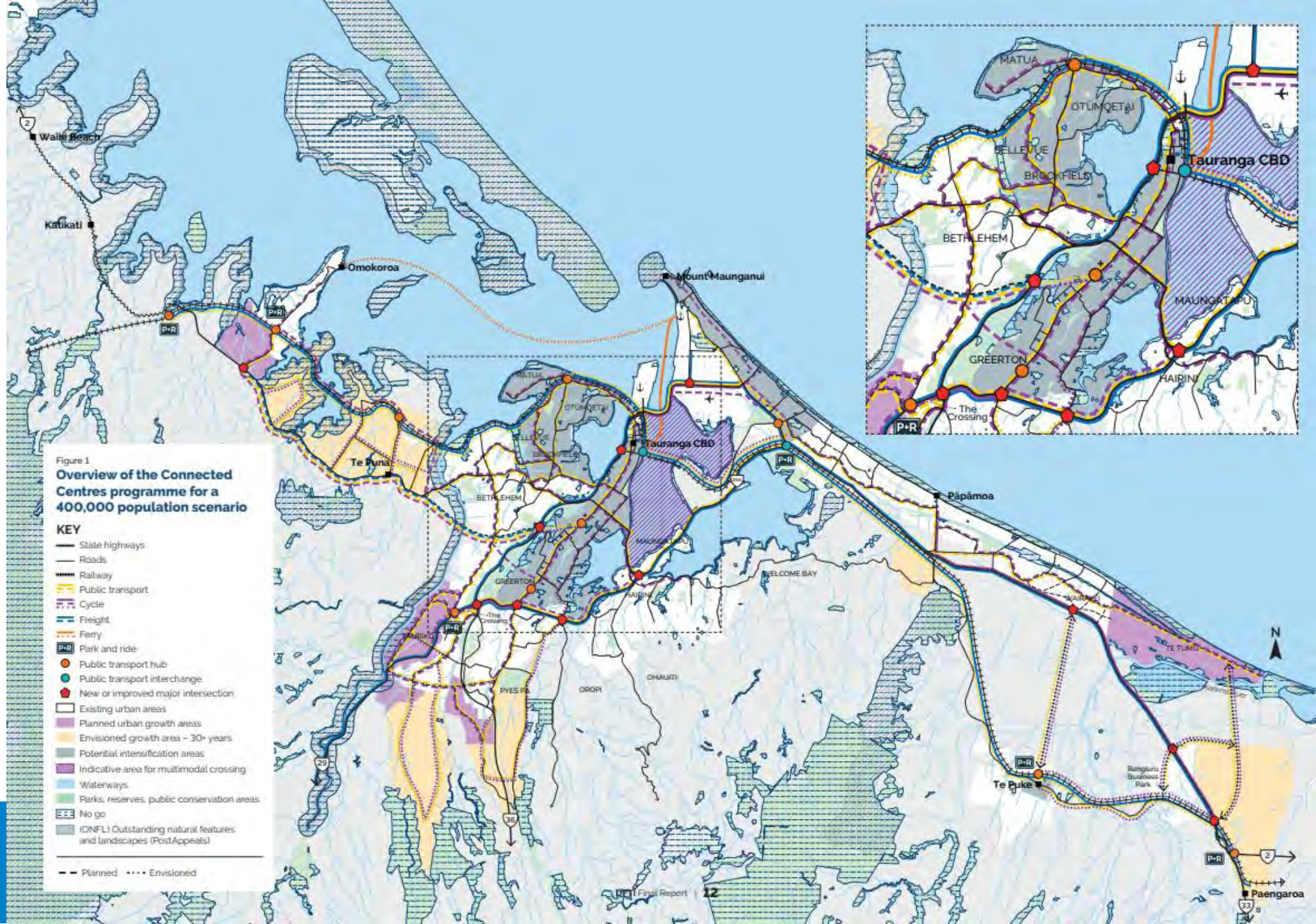
A tool to effectively design streets for people movement

Traffinz conference, August 2023

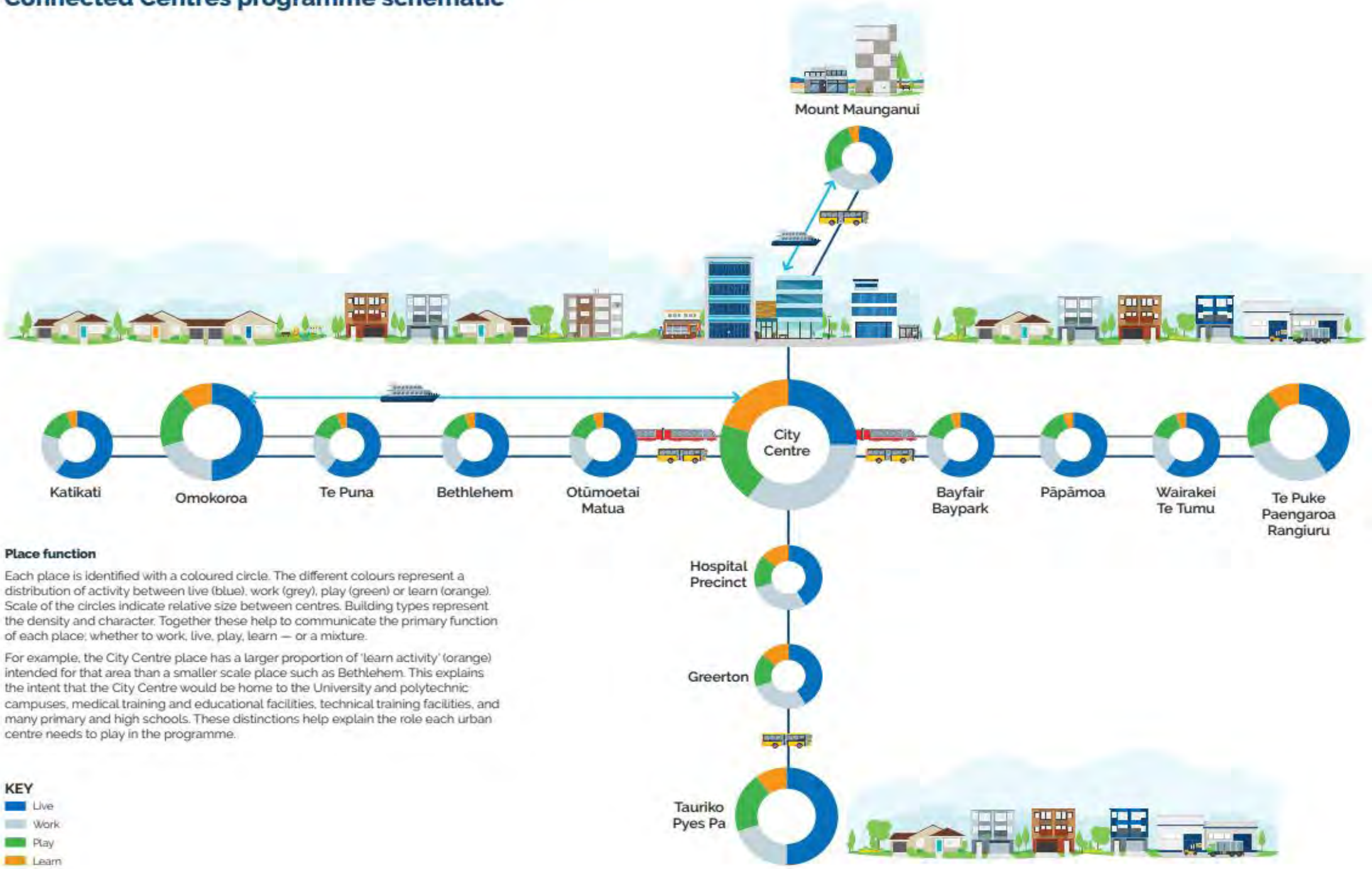
Tauranga City


UFTI
Urban Form +
Transport Initiative
&
tsp
The Western Bay of Plenty
transport
system plan

