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SABOA 2013 Conference

An IPTN for Cape Town: Role of modes in corridors

28 February 2013

CONTENT

Planning background

Towards an IPTN: Hub & Spoke vs Direct Services

Integration with Land Use plans

Transformation options

Multimodal Corridor

Summary

History of Transport Planning

1980

- **“Cape Town Metropolitan 1980 – 1985 Transport Plan”** was prepared from 1975 to 1979 and approved in 1980

2007

- ITP (2006 – 2011) approved by COUNCIL on 27th June 2007
- Submitted to Provincial Government and National Government – Oct & Dec 07

2008

- Changes in ITP statutory requirements

2009

- 2009 Update of 2006 – 2011 ITP submitted to Portfolio committee - May 2009

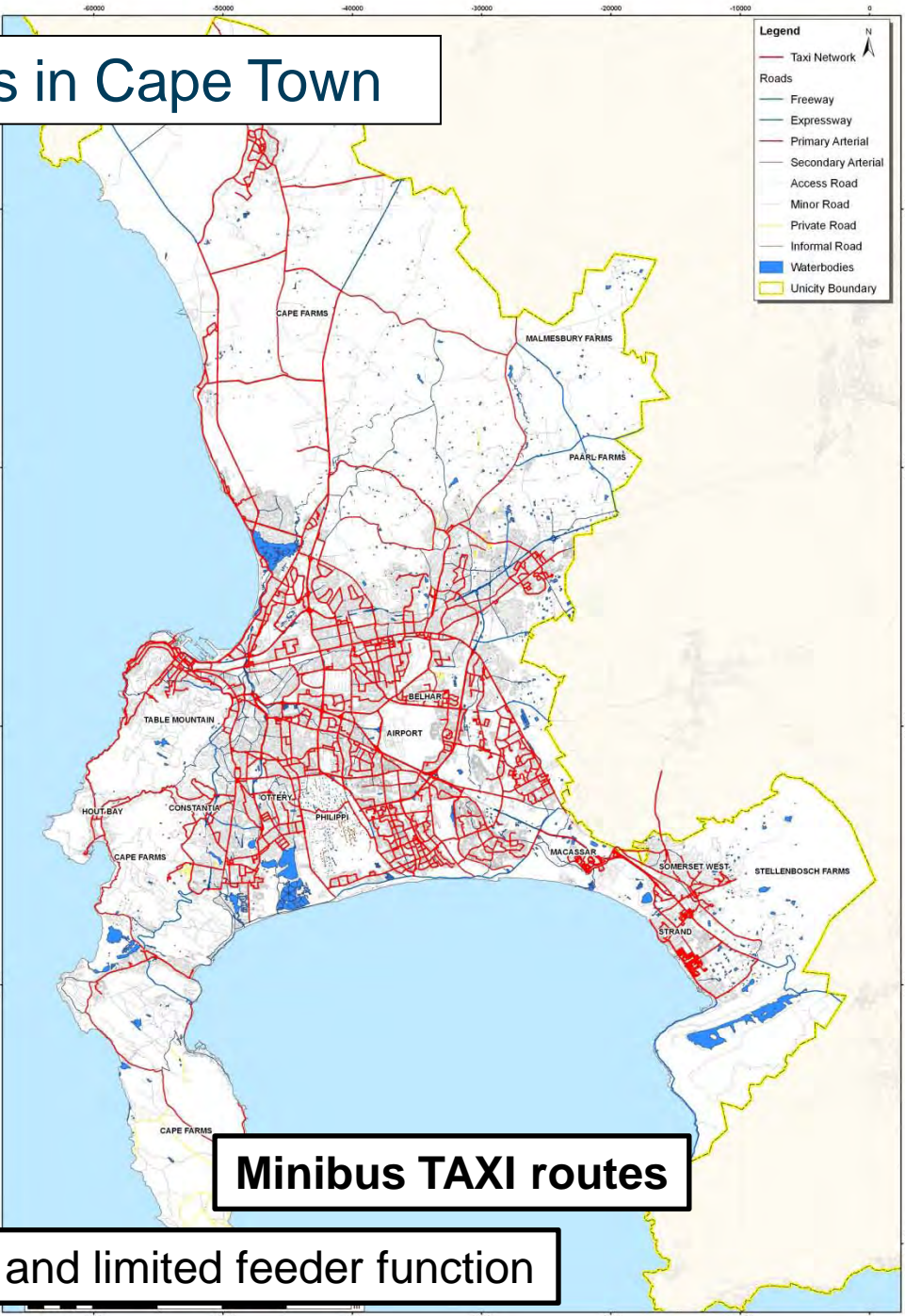
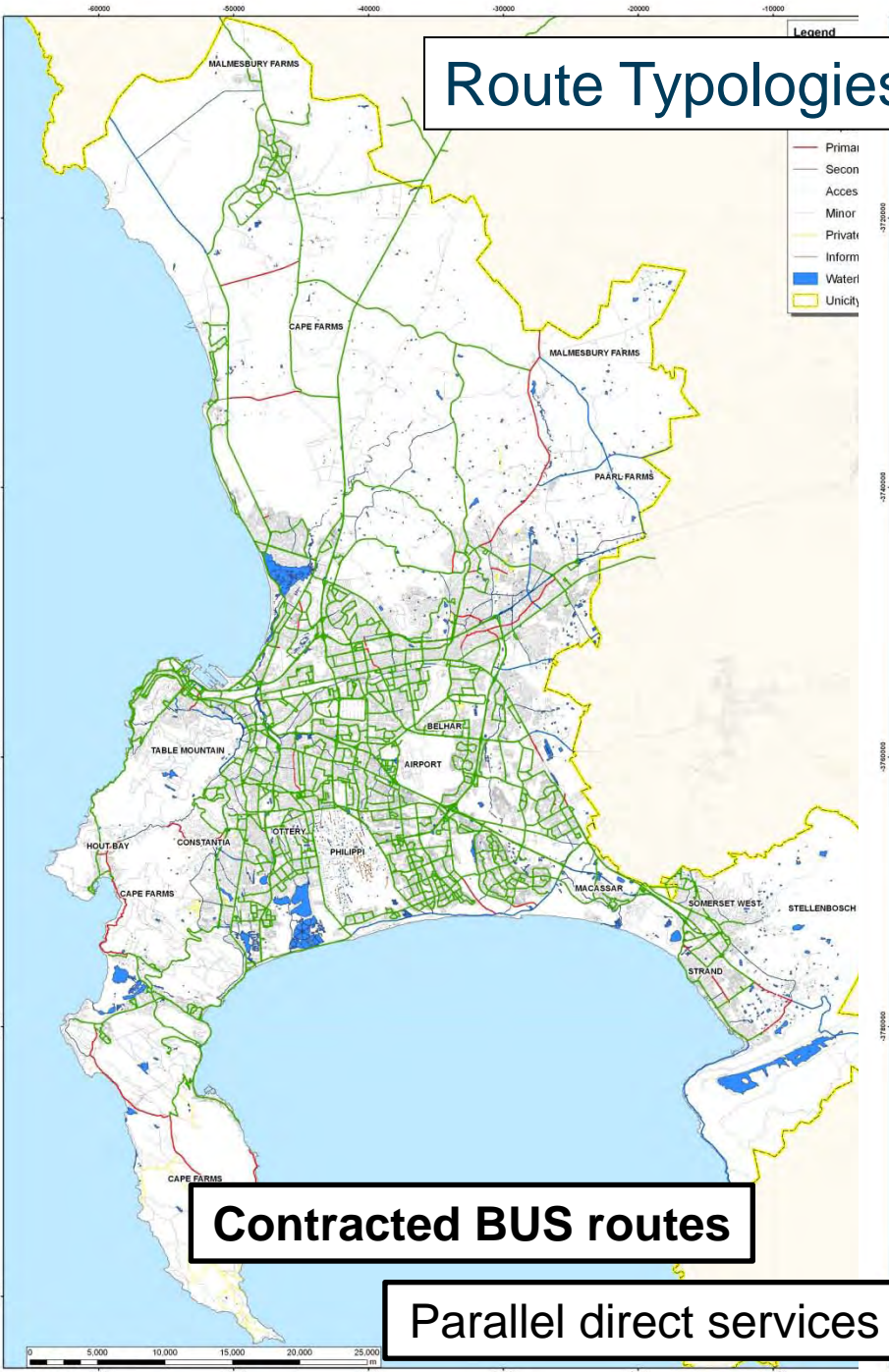
2010

