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Can a focus on NMT reconcile Transit Oriented Development, paratransit formalization and urban informality?

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Introduction

Common TOD objectives

Modal shift

New growth / LVC

Ridership

SA TOD objectives

Access inequality

State subsidised housing

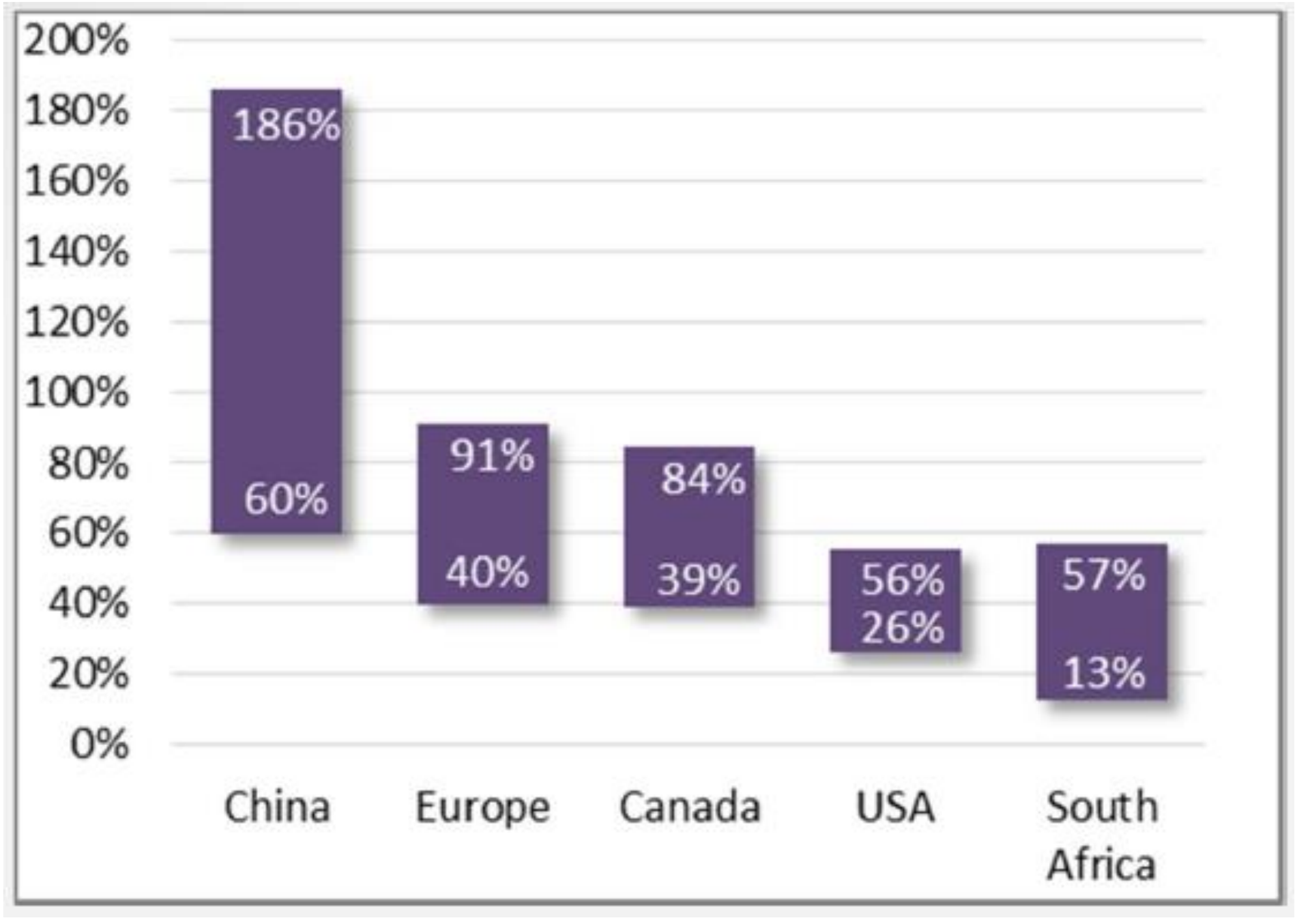