Connected Centres approach



Connected Centres programme schematic



Place function

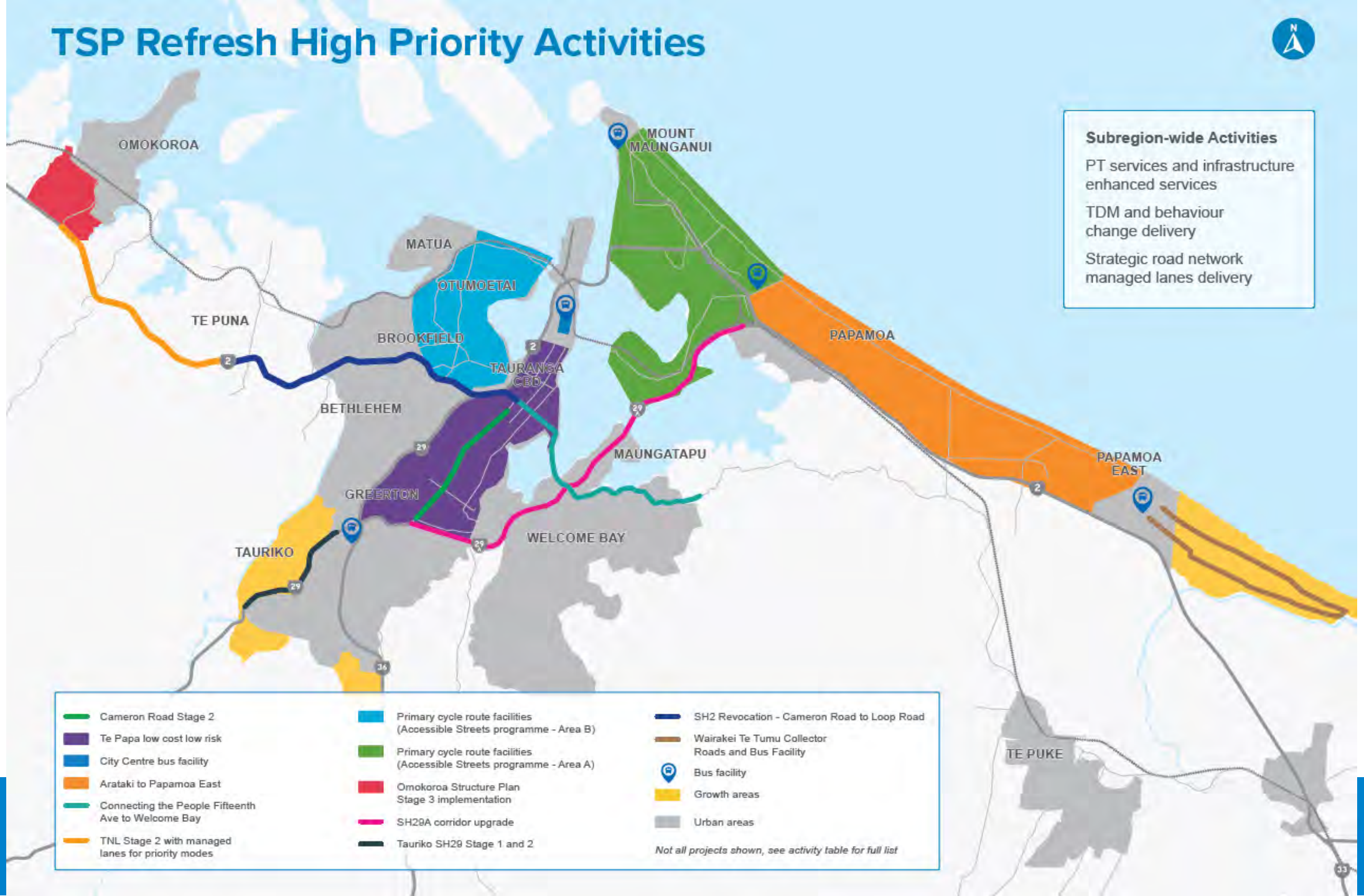
Each place is identified with a coloured circle. The different colours represent a distribution of activity between live (blue), work (grey), play (green) or learn (orange). Scale of the circles indicate relative size between centres. Building types represent the density and character. Together these help to communicate the primary function of each place; whether to work, live, play, learn — or a mixture.

For example, the City Centre place has a larger proportion of 'learn activity' (orange) intended for that area than a smaller scale place such as Bethlehem. This explains the intent that the City Centre would be home to the University and polytechnic campuses, medical training and educational facilities, technical training facilities, and many primary and high schools. These distinctions help explain the role each urban centre needs to play in the programme.

KEY

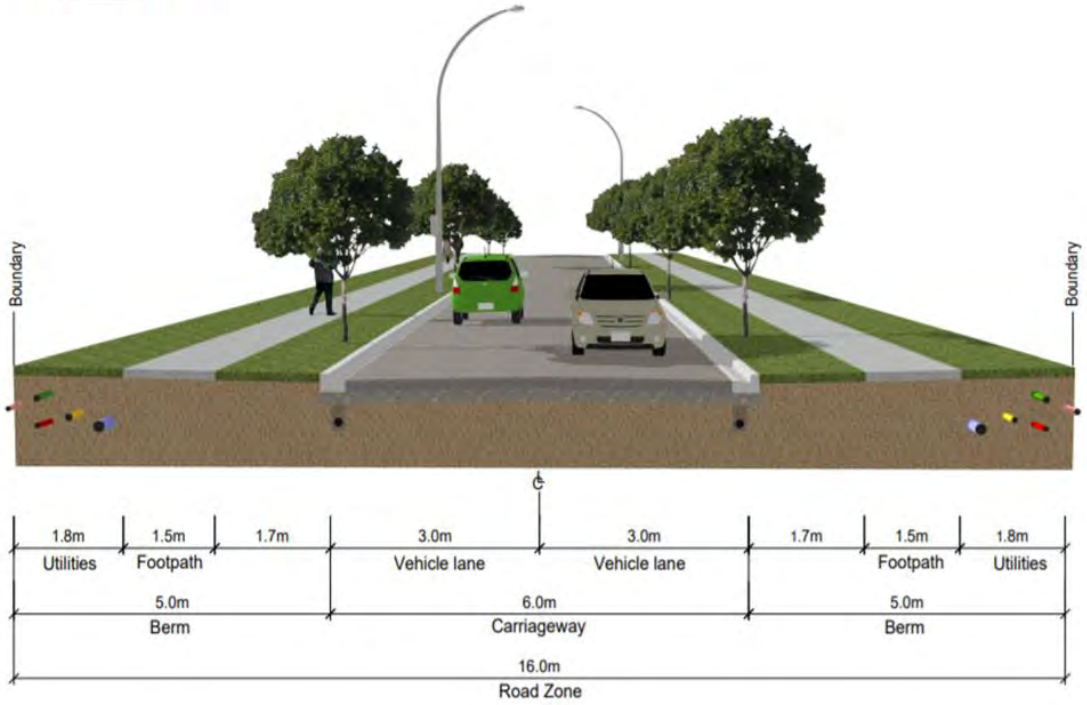
- Live
- Work
- Play
- Learn

TSP Refresh High Priority Activities



Why did we initiate this project?

