Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

Futuregroup

Golden Mile

100% DESIGN SUBMISSION DESIGN REPORT | COURTENAY PLACE

FOR WELLINGTON CITY COUNCIL

Contents

Prepared for

Absolutely Positively **Wellington** City Council
Me Heke Ki Pōneke

Prepared by

Futuregroup

Document Issue
February 2025

SECTION ONE:

Introduction & Overview

1.1 Purpose of this Report

1.1.1 Purpose

The Golden Mile Project (the Project) has now reached 100% design submission stage for Courtenay Place (commonly know as 100% Detailed Design)

The purpose of this report is to summarise the progress that The team has made on Courtenay Place since Developed Design (60% design) to the completion of Detailed Design (100% design) and as such, is to be read in addition to, and as a supplement to the Developed Design Report (60% Design) as issued October 2022.

As a supplementary report, this document will not present the current design in totality, rather it will summarise the design adjustments and progression of the team's design in the period August 2022 until December 2024.

These adjustments have arisen from design progression, responses to technical report and audits, focused Technical Advisory Group (TAG) and Subject Matter Expert (SME) direction and engagement.

This report is for Courtenay Place only and should be read in conjunction with additional Lambton Quay / Willis Manner design reports when they become available (date to be confirmed).

1.1.2 Structure of this report

- ***Section 1 (Introduction)*** provides background to this document and the Project.
- ***Section 2 (Design Illustrations)*** is a visual illustration of the 100% Courtenay Place design.
- ***Section 3 (Streetscape Design, Reviews & Approvals)*** describes the adjustments between 60% design and 100% design in the layout and materiality if the Project.
- ***Section 4 (Engineering Design, Reviews & Approvals))*** described the processes, check and balances that have occurred to inform the Project between 60 - 100% Design.
- ***Section 5 (Other Considerations)*** provides a summary of the other considerations

For clarity section headings detailing design changes are coloured coded by the following

Blue	Design progression
Purple	Reviews, audits and approvals
Green	Engagement

1.13 Report exclusions

- Bus shelters are excluded as these works are by Greater Wellington Regional Councill (GWRC).
- Although part of the Golden Miles works and also at 100% Design, Lambton Quay and Willis / Manners are excluded from this report.

1.2 Project Background

1.2.1 Golden Mile

The Golden Mile was a Project within the citywide transportation strategy of Lets Get Wellington Moving (LGWM) as managed by LGWM. This Project was and brought in-house to Wellington City Council (WCC) in December 2023 after the dissolution of LGWM.

The scope of the Golden Mile Project covers the areas of

- Courtenay Place (CP)
- Lambton Quay (LQ) and
- Willis / Manners Street (WM)

as set out in ***Figure 01 (page 5)*** opposite, with this report focusing on Courtenay Place only.

This project started under Let's Get Wellington Moving, a joint initiative of Wellington City Council, Waka Kotahi New Zealand Transport Agency and Greater Wellington Regional Council. In December 2023, Let's Get Wellington Moving was wound up and responsibility for the Golden Mile was transferred to Wellington City Council (WCC).

The project has Early Contractor Engagment (ECI) since 60% Developed Design phase to assist the project in regards to construction methodology and constructibility.

1.2.2 Design delivery at 100% Design

This stage involved the completion of all

- streetscape
- underground services
- civil engineering &
- traffic design

for detailed design in preparation for final Engineering approval and drawings ready for issue to the Contractor for Construction.

100% Design Submission of Courtney Place was completed on 11th November 2024.

1.3 Previous Documents & Key Project Dates

1.3.1 Key documents and dates directly related to the Golden Mile Project

2018

- Establishment of Lets Get Wellington Moving (LGWM)

2019

- Golden Mile Single Stage Business Case, including the definition of vision & principles and the selection of preferred option
- LGWM Spatial allocation and urban amenity study
- GM Movement and access strategy plan
- Fossil Fuel Free central City plan
- Jan Gehll Public Space Public Life Study
- Central City Green Network Plan
- Golden Mile Heritage Landscape Assessment
- Mana whenua Aspirations Plan
- Wellington Spatial Integration Plan

2021

- Golden Mile Concept Plan
- Golden Mile Preliminary Design (30%)

2022

- Golden Mile 60% Design

2023

- Golden Mile traffic Resolution decission - June 2023
- Wellington City Council Long Term Plan (2023 - 2027)
- Dissolution of LGWM (Dec 2023)

2024

- Updated Wellington City Council Long Term Plan (2023 - 2027)

Figure 01_ *Extent of The Project.* *Not to scale*

Project Vision
Connecting large numbers of people to and through the central city with reliable and effective transport while providing safe, accessible, attractive street and spaces.

Project Design Vision
A safe, comfortable and attractive street network that encourages diverse business opportunities and 24/7 occupation as a democratic venue for city life to play out.

The streets are inclusive of all ages, abilities, genders and cultures. They are ecologically connected with the broader landscape and have greater resilience to climate change, weather and disturbance.

The streets express an identity that reveals mana whenua heritage, values, language and aspirations and reflects Wellington's unique geography, climate,and settlement history.

1.4 Vision & Principles

1.4.1 Vision
Refer to the blue box to the left

1.4.2 Design Principles
The Golden Mile Principles have been used to guide the changes made to achieve the Vision. These Principles are:

Transitioning
- Recognise that the carrying capacity of public transport on the Golden Mile will have a limit if the system is to enable a good customer experience and retain amenity space for pedestrians
- Plan for the ultimate public transport system being on two routes for efficiency and reliability
- Ensure alternative public transport routes to supplement the Golden Mile capacity occurs well in advance of the limits being reached

Vibrant and Prosperous
- Reflect the Golden Mile's unique local character and cultural landscape as the original harbour shoreline
- Provide for linear continuity and attractive spaces where people can dwell comfortably
- Prioritise public transport, walking and cycling access over private vehicles
- Recognise the need for the strategic location of loading and servicing facilities to assist business prosperity

Inclusive and Connected
- Enable universal access, and safe and comfortable movement for all people by considering the interplay of public transport, active modes and pedestrian space
- Design for good public transport customer experience in place-specific street-based stops and interchanges
- Connect people by the street network and lanes both along and across the Golden Mile and to destination
- and anchor places (the waterfront, the Terrace, Civic Square, Te Papa etc....)

Greener
- Deploy clean and green quiet running public transport vehicles on the Golden Mile
- Incorporate stormwater design into streetscapes in a format that is appropriate to a premium location and which reflects climate change influences
- Enhance green infrastructure including trees, active mode facilities, pocket parks and water sensitive urban design

Resilient
- Enable emergency vehicles to access all areas of the Golden Mile
- Provide for events and incidents that close lanes on the Golden Mile to maintain public transport services
- Recognise sea level rise and flooding, ground shaking and liquefaction risks in design

1.4.3 Mana whenua Value Framework
Mana Whenua have developed a Framework that is underpinned by a set of values that guide the aspirations and expectations for the Golden Mile Upgrade, create a foundation on which the intangible impacts of the project can start to be assessed, and provide a mechanism for Taranaki Whānui interests to be provided for.

Tongi
A sense of place,natural heritage

Pūnga-ora
Sustainable energy use and production

Wai-ora
Respect the role of water

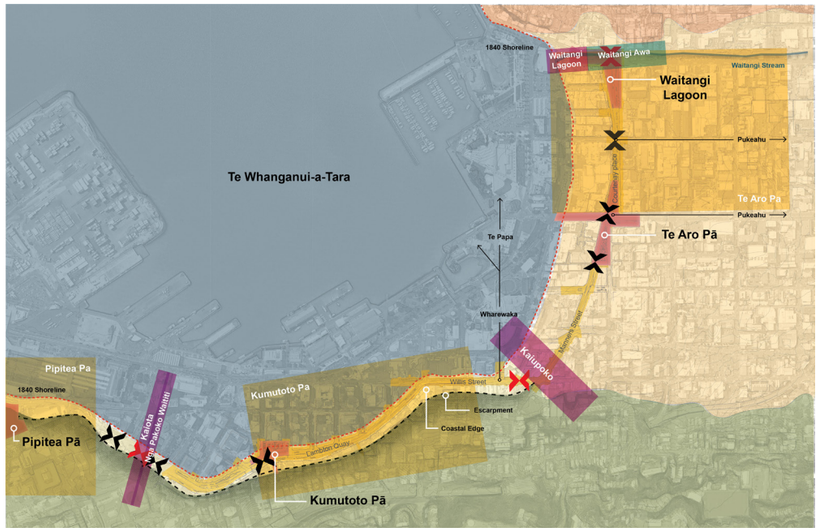
Hau-ora
Optimising health & well-being

Whakaahuatanga
Celebrate beauty in design

Whakamahitanga
Use of materials, sustainable and contextual

Aroturuki
Ongoing monitoring of outcomes

Manaakitanga
Just & equitable



1.5 Cultural Narrative

1.5.1 Cultural Heritage Landscape Approach

A Cultural Heritage Landscape Approach to interpretation in public space sees the present landscape as dynamic and alive with layered, distinct cultural meanings that people have created over time through complex connections with their environment.

These cultural meanings or themes are:

1. **Integrated natural and cultural heritage landscapes** – our city's streams, cliffs, beaches and coastal forest converge at the Golden Mile, the original shoreline, the zone of transition between land and sea and continual site of hīkoi.
2. **Mana whenua cultural narratives of discovery and settlement,** colonial-settler arrival, settlement and the subsequent loss of Māori cultural sovereignty through the assertion of military, executive and commercial authority, followed by the post-colonial renaissance of te ao Māori and aspiration of rangatiratanga.
3. The Golden Mile as a primary site of **active democracy** – protest, collective social and political challenge, and enaction of democracy through people's voices.
4. Pōneke Wellington's ***social and cultural change and diversity*** – all ethnicities, tribes and subcultures are encountered on the Golden Mile.
5. **Contrasts and contradictions** along the Golden Mile from the conservative governmental, executive and commercial Lambton Quay, Te Ngākau the cultural heart of the city, the retail of Willis Street, the socially dynamic and alternative Cuba Street, and the creative, vibrant entertainment and hospitality in the Courtenay Place precinct.

1.5.2 Mana whenua narratives

The Golden Mile Project recognise the importance of embracing the cultural narrative of mana whenua and working with artists and designers to give expression to that narrative.

The design team have worked in close collaboration with Len Hetet as Mana Whenua Cultural Design Lead to establish and evolve a design response that expresses themes that are underpinned by Māori protocols, practices and values while acknowledging the rich cultural history of the area.

The broader cultural narrative which this project responds to is Te Ara Tupua – the ancient pathway, a narrative associated with Tupua: Ngake and Whātatai. This is the story of the formation of the Wellington Harbour and the origins of its geography.

