



**Frank Kitts Park
Redevelopment**

Preliminary Civil Engineering Report

Prepared for
Wellington City Council

Prepared by
Tonkin & Taylor Ltd

Date
April 2024

Job Number
1018875.4000 v1



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Date	Version	Description	Prepared by:	Reviewed by:	Authorised by:
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Distribution:

Wellington City Council

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1 Introduction

Tonkin & Taylor Ltd (T+T) was engaged by Wellington City Council (WCC) to undertake preliminary civil design for the redevelopment of Frank Kitts Park, Wellington.

The purpose of this report is to support resource consent for the redevelopment of the park. It builds on work done for the resource consent submitted in 2016.

1.1 Site description

Frank Kitts Park (Site) is located on the Wellington harbour waterfront. The proposed area of redevelopment is defined by the existing park which extends from the Whairepo Lagoon to the south, Wellington Harbour to the east, Jervois Quay to the west and the building service areas of the TSB Arena to the north (refer Figure 1-1 below). The playground area contained within Frank Kitts Park is currently under redevelopment, and is excluded from this report.

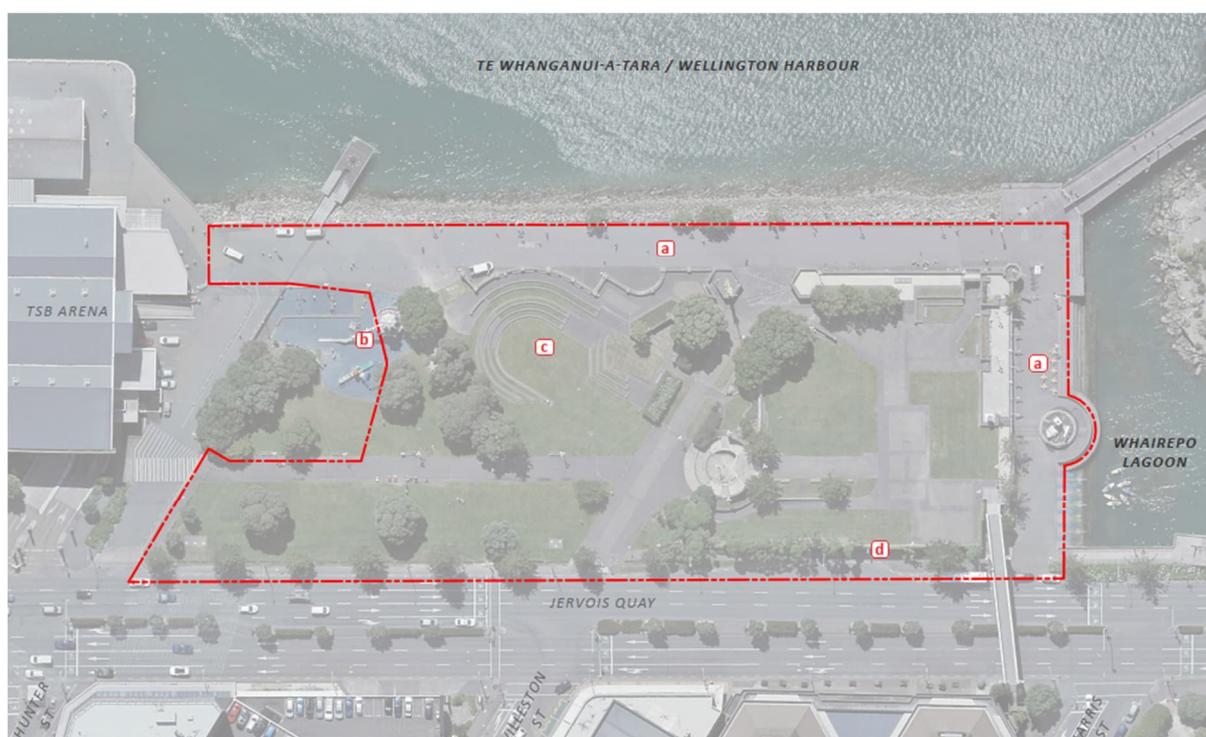


Figure 1-1: Existing park plan (extent of site shown with dashed red line)

Key aspects of the existing park shown on the plan include;

- a Harbour promenade/Ara moana at the top and Lagoon/Whairepo Promenade to the right.
- b The children's playground, currently under reconstruction (excluded from this scope).
- c Grassed amphitheatre.
- d Underground carpark. The underground carpark also hosts boat sheds, public toilets and several small shops around the interface with the Harbour and Lagoon Promenades.

The proposed development centres around the removal of the underground carpark and the amphitheatre with the intention being to create a better interface with the Harbour. Key features shown on the proposed development plan Figure 1-2 below include:

- The demolition of the underground carpark
- Garden of Beneficence (GoB) (E)

- Fale building (F)
- Malae – a grassed lawn to accompany the Fale (G)
- A larger Harbour Lawn (D)
- Improved pedestrian walkways, paths and sitting areas (H, I, J, K, L)
- Shifted and improved children’s playground (B) (excluded from scope)
- Maintains the existing Te Ara Moana/Harbour and Whairepo Lagoon Promenades. (A)



Figure 1-2: Proposed development of Frank Kitts Park

2 Earthworks Assessment

Earthworks are proposed across much of the site as part of the park’s redevelopment. This will require demolition of the existing amphitheatre, underground carpark, and Jervois Quay pedestrian overbridge, and building up of the new Harbour Lawn and Malae. The largest volume of earthworks is in the south of the site. The maximum fill height in this area will be approximately 2.75 m, within the old car park basement. The maximum cut height will consist of removal of the existing concrete walls between the harbour side promenade and the amphitheatre (approximately 1.6 m). For more detail on cut and fill depths across the site, refer to the cut/fill drawing in Appendix A.

Low rise retaining walls (under 1 m height) are proposed around the outer edges of the Harbour Lawn and Malae. More significant retaining walls will be required around the Fale basement however these form part of the Fale building consent works. Further details on Geotechnical considerations can be found in the Frank Kitts Park - Geotechnical Report¹.

Due to the site being on reclamation fill, there is risk that contaminated material will be encountered. A contaminated land Detailed Site Investigation report was prepared² which found *“All soil samples returned concentrations below the applicable soil contaminant standards for commercial/industrial outdoor workers and recreational land use. Consequently, no significant health*

¹ Frank Kitts Park Redevelopment – Geotechnical Report, Tonkin & Taylor Ref: 1018875.4000 v1. April 2023

² Detailed Site Investigation, Frank Kitts Park Redevelopment, Tonkin & Taylor Ref: 10188754.4000 v2, April 2024

risk to future site workers and recreational users is indicated from contaminated soil. Similarly, asbestos was not detected within the soil samples analysed."

Options for mitigating effects of potential soil contamination during earthworks are set out in the Contamination Site Management Plan³ prepared for the site.

2.1 Earthworks sequencing

For the purpose of estimating earthworks quantities we have assumed the following sequencing:

- 1 Cut to waste off site, material on top of the car park roof structure.
- 2 Demolish and remove car park concrete structure off site (inclusive of roof, walls, floor and columns).
- 3 Cut to stockpile on site, topsoil material from remainder of site.
- 4 Demolish and remove amphitheatre concrete steps and walls off site (the existing levels in this area are similar to the proposed levels and therefore the concrete cannot remain in place).
- 5 Cut to fill excavated material in amphitheatre area (including existing paving materials).
- 6 Cut to fill remaining excavation to design levels (Fale basement, rain garden etc.).
- 7 Import fill material.
- 8 Excavate from stockpile and spread topsoil (Item 3 above)
- 9 Import topsoil material.

