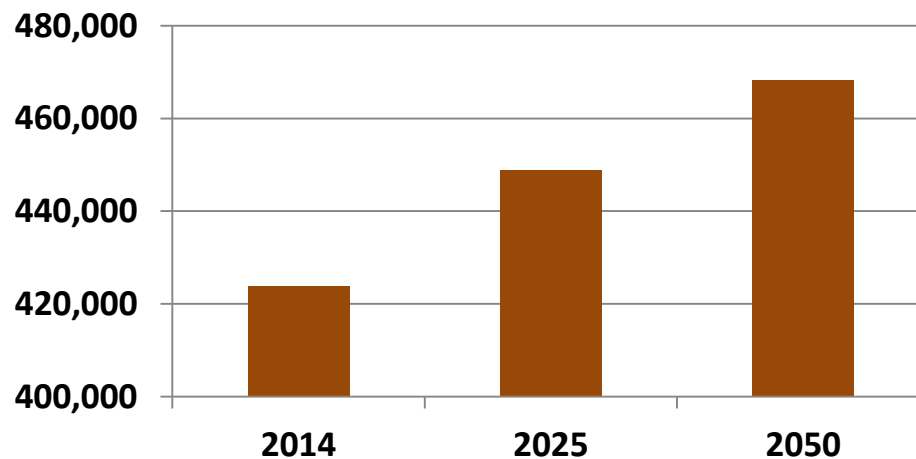
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Quick Statistics About Malta

	2014	2025	2050
Area (km ²)	316		
Population Density	1,341	1,420	1,481
Number of employees	159,952	170,891	181,680

Population

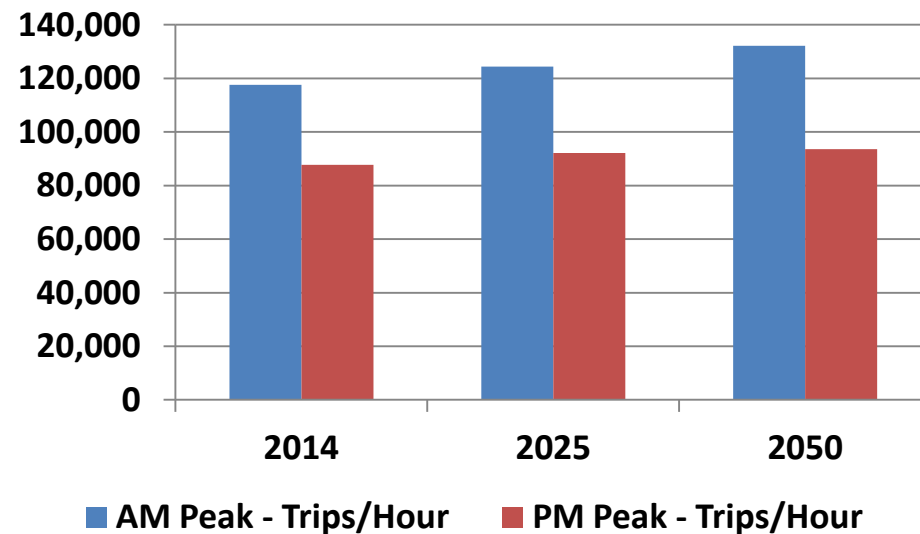


Values estimated at 2015



Quick Statistics About Malta

	2014	2025	2050
Total road network	2,856 km		
Public Transport Network	2,612 km (all routes)		
Annual PT Trips	56,725,868	59,077,000	60,729,000
Daily Trips All Modes	1,107,458	1,168,000	1,239,000



Values estimated at 2015



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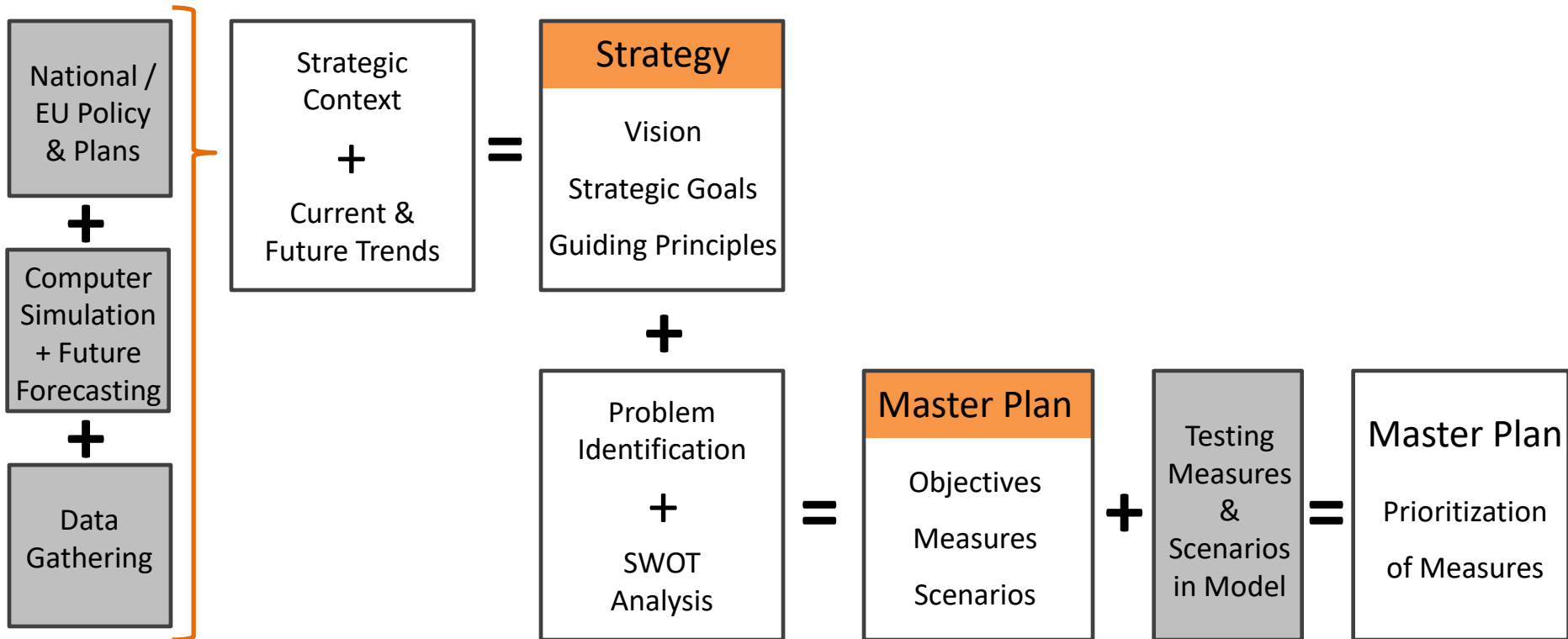
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Logical Development of the Strategy and Master Plan