- Provincial government approval - March 2010
- 2009 Update Gazetted - June 2010

2011

- Final, 2011 Technical update submitted to Province – August 2011
- Approved by MEC - Jan 2012

Route Typologies in Cape Town



Parallel direct services and limited feeder function

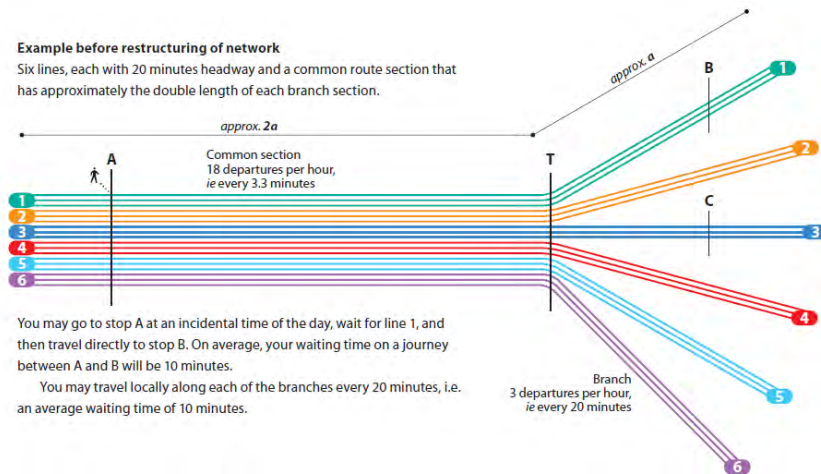
Direct vs Hub & Spoke



- Network typologies

Example before restructuring of network

Six lines, each with 20 minutes headway and a common route section that has approximately the double length of each branch section.



You may go to stop A at an incidental time of the day, wait for line 1, and then travel directly to stop B. On average, your waiting time on a journey between A and B will be 10 minutes.

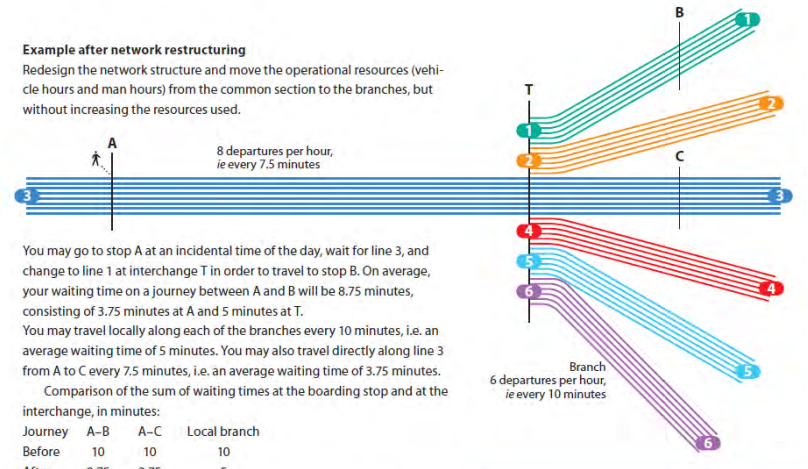
You may travel locally along each of the branches every 20 minutes, i.e. an average waiting time of 10 minutes.