Assumptions

- There is insufficient room on site to stockpile excavated material on top of the carpark roof (item 1 above) and therefore this will need to be removed off site.
- On site concrete crushing and reuse as bulk fill material was not considered to be a viable option as the associated noise involved with this activity is likely to be unacceptable. If future investigations prove that it is viable, items 2 and 4 above could be reused as bulk fill, reducing the volume of imported fill required.
- Crushing concrete off-site and then bring it back to site does not provide any commercial benefit and was not considered.
- There is sufficient room on site to stockpile topsoil (item 3 above). If this is not possible, stockpiled material will have to be removed from site and additional material imported.
- All excavated material (excluding concrete) is suitable for reuse as landscape fill material. No allowance has been made for removal of unsuitable soils as it has been assumed any unsuitable soils can be used as landscape fill.
- Imported fill material volume (Item 7 above) is calculated as the fill volume between the demolition surface and the finished surface; less the Fale and GoB structures, and site won material to be placed as fill.

2.2 Earthworks volumes

Regardless of the extent of site won fill that may be utilised, there will be a considerable deficit in the total fill volume, thus imported fill will be required. Imported fill material may consist of soil or hardfill. The material will arrive by truck. Based on a tipping truck with a capacity of 15,000 – 20,000kg (approximately 10 m³) we estimate approximately 800 truck movements would be required to import the fill material. If a truck and trailer unit was used (subject to this being able to manoeuvre within the site) the number of truck movements may be reduced by approximately half.

³ Contamination Site management Plan – Frank Kitts Park Redevelopment, Tonkin & Taylor Ref: 1018875.4000, April 2024

Initial estimates of earthworks volumes are shown below in Table 1.

Table 1: Earthwork volume estimates

Item number (corresponds to sequencing above)	Description	Approx. Volume (m ³)
1	Cut to waste off site, material on top of the car park roof structure (assumes 0.5m average depth over concrete structure)	1,000
2	Demolish and remove car park concrete structure from site	2,200
3	Cut to stockpile on site, topsoil material from rest of site	800
4	Demolish and remove amphitheatre concrete steps and walls off site	1,500
5	Cut to fill, material in and around amphitheatre concrete steps and walls (excl. item 3 above)	3,200
6	Cut to fill remaining excavation to design levels (Fale basement, rain garden etc.)	800
7	Import fill material (soil or hardfill)	7,000
8	Excavate from stockpile and spread topsoil (item 2 above)	800
9	Import topsoil material	200

Note:

1. If the option of onsite crushing of concrete and reuse as fill material is viable, the imported fill material volume (item 6 above), would reduce by approximately 3,700 m³.
2. If stockpiling topsoil material on site is not viable (item 3 above), this material would have to be removed from site and additional topsoil material imported.

3 Dry Services

3.1 Electricity

Power will be required for event power, lighting, any pumping required for the GoB water feature, and to the Fale. This will require a new transformer and switchboard for the park. The location of the proposed transformer is shown on the services plan in Appendix A, as provided by Wraight and Associates (WA).

Existing power supply to the site is from a 400 V duct that crosses Jervois Quay to the south of the site. There is also an 11,000 V duct to the north of the site. It is anticipated that these connections can be reused to service the new transformer and site. Wellington Electricity have been contacted to confirm this and we are awaiting their response.

3.2 Communications

Existing One Network Cables are shown in the footpath on the Western side of Jervois Quay. This will allow fibre optic to service the site. Online broadband checkers for both One NZ and Chorus confirm fibre connection to the site is available.

4 Wet Services

4.1 Water supply

Potable water connections will be required for drinking fountains, irrigation, GoB and to the Fale building.

The water supply to the GoB is intended as a backup supply in case the water from the Fale roof runoff contains contaminants and is not suitable for use.

There are four existing 20 mm service connections shown crossing Jervois Quay to the site. Three appear to be direct connections to an 800 mm transmission main in the middle of Jervois Quay and the fourth connects to a 200 mm main on the West side of Jervois Quay. It is proposed to utilise these existing connections to service the site.

Wellington Water Ltd. (WWL) have indicated⁴ that minimum pressure at the point of supply on the public main is expected to be 80-84m head. This is within the mandated levels of service for pressure detailed in the Regional Standard for Water Services⁵ and therefore is sufficient to service the proposed development.

Water supply to the Fale building is covered under a separate report prepared by Aurecon.

Refer to Appendix C for a record of correspondence with WWL.

4.2 Wastewater

Wastewater connections will be required at drinking fountains.

There is an existing 100 mm PVC wastewater main that connects the site to a 200 mm earthenware main on the West side of Jervois Quay. This currently services the toilets in the underground carpark building. It is proposed to utilise the existing connection to service the park. Correspondence with WWL indicated their wastewater model shows at least 1 L/s of local network capacity in the 1-year LTS design event.

This is considered sufficient to service the development and utilising the existing connections should meet the level of service requirements detailed in the Regional Standard for Water Services⁴. Approximately 100 m of existing wastewater main is located under/within the underground carpark and is expected to be removed or made redundant during the demolition of the underground carpark. This will require a Public Drainage Permit from the WWL Land Development Team.

Wastewater servicing the Fale building is covered under a separate report prepared by Aurecon.

Refer to Appendix C for a record of correspondence with WWL.

4.3 Stormwater

4.3.1 Existing system

Existing site runoff is collected through a system of sumps and subsoil drains. Several 225 mm collector pipes then convey flow to three outfalls which discharge directly into Wellington Harbour. Figure 4-1 below shows the existing pipe network as shown on WWL GIS.

⁴ WWL pre-Application Advice – Frank Kitts Park, email correspondence with Ye Mon Oo, Wellington Water, March 2024.

⁵ Regional Standard for Water Services (Version 3.0), Wellington Water. December 2021.



Figure 4-1: Frank Kitts Park existing pipe networks. Source: Wellington Water GIS

Towards the north of the park, the outfalls from the two sumps on Jervois Quay appear to flow North to a 1200 mm diameter pipe. This then flows into a 1350 mm pipe (Outfall 1) which flows into the Harbour. The middle area of the park including the children's playground and the amphitheatre is collected into a 1200 mm stormwater main (Outfall 2) which again discharges directly to the harbour. Runoff from the south of the site, above the underground carpark, is collected into a 1650 mm stormwater main (Outfall 3) beneath the Lagoon Promenade. There is an additional 1550 mm pipe which runs parallel to this which conveys flow from higher in the catchment (Outfall 4). All four outfalls convey runoff from the central city with a combined catchment area of approximately 35 hectares. Table 2 shows an estimate of the existing runoff flows entering the stormwater network in a 50% AEP event (Primary system level of service for open space/reserve⁶).

Table 2: Existing site runoff to stormwater network for a 50% AEP rainfall event (excluding Fale)

Network	Outfall dia. (mm)	Park catchment area impervious (m ²)	Park catchment area pervious (m ²)	Total park catchment area (m ²)	Combined runoff coefficient* C	Present day runoff (L/s)	Future runoff – RCP8.5 in 2100 (L/s)
Outfall 1	1350	1442	1435	2877	0.58	20.8	27.4
Outfall 2	1200	2943	3222	6165	0.56	43.6	57.3
Outfall 3	1650	3742	1630	5372	0.68	46.2	60.7
Total		8127	6287	15614		110.7	145.3

* Area averaged where 0.3 is used for pervious surfaces and 0.85 for impervious surfaces.

⁶ Regional Standard for Water Services (Version 3.0), Wellington Water. December 2021.

4.3.2 Runoff management

Runoff within the park will be managed using a combination of conventional methods and low impact stormwater design. This will include the following:

- Landscaped planted areas comprising a rain garden, garden beds and lawns.
- Perforated subsoil drains around lawn perimeters and garden beds.
- A rain garden in the northwest corner to collect and treat runoff from approximately 900 m² of Jervois Quay.
- Grated channels/slot drains to intercept runoff on walkways at change of grade and to convey runoff from Jervois Quay under the footpath to the proposed rain garden.
- A variety of sumps to suit the environment located at runoff collection points along Jervois Quay, in planted areas, in the GoB and throughout the park.

More detail can be found in the Stormwater drawings in Appendix A.

4.3.3 Receiving network

The three existing outfalls and their respective pipe networks described above will be utilised to convey collected runoff to Wellington Harbour.