Growth – Medium/High Density Development



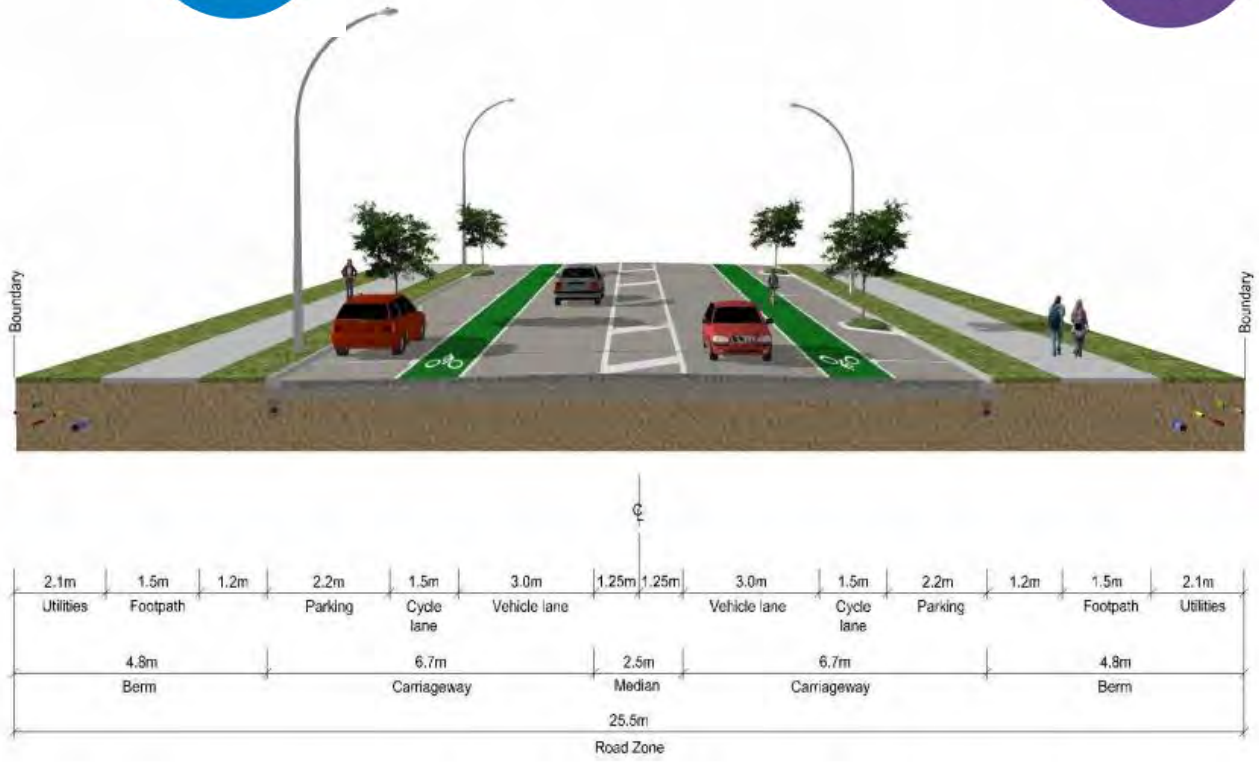
TAURANGA CITY
Infrastructuredevelopmentcode

Why did we initiate this project?

Activity and exercise

Travel choices

Safety



TAURANGA CITY Infrastructuredevelopmentcode

Why did we initiate this project?

- Environmental Outcomes
- Amenity
- Utilities
- Identity and Character
- Connecting communities

Process

- **TCC Project Sponsors:** GM's

  Growth / Infrastructure / Regulatory

- **Steering Group**
  - TCC Managers
  - Utility Operator Forum
  - Property Developers Forum

Project deliverables

Street design guide

Project deliverables

Street design guide

Street design tool

Project deliverables

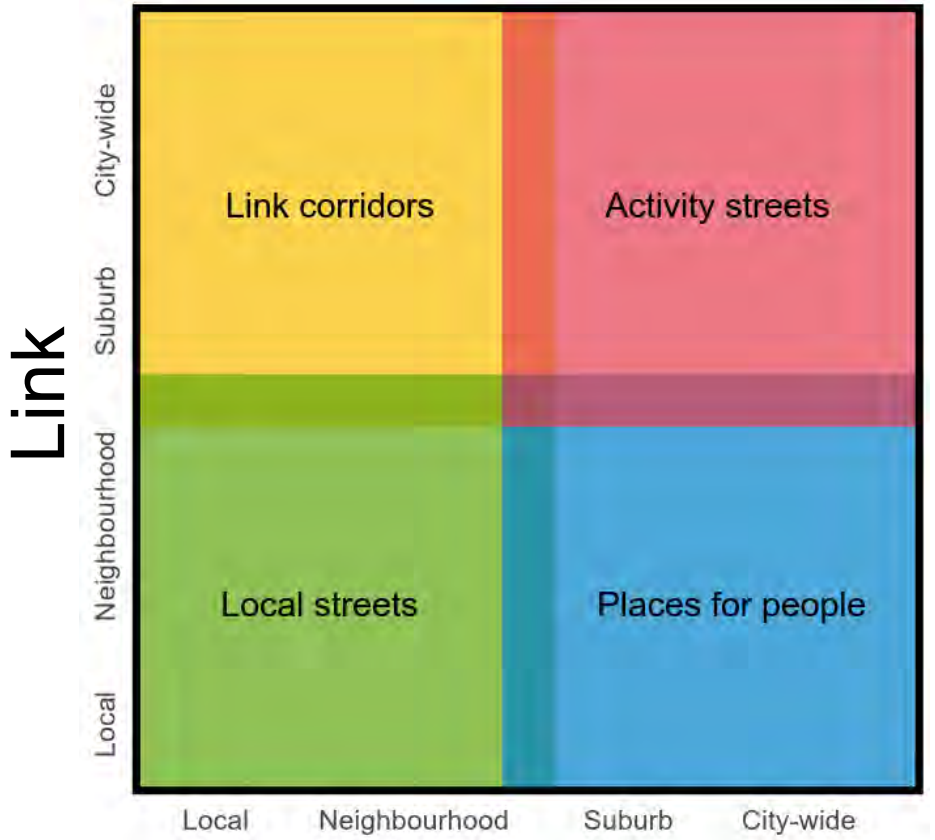
Street design guide

Design Principle

Aligned with the

Tauranga Moana Principles

Street Typologies



Street design tool

Example:

Gloucester Road

- Residential land use

- Local Street

Street design tool

https://streetdesigntool.tauranga.govt.nz/

Welcome to the Tauranga's street design tool. We recommend you keep the Street design guide on hand for reference and explanation. Fill out the fields below, draw the street segment of the street you are designing and click next to go to the following step. Once you have completed all the steps, create a report to include in your consent application. You can save your design to import at a later date, although some selections may no longer apply if the tool has been updated. Once you have completed the design you can return to this page to add additional comments.

Project details

Project name: New road section

Contact phone number: 077555000

Street reference: Gloucester road

Email address: sarah.dove@tauranga.govt.nz

Designer: Sarah

Revision number: 1

Company: Tauranga City Council

Revision date: 21/04/2021

Additional comments:

Design location

Use the search box to find the location of the street you are designing (where existing). Use the draw a polyline button to draw the location of your street segment (typically interseciton to intersection), this street segment will be used to generate your street parameters.

1

STREET SEGMENT

We have selected your link and place status indicators and overlay inputs based on your street location and available GIS information. Refer to the street desig
indicators to finalise your street typology. A reason for changing from the automated source information will be required. Inputs with red frames and exclamatio
All indicators have to be reviewed, but note that the GIS source layers for "Buses per hour", "Freight", "On cycle plan", "Overland flow path" and "Located with
DUMMY information is being used in this version of the tool. Where the street is an existing dual carriageway, please review and update the “Anticipated” traffic

Link status

Road classification	Collector
"Anticipated" traffic volumes (per day)	1000-5000
Requirement for vehicle access to properties	High importance for access to properties
Buses per hour	1-6
	bus route likely
Freight	Neither
On cycle plan or planned key cycle route	Yes

2
LINK AND PLACE STATUS

Place status

Residential	Medium density character/retirement (15-25dph)
	retirement village
Retail	Local centre, e.g. 1-3 shops
	dairy, pharmacy, cafe
Commercial	None
Industrial	None
Education	None
Recreation	Local park/playground
Civic, community or medical	None
What is the catchment of people who come to spend time in this street?	People from the neighbourhood

