



Hastings District Council

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OPEN DOCUMENT 2

COMMISSIONER HEARING

Meeting Date: **Friday, 17 July 2020**

Time: **9.30am**

Venue: **Council Chamber
Ground Floor
Civic Administration Building
Lyndon Road East
Hastings**

ITEM	SUBJECT	PAGE
2.	NOTIFIED LAND USE CONSENT APPLICATION FROM HASTINGS DISTRICT COUNCIL FOR THE INSTALLATION AND OPERATION OF A DRINKING WATER TREATMENT PLANT, RESERVOIR, BORES AND ASSOCIATED INFRASTRUCTURE IN FRIMLEY PARK AND SURROUNDS (RMA20190545)	
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SECTION 95A NOTIFICATION REPORT

Application Received: 10/12/2019	PID: 13818	RMA20190545
Applicant:	Hastings District Council	
Address of Site:	Frimley Park, 411 Frimley Road, Hastings 4120; and road reserve associated with Frimley Road and Hapuku Street	
Legal Description:	Pt Lot 254 DP2101 and Lot DP3197 (record of title: HB 136/54)	
Area:	19.3384 hectares	
Zoning:	Open Space Zone (OS1-07); with the Notable Trees overlay applying (outstanding trees: T40 – T60)	
Proposal:	The construction / installation and operation of the following Network Utility activities: water treatment plant, water storage reservoir, drinking water supply bores with above ground amenity treatment, all within Frimley Park; the installation of water reticulation pipes within the road berms of Frimley Road and Hapuku Street; and the removal of the Frimley Park maintenance sheds and yard with the area to be reinstated to become part of the useable park.	
District Plan Provisions:	Rules NU11 and NU13 of the Proposed Hastings District Plan and Regulation 11 of the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011	
Assessment of Status:	Discretionary Activity under both the Proposed Hastings District Plan and the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011	
Report Prepared By:	Philip McKay (consultant planner) on behalf of the Hastings District Council	

1.0 THE PROPOSAL

1.1 Introduction and Overview

Grey Wilson of Good Earth Matters has prepared the resource consent application and associated assessment of environmental effects ("AEE") on behalf of the applicant and has provided a thorough description of the proposal in the application document. This description is adopted for the purpose of this assessment and the following is extracted to provide a summary of the proposal:

Introduction and Reason for Application

Hastings District Council (the Applicant) is currently in the implementation phase of its district wide drinking water improvement programme and Drinking Water Strategy which seek to ensure the

delivery of safe and secure drinking water to the Hastings District. The activities proposed in this application are a part of a significant investment package and improvement programme to ensure the provision of a safe and sustainable drinking water supply to the people of the Hastings District. The purpose of this application in particular is to ensure compliance with the New Zealand Drinking Water Standards and delivery of safe water from the Frimley borefield in a way that avoids, remedies or mitigates any adverse effects of the necessary land use activities on the environment and that enables a significant improvement to the way in which interaction with the Heretaunga Plains aquifer occurs.¹

Background

The activities proposed in this application include the construction and operation of a new water treatment plant (approximately 480 m²) and drinking water storage reservoir (approximately 8,000 m³) at Frimley Park.

Frimley Park is the current location of the Frimley borefield and, in order to ensure the safety and security of drinking water supply and to expand the borefield to provide for community growth, new bores need to be installed within the Park to replace the existing bores. The new bores will be of increased capacity and landscape planting and architectural treatment of the bores, reservoir and treatment plant building is proposed to reduce potential effects in the same location as the existing bores. New drinking water reticulation pipes also need to be installed to connect the water treatment plant (WTP) and reservoir to the existing water reticulation network.

Additionally, the Applicant proposes to, after construction of the proposed new infrastructure, make various changes and improvements to Frimley Park which include removal of the park maintenance sheds and yard (upon securing an alternative location for the relocation of this service) and planting of this area as well as planting of new trees along the entry to the Park to create an avenue effect and potential extension of the existing perennial gardens to create better flow and cohesion through and within the Park. These improvements are additional to landscaping measures to be undertaken on and around the WTP and reservoir site including plantings and screening as well as amenity gazebos to be installed over the new drinking water bores.

These activities make up the Frimley Park upgrade project, which is one of several upgrade projects being undertaken by the Applicant as part of the drinking water improvement programme and implementation of the Hastings District Council Drinking Water Strategy...²

The AEE then goes on to document the key aspects of the Hastings District Council Drinking Water Strategy which has given rise to this application. The AEE should be referred to for those details. The next section of the AEE summarises the nature of the resource consents sought under this application and associated consents that will be required from the Hawke's Bay Regional Council with key extracts listed as follows:

Resource Consent Sought

The Applicant seeks land use consent from the Hastings District Council under the Proposed Hastings District Plan for the following as network utility activities and any associated ancillary activities required for the upgrade of the Frimley borefield and Hastings urban supply network:

- *Construction and operation of a new water treatment plant and new drinking water storage reservoir including new plantings;*
- *Installation of new drinking water supply bores and installation of 'visual treatments' at each;*
- *Installation of new drinking water reticulation pipes; and*

¹ 'Hastings Urban Water Supply Upgrades Water Treatment Plant and Drinking Water Reservoir – Construction and Operation Frimley Park, Resource Consent Application and Assessment of Environmental Effects 10 December 2019', Good Earth Matters, December 2019 ("Application and AEE") (page 1).

² Ibid

- Removal of the existing park maintenance sheds and yard.

The Application overall falls to be considered as a Discretionary activity under the Hastings District Plan due to the non-compliance of the water treatment plant and reservoir with the bulk and location requirements for network utilities and the likely non-compliance of the installation of the new drinking water bores with the construction noise standards of the District Plan...

It is noted that as a precursor to the lodgement of this Application and the requisite variation to the Frimley Borefield Water Take Permit, two investigative pilot bores are being installed at Frimley Park. A resource consent (bore permit) was obtained from the Hawke's Bay Regional Council for the bores to enable the bore construction. The abstraction of water for testing purposes and the discharge of that water and associated drilling fluids to land is a permitted activity under the Regional Resource Management Plan. The activity is also permitted under the District Plan as it can comply with all relevant standards of the network utility chapter, including the construction noise standard given the short term duration of the activity and the relevant standard that applies in the Construction Noise Standard NZS6803 (which differs to that which applies for the construction of the proposed drinking water production bores).³

Additional Resource Consents Required

In addition to the land use consent sought under the Proposed Hastings District Plan as set out above, consent is sought under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS). Part of the area where pipes are to be installed along Frimley Road, as well as the current park maintenance sheds and yard, are potentially HAIL sites and the Applicant seeks consent for the proposed works within these locations as a Discretionary activity under the NESCS.

Based on knowledge of past use of areas near Frimley Park for horticultural activities, the Applicant expects that a limited section of the drinking water pipe alignment between the northern extent of Frimley Park and Nottingley Road may be a HAIL site and trigger the NESCS. This may also be the case for part of the alignment along Hapuku Street. Similarly, the existing park maintenance buildings and yards is likely to trigger the NESCS...⁴

Additional Resource Consents – Not Included in this Application

Additional resource consents that are required in association with the proposed activities and are not included in this application are:

- *Bore permits from the Hawkes Bay Regional Council (HBRC) for the installation of the new bores. The bore construction is a Controlled Activity under the Regional Plan and therefore consent must be granted.*
- *A variation to the existing Hastings Drinking Water Supply water take permit from HBRC (Consent No. WP120036Tb) to enable a reconfiguration of the existing Frimley borefield (i.e. to enable the Applicant to take water from the new bores being installed).*
- *An air discharge permit for the (intermittent) use of the backup generator at the proposed new Frimley treatment station. The backup generator to be installed at the site has an output of 1500kW and as such requires an air discharge permit from HBRC under the Hawke's Bay Regional Resource Management Plan.*

The Applicant has been in discussion with the Hawke's Bay Regional Council regarding these matters and anticipates that all consent applications will be processed on a non-notified basis and that no significant issues will arise.⁵

Figures 1 and 2 below are extracted from the application and summarise the location and scale of the various activities proposed as part of the application.

³ Application and AEE (page 6).

⁴ Ibid (page 6)

⁵ Ibid (page 7)