There are specific sub narratives that connect to Te Ara Tupua. These help to drive creative intent and rational design development, allowing for cultural expression and integration with The teams design knowledge and technical expertise to showcase a true co-design partnership.

Sub-narratives such as Te Tai Whakarunga – the upward tide which speaks to the location of the Golden Mile and references the hills, landscapes and waterways which were formed during the geological movement associated with the surfacing of Te Ika-a-Māui - the Great Fish of Māui. This event was violent and activated Te Aukume and Te Aurona (the magnetic and tidal pulls) which created water movement that flooded the region. Once this violent period was over, water then retreated to the freshwater lake (which is now Wellington Harbour) via water tributaries. The Golden Mile resides within the ancient pathway of Tupua-Horo-Rangi – the evolving mass of fluidity, Whātaitai. The Tupua Whātaitai is the spiritual and physical connection of land to water, sky, and people. It has the power to uplift, create water movement (whirlpools and waves), generate seismic activity, but also has the desire to care for and nurture birds, fish. plants and other wildlife.

There are several layers that make up the Cultural Overlay (whariki te whenua, a mat made of the land) which references raranga whariki – the art of mat weaving and the gifting of a taonga in the form of a whariki by Whātaitai to the people of Te Whanganui a Tara. Whariki te whenua allows for projects undertaken throughout Wellington by mana whenua to create a system and framework that brings continuity and connectedness to everything.

These design themes are being used to inform the design treatment of a range of building and landscape aspects that have been identified within the project. These are discussed in parts throughout the document.

Figure 02_ *Cultural Map* Not to scale

Ecosystems:
- 🟧 Tangi-te-keo (Mt Victoria)
- 🟨 Te Aro Flats
- 🟩 Elevated Headland
- 🟨 Coastal Edge
- ⬜ Harbour

Areas of Cultural Significance:
- 🟨 Pa Sites
- 🟦 Water Tributaries
- 🟪 Boundary Marks

Figure 03 & 04 _ *Paintings of Te Ara Tupua.*

1.6 Program & Process

Changes in the design occurred following the 3 identified fields of:

- Design (progression)
- Reviews, Audits & Approvals
- Public Engagement

1.6.1 Design - Courtenay Place

The Detailed Design stage of the project encompasses the design component from 60% design to 100% design with all documentation being completed ready for implementation on site.

Courtenay Place

CURRENT STATUS

100% Design completion - 11th November 2024 [1.]

The team are currently closing out elements of the audits as part of the post 100% design process. Once complete, the design is ready for construction and the finalisation of all Consents issues.

1.6.2 Design - Enabling Works 1 (EW1)

To facilitate the Courtenay Place main works (Work Package 2), enabling works at the intersection with Kent Terrace and Cambridge Terrace are required and will be constructed as a separate work package.

Enabling Works 1 - Kent & Cambridge Terrace Island Crossing [2.]

CURRENT STATUS

100% Design for Tender completed - 29th July 2024

1.6.3 Reviews - Additional Review & Audits

The staged issue of a full set of documentation by The team at 60% and 80% allowed for a sitewide review and audit opportunities for WCC appointed consultants / technical experts for specific technical reviews and audits including:

STREETSCAPE

- Crime Prevention through Environmental Design (CPTED) [3a & 3b]
- Accessibility Audit [4a & 4b]

TRAFFIC

- Safe Systems Audits (SSA) [5a, & 5b]

LIGHTING

- Lighting Design Peer Review

1.6.4 Reviews - Design Cost Reviews

WCC appointed Quantity Surveyors for key stage cost estimated and assistance to the team and WCC with value management,

1.6.5 Reviews -Technical Advicory Group (TAG) and Subject Matter Expert (SME) reviews

Facilitated by LGWM and then WCC, regular meetings were organised with key members of

- Wellington City Council (WC)
- Waka kotahi (WK) / NZTA
- Wellington Regional Council (WRC)

allowing for focused reviews, feedback and workshops.

In addition, the design team provided a full set of documentation to TAG and SME at both 60% and 80% design milestones. These design reviews were issued in stages and allowed for project wide review and audit opportunities by technical specialists and subject matter experts.

TRAFFIC

- EW1 works tender documentation review and approval by WCC traffic officers
- 100% Design documentation review and approval by WCC traffic officers

1.6.6 Reviews - WWL Opportunistic Renewals & Infrastructure

Wellington Water Limited and WCC are working together to ensure that wastewater and stormwater renewals required along the Golden Mile can be undertaken in conjunction with the Golden Mile Construction program to minimise cost, disruption and ensure design coordination.

To facilitate this trial pits and CCTV investigations of pipe conditions were undertaken in 2024 to provide confirmation of infrastructure location, depths and condition.

Relevant Documents Footnote:

1. Futuregroup 'Courtney Place 100% Documentation Issue' 11th November 2024
2. Futuregroup 'Enabling Works 1 Tender Documentation Issue' 29th July 2024

3a. Boffa Miskell 'CPTED Review (50%) Design Phase - PW' 30th September 2022

3b. Boffa Miskell 'CPTED Review Tender (80%) Design Phase - PW' 17th August 2023 (FutureGroup Response 17th October 2023)

4a. Barrier Free 'Accessibility Review (50%) Design Phase - PW' 28th August 2022 (FutureGroup Response 11th October 2023)

4b. Barrier Free 'Accessibility Review Tender (80%) Design Phase - PW' 1st September 2023 (FutureGroup Response 11th October 2023)

5a. TPC 'Road Systems Audit of the (50%) Design - PW' 30th August 2022

5b. TPC 'Safe Systems Audit of the Tender (80%) Design - PW' 7th September 2023 (FutureGroup Response 17th October 2023)

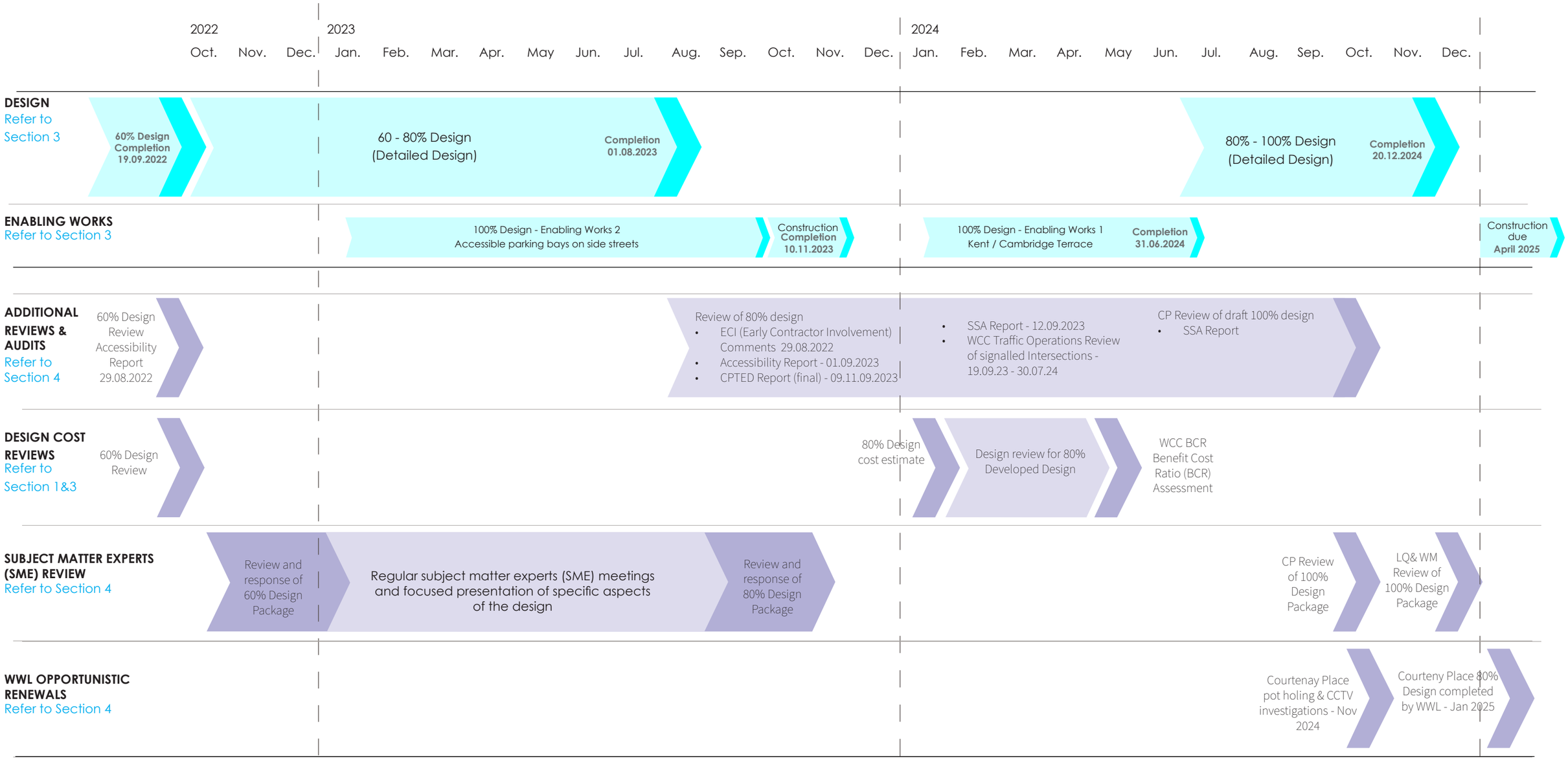


Figure 05a_*60% - 100% Design Program*

1.6.7 Engagement

Public and stakeholder engagement started since the project commencement.

Over the project lifespan, extensive feedback have been provided by Wellingtonians through six formal consultations. At each stage of engagement, Wellingtonians have consistently shown support for more pedestrianisation and, better public transport.

Key Engagement Timeline Dates Prior to 60% Design

2016

- Initial research is done by UMR Research which investigates issues about Wellington's transport system. Results are used to guide the implementation of transport planning in the region.
  Refer to
  - Findings of this report [1.]

2018

- Public engagement is undertaken on transport issues and possible solutions for Wellington's transport system.
  Refer to
  - Engagement report [2.]

- An online survey with a representative sample of people living in the Wellington Region is conducted on transport related issue and possible solutions.
  Refer to
  - Survey results [3.]

2019

- Public engagement is undertaken on the vision for the future of the Golden Mile.
  Refer to
  - Engagement report

2020

- Research is commissioned on how proposed changes would impact on retailers, and on people's travel and behaviour patterns in the area.
  Refer to:
  - Retail Impact Assessment [4.]
  - Golden Mile Intercept Survey

- Three options are consulted on: streamline, prioritise and transform.
  Refer to
  - Consultation report [5.]