- In accordance with DG-REGIO and JASPERS guidance notes
- Process continuously supported and reviewed by JASPERS
- Technical support by INECO / Systematica consortium



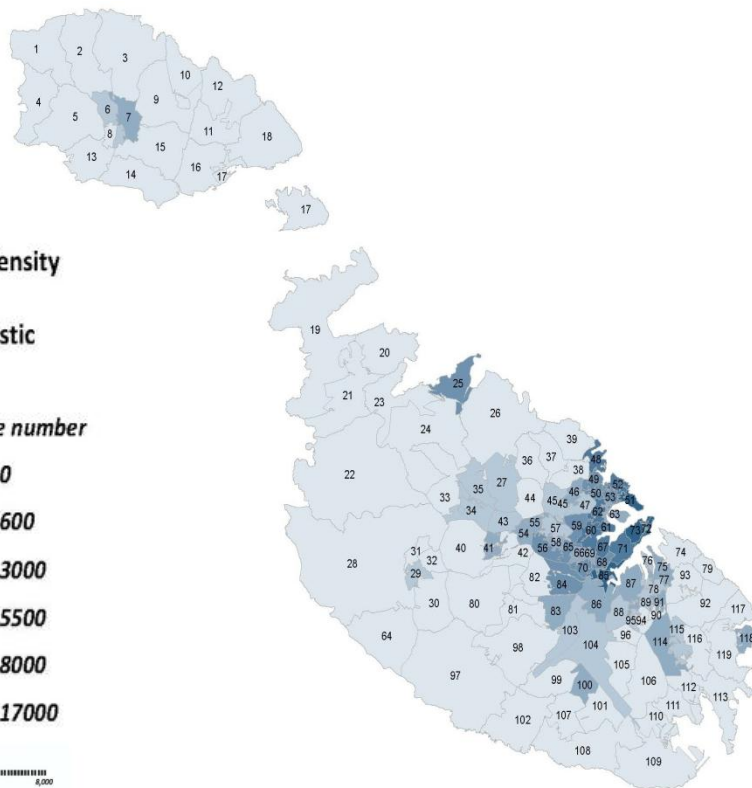
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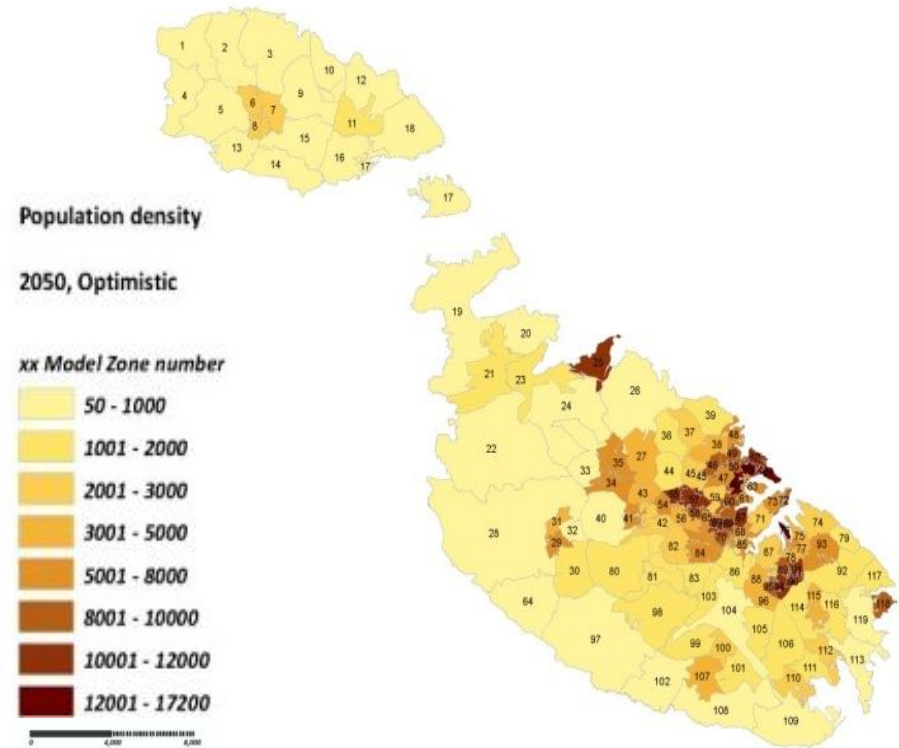


