

An aerial view of a city skyline at dusk. The sky is a mix of orange, pink, and blue. In the foreground, a body of water reflects the city lights and buildings. A prominent bridge with blue and green lighting is on the left. The city skyline includes several tall buildings, some with logos like 'ANZ' and 'PwC'. A tall, slender tower is visible on the right side of the skyline.

TOD - Decision Support Tool

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Principal Transport Planner at AECOM



- Road building
- Car parking
- Lower density
- Decentralisation



- Public transport
- Cycle networks
- Roadspace reallocation



- Public realm
- Street activities
- Traffic restraint
- ToD/mixed use developments



Government Policy Statement on LAND TRANSPORT

Key outcomes of Safety

Primary outcome

Healthy and safe people

Co-benefits

Inclusive access

Economic prosperity

Resilience and security

Key outcomes of Better Travel Options

Primary outcome

Inclusive access

Co-benefits

Healthy and safe people

Environmental sustainability

Economic prosperity

Resilience and security

Strategic Priority: Climate Change

Climate Change priority: Transforming to a low carbon transport system that supports emissions reductions aligned with national commitments, while improving safety and inclusive access.

Primary outcome

Environmental sustainability

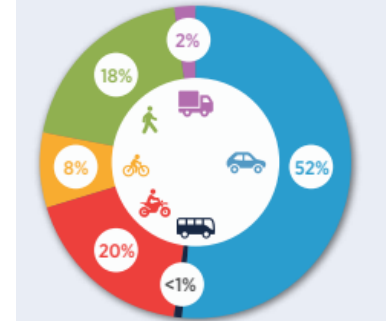
Co-benefits

Inclusive access

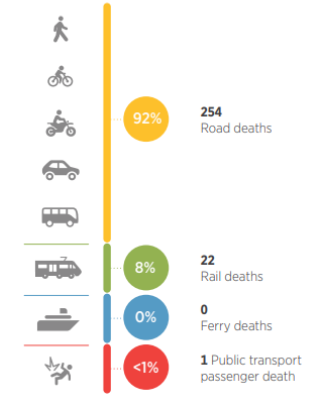
Healthy and safe people

Resilience and security

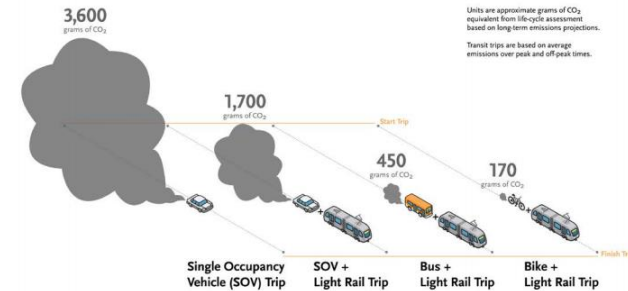
Auckland DSI by mode of injured person (2014 - 2018)



Transport deaths in Auckland (2014 - 2018)



Greenhouse Gas Emissions Per Person Per Trip



Improving how our cities respond to growth to enable improved housing affordability and community wellbeing

What is the National Policy Statement on Urban Development (NPS-UD)?

National direction that sets out objectives and policies for urban development under the Resource Management Act 1991. Councils must give effect to these objectives and policies.

Why do we need an NPS-UD?

Constraints in the planning system have made it harder for people to build and live in the homes they want, where they want. This has led to high land prices, unaffordable housing, and a system that incentivises land banking and speculation. It has also resulted in people having poor access to employment, education and social services. This impacts most on our poor, vulnerable and younger generations.

Where does it apply?

Some policies apply only to "Tier 1" local authorities in Auckland, Christchurch, Wellington, Tauranga and Hamilton. These include the most directive policies, particularly regarding intensification.

Others apply to both Tier 1 and Tier 2 (Napier-Hastings, Nelson, Whangarei, Palmerston North, New Plymouth, Rotorua, Dunedin, Queenstown).

The majority of policies, including carparking, apply to all urban environments that have, or are planned to have, more than 10,000 inhabitants.

Buildings in the city centre are taller and denser, giving more businesses and apartment dwellers a chance to work and live there, where productivity is highest.

Buildings within a walkable range from city centres, metropolitan centres and existing or planned rapid transit stops may now be six storeys, or higher.

The form of the city and the types of homes within it enables all people and communities to provide for their wellbeing, provides access to opportunity to all and evolves to reflect the diverse and changing needs of its inhabitants. This includes allowing Māori to express their cultural traditions and norms.

Across the city, height and density reflect demand and the level of accessibility by active and public transport.