Figure 1 – Indicative Location of the Proposed Activities within Frimley Park⁶

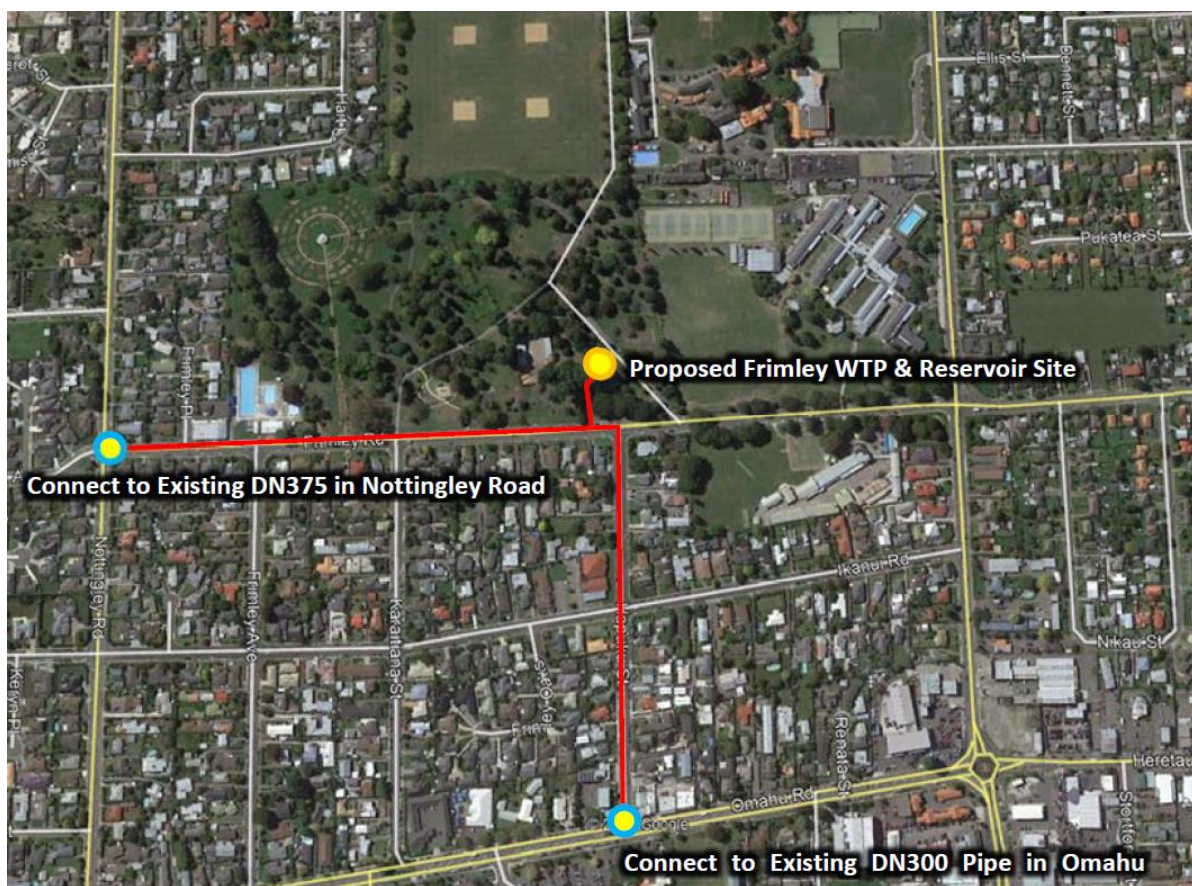


Figure 2 – Indicative Location of Proposed New Drinking Water Pipes⁷

⁶ As extracted from Figure 2.2 of the Application and AEE (page 10).

⁷ As extracted from Figure 2.3 of the Application and AEE (page 10).

1.2 Details of Proposed Activities

The AEE sets out the details of the various components of the proposal in section 2.6. The following key points are extracted for the separate activities:

Water Treatment Plan and Emergency Generator

The water treatment plant will consist of a treatment and pump room, chemical dosing rooms (chlorine and fluoride), a SCADA room, a switch room and toilet facilities. Any areas where chemicals are to be stored and used will be physically separate to other parts of the building and will have bunding, containment and separation distances in accordance with HASNO requirements. The building is to be connected to the Hastings District Council stormwater and sewer networks, and an interceptor system is to be installed between the building and the stormwater connection. Access to the WTP will be via the existing (gated) vehicle entrance to Frimley Park off Frimley Road and a new internal access to the WTP itself. A 'hammerhead' configuration will be used to enable delivery of bulk chemicals to the site whilst reducing the need for reversing manoeuvres and ensuring that vehicle movements are confined to the area in the immediate vicinity of the WTP and not within highly frequented areas of the Park.

The approximate floor area of the building will be 480 m² and the maximum height will be 7m. The building will be designed to the requirements of the New Zealand Building Code and the relevant material structures standard. With respect to the Building Code, the facility is being designed to Building Importance Level 4 (IL4) 50-year return period event. Importance level 4 is for 'Buildings that are essential to post-disaster recovery' (Building Code Clause A3). This categorisation means that it is required to be designed to a higher standard than required for other buildings or structures.

The facility will also include a diesel-powered emergency generator to be used in the event of a power outage. The generator will need to be tested periodically to ensure it is operational in the event of a power outage.⁸

Water Reservoir

The reservoir will be bolted steel sides with a concrete floor and geodesic dome roof. It will hold approximately 8 million litres (8,000 m³) of clean, treated drinking water and will have an approximate diameter of 38m and a height of approximately 14.5 m. The height of the reservoir is approximately 10 metres with a 4.5 metre geodesic domed roof. Whilst it adds some height to the reservoir structure, the domed roof has structural advantages and cost benefits as compared to a flat roof.⁹

Drinking Water Supply Bores

In order to ensure a safe and secure supply and enable better connectivity options, the Applicant proposes to install up to five new drinking water supply bores within Frimley Park. These new bores will replace the existing bore field and allow for future community water demand to be met. The Applicant proposes to install various visual treatments over/at each bore to soften their appearance and ensure a sense of cohesion with the rest of the Park and its features.

Installation of the bores will involve the establishment of a construction laydown area, drilling pad and securing area to allow the works to be undertaken. Drilling will then occur with a truck mounted drill rig and supporting infrastructure such as settling/recirculation pits. Throughout the drilling support vehicles will deliver items such as the drill casing, water and power generator. The bore casing will be driven into the ground using high frequency vibration technique which has been assessed as the best practicable option to ensure that the emission of noise does not exceed a reasonable level, as required by Section 16 of the RMA. While the high frequency vibration technique has been adopted by the applicant as the preferred drilling method, it is noted that there may be short periods of time where standard drilling techniques are required due to ground conditions. This

⁸ Application and AEE (page 16).

⁹ Ibid (page 16).

is not expected given current understanding of ground conditions. However, if difficult conditions are encountered, standard drilling techniques may be required for a short duration. Effects of this will be managed via a Construction Noise and Vibration Management Plan.

- Bore FR1 is the closest to the WTP and reservoir and will be covered by a steel box finished in Resene Ironsand to match the reservoir.
- Bore FR2 is to be located at the southern end of the Park. The Applicant has observed that this regularly frequented part of the Park lacks shaded seating and therefore proposes to construct a small gazebo structure which can seat up to 8 people. The bore will be located at the rear of and integrated into the design of this structure and the appearance of the gazebo will be similar to that of the gazebo structure in the centre of the Frimley Park rose gardens.
- Bore FR3 is to be located at in the northern part of the Park in an area also regularly frequented by visitors. It is proposed that a new drinking water tap is installed in this location with the bore integrated into the design, along with an educational sign outlining the water take and treatment process. Treatment for water supplied to the new drinking water tap will be either via a standalone UV treatment plant at the tap or via a pipeline delivering treated water from the WTP to be laid in the same trench as the raw water pipeline.
- Bore FR4 is to be located either within Frimley Road reserve, or just within the Frimley Park boundary, near the Frimley pool, in the vicinity shown in Figure 2.2. It is proposed that this bore is covered in the same way that Bore 1 is covered. This type of 'utilities box' is not unanticipated in road reserve, is similar to the existing bores along Lyndhurst Road. It will not be a dominant visual feature in this regard.¹⁰

New Water Reticulation Pipes

New pipes are required in order to connect the new bores to the WTP and Reservoir and then to connect the reservoir to the existing drinking water reticulation network via Frimley Road and Hapuku Street. This element of the proposal involves standard pipe laying and network improvements which are routinely carried out as part of operating a network utility. They are included in the application in order to ensure that the entirety of the proposal is able to be understood.

The construction and establishment of the pipes to allow the new infrastructure (bores, water treatment plant and reservoir) to be connected to the existing reticulation network will require the following components (pipe sizing figures are preliminary and included for indicative purposes only):

- Raw water supply pipe from the new bores within Frimley Park to the new Water Treatment Plant in Frimley Park,
- Approximately 140m of DN800 treated water supply pipe within Frimley Park from Frimley Water Treatment Plant and Reservoir to Frimley Road,
- Approximately 530m of DN560 treated water supply pipe in road reserve down Frimley Road to Nottingham Road, connecting to the existing DN375 pipe, and
- Approximately 450m of DN630 treated water supply pipe in road reserve down Hapuku Street to Omaha Road, connecting to the existing DN300 pipe.

All pipes are to be installed via trenching (direct drilling would not be practicable in this instance due to the depth at which the pipes need to be installed). After establishment of the construction laydown area and securing of this area, excavation of the trenches will be undertaken using mechanical excavator(s). The trenches will typically be 1.5m wide, however in some places they may be up to 2.0m wide and will range from 2.0m to 4.5m deep. Where the treated water and raw water pipes are to be located next to each other they may be placed in a single trench (with an appropriate separation distance between them). The bulk of the trenching will occur within the legal road reserve and, where practicable, outside of the road carriageway...¹¹

¹⁰ Application and AEE (pages 18 & 19).

¹¹ Ibid (page 20)

Removal of Park Maintenance sheds and Yard

The proposed construction of the water treatment plant and drinking water reservoir is a significant infrastructure project occurring within a public park. The Applicant has recognised an opportunity to offset the use of Park space for infrastructure by removing the existing park maintenance sheds and yard whereby freeing up a high-profile area for public use as park space. The construction of the WTP and reservoir, the new bores and new pipes has priority over this removal work given that these works are required in order to ensure compliance with the drinking water standard by June 2021. Additionally, the removal cannot occur until such time as a suitable alternative location is identified and established for the park maintenance depot activities. It is expected that the removal therefore will occur within 3-5 years of any grant of consent.¹²

Further details of the proposed activities and mitigation measures are included in the AEE. It is also noted that the AEE includes expert Landscape and Visual Effects Assessment and Acoustic Assessment technical reports as follows:

- Appendix B – ‘Hastings Safe Drinking Water Proposed Water Treatment, Storage and Pumping Facility: Frimley Park – Assessment of Landscape and Visual Effects’, Wayfinder Landscape Planning & Strategy Ltd, December 2019.
- Appendix C – ‘Frimley Water Treatment Plant Desktop Acoustic Assessment’, Marshall Day Acoustics, 9 December 2019.

2.0 FURTHER INFORMATION – SECTION 92

Further information was requested from the applicant on the 23rd January 2020 (HDC Ref: 13818#0263). The request included only one item of information seeking a formal ‘Preliminary Site Investigation’ report under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011.