The volume of discharge (from the park) to this network is not expected to increase as a result of the development. As seen below in , a small decrease in total runoff is expected. Attenuation and a small amount of detention will be provided within the rain garden thus allowing the site to achieve post development hydraulic neutrality. Due to the direct discharge to the harbour attenuation is not required.

Provision has been made for the following features which will reduce peak flows discharging to the stormwater network:

- Roof runoff from the proposed Fale building is to be captured in two 20,000 L tanks and reused in reticulation of the GoB water feature , subject to confirmation that runoff from the Fale roof surface is suitable for this use (this is covered in a separate stormwater report for the Fale, prepared by Aurecon). Our understanding is that any overflow from the GoB water feature during high rainfall events or if the pond is emptied, will discharge into the stormwater system – refer section 4.3.4.
- A rain garden in the North-west corner of the park will capture runoff from a portion of Jervois Quay. A flow splitter is proposed in the existing manhole further south of the proposed garden to divert additional flow to the rain garden to maximise the use of the rain garden area. This would divert low flows into the rain garden for treatment and bypass it in high flows so its capacity (and that of outfall 1) is not exceeded.

Table 3: Proposed site runoff to stormwater network for a 50% AEP rainfall event (excluding Fale)

Network	Park catchment area impervious (m ²)	Park catchment area pervious (m ²)	Park catchment area semi-pervious (m ²)	Total park catchment area (m ²)	Combined runoff coefficient* C	Present day runoff (L/s)	Future runoff – RCP8.5 in 2100 (L/s)
Outfall 1	1624	868	0	2492	0.66	20.6	27.1
Outfall 2	2553	3734	355	6642	0.52	43.6	57.3
Outfall 3	3693	1587	0	5280	0.68	45.5	59.8
Total	7870	6189	355	14414		109.8	144.2

* Area averaged where 0.3 is used for impervious surfaces, 0.85 for pervious surfaces and 0.5 for semi-pervious surfaces.

4.3.4 Treatment

Runoff from the park is not expected to carry excess contaminants or sediment and therefore treatment is unlikely to be required. Sumps located at low points will aid in the removal of sediment before discharge into the stormwater network.

Overflow from the GoB water feature should be treated before discharge into the stormwater network. This will be done via a rain garden type infiltration treatment or a proprietary device. Provision has been made for a rain garden in the northwest corner of the park which would collect runoff from the adjacent section of Jervois Quay. This would act as a treatment device for the removal of silt and traffic pollutants. It would also provide some attenuation to reduce discharge to the network in heavy rainfall and high water events.

Any treatment requirements for the Fale building are covered in a separate report prepared by Aurecon.

4.3.5 Sea level rise

Existing mean sea level is currently at approximately 0.28 m (Wellington Vertical Datum 1953). Sea level rise projections are presented below (table adapted from Aurecon report⁷).

Table 3: Sea level rise projections using SSP2-4.5 & SSP5-8.5, & likely change 2040, 2090, & 2130.

Sea Level Rise							
Change by 2040		Change by 2090		Change by 2123		Change by 2130	
Standard Case ¹	Worst Case ²	Standard Case	Worst Case	Standard Case	Worst Case	Standard Case	Worst Case
+280 mm	+280 mm	+760mm	+950mm	+1,120mm	+1,490mm	+1,200mm	+1,610mm

¹SSP2-4.5 Standard Case

²SSP5-8.5 – Fossil fuelled development worst case scenario

Based on WWL GIS pipe invert levels and surveyed invert levels at the upstream manholes we understand that all four stormwater existing outlets are submerged at current mean sea level. An increase in tailwater level as a result of sea level rise will eventually result in water backing up in the system and not being able to discharge in high water.

In this situation, maintaining an overland flow path through the site will be critical to the dispersal of runoff. As seen in the flood modelling, Jervois Quay is the lowest point in the surrounding area where water will collect. It is therefore critical that as much as possible runoff from the park flows

⁷ Aurecon (21 October 2021), Report for Fale Malae Trust "Fale Malae, Climate Change Risk & Adaptation Plan" Aurecon Ref. 522118 Rev A

east directly. Most of the large areas in the current proposed development do so. The two proposed rain gardens on the east side of the site may also help as they have some capacity to hold water in high water events when discharge through the network is not possible. Design of the rain gardens will need to consider whether the higher ground water table associated with sea level rise will influence infiltration and capacity.

Refer to report prepared by Aurecon for sea level rise considerations for the Fale building.

5 Further work required

The following work is required as part of developed and detailed design:

- Confirm if it is viable for demolition materials such as concrete, to be crushed and reused on site.
- Confirm service requirements from Wellington Electricity.
- Detailed civil engineering design after receipt of resource consent.
- A Draft Construction Management Plan is included in Appendix B. A Final Construction Management Plan will need to be submitted to Wellington City Council by the Head Contractor for approval, prior to any physical works commencing.

6 Applicability

This report has been prepared for the exclusive use of our client Wellington City Council, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that our client will submit this report as part of an application for resource consent and that Wellington City Council and Greater Wellington Regional Council as the consenting authority will use this report for the purpose of assessing that application.

We acknowledge that the Fale Malae Trust will also submit this report as part of an application for resource consent in accordance with the Reliance Statement⁸, and that Wellington City Council and Greater Wellington Regional Council as the consenting authority will use this report for the purpose of assessing that application.

Tonkin & Taylor Ltd
Environmental and Engineering Consultants

Report prepared by:



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Marina Comeskey
Civil Engineer

Authorised for Tonkin & Taylor Ltd by:



.....
Dr Eng Chin
Project Director

Technical reviewed by: Maurice Mills (Senior Civil Engineer)

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⁸ Tonkin & Taylor Ltd (X March 2024), Letter to Fale Malae Trust titled "Reliance Statement – Frank Kitts Park Redevelopment". T+T Ref. 1018875.4.

Appendix A Drawings

- General Arrangement, Services Layout Plan, Fig 1018874.4000-F01 Rev1
- Earthworks Cut Fill Plan, Fig 1018874.4000-F02 Rev1
- Stormwater Concept Design, Layout Plan, Fig 1018874.4000-F10 Rev 1
- Stormwater Concept Design, Rain Garden Typical Details, Fig 1018874.4000-F11 Rev 1

NOTES

1. PROPERTY BOUNDARIES, LOCALITY MAP AND AERIAL IMAGE SOURCED FROM LINZ DATA SERVICE <https://data.linz.govt.nz/> AND MADE AVAILABLE UNDER CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENSE.
2. WATER SUPPLY, WASTEWATER AND STORMWATER PIPES ARE SOURCED FROM WWL OPEN DATA PORTAL.
3. OTHER SERVICE LOCATIONS HAVE BEEN BASED ON INFORMATION RECEIVED FROM BEFORE U DIG AND SURVEY FROM SPENCER HOLMES S23-0424-SERV-A-COMBINED DATED 11/10/2023.
4. EXISTING SERVICE LOCATIONS SHOULD BE CONFIRMED ON SITE.
5. COORDINATES IN NZGD2000 WELLINGTON CIRCUIT.
6. DEVELOPMENT PLAN PROVIDED BY WRAIGHT AND ASSOCIATES.