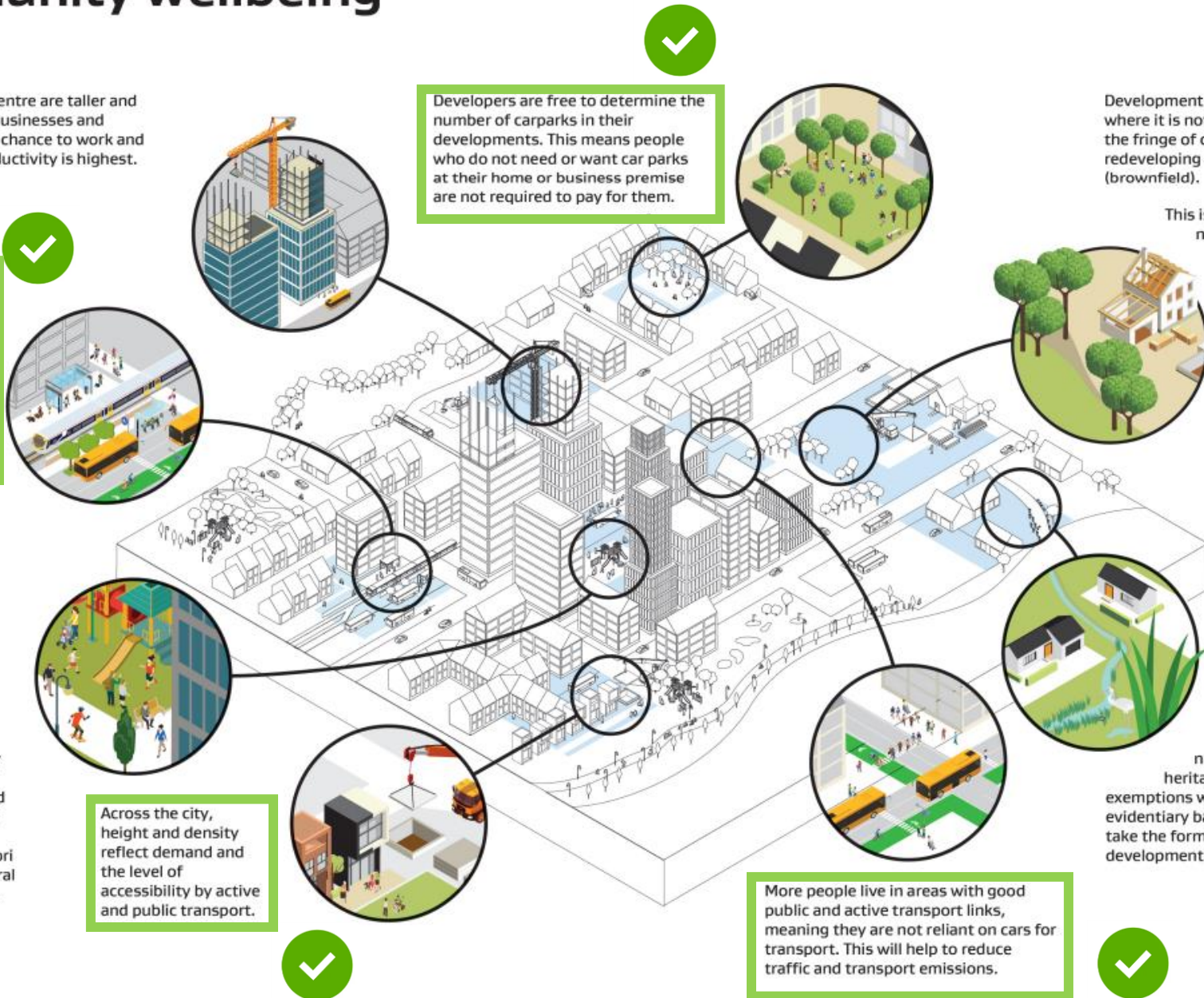
Developers are free to determine the number of carparks in their developments. This means people who do not need or want car parks at their home or business premise are not required to pay for them.

