12 May 2022

Watercare Services Limited
C/- Shalini Sanjeshni
Private Bag 92 521
Wellesley Street
Auckland 1141

Dear Shalini

Resource consent application – s92 request

Application number:	LUC60397719
Applicant:	Watercare Services Limited
Proposed activity:	The provision of minor infrastructure upgrades that are located within flood plains, overland flow paths, or areas of coastal inundation
Site address:	Various sites throughout Auckland associated with the consented central interceptor project

Thank you for submitting the above resource consent application.

Following consultation with the respective Council specialists, I am writing to advise you that the following further information and clarification is required under Section 92(1) of the Resource Management Act 1991 ("the Act") to allow for a full and accurate assessment of your application to be undertaken:

Keith Hay Park and May Road Sites

1. Please clearly show on a site plan the location of the Keith Hay Park works. For reference, the overlay of the proposed works at May Road is shown on drawing number 2011806.003, issue F, dated 11 January 2021. This level of detail needs to be replicated with the plan of works for Keith Hay Park.

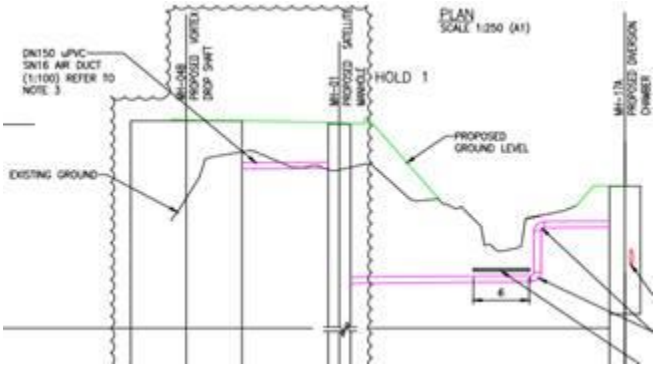
2. Please confirm if the above ground stairs at May Road referenced in section 3.3 of the submitted assessment of environmental effects refers to the access ladder shown in Section 1 in the MH-17A Diversion Chamber – Sections drawing, drawing number 2011806.006, issue E, dated 22 January 2021. If not, please provide details and any necessary level of additional assessment.

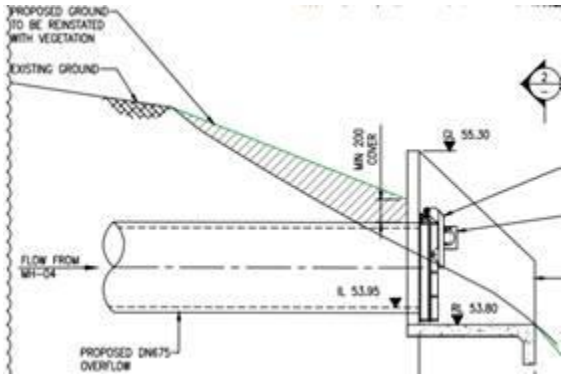
3. Please provide a flood / overland flow path risk assessment as per the special information requirements of Standard E36.9.(2) of the Auckland Unitary Plan (Operative in Part) (**AUP(OP)**). Please note that due to the nature of the proposed works, which involves filling in a flood plain, this cannot be deferred to consent condition stage and needs to be assessed as part of the resource consent assessment process.

4. Following on from question 3, please provide clarity on the total volume and depth of fill proposed within the flood plain.

5. Please provide evidence to support the statement that there 'be no exacerbation of existing flood risk' (Table 6.2 c within the assessment of environmental effects (**AEE**)), noting that the consent includes filling works within a flood plain which has not been addressed as part of the risk assessment and may result in a loss of available flood storage ,which would likely exacerbate flood risks offsite.

   Note: sections are provided below that show areas where filling is proposed:





Other Sites

6. In respect of all other works areas to which the subject consent relates, based on the submitted content of the AEE, it is understood that a blanket approach is being applied where minor infrastructure works will be constructed within a floodplain, overland flow path or coastal inundation area. As the precise nature of the works proposed is not yet known, a bespoke risk assessment as required by Standard E36.9.(2) of the AUP(OP) cannot be provided. It is therefore proposed to do this by condition of consent. As this would effectively require an effects assessment to be under, this goes beyond the scope of consent conditions and is not considered appropriate.

   To address this, it is requested that a 'draft risk assessment' is provided that addresses what would be a 'worst case scenario' in terms of the works that are likely to be undertaken within a floodplain, overland flow path or coastal inundation area. There would then be a need for individual risk assessments to be submitted for each of the works area, which being no worse and within scope of the draft plan, could be certified by Council. Anything beyond the worst-case scenario risk assessment would fall outside of the scope of this consent and would require separate resource consent approval.

   Note: this draft risk assessment (or an associated document) could contain a range of measures that could be used to mitigate adverse flooding effects. Examples of this include:

   - Where above ground utilities produce inappropriate displacement effects, there may be a need to underground other assets by way of compensation.
   - Earthworks filling undertaken in flood plains need be compensated with excavations in the same flood plain in a similar location to ensure offsite effects do not result.
   - All new manholes and services need to be underground and with flush manhole covers.

7. Please provide clarity where works are subject to coastal inundation and what measures are proposed to mitigate the effects of coastal inundation on the infrastructure and its serviceability.

It is requested that you either provide this information, in writing, within 15 working days, or contact me to arrange an alternative timeframe.

Please note that pursuant to Section 95C of the Act, if the information is not or will not be submitted within the 15-day timeframe and an alternative timeframe has not been agreed, the application must be publicly notified. Please contact me as soon as possible to confirm that the information will be provided either within the 15 working days of the request or to agree alternative timeframes for the provision of the information requested.

If you do not reply in writing within 15 working days, or refuse to provide the information, the Council reserves the right to decline your application under Section 92A(3) of the Act should it consider that it has insufficient information to enable it to determine the application.

Your attention is also drawn to the provisions of Sections 357A(1) and 357C of the Act which set out the rights of objection against this request for information.

Pursuant to Sections 88B and 88C of the Act, the application is “on hold” until all matters have been addressed.

If you wish to discuss the matters, please do not hesitate to contact me.

Yours sincerely
Mark Ross
Consultant Planner, Auckland Council

Central Interceptor | Watercare
An Auckland Council Organisation

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Auckland 2241

www.watercare.co.nz
ciproject@water.co.nz
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Customer service line
Mon to Fri 7.30am to 6pm
09 442 2222

14 June 2022

Attn: Mark Ross
Auckland Council
Private Bag 92300
Auckland 1142

Dear Mark,

Minor Infrastructure in Natural Hazard Areas: Response to s92 Request for Further Information in relation to Watercare's Resource Consent Application LUC60397719

Further to your letter dated 12 May 2022 requesting further information with respect to application LUC60397719 we provide the following response:

Keith Hay Park and May Road Sites

1. *Please clearly show on a site plan the location of the Keith Hay Park works. For reference, the overlay of the proposed works at May Road is shown on drawing number 2011806.003, issue F, dated 11 January 2021. This level of detail needs to be replicated with the plan of works for Keith Hay Park.*

   Refer to **attachment 1**.

2. *Please confirm if the above ground stairs at May Road referenced in section 3.3 of the submitted assessment of environmental effects refers to the access ladder shown in Section 1 in the MH-17A Diversion Chamber – Sections drawing, drawing number 2011806.006, issue E, dated 22 January 2021. If not, please provide details and any necessary level of additional assessment.*

   The proposed stairs do not refer to the access ladder. The above ground stairs are shown separately and have an approximate footprint of 13m^2.

3. *Please provide a flood / overland flow path risk assessment as per the special information requirements of Standard E36.9.(2) of the Auckland Unitary Plan (Operative in Part) (AUP(OP)). Please note that due to the nature of the proposed works, which involves filling in a flood plain, this cannot be deferred to consent condition stage and needs to be assessed as part of the resource consent assessment process.*

   We note that earthworks are already authorised under the Central Interceptor (CI) resource consents, as outlined in Section 3.2 of the AEE. Therefore, these are not within the scope of this application.