2021

- LGWM completes Single Stage Business Case (SSBC) for the project.
  Refer to
  - Business case [6.] (including Appendix A - K)

- A preferred option was identified based on public feedback: transform.

Key Engagement Timeline Dates From 60% - 100% (as addressed in this report)

2022

- 60% design is completed and the public is invited to provide feedback
  Refer to
  - Engagement report [7.]

2023

- Let's Get Wellington Moving consults on and WCC approves traffic resolutions – the legal tool to implement and enforce the roading changes in the design.
  Refer to:
  - TR Plans LQ; WM; CP Combined [8.]
  - TR25-23-GM1 LGWM Courtenay Place [9.]
  - TR28-23-GM1 LGWM Authorisation System TR [10.]

- Focused workshops are held with stakeholders including
  - Emergency Services
  - Youth Groups
  - Business and Commercial Groups
  - Accessibility Groups

2024

- WCC consults on the Long Term Plan, which includes the Golden Mile project resulting in WCC voting in favour of the Long Term Plan 2024-34 in November 2024 [10.]

- Following 80% Design Issue, focused workshops are held with stakeholders including
  - Emergency Services
  - Youth Groups
  - Business and Commercial Groups
  - Accessibility Groups

  as well as one-on-one meetings with
  - Courtenay Place business & restaurant operators.

- In September, WCC undertake consultation Kent Terrace, Cambridge Terrace and Majoriebanks St traffic resolution for Enabling Works (EW1).

- In November, when amending the Long Term Plan 2024-34, WCC votes to retain the Golden Mile project with full funding meaning construction can start in 2025.

2025

- WCC release Coutenay Place 100% design to the public.

Relevant Documents Footnote:

1. UMR 'LGWM - overview of research findings" 30 June 2016
2. Global Research 'Let's Get Wellington Moving - Full analysis of public comments' March 2028
3. Research NZ "online public opinion transport survey" May 2018
4. LGWM "Golden Mile Retail Impact Assessment" December 2020
5. LGWM 'Golden Mile Engagement Report' March 2020
6. LGWM 'Single Stage Business Case Report' November 2021
7. Futuregroup 'Developed Design Mid-Year Engagement Report' 4th October 2022
8. WSP 'TR Plans - LQ; WM; CP Combined' 18th April 2023
9. WCC 'TR25-23GM1 LGWM Courtenay Place' 18th April 2023
10. WCC 'TR28-23GM1 LGWM Authorisation' 18th April 2023

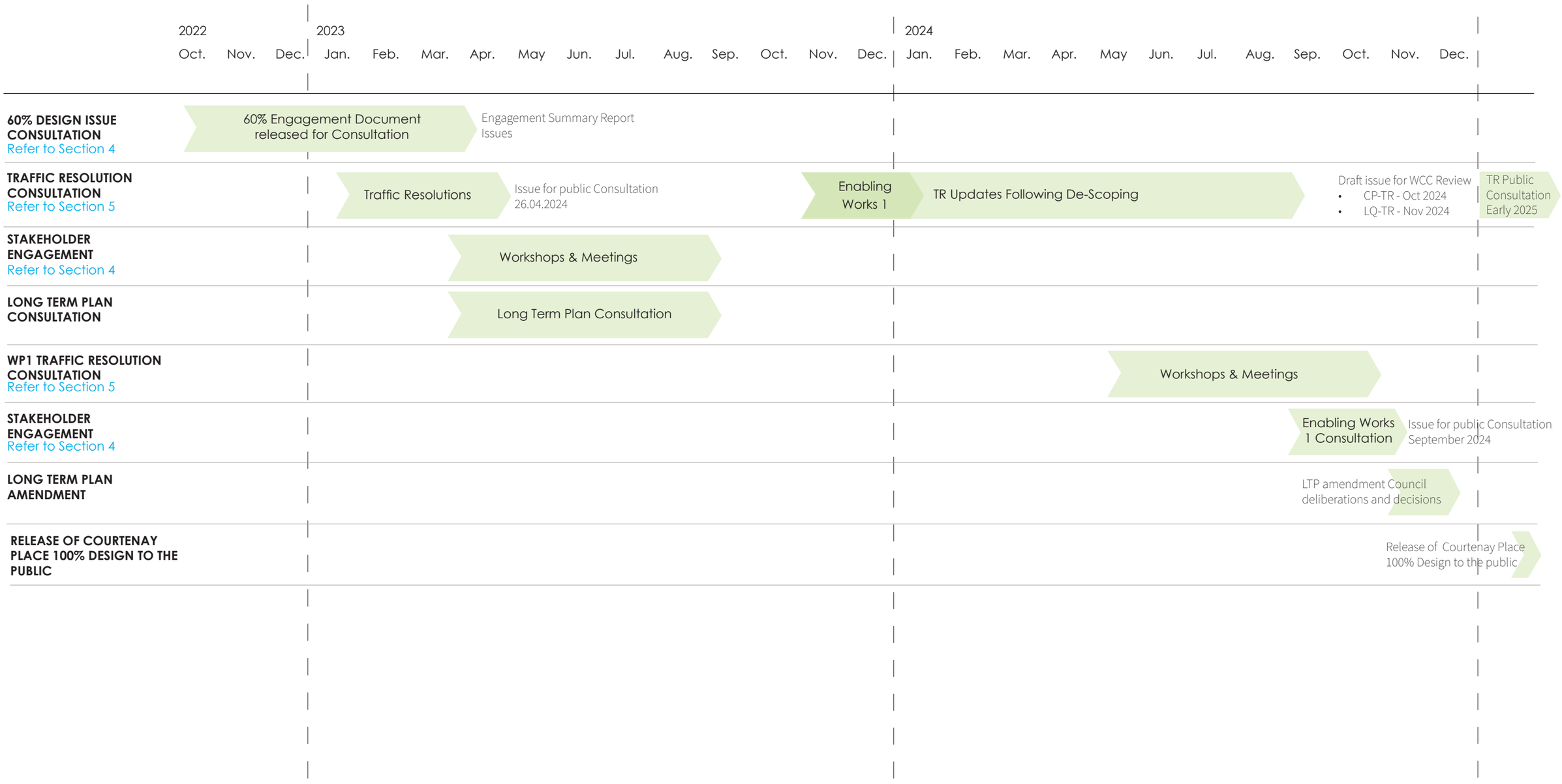


Figure 05b_*60% - 100% Design Program*

Illustrations

2.1 Courtenay Place

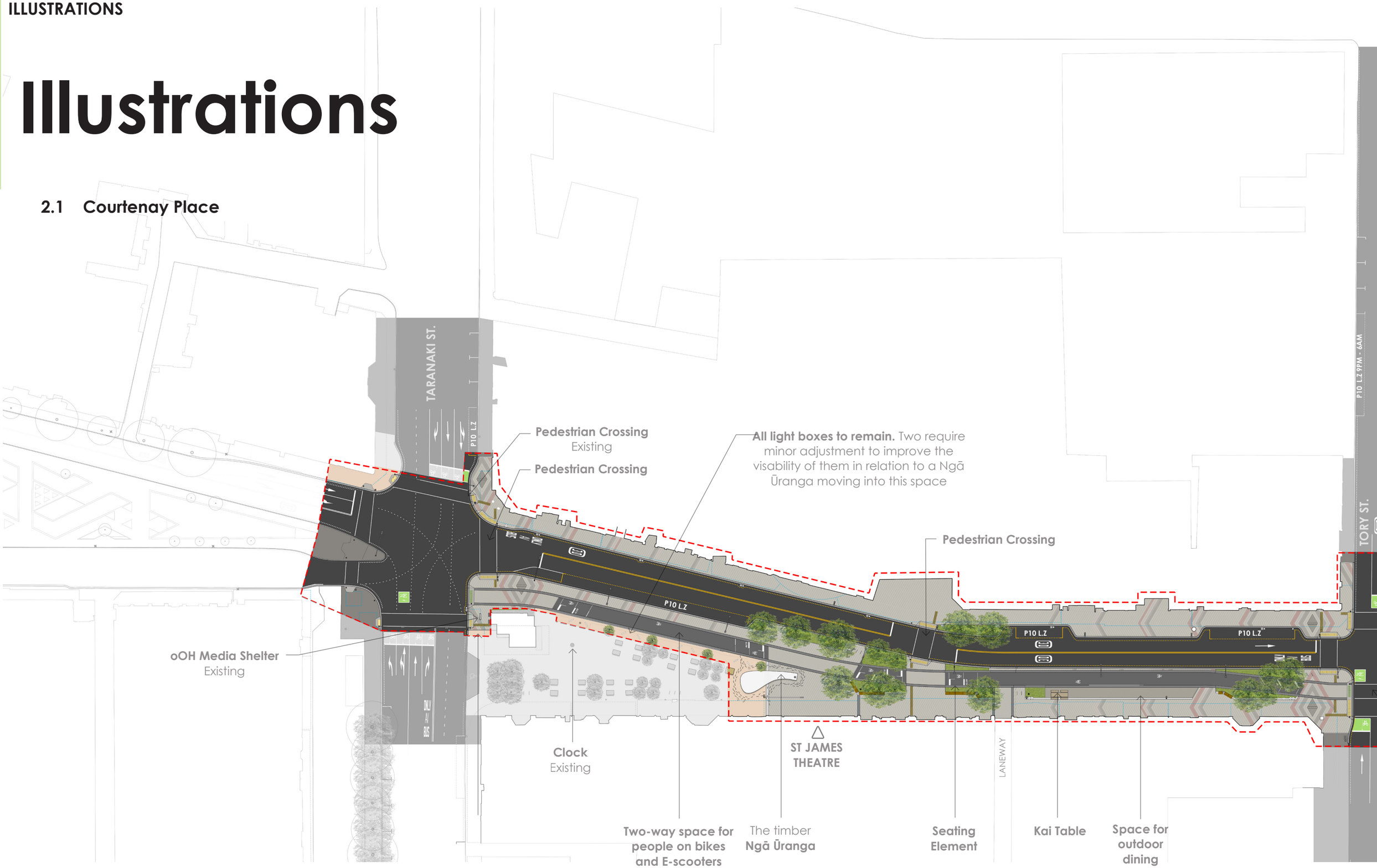
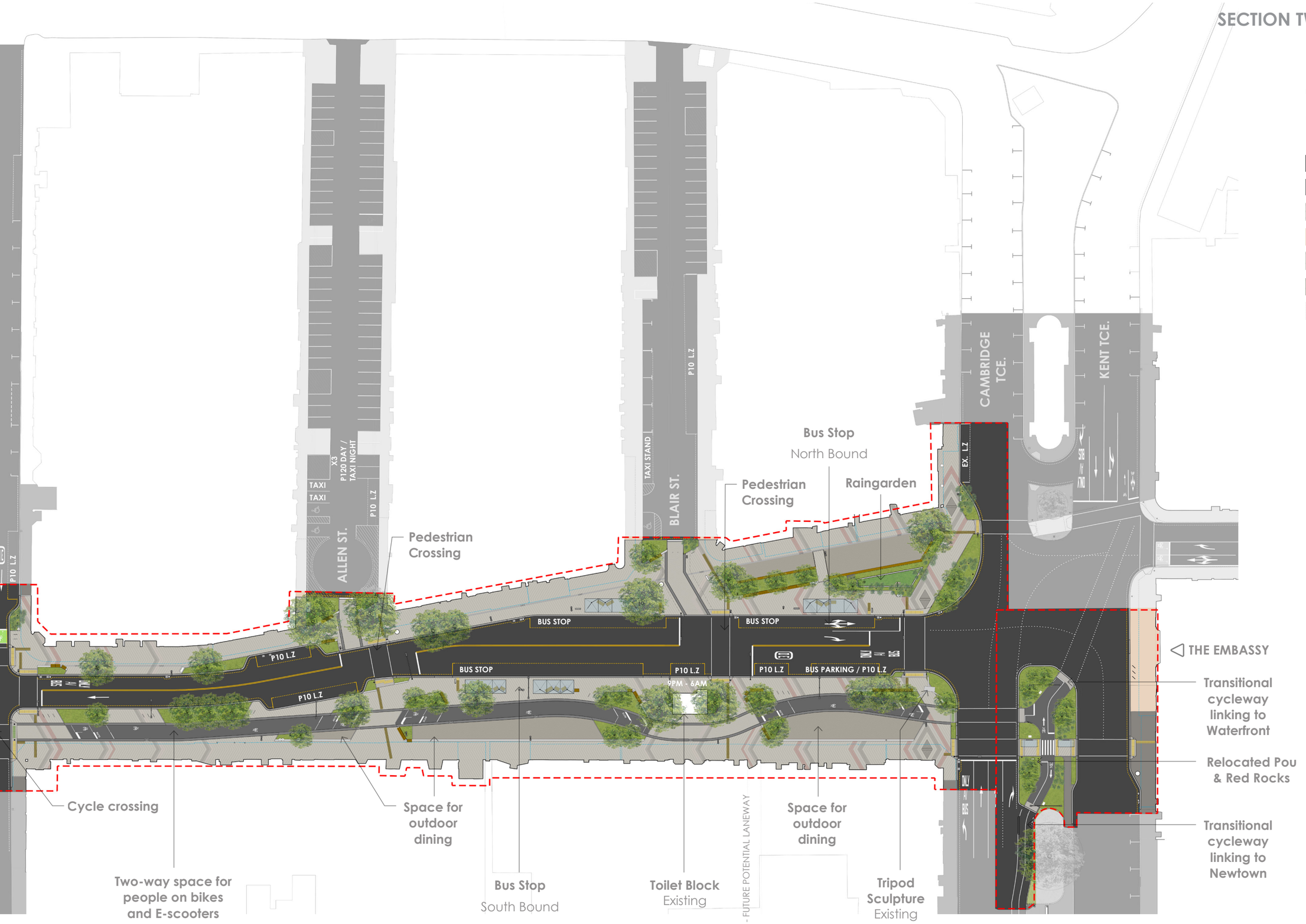