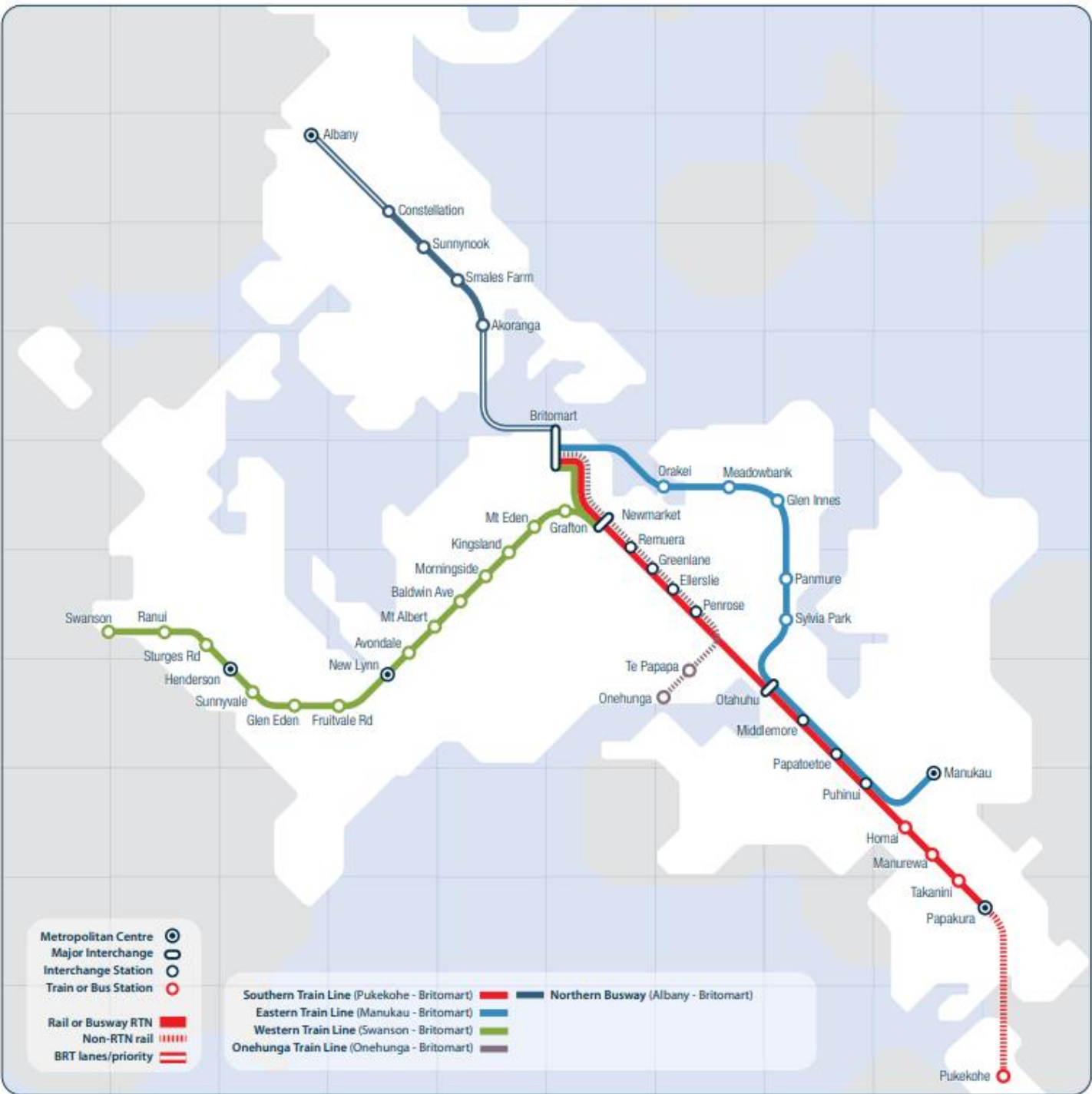
Development may occur even where it is not planned for, both on the fringe of cities (greenfield) or redeveloping already urban land (brownfield).

This is because councils need to be responsive to development that will provide significant numbers of new homes or business locations, and will contribute to good outcomes.

In some areas, plans may not enable the same levels of intensification. For example, areas with significant risks of natural hazards, or heritage buildings. Such exemptions will require an evidentiary basis, and are unlikely to take the form of a blanket ban on development.

More people live in areas with good public and active transport links, meaning they are not reliant on cars for transport. This will help to reduce traffic and transport emissions.





- Metropolitan Centre
- Major Interchange
- Interchange Station
- Train or Bus Station
- Rail or Busway RTN
- Non-RTN rail
- BRT lanes/priority

- Southern Train Line (Pukekohe - Britomart)
- Eastern Train Line (Manukau - Britomart)
- Western Train Line (Swanson - Britomart)
- Onehunga Train Line (Onehunga - Britomart)
- Northern Busway (Albany - Britomart)

The big 'F' word **Funding**

How can we decide where we will invest?

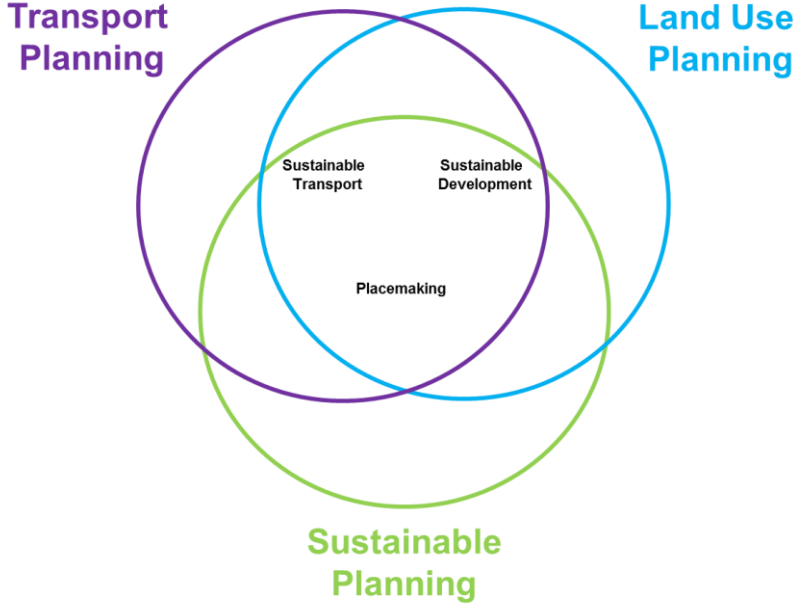
- Funding complexity with many private and public stakeholders
- Why should this station get the investment and not another one?
- It is not always clear what is good, bad or ugly and how to assess it
- Station Typology: Road hierarchy example
- Need for cross-sector Decision Support Tools to consistently guide operational and investment decisions around transit hubs to deliver desired outcomes