LEGEND

- PROPERTY BOUNDARIES
- - - SITE BOUNDARY
- - - PWR EXISTING POWER CABLE_UNKNOWN
- - - 11kV EXISTING UNDERGROUND POWER CABLE_11KV-E
- - - UGLV EXISTING UNDERGROUND POWER CABLE
- - - X X X UGLV ABANDONED UNDERGROUND POWER CABLE
- - - SWD EXISTING STORMWATER SUBSOIL DRAIN
- - - SW EXISTING STORMWATER PIPE
- - - SWAD EXISTING STORMWATER DRAIN
- - - CHORUS EXISTING CHORUS
- - - DUCT EXISTING DUCT
- - - EXISTING NOVA GAS
- - - X X X NOVA-GAS ABANDONED NOVA GAS
- - - UND EXISTING UNIDENTIFIED SERVICES
- - - A EXISTING GAS
- - - B EXISTING ELECTRICAL CONDUIT
- - - VODA EXISTING ONE.NZ LINES
- - - W EXISTING WATER PIPE
- - - WW EXISTING WASTE WATER PIPE
- - - 0.5 m DESIGN CONTOUR
- - - 0.1 m DESIGN CONTOUR
- ⊙ EXISTING STREET LIGHT
- ⊙ EXISTING LIGHT POLE
- ⊙ EXISTING ELECTRICAL POWER
- ⊙ EXISTING IRRIGATION CONTROL VALVE
- ⊙ EXISTING STORMWATER SUMP
- ⊙ EXISTING STORMWATER BOX SUMP
- ⊙ EXISTING STORMWATER MANHOLE
- ⊙ EXISTING UNIDENTIFIED MANHOLE



0 10 20 m
1:400 (A1)
1:800 (A3)

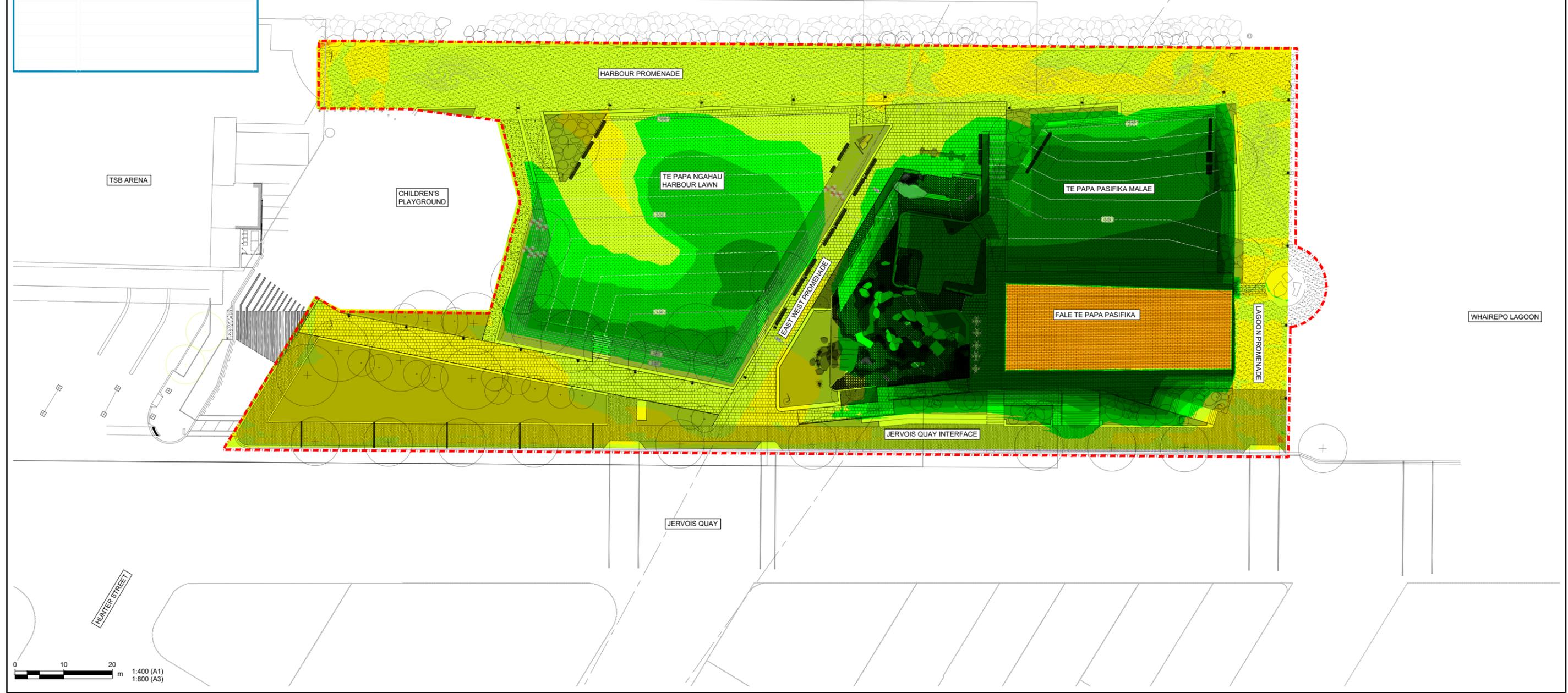
DESIGNED	MACO	DEC.23	FIGURE STATUS	CLIENT
DRAWN	HUGO	DEC.23	DRAFT	WELLINGTON CITY COUNCIL
DESIGN CHECKED			PROJECT PHASE	PROJECT FRANK KITTS PARK REDEVELOPMENT
FIGURE CHECKED			RESOURCE CONSENT	TITLE GENERAL ARRANGEMENT SERVICES LAYOUT PLAN
NOT FOR CONSTRUCTION			THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AS APPROVED	DRAFT
APPROVED	DATE		SCALE (A1) AS SHOWN	FIG No. 1018874.4000-F01

NOTES

1. PROPERTY BOUNDARIES, LOCALITY MAP AND AERIAL IMAGE SOURCED FROM LINZ DATA SERVICE <https://data.linz.govt.nz/> AND MADE AVAILABLE UNDER CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENSE.
2. COORDINATES IN NZGD2000 WELLINGTON CIRCUIT.
3. DATUM IN NZVD2016.
4. DEVELOPMENT PLAN PROVIDED BY WRAIGHTS AND ASSOCIATES.
5. LAYOUT SUBJECT TO CONFIRMATION DURING DETAILED DESIGN.

LEGEND

PROPERTY BOUNDARIES	
CUT -2.0m to -1.5m	[Red]
CUT -1.5m to -1.0m	[Orange]
CUT -1.0m to -0.5m	[Yellow]
CUT -0.5m to -0.0m	[Light Green]
FILL 0.0m to 0.5m	[Light Green]
FILL 0.5m to 1.0m	[Green]
FILL 1.0m to 1.5m	[Dark Green]
FILL 1.5m to 2.0m	[Dark Green]
FILL 2.0m to 2.5m	[Dark Green]
FILL 2.5m to 3.0m	[Dark Green]



0 10 20 m
 1:400 (A1)
 1:800 (A3)



DESIGNED	MACO	DEC.23	FIGURE STATUS
DRAWN	HUGO	DEC.23	DRAFT
DESIGN CHECKED			PROJECT PHASE
FIGURE CHECKED			DRAFT RESOURCE CONSENT
NOT FOR CONSTRUCTION		THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AS APPROVED	
APPROVED	DATE		

CLIENT	WELLINGTON CITY COUNCIL
PROJECT	FRANK KITTS PARK REDEVELOPMENT
TITLE	CUT FILL PLAN
SCALE (A1)	1:400
FIG No.	1018874.4000-F02
REV	1

DRAFT

NOTES

1. ALL EXISTING STORMWATER DRAINS WILL BE REMOVED DURING DEMOLITION.
2. PROPERTY BOUNDARIES, LOCALITY MAP AND AERIAL IMAGE SOURCED FROM LINZ DATA SERVICE <https://data.linz.govt.nz/> AND MADE AVAILABLE UNDER CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENSE.
3. EXISTING WATER SUPPLY, WASTEWATER AND STORMWATER PIPES ARE SOURCED FROM WWL OPEN DATA PORTAL.
4. EXISTING SERVICE LOCATIONS SHOULD BE CONFIRMED ON SITE.
5. COORDINATES IN NZGD2000 WELLINGTON CIRCUIT.
6. DATUM IN NZVD2016.
7. DEVELOPMENT PLAN PROVIDED BY WRIGHTS AND ASSOCIATES.
8. LAYOUT SUBJECT TO CONFIRMATION DURING DETAILED DESIGN.