Transport DEMAND

Employees density



Population density



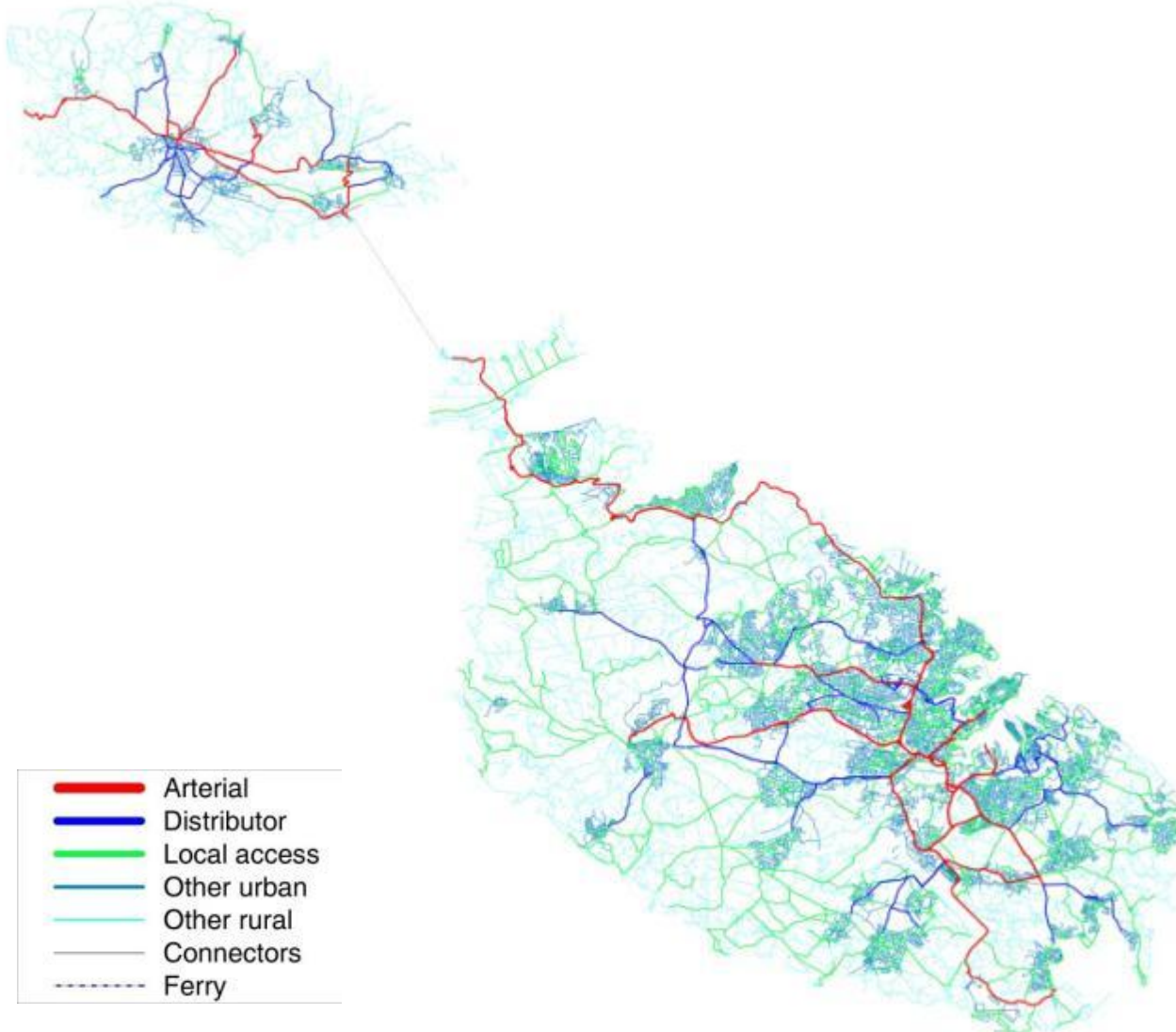


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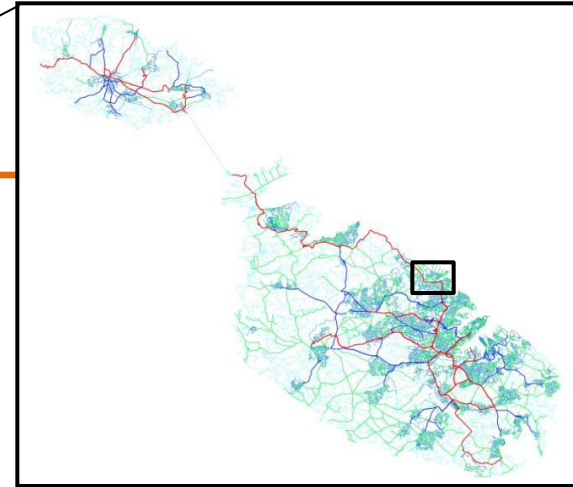
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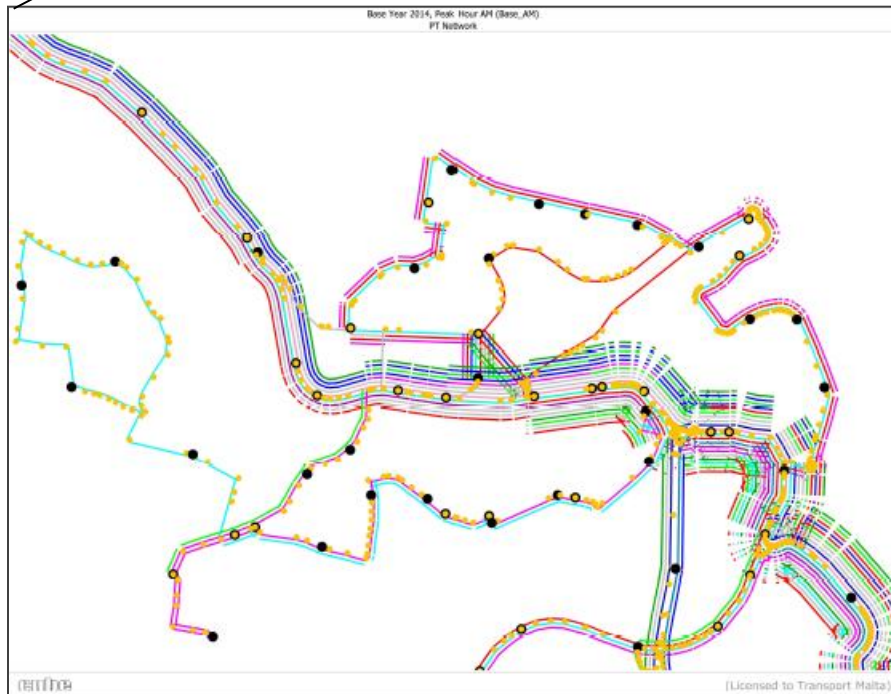
Modelling Software INPUT: Characteristic of the roads