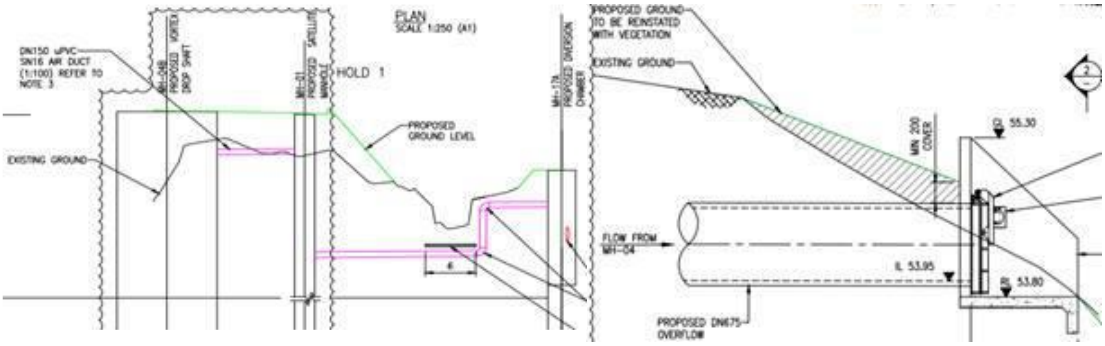
   Consent for the proposed works is sought under Chapter E36 of the AUP for infrastructure in a natural hazard area only. Any hazard risk assessment therefore is to be limited to the minor infrastructure that is to be located within identified natural hazard areas.

4. *Following on from question 3, please provide clarity on the total volume and depth of fill proposed within the flood plain.*

   As noted above, earthworks are not within the scope of this application and are already authorised under the existing CI resource consents. The scope of this application is limited to minor infrastructure to be located within a natural hazard area.

5. *Please provide evidence to support the statement that there 'be no exacerbation of existing flood risk' (Table 6.2 c within the assessment of environmental effects (AEE)), noting that the consent includes filling works within a flood plain which has not been addressed as part of the risk assessment and may result in a loss of available flood storage ,which would likely exacerbate flood risks offsite.*

   Note: sections are provided below that show areas where filling is proposed:



   As outlined above earthworks are authorised under the existing CI designation and resource consents.

   The effects of flooding at this site (May Road) are managed under consent 40840, condition 6.3 that requires a Stormwater Management Plan to be prepared that includes a description of how the 100 Year ARI attenuation to pre-development levels objective at that site will be met (see **attachment** 2 for complete condition). Note that condition 6.3 applies to a number of CI sites and includes consideration of how stormwater flows in excess of the primary system are provided for, up to the criterial stormwater event with a 1% Annual Exceedance Probability (RC6.3(f)) and effect of site development on overland flow paths (RC6.3(g)).

<u>Other sites</u>

6. *In respect of all other works areas to which the subject consent relates, based on the submitted content of the AEE, it is understood that a blanket approach is being applied where minor infrastructure works will be constructed within a floodplain, overland flow path or coastal inundation area. As the precise nature of the works proposed is not yet known, a bespoke risk assessment as required by Standard E36.9.(2) of the AUP(OP) cannot be provided. It is therefore proposed to do this by condition of consent. As this would effectively require an effects assessment to be under, this goes beyond the scope of consent conditions and is not considered appropriate.*

   To address this, it is requested that a 'draft risk assessment' is provided that addresses what would be a 'worst case scenario' in terms of the works that are likely to be undertaken within a floodplain, overland flow path or coastal inundation area. There would then be a need for individual risk assessments to be submitted for each of the

works area, which being no worse and within scope of the draft plan, could be certified by Council. Anything beyond the worst-case scenario risk assessment would fall outside of the scope of this consent and would require separate resource consent approval.

Note: this draft risk assessment (or an associated document) could contain a range of measures that could be used to mitigate adverse flooding effects. Examples of this include:

- *Where above ground utilities produce inappropriate displacement effects, there may be a need to underground other assets by way of compensation.*
- *Earthworks filling undertaken in flood plains need be compensated with excavations in the same flood plain in a similar location to ensure offsite effects do not result.*
- *All new manholes and services need to be underground and with flush manhole covers.*

The approach proposed of the hazard risk assessment forming part of the consent conditions is based on the permitted baseline, as described in Section 5.1 of the AEE. Specifically, there are two rules that have formed the basis of these conditions:

- Rule E36.4.1(A34): New structures and buildings (and external alterations to existing buildings) with a gross floor area up to 10m^2 within the 1 per cent annual exceedance probability (AEP) floodplain that comply with standard E36.6.1.9[1]; and,
- Rule E36.4.1(A35): New structures and buildings **designed to accommodate flood tolerant activities** up to 100m^2 gross floor area within the 1 per cent annual exceedance probability (AEP) floodplain.

Rule E36.4.1(A34) sets the basis of the conservative trigger of 10m^2 for Condition 2.

Additionally, Condition 3 requires that the proposed works authorised as part of this consent do not exceed 100m^2. Rule E36.4.1(A35) allows for new flood-tolerant activities up to 100m^2, without the requirement for a natural hazard assessment. Buildings for network activities (inclusive of wastewater infrastructure) are defined as flood-tolerant activities for the purpose of the AUP[2].

As the AUP allows these activities to happen as a permitted activity, we do not consider the natural hazard assessment to be an assessment of effects above what the AUP already authorises. Rather, this provides additional assurance that the works will not cause unforeseen effects from the natural hazards and it is, therefore, appropriate to manage through consent condition.

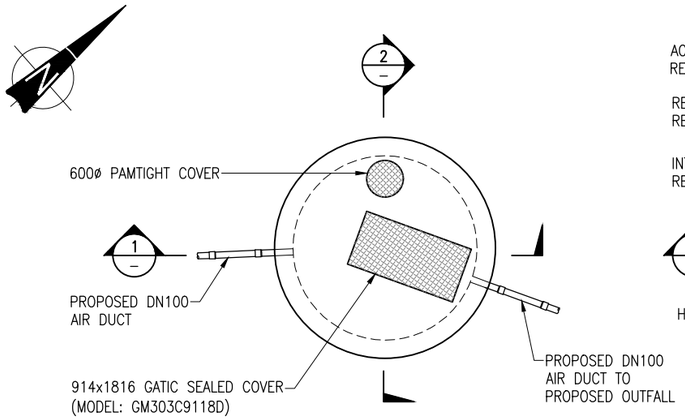
7. *Please provide clarity where works are subject to coastal inundation and what measures are proposed to mitigate the effects of coastal inundation on the infrastructure and its serviceability.*

   As previously agreed (see **attachment 3**), this is a Watercare operational issue and not a consenting concern. In addition, the works that are subject to coastal inundation have previously been authorised under LUC60375823 for “the installation of new wastewater infrastructure, being two manholes, within a coastal storm inundation 1% annual exceedance probability plus 1m sea level rise area”.

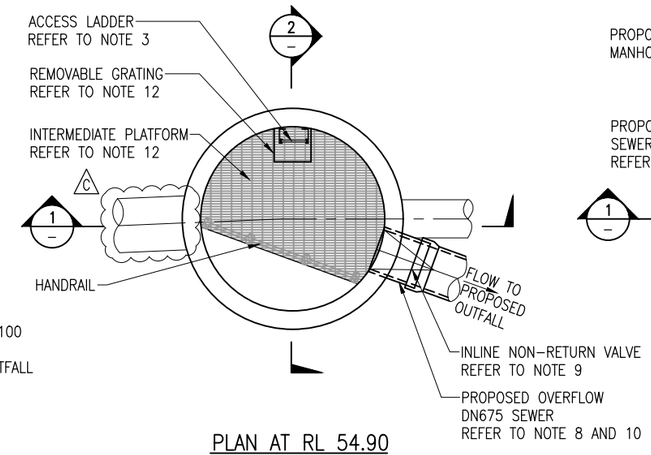
[1] E36.6.1.9: (1) The structure or building is to be located where the depth of flood waters in a 1 per cent annual exceedance probability (AEP) event does not exceed 300mm above ground level.
[2] Chapter J Definitions: Flood tolerant activity: Flood tolerant activities for the purpose of the Plan are: … buildings for network utilities.