LEGEND

- PROPERTY BOUNDARIES
- EXISTING STORMWATER SUBSOIL DRAIN
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER DRAIN
- EXISTING STORMWATER SUMP
- EXISTING STORMWATER BOX SUMP
- EXISTING STORMWATER MANHOLE
- SITE BOUNDARY
- 0.5 m DESIGN CONTOUR
- 0.1 m DESIGN CONTOUR
- PROPOSED STORMWATER CHANNEL DRAIN
- PROPOSED STORMWATER SUBSOIL DRAIN
- PROPOSED STORMWATER PIPE
- PROPOSED STORMWATER BOX SUMPS
- PROPOSED STORMWATER SUMPS
- PROPOSED STORMWATER MANHOLE / BUBBLE UP OUTLET

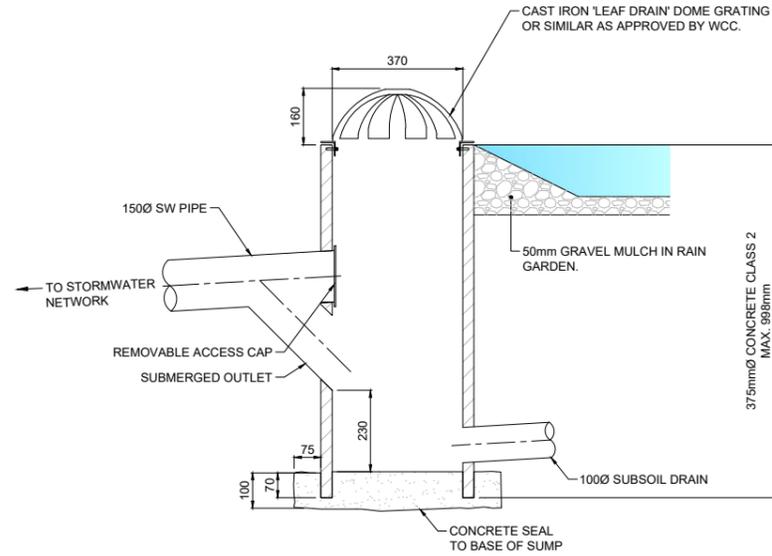


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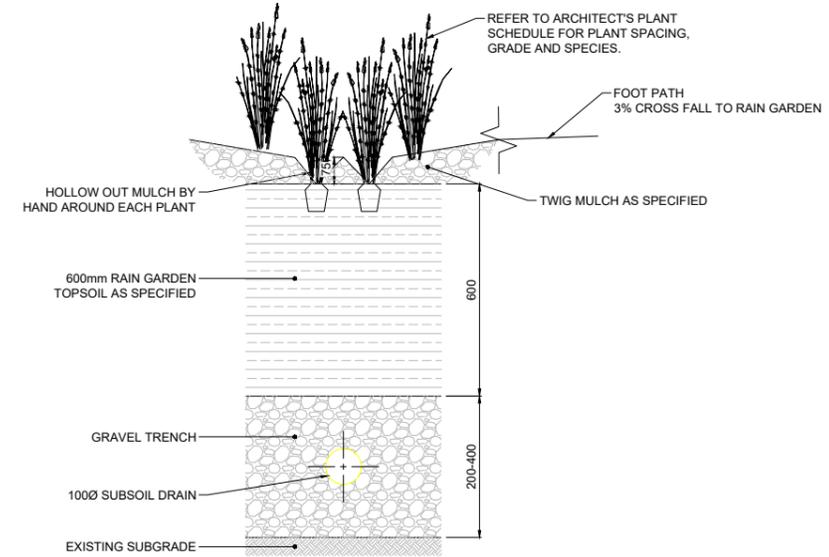
DESIGNED	MACO	DEC.23	FIGURE STATUS
DRAWN	HUGO	DEC.23	DRAFT
DESIGN CHECKED			PROJECT PHASE
FIGURE CHECKED			DRAFT RESOURCE CONSENT
NOT FOR CONSTRUCTION		THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AS APPROVED	
APPROVED	DATE		

CLIENT WELLINGTON CITY COUNCIL
PROJECT FRANK KITTS PARK REDEVELOPMENT
TITLE STORMWATER CONCEPT DESIGN LAYOUT PLAN

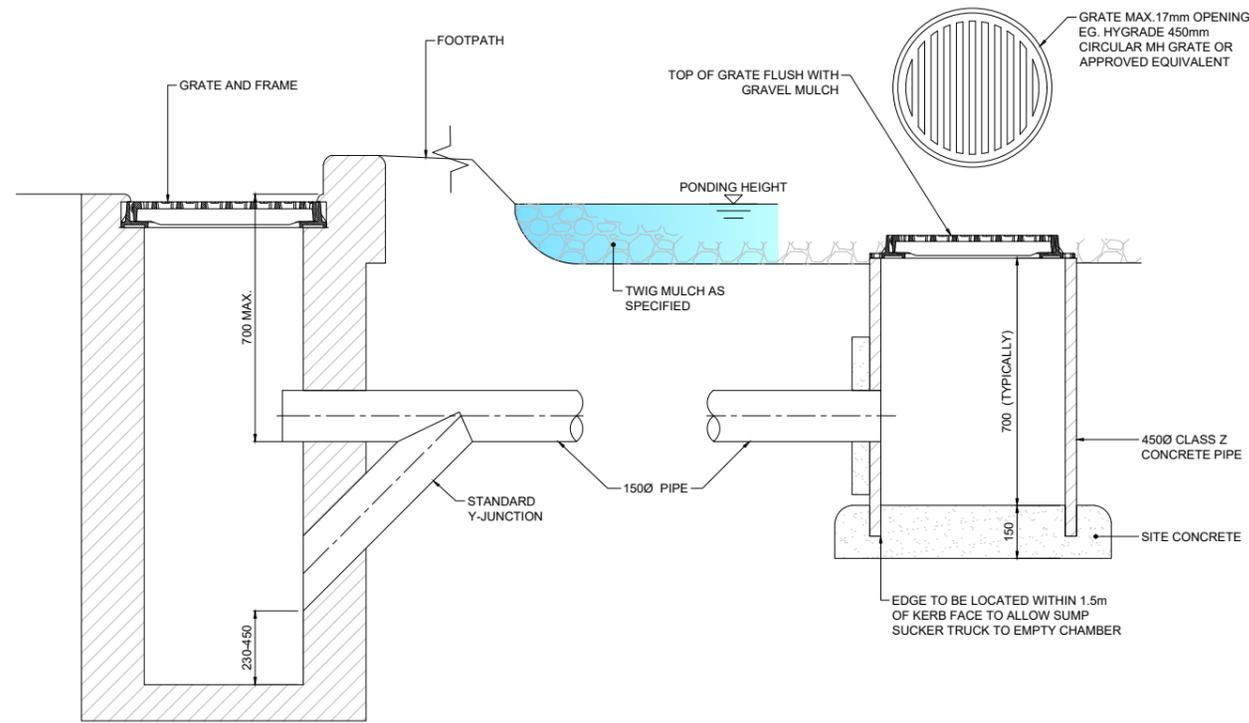
SCALE (A1) 1:400 **FIG No. 1018874.4000-F10** **REV 1**



TYPICAL OVERFLOW DETAIL
SCALE 1:10



TYPICAL SECTION DETAIL
SCALE 1:10



TYPICAL BUBBLE UP INLET DETAIL
SCALE 1:10



DESIGNED	MACO	DEC.23	FIGURE STATUS
DRAWN	HUGO	DEC.23	DRAFT
DESIGN CHECKED			PROJECT PHASE
FIGURE CHECKED			RESOURCE CONSENT

NOT FOR CONSTRUCTION THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AS APPROVED

APPROVED DATE

CLIENT **WELLINGTON CITY COUNCIL**
PROJECT **FRANK KITTS PARK REDEVELOPMENT**

TITLE **STORMWATER CONCEPT DESIGN**
RAIN GARDEN TYPICAL DETAILS

DRAFT

SCALE (A1) AS SHOWN FIG No. 1018874.4000-F11 REV 1

Appendix B Draft Construction Management Plan

Draft Construction Management Plan

Frank Kitts Park

December 2023

1 Introduction

This document forms a “Draft Construction Management Plan” (DCMP) for the proposed development of Frank Kitts Park.