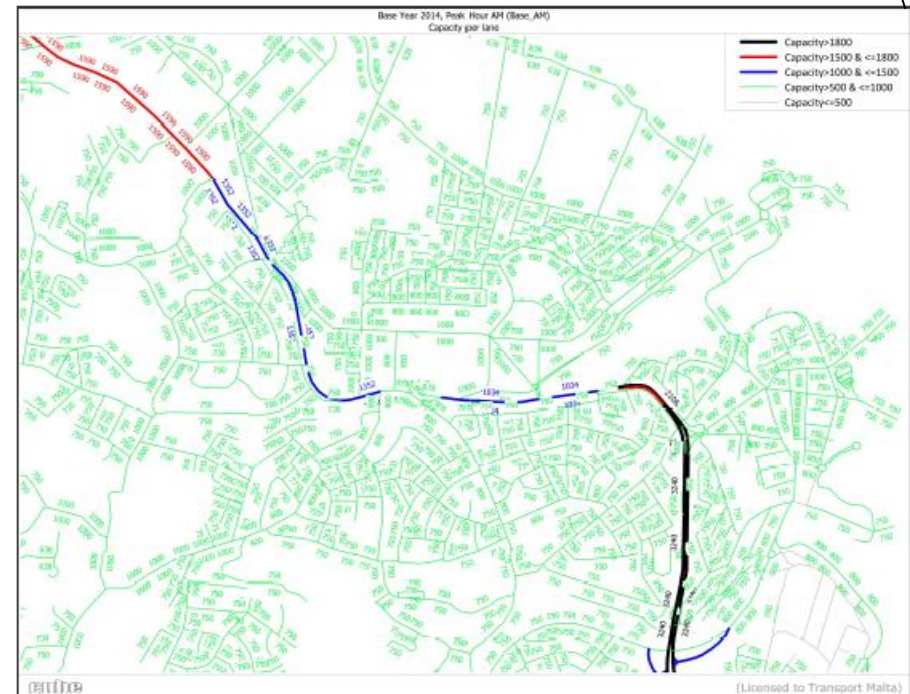
Transportation SUPPLY



Public Transport Network (PT)



Road Network (HW)



Sample: Pembroke area



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Cube Voyager Suite Key features (Citilabs)

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Cube GIS provides unlimited layering, signing, intersection coding and analysis, unmatched network editing and analysis, charting, links to digital media

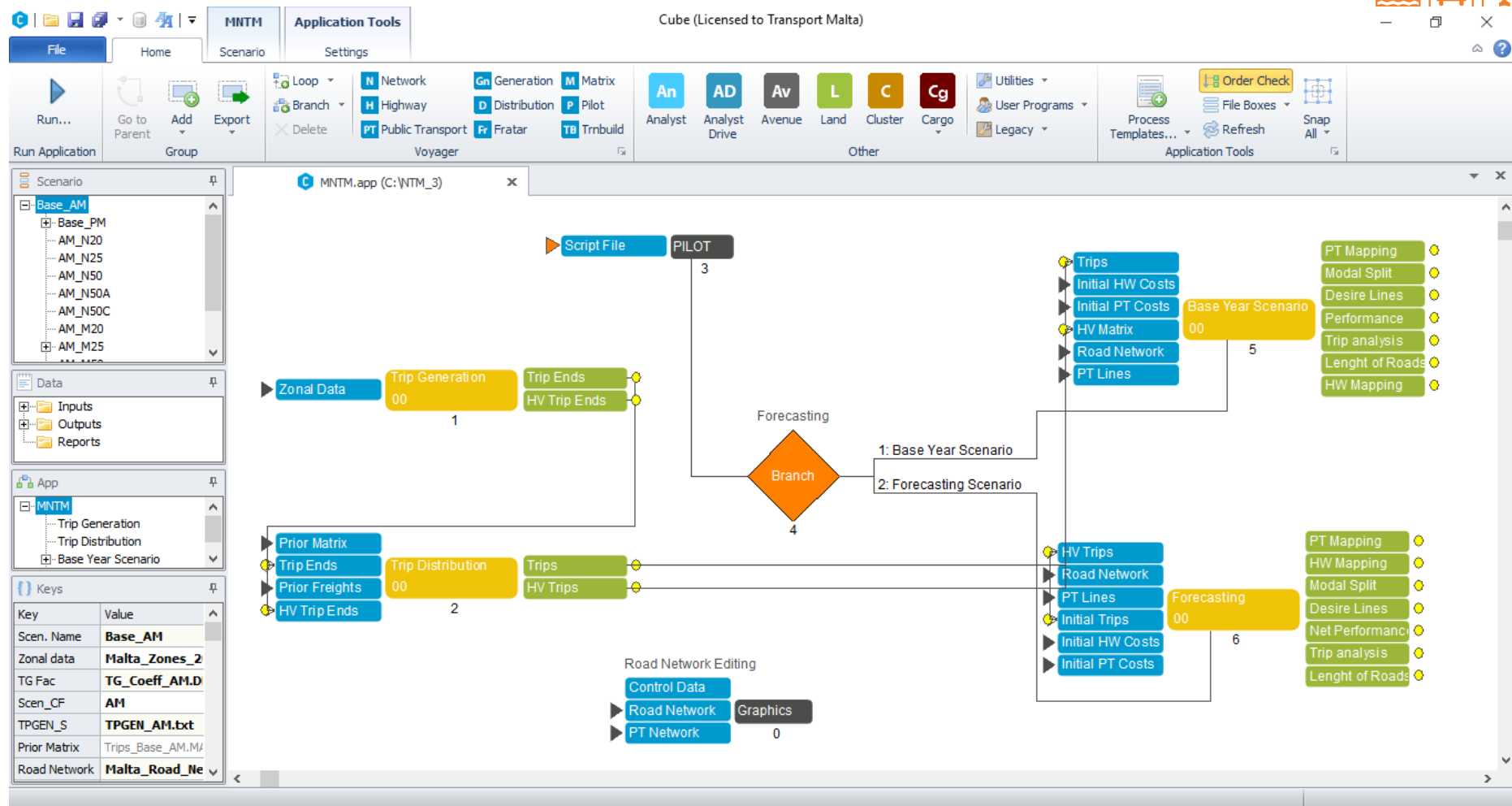
Scenario Manager makes creating, managing and running scenarios very easy to do

Flow-Chart provides extremely easy to use model interface for building, running and documentation

The screenshot shows the Cube GIS interface with a map of a road network. The left sidebar contains a 'Scenario Manager' panel with a list of scenarios: 'Basic Road', 'Increase Transit', 'Land Use', 'Cambia 2010'. The main map area shows a road network with various layers and features. The bottom panel displays a flowchart with various nodes and connections, including 'Flowchart: Loop with Constrained Costs' and 'Flowchart: Loop with Constrained Costs'.