Branch
3 departures per hour,
ie every 20 minutes

- Route typologies

Example after network restructuring

Redesign the network structure and move the operational resources (vehicle hours and man hours) from the common section to the branches, but without increasing the resources used.



You may go to stop A at an incidental time of the day, wait for line 3, and change to line 1 at interchange T in order to travel to stop B. On average, your waiting time on a journey between A and B will be 8.75 minutes, consisting of 3.75 minutes at A and 5 minutes at T.

You may travel locally along each of the branches every 10 minutes, i.e. an average waiting time of 5 minutes. You may also travel directly along line 3 from A to C every 7.5 minutes, i.e. an average waiting time of 3.75 minutes.

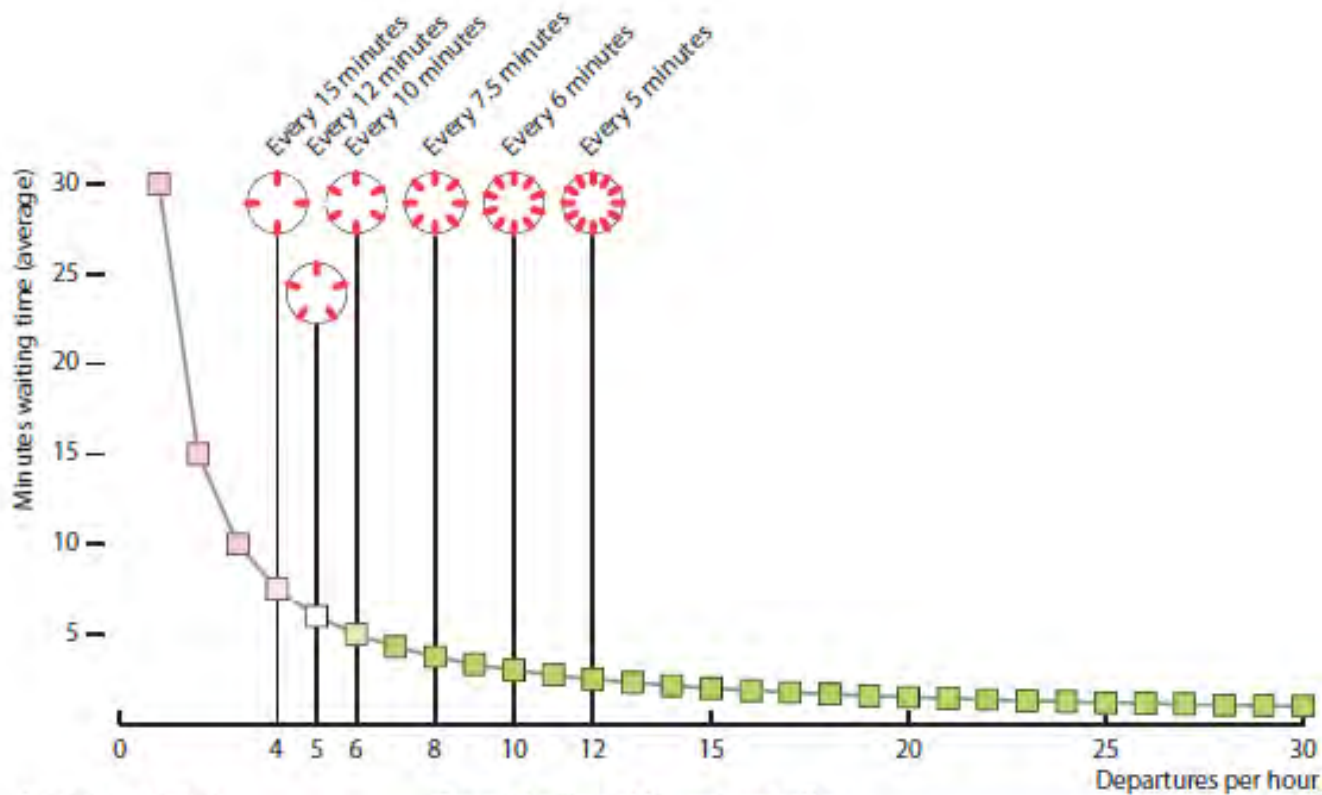
Comparison of the sum of waiting times at the boarding stop and at the interchange, in minutes:

Journey	A-B	A-C	Local branch
Before	10	10	10
After	8.75	3.75	5

Even if one allows for any time (if needed) spent on changing platforms, this example suggests that total travel time does not have to increase, even if travellers have to make more transfers in the system.

Network / Route Model

- Network model > metropolitan nodes as key anchor points.
- Route model > hub and spoke services and strong PTIs.