The requested information was received on 10 February 2020 following an interim response on 28 January 2020.

The 10 February response provided the ‘Preliminary Site Investigation’ report (“PSI”) along with a covering letter. The PSI report confirmed that some pesticide residue contamination from former orchard land is likely in the north western extent of the Frimley Road berm, and that hydrocarbon contamination has been identified as being present in the Hapuku Street berm near the Omaha Road intersection. The PSI also identifies that soil contamination is likely around the Frimley Park maintenance sheds and yards due to the nature of the activities that has taken place there including storage of pesticides, storage and use of fuels and lubricants and the potential for asbestos and lead based paints to have been used as building materials.

The PSI recommends further soil sampling to determine the nature and extent of contamination of the former horticultural area and to inform off-site disposal requirements. Preparation of a Soil Management Plan (“SMP”) is recommended following the recommended soil sampling. Irrespective of the results of the soil sampling the PSI states that an SMP will be an appropriate tool to manage the risk associated with soil disturbance for the laying of the drinking water pipes. A separate SMP is recommended in relation to the demolition of the Park depot and related works.

On the basis of the findings of the PSI, the applicant is requesting that public notification occur prior to the additional soil sampling and SMPs being prepared. Given the findings of the PSI that adverse effects of the likely soil contamination will be able to be avoided and mitigated by the development and implementation of SMPs I agree that there is an appropriate level of information available for public notification of the application.

¹² Application and AEE (page 21).

3.0 THE SITE AND SURROUNDING AREA

As can be seen in Figures 1 and 2 above, the water treatment plant (WTP), reservoir and bores are all located within Frimley Park. The new pipes that are required to connect the new water supply with the existing network, commence in Frimley Park and extend along both Frimley Road to Nottingley Road, and Hapuku Street to Omaha Road.

The WTP and reservoir are located near to the south eastern boundary of Frimley Park with the Hastings Girls High School Playing fields. This location is between that boundary and a pathway that extends through the park from Frimley Road. At its closest point the WTP will be located approximately 100m from Frimley Road, while the proposed reservoir will be further back at approximately 130m from Frimley Road. Both facilities will be setback from the Hastings Girls High School boundary by approximately 20m at their closest point. This section of Frimley Park consists of scattered trees as can be seen in Figure 1 above. Frimley Park is generally flat however there is a slight rise in ground level immediately to the north west of the proposed reservoir location, which will assist in screening the base of the structure from that direction.

The water bores will have limited above ground visibility and are located closer to the Frimley Road frontage than the WTP and reservoir and are generally spread along the width of the park towards the Frimley Pools facility (see Figure 1 above).

As can be seen in Figure 2 above, the Frimley Park surrounds are generally residential in character with residential housing predominating to the north west and south west, while Frimley Park itself extends for some 380m to the north east from behind the proposed reservoir to Lyndhurst Road. The area to the south east is characterised by the secondary schools adjoining Frimley Park in Hastings Girls High School and Lindisfarne College. Frimley Primary School is also located nearby on the opposite side of Frimley Road to Hastings Girls High School.

The subject site (Frimley Park) is located within the Open Space Zone under the Proposed Hastings District Plan as shown in Figure 3 below (dark green). The pale yellow shading in Figure 3 identifies the Hastings General Residential Zone, with the designations for Frimley Primary School and Hastings Girls High School showing as D94 and D97 respectively and the scheduled activity of Lindisfarne College being S7. The purple colour represents the Suburban Commercial Zone around the Frimley shops, while the mid green colour identifies the Plain Production Zone land on the opposite side of Lyndhurst Road to Frimley Park.



Figure 3 – Proposed Hastings District Plan Zoning Map

3.0 RESOURCE CONSENT ACTIVITY STATUS

3.1 National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES)

A preliminary site investigation (PSI) report is currently being sought as further information under section 92 of the Resource Management Act 1991 ("RMA"). The AEE however as lodged identifies that there may be areas of contaminated soil within the area of proposed works and that it is not proposed to produce a Detailed Site Investigation report as any effects will be able to be mitigated through Soil Management Plans. For these reasons, the proposed activity is subject to the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS) as a **Discretionary Activity (regulation 11)**.

3.2 Hastings District Plan

The Proposed Hastings District Plan as amended by decisions on submissions took legal effect on 12th September 2015. There is now only one outstanding appeal. The relevant sections of the Proposed Hastings District Plan to this application are: Open Space Environments (Section 13.1), Network Utilities District Wide Activity (Section 22.1), Noise (Section 25.1), and Transport and Parking (Section 26.1). All of these sections are prefaced by the following statement in the E-Plan: *"There are no appeals to this section. This section now has full effect (any equivalent provisions of the Operative plan 2003 now cease to have effect)."*

In accordance with Section 86F of the Resource Management Act 1991, the provisions of the Proposed Hastings District Plan relevant to this application must be treated as operative. As such, no assessment is required under the Operative District Plan. Therefore, any reference to the 'District Plan' in this report is to the Proposed Hastings District Plan.

Open Space Environments

Frimley Park is categorised as OS1 – Open Space 1 (Sport and Recreation) which permits buildings, but network utilities are not specifically provided for. As would be expected 'recreation activities' are permitted under rule OS2. It is therefore considered that the demolition of the park maintenance shed and yard and the reinstatement of that area to be publicly accessible recreational park space would be a permitted activity under rule OS22.

Network Utilities District Wide Activity

The proposed WTP, reservoir, water bores and water reticulation pipes and their operation fall within the definition of Network Utilities and Network Utility Operator. Network Utility is defined in the District Plan as:

*means network utility operations and includes electrical lines, **water**, sewage and stormwater **reticulation**, streetlighting, telecommunications facilities, radiocommunications facilities, gas, petroleum or geothermal lines, roads, railway lines, airports, lighthouses, navigation aids and beacons, meteorological services and associated support structures and infrastructure for conveyance of water for irrigation. Amateur radio is excluded from this definition. See definition of amateur radio configuration. (emphasis added)*

Network Utility Operator is defined in section 166 of the Resource Management Act 1991 (RMA) as follows:

network utility operator means a person who—
*(d) undertakes or proposes to undertake the **distribution of water for supply** (including irrigation); or ...*

(i) undertakes or proposes to undertake a project or work prescribed as a network utility operation for the purposes of this definition by regulations made under this Act,— and the words network utility operation have a corresponding meaning. (emphasis added)

In this case the Hastings District Council is the Network Utility Operator responsible for the distribution of water and the proposed activities all relate to that function. Network Utilities are provided for on a district wide basis by Section 22.1 of the District Plan.

Rule NU2 provides for: “*The construction, operation, maintenance, replacement, refurbishment or upgrading of the following: (i) In-ground network utilities...*” as a permitted activity, which would be the relevant rule for the proposed new drinking water reticulation pipes as well as the water supply bores.

The Application and AEE states that the construction of the water supply bores will likely breach the relevant District Plan Noise standards (District Plan section 25.1) which are required to be complied with by Network Utility general performance standard 22.1.6B. This would require resource consent as a **Restricted Discretionary Activity** under **rule NU11**: “*Any Permitted or Controlled activity not meeting one or more of the relevant General Performance Standards and Terms 22.1.6 or Specific Performance Standards and Terms 22.1.7.*”

Rule NU2(iii) provides for above ground network utilities outside of legal roads that do not exceed 30m² in gross floor area as a permitted activity. The proposed WTP has a gross floor area of approximately 480m² and so does not meet this rule. There are no other rules that provide for above ground network utilities outside of legal road reserve, therefore the WTP is a **Discretionary Activity** under **rule NU13** “*Any Network Utility not being a Permitted, Controlled Restricted-Discretionary or Non-Complying Activity.*”

Rule NU10 provides for “*The construction of new water reservoirs, or the upgrading of existing water reservoirs, up to 100m² in plan area and 8m in height,...*” The proposed reservoir has a plan area of approximately 1,134m² (based on a diameter of 38m) and a maximum height at the top of the dome of 14.5m. Accordingly, the water reservoir would also be a **Discretionary Activity** under **rule NU13**.

As the separate activities described above are all part of the same overall project it is appropriate bundle them to be assessed together. Given the above, the activity status against which this application should be assessed is the most stringent applying under the District Plan Rules. This means the application has the overall status of a **Discretionary Activity**.

4.0 NOTIFICATION ASSESSMENT

4.1 Public Notification Assessment

4.1.1 Section 95A Public Notification of Consent Applications

Section 95A of the Act states:

(1) A consent authority must follow the steps set out in this section, in the order given, to determine whether to publicly notify an application for a resource consent.

Step 1: mandatory public notification in certain circumstances

(2) Determine whether the application meets any of the criteria set out in subsection (3) and,—
(a) if the answer is yes, publicly notify the application; and
(b) if the answer is no, go to step 2.

(3) The criteria for step 1 are as follows:
(a) the applicant has requested that the application be publicly notified;
(b) public notification is required under section 95C:

(c) the application is made jointly with an application to exchange recreation reserve land under section 15AA of the Reserves Act 1977.

In this case section 95A(3)(a) applies, as the applicant has requested that the application be publicly notified at section 1.4 (page 7) of the AEE.

Under section 95(2)(a) no further assessment is required.

5.0 NOTIFICATION PROCESS

5.1 Meaning of Public Notice

Section 2AB of the RMA sets out the requirements of public notice as follows:

- (1) If this Act requires a person to give public notice of something, the person must—*
- (a) publish on an Internet site to which the public has free access a notice that—*
 - (i) includes all the information that is required to be publicly notified; and*
 - (ii) is in the prescribed form (if any); and*
 - (b) publish a short summary of the notice, along with details of the Internet site where the notice can be accessed, in 1 or more newspapers circulating in the entire area likely to be affected by the matter to which the notice relates.*
- (2) The notice and the short summary of the notice must be worded in a way that is clear and concise.*

The public notice of the application in the prescribed form¹³ is therefore required. This needs to include notice on Council's website and in the Hawke's Bay Today.