Yours sincerely,

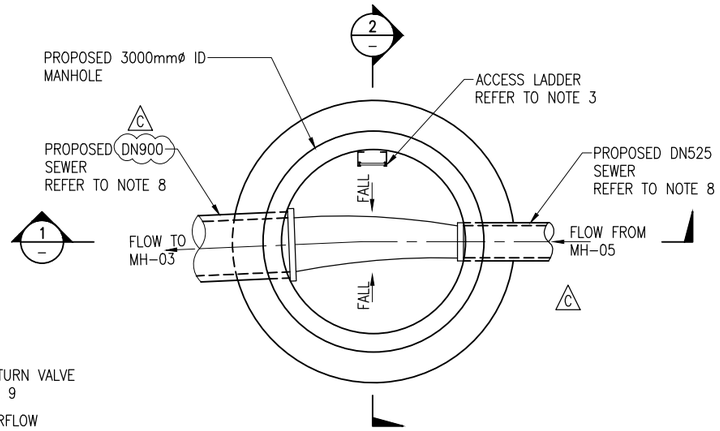
Xenia Meier
Central Interceptor – Environmental Manager
Watercare Services Limited



PLAN ON COVER SLAB
SCALE. 1:50



PLAN AT RL 54.90
SCALE. 1:50



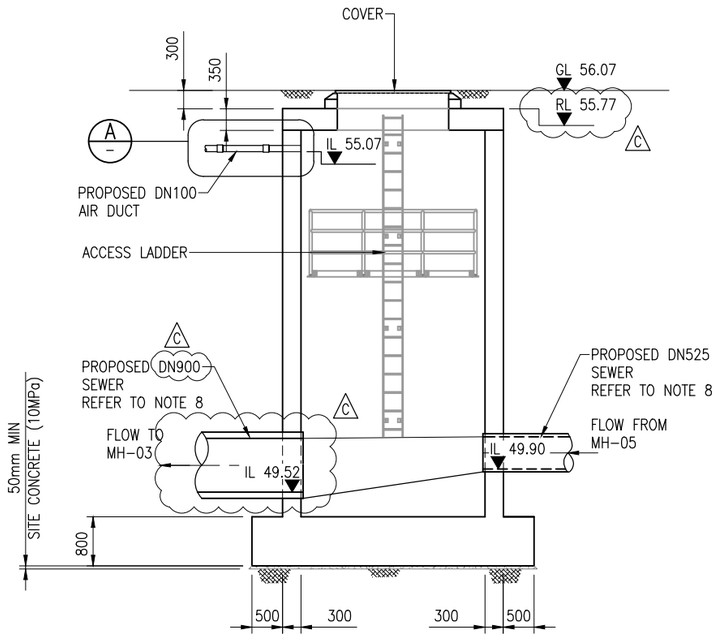
PLAN AT IL 49.44
SCALE. 1:50

NOTES:

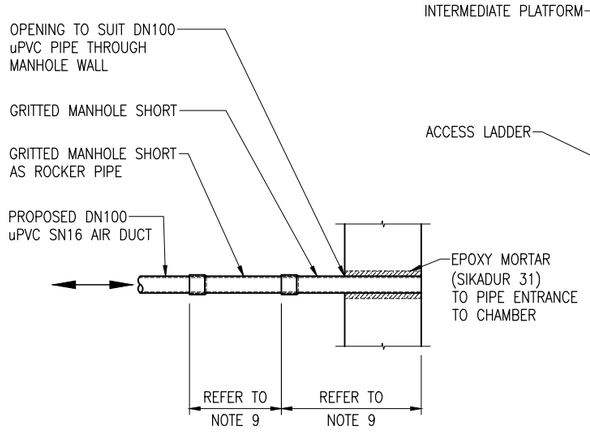
1. ALL LEVELS ARE IN METRES AND DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.
2. CONCRETE COVER SLABS ON MANHOLES AND CHAMBERS SHALL BE HN-HO-72 RATED.
3. REFER TO WATERCARE STANDARD DRAWING 2000244.003 FOR DETAILS OF GALVANISED STEEL ACCESS LADDER.
4. ALL COVERS SHALL BE TRAFFICABLE AND HAVE INTEGRAL SAFETY GRILLES UNLESS OTHERWISE STATED.
5. BENCHING FALL SHALL BE 1:12 UNLESS OTHERWISE STATED.
6. ALL INTERNAL AND EXTERNAL CONCRETE ANGLES SHALL HAVE 25mm CHAMFERS OR FILLETS UNLESS OTHERWISE STATED.
7. REFER TO WATERCARE STANDARD DRAWINGS 2000244.001 TO 2000244.044 FOR GENERAL MANHOLE DETAILS.
8. REFER TO WATERCARE STANDARD DRAWING 2000244.014 FOR PIPE CONNECTION DETAILS.
9. FIXING DETAIL OF INLINE NON-RETURN VALVE TO BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
10. REFER TO DRAWING 2011805.033 FOR ROCKER PIPE DETAILS.
11. REFER TO WATERCARE STANDARD DRAWING 2001979.049 FOR HANDRAIL DETAILS.
12. REFER TO STRUCTURAL DRAWINGS FOR PLATFORM AND REMOVABLE GRATING DETAILS.

HOLD:

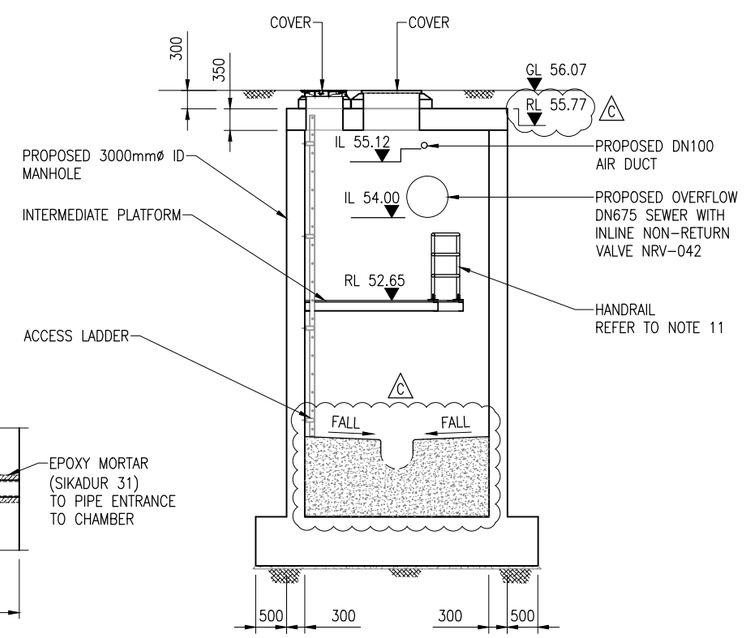
C
1. DELETED.



SECTION 1
SCALE.1:50



DETAIL A
SCALE.1:20



SECTION 2
SCALE.1:50

BRANCH 9B CARR ROAD CONNECTION SEWER

SCALE 1:20 (A1) 0 400 800 1200 1600 2000mm (400 200)

SCALE 1:50 (A1) 0 1000 2000 3000 4000 5000mm (1000)

CONSTRUCTION ISSUE

JACOBS AECOM McMILLEN JACOBS ASSOCIATES

ISSUE	DATE	AMENDMENT	BY	APPD.
C	13.10.21	IFC – CONNECTION SEWER PIPE SIZE CHANGED TO DN900, AS INDICATED	JFN	DJK
B	23.10.20	IFC – ASSET TAG NUMBERS UPDATED – DRAWING REINSTATED	WIS	CW
A	07.06.19	CONSTRUCTION ISSUE	PMF	EB
–	30.08.17	TENDER ISSUE	PJG	NK
2	19.05.17	ISSUED FOR CLIENT REVIEW	PJG	DK
1	09.12.16	ISSUED FOR CLIENT REVIEW	AP	DJK

DESIGNED	CW	08.16
DES. CHECKED	DJK	08.16
DRAWN	PJG	08.16
DWG. CHECKED	CW	08.16
PROJECT LEADER	NK	08.17
INFRAST'R APP'D	SG	08.17
	BY	DATE