TRADITIONAL PLANNING



VS

CROSS-SECTOR PLANNING



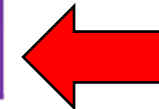
Direction of Travel



Review of International
Decision Support Tools for
Transit hubs and surrounding facilities

Review of International Decision Support Tools for Transit Hubs

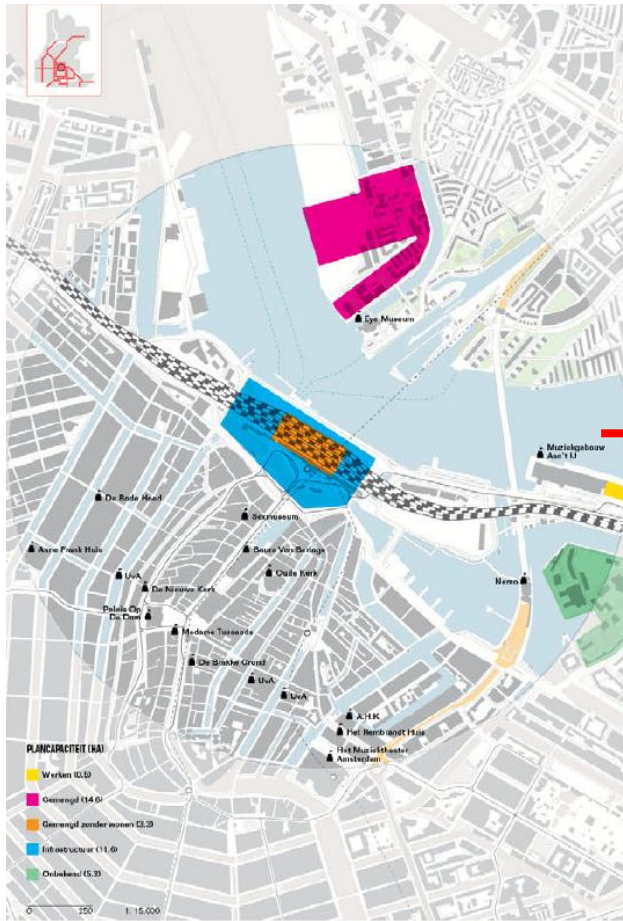
Applications	Transport						Land Use					Other Measures			
	Pedestrian	Cycle	Car	Bus/Tram and Underground	Train	Other	Population	Jobs	Functional Mix	Other	Forecasting	Catchment area (m)	Number of Stations	Total Node Indicators	Total Place Indicators
Academic Circles															
Bertolini	Netherlands, Switzerland, Japan, Australia,														
Peek et al.	Iran, Portugal, Germany, Italy, China, Canada,														
Reusser	United States														
Chorus and															
Cheng et al.															
Kamruzzar															
Monajem and Nosratan 2015											700m	79	5	3	
Vale 2015	1										700m	83	8	6	
Papa and Bertolini, 2015		2									30km	-	9	4	
Lyu, 2016	2		2	1	4	1	2	5	1		700m	268	10	8	
Higgins and Kanaroglou, 2016	1					1	1	1		4	800m	372	2	6	
Professional Circles															
GB Arrington et al., 2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reconnecting America, 2016				2	1					1	400m & 800m	-	3	1	
Center for Transit-Oriented Development, 2010			2			1	1	1			800m	-	3	2	
Institute for Transportation and Development Policy, 2017	9	4	3				2			7	500 & 1000m	-	16	9	
Academic + Professional Circles															
Deltametropolis Association, 2013	2	2	5	6	10	1	2	2		5	1	300m, 1200m & 3200m	64	26	9