Public transport subsidies

Public transport reform

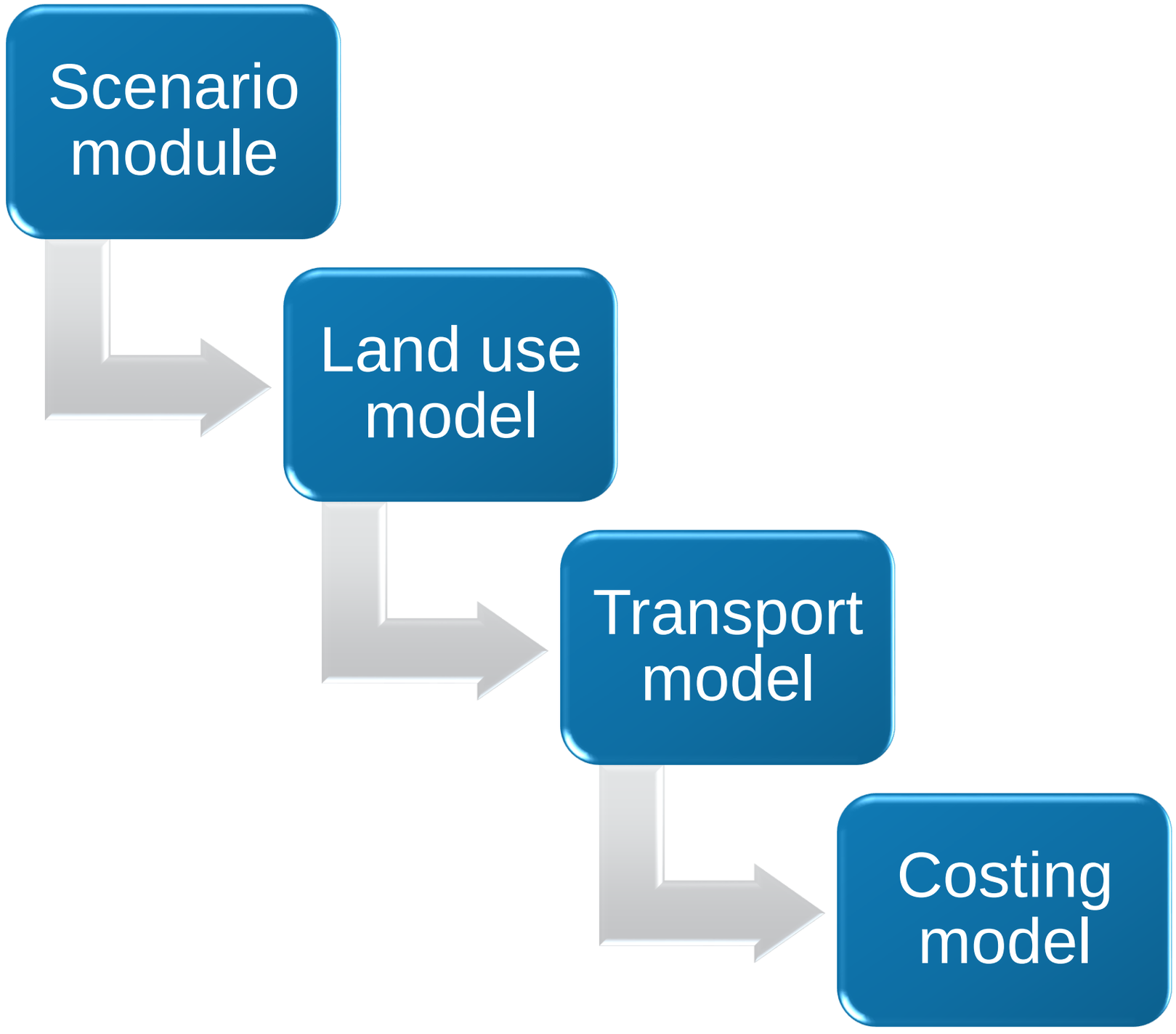
Public transport reform

Revenue to operating cost ratio

Revenue to operating cost

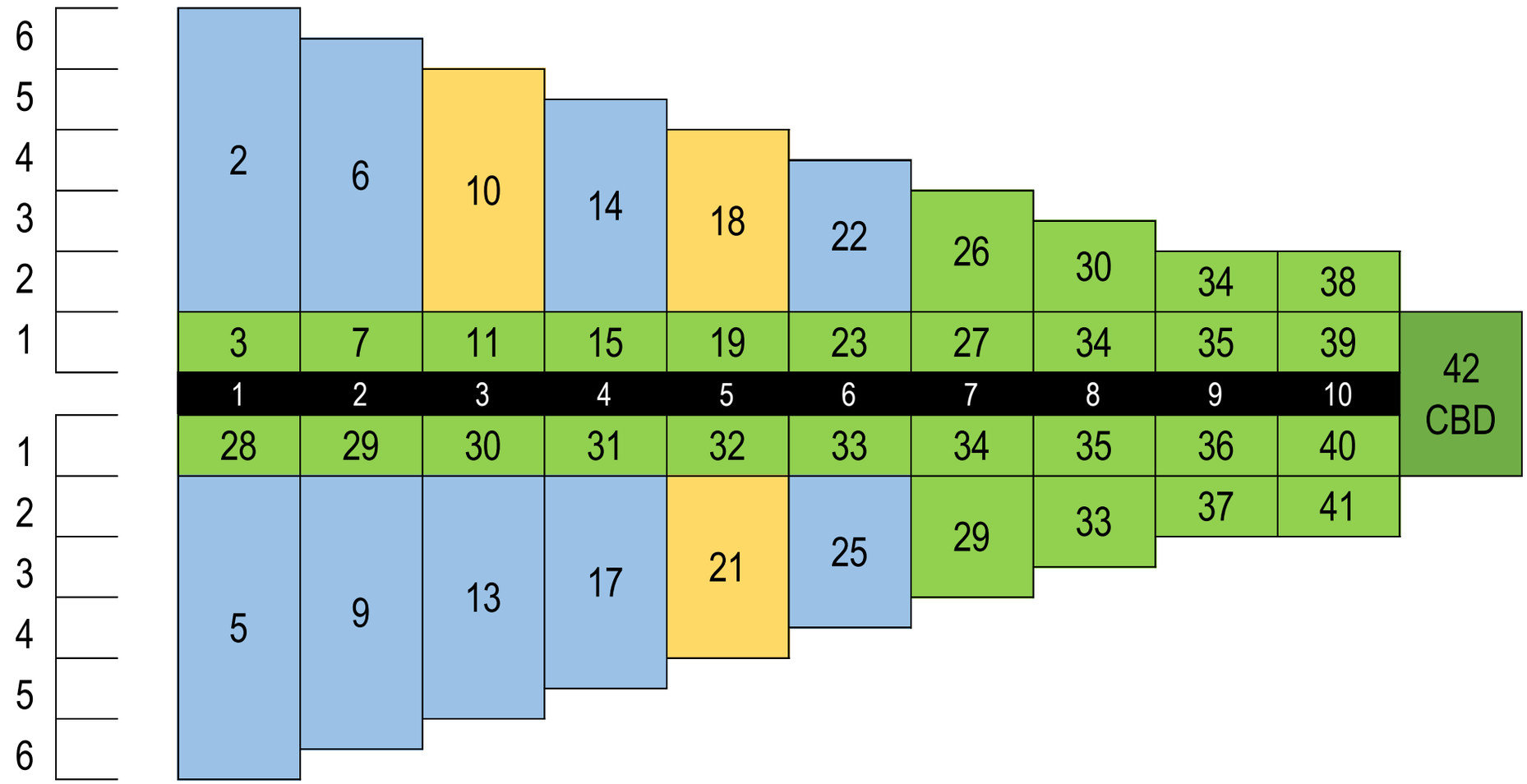


Study method



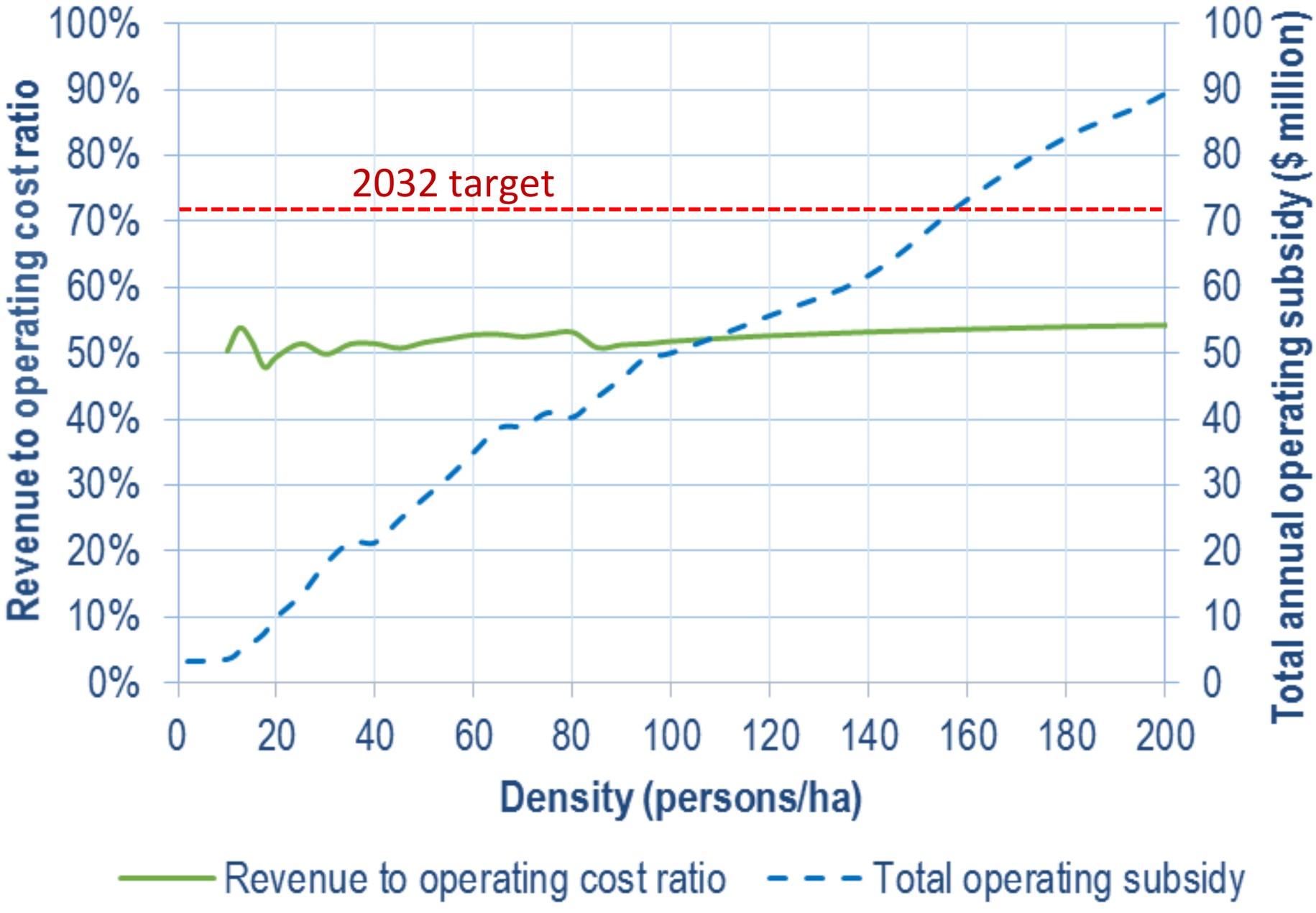
Ridership

- Generic South African land use distribution
- 9 Feeder services
- 20km corridor