The head contractor responsible for constructing this project has not yet been appointed. Therefore, this DCMP provides the framework within which the construction activities will be managed. At this stage, it is not possible to provide final details of the works or associated construction activities that might be implemented to manage the construction effects.

A Final Construction Management Plan (FCMP) will be submitted to Wellington City Council (WCC) by the appointed Head contractor for its review and approval prior to any physical works commencing. It is anticipated that the requirement to provide a FCMP will be covered by an appropriate consent condition as part of the resource consent process. Once the FCMP has been approved, no changes will be made without approval from WCC.

2 The site

Frank Kitts Park (Site) is located on the Wellington harbour waterfront. The proposed area of redevelopment is defined by the existing park extents from the Lagoon and Harbour to the east and south, Jervois Quay to the west and the building service areas of the TSB Arena to the north (refer Figure 1 below). The playground area currently under redevelopment, contained within Frank Kitts Park is excluded from this DCMP.



Figure 1: Location Plan (extent of site shown with dashed red line)

3 Statutory requirements

All contractors and construction workers on the site are required to comply with all applicable New Zealand legislative obligations (current New Zealand law).

All necessary statutory and bylaw requirements will be finalised by WCC upon application for Resource Consent and Building Consent for the proposed redevelopment.

4 Health and safety

The head contractor will prepare a Health and Safety policy for the project. The policy will be specific to this project and Site.

A visible hazard board naming site specific hazards will be maintained and displayed at the main entrance to the Site.

Safety induction courses will be carried out for all people working on the Site. The head contractor will maintain a register at the Site office, to ensure all people working on the Site have carried out safety induction training.

All people entering the Site will be required to be site safe and hold a current site safe passport.

5 Complaints procedure

All complaints are to be followed up by the head contractor's Site Manager. It is the Site Manager's responsibility to carry out the following:

1. Provide signage with Site Manager's 24 hour contact details at the main site entrance.
2. Maintain complaints register at the Site office and keep it up to date.
3. Ensure all people working on the Site are trained to immediately report feedback (good or bad) from site visitors, neighbouring property owners, and members of the public.
4. Ensure all feedback is recorded in a public feedback record register.

6 Environmental effects

This project will create short-term effects to the environment during the car park demolition, earthworks and construction phases. These include:

- Pedestrian amenity and safety
- Noise
- Traffic
- Earthworks and dust
- Construction

Pedestrian amenity and safety

A key factor to be addressed in the FCMP will be measures to be implemented to ensure pedestrian safety; and to the greatest extent practicable, that any disruption to pedestrian movement along Jervois Quay or the waterfront is minimised.

Noise

All noise generating activities during the period of site works for this project will be managed on site as far as is reasonably practicable to meet New Zealand Standard NZS 6803:1999 Acoustics - Construction Noise which was developed to appropriately mitigate and manage noise effects during demolition, earthworks and construction work. In addition, all persons undertaking day to day management of construction activities on the site will wherever possible, adopt the Best Practical

Option (BPO) at all times to ensure the emission of noise from the site does not exceed a reasonable level in accordance with Section 16 of the Resource Management Act 1991.

Traffic

The earthwork and construction contractor/s will each be required to provide traffic management details for the respective work phases, which will be detailed as Traffic Management Plans within the FCMP.

These will detail:

- Site access for vehicles.
- Site access controls to provide for pedestrian and road safety.
- Route for the transport of earth or demolition material off site.
- Route for the transport of imported fill material onto the Site.
- Measures for avoiding and minimising the adverse effects of the transportation of surplus material (e.g. wheel wash, covering loads etc).

The head contractor's Site Manager will carry out all necessary traffic management confirmed as necessary and appropriate by WCC when it approves the FCMP.

During site works, construction-related parking will be provided on the site where practical, to avoid any potential conflict with traffic, parking and pedestrians in the vicinity of the site.

Maintenance of pedestrian safety on Jervois Quay and the waterfront path will be paramount and covered in a separate Health and Safety document prepared by the Head Contractor.

Earthworks

As part of site preparation, the site will be excavated as necessary to accommodate the new park. Refer to the demolition plan (prepared by others) for specific details on demolition of the underground car park.

Dust mitigation measures will be utilised on-site to avoid dust being generated and carried beyond the site. Potential sediment runoff from the Site will be managed in accordance with the approved Erosion and Sediment Control Plan (ESCP).

Demolition and Construction

Demolition and construction activities will be carried out with all necessary care to prevent damage or risk for adjacent properties, adjacent buildings, and their occupiers. Signage and safety barriers will be installed as required to warn pedestrians that construction activities are occurring. Access to the Site will be managed at all times, including maintenance of secure fencing around its perimeter when construction workers are not present on the site.

If any demolition material is carried off the site onto the street network the Site Manager will ensure it is removed promptly and in a safe manner.

7 Construction procedures

Site Office

A temporary site office will be installed within the Site. All approved documentation will be kept at the site office including the originals of the approved building consents and all working drawings.

Construction Program

An expected commencement and completion date for the project has not yet been determined.

Advice to Neighbouring Properties

Adjoining property owners will be supplied with an intended construction timetable along with 24 hour contact details for the Site Manager should issues arise at any point, including when construction personnel are not present on the site.

8 Plant and equipment

The head contractor's Site Manager will ensure the head contractor's and any sub-contractors plant and equipment carries the necessary certificates and inspection notifications as required under the current Health and Safety requirements. All contractors will be responsible for the maintenance of their own plant and equipment to ensure safe and smooth operation. Plant and equipment will be kept in good condition. No plant or equipment without a current safety check will be allowed on site.

9 Sewage and waste disposal

Portable chemical toilets will be provided for workers. Portable toilets will be located away from the street frontage, regularly serviced, and suitably screened. Skip bins will be used for regular refuse disposal.

10 Inspections, reporting and records

The site office will be the point of reference for all management requirements. All relevant records will be housed in the site office. The site office will be used for induction of sub-contractors for Health and Safety procedures.

11 Summary

In implementing all aspects of the proposed earthworks and construction activity associated with the proposed redevelopment of Frank Kitts Park, the objective will be to ensure that as little disruption to the surrounding environment as possible and to complete these activities as practically and efficient as possible.

Appendix C Utility Provider Correspondence

From: YeMon Oo <YeMon.Oo@wellingtonwater.co.nz>
Sent: Monday, March 11, 2024 1:08 PM
To: Marina Comeskey <MComeskey@tonkintaylor.co.nz>
Cc: Land Development <Land.Development@wellingtonwater.co.nz>
Subject: RE: Network capacity for proposed redevelopment of Frank Kitts Park - 11 March 2024

Hi Marina,

Hope you are well.

Kindly see the pre-application advice attached for Frank Kitts Park redevelopment.

Kind Regards,
Ye Mon Oo Graduate Engineer – Land Development
Network Strategy and Planning



Tel 04 912 4400 Mob 021 462 258

Private Bag 39804, Wellington Mail Centre 5045
Level 4, 25 Victoria Street, Petone, Lower Hutt

www.wellingtonwater.co.nz



From: Marina Comeskey <MComeskey@tonkintaylor.co.nz>
Sent: Friday, March 1, 2024 1:42 PM
To: YeMon Oo <YeMon.Oo@wellingtonwater.co.nz>
Cc: Land Development <Land.Development@wellingtonwater.co.nz>
Subject: RE: Network capacity for proposed redevelopment of Frank Kitts Park - 1 March 2024

You don't often get email from mcomeskey@tonkintaylor.co.nz. [Learn why this is important](#)

Caution: This is an external email. Please take care when clicking links or opening attachments.

Kia ora,

Apologies about that, see attached.