Figure 6_*Courtenay Place, 100% Design_ 1:800@A3*

for continuation of plan and legend for plan, see next page



for continuation of plan,
see previous page

KEY:

- Extent of physical works
- Building Canopy
- Carriageway
- Two-way space for people on bikes or e-scooters
- Shared space
- Existing paving
- Pedestrian paving
- Outdoor dining space
- Aramoana paving
- Patiki
- Seating Element
- Bus Infrastructure
- Planting beds (Garden beds, Rain gardens & Passively irrigated garden beds)
- Existing trees
- Proposed trees

ILLUSTRATIONS

View A - Birds eye view from Cambridge Terrace into Courtenay Place, illustrating bus stop locations, eating areas and cyclepath

View B - View from Allen Street illustrating emergency vehicle only access onto Courtenay Place

View C- View of the Southside of Courtney Place from near Cambridge Terrace showing bus stop and cycle lane and eating areas beyond.

Figure 7 A-G *_Courtenay Place visualisations, page 1/2*

View D - View of the Southside of Courtenay Place from Cambridge Terrace showing the eating areas in the dedicated spaces aswell as retaining existing eating areas for businesses and still allowing for pedestrian movement through.

View E - View of the Southside of Courtenay Place from Cambridge Terrace showing the dedicated 4.0m wide footpath and the eating areas beyond.

View F - View of the Southside of Courtenay Place near St James Theatre in distance, showing loading zone.

View G - View of the Southside of Courtenay Place looking towards Cambridge Terrace showing eating areas and space for pedestrians the dedicated 4.0m wide footpath and the eating areas beyond.

ILLUSTRATIONS

View H - View of the Southside of Courtenay Place from Cambridge Terrace showing the dedicated 4.0m wide footpath and the eating areas beyond.

View I- View of the Southside of Courtenay Place from Tory Street showing the cyclepath and the eating areas beyond - including Kai Table.

View J- View of the Northside of Courtenay Place from Blair Street showing the dedicated 4.0m wide footpath and the eating areas beyond.

Figure 8 H-L *_Courtenay Place visualisations, page 2/2*

View K- View of the Southside of Courtenay Place outsite St James Theatre, with people sitting on Nga Uranga

View L - View from Kent Terrace overlooking the crossing island for pedestrians and cyclenetwork, linking to waterfront & Newtown.

ILLUSTRATIONS

Figure 9A_*Courtenay Place*
Visualisation of current street

Figure 9B_*Courtenay Place*
Visualisation of 100% Design

ILLUSTRATIONS

Figure 10A_*Courtenay Place - Cambridge / Kent Terrace*
Visualisation of current street - prior to Transitional Cycleway ammendments

Figure 10B_*Courtenay Place - Cambridge / Kent Terrace Visualisation of 100% Design*

Streetscape Design, Reviews & Approvals

3.1 Sitewide Design Updates since 60%

Changes occurred following the 3 identified fields of:

- Design (progression)
- Reviews, Audits & Approvals
- Engagement

with key changes summarised in this section and section 4

3.1.1 Sitewide design updates_ Cycle Lane design

In coordination with subject matter experts (SME) Waka kotahi / NZTA road paint marking and signage has been agreed for the cycle lane. In addition bike hold rails have been add on the Cambridge Terrace / Kent Terrace Island.

3.1.2 Sitewide design updates_ Bicycle Racks Locations

At the request for subject matter experts (SME) following the review of the 80% issue, additional bicycle racks have been added at:

Courtenay Place
- Tory Street junction
- by the outdoor eating areas of Courtenay Place

3.1.3 Sitewide design updates _ Loading Bay Design

At 60% design the loading bays were designed at footpath level and paved as loading is restricted to outside of the main pedestrian flows. This allowed pedestrians to utilise the space thereby widening the usable footpath.

Identified as a design change following 80% deisgn review and as recommended in the accessibility audits, the change was made to the loading bays to adjust to asphalt bays at carriageway level.

3.1.4 Sitewide design updates_ Event Power

Event Power locations were worked through during workshops with key subject matter experts (SME) & approved by WCC to ensure they were at appropriate highly used locations.

3.1.5 Courtenay Place design updates_ St James Frontage & Courtney Place between Taranaki Street & Tory Street

The design team revisited the layout of this space providing larger space for gathering, feature projection lighting as well as the placement of an Uranga as designed by mana whenua

The existing kerbline on the north side of Courtenay Place between Taranaki and Tory streets is to be retained. This allows for simplified f the pedestrian area to provide flexibility for any future developments or changes at the Reading Cinema site.

3.1.6 Courtenay Place desgin updates_ Retention of toilets & removal of slip lane

The need for toilets on the east end of Courtenay Place has been identified by WCC. The officers have investigated a number of opportunities for new toilets but it was determined that the best outcome was to retain the existing toilets.

The 4m wide footpaths and a cycle lane are key principles of this project as well as this section of Courtney Place requiring outdoor dining for the food retailers. The slip lane has been removed to facilitate these users and to avoid conflicts between pedestrians, cyclists and vehicles. Loading bays have been reallocated from the slip lane to the main carriageway nearby for ease of servicing adjacent businesses.

3.1.7 Courtenay Place desgin updates_ Raingarden & ramp by Tasting Rooms

Design development and confirmation of the stormwater design has resulted in a change to the raingarden parameters. As recommended in the accessibility audit, the ramp in this location has up stand edges and visibility bands added to the top and bottom of the ramp.

3.2 Design updated directly resulting from engagment

3.2.1 Design updates to Courtenay Place _ Access

Since 60% desgin the following were investigated and resulted in changes to the design:

- The inclusion of more loading zones, particularly between Taranaki Street and Tory Street
- Loading zone works for large scale deliveries on Cambridge Terrace just north of the intersection with Courtenay Place
- The refinement of loading bay locations
- An increase in width of loading bays and carriageway
- The provision of service vehicle access from Allen and Blair Steet onto Courtenay Place
- Changes to private vehicle access to allow for nighttime drop off and pick ups
- Increased provision for accessible carparks on side streets along the Golden Mile.