OPERATIONS

INFRASTRUCTURE

Watercare

KEITH HAY PARK – CI BRANCH SEWER 3 (DSC03)
82 GRAVITY SEWER INCLUDING MANHOLES
MH-04 OVERFLOW MANHOLE – PLANS AND SECTIONS

CAD FILE 2011805.024	DATE 13.10.21
ORIGINAL SCALE A1 AS SHOWN	CONTRACT No. 6661
REF. No. CI-CIVIL	ISSUE
DWG. No. 2011805 .024	C

Plot Date: Oct 12, 2021 - 4:34pm
C:\pw_work\jeffrey.navisa@jacobs.com\dms52385\201805.024.dwg

6.3 The Stormwater Management Plan(s) shall include, but not be limited to:

(a) design details for the proposed stormwater management system, if required, including confirmation of the site impervious area and the contributing site catchment area;

(b) a description of how the general provisions of TP10 and TP108 have been applied in developing the design details;

(c) a description of how the following stormwater management objectives shall be met for the following sites:

100 Year ARI attenuation to predevelopment levels	May Road
2 & 10 year ARI attenuation to predevelopment levels	Western Springs Haverstock Road PS25 May Road
Extended detention of the first 34.5mm and release over 24 hours	
Water quality treatment to 75% removal of TSS on a long term average basis	All sites - all vehicle movement areas greater than 1,000m²

(d) a description of the extent to which Low Impact Design has been included as part of the stormwater management system;

(e) supporting calculations for the sizing of pipework and associated stormwater systems;

(f) a description of how stormwater flows in excess of the primary system are to be provided for, up to the critical storm event with a 1% Annual Exceedance Probability;

(g) an assessment of the potential effects of site development on existing overland flow paths and the proposed measures to ensure adjacent properties are not adversely affected by the Consent Holders' construction or permanent works; and

(h) a description of any relevant provisions to minimise erosion and flood safety hazards.

XMeier (Xenia)

From: Mark Ross <mark@sentinelplanning.co.nz>
Sent: Tuesday, 16 February 2021 12:27 pm
To: XMeier (Xenia)
Subject: RE: LUC60370906 - 53 Arundel Street, Hillsborough - response

CAUTION:External Email!

Cheers Xenia

Have discussed this with the engineer and upon review we accept your position – this condition won't be included.

I've sent my report to Colin for review – only three conditions, compliance with submitted plans, lapse and monitoring, so haven't sent them to you for review as there is nothing bespoke.

Will be in touch once I hear back from Colin.

MARK ROSS
CONSULTANT PLANNER
SENTINEL PLANNING
mark@sentinelplanning.co.nz
PH (09) 551 6205
MOB 021 619 282
WEB www.sentinelplanning.co.nz
121A Kitchener Road, Milford,
PO Box 33995, Takapuna 0740

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Monday, February 15, 2021 4:11 PM
To: Mark Ross <mark@sentinelplanning.co.nz>
Subject: LUC60370906 - 53 Arundel Street, Hillsborough - response

Kia ora Mark

Good to hear from you – glad the application found its way to you!

I have checked in with our Engineering Manager and question why this condition would be necessary.

This is an asset owned and designed by Watercare; an organisation that has a proven record of constructing and operating Auckland's entire wastewater network. Stormwater/floodwater inundation into the Watercare system would seem to be more of a Watercare operational issue that a consenting concern. However, on behalf of the project's Engineering Manager, I can confirm:

- Lids on chambers to be close fit to minimise the potential for water to enter
- Gatic lids also need special lifters due to their weight.

In this instance, we would not be supportive of the proposed condition but I would be happy to facilitate a discussion between our Engineering Manager and the Council engineer to discuss further, if required. Thanks.
Xenia

From: Mark Ross <mark@sentinelplanning.co.nz>
Sent: Monday, 15 February 2021 1:44 pm

To: LAlkamil@tonkintaylor.co.nz; XMeier (Xenia) <Xenia.Meier@water.co.nz>
Subject: LUC60370906 - 53 Arundel Street, Hillsborough - question

CAUTION:External Email!

Hi Laila and Xenia

Firstly, apologies for the delayed response on this one. There were some issues with allocation and the application only arrived with me last week.

The Council's engineer has reviewed your application for the construction of new wastewater infrastructure (a diversion chamber, and air, power and control ducts) within a flood plain at 53 Arundel Street, Hillsborough. They note that the works could potentially result in surface water discharging into the wastewater network. To address this, they have noted that the following could be imposed as a condition of consent:

- Prior to operation, the consent holder shall provide a brief written statement from an engineer confirming how the works have been designed and constructed to prevent surface water from the floodplain inundating the wastewater network.

Please confirm you are supportive of a condition in this respect. In the meantime, I'll continue writing my report.

Regards

MARK ROSS
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ciproject@water.co.nz
www.centralinterceptor.co.nz

Customer service line
Mon to Fri 7.30am to 6pm
09 442 2222

7th July 2022

Attn: Mark Ross
Auckland Council
Private Bag 92300
Auckland 1142

Dear Mark,

Minor Infrastructure upgrades associated with the CIP: Response to s92 Request for Further information relation to Watercare's Resource Consent Application LUC60397719.

Further to your email dated 7 July 2022 requesting further information with respect to application LUC60397719, we provide the following response:

Keith Hay Park Site

1. *The plans provided include sections of the manholes but does not show their location. For reference, the plan at May Road shows the site relative to the proposed works. While this is shown for Keith Hay Park, they are zoomed-in, and the exact location cannot be identified. The s92 response just provides some sections of the manhole.*

> Please find attached a copy of Keith Hay Park proposed site provided in **Attachment 1.** This proposed site plan shows a zoomed-out view of Keith Hay Park and some of the surrounding land marks for reference to location, including the snippet provided in the email.

Taylor's Bay (PS23) Site

2. The Council needs to be able to confirm that all structures within coastal inundation areas will be designed to minimise surface water and seawater ingress and that infrequent operator access is anticipated (or will be managed to minimise risk). This confirmation cannot be found in the application documents and if it can be provided, this will circumvent the need for an E36.9 assessment. Accordingly, the request is reiterated to provide clarity where works are subject to coastal inundation and what measures are proposed to mitigate the effects of coastal inundation on the infrastructure and its serviceability.

> This infrastructure is already authorised by way of LUC60375823. The Assessment of Environmental Effects included a E36.9 assessment. This assessment is included as **Attachment 2**.

We trust the above provides sufficient information in response to the s92 queries and processing application LUC60397719 can recommence.