Ridership

Simulation results



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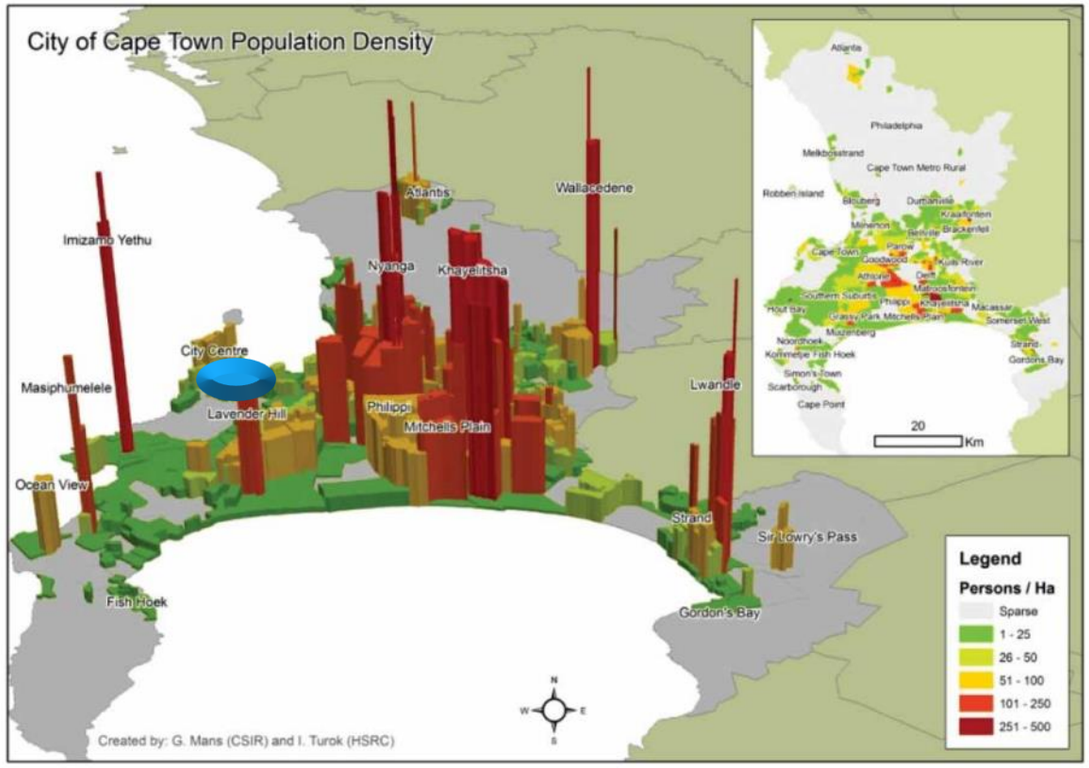
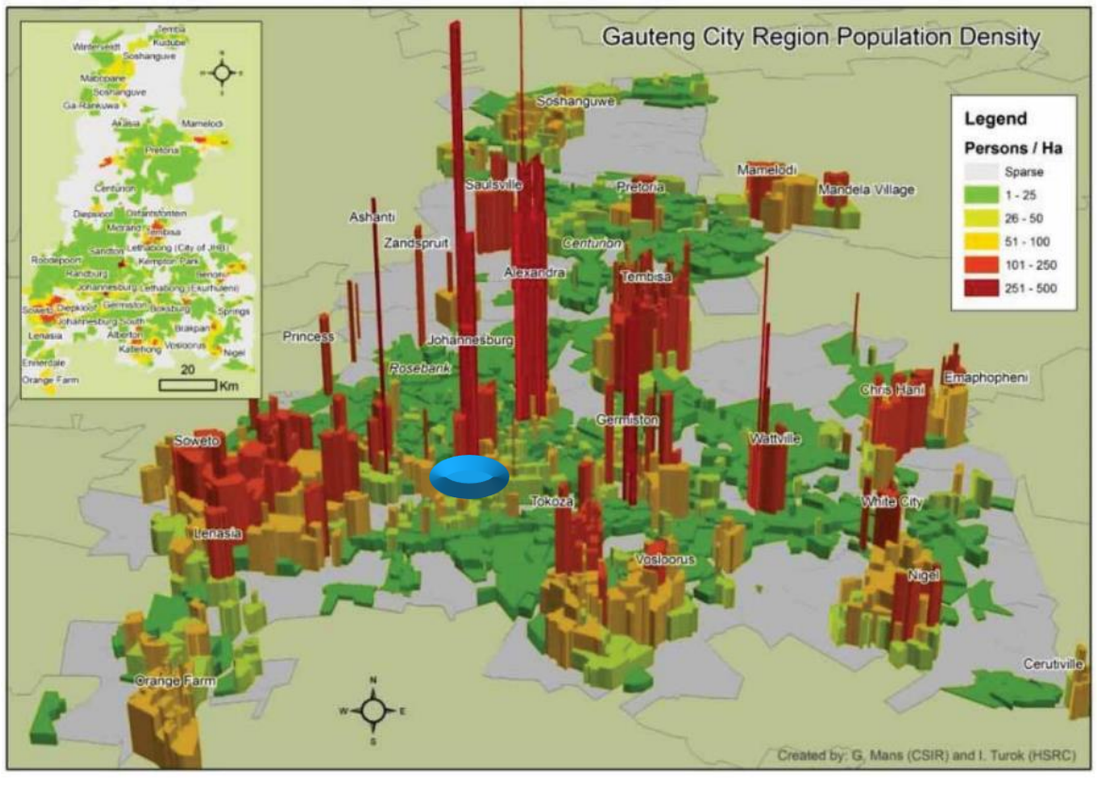
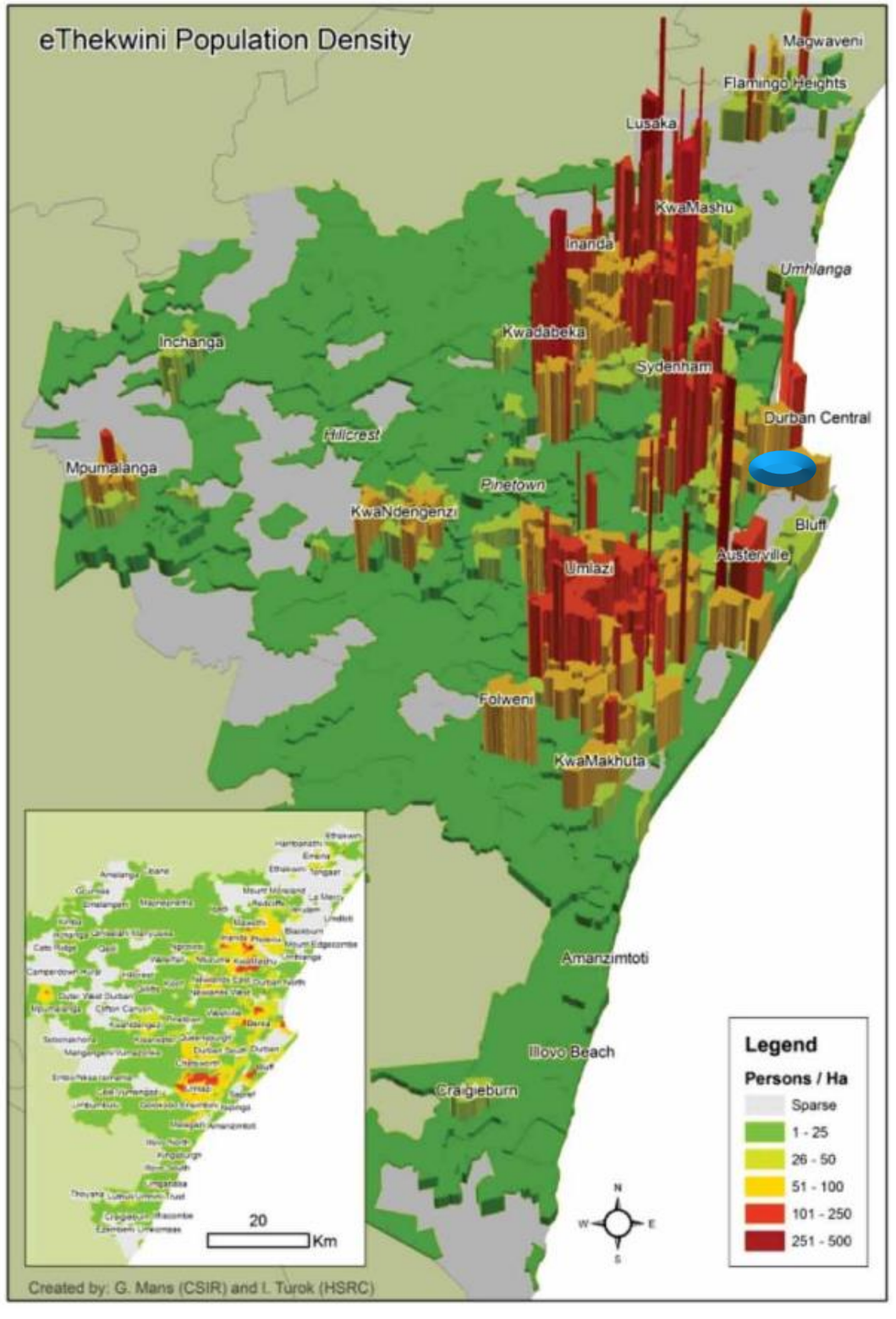
Passenger demand pattern







TOD principles

TOD principle	Objective	Primary link	Scale
Walk	Safe, complete, and accessible pedestrian realm	Ridership	Precinct
	Active and vibrant pedestrian realm	Ridership	Precinct
	Temperate and comfortable pedestrian realm	Ridership	Precinct
Cycle	Cycling network is safe and complete	Ridership	Nodal
	Ample and secure cycle parking	Ridership	Precinct
Connect	NMT routes are short, direct and varied	Ridership	Nodal
	NMT routes are shorter than motorised routes	Ridership	Nodal
Transit	High quality transit is accessible by foot	Ridership	Precinct
Mix	Land use diversity	Passenger demand pattern	Nodal
	Income and demographic diversity	Passenger demand pattern	Metropolitan
Densify	High residential and job density	Ridership	Metropolitan
Compact	Near existing urban area	Passenger demand pattern	Metropolitan
	Convenient transit travel	Accessibility	Metropolitan
Shift	Land for vehicles is minimised	Ridership	Precinct