3.2.2 Design updates to Courtenay Place _ Safety

The following were investigated and resulted in changes to the design:

- The inclusion of Taxi and rideshare pickup along Courtenay Place
- More space for emergency vehicles to stop
- Remove obstacles to increase visibility and site lines to improve natural surveillance
- Improvements to cycle and pedestrian crossing points to ensure clear legibility between cyclists and pedestrians
- Refinement of the lighting to provide increased safety
- Refinements to the cycle pedestrian crossing on Kent and Cambridge Terrace
- Refinement to the bus shelter design to improve safety concerns
- The retention of the public toilets

3.2.3 Design updates to Courtenay Place _ Bus infrastructure

The following were investigated and resulted in changes to the design:

- Improvements to transparency of bus stops to adjacent shops
- Refinement to the bus shelter design to improve safety concerns

3.2.4 Design updates to Courtenay Place _ Spatial Arrangement

The following were investigated and resulted in changes to the design:

- Changes to the allocation of space in front of the St James as per 3.1.5 to provide more space for people to gather and enter the theatre
- Refinements to the flexibility built into the design for how businesses can use the space for outdoor dining and licenced areas
- Refinement of the layout to better accommodate events

3.2.5 Design updates to Courtenay Place _ Furniture & art

- The retention of the tripod sculpture in its current location
- The inclusion of more public art on Courtenay Place
- Inclusion of Power points and a stage for events
- The inclusion of a public kai table
- Refinement of seating positions and quantity
- improve bike parking
- Increased provision of rubbish bins

3.2.6 Key comments on Courtenay Place that were investigated and tested (but have not result in any changes):

- Inclusions of private vehicle access and parking during the daytime.

  while 24hr private vehicle access has not been included, vehcile access after 7pm and before 7am has been provided for in the approved traffic resolution for Courtenay Place

- Further space for larger takeaway food pickup vehicles
  - *additional loading bays have been included, but space dedicated for food pickup hasn't been specifically included.*
- The retention of the bus stops outside St James Theatre
  - *while we understand the concerns around removing this stop, the impacts on retaining these stops on the bus network, bus reliability, loading space and cycleway mean we are unable to retain them.*
- The removal of the cycleway from Courtenay Place
  - *the cycleway is a strategic part of the Paneke Pōneke - Bike network plan (ref to https://www.transportprojects.org.nz/current/bikenetwork) as such this has not been removed. A separated cycleway provides safe ways to move through this space for pedestrians, cyclists and vehicles as well as a safer environment for businesses to operate their outdoor entertainment areas. It is designed as a 'slow' cyclepath and appropriate measures have been incorporated into the design of the cycleway to help manage speed (such as changes to paving types at pedestrian crossings, pedestrian priority, "slow" markings on the cyclepath and textured edges to the cycleway to help define these areas for all users.*
- Further improvements to the pedestrian crossings at the Taranaki St interchange
  - *while we understand that crossing Taranaki St is difficult for some physical works to this interchange are not part of the scope of this project.*
- Updates to the city's wayfinding signage suit
  - *this is a city-wide project and being looked at independently to the Courtenay Place upgrade.*

3.3 Project / Sitewide Staging Changes

3.3.1 Enabling Works 1 (EW1)

The traffic island on Kent/ Cambridge Terrace has been updated to work with the transitional cycle which runs from the waterfront to Island Bay.

A temporary alignment though this island was completed by LGWM (separate project to the GM) in 2024. The EW1 design brings this cycle lane centrally into the island to allow for alignments with the proposed Courtenay Place controlled crossings, both a 3m wide pedestrian crossing and a 3m wide separate cycle crossing.

EW1 also provides new shelters for the replacement of the current pedestrian crossing across Cambridge/ Kent Terraces which will be removed with the main works due to the realignment of the carriageway on Courtenay Place.

Refer to the 'before' and 'after' image (*Figure 10a & 10b on pages 20 & 21*).

3.4 Project / Sitewide Accessibility

3.4.1 Accessibility Audits

An accessibility Audit was completed at both the 60% and 80% design issues 1a & 1b

Following these audits the following adjustments to the design occurred:

- Upstand kerb to loading bays (refer to 3.1.4)
- A minimum 1.5m manoeuvring & cleaning zone around all furniture and other items was created.
- Upstand edge (75mm tall) were added to those garden beds where there was higher vulnerability to partial signed people, for example at graded paths or garden beds in slightly unexpected location (for example the arrangement by the Tasting Rooms at eastern extent of Courtney Place). Sitewide the use of upstands has been limited to allow for passive irrigation of garden beds.
- A white stone 300mm wide band was introduced at the top and bottom of the 1:14 grade ramp on Courtney Place (by the Tasting Rooms) as a visual warning.
- Furniture construction methodology / fabrication strategy has been adjusted to increase ease of maintenance and possible future repair.
- Provide a second lower handrail on the accessible ramp handrails so we have rails at 900mm and 450mm above the ground.

3.5 Project / Sitewide Crime Provision through Environmental Design (CPTED)

3.5.1 CPTED Audits

CPTED audits and reports have been undertaken for 60% and 80% design milestones and a additional 100% design audit is currently underway. 2a & 2b

Following these audits the following adjustments to the design have occurred on Courtenay Place;:

- Minor adjustment to seat locations to remove possible conflict areas.

We note that a number of the CPTED comments were in regards to the management of the construction period and ongoing operations post construction. These are outside of this current design report which address the design only.

Relevant Documents Footnote:

1a. Barrier Free 'Accessibility Review (50%) Design Phase - PW' 28th August 2022 (FutureGroup Response 11th October 2023)

1b. Barrier Free 'Accessibility Review Tender (80%) Design Phase - PW' 1st September 2023 (FutureGroup Response 11th October 2023)

2a. Boffa Miskell 'CPTED Review (50%) Design Phase - PW' 30th September 2022

2b. Boffa Miskell 'CPTED Review Tender (80%) Design Phase - PW' 17th August 2023 (FutureGroup Response 17th October 2023)

3.6 Pavement Design

3.6.1 Pavement Design design

The pavement design for the Golden Mile (GM) project has changed significantly from the 60% design report. The full details of the final pavement design for the Golden Mile project are presented in a separate report which has been accepted by Wellington City Council.

Pavement designs are included in the final set of 100% design documentation and cover the pavement types for the following:

- (AP1) Road carriageway
- (UP1v) Vehicle loading bays
- (SS) Granite sets
- (AP2) Asphalt cycle pedestrian areas
- (UP1p, UP2, UP3) Stone paving
- (RCP) Reclaimed/new clay paving

The shared space details are based on WCC Code of Practice minimum layer thickness's and the manufacturers' recommendations, where applicable. The streetscape surfaces for the various pavements are discussed under the streetscape design section of this report - section 3.6.5.

The pavement design for the bus/road carriageway (AP1), is based on a full reconstruction. However, the results from the ground investigations showed that the existing pavement consists of significant areas of concrete slabs located along the proposed road alignment. Design options were developed to incorporate the existing concrete slabs into the pavement construction of the bus/road carriageway.

The pavement design methodology for the AP1 pavement is to utilize the high strength asphalt (AC), EME2 for the base layers. By using this methodology, the aim is to reuse the existing concrete slabs as much as possible and to simplify the detailing. It should be noted that a design life for the pavement over the existing concrete slabs is not provided, and the condition of these slabs can only be determined during the construction stage of the project.

3.6.2 Changes post 60% design

The following include key changes of pavement design from 60% design to 100% design

DESIGN PHILOSOPHY

- High Strength AC, EME2 flexible pavement to allow for shallow services, improved construction logistics, and future maintenance activities.

DESIGN TRAFFIC

- Axle loads of 11 tonnes for electric buses.

DESIGN LIFE

- 25-year design life.

PAVEMENT DESIGN

- High strength AC, EME2 flexible design philosophy.

SURFACING

- AC14 NZTA M10:2020 surfacing.

3.7 Streetscape Surfacing

3.7.1 Cycle path

Discussed extensively within the technical advisory group (TAG) and subject matter experts (SME),agreement was reached post 60% that the cycle path materiality would predominantly be asphalt and where it entered a shared zone with pedestrians, the paving would be used.

Along the entire length of the cycle way and shared spaces a wide textured stone paving edge is provided as a visual border to indicate a change of users.

3.7.2 Slip resistance

The team have undertaken slip resistance testing of:

- Existing Golden Miles brick pavers
- Proposed stone and finishes (as per section 3.5.4

and can confirm that the proposed pavers pass slip resistance to the standards AS 4586-2013 and EN 14231:2003 in application that they are proposed (i.e.. streetscape usage).

This will be a significant improvement to the slip resistance of pavements compared with the existing clay pavers

3.7.3 Paver type, colour and finish

Stone vs. concrete pavers were considered and compared looking at such factors as sustainability, cost, replacement, durability and aesthetics.

Stone was selected from individual suppliers and the sample panel. Final section are for 5 samples below. For all these the finishes are bush hammered and flamed resulting in a total panel of 10 stone types.

	Our ref:	Colour ref:	Located:	Stone type:
	C	Colour	Aramoana	Red porphry (666)
	D	Grey dark - black	Aramoana	Mongolian or vietnamese black basalt
	M	Grey medium - dark	General paving & Aramoana	684 original
	L	Grey light - mid	General paving & Aramoana	PT black
	W	Grey white	Edges	654c

Figure 11 *Stone types, colour and finishes*

3.7.4 Sample Panel

To assist WCC asset managers and subject matter experts (SME) on the paving a 3m x 3m sample panel was provided by the ECI.

Following the testing of samples (jointing sand and sealants) and inspection of this the following was agreed:

- Jointing sand. For the flexibly laid paving Ultrascape prejoint filler
- Sealant. For all natural stone paving, flexibly laid paving Ultrascape prejoint filler

Figure 12 *Sample Panel*

3.7.5 Paving selection

The paving selection (general sizes & location of use) was agreed with WCC post 60% design with the paving types (UP1, UP2, TE, UP3) agreed to be stone rather than concrete.

Stone was chosen over concrete due to whole of life cost, stone quality product and avoidence of reliance on moulds.

3.7.6 Aramoana

At the request of WCC and ECI, the paving pattern has been simplified with a reduction in directional changes and Aramoana banding. The current pattern has the base paving, Patiki and 05 Aramoana Bands as a representation of the Awa of the area.

Simplification to paving design was required to reduce ongoing maintenance costs for WCC post project completion

AP1 **ASPHALT CARRIAGEWAY**
AP2 **ASPHALT CYCLEPATH**

RCP **RECLAIMED CLAY PAVERS**

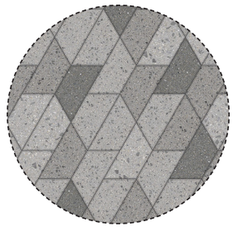
SIZE 200 x 100mm
COLOUR Existing

SS **STONE SETTS**

SIZE 100 x 100mm
COLOUR Grey Med - Dark
FINISH Flame

TE **TEXTURED EDGE**

SIZE 1000X500; 138; 100mm
COLOUR Grey white
FINISH Flame



UP1 **UNIT PAVER - BESPOKE**

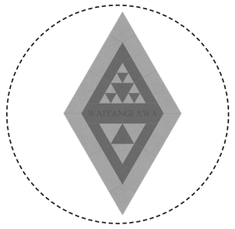
SIZE 232.68 x 119.23mm
COLOUR Four colours
FINISH Flame; Bush Hammerd

UP2 **UNIT PAVER - BESPOKE**

SIZE 248.27 x 294.80mm
COLOUR Four colours
FINISH Flame; Bush Hammerd

UP3 **UNIT PAVER**

SIZE 360 x 90mm
COLOUR Grey Dark - Black; Grey Med - Dark
FINISH Flame



- **PATIKI**

SIZE Diamond
COLOUR Grey Dark - Black; Grey Med - Dark
FINISH Flame; Bush Hammerd

8 PAVING TYPES

Colour	**Light Grey**	**Mid Grey**	**Dark Grey**
CB *Bush Hammered*	LB *Bush Hammered*	MB *Bush Hammered*	DB *Bush Hammered*
CF *Flame Finish*	LF *Flame Finish*	MF *Flame Finish*	DF *Flame Finish*

Figure 13 *Surfacing Type and finishes*

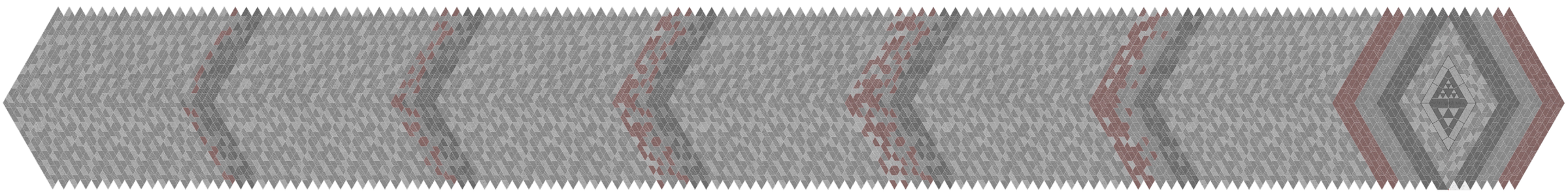


Figure 14 *Aramoana Layout*

3.8 Streetscape Furniture

3.8.1 Seating

The seat design including the composition of pre-cast concrete with timber, armrest and backs remains as per the 60% design. Change has occurred in the proposed construction methodology and suggested assembly to reduce construction cost and complexity.