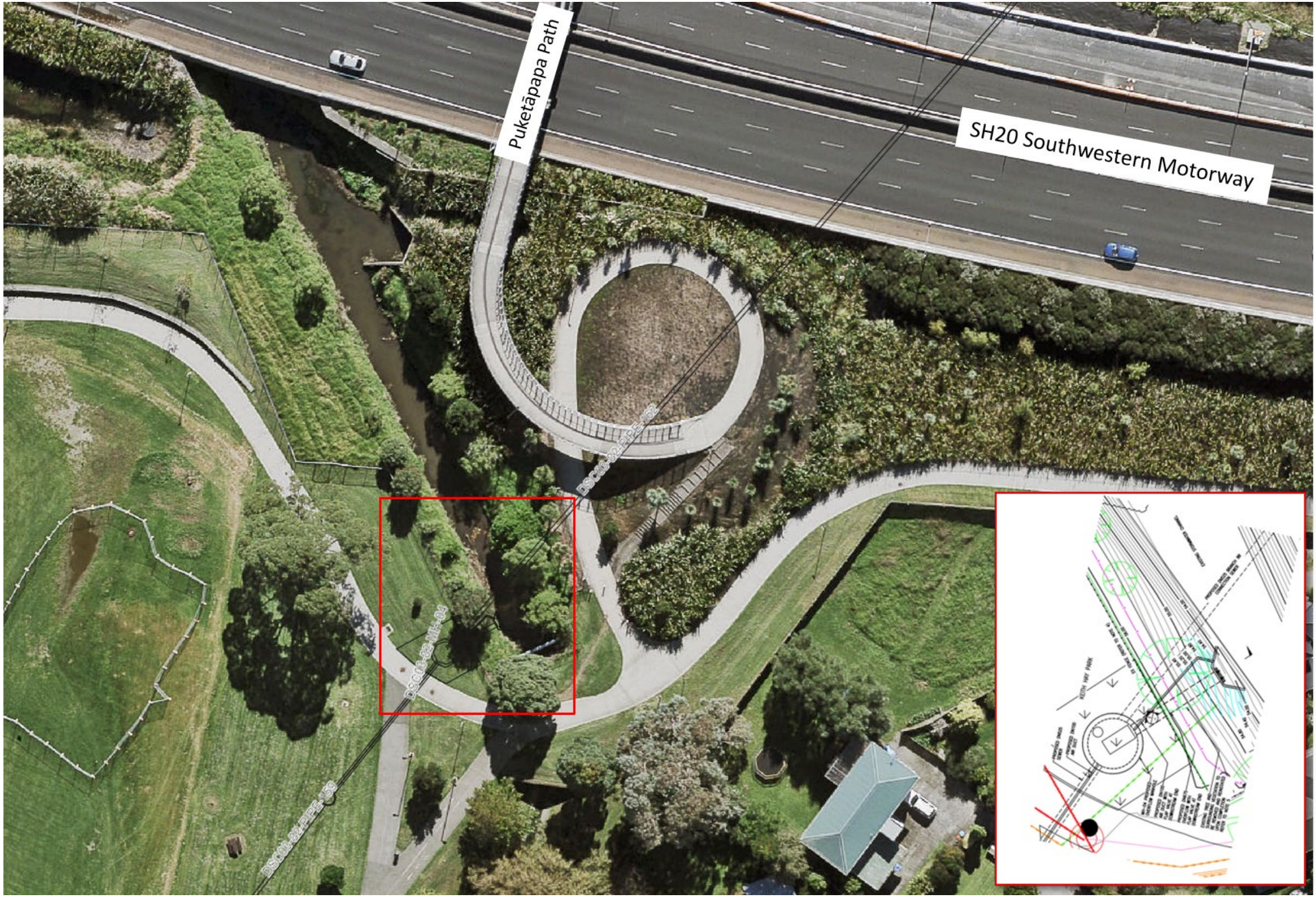
Central Interceptor | Watercare An Auckland Council Organisation

Yours faithfully,

Xenia Meier
Environmental Manager
Watercare Services Limited

Attachments
Attachment 1: Keith Hay Park Site Plan
Attachment 2: Natural Hazard Assessment

Attachment 1: Keith Hay Park Site Plan


Puketāpapa Path
SH20 Southwestern Motorway

Attachment 2: Natural Hazard Assessment

Memorandum

To: Xenia Meier

From: Lucy Ferris
Reviewed: Tess Gilham/Tim Hegarty

CC: Shalini Sanjeshni, Laila Alkamil

Subject: Central Interceptor PS23 Taylors Bay MH-XX and MH-03 Natural Hazard Assessment – Revision 2

Doc. Ref: JNZ-WSL-CIP-TM-0000050 Rev. 2

Date: 01 April 2021

Introduction

As part of the Central Interceptor project, it is proposed to build two new manholes (MH-XX and MH-03) as part of a larger Hoskins Avenue sewer diversion to divert flows from an existing local sewer away from the Western Interceptor to the Central Interceptor tunnel. This sewer diversion will enable the Western Interceptor to be fully isolated to allow either future rehabilitation or decommissioning.

MH-XX will be constructed over an existing local sewer. This is the connection point to the existing network which will discharge into the Central Interceptor tunnel. MH-03 is required to facilitate this connection.

Proposed manholes MH-XX and MH-03 are located within Taylors Bay Road Reserve next to the Manukau Harbour. Auckland Council's GeoMaps (GeoMaps) show the proposed manholes MH-XX and MH-03 are located adjacent to the 100 year Annual Recurrence Interval (ARI) storm event flood plain, a large overland flow path, and within the Coastal Inundation 1% Annual Exceedance Probability (AEP) plus 1m sea level rise zone.

Flooding and Overland Flow Path

The Central Interceptor Hoskins Avenue Diversion is located within the Hillsborough catchment. The flood mapping shown on GeoMaps dates from 2005. This modelling does not include climate change, sea level rise or maximum probable development now allowed under the Auckland Unitary Plan (Operative in Part) (AUP(OP)). The GeoMaps flood modelling can be seen in Figure 1.

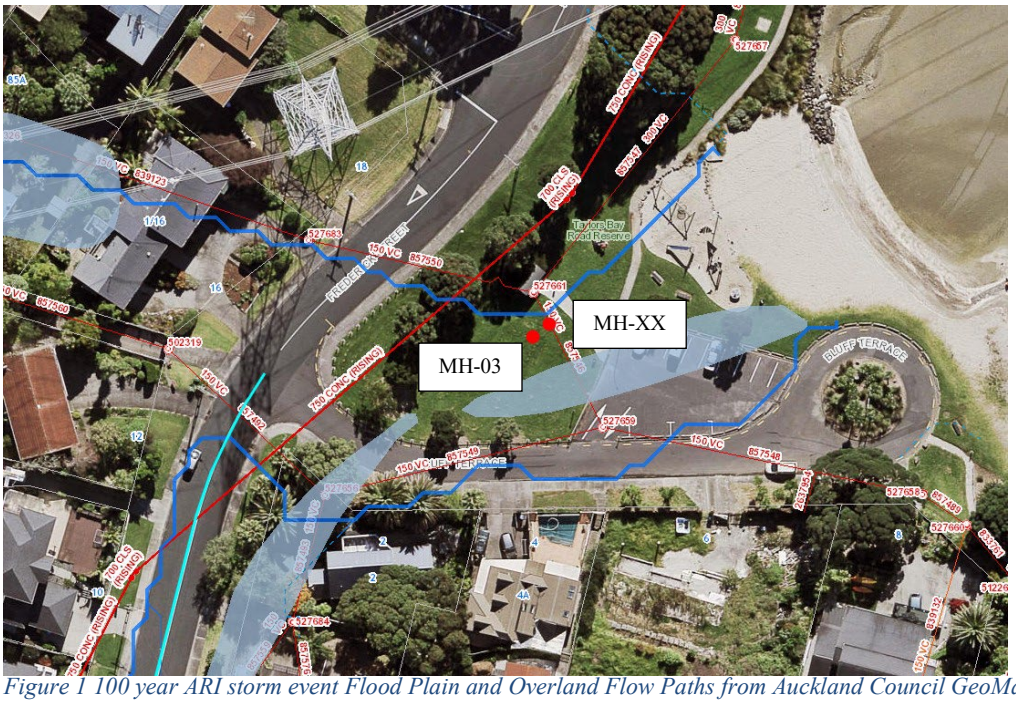


Figure 1 100 year ARI storm event Flood Plain and Overland Flow Paths from Auckland Council GeoMaps

Auckland Council Healthy Waters has advised that there are no plans to update the Hillsborough catchment model and that the 2005 floodplains shown on GeoMaps cannot be relied upon as they did not use LIDAR based contours. Healthy Waters provided the latest 2017 LIDAR based overland flow paths; this can be seen in Figure 2, where the light blue lines are the overland flow paths. A site visit has confirmed that these overland flow paths are correct.

Figure 2 Overland Flow Paths from 2017 LIDAR

TP108 was used to estimate ARI storm event peak flow rates, a summary is shown in Table 1.

Table 1 Summary of Peak Runoff Flow Rates

ARI (years)	100	10	2
Peak Flow Rate (m^3/s)	6.19	3.86	2.06

Dependent on tide conditions, the pipe network is either headwater or tailwater controlled and the existing stormwater outlets have an approximate capacity of 3.6-4.0m^3/s. This is equivalent to the 10 year ARI storm event being able to be conveyed by the existing pipe network, with any flow above this being conveyed as overland flow down Bluff Terrace to the Manukau Harbour.

In summary, the Taylors Bay Road Reserve is not subject to flooding or overland flow paths, as the overland flow is contained within Bluff Terrace. Hence manholes MH-XX and MH-03 are positioned to be clear of any flooding or overland flow paths.

Coastal Inundation

Storm Surge

Proposed manholes MH-XX and MH-03 are located within Taylors Bay Road Reserve next to the Manukau Harbour within the Coastal Inundation 1% AEP plus 1m sea level rise zone. This can be seen on GeoMaps and is shown in Figure 3.