No network effect

Forget the timetable - network effect

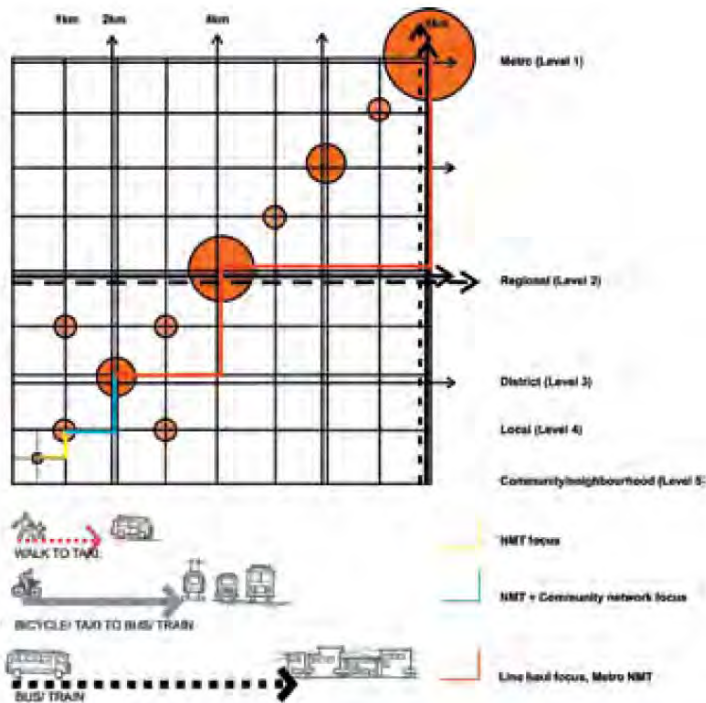
No significant reduction in waiting times

Increasing congestion and environmental problems

Responding to Land Use Plans

SDF

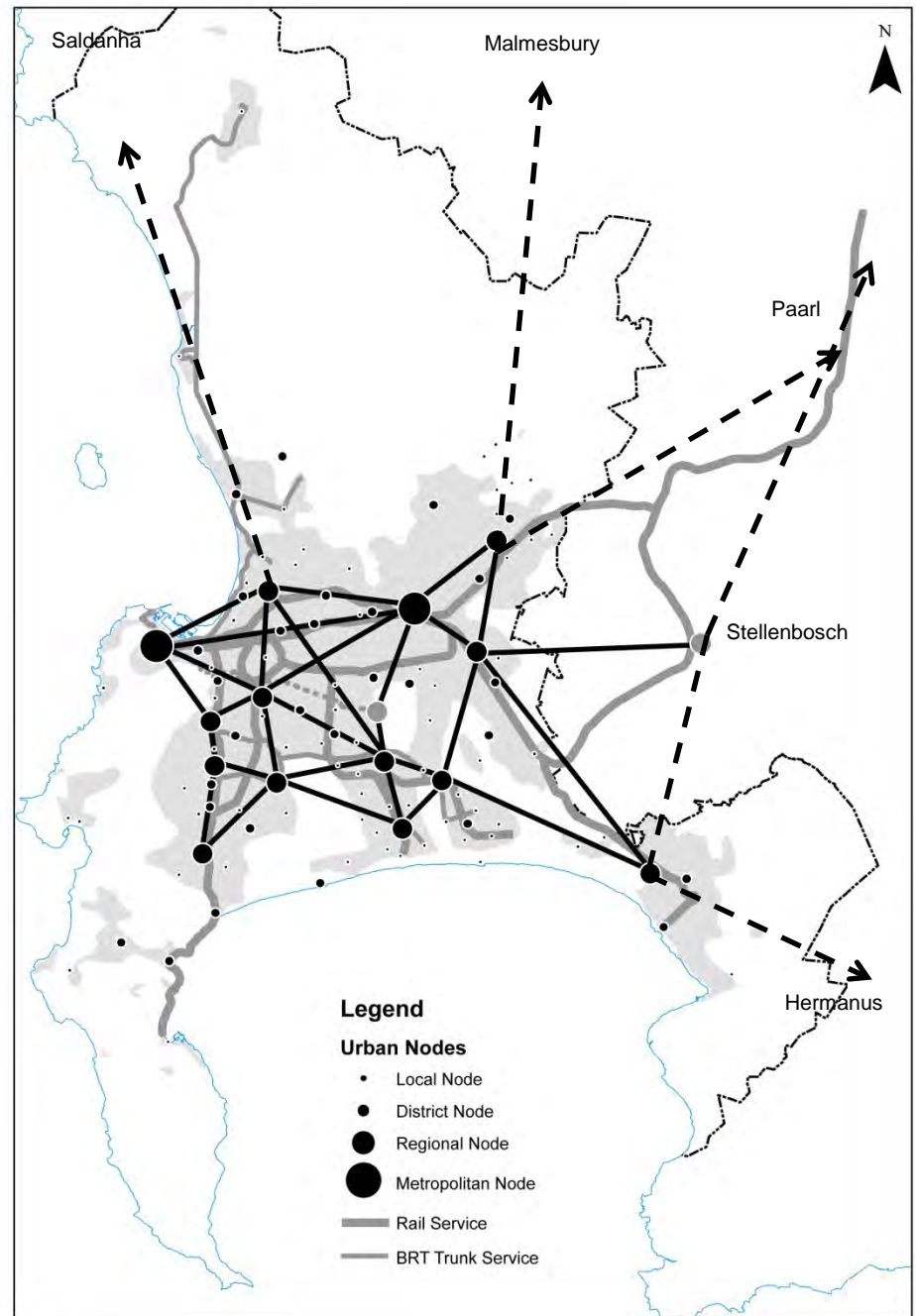
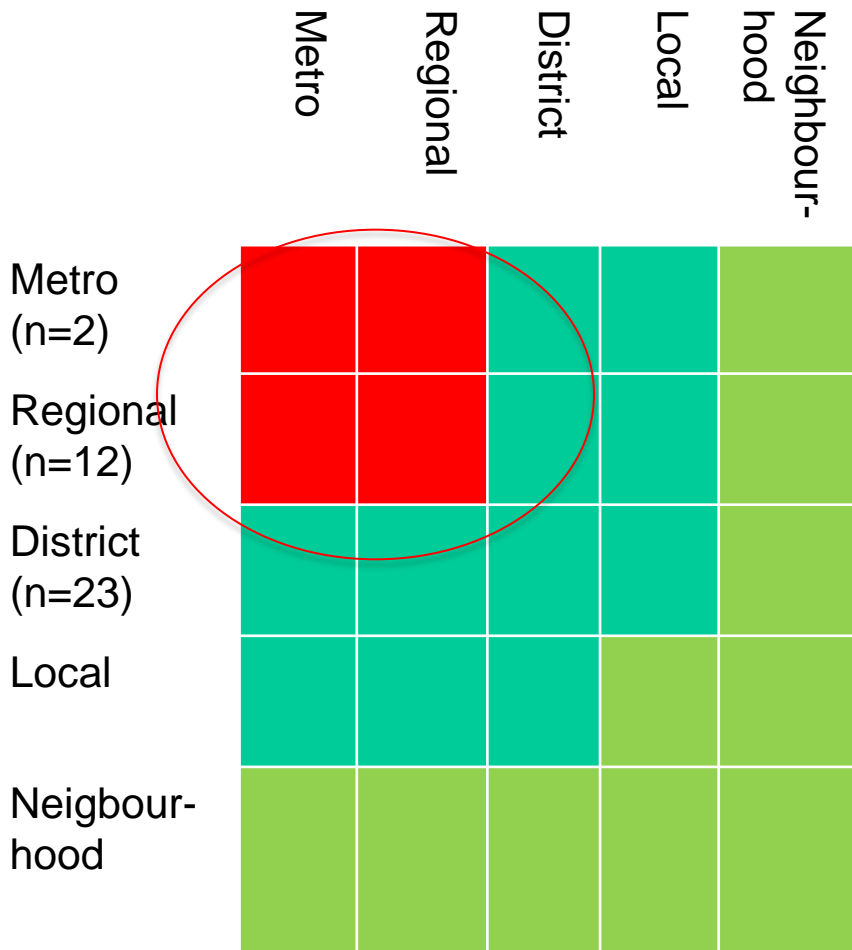
Transport Response