3.8.2 Kai Tables

The Kai table design with mana whenua designed side aluminium panels and timber tops to the seats and tables are as per the 60% design. Following subject matter experts (SME) comment, civil defence storage was no longer a requirement and was removed, In addition, and due to constrains of space, two Kai tables on Courtenay Place indicated at 60% were removed.

PM-01 | Straight **PM-02 |** Corner **PM-03 |** Corner **PM-04 |** Corner **PM-05 |** Corner

TS-01 | Straight **TS-02 |** Straight **TS-03 |** Straight **TS-04 |** Straight **TS-05 |** Straight

Figure 15 *Furniture Palette*

3.8.3 Bollards

Bollards at the end of Stout Street, Allen and Blair Street are to be retractable within their own in-ground sleeve. This was in discussion with emergency services to ensure that ease and speed of use (without keys) can occur.

3.8.4 Bike Racks

The bicycle rack has not changed since 60% although at WCC request the detail has been adjusted to a sleeve footing for ease of replacement of damaged racks.

3.8.5 Bins

At 60% we proposed a number of bin sizes, but these are now rationalised to the WCC 80L bins only.

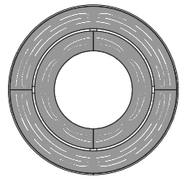
3.8.6 Plaques & art

Art and Plaque locations were discussed extensively up to 60% Design with minor changes to location following subject matter experts (SME) review of the 80% deign submission.

All artworks are retained insitu and all existing plaques within the GM project are retained either insitu or within close proximity.

3.8.7 Tree grille

The proposed design of the grilles by mana whenua has been progressed since 60% with the final design as per the graphic below. The proposal is that these custom design shall be cut into a proprietary tree grille



TYPE Custom Pattern Tree Grille
MATERIAL Perforated & etched pattern to steel

Figure 16

3.8.8 Drainage Grate

The proposed design of the grates by mana whenua has been progressed since 60% with the final design as per the graphic below. The proposal is that these custom grates shall be cast by the drain supplier to work with the drainage grate system (below ground channels and typical fixings / sumps).

TYPE Custom Pattern Drainage Grate
MATERIAL Perforated & raised pattern ductile iron grate

Figure 17

3.8.9 Nga Uranga

The proposed design of the four Nga Uranga by mana whenua designers has been progressed since 60% with the final design as per the graphic to the right.

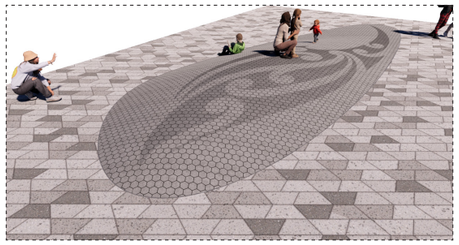
These designs have been presented to and reviewed by subject matter experts (SME)

.

At 60% design the proposal was for four Nga Uranga on Lambton Quay including a water Nga Uranga which was recessed into the streetscape pathway. This proposal has been removed and replaced with the proposed timber Nga Uranga on Courtenay Place.

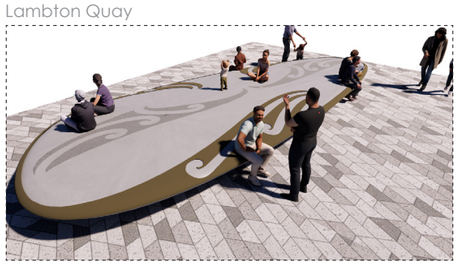
Ngā Ūranga | 01 Mound

Lambton Quay



Ngā Ūranga | 02 Plinth

Lambton Quay



Ngā Ūranga | 03 Timber

Lambton Quay

Ngā Ūranga | 04 Timber

Courtenay Place

Figure 18 *Nga Uranga*

3.9 Streetscape Planting

3.9.1 Planting Design

The planting selection (location, plant/ tree size, species and spacing) has not been significantly adjusted since 60% design.

3.9.2 Tree Planting - Courtenay place

The retention of the northern footpath between Taranaki Street and Tory Street on Courtenay Place has allowed for the retentions of 03 additional existing street trees that were identified for removal at 60%.

Figure 19 *Photograph of existing trees Courtenay Place for retention.*

3.9.3 Tree & Garden Bed Provision

As per the 60% design, and to follow the Green Network Plan, we are providing a minimum of 02 new trees for all singular trees removed. The table of tree removals, retentions and planting are provided on this page as Figure 20 :

3.9.4 Adjustment of mulch

Stone mulch is proposed for the PIGs (passively irrigated Gardens) but at the request of WCC stone mulch was also added to the garden bed within the shell sculpture by Mildland Park.

All other Garden beds and tree pits have organic mulch.

3.9.5 Tree guying

Tree guying (Stabilising trees with underground anchors) has been minimised so it is only proposed on the trees within hard paving / with tree grilles only.

3.9.6 Temporary protection

At WCC request, all garden beds, PIGs and tree pits are to have temporary protection with manuka stakes and black plastic chains. This will to help the plants survive during their initial growth period in this busy urban environment

3.9.7 Arborist involvement

Arborists are part of the Streetscape team and have been involved din the 60-100% design, actively contributing to the tree protection plans and specifications.

Courtenay Place	Existing Trees	39	units
	Trees within 100% Design Proposal	**70**	units
	Existing trees to be removed	24	units
	Ex. To be removed and to be relocated	0	units
	Existing Trees To Remain	15	units
	New trees to be planted trees	55	units
	Existing planting m2	94	m2
	Planting within 100% Design Proposal	**936**	m2
	New Garden beds (GB)	480	m2
	New passively irrigated garden beds (P.I.G.s)	425	m2
	New Raingarden	31	m2
	New lawn	-	m2
EW1 Courtenay Place	Existing Trees	7	units
	Existing trees to be removed	1	units
	Ex. To be removed and to be relocated	6	units
	New trees to be planted trees	1	units
	Trees within 100% Design Proposal	**7**	units
	Existing planting m2	196	m2
	Planting within 100% Design Proposal	**203**	m2
	New Garden beds (GB)	192	m2
	New passively irrigated garden beds (P.I.G.s)	-	m2
	New Raingarden	-	m2
	New lawn	11	m2

Figure 20 *_Tree & planting calculations*

Engineering Design, Reviews & Approvals

4.1 Traffic Design

4.1.1 Traffic Design

Traffic Design continues the design philosophy established in the approved 2019 single stage business case (SSBC)[1]. however, as the design has progressed post 60%, key changes to transport design have occurred as detail below.

These design changes still achieve the project benefits expected by the SSBC.

4.1.2 Courtenay Place / Kent terrace / Cambridge Terrace / Intersection

Changes to the 60% design for this intersection were made:

- to enable integration with the Newtown to Waterfront Transitional Cycleway Project late 2022 and early 2023. The Newtown to Waterfront Transitional Cycleway Project resulted in design changes to the Kent / Cambridge intersection to accommodate a bi-directional cycle lane running diagonally between the eastern side of Kent Terrace and the central median. Consequently the 60% GM design was modified to incorporate the cycle lane in a manner which minimised any rework to the transitional cycleway which has been implemented first.;
- in response to Technical advisory group (TAG) and subject matter experts (SME), feedback on the 80% design between July and Sept 2023 to address cyclist - pedestrian conflict issues; and
- in response to WCC Traffic Operations (WTOC) feedback on the 80% design between Sept 2023 and Oct 2024 (noting that the 80% design included the as-built transitional cycleway) including changes to the layout and signal phase to optimise the performance of this intersection.

4.1.3 Courtenay Place Slip Lane & Taxi Bay removal

As mentioned earlier in section 3.1.6, the removal of the slip lane resulted in a street layout adjustment.

Changes including:

- amendment to the layout of the bus stops,
- introducing taxi and loading bays into the carriageway layout.
- revisiting and reallocation of stopping space on Allan and Blair Street
- additional kerbside controls on Courtenay Place to reduce the risk of taxis and service vehicles blocking bus movements and affecting service reliability.

4.1.4 Access to Allen & Blair Street

Changes to the bus stop layout on the northern side of Courtenay Place between Blair Street and Cambridge Terrace led to changes to the geometry of the turns from Blair Street to Courtenay Place and the location of the mid-block pedestrian crossing.

As mentioned in section 3.7.3 above the automatic bollards included within the 60% design to control access to Courtenay Place from Blair and Allen Street for large vehicles (which have difficulty turning within the facilities provided at the ends of Blair and Allen Streets to exit at Wakefield Street) were replaced with manually operated drop down bollards.

4.1.5 Loading Bays - Site Wide

At 60% loading bays were typically 2.2m wide. At 100% this was increased to 2.5m partly to ensure vehicles parking in the loading bays did not encroach into the carriageway and impede bus movement.

At 60% the loading bays were rectangular in shape and the loading bay markings extended the full length of loading bay. At 100% tapers were introduced at both ends of loading bays to improve the manoeuvrability of vehicles entering and exiting. Loading bay markings were also changed to not extend to the full length of the loading zone.

Adding tapers and changes to the loading bay markings encourages better parking behaviour and reduces the risks of parked vehicles encroaching into the carriageway and impeding bus movement.

4.1.6 Courtenay Place kerb changes to the approach to Taranaki Street

Futureproofing a left turning facility for eastbound traffic turning left from Courtenay Place into Taranaki Street led to removing the kerb build out on the southern side of Courtenay Place at the Taranaki Street intersection.