Figure 3 Coastal Inundation Zone from Auckland Council GeoMaps

Auckland Council's Technical Report 2020/024 Auckland's Exposure to Coastal Inundation by Storm Tides and Waves, (December 2020) tabulates extreme sea levels in the Manukau Harbour for various ARI storm events.

Storm surge/extreme sea level in the Manukau Harbour is summarised in Table 3-6 from this Technical Report. Taylors Bay is near site 15, copied in Table 2. These extreme sea level rises do not include sea level rise due to climate change; one metre has been added to these values to account for climate change.

Table 2 Extreme Sea Level Rise Elevations

Site	Easting (NZTM)	AEP	0.39	0.18	0.1	0.05	0.02	0.01	0.005
		ARI	2 yr	5 yr	10 yr	20 yr	50 yr	100 yr	200 yr
		Northing (NZTM)							
15	1757321	5911763							
Sea Level Rise Elevations (mRL)			2.5	2.57	2.63	2.71	2.83	2.92	3.02
+1 metre climate change (mRL)			3.5	3.57	3.63	3.71	3.83	3.92	4.02

The proposed access hatch levels for MH-XX and MH-03 are 3.30mRL and 3.38mRL, respectively, which are above the 100-year ARI storm event maximum extreme sea level.

Storm Surge & Climate Change

The AUP(OP) (Chapter E36), contains specific requirements for developments located within the flooding zone for a 1 in 100 year plus 1 metre sea level rise inundation event.

Adding 1 metre of sea level rise due to climate change onto the extreme sea levels results in both MH-XX and MH-03 access hatches being submerged at times.

MH-XX and MH-03 cannot be relocated to be outside of the extreme sea level & 1 metre of climate change area. They must be located where designed to enable the connection to the existing sewer, which ultimately allows for the rehabilitation or decommissioning of the Western Interceptor.

Both manholes will be fitted with one sealed access hatch each to minimise the ingress of seawater through these hatches. Operator access to these manholes will be very infrequent.

MH-XX and MH-03 will be buried approximately 150mm below the existing ground level. The access hatches will be visible from the ground surface and will be set flush with the existing ground level. The surface will be reinstated with topsoil and grass.

There is no proposed above ground infrastructure and there is no proposed change to the existing ground levels.

Risk Hazard Assessment

A risk assessment for constructing MH-XX and MH-03 within the flood plain is summarised in Table 3.

Table 3 Risk Mitigation for Construction Within Flood Plain

Risk	Mitigation Response
The risk of adverse effects to other people, property and the environment	There is no increased adverse risk to other people, property and the environment. MH-XX and MH-03 are not located within an overland flow path or flood plain.
The risk to public health and safety	There is no change to the existing public health and safety risk from flooding as a consequence of constructing MH-XX and MH-03.
The management or regulation of other people and property required to mitigate natural hazard risks resulting from the location of the infrastructure	There is no change to the flooding risk as a consequence of constructing MH-XX and MH-03 hence no mitigation is required.
Any exacerbation of an existing natural hazard or creation of a new natural hazard as a result of the structure	Not applicable. MH-XX and MH-03 are not located within an overland flow path or flood plain. MH-XX and MH-03 will be buried completely belowground and existing ground levels will not change.
The ability to relocate or remove structures	Not applicable. MH-XX and MH-03 are not located within an overland flow path or flood plain.

Risk	Mitigation Response
	MH-XX and MH-03 will be located belowground, with MH-XX above an existing local sewer. MH-XX must be constructed in this location to allow diversion of local sewer flows to the Central Interceptor tunnel.
The long-term management, maintenance and monitoring of any mechanisms associated with managing the risk of adverse effects resulting from the placement of infrastructure within a hazard area to other people, property and the environment including the management of hazardous substances	Not applicable. Storage of hazardous substances at MH-XX and MH-03 will not occur. MH-XX and MH-03 will be completely belowground.
Subdivision, use and development including redevelopment, is managed to safely maintain the conveyance function of floodplain and overland flow paths	Not applicable. MH-XX and MH-03 are not located within an overland flow path or flood plain. MH-XX and MH-03 will be buried completely belowground and existing ground levels will not change.
Where infrastructure has a functional or operation need to locate in a natural hazard area, the risk of adverse effects to other people, property, and the environment shall be assess and significant adverse effects are sought first to be avoided or, if avoidance is not able to be totally achieved, the residual effects are otherwise mitigated to the extent practicable.	Not applicable. MH-XX and MH-03 are not located within an overland flow path or flood plain. MH-XX and MH-03 will be located belowground, with MH-XX above an existing local sewer. MH-XX must be constructed in this location to allow diversion of local sewer flows to the Central Interceptor tunnel. MH-XX and MH-03 will be buried completely belowground and existing ground levels will not change.
Ensure all development in the 1 per cent annual exceedance probability (AEP) floodplain does not increase adverse effects from flood hazards or increased flood depths and velocities, to other properties upstream and downstream of the site	Not applicable. MH-XX and MH-03 are not located within an overland flow path or flood plain.
Maintain the function of overland flow paths to convey stormwater runoff safely from a site to the receiving environment	Not applicable. MH-XX and MH-03 are not located within an overland flow path or flood plain. There are no changes to the function of the flood plain or overland flow path.
Require changes to overland flow paths to retain their capacity to pass stormwater flows safely without causing damage to property or the environment	Note applicable. MH-XX and MH-03 are not located within an overland flow path or flood plain. There are no changes to the function of the flood plain or overland flow path.

A risk assessment for constructing MH-XX and MH-03 within the coastal inundation zone is summarised in Table 4.

Table 4 Risk Mitigation for Construction Within Coastal Inundation Zone

Risk	Mitigation Response
The risk of adverse effects to other people, property and the environment	There is no increased adverse risk to other people, property and the environment. MH-XX and MH-03 will be buried completely belowground and existing ground levels will not change. Hence the coastal inundation zone will not change as a consequence of constructing MH-XX and MH-03. MH-XX and MH-03 will only be accessed occasionally by Watercare's maintenance workers.
The risk to public health and safety	There is no change to the existing public health and safety risk from coastal inundation as a consequence of constructing MH-XX and MH-03. MH-XX and MH-03 will be buried completely belowground and existing ground levels will not change.
Impacts on landscape values and public access associated with the proposed activity including a need for hard protection structures to be required to protect the utility from the natural hazard	MH-XX and MH-03 will be buried completely belowground and existing ground levels will not change. One new access hatches will be constructed on each proposed manhole to allow for future maintenance access, these access hatches will be proposed to be sealed to prevent water ingress. Only these access hatches will be visible from the surface, Hence the coastal inundation zone will not change as a consequence of constructing MH-XX and MH-03.
The management or regulation of other people and property required to mitigate natural hazard risks resulting from the location of the infrastructure	MH-XX and MH-03 will be located within a public reserve. There is no change to the coastal inundation risk as a consequence of constructing MH-XX and MH-03 hence no mitigation is required.
The long-term management, maintenance and monitoring of any mechanisms associated with managing the risk of adverse effects resulting from the placement of infrastructure within a hazard area to other people, property	Not applicable. No long-term monitoring proposed as new manholes will be completely buried belowground with only access hatches visible from the surface. Storage of hazardous substances at MH-XX and MH-03 will not occur.

Risk	Mitigation Response
and the environment including the management of hazardous substances	
Any exacerbation of an existing natural hazard or creation of a new natural hazard as a result of the structure	MH-XX and MH-03 will be buried completely belowground and existing ground levels will not change. Hence the coastal inundation zone will not change as a consequence of constructing MH-XX and MH-03.
The use of non-structural solutions instead of hard engineering solutions	Not applicable. MH-XX and MH-03 will be located belowground. No non-structural or hard engineering solutions proposed.
The ability to relocate or remove structures	Not applicable. MH-XX and MH-03 will be located belowground, with MH-XX above an existing local sewer. MH-XX must be constructed in this location to allow diversion of local sewer flows to the Central Interceptor tunnel.