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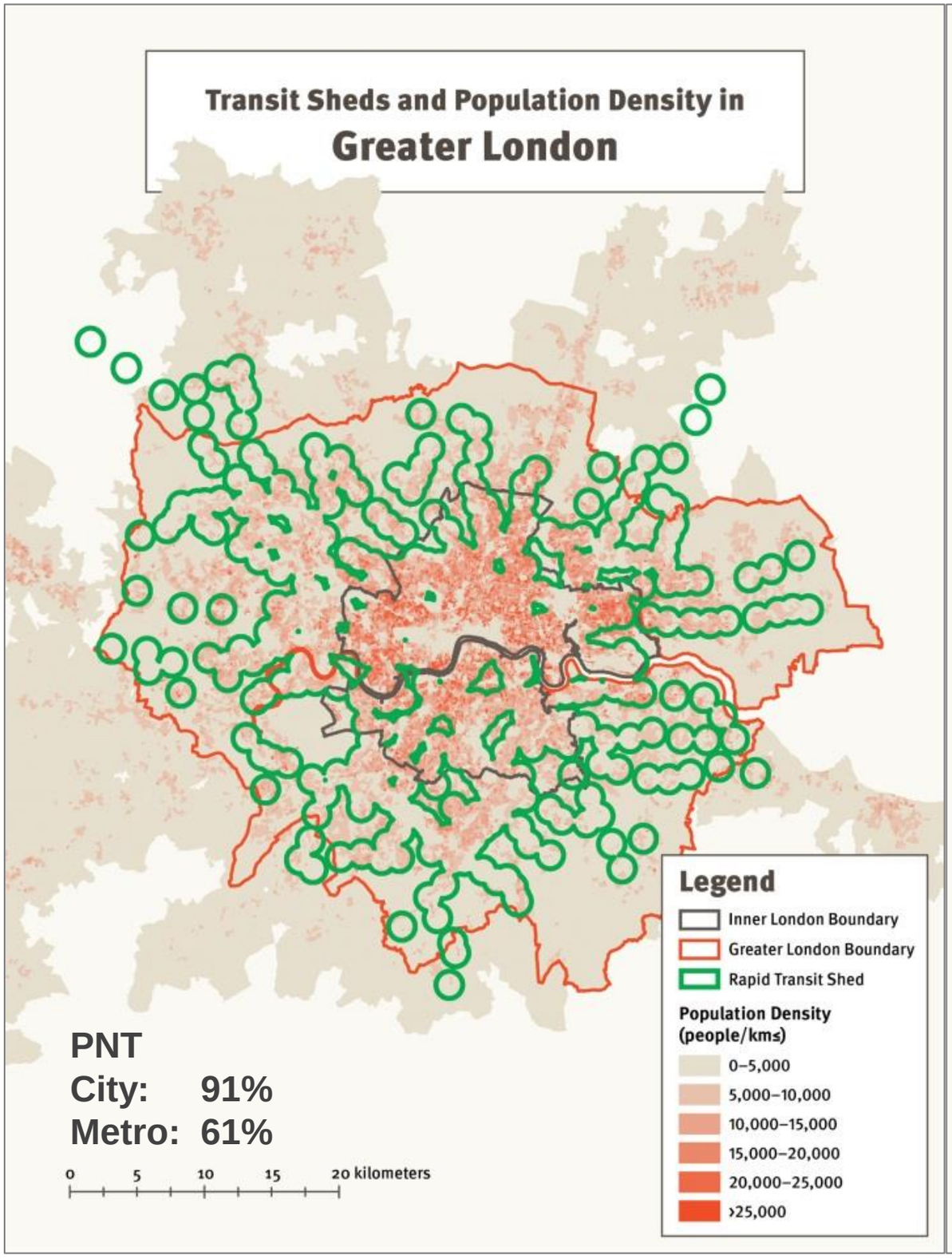
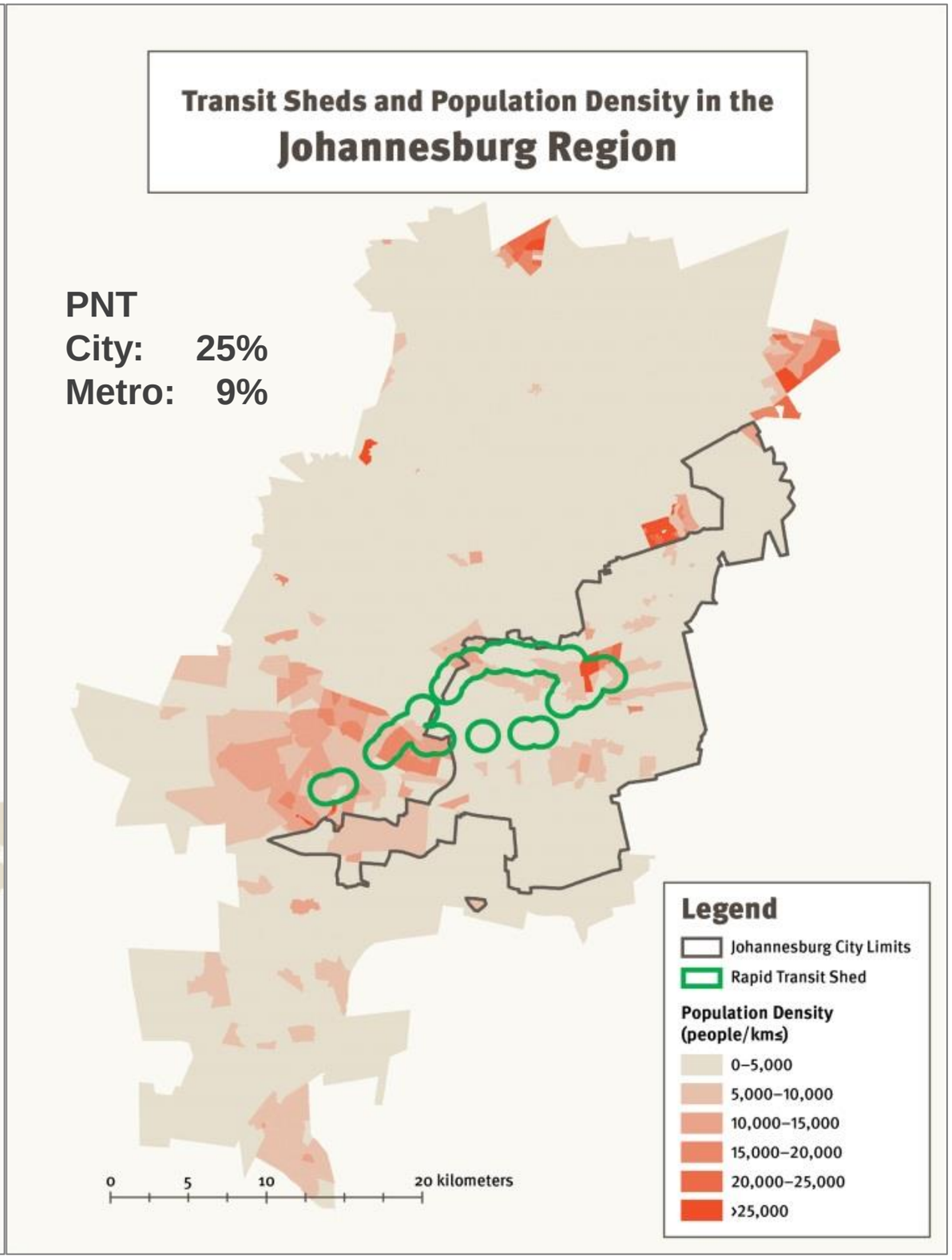
People Near Transit (PNT)