Ngā mihi | Kind regards,

[Marina Comeskey](#) | Civil Engineer

BE (Hons)

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Lucas House, 51 Halifax Street, Nelson | PO Box 1009, Nelson 7040, New Zealand

T [+6435462600](tel:+6435462600) M [+64220916626](tel:+64220916626) www.tonkintaylor.co.nz  T+T profile

 **Tonkin+Taylor**

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From: YeMon Oo <YeMon.Oo@wellingtonwater.co.nz>

Sent: Friday, March 1, 2024 12:54 PM

To: Marina Comeskey <MComeskey@tonkintaylor.co.nz>

Cc: Land Development <Land.Development@wellingtonwater.co.nz>

Subject: RE: Network capacity for proposed redevelopment of Frank Kitts Park - 1 March 2024

Hi Marina,

I hope this email finds you well.

Apologies for the delay in getting back to you. I've been reviewing the original request that came into the Land Development team, and it appears that there are no attached plans.

Could you please resend the plans when you have a moment?

Thank you.

Kind Regards,

Ye Mon Oo Graduate Engineer – Land Development
Network Strategy and Planning

 **Wellington
Water**

Tel 04 912 4400 Mob 021 462 258

Private Bag 39804, Wellington Mail Centre 5045
Level 4, 25 Victoria Street, Petone, Lower Hutt

www.wellingtonwater.co.nz



From: Land Development <Land.Development@wellingtonwater.co.nz>
Sent: Tuesday, February 20, 2024 4:57 PM
To: Marina Comeskey <MComeskey@tonkintaylor.co.nz>; YeMon Oo <YeMon.Oo@wellingtonwater.co.nz>
Subject: RE: Network capacity for proposed redevelopment of Frank Kitts Park

Kia ora YeMon

Thank you for assisting Marina as per her enquiry below. Please let me know how you would like to me upload these.

Kind regards,
Etta
Land Development Team
[Network Strategy & Planning](#)



Private Bag 39804, Wellington Mail Centre 5045
Level 4, 25 Victoria Street, Petone, Lower Hutt

From: Marina Comeskey <MComeskey@tonkintaylor.co.nz>
Sent: Tuesday, 20 February, 2024 2:36 PM
To: Land Development <Land.Development@wellingtonwater.co.nz>
Subject: RE: Network capacity for proposed redevelopment of Frank Kitts Park

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Caution: This is an external email. Please take care when clicking links or opening attachments.

Kia ora Etta,

Thank you, I totally understand and appreciate the update!

Ngā mihi | Kind regards,
[Marina Comeskey](#) | Civil Engineer
BE (Hons)
Tonkin + Taylor - *Exceptional thinking together*
Lucas House, 51 Halifax Street, Nelson | PO Box 1009, Nelson 7040, New Zealand
T [+6435462600](tel:+6435462600) M [+64220916626](tel:+64220916626) www.tonkintaylor.co.nz  T+T profile



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From: Land Development <Land.Development@wellingtonwater.co.nz>
Sent: Tuesday, February 20, 2024 1:22 PM
To: Marina Comeskey <MComeskey@tonkintaylor.co.nz>
Subject: RE: Network capacity for proposed redevelopment of Frank Kitts Park

Hi Marina,

Acknowledging receipt of your enquiry.

Our sincere apologies, our small team of engineers are at full capacity, processing a high volume of applications at the moment.

I am hoping one of our engineers can come back to you very soon – tomorrow morning at the latest.
Thanks so much for your patience.

Etta

Kind regards,
Land Development Team
[Network Strategy & Planning](#)



Private Bag 39804, Wellington Mail Centre 5045
Level 4, 25 Victoria Street, Petone, Lower Hutt

From: Customer Support Team <customer@wellingtonwater.co.nz>
Sent: Monday, 19 February, 2024 8:34 AM
To: Land Development <Land.Development@wellingtonwater.co.nz>
Subject: FW: Network capacity for proposed redevelopment of Frank Kitts Park

Kia Ora team,
Please see the below request.
Nga mihi.

From: Marina Comeskey <MComeskey@tonkintaylor.co.nz>
Sent: Thursday, February 15, 2024 9:24 AM
To: Info Mailbox <Info@wellingtonwater.co.nz>
Subject: Network capacity for proposed redevelopment of Frank Kitts Park

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Caution: This is an external email. Please take care when clicking links or opening attachments.

Kia ora,

We are considering redevelopment of Frank Kitts park for resource consent and would like to confirm with Wellington Water that the existing water supply and wastewater networks in the area have sufficient capacity to service the proposed development. See the attached plan for reference.

Potable water connections will be required for drinking fountains and irrigation. WWL GIS show four existing 20 mm service connections shown crossing Jervois Quay to the site. Three appear to be direct connections to an 800 mm transmission main in the middle of Jervois Quay and the fourth connects to a 200 mm main on the West side of Jervois Quay. We currently assume these will be sufficient to service the site. Confirmation on the nature of the existing site connection and the existing networks capacity to service the proposed development (including LoS network pressure requirements) would be much appreciated.

Wastewater connections will be required at drinking fountains. There is an existing 100 mm PVC wastewater main that connects the site to a 200 mm earthenware main on the West side of Jervois Quay. This currently services the toilets in the underground carpark building. It is expected that this connection will be sufficient for the park.

Note that while a Fale building is included in the overall plans for the site, it is being considered under a separate resource consent and is hence outside of our scope.

Ngā mihi | Kind regards,

[Marina Comeskey](#) | Civil Engineer

BE (Hons)

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Lucas House, 51 Halifax Street, Nelson | PO Box 1009, Nelson 7040, New Zealand

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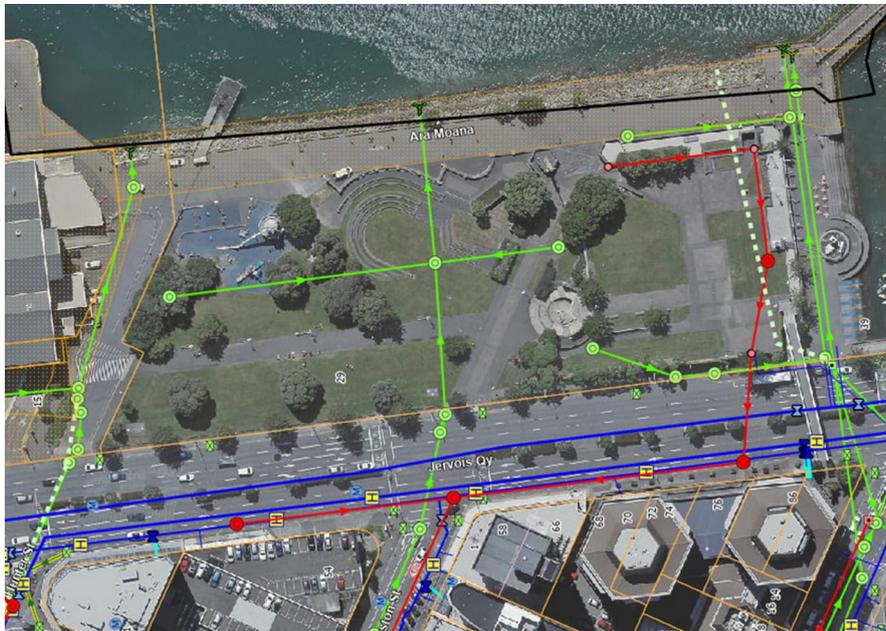
WWL Pre-Application Advice