2

LINK AND PLACE STATUS

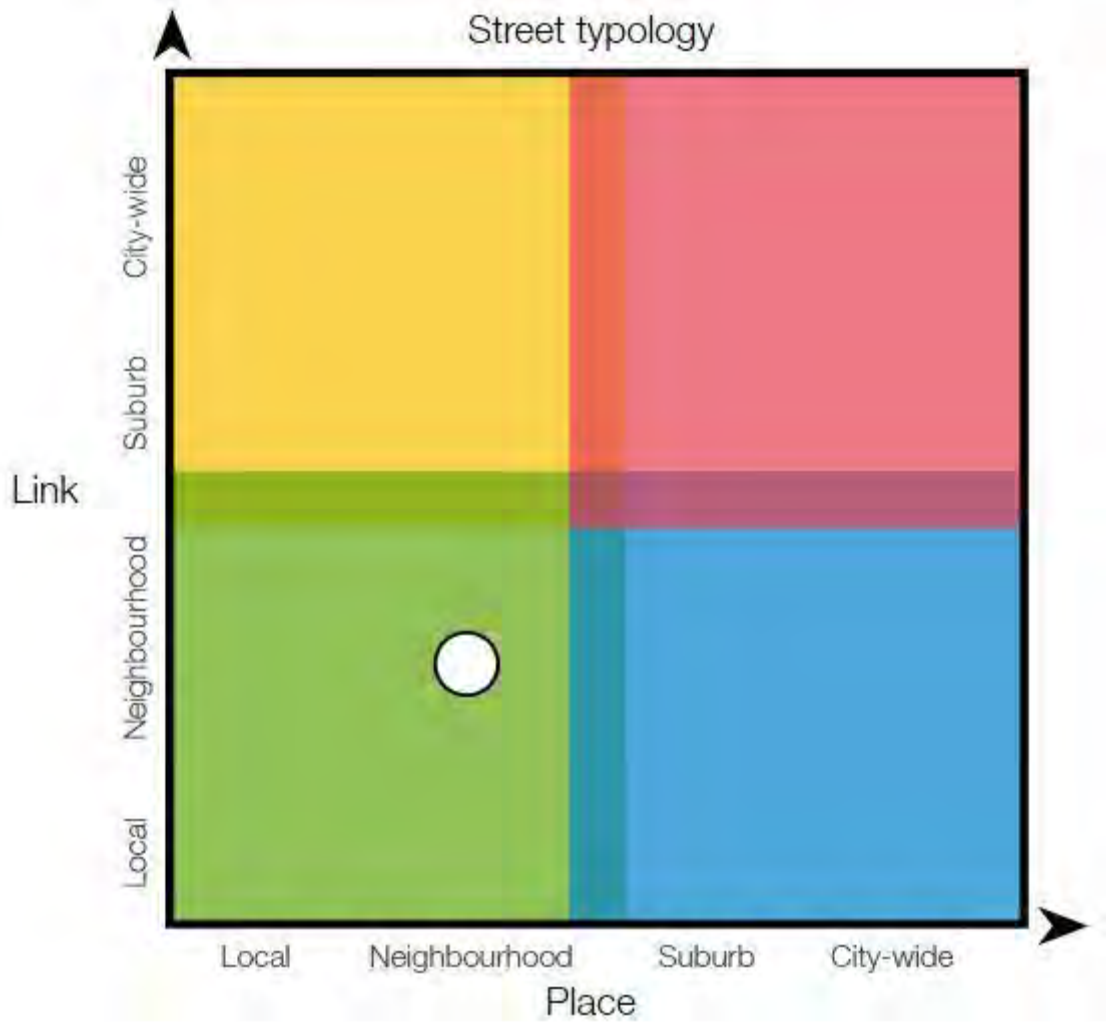
Overlays

Located within the commercial business sub-zone	No
Located within the city centre waterfront sub-zone	No
Located within 500m of the coastline	No
Located within 200m of a river/estuary/wetland/lake	No
Located within 500m of a marae	No
Located within 500m of a school or hospital	Yes
Located within 500m of an outstanding natural features and landscapes plan area	No
Located within or adjacent to a significant māori area	No
Located within or adjacent to a significant archaeological area	No
Located within or adjacent to an important amenity landscape area	No
Located adjacent to a commercial plan area	No
Located adjacent to a high rise plan area	No
Location adjacent to a medium rise plan area	Yes
Located within or adjacent to a special ecological area	No
Overland flow path	Major
Located within or adjacent to stormwater soakage decommissioning zone	No

2

LINK AND PLACE STATUS

Street design tool



2

LINK AND PLACE STATUS

Street design tool

Link and place element ranking

1 STREET SEGMENT — 2 LINK AND PLACE STATUS — 3 LINK ELEMENT SELECTION — 4 PLACE ELEMENT SELECTION — 5 UTILITIES LOCATION SELECTION — 6 REPORT

Next

Street typology: LOCAL STREETS

View and select the link elements required for your street design.
1. Click a category heading to expand.
2. Select relevant elements, "Mandatory" elements have been pre-selected. You cannot select any "Prohibited" elements.
3. When not selecting "Mandatory unless criteria met" or selecting "Prohibited unless criteria met" elements, document reasons by clicking on the element and completing the drop-down list. Note, this step is not required where this element is either "Mandatory" or "Prohibited".
Categories with an exclamation mark (!) and elements with a red frame must be resolved before you can move to the next screen.

Please note: For private roads all elements selected will be maintained and renewed by the residents with a body corporate or similar legal entity established.

Movement lane elements

Design diagrams and descriptions

Select one element

Indicator	Dual carriageway (two lanes in each direction)	One lane in each direction, with centreline	Two-way street, with no centreline marking	Single lane street, two-way with passing bays	Single lane street, one-way	Shared lane	Shared plaza
Road classification: Collector	Acceptable and preferred	Mandatory unless criteria met	Acceptable but not preferred	Prohibited	Prohibited	Prohibited	Prohibited unless criteria met
"Anticipated" traffic volumes (per day): 1000-5000	Acceptable but not preferred	Mandatory unless criteria met	Acceptable but not preferred	Prohibited	Prohibited	Prohibited unless criteria met	Prohibited unless criteria met
Buses per hour: 1-6	Prohibited unless criteria met	Mandatory unless criteria met	Prohibited unless criteria met	Prohibited unless criteria met	Prohibited unless criteria met	Prohibited unless criteria met	Acceptable but not preferred
On cycle plan or planned key cycle route: Yes	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Overland flow path: Major	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Located within or adjacent to stormwater soakage decommissioning zone: No	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Driving elements

Design diagrams and descriptions

Walking elements (!)

Design diagrams and descriptions

Cycling elements (!)

Design diagrams and descriptions

Bus elements (!)

Design diagrams and descriptions

Traffic calming elements (!)

Design diagrams and descriptions

Vehicle design speed (!)

Design diagrams and descriptions

Stormwater elements (!)

Design diagrams and descriptions

Walking elements

Select one element

Indicator	Footpath shared with carriageway	Footpath on one side of the street	Footpath on both sides of the street
Road classification: Collector	Not Applicable	Prohibited unless criteria met	Mandatory unless criteria met
"Anticipated" traffic volumes (per day): 1000-5000	Not Applicable	Prohibited unless criteria met	Mandatory unless criteria met
Buses per hour: 1-6	Not Applicable	Prohibited unless criteria met	Mandatory unless criteria met
On cycle plan or planned key cycle route: Yes	Not Applicable	Not Applicable	Not Applicable
Overland flow path: Major	Not Applicable	Not Applicable	Not Applicable
Located within or adjacent to stormwater soakage decommissioning zone: No	Not Applicable	Not Applicable	Not Applicable