4.1.7 Traffic Resolution - Main Works

At 60% design in early 2023 Golden Mile traffic resolutions were implemented [2. 3. & 4.]

4.1.8 Traffic Resolution - Enabling Works 1

The separation of the Kent and Cambridge Terraces island as Enabling works (Enabling Works 1) were not included in the 60% Design thereby resulting in a separate Traffic Resolution required for this works.

The Enabling Works Traffic Resolution sought include;

- changes to the clearway operating times on Majoribanks Street
- minor changes to holistically 'tidy up' the existing Traffic Resolutions for this area.
- maintain loading zones over metered parking on Kent Terraces

Relevant Documents Footnote:

1. Futuregroup SSBC
2. WSP 'TR Plans - LQ; WM; CP Combined' 18th April 2023
3. WCC 'TR25-23GM1 LGWM Courtenay Place' 18th April 2023
4. WCC 'TR28-23GM1 LGWM Authorisation' 18th April 2023

4.1.9 Review - WCC Traffic Operations Team resulting in Kent / Cambridge Terrace changes

Following 60% design further reviews of the traffic signals design by WCC Traffic Operations (WTOC) took place on both the 80% design and 100% design issues.

The most significant changes to the Courtenay Place design was the Kent Tce/Cambridge Tce/Courtenay Place intersection. This is because Kent and Cambridge Terrace are primary arterial roads in the city transport network and carry heavy traffic to key destinations like the Regional Hospital and Airport.

The WTOC review focussed on the operation of the intersection to ensure as "best as practical" that the transport network did not gridlock, vehicle queuing did not impede the function of Kent Tce/ Cambridge Tce and emergency service response times were not impacted. \

Consequently, the TR is going back to Regulatory Processes Commitee in Fenruary changes to the 60% design included:

4.1.10 Review - Safe Systems Audit

A series of safety audits were undertaken for Courtenay Place, specifically

- 60% design safe system audits were undertaken of the concept design in August 2021 and the 50% design in August 2022.
- 80% design in September 2023
- 100% design Courtenay Place in currently underway

Changes to the 60% design to address concerns raised in the SSA of the 80% and 100% design included:

- updating signage and road markings to:
    - improve consistency of messaging
    - ensure signs and markings are located where the controls apply
    - ensure signs are clear on the times the controls apply
    - ensure signs are visible to the intended audience
- improving the visibility of bollards
- updating the signalised crossing at Panama Street to reflect the one-way cycle movement at this location
- adding a stub pole with push button for cyclists turning from Willis Street into Mercer Street
- updating signage in Courtenay Place to reflect the decision to allow general traffic access to Courtenay Place between the hours of 7pm and 7am
- adding a new sign at the Courtenay Place/Taranaki Street intersection that indicates no right turn except for buses

Relevant Documents Footnote:

1a. TPC 'Road Systems Audit of the (50%) Design - PW' 30th August 2022

1b. TPC 'Safe Systems Audit of the Tender (80%) Design - PW' 7th September 2023
(FutureGroup Response 17th October 2023)

4.2 Electrical Design

4.2.1 Electrical Design overview

The Electrical Design encompasses the supply of power to the electrical infrastructure for the Golden Mile.

The following details key changes of to the design from 60% design to100% design.

4.2.2 Updating to Streetscape layout / Scope

As mentioned in section 3.1 of this report, the streetscape layout updated a number of times during the 60% - 100% design through discipline coordination and review feedback.

This layout change resulted in a localised adjustment of items (and thereby the placement of power and communication cables) , such as:

- Light Columns
- Gobo projections / feature lighting
- Street furniture (that required electrical)
    - Strip lighting in selected seats
    - oOh Media Bollards
    - Event Power Bollards

4.2.3 Adjustment of circuits & additional circuits

Post 60% issue there was direction from WCC to ensure only street lights were on the street light network and all otheron the low votage networks as per standard requirements.

4.3 Lighting Design

4.3.1 Lighting Design overview

The provision of new functional, amenity and feature lighting to the Golden Mile is a key component of delivering on the overall design vision.

As of the 60% Design, the lighting design provided outdoor road amenity (pathway & Pedestrian area lighting (for LQ & CP) to NZTA M300 & the relevant parts of AS/NZS 1158.

4.3.2 Roadway Lighting:

During 60% design, the roadway lighting was designed in accordance with the Subcategory V3 requirements of AS/NZS 1158.1.1:2022 and has remained the same for 100% design.

4.3.5 Cyclepath Lighting

During 60% design the cycle pathway lighting was designed in accordance with the Subcategory PP2 requirements of AS/NZS 1158.3.1:2020 and has remained the same for 100% design.

4.3.6 Public Activity Lighting

During 60% design, The public activity area lighting was designed in accordance with the Subcategory PA1 (Courtenay Place) requirements of AS/NZS 1158.3.1:2020 and has remained the same for Courtenay Place) for 100% design.

The following includes key changes of lighting coordination design from 60% design to 100% design:

4.3.4 Light pole positions:

Light pole locations were updated across Lambton Quay & Courtenay Place due to:

- Coordinating with utility's to avoid underground service clashes;
- Align with overall design improvements & coordinate with updated furniture / garden bed spatial arrangements through workshops with the Streetscape team and WCC; and
- Geometric alignments proposed by Streetscape team

4.3.3 Feature Lighting

During subject matter experts (SME) feedback of 60% a request was made to incorporate feature / decorative lighting (including Gobo Projectors) – this was completed through the Streetscape team on the 60-100% design.

4.3.7 Reviews - Peer Reviews

From early 2023 LGWM appointed an independent consutant o externally peer review the 60% design. Comments from the peer review were actioned and closed out March 2023

Post 80% design, the lighting design went through another round of reviews with which were closed out October 2023. These included:

- subject matter experts (SME) review and comments on the 80% design documentation
- Safe Systems Audit (SSA) [1]
- Crime Prevention through Environment Design (CPTED) Audit [2]

Post 100% design, a final round of peer reviews have been completed. Courtenay Place package was reviewed in December 2024 and closed out January 2025.

Relevant Documents Footnote:

1. TPC 'Safe Systems Audit of the Tender (80%) Design - PW' 7th September 2023
   (FutureGroup Response 17th October 2023)
2. Boffa Miskell 'CPTED Review Tender (80%) Design Phase - PW' 17th August 2023
   (FutureGroup Response 17th October 2023)

4.4 Utility Services Design

4.4.1 Utility Services Design overview

For all existing in ground services, the 60% design used both GIS and scanned GPR (Ground Penetrating Radar) data to show the combined utilities in the network.

The design team has adopted the scanned GPR information as the "source of truth" for the known utilities used to identify service clashes for the detailed design stage.

The following include key changes of utility coordination design from 60% DD - 100% DD:

4.4.2 NUO coordination & engagement

A workshop with the NUOs (National Utility Operators) representatives was held in May 2023 to discuss the latest design for Golden Mile, which shows the interface with known utilities within the corridor.

Individual workshops were held with multiple NUOs following this combined workshop. These workshops provided the design team with details on such items as:

- service clearance requirements,
- preferences for utility locations,
- minimum cover requirements,
- construction plant restrictions, and
- other information used to develop the technical specification and detailed drawings for the protection or relocation of underground utility services.
- opportunistic renewals were also explored

4.4.3 Combined Utilities Drawings & Design Register

The combined utilities design was updated using the information gathered from the workshops with the NUOs and a register of known service clashes with new infrastructure was produced in the 60% - 100% design, along with a combined technical specification covering each NUO's standard requirements for construction and design.

The service clashes are categorized by service type and clash with new infrastructure. Each identified clash has a proposed action, which will be presented to the NUOs for review and acceptance prior to construction.

The risk of unreliable data from the Reveal Survey was considered due to high tolerances on the accuracy of the underground utility locations, details, and condition.

4.4.4 Site Investigation (trial pits)

Multiple site investigations were completed by the Contractor (ECI) team in stages following the completion of the 80% design.

The last investigation in mid 2024 was to expose the underground services and survey underground assets at locations proposed by the design team to gather accurate details on the services and further reduce the risk of unreliable survey data.

4.4.5 Clash Detection Federated Model:

The design team have developed a federated model (shared model between all consultants) that shows a 3D view of all known existing and all new infrastructure from the latest designs.

Clash detections were carried out to from this model. The utilities design process involved reviewing the output from this process between 60% - 100% design and comparing it against the service clashes identified in at 60% design.

A further refined utilities clash register and layout drawings has been produced, indicating an updated scope for service protection/relocation.

4.4.6 Outcomes & Risks

During the 80% and 100% design phases, it became clear that the number of identified clashes was significant. This indicates a high risk of construction delays if the services require relocation within the corridor, which is constrained and lacks available space.

It was also found that the proportion of unknown services was quite high, increasing the risk of delays from discovering a service clash to completing a proposed design relocation or protection. This may result in extended construction delivery and increased construction costs.

To mitigate these risks:

a) The design team is establishing agreed protocols with NUOs for identifying unknown services, relocation or protection designs. This resource commitments will reduce this risk during construction.
b) WCC is coordinating discussion with the NUOs
c) The 100% design combined utilities clash register and drawings will be discussed with all NUOs. It is anticipated that a separate workstream for relocation designs with NUOs will be carried out before final coordination, and updated drawings will be issued for construction.

4.5 Stormwater Design

4.5.1 Stormwater Design overview

The 60% design adhered to the principle of maintaining the existing conveyance and capture regime while strategically enhancing key areas.

As the design progressed to 100% design, this strategy has been retained. Changes to the stormwater therefore have only been regards to changes in the streetscape layout such as the removal of the slip lane and retention of the public toilets in Courtenay Place.

4.5.2 Design - Collection of road run off

Road runoff is primarily managed through a system of kerbs and channels within the carriageway, with stormwater captured by catch-pits or channel drains integrated into the kerb structure.

To mitigate potential flooding and blockage risks, double catch-pits or equivalent lengths of TraffikDrain are installed at kerb low points, providing additional capacity where it's most needed.

4.5.3 Design - Collection of footpath run off

In pedestrian zones and footpaths, the drainage strategy shifts to a more discrete approach, utilizing point drains and grated channel drains. These are carefully positioned at low points in the surface geometry to ensure efficient water collection and prevent pooling in high-traffic pedestrian areas.

4.5.4 Design - integration into the City network

The project has a net increase of permeable surfaces with the introduction of garden beds and passively irrigated garden beds (PIGS) along with a dedicated raingarden at the eastern end of Courtenay Place.

The entire proposed stormwater infrastructure has been designed under the assumption that the existing stormwater networks have sufficient capacity to handle the proposed input.