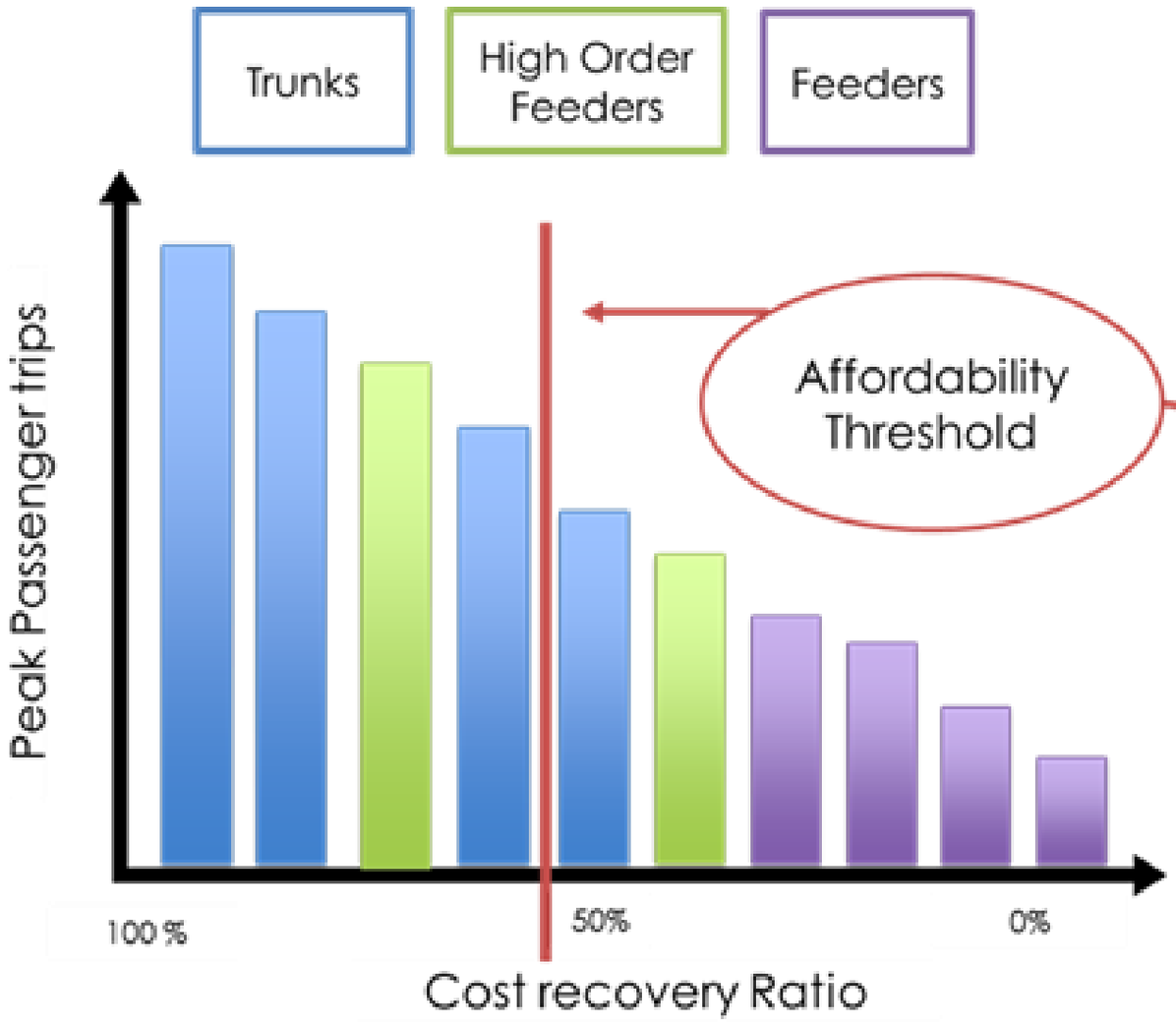
PNT and financial viability

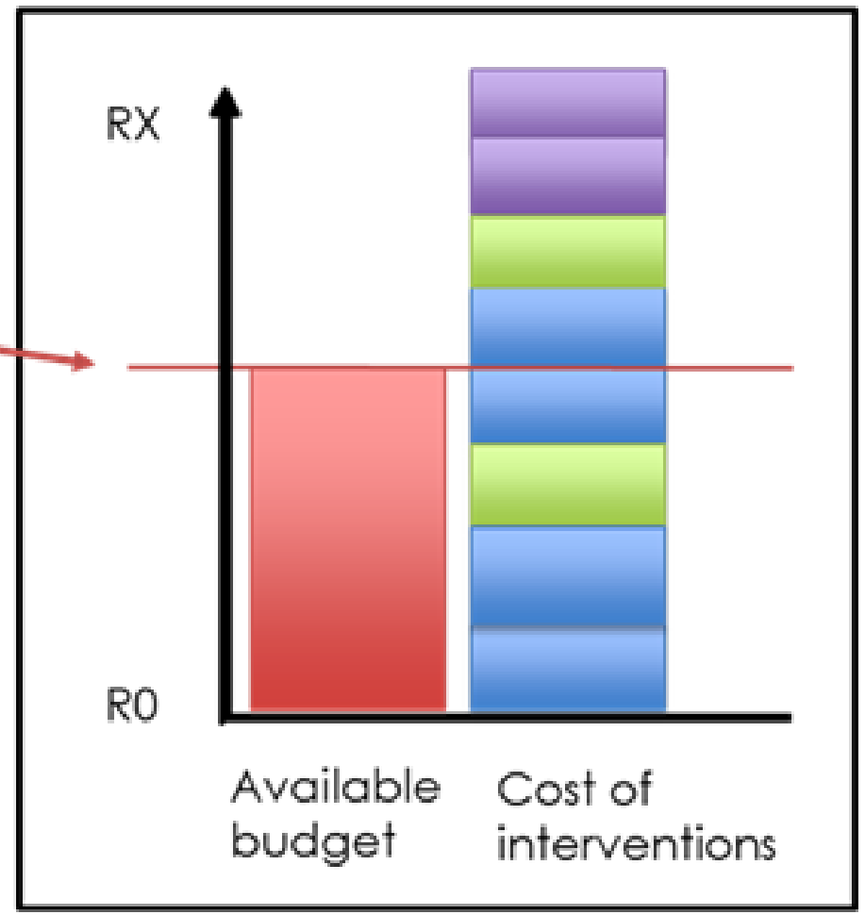
Table 1: Revenue-to-operating cost ratios and PNT values for Johannesburg and London

Service	Mode	Revenue-to-operating cost ratio	
		London	Johannesburg
Trunk	Rapid rail/subway	102%	57%
	Suburban rail	86%	36%
Trunk & feeder	Bus rapid transit	-	28% - 44%
	Conventional bus	63%	22%
Informal	Paratransit	-	100%
PNT	City	91%	25%
	Metro	61%	9%

Source: Adapted from (Hunter Van Ryneveld, 2014; Transport for London, 2016)