5.2 Service of Applications for Resource Consent

Clause 10 of the Resource Management (Forms, Fees, and Procedure) Regulations 2003 requires that notice be served on:

- Affected Persons under section 95B of the RMA (clause 10(2)(a))
- Every person, other than the applicant, who is an owner or occupier of land to which the application relates (clause 10(2)(b))
- Hawke's Bay Regional Council (clause 10(2)(c))
- Relevant iwi authorities and any other person or body considered affected (clause 10(2)(d))

Affected Persons under Section 95B

Section 95B of the RMA in turn refers to section 95E for determining whether a person is an affected person. Section 95E states that "...a person is an **affected person** if the consent authority decides that the activity's adverse effects on the person are minor or more than minor (but are not less than minor)."

The requirements under Clause 10 are minimum requirements so it is important that any person who could be adversely affected in at least a minor way receives notice of the application. In ensuring that all such people are served notice of the application it does not matter if notice is also served on those whom the application is likely to have less than minor adverse effects on.

On this basis it is suggested that notice be served on all those identified in the maps in Figures 4 - 6 below.

¹³ Form 12 of the Resource Management (Forms, Fees, and Procedure) Regulations 2003

Section 7 of the AEE sets out details of the consultation undertaken by the applicant and documents that in addition to a public open day to which residents in an area 500m around the Park had been invited, that direct consultation was undertaken with: immediately neighbouring properties; Williams Family Trust; Hastings Girls High School; Frimley School; Lindisfarne College and Mana Whenua representatives. It is recommended that notice be served on these parties whom the applicant sought to directly consult with, in addition to the owners and occupiers of all those properties identified in the maps in Figures 4 - 6 below, and on whom specific notification is required under Clause 10 as listed above (this would include the current occupiers of the Frimley Park maintenance sheds, the Regional Council, iwi authorities and the Williams Family Trust).



Figure 4 – South of Frimley Park & Hapuku Street - Recommendations for Owners and Occupiers to be Served Notice – Blue Shading



Figure 5 - North and West of Frimley Park & Frimley Road - Recommendations for Owners and Occupiers to be Served Notice – Blue Shading



Figure 6 – East of Frimley Park and Adjacent Lyndhurst Road Entrance - Recommendations for Owners and Occupiers to be Served Notice – Blue Shading

The justification for the identification of those properties in Figures 4 – 6 above is explained as follows.

Properties Identified in Figure 4

Figure 4 identifies the two schools sharing the south eastern boundary of the Park, being Hastings Girls High School and Lindisfarne College. These are the two closest properties to the proposed WTP and reservoir and from where the visual effects of those structures and any construction noise effects are likely to be the greatest. Frimley School directly opposite the Park to the south is also identified as there would be a partial line of site from the school across Hastings Girls High School to the proposed structures. The remaining identified properties in Figure 4 are identified as they have frontage to either Hapuku Street, where a proposed new drinking water pipe is to be laid, or Frimley Road opposite the Park frontage closest to where the WTP, reservoir, water bores are to be located and to where the water pipes will connect. There is an argument that the laying of the new drinking water pipes in Hapuku Street is a permitted activity under the District Plan and therefore any effects of that activity may be disregarded. While these properties could be excluded from notification on that basis, they are included for completeness as being adjacent to a component of the project.

It is considered that the potential adverse effects of the proposed activities on the owners and occupiers of the properties to the south and west of the blue shaded areas in Figure 4 will be less than minor given that those properties do not front or have direct access to either Frimley Avenue or Hapuku Street and have no direct line of site to Frimley Park. People that live in those properties may be regular users of Frimley Park and could make a submission on that basis, however there is no need for notice to be served on the owners or occupiers of those properties in consideration of sections 95B and 95E of the RMA. The same applies to those properties not identified in Figures 5 and 6.

Properties Identified in Figure 5

Figure 5 identifies those properties bounding Frimley Park along its north western boundary. Although the proposed activities are located closer to the south eastern boundary, the owners and occupiers of those properties may still have an interest in the application and have a partial line of sight to some of the proposed structures and may hear the construction noise. The construction noise will include vehicles entering the Park from the Lyndhurst Road frontage.

The remaining identified properties in Figure 5 have frontage to Frimley Road. Those properties on Frimley Road opposite the Park frontage to the north west of Karaitiana Street will be some distance

from the WTP and reservoir but will be close to the water bores and in particular FR4. The identified properties in Figure 5 include, 402 – 408 Frimley Road and 317 Frimley Avenue, which the Marshall Day Acoustic assessment provided with the AEE identifies as where the construction noise standard for the installation of bore FR4 may be breached¹⁴. Due to potential construction noise effects, the properties directly behind 402 – 408 Frimley Road and 317 Frimley Avenue are also identified, including properties accessed off both Karaitiana Street and Frimley Avenue. The remaining properties at the north western end of Frimley Road are identified as they will be adjacent to the new drinking water pipes connecting with Nottingley Road. There is an argument that the laying of the new drinking water pipes is a permitted activity under the District Plan and therefore any effects of that activity may be disregarded. While these properties could be excluded from notification on that basis, they are included for completeness as being adjacent to a component of the project as well as being in proximity to the proposed water bores.

It is considered that the potential adverse effects of the proposed activities on the owners and occupiers of the properties to the north and west of the blue shaded areas in Figure 5 will be less than minor. This is because those properties do not front Frimley Park or have direct access to Frimley Avenue and have no direct line of site to Frimley Park. Regarding noise effects, any noise received by properties that are not identified with blue shading, would be in compliance with the relevant District Plan noise standards based on the Marshall Day noise assessment provided with the application.

Properties Identified in Figure 6

Figure 6 identifies a group of properties on Lyndhurst Road that are opposite and near to the Lyndhurst Road entrance to Frimley Park. The Application and AEE states that the construction of the WTP and reservoir “...will involve...the provision of temporary construction vehicle access to the site off Lyndhurst Road.” While the effects of construction vehicles using this access for a temporary period may not be significant the owners and occupiers of those properties are recommended to be served direct notice for completeness as they are opposite a vehicle entrance to the Park that forms part of the proposal. Some of these properties may also have a partial line of site through the Park to the proposed reservoir, albeit at a distance of over 400m. Given the significant distances to the buildings and structures of the water treatment project, it is considered that any adverse effects on other Lyndhurst Road properties, or properties fronting Hart Drive or Hart Place with no frontage to the Park, would be less than minor.

5.3 Summary of Persons to be Served Direct Notification

Table 1 below provides a summary of those parties recommended to be served notice of the application.

Table 1 – Recommended Persons to be Served Direct Notification

Name	Reason
The owners and occupiers of all of those properties identified by blue shading in Figures 4 – 6 above. The Ministry of Education as the requiring authority of the immediately neighbouring property, Hastings Girls HS (designation reference D97 in the District Plan).	Affected Persons under section 95B of the RMA (clause 10(2)(a) of the Resource Management (Forms, Fees, and Procedure) Regulations 2003.
The occupiers of the Frimley Park Maintenance sheds and any other permanent occupiers of buildings within Frimley Park that is not the Hastings District Council.	Every person, other than the applicant, who ... is an owner or occupier of land to which the application or review relates (clause 10(2)(a) of the Resource Management (Forms, Fees, and Procedure) Regulations 2003.

¹⁴ ‘Frimley Water Treatment Plant Desktop Acoustic Assessment’, Marshall Day Acoustics, 9 December 2019 (pages 15 & 16)

Hawke's Bay Regional Council	Clause 10(2)(c) of the Resource Management (Forms, Fees, and Procedure) Regulations 2003.
Iwi authorities and mana whenua representatives whose rohe includes Frimley Park; and the Williams Family Trust (as representatives of the Williams family who gifted the land to the park to the then Hastings City Council). The iwi authorities recommended to be served direct notification are: Te Taiwhenua of Heretaunga; Heretaunga Taiwhenua Settlement Trust; and Ngati Kahungunu Iwi Incorporated.	Any other iwi authorities, local authorities, persons with a relevant statutory acknowledgement, persons, or bodies that the consent authority considers should have notice of the application (clause 10(2)(d) of the Resource Management (Forms, Fees, and Procedure) Regulations 2003.

Item 2

Notification Decision

Notification is required under s95A(2) of the Resource Management Act 1991 and that the application be publicly notified in accordance with the recommendations in this report

Recommended by:

Philip McKay
Associate, Mitchell Daysh Ltd
Consultant for Hastings District Council

Decision made under delegated authority by:

Caleb Sutton
Team Leader Environmental Consents / Subdivision
Hastings District Council

Dated: 13 February 2020

Attachment 2



Hastings Urban Water Supply Upgrades Water Treatment Plant and Drinking Water Reservoir - Construction and Operation Frimley Park

Resource Consent Application and Assessment of Environmental Effects
10 December 2019

Hastings District Council

FOR LODGEMENT

Palmerston North | Wairoa | Christchurch | contact@goodearthmatters.com

goodearthmatters.com

Item 2

Attachment 3



Client: Hastings District Council

Report Title: Resource Consent Application and Assessment of Environmental Effects

File Reference: 27527\2019.12.10 Frimley WTP Reservoir Associated Activities AEE - FOR LODGEMENT.docx

Report Issue: DRAFT FOR REVIEW Date: 29 November 2019
DRAFT v2 FOR Approval for Lodgement Date: 7 December 2019
FOR LODGEMENT Date: 10 December 2019

Prepared: Good Earth Matters Consulting Limited Date: 10 December 2019

Authorised for Issue:  Date: 10 December 2019
Annette Sweeney

On behalf of: Good Earth Matters Consulting Limited



HASTINGS DISTRICT COUNCIL
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Hastings 4122
Private Bag 9002
Phone 06 871 5000
www.hastingsdc.govt.nz