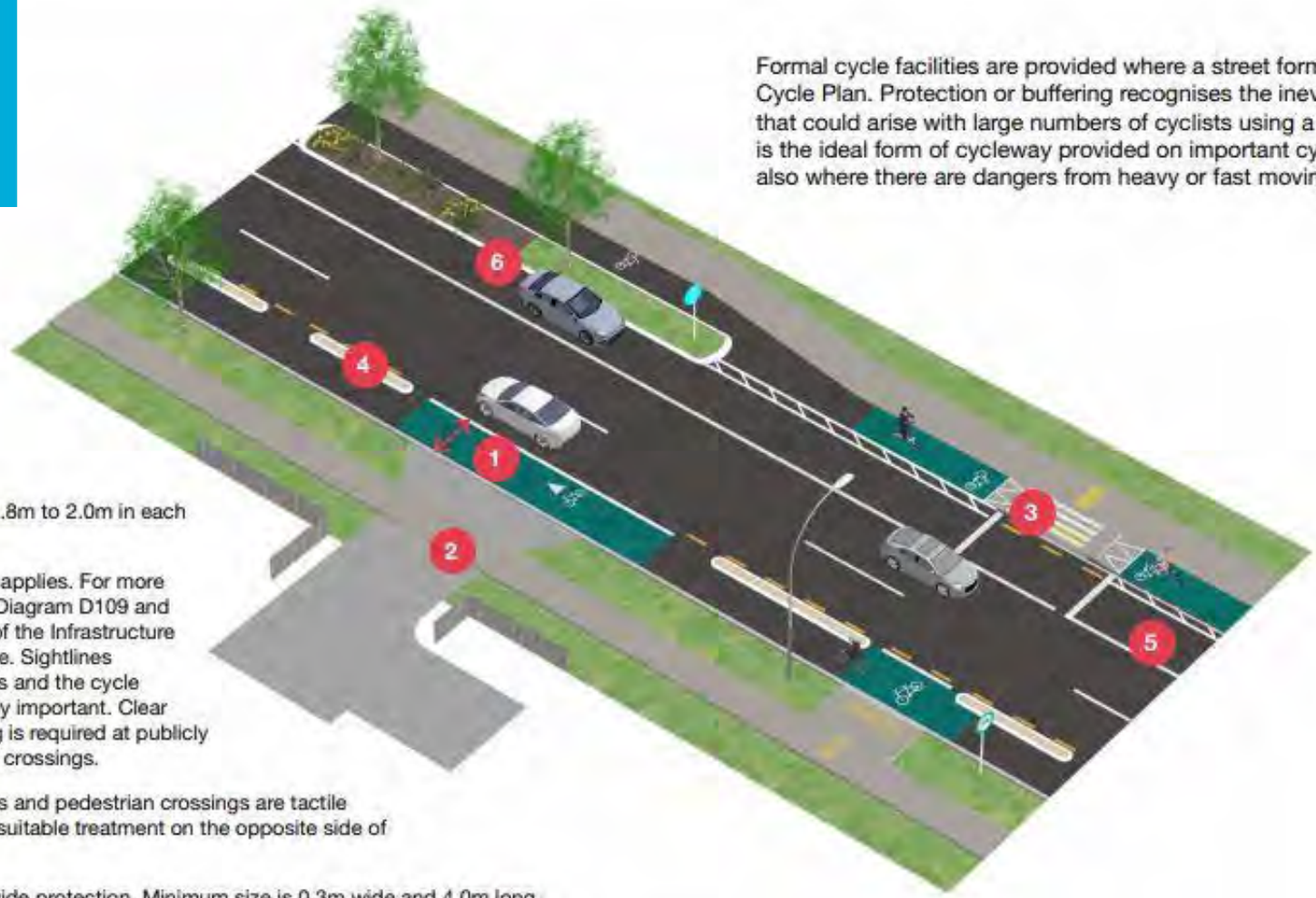
Cycling elements

Select all elements that apply

Indicator	Combined pedestrian and cycle path	Cyclists sharing the carriageway	Marked cycle lane	Protected or buffered cycle lane	Cycle path provided outside of the street corridor
Road classification: Collector	Not Applicable	Prohibited unless criteria met	Acceptable and preferred	Mandatory unless criteria met	Acceptable and preferred
"Anticipated" traffic volumes (per day): 1000-5000	Not Applicable	Acceptable but not preferred	Acceptable and preferred	Mandatory unless criteria met	Not Applicable
Buses per hour: 1-6	Not Applicable	Prohibited unless criteria met	Acceptable and preferred	Mandatory unless criteria met	Not Applicable
On cycle plan or planned key cycle route: Yes	Prohibited unless criteria met	Not Applicable	Acceptable and preferred	Mandatory unless criteria met	Acceptable and preferred
Overland flow path: Major	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Located within or adjacent to stormwater soakage decommissioning zone: No	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Design diagrams

Formal cycle facilities are provided where a street forms part of the Cycle Plan. Protection or buffering recognises the inevitable conflict that could arise with large numbers of cyclists using a busy street. This is the ideal form of cycleway provided on important cycling routes and also where there are dangers from heavy or fast moving vehicles.



1. Cycle lane width 1.8m to 2.0m in each direction.
2. Access restriction applies. For more detail see Design Diagram D109 and section DS-4.8.1 of the Infrastructure Development Code. Sightlines between driveways and the cycle lane are particularly important. Clear cycle lane marking is required at publicly accessible vehicle crossings.
3. Footpath crossings and pedestrian crossings are tactile and marked, with suitable treatment on the opposite side of the street.
4. Concrete can provide protection. Minimum size is 0.3m wide and 4.0m long.
5. Formal car parking spaces can provide protection. A car park buffer strip of at least 0.6m wide is required.
6. Grass or vegetation can provide protection. Trees and other structures within 3.0m of the cycle lane require clear space of 2.5m height. Minimum width for vegetated buffer island is 2.5m. Tree species to be selected from the cycle-friendly list (e.g. no falling fruit or similar objects; refer TCC Species Guide).

Cycling elements

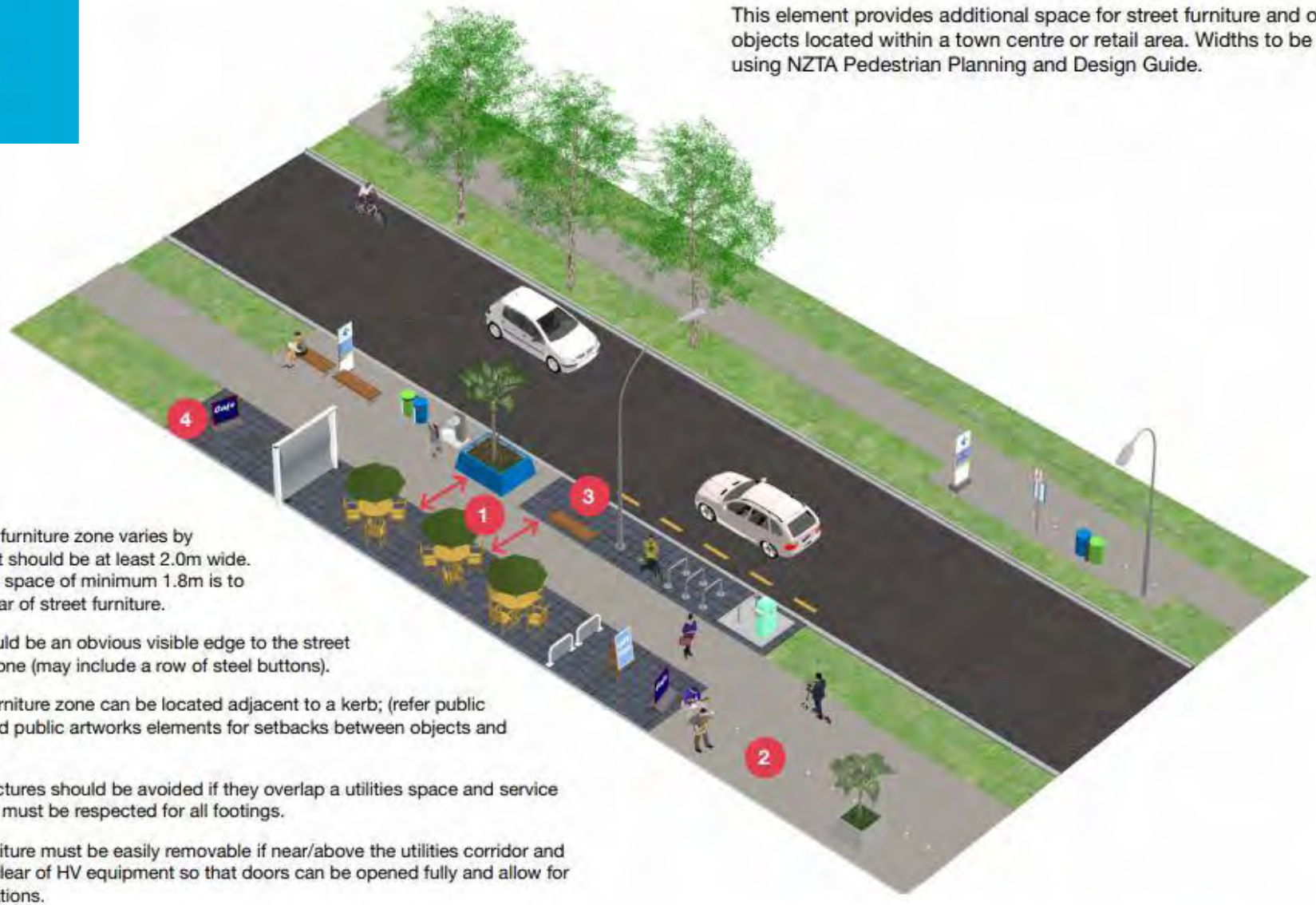
Protected or buffered cycle lane

Infrastructure Development Code Street Design Diagrams	D118	
	October 2020	Draft

Tauranga City

Design diagrams

This element provides additional space for street furniture and other objects located within a town centre or retail area. Widths to be defined using NZTA Pedestrian Planning and Design Guide.