Maak Plaats: Butterfly Model

Transport

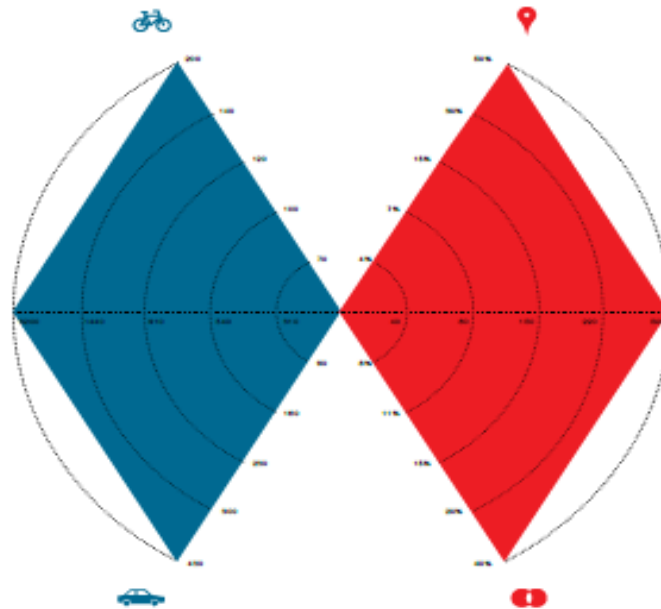
Land Use



SLOW TRAFFIC
Presence of bicycle storage, bicycle rental, and rail crossings, network density within 300 meters

PROXIMITY