TE KAUNIHERA O HERETAUNGA

RESOURCE MANAGEMENT ACT 1991 (Resource Application Form)

Office Use Only	
RMA	
PID	

1.0 APPLICANT'S DETAILS

I AM THE	<input type="radio"/> PROPERTY OWNER (PROCEED TO 2.0)	<input type="radio"/> LESSEE	<input checked="" type="radio"/> AUTHORISED AGENT
APPLICANT'S NAME	Hastings District Council		
APPLICANT'S POSTAL ADDRESS	Private Bag 9002, Hastings 4156		
APPLICANT'S CONTACT PHONE NUMBER	06 871 5000		
APPLICANT'S EMAIL ADDRESS	graemeh@hdc.govt.nz		
ADDRESS FOR SERVICE	c/- Good Earth Matters Consulting, 23 Tiniroto Road, RD5, Frasertown, Wairoa. Attention: Grey Wilson		

2.0 OWNER'S DETAILS (if owner is not the applicant)

PREFERRED MEANS OF FORMAL CORRESPONDENCE	<input type="radio"/> MAIL	<input checked="" type="radio"/> EMAIL	<input type="radio"/> PHONE	<input type="radio"/> FAX
OWNER'S NAME				
OWNER'S POSTAL ADDRESS				
OWNER'S CONTACT PHONE NUMBER				
OWNER'S EMAIL ADDRESS				

3.0 BILLING DETAILS

BILLED TO:	<input checked="" type="radio"/> APPLICANT	<input type="radio"/> OWNER	<input type="radio"/> OTHER (PLEASE PROVIDE DETAILS BELOW)
NAME	Graeme Hansen, Hastings District Council		
POSTAL ADDRESS	As above		

4.0 SUBJECT SITE

SITE ADDRESS	Frimley Road, Hastings
LEGAL DESCRIPTION	Pt lot 254 DP 2101 and Lot 2 DP 3197
LAWFULLY ESTABLISHED USES ON SITE	Public Park and Associated Activities

Please note that current copies of Certificate of Titles are required (no older than 3 months). If a Certificate of Title is not supplied, Council will obtain a copy from Land Information New Zealand – the cost will be added to the cost of processing your consent.

5.0 BRIEF OVERVIEW

BRIEF DESCRIPTION OF THE PROPOSED USE	Construction and operation of drinking water treatment plant, storage reservoir, reconfigured bore field and drinking water pipes
PROPOSED START DATE	July 2020
ARE ANY OTHER RESOURCE CONSENTS REQUIRED? *	Refer attached AEE
ACTIVITY STATUS/TYPE OF RESOURCE CONSENT	Discretionary
RELEVANT RULE/S OF THE DISTRICT PLAN	Network utilities rules (refer attached AEE)

* E.g. Hawke's Bay Regional Council (for discharges or earthworks) or New Zealand Historic Places Trust (for archaeological sites or heritage buildings)

6.0 DECLARATION BY THE APPLICANT

☒ The Information on this form is required to be provided under the Resource Management Act 1991 and is required to process your application. This information (including your personal details) has to be made available to members of the public and the media, including business organisations. In appropriate circumstances it may also be made available to; other units of the Council, Council's approved contractors and government agencies. Under the Privacy Act 1993 you have the right to access the personal information held about you by the Council, and you can also request that the Council correct any personal information it holds about you.

☒ I confirm that I have read and understood the privacy statement above and that the information provided on the application form is true and correct.

☒ I also understand that as the applicant, the Council will send all invoices and refunds for fees to me and I will be responsible for, and will indemnify the Council in respect of, or payment of all fees in connection with this application. I further understand that all correspondence related to the application will be made to me

☐ Please tick here if all correspondence related to the application is to go to a surveyor. Please also supply the surveyor's details below:

APPLICANT'S NAME	Hastings District Council
APPLICANT'S POSTAL ADDRESS	Private Bag 9002, Hastings 4156

SIGNATURE



PRINTED NAME

c/- Annette Sweeney

7.0 TERMS OF BUSINESS

Additional charges over and above the deposit paid may accrue during processing of a resource consent application (depending on the quality of application and planning issues involved). These charges will be invoiced in accordance with the Schedule of Resource Management Charges and must be paid by the applicant. Any invoice that remains unpaid after 60 days may attract penalty fees as prescribed in the schedule of charges.

A full copy of the Schedule of Resource Management Charges can be viewed at the Council's office or at website www.hastingsdc.govt.nz



Item 2

Attachment 3

Hastings Urban Water Supply Upgrades Water Treatment Plant and Drinking Water Reservoir - Construction and Operation Frimley Park

Assessment of Environmental Effects
10 December 2019

Hastings District Council

FOR LODGEMENT

Item 2

Attachment 3



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1 INTRODUCTION AND REASON FOR THE APPLICATION

Hastings District Council (the Applicant) is currently in the implementation phase of its district wide drinking water improvement programme and Drinking Water Strategy which seek to ensure the delivery of safe and secure drinking water to the Hastings District. The activities proposed in this application are a part of a significant investment package and improvement programme to ensure the provision of a safe and sustainable drinking water supply to the people of the Hastings District. The purpose of this application in particular is to ensure compliance with the New Zealand Drinking Water Standards and delivery of safe water from the Frimley borefield in a way that avoids, remedies or mitigates any adverse effects of the necessary land use activities on the environment and that enables a significant improvement to the way in which interaction with the Heretaunga Plains aquifer occurs.

1.1 Background and Development of the Proposal

The activities proposed in this application include the construction and operation of a new water treatment plant (approximately 480 m²) and drinking water storage reservoir (approximately 8,000 m³) at Frimley Park.

Frimley Park is the current location of the Frimley borefield and, in order to ensure the safety and security of drinking water supply and to expand the borefield to provide for community growth, new bores need to be installed within the Park to replace the existing bores. The new bores will be of increased capacity and landscape planting and architectural treatment of the bores, reservoir and treatment plant building is proposed to reduce potential effects in the same location as the existing bores. New drinking water reticulation pipes also need to be installed to connect the water treatment plant (WTP) and reservoir to the existing water reticulation network.

Additionally, the Applicant proposes to, after construction of the proposed new infrastructure, make various changes and improvements to Frimley Park which include removal of the park maintenance sheds and yard (upon securing an alternative location for the relocation of this service) and planting of this area as well as planting of new trees along the entry to the Park to create an avenue effect and potential extension of the existing perennial gardens to create better flow and cohesion through and within the Park. These improvements are additional to landscaping measures to be undertaken on and around the WTP and reservoir site including plantings and screening as well as amenity gazebos to be installed over the new drinking water bores.

These activities make up the Frimley Park upgrade project, which is one of several upgrade projects being undertaken by the Applicant as part of the drinking water improvement programme and implementation of the Hastings District Council Drinking Water Strategy. The Strategy, and additional background to the proposal is discussed below.

1.1.1 Hastings District Council Drinking Water Strategy

In 2018, Council developed and adopted its Drinking Water Strategy, recognising that significant improvements in the delivery and management of drinking water were required following the Havelock North contamination event in 2016 and new science information about the effects of region wide abstraction on groundwater aquifers and surface waters. The Strategy explicitly states that the number one priority for Council is the provision of safe water and that is the primary driver for the activities proposed within this Application.

The Drinking Water Strategy also recognises that there are a number of other objectives which its drinking water supplies must meet. The Strategy describes the shift from previous thinking to the development of adopted objectives as follows:



"Council's previous water strategy was premised on the assumption that groundwater was both pristine and plentiful and the key considerations were around accessing sufficient quantities of water while minimising potential stream depletion effects. This strategy recognises that the assumptions of plentiful and pristine water are no longer valid and a wider range of objectives have been established as a result of the extensive investigations and recommendations from the Board of Inquiry who have investigated and reported on the Havelock North contamination event. These are summarised below."



The Strategy also fully adopts and includes an implementation programme to give effect to the Six Fundamental Principles of Drinking Water Safety as identified by the Board of Inquiry into the Havelock North Contamination Event. These principles are as follows:



Principle 1: A high standard of care must be embraced

- *Unsafe drinking water can cause illness, injury or death on a large-scale. All those involved in supplying drinking water (from operators to politically elected representatives) must therefore embrace a high standard of care akin to that applied in the fields of medicine and aviation where the consequences of a failure are similarly detrimental to public health and safety. Vigilance, diligence and competence are minimum requirements and complacency has no place.*

Principle 2: Protection of source water is of paramount importance

- *Protection of the source of drinking water provides the first, and most significant, barrier against drinking water contamination and illness. It is of paramount importance that risks to sources of drinking water are understood, managed and addressed appropriately. However, as pathogenic microorganisms are found everywhere, complete protection is impossible and further barriers against contamination are vital.*

Principle 3: Maintain multiple barriers against contamination

- *Any drinking water system must have, and continuously maintain, robust multiple barriers against contamination appropriate to the level of potential contamination. This is because no single barrier is effective against all sources of contamination and any barrier can fail at any time. Barriers with appropriate capabilities are needed at each of the following levels: source protection; effective treatment; secure distribution; effective monitoring; and effective responses to adverse signals. A "source to tap" approach is required.*

Principle 4: Change precedes contamination

- *Contamination is almost always preceded by some kind of change and change must never be ignored. Sudden or extreme changes in water quality, flow or environmental conditions (for example, heavy rainfall, flooding, earthquakes) should arouse particular suspicion that drinking water might become contaminated. Change of any kind (for example, personnel, governance, equipment) should be monitored and responded to with due diligence.*

Principle 5: Suppliers must own the safety of drinking water

- *Drinking water suppliers must maintain a personal sense of responsibility and dedication to providing consumers with safe water. Knowledgeable, experienced, committed and responsive personnel provide the best assurance of safe drinking water. The personnel, and drinking water supply system, must be able to respond quickly and effectively to adverse monitoring signals. This requires commitment from the highest level of the organisation and accountability by all those with responsibility for drinking water.*

Principle 6: Apply a preventive risk management approach

- *A preventive risk management approach provides the best protection against waterborne illness. Once contamination is detected, contaminated water may already have been consumed and illness may already have occurred. Accordingly, the focus must always be on preventing contamination. This requires systematic assessment of risks throughout a drinking water supply from source to tap; identification of ways these risks can be managed; and control measures implemented to ensure that management is occurring properly. Adequate monitoring of the performance of each barrier is essential. Each supplier's risk management approach should be recorded in a living WSP which is utilised on a day to day basis.*

The objectives of the Drinking Water Strategy and the Fundamental Principles of Drinking Water Safety form the basis upon which the options for changes to the network have been considered and the suite of upgrades to the Hastings District drinking water supplies, to apply to all supplies across the District have been developed. The details of each of the site-specific proposals have been further developed and refined in accordance with the relevant plan and policy framework, the need to avoid, remedy or mitigate any significant adverse effects and the sustainable management purpose of the RMA.