1. The street furniture zone varies by activity but should be at least 2.0m wide. A footpath space of minimum 1.8m is to remain clear of street furniture.
2. There should be an obvious visible edge to the street furniture zone (may include a row of steel buttons).
3. A street furniture zone can be located adjacent to a kerb; (refer public seating and public artworks elements for setbacks between objects and the kerb).
4. Fixed structures should be avoided if they overlap a utilities space and service envelopes must be respected for all footings.

Street furniture must be easily removable if near/above the utilities corridor and must ·be clear of HV equipment so that doors can be opened fully and allow for safe operations.

Hard landscape elements

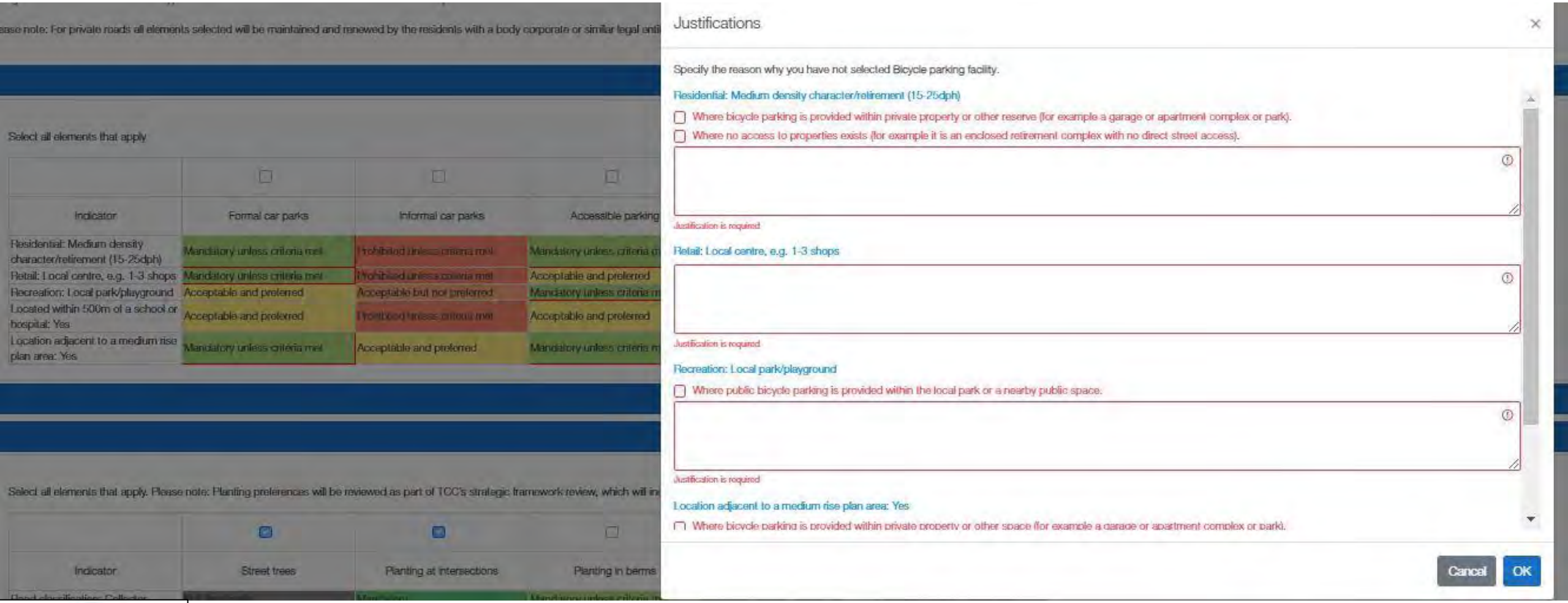
Street furniture zone

Infrastructure Development Code
Street Design Diagrams

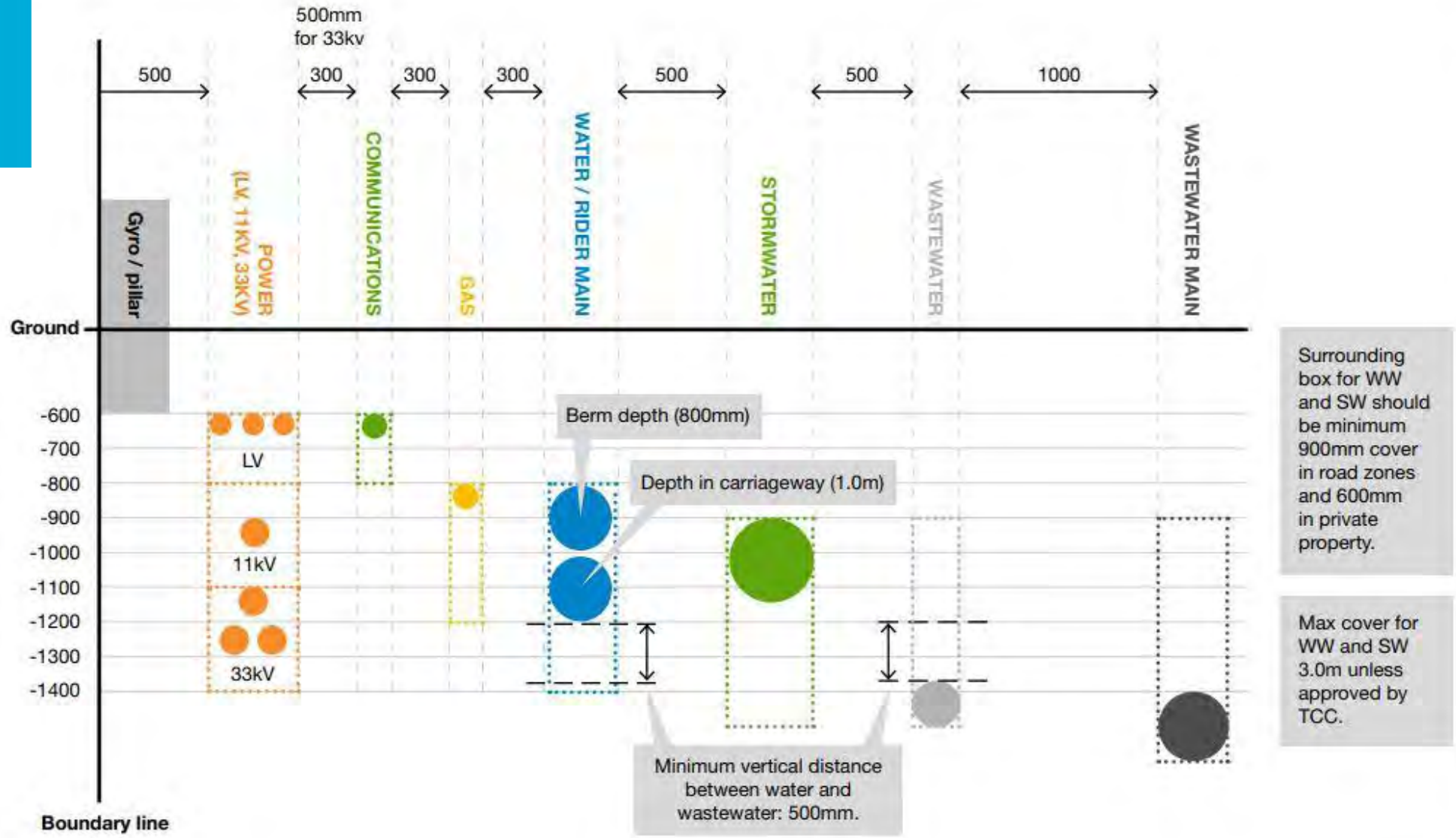
D140

October 2020 | Draft

Tauranga City


ease note: For private roads all elements selected will be maintained and renewed by the residents with a body corporate or similar legal enti
Select all elements that apply
Indicator
Formal car parks
Informal car parks
Accessible parking
Residential: Medium density character/retirement (15-25dph)
Mandatory unless criteria met
Prohibited unless criteria met
Mandatory unless criteria
Retail: Local centre, e.g. 1-3 shops
Mandatory unless criteria met
Prohibited unless criteria met
Acceptable and preferred
Recreation: Local park/playground
Acceptable and preferred
Acceptable but not preferred
Mandatory unless criteria
Located within 500m of a school or hospital: Yes
Acceptable and preferred
Prohibited unless criteria met
Acceptable and preferred
Location adjacent to a medium rise plan area: Yes
Mandatory unless criteria met
Acceptable and preferred
Mandatory unless criteria
Select all elements that apply. Please note: Planting preferences will be reviewed as part of TCC's strategic framework review, which will in
Indicator
Street trees
Planting at intersections
Planting in berms
Justifications
Specify the reason why you have not selected Bicycle parking facility.
Residential: Medium density character/retirement (15-25dph)
Where bicycle parking is provided within private property or other reserve (for example a garage or apartment complex or park).
Where no access to properties exists (for example it is an enclosed retirement complex with no direct street access).
Justification is required
Retail: Local centre, e.g. 1-3 shops
Justification is required
Recreation: Local park/playground
Where public bicycle parking is provided within the local park or a nearby public space.
Justification is required
Location adjacent to a medium rise plan area: Yes
Where bicycle parking is provided within private property or other space (for example a garage or apartment complex or park).
Cancel
OK

Design diagrams



Utilities elements

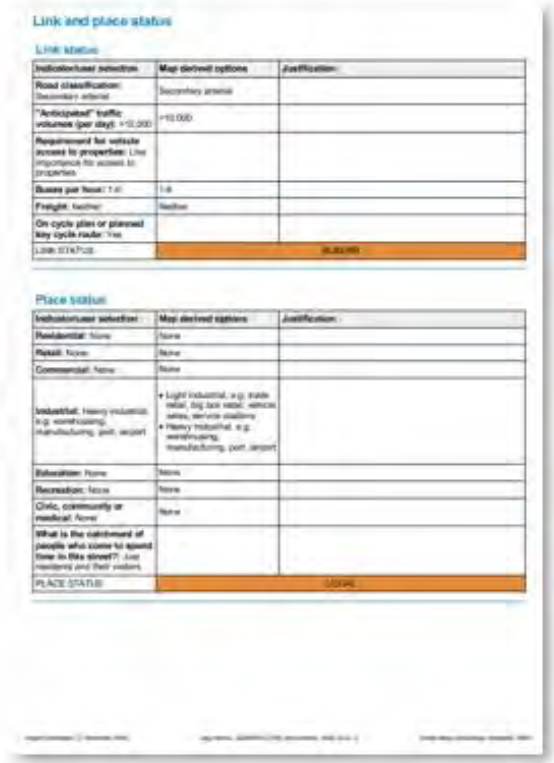
Standard utilities arrangement

Infrastructure Development Code
Street Design Diagrams

D154

October 2020 | Draft

Tauranga City



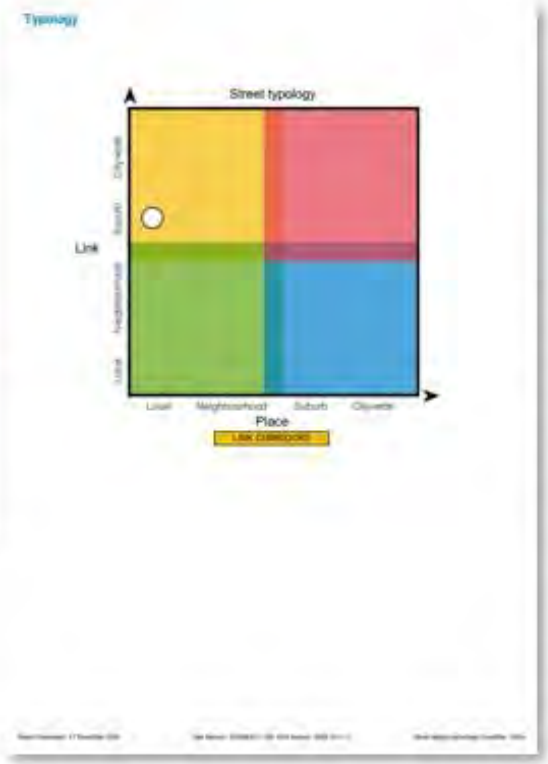