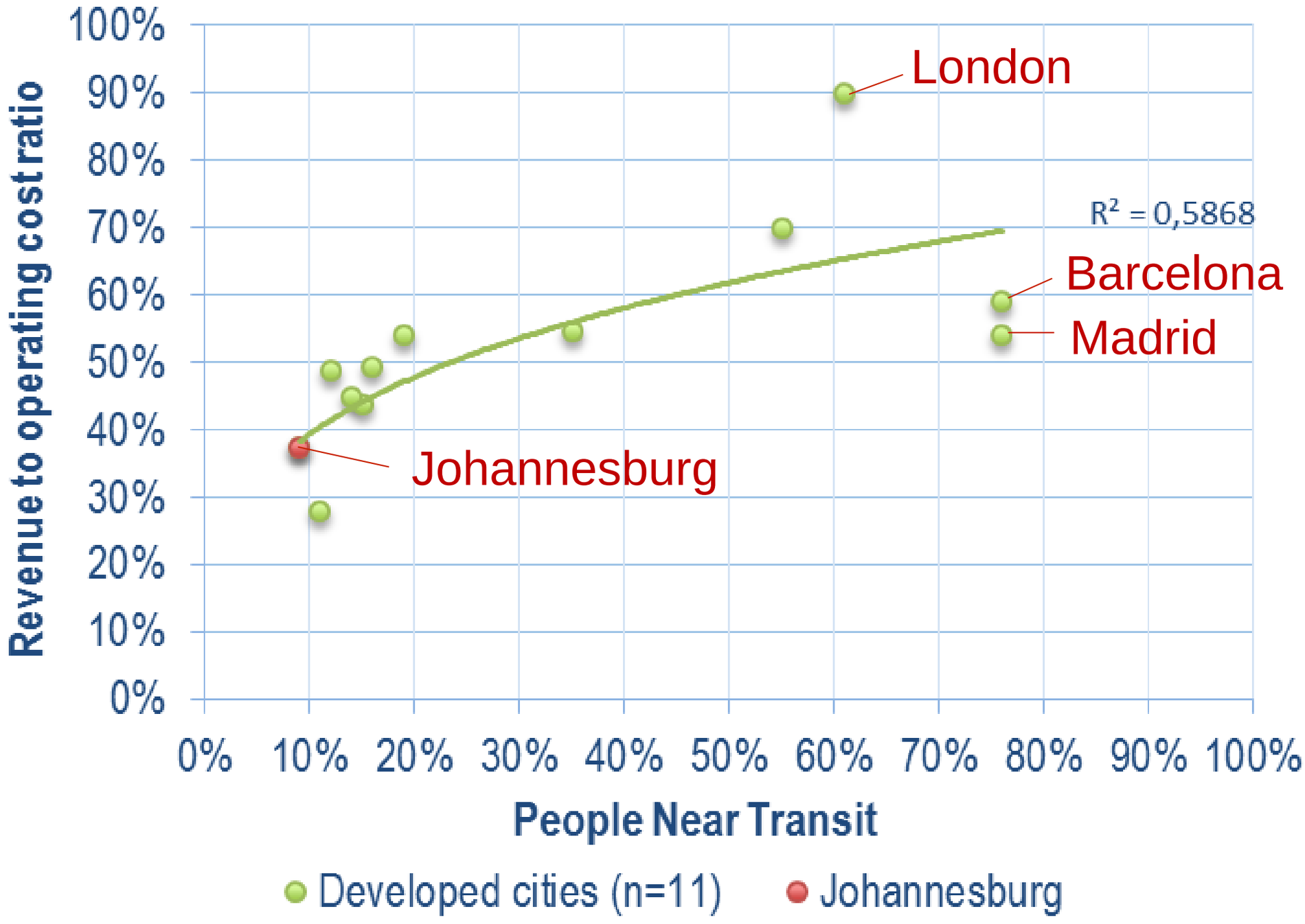
PNT and financial viability





PNT and financial viability

Empirical evidence



PNT and financial viability

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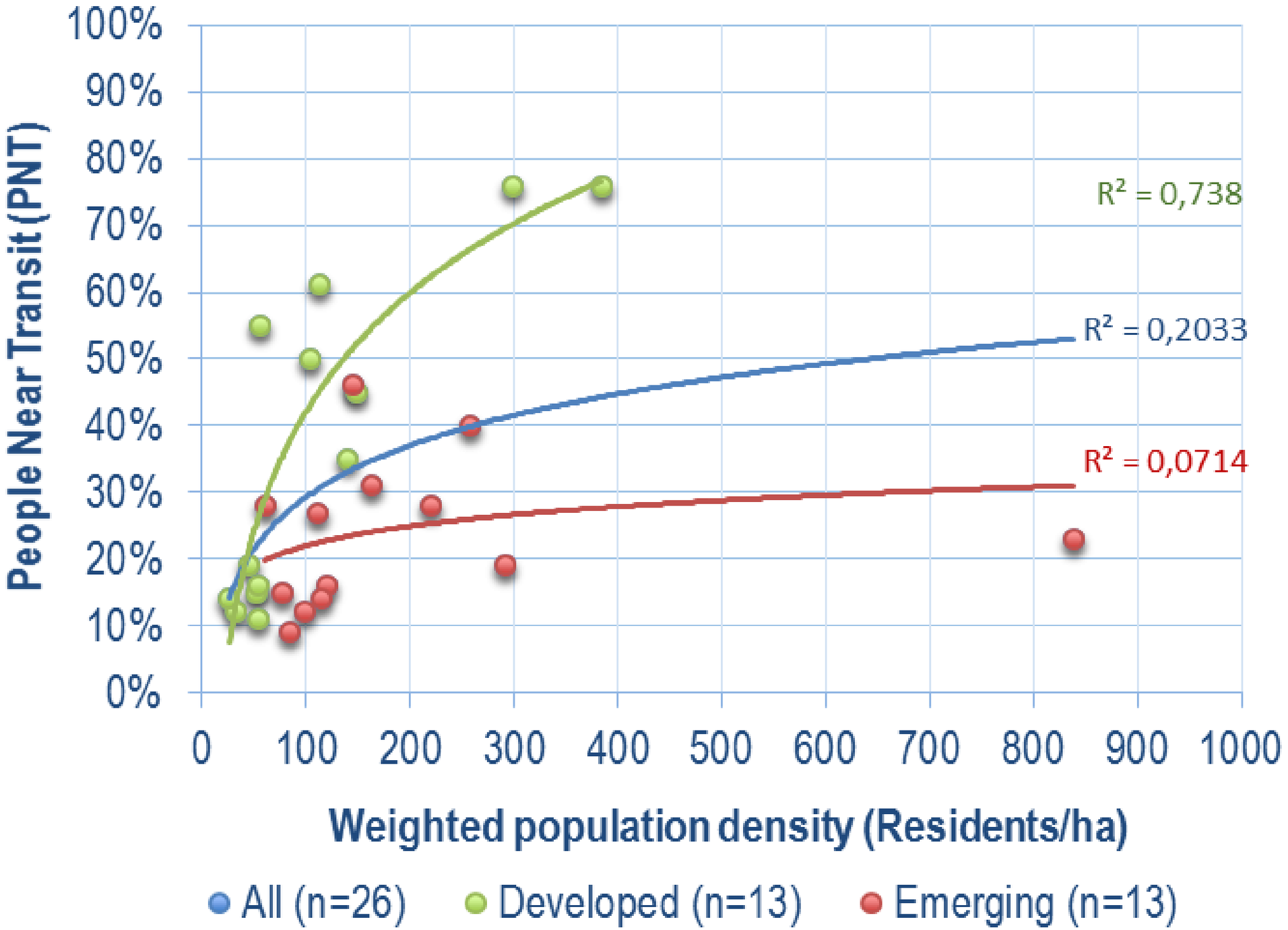
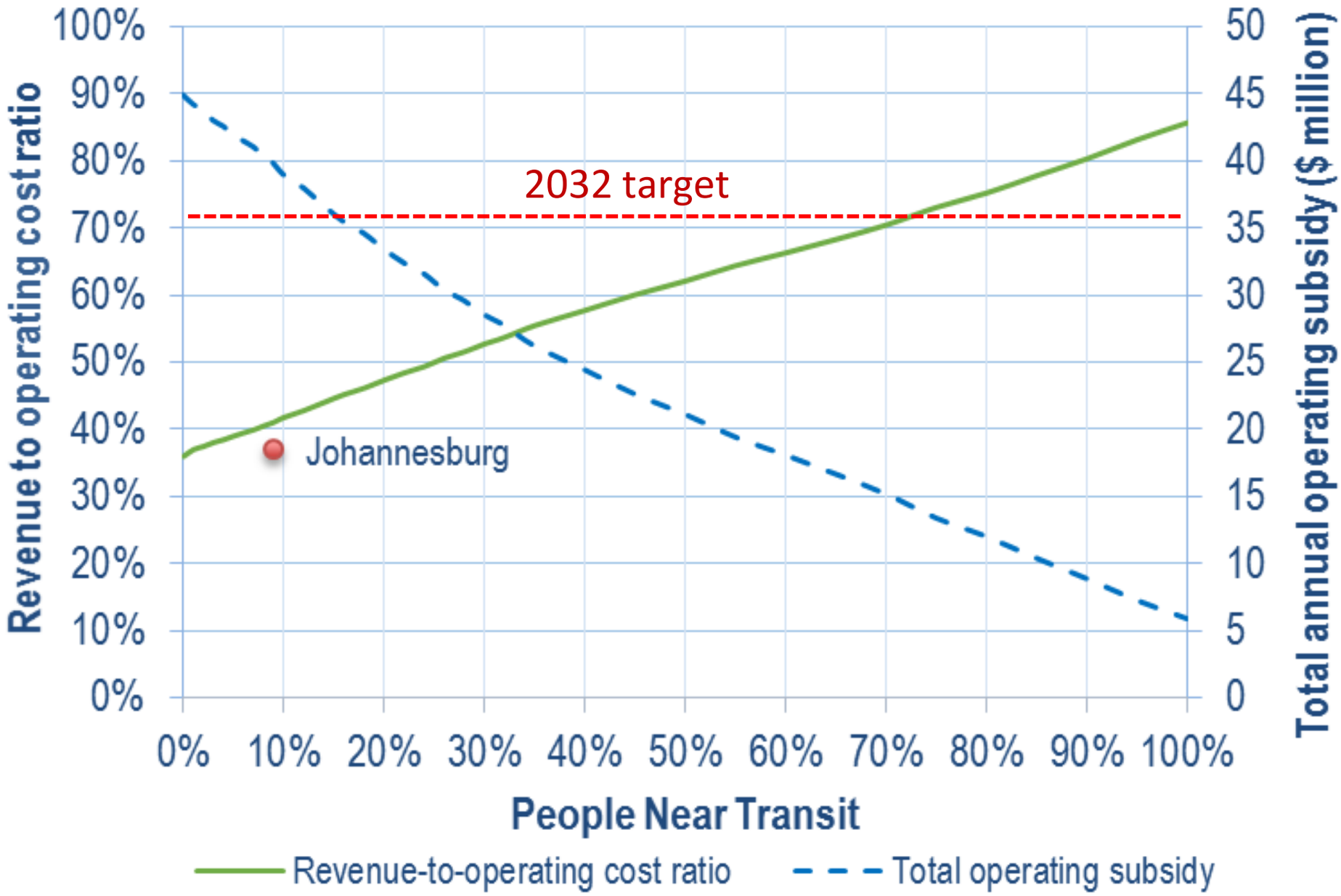