1.1.2 Improvements to the Hastings Urban Drinking Water Supply Network

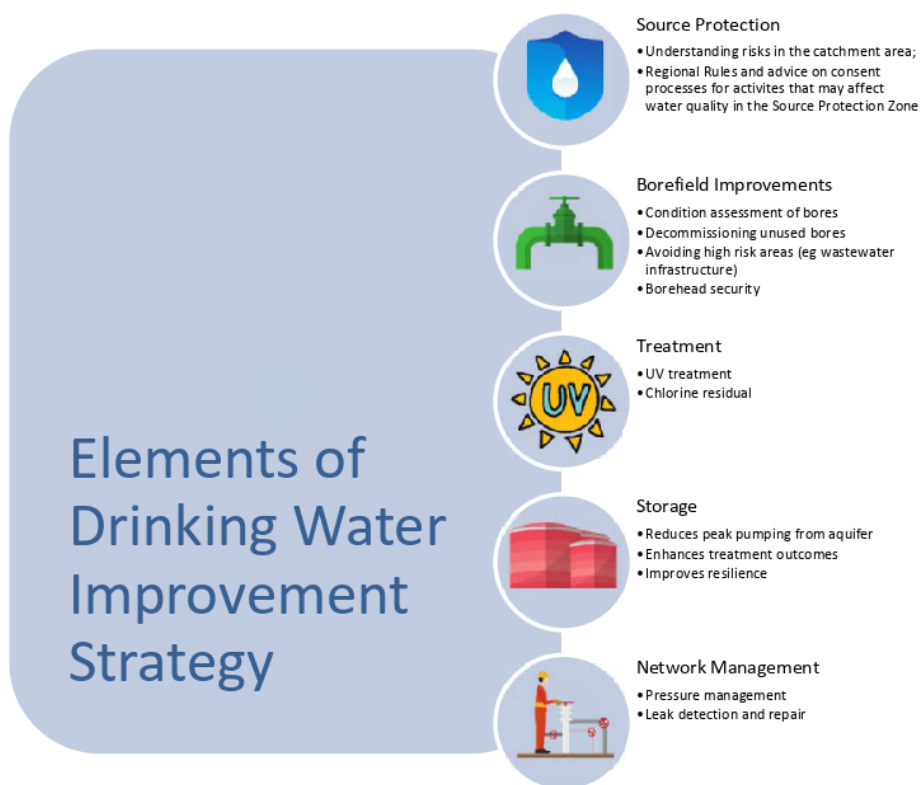
The Hastings Drinking Water Supply services the urban area of Hastings, Havelock North, Flaxmere and also provides water to Bridge Pa and Pakipaki. The supply sources water from two major borefields, known as Eastbourne and Frimley, and is supplemented by single bores in Wilson Road (Flaxmere), Portsmouth Road (Flaxmere) and Brookvale (Havelock North). Due to concerns regarding stream depletion effects within the Irongate Stream, the Portsmouth Road bore is only used in emergency situations. The Brookvale Bore is currently in use, however, once the booster pump station being installed in Havelock North is commissioned, the Brookvale Bore will move to a back-up role and is planned to be decommissioned once the remainder of the Hastings urban supply upgrades are completed.



The outcome will be that under normal conditions, the Hastings urban drinking water supply will be supplied solely from the Frimley, Eastbourne and Wilson Road bores. The Wilson Road bore is only a minor take (up to 80 L/s) and by far the majority of water is sourced from the Frimley (up to 480 L/s) and Eastbourne (up to 560 L/s) borefields.

The District Council holds resource consent from the Regional Council to abstract water from these bores. That consent provides for additional water to be abstracted as the community grows (in line with the Heretaunga Plains Urban Development Strategy growth projections), but also requires that the water be used efficiently, and the system is managed in accordance with a Water Conservation and Demand Management Strategy. The resource consent for water take is a long-term consent providing security of supply for the drinking water system. The consent expires in 2047.

With the major abstractions being in the Frimley and Eastbourne borefields, Council has been undertaking investigations and re-design of the supply system to ensure the safest possible water is abstracted, treatment is provided to ensure safe drinking water is delivered to residents, and the effects of the abstraction do not have an adverse effect on the aquifer. As a result, the upgrades required for both borefields include the following elements:



The elements of the above that are the subject of this application are the Treatment Plant and Drinking Water Storage Reservoir for the Frimley borefield and associated works including installing new bores (land use element only) and installing new drinking water reticulation pipes.



Why is Treatment Needed?

The Council's Drinking Water Strategy implements a Council decision to provide treatment to all community water supplies to ensure safe drinking water is provided, and compliance with the Drinking Water Standards is achieved. This approach is an outcome of the Havelock North contamination event and the subsequent findings and recommendations of the Board of Inquiry, as well as technical investigations as to the quality of groundwater and potential risks to groundwater across the aquifer.



The steps Council is taking to provide safe drinking water include:

- Water Source Protection: working with Regional Council in managing activities in and around the water catchment area to reduce the risk of micro-organisms entering the aquifer;
- Monitoring and Testing of Source Water;
- Treatment of Source Water by UV and Chlorination. UV treats any protozoa, viruses and bacteria that might be present as the water comes out of the bore. Chlorination is used to deal with any bacteria and viruses that may be present in the source water as well as when the water travels through the reticulation pipes; and
- Reservoir Storage to provide time for chlorination processes to occur, improve resilience in the event of an emergency, and storage to enable supply to the network to match peak demand without having to increase abstraction rates from the aquifer.

The requirement for, and decision to treat the groundwater abstracted for drinking water purposes is not subject of this application. This application is for the infrastructure works associated with the treatment plant, reservoir and associated activities.

Why is a Storage Reservoir Needed?

The main purpose of the reservoir is to enable the abstraction system (ie pumping from the aquifer) to be "decoupled" from the network supply system. The amount of water which Council needs to supply varies greatly during the day. Without storage (as per the existing system) the pumps abstracting water from the bores stop and start often and the pump rates vary during the day. This results in groundwater levels close to the bores varying throughout the day as the pumps turn on and off. It also means that the maximum pumping rate during the day is much more than what is required to meet the average demand across any 24-hour period. If the peak pump rate is too high, this can lead to a risk of contamination in shallow groundwater being drawn down into the deeper aquifer and the water that is supplied. By providing storage, the pumping rates from the bore can be reduced to the average daily demand, meaning that there is a consistent demand on the aquifer and risks of contamination are reduced. The variation in water demand during the day is supplied from the reservoir rather than the aquifer.

The reservoir also provides some storage time between treatment and subsequent delivery to the network to ensure that chlorine treatment is effective prior to water being delivered to the network.



A further benefit of the reservoir is that it improves resilience by providing a source of stored water above ground for use in emergency, firefighting and also in the event that the bores are damaged or bore pumps require replacement.

1.2 Resource Consent Sought

The Applicant seeks land use consent from the Hastings District Council under the Proposed Hastings District Plan for the following as network utility activities and any associated ancillary activities required for the upgrade of the Frimley borefield and Hastings urban supply network:

- Construction and operation of a new water treatment plant and new drinking water storage reservoir including new plantings;
- Installation of new drinking water supply bores and installation of 'visual treatments' at each;
- Installation of new drinking water reticulation pipes; and
- Removal of the existing park maintenance sheds and yard.

The Application overall falls to be considered as a Discretionary activity under the Hastings District Plan due to the non-compliance of the water treatment plant and reservoir with the bulk and location requirements for network utilities and the likely non-compliance of the installation of the new drinking water bores with the construction noise standards of the District Plan. A detailed assessment of the activity status of each aspect of the proposal is included in Section 4 of this document, noting that there are a number of elements which are permitted under the District Plan and therefore subject to the permitted baseline considerations also set out in Section 4 of this document.

It is noted that as a precursor to the lodgement of this Application and the requisite variation to the Frimley Borefield Water Take Permit, two investigative pilot bores are being installed at Frimley Park. A resource consent (bore permit) was obtained from the Hawke's Bay Regional Council for the bores to enable the bore construction. The abstraction of water for testing purposes and the discharge of that water and associated drilling fluids to land is a permitted activity under the Regional Resource Management Plan. The activity is also permitted under the District Plan as it can comply with all relevant standards of the network utility chapter, including the construction noise standard given the short term duration of the activity and the relevant standard that applies in the Construction Noise Standard NZS6803 (which differs to that which applies for the construction of the proposed drinking water production bores).

1.2.1 Additional Resource Consents Required - Included in this Application

In addition to the land use consent sought under the Proposed Hastings District Plan as set out above, consent is sought under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS). Part of the area where pipes are to be installed along Frimley Road, as well as the current park maintenance sheds and yard, are potentially HAIL sites and the Applicant seeks consent for the proposed works within these locations as a Discretionary activity under the NESCS.