Link and place status

Link status

Indicator/user selection	Map derived options	Justification:
Road classification: Secondary arterial	Secondary arterial	
"Anticipated" traffic volumes (per day): >10,000	>10,000	
Requirement for vehicle access to properties: Low importance for access to properties		
Buses per hour: 1-6	1-6	
Freight: Neither	Neither	
On-cycle plan or planned key cycle route: Yes		
LINK STATUS	[redacted]	

Place status

Indicator/user selection:	Map derived options:	Justification:
Residential: None	None	
Retail: None	None	
Commercial: None	None	
Industrial: Heavy industrial, e.g. warehousing, manufacturing, port, airport	• Light industrial, e.g. trade retail, big box retail, vehicle sales, service stations • Heavy industrial, e.g. warehousing, manufacturing, port, airport	
Education: None	None	
Recreation: None	None	
Civic, community or medical: None	None	
What is the catchment of people who come to spend time in this street?: Local residents and their visitors		
PLACE STATUS	[redacted]	



Typology

Utility selection

Utility owned power

Location	Selected	Desirability	Use restrictions
Grass berm with other linear utilities.	✓	Acceptable and preferred	None
Planted berm with other linear utilities.	?	Allowed with justification	In discussion and with written approval from utility provider (including plant type). Planting not allowed that will impede access to and opening of the transformers and switch units (will not impact on operating the equipment and will allow for safe egress in a fault situation e.g. switch failure/flashover.
Footpath or off-road cycle path.	?	Allowed with justification	In discussion and with written approval from utility provider. Restrictions on footpath type – only plain concrete (with frequent expansion joints), bitumen or pavers unless overlay triggers "special" footpath surfaces".
Indented car parking.	?	Allowed with justification	In discussion and with written approval from utility provider. For high density developments consider future connections and maintenance requirements. Provide details/locations to utility provider for consideration during design. Utility may require ducting and spare ducts may be required.
Grass/planted berm, central median and roundabouts without linear utilities.	?	Not supported	None
Carriageway (including carriageway parking, cycle lanes and shared zones).	?	Prohibited	None
Raingarden.	?	Prohibited	None
Swale.	?	Allowed with justification	In discussion and with written approval from utility provider. Depends on the location of the swale, not allowed in a central median swale.
Turning area in shared zone.	?	Not supported	None
On one side of the road only.	?	Allowed with justification	In discussion and with written approval from utility provider. May be allowed where no more than two road crossings are required and the development cannot be extended in the future.
Public Parks and Reserves.	?	Allowed with justification	In discussion and with written approval from TCC's Spaces and Places team even though this is the preferred option by the utility. An easement will be required.
Private property.	?	Prohibited	None