People Near Transit (PNT)

Simulation results



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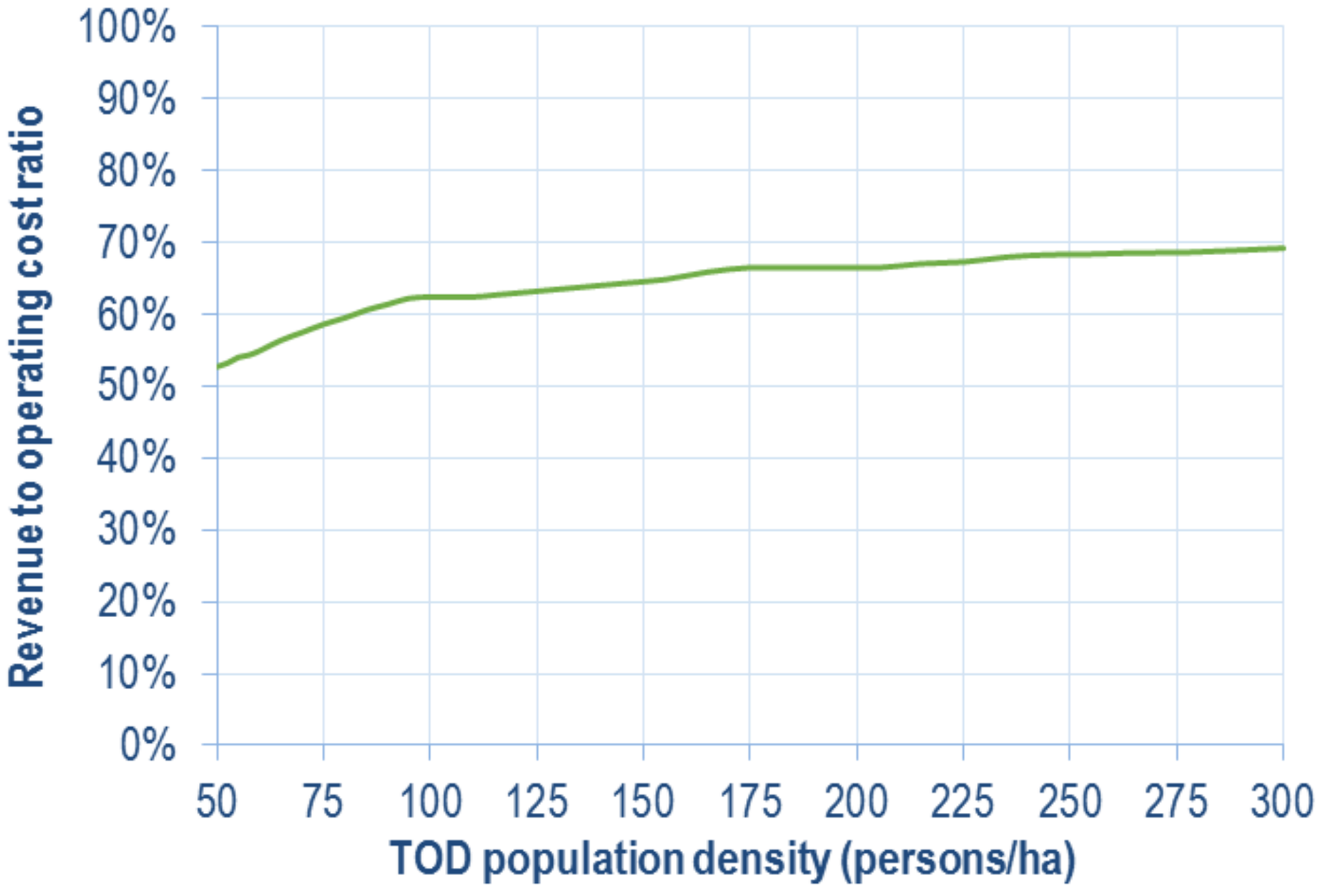
Conventional TOD

Simulation results



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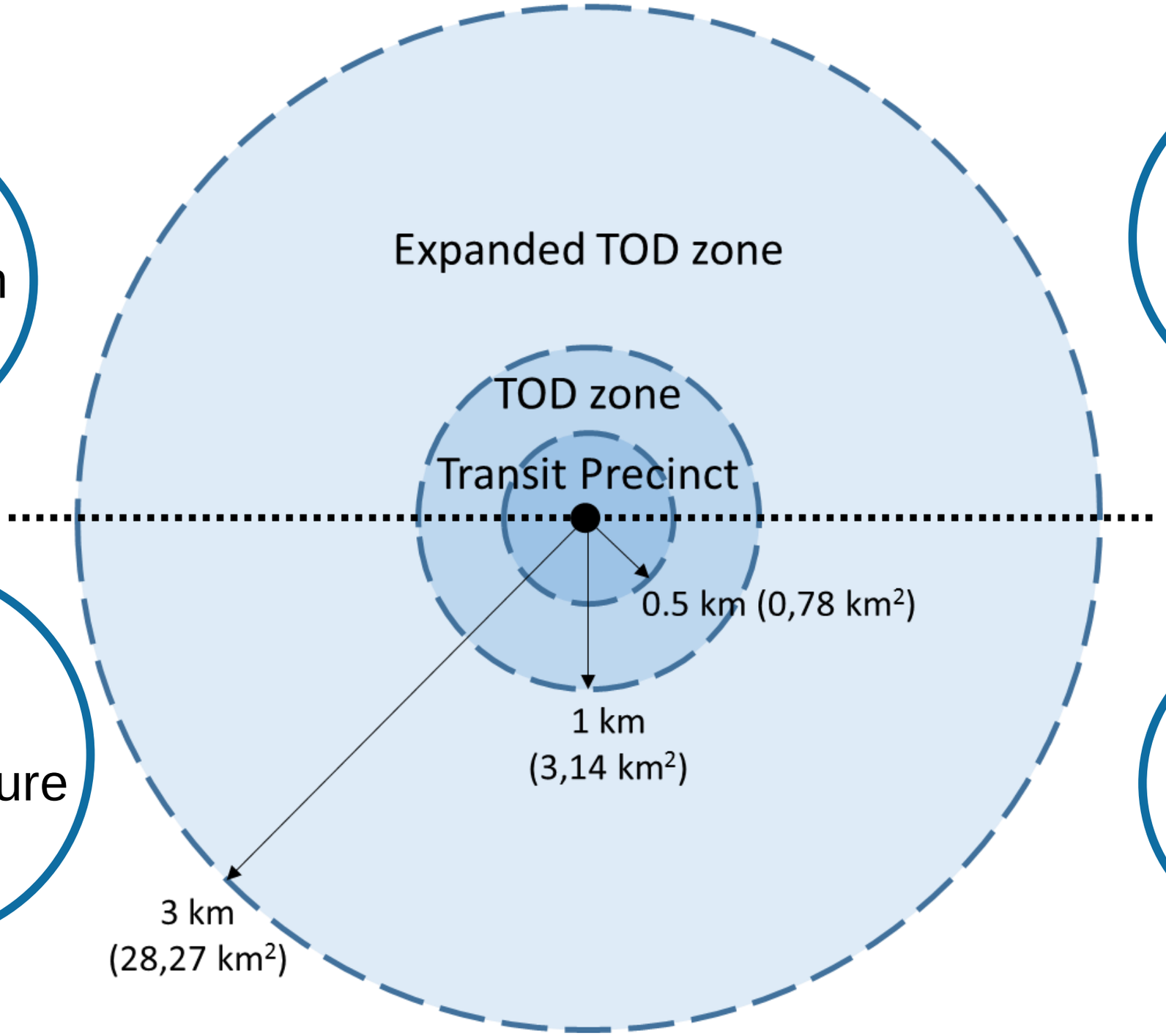
PNT and access distance