1. Metropolitan Services
2. Regional Services
3. District Services
4. Local Services
5. Neighbourhood Services

Figure 5.3: Road hierarchy, points of greatest accessibility, and alignment of public transport with the grid

Link to CTSDf

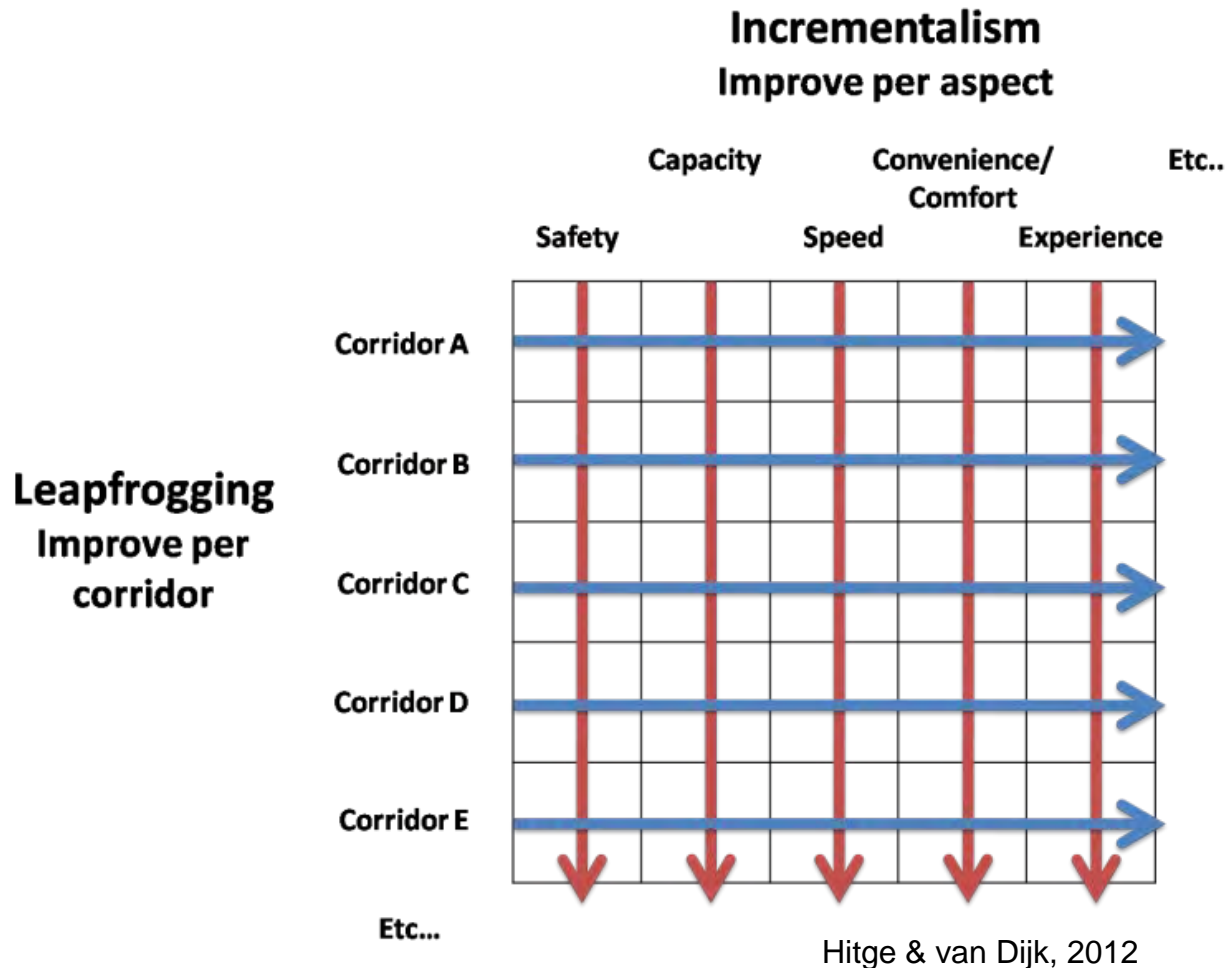


Roles of multiple modes

Services	Scale	Service	Capacity (pass/ hour/ dir)	Average Operating Speed	Station / stop Spacing	Technology
Level 1 (Trunk Express)	Metro-Regional	Express (skip-stop)	10.000 - 50.000	30 – 70 km/hour	1 000 - 2 000 m	Heavy Rail, BRT
Level 2 (Trunk)	District-Local	Local	4.000 - 20.000	20 – 30 km/hour	500 - 1 000 m	Heavy Rail, LRT, BRT, Bus, MBT
Level 3 (Feeder)	Neighbourhood	Local	0 – 4.000	5 – 30 km/hour	<500 m	MBT, Bus, NMT, Metered Taxi, and alternative technologies (pedicabs, tuk-tuk)