Based on knowledge of past use of areas near Frimley Park for horticultural activities, the Applicant expects that a limited section of the drinking water pipe alignment between the northern extent of Frimley Park and Nottingley Road may be a HAIL site and trigger the NESCS. This may also be the case for part of the alignment along Hapuku Street. Similarly, the existing park maintenance buildings and yards is likely to trigger the NESCS. At the time of lodgement, the Applicant is in the process of undertaking a desktop study to confirm the location of potential HAIL sites. The Soil Management Plan as expected to be required as part of any grant of consent to this application would apply at the above sites as well as any additional potential HAIL sites identified through the desktop study.



1.2.2 Additional Resource Consents Required - Not Included in this Application

Additional resource consents that are required in association with the proposed activities and are not included in this application are:

- Bore permits from the Hawkes Bay Regional Council (HBRC) for the installation of the new bores. The bore construction is a Controlled Activity under the Regional Plan and therefore consent must be granted.
- A variation to the existing Hastings Drinking Water Supply water take permit from HBRC (Consent No. WP120036Tb) to enable a reconfiguration of the existing Frimley borefield (i.e. to enable the Applicant to take water from the new bores being installed).
- An air discharge permit for the (intermittent) use of the backup generator at the proposed new Frimley treatment station. The backup generator to be installed at the site has an output of 1500kW and as such requires an air discharge permit from HBRC under the Hawke's Bay Regional Resource Management Plan.

The Applicant has been in discussion with the Hawke's Bay Regional Council regarding these matters and anticipates that all consent applications will be processed on a non-notified basis and that no significant issues will arise.

1.3 Statement of Completeness

This document has been prepared to support an application for resource consent from the Hastings District Council for land use activities including primarily the construction and operation of a new water treatment plant and drinking water storage reservoir, the installation of drinking water supply bores and the installation of drinking water reticulation pipes along with physical changes to the appearance of Frimley Park in the location of these works. The Application has been prepared in accordance with section 88 and the fourth schedule of the Resource Management Act with the intent of including any and all relevant information to enable an assessment and determination of the application under section 104 of the Act.

1.4 Applicant Requests Notification

The Applicant requests that the consent authority process this application be publicly notified as per section 95(A)(2) of the Resource Management Act.

1.5 Overview of Document

As stated above, this document has been prepared to fulfil the statutory requirements of the RMA. The structure of the document is as follows.



1: Introduction & Reason for the Application

- Provides an overview of, and background to, the Application including why the treatment plant and reservoir are required for the provision of safe drinking water.

2: Details of the Site and Proposed Activity

- Provides details of the site where the treatment plant, reservoir, bores and pipes are to be constructed.
- Identifies the District Plan zoning that applies.
- Provides details of what will be built and how it will be constructed and operated.

3: Consideration of Alternatives Including Site Choice and Consenting Approach

- Noting that the treatment plant and reservoir are required in order to meet the Drinking Water Standards and provide safe drinking water, this section discusses the alternative sites that Council has considered along with design considerations at the proposed site.
- This section also discusses the consenting approach and the decision to seek land use consent for the overall proposal.

4: Regulatory Framework

- This section identifies the relevant provisions of the District Plan as it relates to the various elements of the overall proposal.
- While there are a number of elements which are permitted under the District Plan, the overall application is required to be assessed as a Discretionary Activity due to the size of the treatment plant and reservoir.

5: Assessment of Environmental Effects

- This section assesses the effects of the proposal on the amenity value of the Park and its surrounds, the use of the Park, and the effects associated with the construction activities.
- Section 5 is supported by technical reports included in Appendix B (Landscape & Visual Amenity), Appendix C (Noise).

6: Proposed Mitigation Measures

- Several mitigation measures have been incorporated into the design in order to avoid, remedy or mitigate potential effects. For clarity and to meet the requirements of the fourth schedule of the RMA, these mitigation measures are presented in Section 6.

7: Consultation & Notification

- Consultation undertaken to date is summarised in this section.
- This section also confirms that the Applicant requests that the Application be publicly notified so that the public have an opportunity to submit.

8: Section 104 RMA Considerations

- This section assesses the Application against the relevant objectives and policies of national, regional and district level RMA documents, as is required by Section 104 of the Act.

9: Part 2 RMA Assessment

- This section assesses the Application against Part 2 of the RMA to confirm that it is consistent with the purpose and principles of the Act.

2 DETAILS OF THE SITE AND PROPOSED ACTIVITIES

2.1 Location and Site Details

The primary site of the proposed works, including construction and operation of the water treatment plant and drinking water reservoir and installation of new drinking water bores, is within Frimley Park. The land contained within the Park is owned by the Hastings District Council and is legally described as **Pt Lot 254 DP 2101 and Lot 2 DP 3197 Frimley Park** (certificate of title included in Appendix A). It is 19.17 hectares in area. Works (installation of underground drinking water pipes and up to one of the new drinking water bores) are also proposed within the road reserve along Frimley Road and Hapuku Street, as indicated in the Locality Plan below.

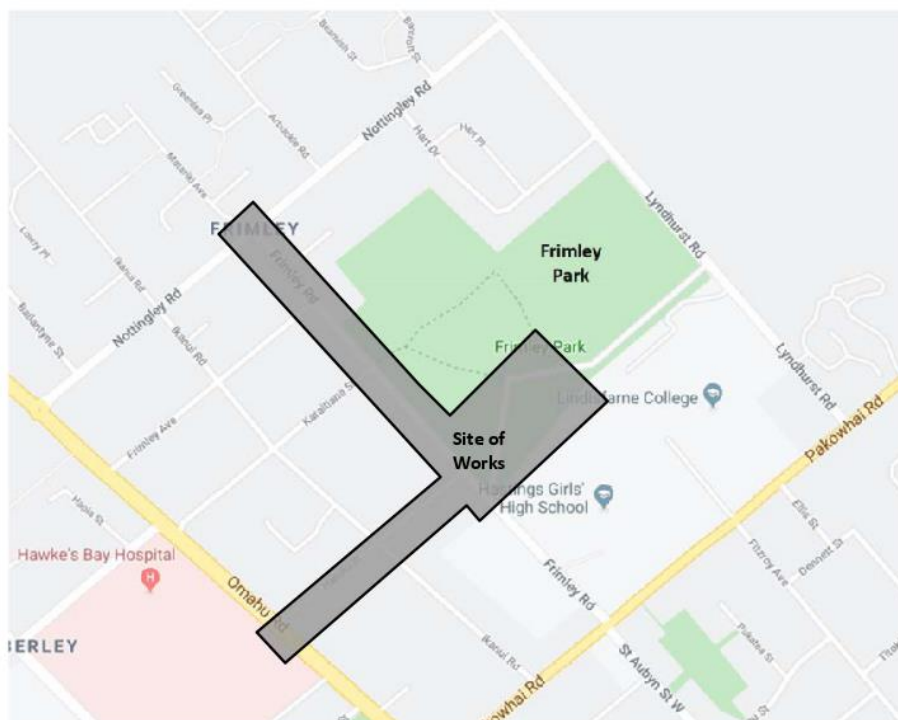


Figure 2.1
Locality Plan

The locations of the WTP and reservoir, and the drinking water pipes which will connect the site to the existing drinking water network are shown in the two figures below. Figure 2.2 also shows the indicative location of the likely four new drinking water bores, noting that the exact locations are subject to change and that a fifth bore may need to be installed. If a fifth bore is needed, it would be located along the same general alignment as bores FR1-FR4 as shown below.



Figure 2.2
Indicative Location of Proposed Activities Within the Site

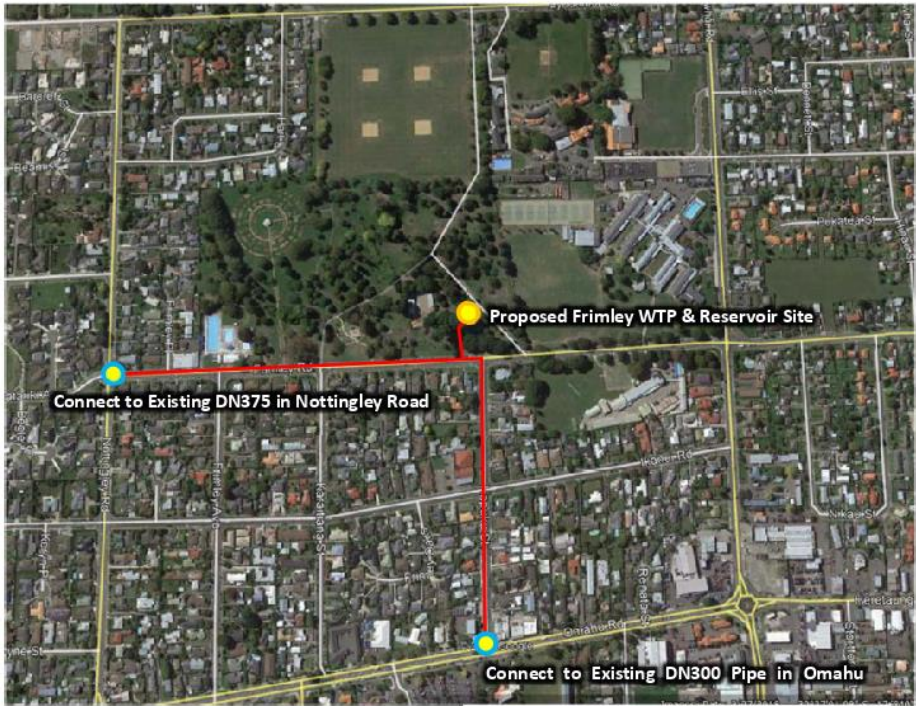


Figure 2.3
Indicative Drinking Water Pipe Locations



2.2 Zoning and District Plan Notations

The entirety of Frimley Park is zoned Open Space (OS1-07) in the Proposed Hastings District Plan (the PDP or District Plan). The Open Space Zone provides for parks, reserves and open spaces that are owned, managed or controlled by the Hastings District Council. The Open Space Zone also provides for recreation spaces and community facilities that are in public ownership of the Hawke's Bay Regional Council as well as land managed by the Department of Conservation. The sites afforded the Open Space Zoning range from passive amenity areas to highly developed sites which provide for activities such as organised sport and recreation, community facilities, country and forest parks and they include land with natural values and/or environmental significance and also include Lake Tutira.