Enhanced pedestrian routes

Bicycle infrastructure



Paratransit feeders

'New Generation' services

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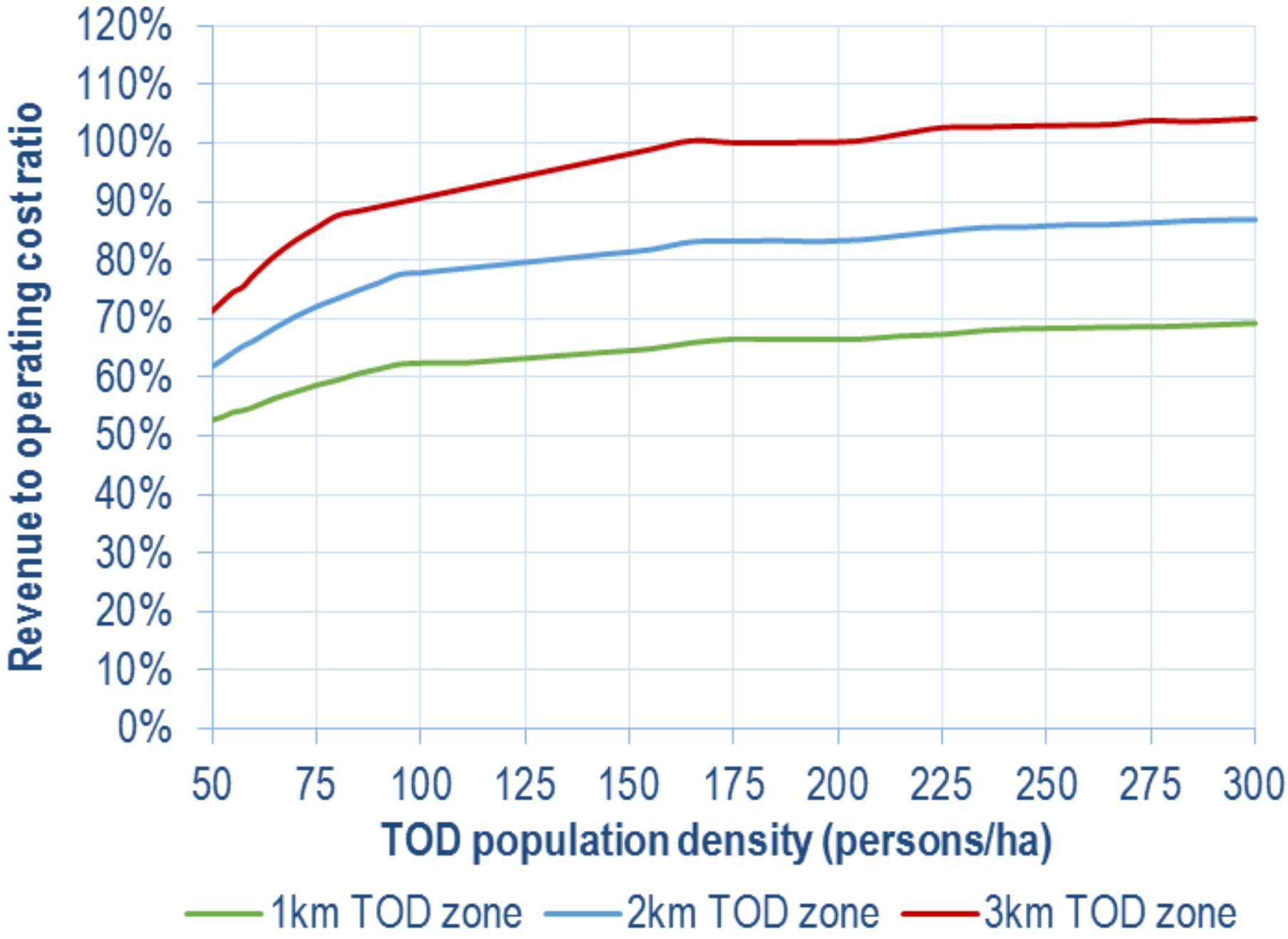
Expanded TOD

Simulation results



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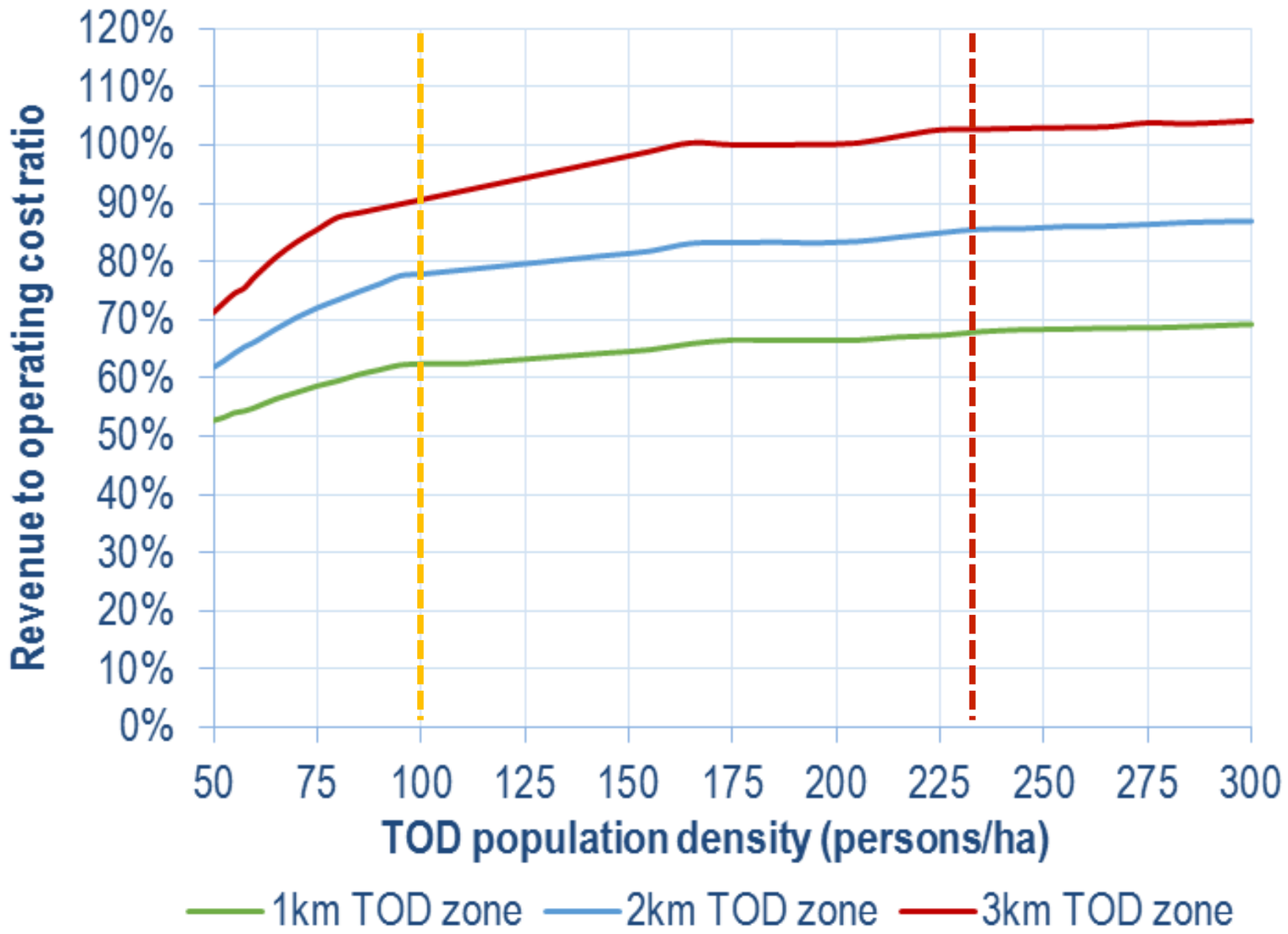
Expanded TOD

Targeted Areas	SOUTH AFRICAN CITY / MUNICIPALITY				
	Cape Town	Tshwane	Joburg	NMB	eThekwini
	(CoCT, 2012)	(CoT, 2012)	(CoJ, 2010)	(NMB, 2007)	(eThekwini, 2013)
Public Transport Trunk Corridors (persons/ha)	208	150	232	238	209



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Informal TOD approaches

Conclusion

TOD planning approach contextualisation

Different TOD objectives

Expand TOD zones

Facilitate paratransit access to Trunk stations

Investigate self-densifying, informal TOD

Underpin the whole system with NMT infrastructure

Thank you

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