Intensity of use in the first 300 meters with respect to the total

PUBLIC TRANSPORT
Presence, frequency and directions of public transport modes

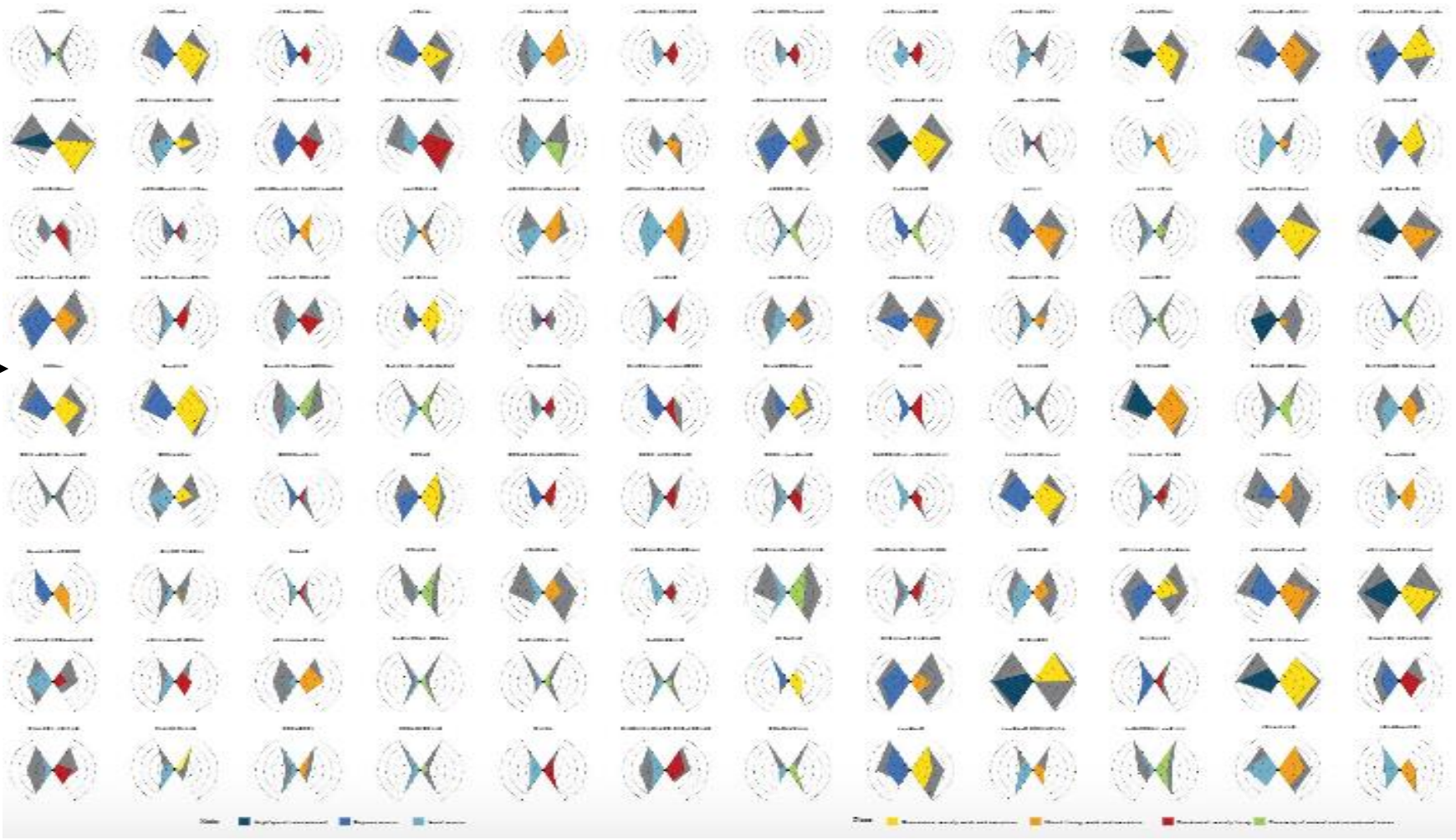
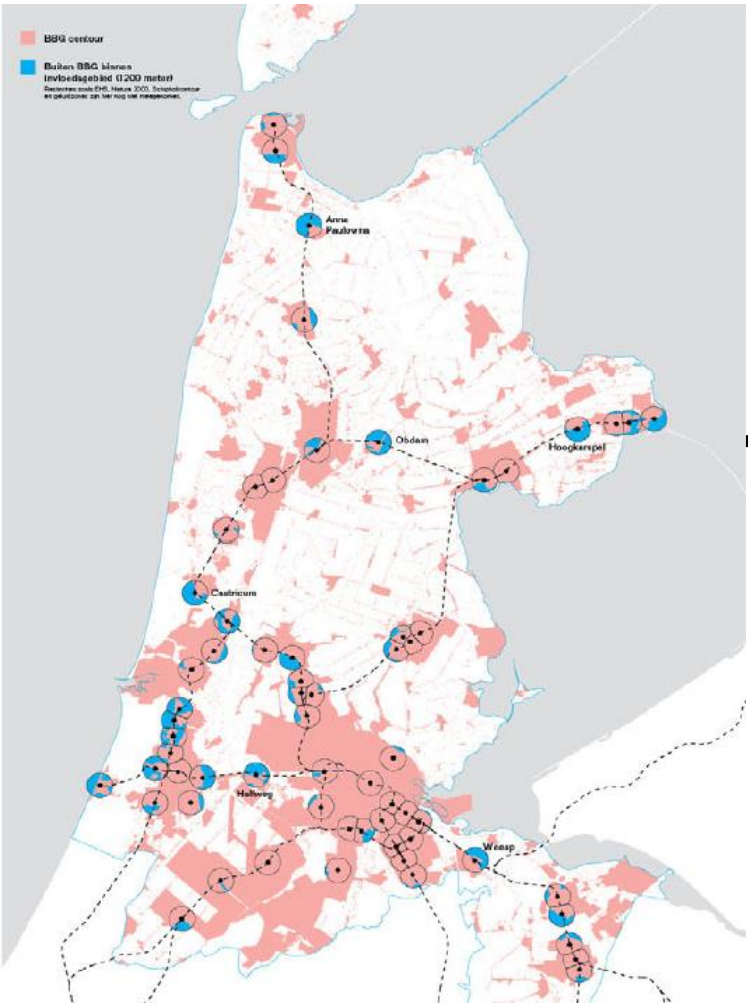