XMeier (Xenia)

From: Mark Ross <mark@sentinelplanning.co.nz>
Sent: Tuesday, 26 July 2022 3:30 pm
To: XMeier (Xenia)
Cc: Colin Hopkins
Subject: RE: LUC60397719 - Minor Infrastructure upgrades associated with the CIP - s92 response - 7 July 2022

CAUTION:External Email!
Fine with me Xenia

Will try to get onto this one in the next week or so – on the go slow at the moment with Court commitments.

M.

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Tuesday, July 26, 2022 1:43 PM
To: Mark Ross <mark@sentinelplanning.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>
Subject: RE: LUC60397719 - Minor Infrastructure upgrades associated with the CIP - s92 response - 7 July 2022

Kia ora Mark

No urgency on this application; however, I am writing to request a small change to one of our suggested conditions. Proposed consent condition 2 requires a hazard risk assessment to be prepared and submitted to Auckland Council for certification prior to the commencement of works.

I was hoping we could add "where practicable" after prior to the commencement of works? The reason for this is because we have, on a number of occasions, had to shift and re-design infrastructure after starting to construct it - primarily because services haven't been where the as-builts said they were. At Haycock, this will result in a portion of the chamber now being above-ground and it seems to be a scenario that can be adequately covered by the project-wide consent.

Would you be happy to accommodate that change? Ngā mihi. Xenia

---

From: Mark Ross <mark@sentinelplanning.co.nz>
Sent: Thursday, 7 July 2022 4:11 pm
To: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>
Subject: RE: LUC60397719 - Minor Infrastructure upgrades associated with the CIP - s92 response - 7 July 2022

CAUTION:External Email!
Ta, will send this on.

M

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Thursday, July 7, 2022 4:01 PM
To: Mark Ross <mark@sentinelplanning.co.nz>

Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>
Subject: LUC60397719 - Minor Infrastructure upgrades associated with the CIP - s92 response - 7 July 2022

Thanks Mark. Please see attached for our response.

I hope the drawing prepared provides an adequate idea of location of the Keith Hay Park infrastructure.

With respect to question 7, we have expanded on our earlier reply which noted that the works subject to coastal inundation have already been through the E36 application process and an E36.9 assessment was provided with that application/assessment of environmental effects.

Bests. Xenia

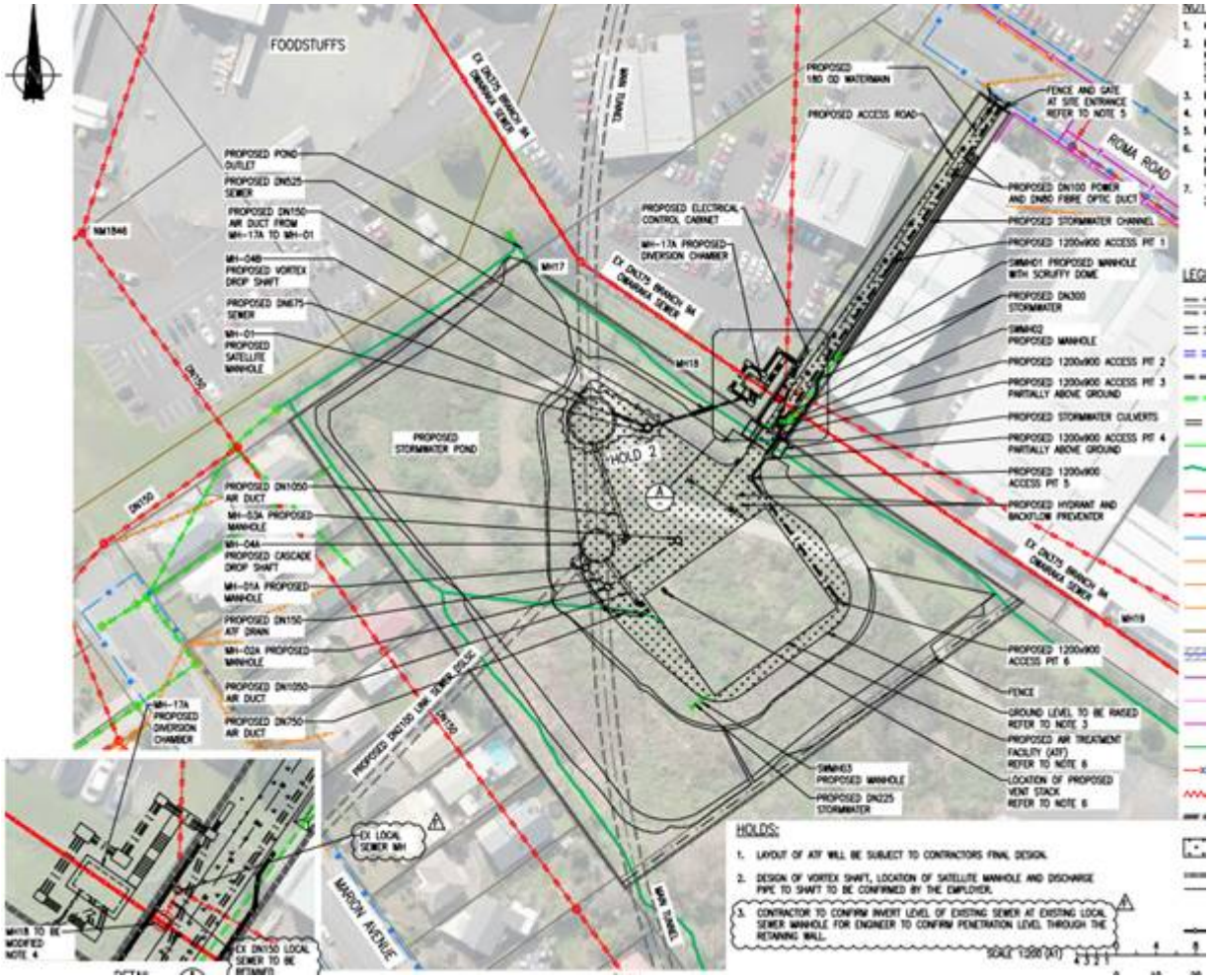
From: Mark Ross <mark@sentinelplanning.co.nz>
Sent: Wednesday, 6 July 2022 5:12 pm
To: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>; SSanjeshni (Shalini) <Shalini.Sanjeshni@water.co.nz>
Subject: LUC60397719 - Minor Infrastructure upgrades associated with the CIP - s92 response - 6 July 2022

Hi Xenia

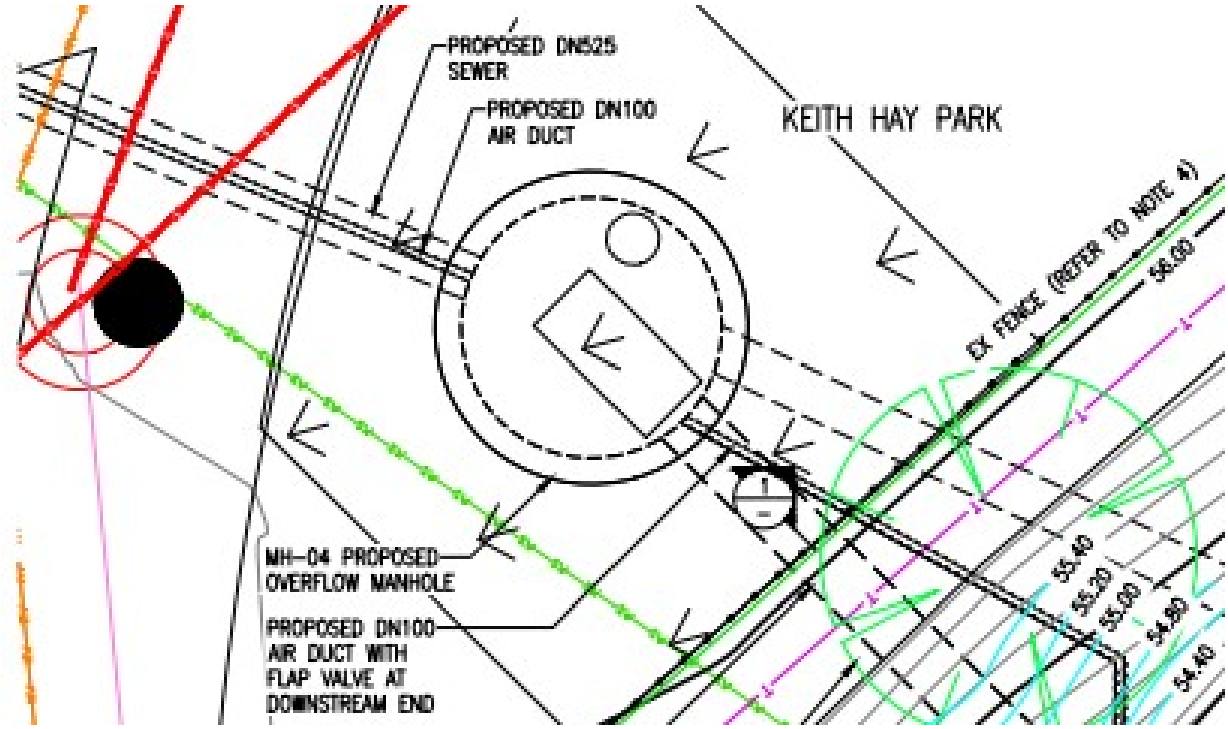
Please see the Council's further response on your s92 response:

- Question 1 – not addressed.