Modelling Software Demonstration: Final Model Framework





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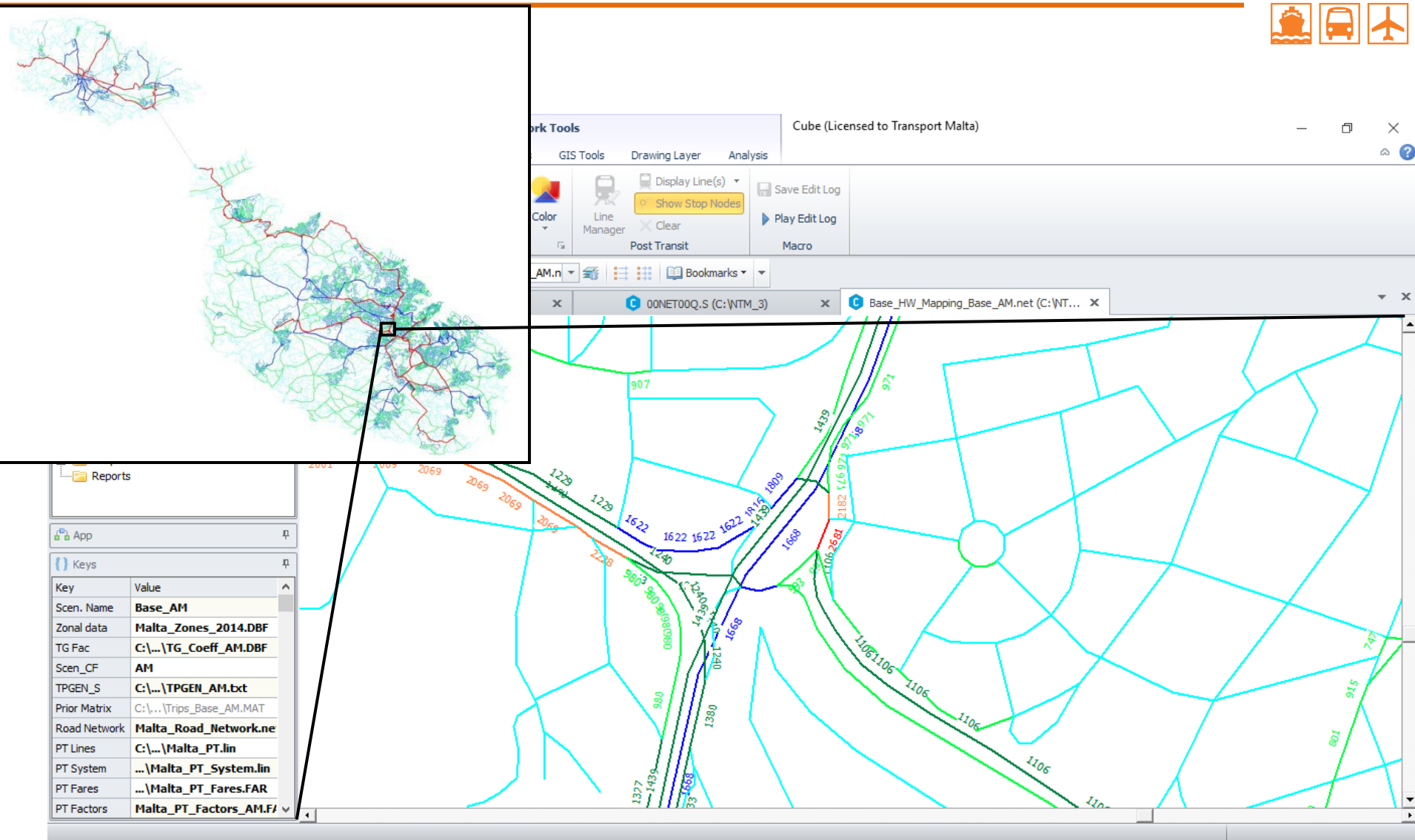
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Modelling Software Demonstration:

Example of Road Network Layer

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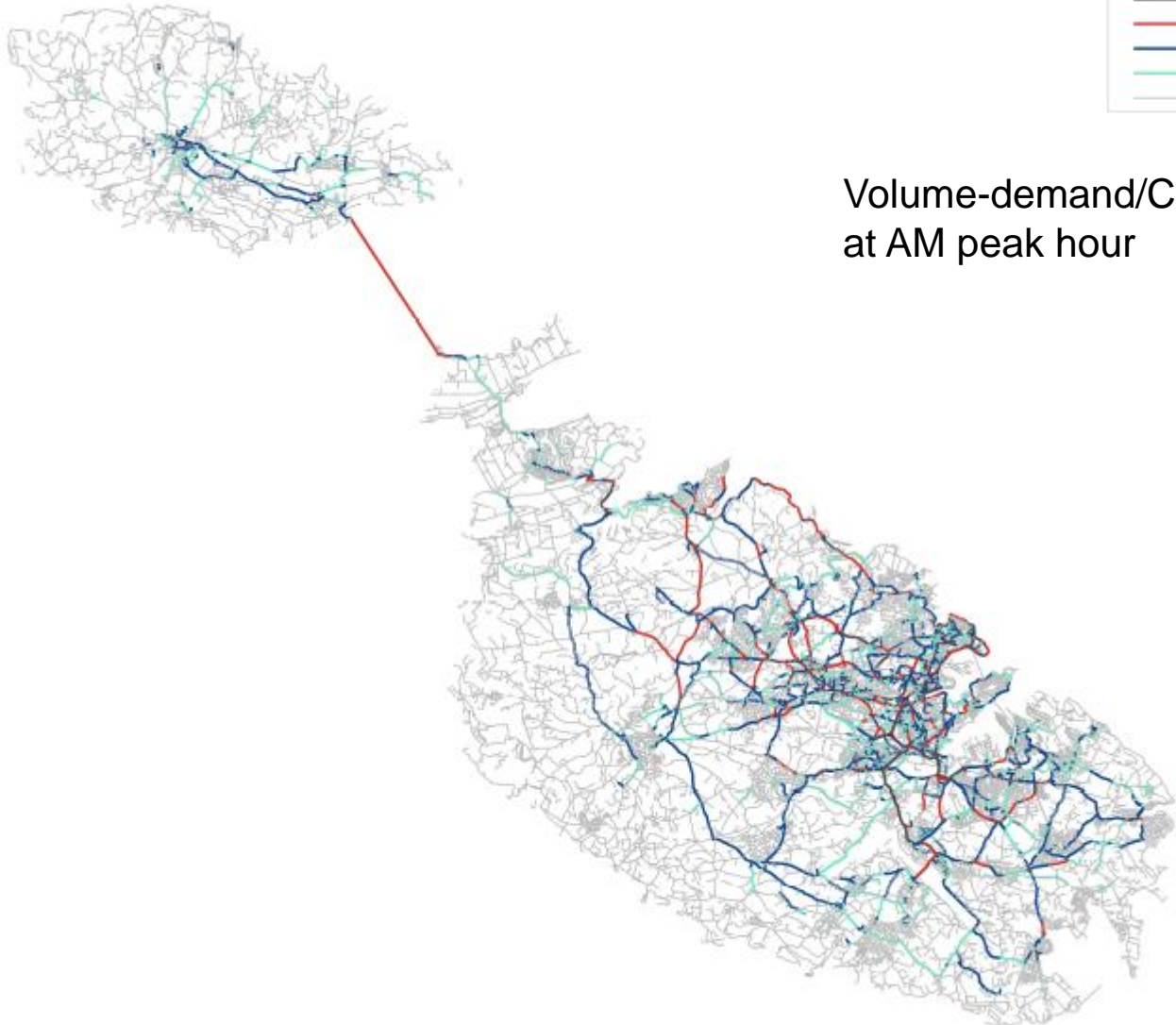
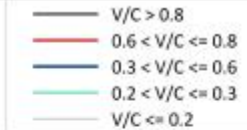
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Comparison – ‘Base Year’ 2014 AM Peak