Element/utility selection summary

Link elements

Movement lane elements

• One lane in each direction, with centreline

Driving moments

• Access restriction
• Wider lane for truck or bus (overwidth lane)
• Central flush median

Walking elements

• Footpath on both sides of the street

Cycling elements

• Protected or buffered cycle lane

Bus elements

• Bus stop with shelter

Traffic calming elements (no detected elements)

Vehicle design speed

• 50km/h

Stormwater elements

• Stormwater treatment
• Overland flow path aiding kerb and channel
• Stormwater outfall

Place elements

Parking and loading elements

• Formal loading space
• Layout of vehicle crossings

Walking elements

• Pedestrian crossing

Soft landscape elements

• Street trees
• Planting at intersections
• Planting in berms
• Planting within roundabouts

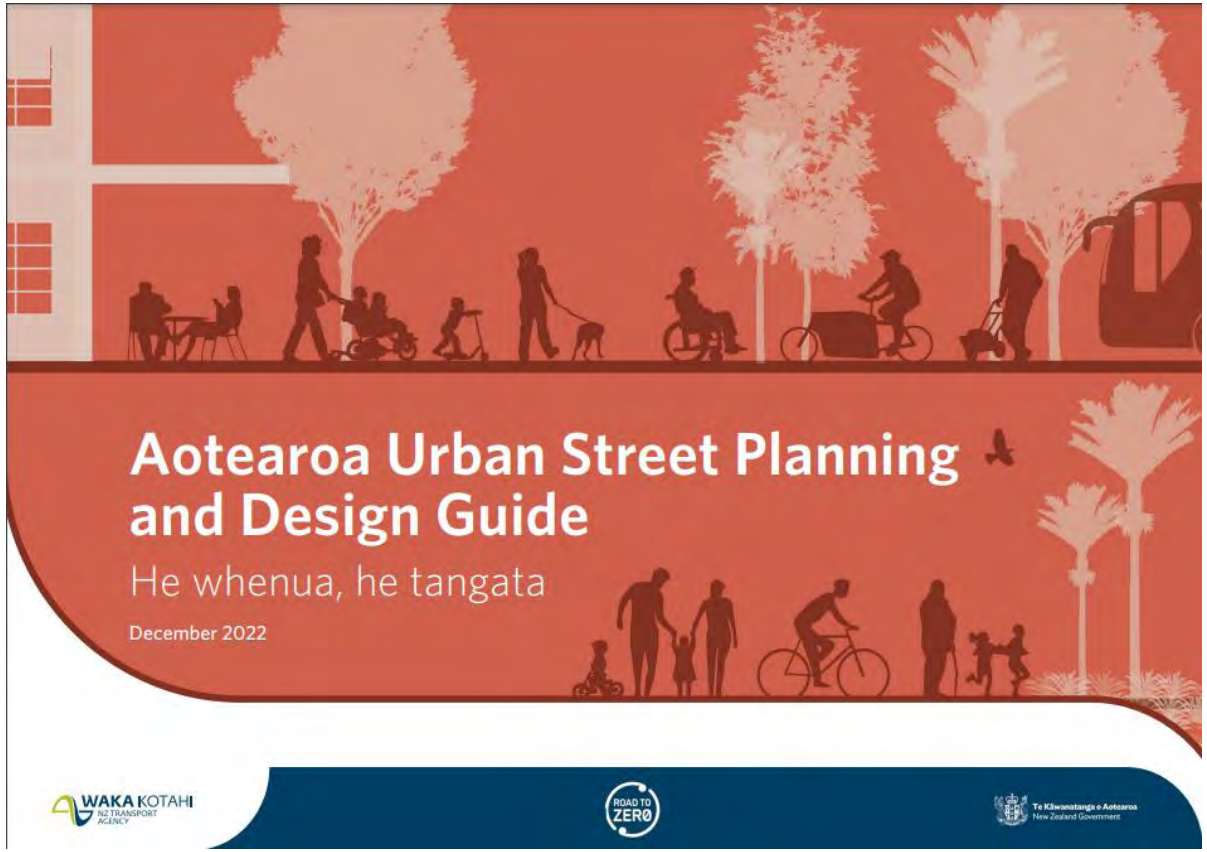
Hard landscape elements (no selected elements)

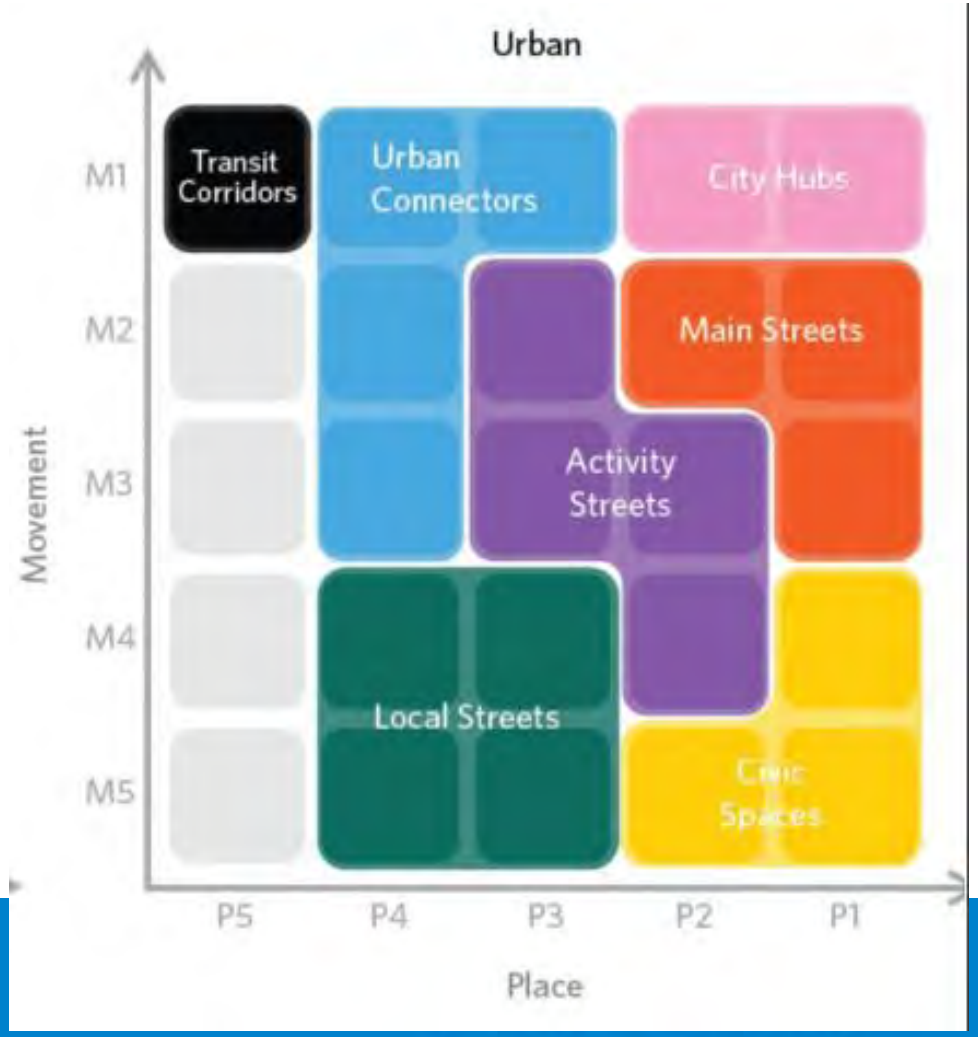
RMA consenting

6

REPORT

Affiliation to national guides / standards





Tauranga Street Design Toolkit user feedback

"Much improved over the current way of doing things"

"Allows for flexibility in design"

"Will bring consistency and reliability"

"Save time for both the designer and council staff"

"Took away some guess work"

"Once we had spent some time with the Tool and become familiar with it, we found it to be very useful. Rather than having to scroll through the considerable Infrastructure Development Code ("IDC") to discover which elements are appropriate where, or indeed to have to glean that information from a TCC engineer, a user could theoretically prepare a detailed design for approval using the Tool outputs and the associated Design Standards."






30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Tauranga City