Location – Frank Kitts Park Redevelopment

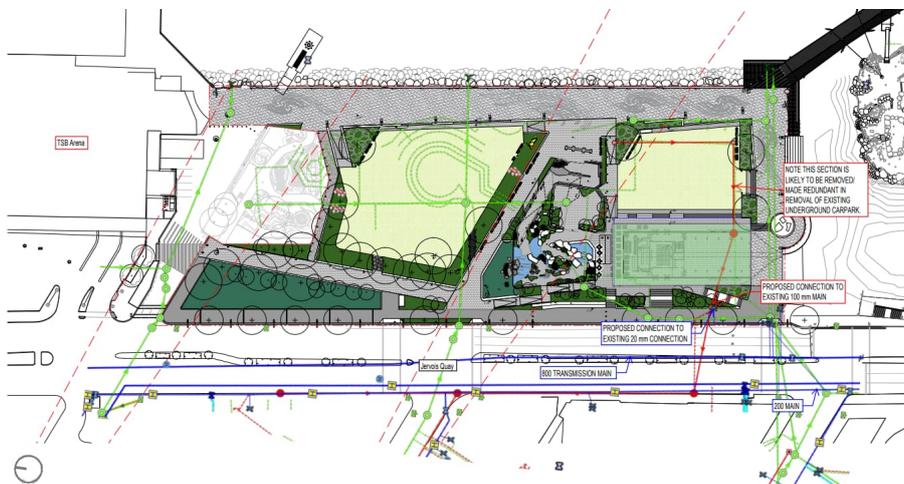
General

- Please note the information provided is not static and can change over time with new information being made available. Depending on the time frame before RC application you may need to check if this information remains valid.
- The locations of any existing connections will need to be confirmed. Re-used connections must comply with the requirements of the Regional Standard for Water Services V3, Dec 2021.
- Any abandoned connections will need to be capped / disconnected from the public mains.

GIS Map



Proposed Scheme Plan



Water Supply

WWL GIS shows there are four 20 mm existing service connections, with three connected to 800 mm STEL transmission main and another one connected 200 mm CI water main along Jervois Quay.

The model shows that minimum pressure at the point of supply on the public main is expected to be 80-84m head. Therefore, it would be sufficient to service the proposed park redevelopment and there is no issue for water supply pressure and LOS requirements.

Wastewater

There is an existing 100mm uPVC wastewater main within the proposed site, connected to 200 mm EW main along Jervois Quay.

WWL wastewater model shows the local network has at least 1 litre/sec of spare design capacity during the 1-year LTS design event where the trunk network up to PS007 has at least 10 litres/sec of spare design capacity during the same event. Therefore, it would be sufficient and there is no issue with reusing the existing wastewater main/connection for the park redevelopment.

Proposed scheme plan shows that the first 70 metres of the existing wastewater main is likely to be removed or made redundant when removing the existing underground carpark. Public Drainage Permit will be required to remove/modify the existing public wastewater network.

Asset impact assessment

DETAILS	
Address	Frank Kitts Park, WELLINGTON
Source	Email dated 23 June 2022
Type	Development enquiry
Reference	
Asset	Wastewater



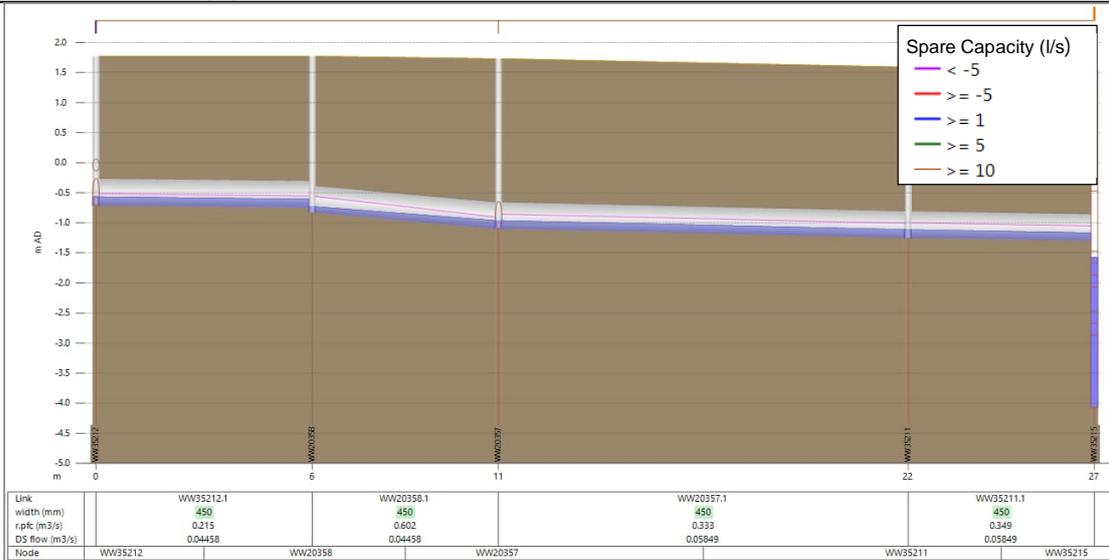
MODEL			
Software	InfoWorks ICM	Version	10.5
Model Name	WCC Moa Point WwTP	Version	5
Base Year	2015 (current)		
Design Event	1-year LTS (Moa Point 1Y > Kelburn with evap)		



Current Capacity

The property is connected to the local network at manhole WW23007 that discharges to manhole WW35212 and has at least 1 litres/sec of spare design capacity during a 1-year LTS design event. From PS006 the trunk network ultimately flows to the Moa Point WWTP and that portion contains sections that are already at, or over their design capacity. There is an engineered overflow at manhole WW20574 that discharges via the Wakefield St stormwater system into Wellington Harbour. It is unclear from the model results how frequently it operates

TRUNK NETWORK (pipes 300mm dia and above)



Current Capacity

The trunk network downstream of manhole WW35212 discharges to pump station PS007 at Wileston St and has at least 10 litres/sec of spare design capacity during a 1-year LTS design event. From PS007 the trunk network ultimately flows to the Moa Point WWTP and that portion contains sections that are already at, or over their design capacity.

SUMMARY

The local network has at least 1 litre/sec of spare design capacity during the 1-year LTS design event where the trunk network up to PS007 has at least 10 litres/sec of spare design capacity during the same event.

DISCLAIMER

This assessment is based on the results from WWL hydraulic models as defined in this memorandum. It does not take into account the impact on the spare design capacity of other developments that have occurred since then, are currently underway, or possible future developments. Non-hydraulic parameters like pipe age, conditions and likelihood of their failure have not been assessed. Flow monitoring may be required to verify these results. This development may impact on the spare design capacity available for possible future developments along the downstream network.

From: CustomerService <WE_CustomerService@welectricity.co.nz>
Sent: Friday, March 15, 2024 10:25 AM
To: Marina Comeskey <MComeskey@tonkintaylor.co.nz>
Subject: [8201] Power connection to proposed Frank Kitts Park Redevelopment

Good morning Marina,

Thank you for your email and online enquiries. If you would like to enquire about getting a capacity check and any costs associated, a design and quote would need to be raised here: <https://www.welectricity.co.nz/getting-connected/new-online-forms-holder/get-connected/>. Just fill in what you can and put 'N/A' (or select any option) for any fields that aren't applicable. One of our project managers will then make contact directly.

We hope this helps.

Kind regards,

Fiona Dermond - IISC
Customer Resolutions Coordinator
Wellington Electricity
DDI +64 4 831 0773 W www.welectricity.co.nz
85 The Esplanade, Petone, PO Box 31049, Lower Hutt 5040, New Zealand

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If you have a complaint, please let us know in order to access our free complaints process. If we cannot resolve your complaint, you can contact Utilities Disputes on 0800 22 33 40 or go to www.udl.co.nz. Utilities Disputes is a free and independent service for resolving complaints about utilities providers.

From: Marina Comeskey <MComeskey@tonkintaylor.co.nz>
Sent: Friday, March 15, 2024 9:11 AM
To: CustomerService <we_CustomerService@welectricity.co.nz>
Subject: [8201] Power connection to proposed Frank Kitts Park Redevelopment

Kia ora,

We are considering redevelopment of Frank Kitts Park for resource consent and wish to confirm with WE that the existing electricity network in the area would have capacity to service the proposed development. Power will be required for event power, lighting and any pumping required for a water feature. Power supply to the Fale is being considered by others.

Ngā mihi | Kind regards,

Marina Comeskey | Civil Engineer

BE (Hons)

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