Base Year 2014, Peak Hour AM (Base_AM)
Volume Demand/Capacity (V/C)



Volume-demand/Capacity
at AM peak hour

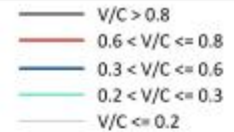
Comparison – ‘Do Minimum’ Year 2020 AM Peak

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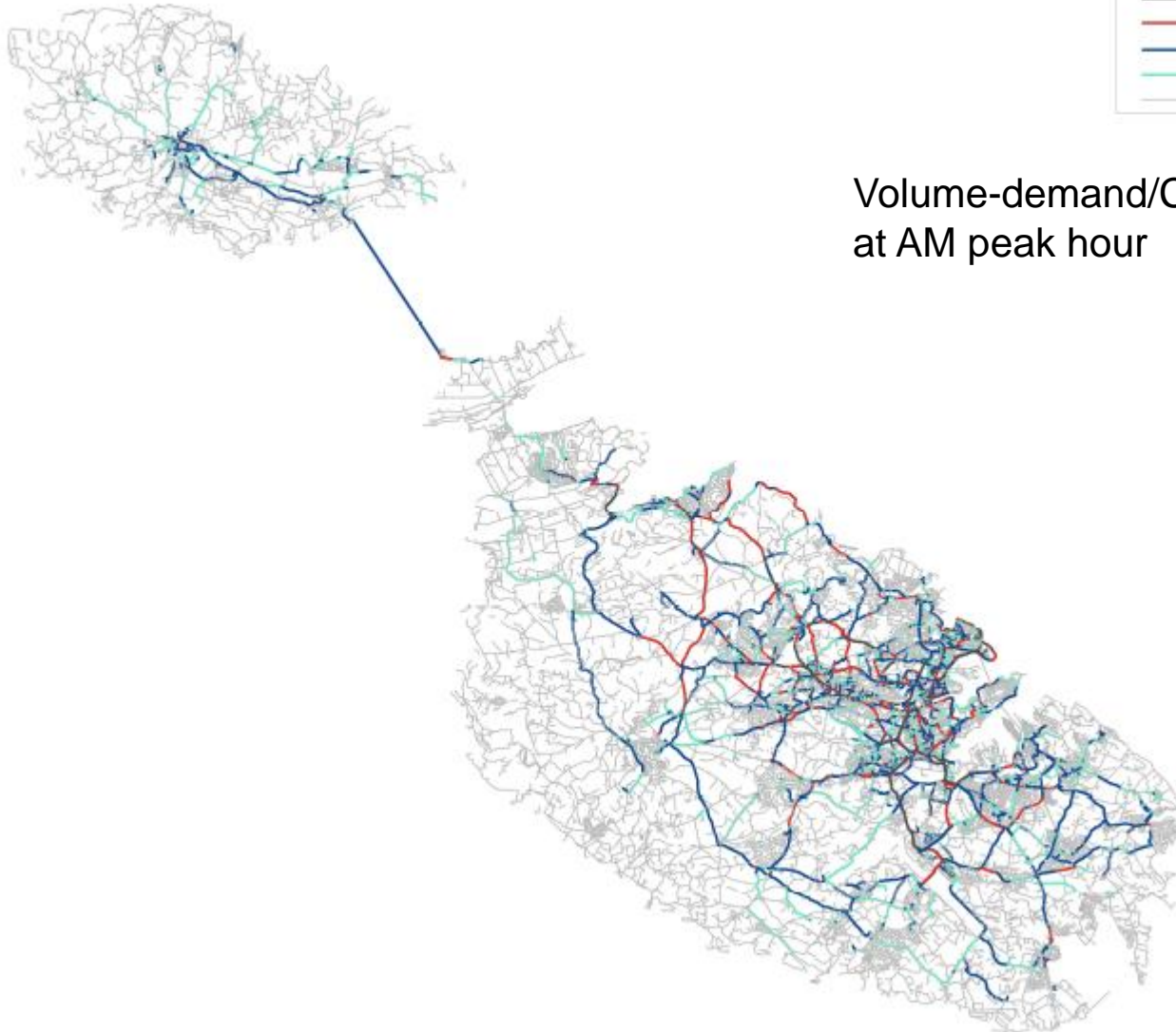
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Do Minimum 2020, Peak Hour AM (AM_M20)
Volume Demand/Capacity (V/C)



Volume-demand/Capacity
at AM peak hour



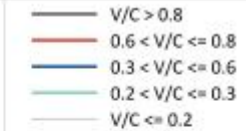
Comparison – ‘Do Minimum’ Year 2025 AM Peak