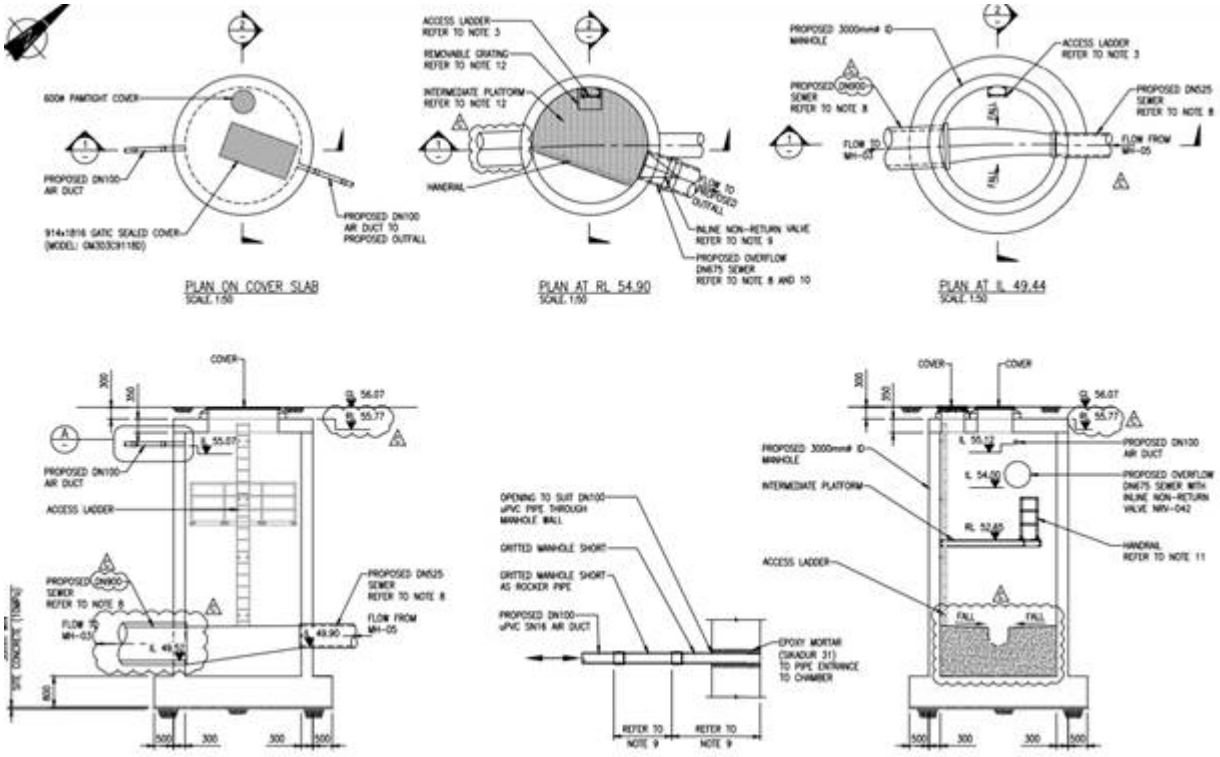
  The plans provided include sections of the manholes but does not show their location. For reference, the plan at May Road shows the site relative to the proposed works as per the snip below:



While this is shown for Keith Hay Park, they are zoomed in and the exact location cannot be identified, see snip below:



The s92 response just provides some sections of the manhole, as per the snip below:



- Question 2 – addressed.
- Question 3 – addressed.
- Question 4 – addressed.
- Question 5 – addressed.
- Question 6 – addressed.
- Question 7 – not addressed.

  The Councill needs to be able to confirm that all structures within coastal inundation areas will be designed to minimise surface water and seawater ingress and that infrequent operator access is anticipated (or will be managed to minimise risk). This confirmation cannot be found in the application documents and if it can be provided, this will circumvent the need for an E36.9 assessment. Accordingly, the request is reiterated to provide clarity where works are subject to coastal inundation and what measures are proposed to mitigate the effects of coastal inundation on the infrastructure and its serviceability.

Any queries, please let me know.

Regards

SENTINEL PLANNING
Mark Ross
Consultant Planner
DDI +64 21 619 282
+64 9 551 6205
121A Kitchener Road, Milford, Auckland 0620 | PO Box 33995, Takapuna, Auckland 0740

From: XMeier (Xenia) <Xenia.Meier@water.co.nz>
Sent: Tuesday, June 14, 2022 4:34 PM
To: Mark Ross <mark@sentinelplanning.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>; SSanjeshni (Shalini) <Shalini.Sanjeshni@water.co.nz>
Subject: LUC60397719 - Minor Infrastructure upgrades associated with the CIP - s92 letter

Kia ora ano Mark

Thanks very much for your time yesterday to run through our response/approach to the section 92.

Letter is now attached for your consideration.

Bests. Xenia

From: Mark Ross <mark@sentinelplanning.co.nz>
Sent: Friday, 3 June 2022 11:51 am
To: SSanjeshni (Shalini) <Shalini.Sanjeshni@water.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>; XMeier (Xenia) <Xenia.Meier@water.co.nz>
Subject: RE: LUC60397719 - Minor Infrastructure upgrades associated with the CIP - s92 letter

Hey Shalini

Sounds like a good approach.

Any time on the 13th or 14th would suit me best.

M

From: SSanjeshni (Shalini) <Shalini.Sanjeshni@water.co.nz>
Sent: Friday, June 3, 2022 10:32 AM
To: Mark Ross <mark@sentinelplanning.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>; XMeier (Xenia) <Xenia.Meier@water.co.nz>
Subject: RE: LUC60397719 - Minor Infrastructure upgrades associated with the CIP - s92 letter

Hi Mark,

We are still in the process of working through the series of s92 questions. We have noted some questions required a little bit more assessment and will aim to provide you an update towards the end of next week.
It would also be good if we can setup a call with you later next week (or the week after) to go over the approach, we undertook for both the assessment and also the s92 response.

How are you placed next week or the week beginning 13th June?.

Shalini Sanjeshni | Environmental Advisor – Central Interceptor
Watercare Services Limited
Postal address: Private Bag 92 521, Wellesley Street, Auckland 1141, New Zealand
Physical address: Gate F, 42 Reimers Avenue, Mt Eden, Auckland, 1024
Phone: 021 346 570
Website: www.watercare.co.nz
Email: Shalini.Sanjeshni@water.co.nz

From: Mark Ross <mark@sentinelplanning.co.nz>
Sent: Thursday, 12 May 2022 4:44 pm
To: SSanjeshni (Shalini) <Shalini.Sanjeshni@water.co.nz>
Cc: Colin Hopkins <Colin.Hopkins@aucklandcouncil.govt.nz>; XMeier (Xenia) <Xenia.Meier@water.co.nz>
Subject: LUC60397719 - Minor Infrastructure upgrades associated with the CIP - s92 letter

CAUTION:External Email!

Hi Shalini

Please find attached my s92 further information request letter.

Any queries, please let me know.

Regards

Mark Ross
Consultant Planner

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