Furthermore, all new installations are engineered to accommodate runoff generated from relevant design rainfall events, ensuring the system's resilience during various weather conditions.

This approach aims to integrate with existing systems while providing targeted improvements to enhance overall stormwater management efficiency and flood mitigation throughout the project area.

The runoff from the catchments were determined using the Rational Method. Rainfall runoff was calculated for 5% and 1% annual exceedance probability (AEP) events. The 5% AEP event (with an extra 20% assumed due to climate change) was used to size the proposed stormwater infrastructure, while the 1% AEP was used for flood modelling. The runoff assessment has been applied to both carriageway and footpath stormwater infrastructure. Summary of the parameters used to calculate the runoff:

Rainfall Intensity:

- Courtenay Place and Willis to Manners: 5% AEP = 97.92mm/hr, 1% AEP = 132mm/hr
- Obtained from HIRDS Version 4 rainfall data with an adjusted rainfall intensity of 20% for climate change.

Time of Concentration:

- 10 minutes, the time of concentration is the minimum time of concentration set for rational method calculations in NZBC: E1 Surface Water.

Catchment Runoff Coefficients:

- C = 1.0, As majority of this area is sealed asphalt, and to be conservative a runoff coefficient of 1.0 was assumed.

4.5.5 Design - treatment

Treatment is provided through the works via baffled sumps, proprietary devices, and a single raingarden in Courtenay Place.

BAFFLED SUMPS
Baffled sumps are designed to intercept untreated stormwater throughout the project area. These structures effectively trap litter and large pollutants, preventing them from flowing into the surrounding environment. By capturing these contaminants, the baffled sumps not only protect the ecosystem but also extend the operational life of downstream treatment facilities by reducing their pollutant load.

PROPRIETARY DEVICES
Proprietary Stormwater360 StormFilter cartridge devices are strategically placed in critical areas prone to contaminant generation and near sensitive ecosystems, including bus interchanges.

These systems comprise manhole structures housing media-filled filter cartridges designed to capture and retain pollutants from stormwater runoff and there are 2 at Courtenay Place. StormFilter cartridges utilize various media types, such as zeolite and perlite, to effectively remove a range of pollutants including suspended solids, soluble metals, nutrients, and hydrocarbons.

The system's self-cleaning mechanism and compact design offer benefits such as extended maintenance intervals of 1-3 years and space efficiency, making it suitable for urban applications. This approach to stormwater management represents a modern, efficient solution for improving urban runoff quality before it enters the wider environment.

RAINGARDEN
A strategically positioned raingarden at the eastern end of Courtenay Place is engineered to process stormwater runoff from the bus interchange and Courtenay Place/Cambridge Terrace intersection, handling a 10 mm/hr water quality flow rate.

Runoff first passes through baffled sumps for preliminary filtration, then flows onto the raingarden surface. As stormwater percolates through filter media aligned with Wellington Water's Water Sensitive Design guidelines, dissolved pollutants are removed, and water temperature is reduced. The treated water is ultimately discharged into the downstream stormwater network, representing an efficient urban water management approach.

4.5.6 Design - flood risk management

The project's flood risk management strategy aims to maintain existing flood risk levels within and beyond the project area, despite surface and stormwater network modifications.

A truncated baseline model of Wellington CBD, validated by WCC, serves as the comparative standard for assessing project impacts on surface water elevations. Flood modelling results indicate minimal increases in flood Water Surface Elevation (WSE) not attributable to ground surface changes. Where significant WSE increases were identified during design development, they were investigated and mitigated where feasible through design adjustments, with final decisions made in consultation with Wellington Water and WCC.

4.6 Wellington Water Renewals

4.6.1 Overview

The Golden Mile project offered a unique opportunity to collaborate with the Wellington Water Limited (WWL) to deliver new and renewed infrastructure within the Golden Mile corridor.

The water assets within this corridor, some of which are up to 120 years old, have reached the end of their expected lifespan. Since 2021, FG, WWL, and Wellington City Council (WCC) have worked together to identify critical "must-do" stormwater and wastewater asset renewals.

4.6.2 Initial Assessment

The initial phase of this project provided Wellington Water with knowledge of the existing condition of stormwater and wastewater pipelines and associated assets within the Golden Mile corridor.

This assessment enabled informed decisions regarding the replacement and renewal of pipelines and manholes, thereby minimising future asset failures post-completion of the Golden Mile project. Failure of these assets would result in significant reputational and economic costs to both businesses and the city.

4.6.3 Objectives

The primary objectives of this project are to:

- Maintain reliable stormwater and wastewater services in Central Wellington.
- Adhere to a "dig once" policy for key infrastructure projects within Wellington CBD.
- Prevent localized flooding and the discharge of wastewater into the surrounding environment by ensuring the integrity of stormwater and wastewater pipelines.

4.6.4 Project Outcome

The project aims to renew and reinforce the stormwater and wastewater pipelines within the Golden Mile corridor, preventing future structural failures.

4.6.5 Project Status

STAGE 1	Complete to 100% Detail Design	Complete
STAGE 2	At 80% Detail Design	In Progress
STAGE 3	At 80% Detail Design	Complete
STAGE 4	Progress and complete to 80% Detail Design	In Progress
STAGE 5	Complete to 100% Detail Design	Complete

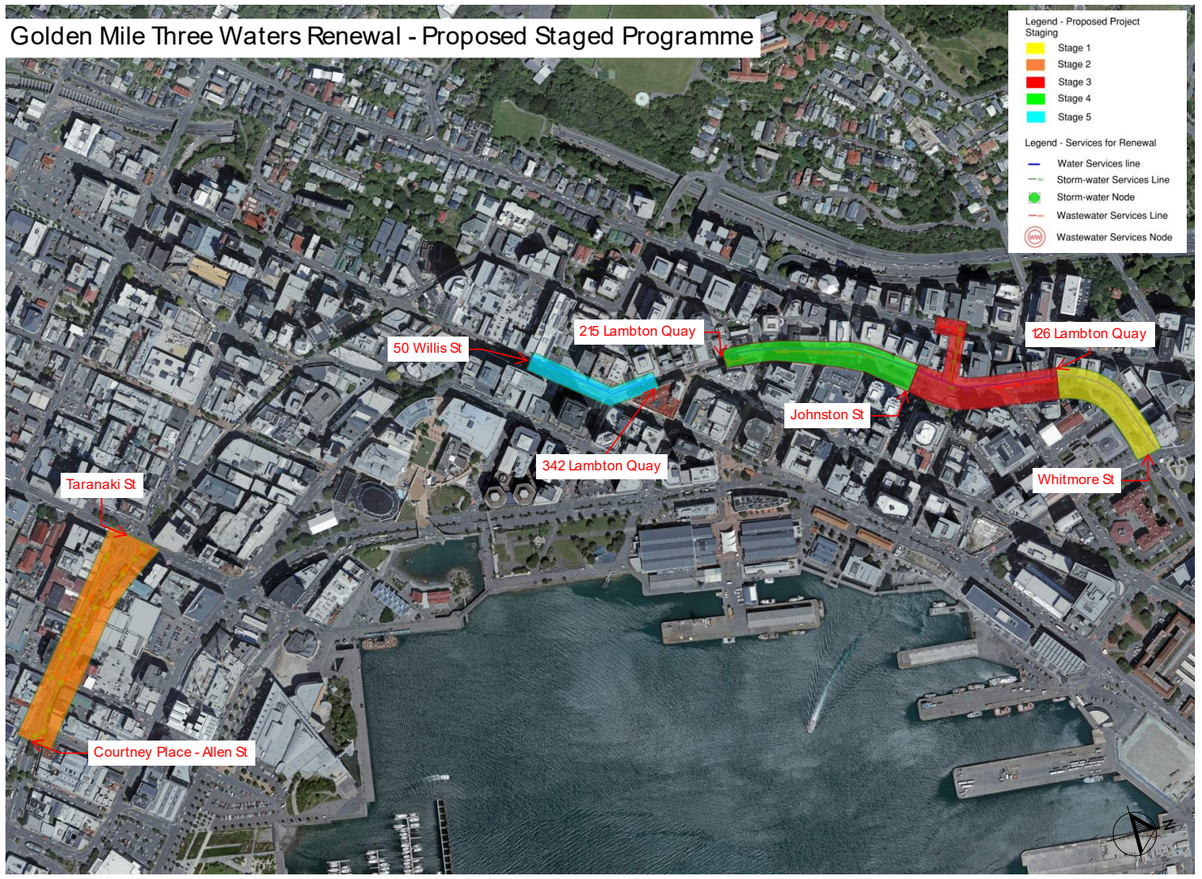


Figure 21 *Three Waters Renewal Staged Programme Map*

Additional Considerations

5.1 Resource Consents

5.1.1 Consent Update

The design team & WCC has been refreshing the Consenting Strategy as part of the Detailed Design Stage

The key step for refreshing the consenting strategy includes taking into account the new provisions of the Proposed District Plan, the ECI's construction methodology, and WCC, GWRC and Heritage New Zealand consent/authority processing requirements.

For any resource consents/archaeological authorities that are ultimately identified as being required, the following steps have been undertaken:

- Engage relevant technical specialists (e.g. noise specialist to complete a noise assessment etc.)
- Preparation of relevant resource consent application and supporting AEE
- Liaise with ECI and WCC to ensure draft consent conditions (if proposed) are "implementable"
- Prepare draft applications for WCC to review (to help reduce further information requests)
- Lodge resource consents, and provide support to WCC planners (if required), and
- Seek certificates of compliance for permitted activities (if deemed appropriate).

Resource Consent has been now granted for Enabling Works 1 (Kent & Cambridge Terrace works).

The Main works consents for the remainder of the Golden Mile project are now well under way.

5.2 Safety in Design (SiD)

5.2.1 Safety in Design overview

Safety in design risk assessment is a crucial aspect of a project, ensuring that potential hazards are identified and mitigated early in the design phase.

The team's proactive approach involved analysis of design elements to prevent accidents and injuries, thereby protecting workers, users, and the public.

By integrating safety considerations into the design process, project teams can address risks related to construction, operation, and maintenance. This not only enhances overall safety but also contributes to compliance with New Zealand's health and safety regulations, such as the Health and Safety at Work Act 2015.

Effective safety in design risk assessment fosters a culture of safety, reduces project costs associated with accidents, and promotes sustainable and resilient infrastructure development.

4.2.2 Golden Mile SiD active spreadsheet

The Golden Mile team started a Safety in Design risk assessments spreadsheet at Feasibility stage.

This document is regularly updated by the team and addressed in focused workshops at each design stage including 30%, 60% and 80% design .


Restaurant
BAR
SQUARE EYES
SCREEN FOUNDATION
EMBASSY
COURTENAY PLACE