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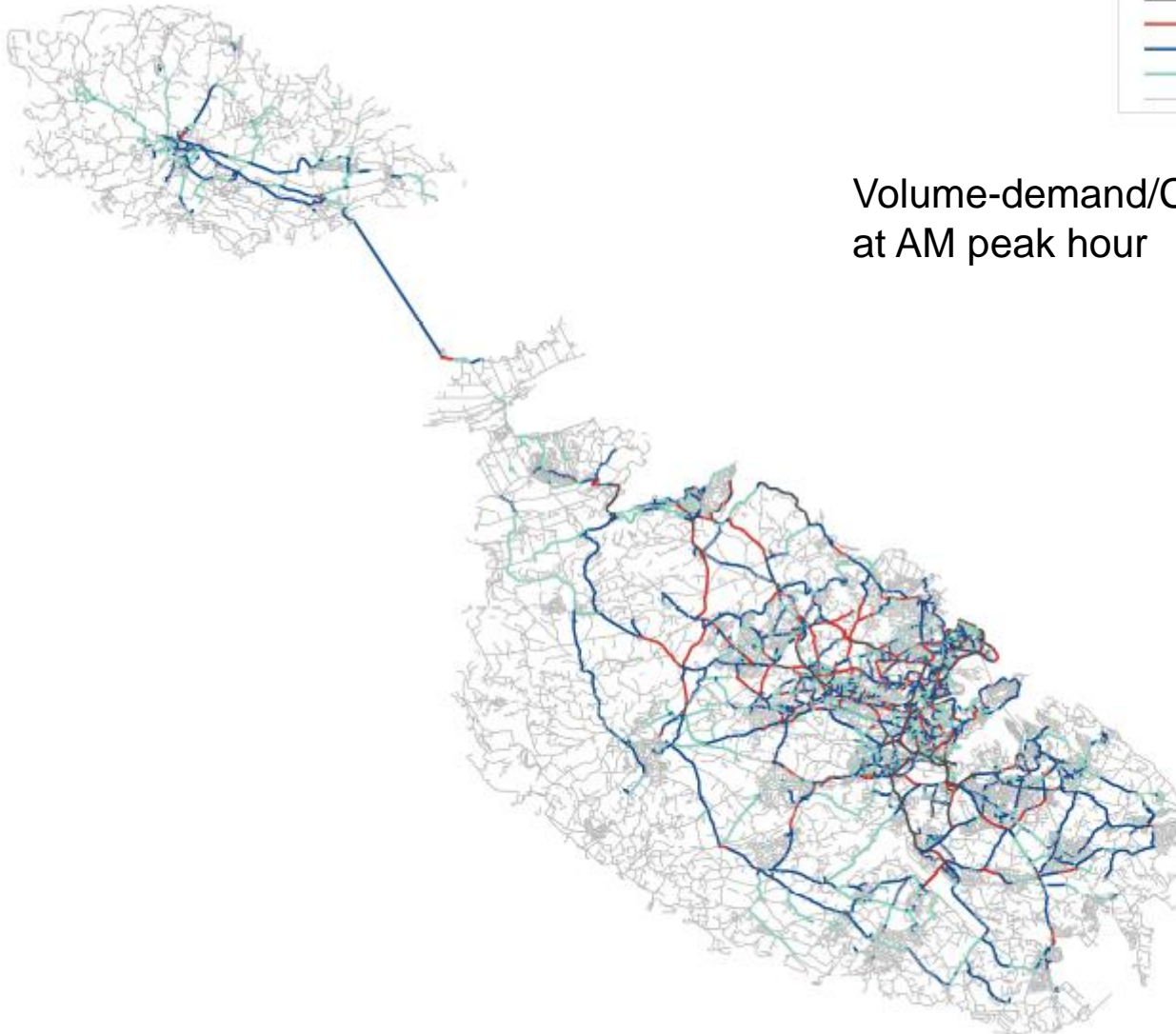
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Do Minimum 2025, Peak Hour AM (AM_M25)
Volume Demand/Capacity (V/C)



Volume-demand/Capacity
at AM peak hour



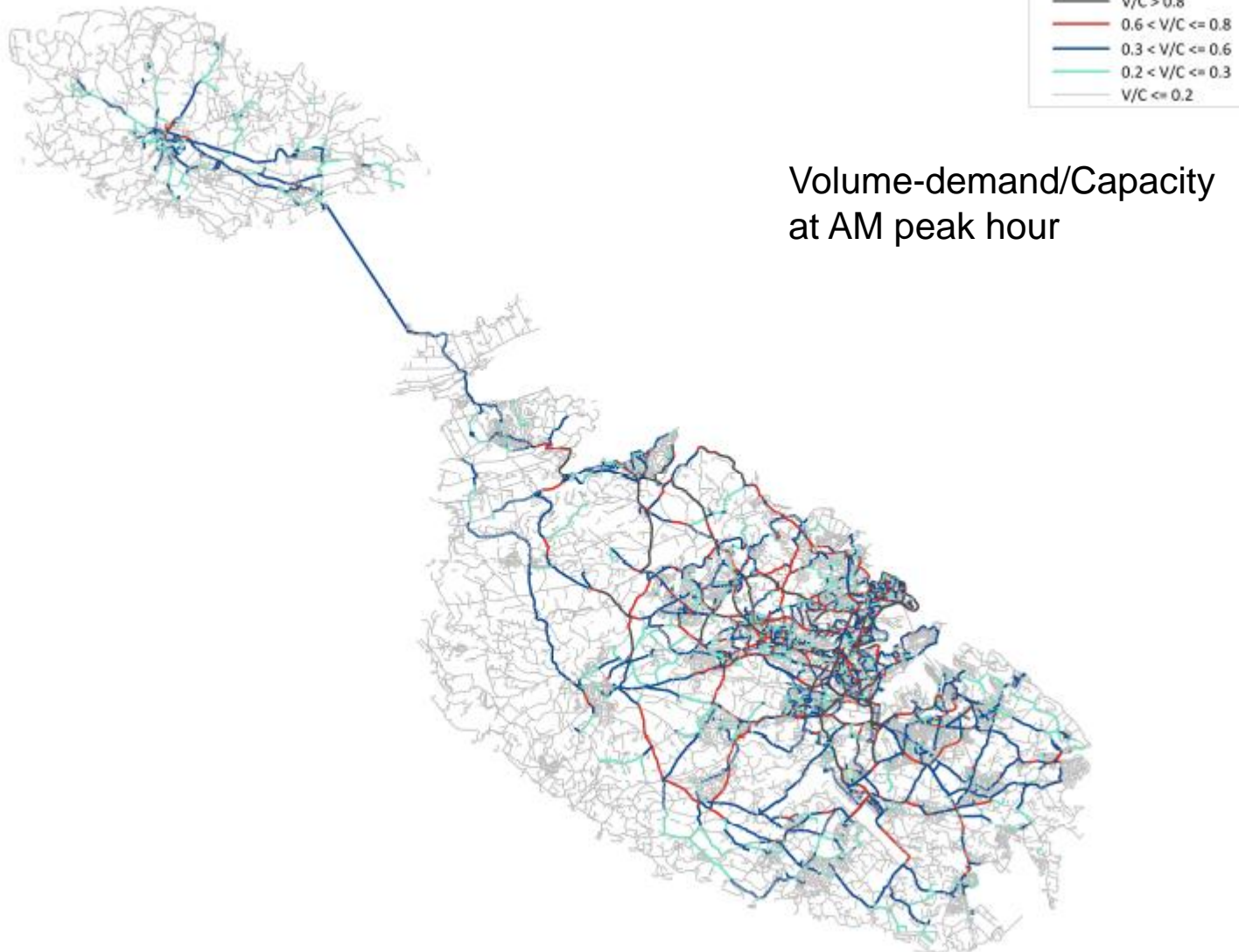
Comparison – ‘Do Minimum’ Year 2050 AM Peak