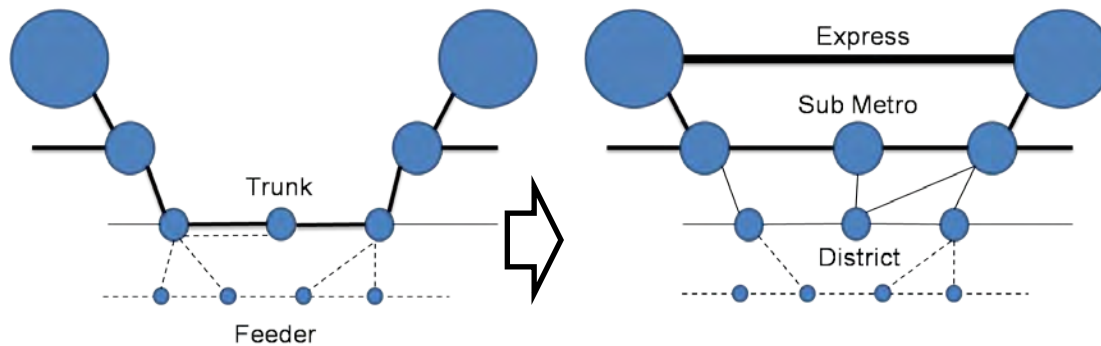
Implementation Options

- A balance must be struck between corridors and system improvements



Transformation Options

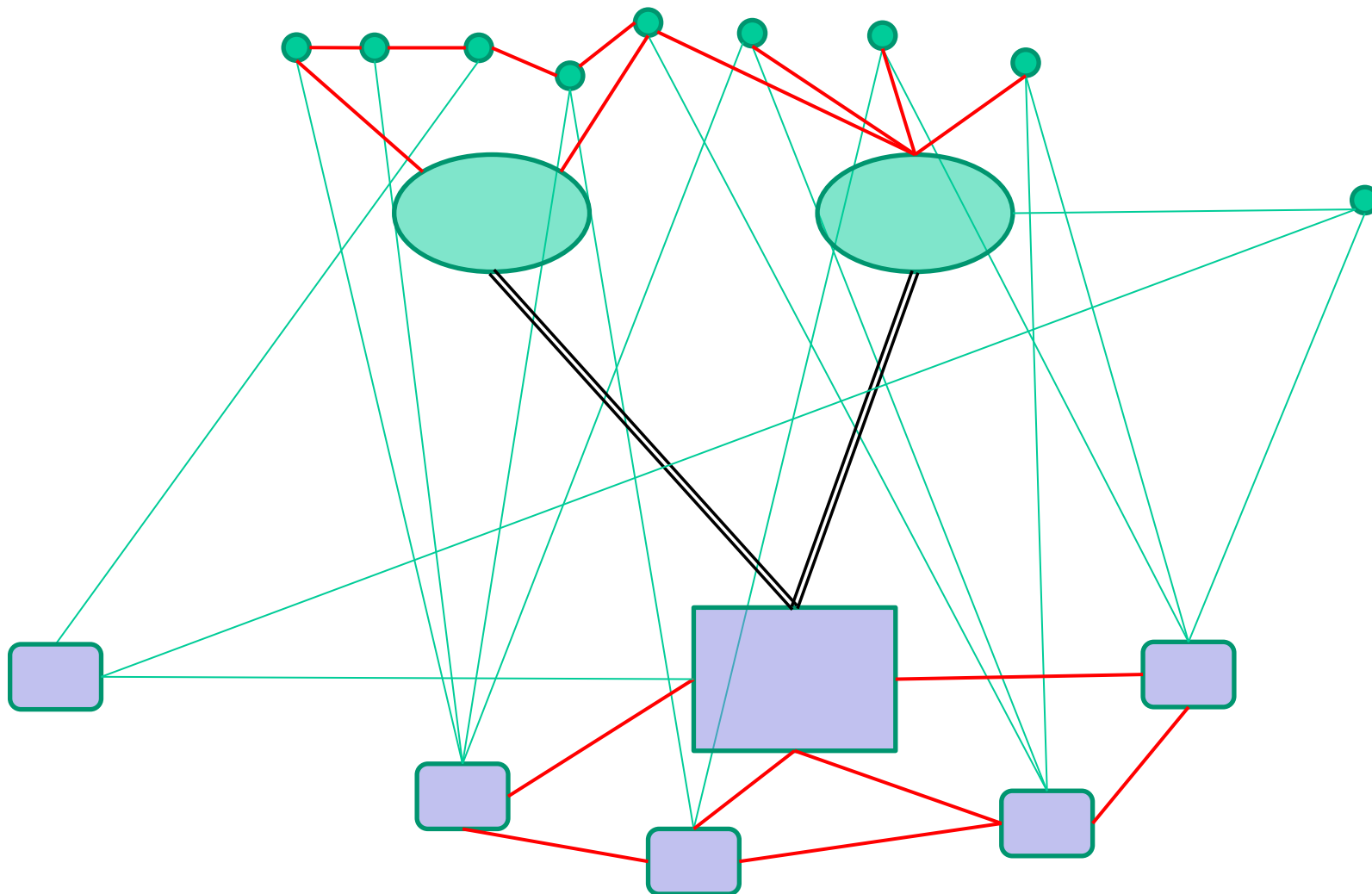
Translating urban nodes into network layers.