INTENSITY
Density of inhabitants, employees, visitors bezoekers

ROADS
Presence of highways, highway exits, regional roads and parking facilities

DIVERSITY
Ratio of inhabitants and employees per hectare

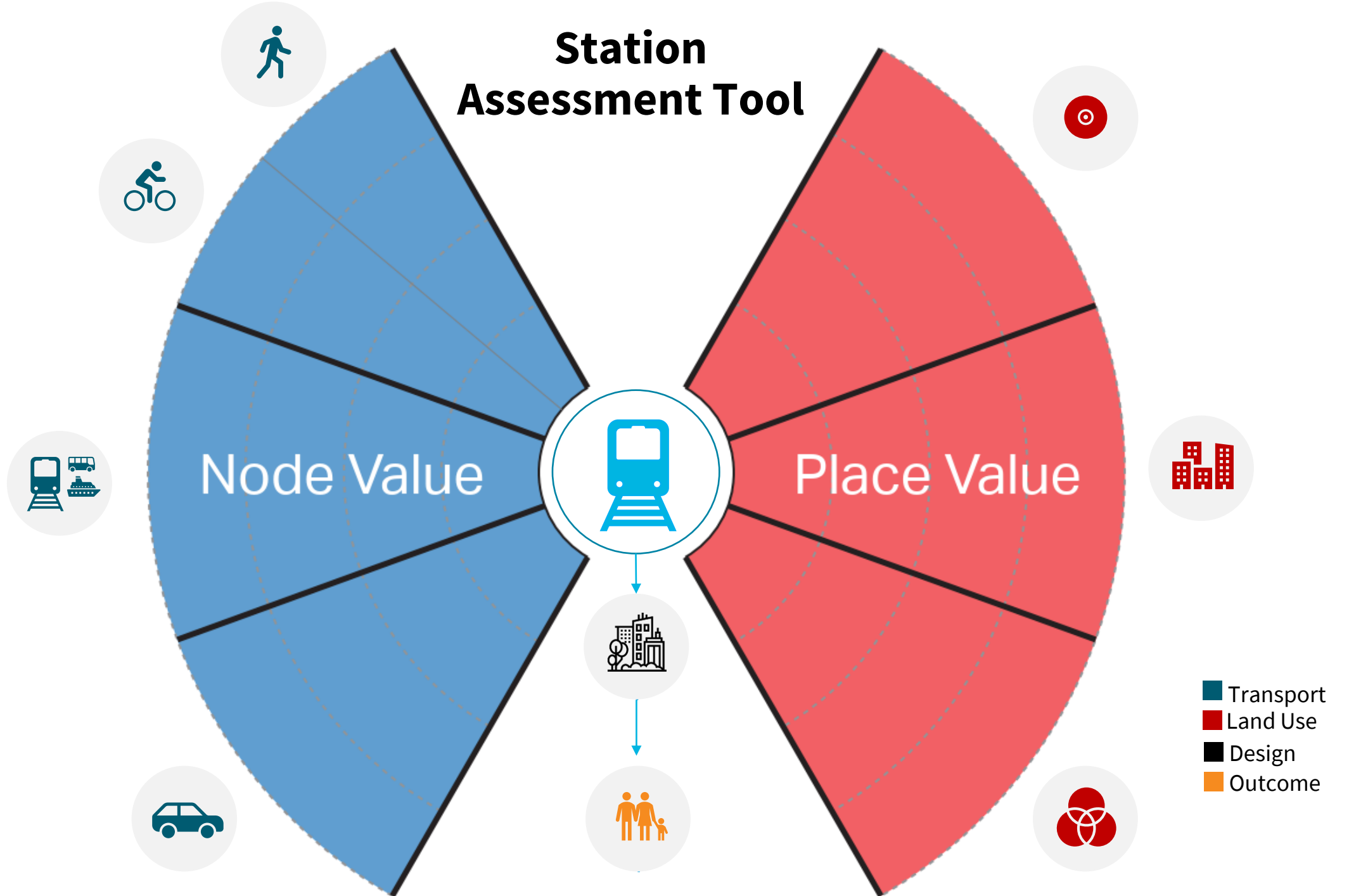
Butterfly Model Applied in Netherlands

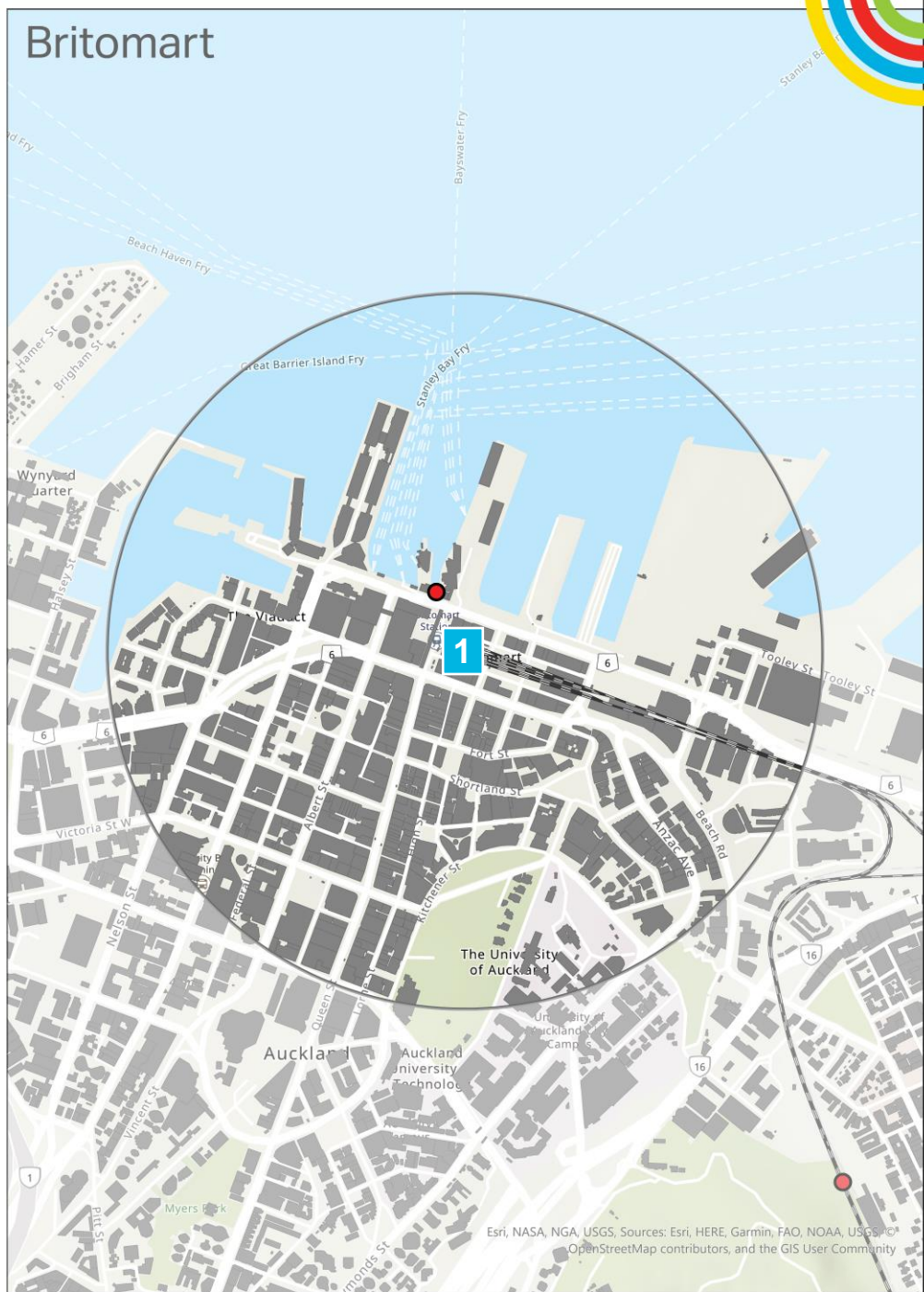


Quality Station



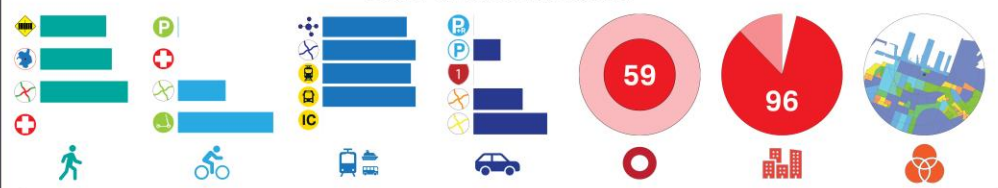
Station Assessment Tool



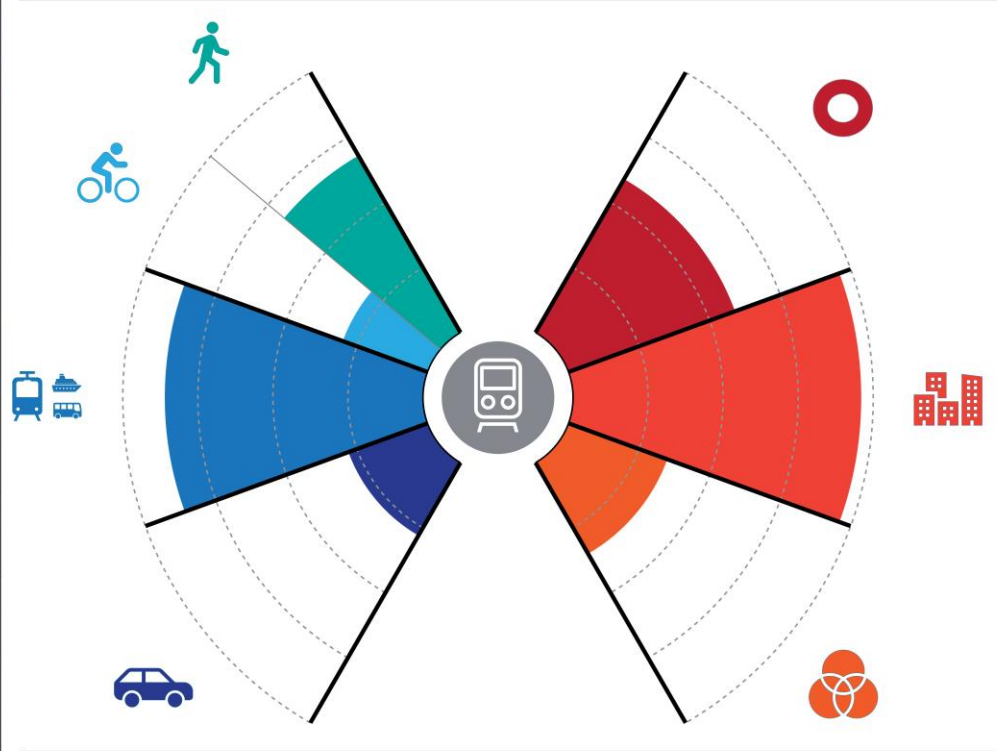


Britomart

Current Situation



2



3

Key Deficiencies



4

Potential Applications

- 👍 TOD - Decision Support Tool (integrated with transport and land use outcomes)
- 👍 Simplify decision making for all stakeholders but still based in strong evidence
- 👍 Ongoing measuring tool (baseline and future investment)
- 👍 Works well with advancing transport and land use policy outcomes
- 👍 Use results to guide investment and planning decisions
- 👍 Superb tool to support the NPS-UD Intensification Process and delivering better outcomes

Questions?



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