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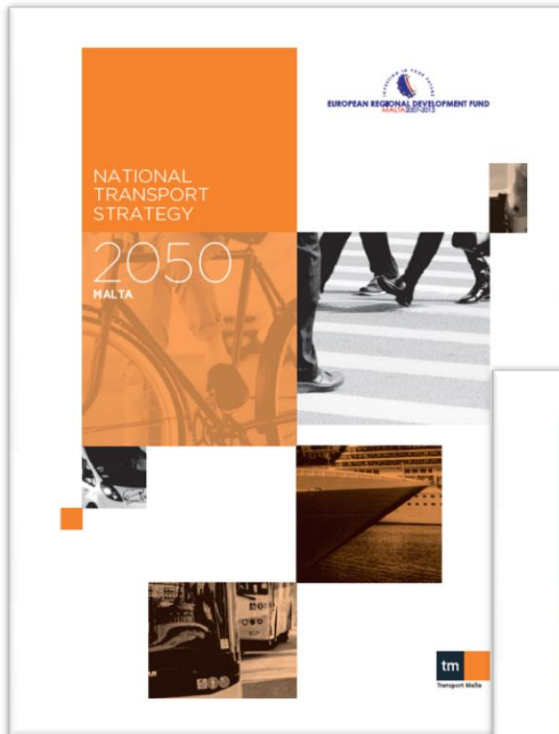
Do Minimum 2050, Peak Hour AM (AM_M50)
Volume Demand/Capacity (V/C)



Final Deliverables

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2050 Strategy

Vision

Strategic Goals

Guiding Principles

Targets



2025 Master Plan

Operational Objectives

Sector Measures

Appraisal of Measures

Appraisal of Policy Scenarios

Environmental Considerations

Preferred Option

Targets, Delivery and Timelines

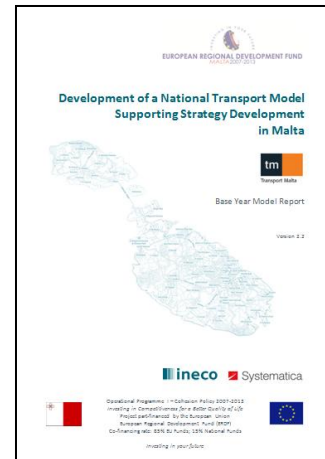
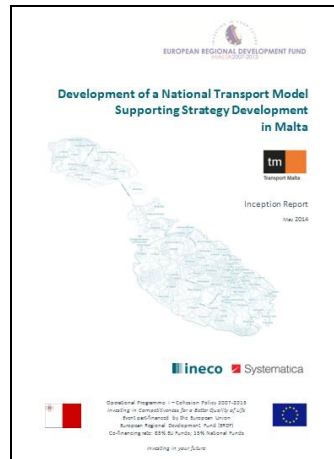
Monitoring

Conclusion

Final Deliverables - Supporting Documents

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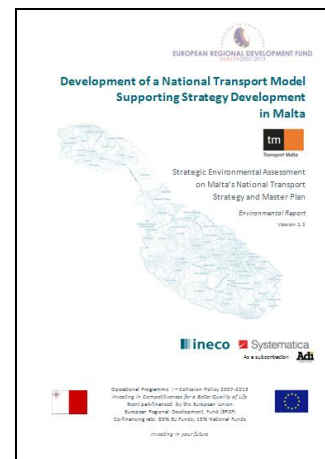
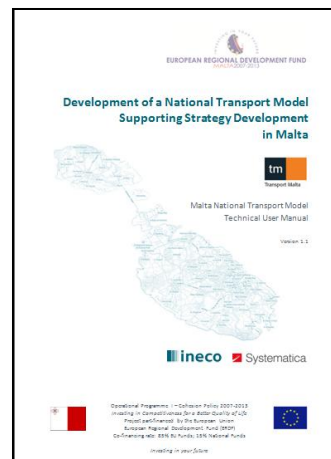
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Existing Conditions Report

Base Year Model Report

Forecasting Report



Strategic Environmental Assessment

Technical User Manual

Additional Data Report



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Limitations/difficulties encountered

- **Tourism's** impact in Malta
- Limitation of the academic and research staff since there is **only one University** in Malta
- How to deal with **different results** from different Models
- **GDP forecasting** (from different entities)
- **Difficulties on insufficiently** accuracy dataset
- **Data estimation** since was no clear where people working and living
- **Moving of resources** from the organizations



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<http://www.transport.gov.mt/transport-strategies/strategies-policies-actions/national-transport-strategy-and-master-plan>

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www.transport.gov.mt

Thank you