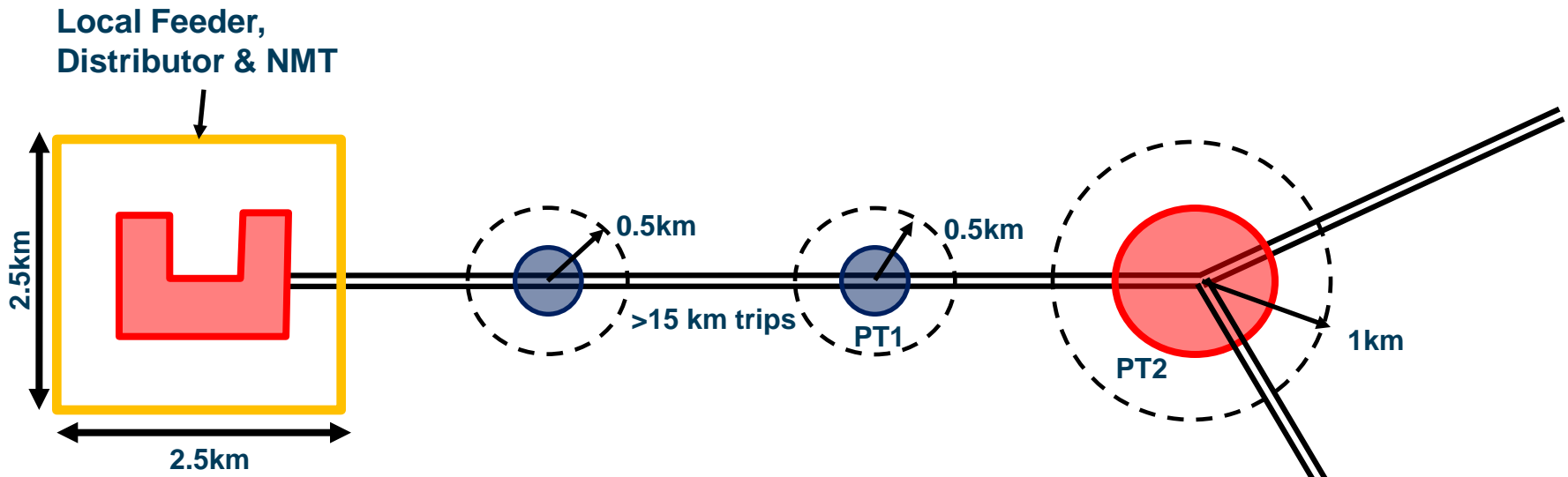
- 1. Metropolitan Nodes / Metropolitan Services**
- 2. Regional Nodes / Regional Services**
- 3. District Nodes / District Services**
- 4. Neighbourhood Nodes / Neighbourhood Services**

- All services could run on the same infrastructure.

Transformation from Direct to Hub & Spoke



Modes in Corridor



Legend:



Level 1



Major Node

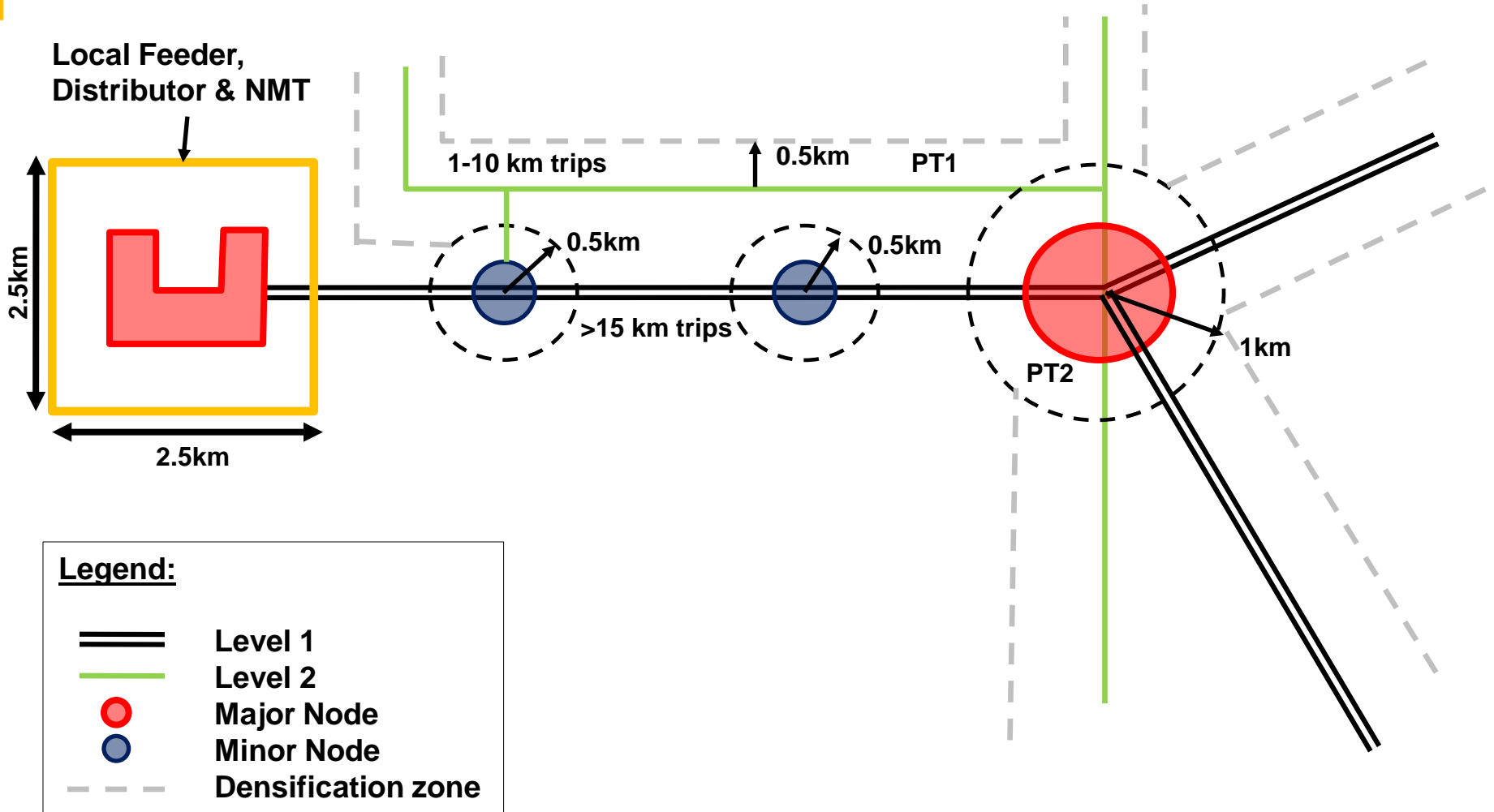


Minor Node

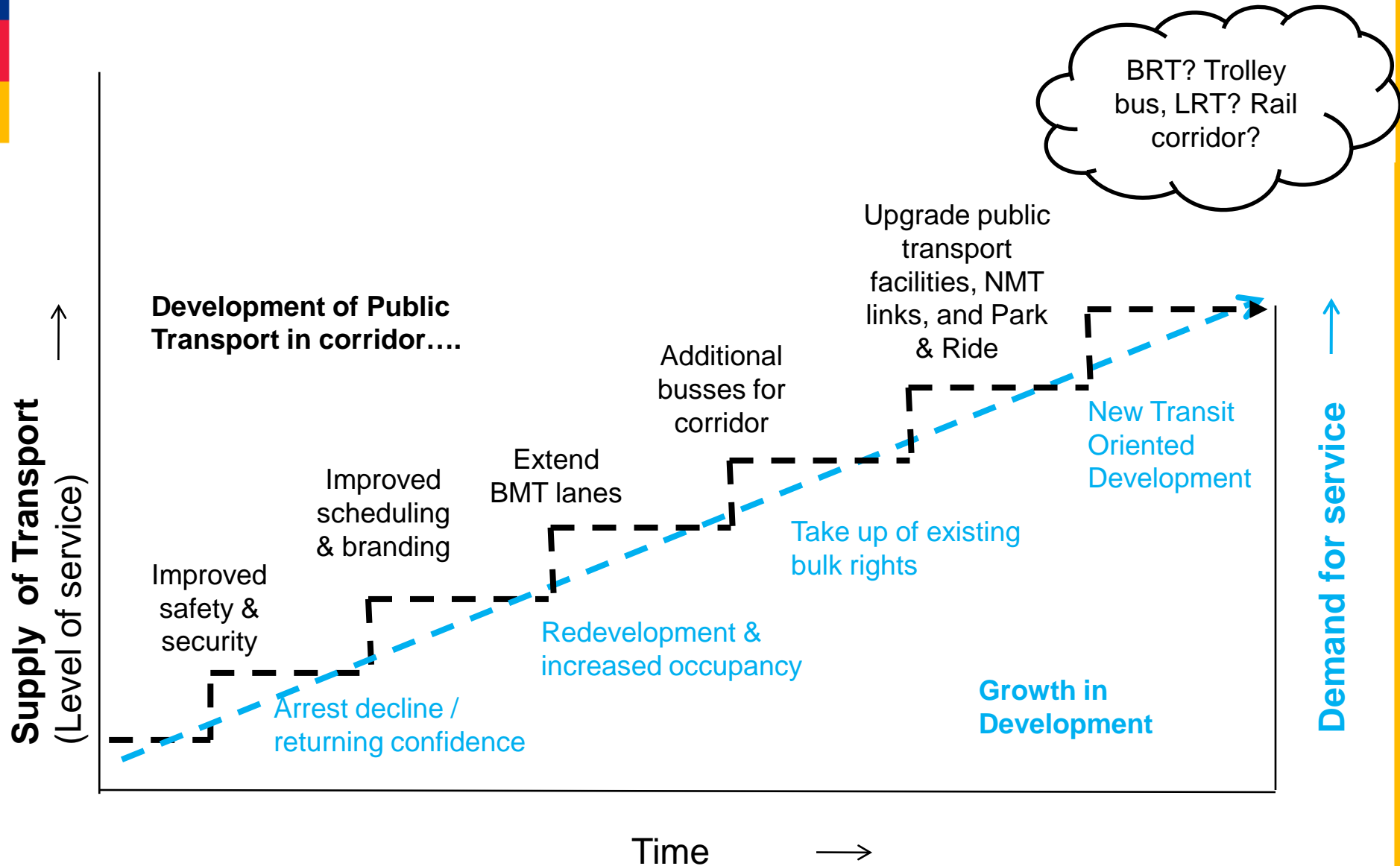


Densification zone

Modes in Corridor



Incremental Land Use & Transport development



Summary

- **Conceptual IPTN to be approved in ITP**
- **Detail IPTN being drafted to implement concept**
- **Contracts developed in parallel, but coordinated with IPTN**
- **Place for “leap frog” solution to secure right of way**
- **Important role for incremental approach with existing operators**
- **IPTN is also for Functional Region**