The Open Space Zone uses categorisation guidelines from the New Zealand Recreation Association and New Zealand parks sector to classify the HDC reserves within the Open Space Zone according to the primary purpose using seven categories:

1. *Sport and Recreation*
2. *Community*
3. *Public Gardens*
4. *Open Space*
5. *Cultural Heritage*
6. *Civic Space*
7. *Linkages: Urban and Ecological*

Frimley Park is classified under the Sport and Recreation category (Category 1 in above list), and as identified in Appendix 63 of the PDP, its identifier is 7, hence the zoning descriptor of OS1-07 for the site.

Frimley Park is also provided for in HDC's District Wide Reserve Management Plan and is notated therein as **District Reserve - D5**. District Reserves are reserves that serve the total District. They are intended to meet the needs of both residents within the District and also visitors to the District. The reserve may enjoy a particular advantageous location or have recreational or amenity assets of a specific value or purpose.

They are generally developed and maintained to a high standard with intensive development of facilities to attract and cater for a high level of usage. They will typically provide some or all of the following features: toilets, playscape, amenity planting, paths, lighting, picnic facilities and developed car parking facilities.

The minimum size of District Reserves is dependent on the particular purpose, but they are likely to be of a comparatively large size. For planning purposes, the minimum parcel size is three hectares (without sports facilities) or a minimum of ten hectares for sports purposes. The District has 95 hectares of District Reserve land, comprising 9 reserves.

Table 2.1
Frimley Park Classification Under the HDC District Wide Reserve Management Plan

Name	Location	Reference	Area (ha)	Reserves Act Classification	HDC Classification	Map
Frimley Park	Hastings	D5	19.1726		District Reserve	1



As this park is not vested or gazetted as Reserve in the Reserve Act the Reserve Management Plan is a non-statutory guiding document. Frimley Park is freehold land held by Council in fee simple title for parks purposes but not held under the Reserves Act. Council's intention is for the Park to be vested under the Reserves Act 1977 as a Local Purpose Reserve.

2.3 Access and Surrounds

Current vehicle access to Frimley Park is via the existing, gated accessway off Frimley and Lyndhurst Roads. The site can also be accessed by foot at various locations around the perimeter of the Park.

Frimley Road is a Collector Road in the Proposed Hastings District Plan Roading Hierarchy and provides access to and from the Frimley area from the main arterials Pakowhai Road and Omaha Road (via Nottingham Road).

The surrounding area around Frimley Park is predominantly zoned Hastings General Residential, with the areas along the southwestern border of the park (across Frimley Road) and the northern border of the park (directly bounding the park) being used for residential purposes. This is with the exception of one site at the northwestern corner of the Park, adjacent to the public pools, that is zoned Suburban Commercial and is currently the site of a 'Four Square' dairy/mini mart.

Land along the northeastern border of the park (across Lyndhurst Road) is zoned Plains Production and is currently used for a mix grazing/agricultural and rural residential purposes.

Along the eastern border of the Park are two large sites, one being the location of Lindisfarne College and the other the location of Hastings Girls' High School. The underlying zoning for both sites is Hastings General Residential.

The Lindisfarne site has a 'Scheduled Activity' overlay, being S7 - Educational Facility, and the Girls' High site is designated (D97) by the Minister of Education for school purposes. Diagonally across Frimley Road from the southern corner of the park is Frimley School which also has an underlying zoning of Hastings General Residential and is also designated (D94) by the Minister of Education for school purposes.



Figure 2.4
Site and Surrounds - Zoning and Existing Uses
Source: Proposed Hastings District Plan - Annotated

2.4 Notable Trees

There are a number of notable trees located within Frimley Park and in the vicinity of the proposed WTP and drinking water storage reservoir. Notable Trees listed in the District Plan are noted with a tree symbol as seen in Figure 2.4. All Notable Trees identified in the District Plan within Frimley Park are classified as ‘Outstanding’ in Appendix 52 of the Plan. There are no ‘Significant’ Notable Trees, as set out in Appendix 53 of the Proposed District Plan, located within Frimley Park.

As part of the development of the proposal and in the determination of the siting for the WTP and reservoir in particular, the Applicant undertook a detailed Tree Assessment with the intention that the avoidance of any need to alter or remove a Notable Tree was a key driver for the locating and design of the proposed infrastructure activities. The Tree Assessment also identified and classified all existing trees within the vicinity of the WTP and drinking water reservoir. The figure below, which can also be found in the Landscape Mitigation Package appended to the Assessment of Landscape and Visual Amenity Effects in Appendix B of this application, shows the location of Notable Trees as per the Proposed District Plan as well as the location and classifiers for all trees near the WTP and reservoir. Note that it is only the Outstanding Trees (as shown in the orange table and labelled with the ‘T’ series) that are Notable in terms of the District Plan. The A, B and C series are classifiers used for the purpose of this application only. The majority of trees within the area of the Park where the WTP and Reservoir will be located will be retained, with 12 trees of average to good current quality to be removed to enable the construction of those facilities.



Figure 2.5
Tree Assessment including Location of Notable Trees
Refer Assessment of Landscape and Visual Amenity Effects



2.5 Description of Frimley Park and History

The description of the Frimley Park Reserve provided on the Hastings District Council website¹ is:

"Frimley Park in Hastings is an 'Old English' style reserve noted for its many beautiful and rare trees and more than 5500 roses set out in formal gardens.

The park also has sports fields catering for football and cricket ... a picnic area with tables, a petanque court (BYO boules), and a playground.

The play area is specially designed to suit all mobilities. Children are drawn into different play zones through the use of brightly coloured astro-turf that separates each area. This vibrant use of colour and textured surfacing is also designed to help those with poor vision or learning disabilities. Play equipment includes bongo drums, talk tubes, wheelchair-friendly roundabout, swings, slides, rope climb and scooter path.

On the park's Frimley Rd boundary is the Frimley Aquatic Centre, an outdoor swimming complex open over the summer months.

Seating: Yes

Public toilets: Yes; closed at night (and sports ground toilets open during organised sporting events only)

The entrances to the park are off Frimley Rd and Lyndhurst Rd.

Maintenance and development programmes for this reserve are governed by the District Wide Reserve Management Plan."

A brief history of the site is as follows [Excerpted from Assessment of Landscape and Visual Amenity Effects, refer Appendix B]:

"An historic 22-roomed kauri homestead was built in 1894 by Frimley Station owner, J.N. Williams, a cousin of the noted Archdeacon Samuel Williams, founder of Te Aute College. The pioneering station of once 2,000 acres was gradually reduced by subdivision and other developments including the expansion of Hastings.

Sadly the Frimley Homestead was destroyed by fire in 1950. By the time the Hastings Fire Brigade arrived, the unoccupied house was well ablaze with the flames reportedly soaring 500 feet. The glow could be seen as far away as Napier and as far south as Waipukurau.

Elsie Williams, A.B and H.B Williams donated the magnificent grounds of over 47 acres to the Hastings Borough Council in memory of their pioneering parents. They gifted the memorial sundial in the Sunken Garden to mark the house site"

2.6 Details of the Proposed Activities

The following sections include a detailed description of the proposed activities for which consent is sought. The specific construction methodologies to be used and the exact sequencing of works is not yet determined and is a matter to be confirmed by the contractor undertaking the works in conjunction with the applicant, as consent holder should consent be granted to this application. The information that follows provides sufficient information to understand the nature and scale of the proposed works and any potential effects on the environment.

¹ As at 25 November 2019.



2.6.1 Construction and Operation of the Water Treatment Plant and Drinking Water Storage Reservoir

The water treatment plant will consist of a treatment and pump room, chemical dosing rooms (chlorine and fluoride), a SCADA room, a switch room and toilet facilities. Any areas where chemicals are to be stored and used will be physically separate to other parts of the building and will have bunding, containment and separation distances in accordance with HASNO requirements. The building is to be connected to the Hastings District Council stormwater and sewer networks, and an interceptor system is to be installed between the building and the stormwater connection. Access to the WTP will be via the existing (gated) vehicle entrance to Frimley Park off Frimley Road and a new internal access to the WTP itself. A 'hammerhead' configuration will be used to enable delivery of bulk chemicals to the site whilst reducing the need for reversing manoeuvres and ensuring that vehicle movements are confined to the area in the immediate vicinity of the WTP and not within highly frequented areas of the Park.

The approximate floor area of the building will be 480 m² and the maximum height will be 7m. The building will be designed to the requirements of the New Zealand Building Code and the relevant material structures standard. With respect to the Building Code, the facility is being designed to Building Importance Level 4 (IL4) 50-year return period event. Importance level 4 is for 'Buildings that are essential to post-disaster recovery' (Building Code Clause A3). This categorisation means that it is required to be designed to a higher standard than required for other buildings or structures.

The facility will also include a diesel-powered emergency generator to be used in the event of a power outage. The generator will need to be tested periodically to ensure it is operational in the event of a power outage. The reservoir will be bolted steel sides with a concrete floor and geodesic dome roof. It will hold approximately 8 million litres (8,000 m³) of clean, treated drinking water and will have an approximate diameter of 38m and a height of approximately 14.5 m. The height of the reservoir is approximately 10 metres with a 4.5 metre geodesic domed roof. Whilst it adds some height to the reservoir structure, the domed roof has structural advantages and cost benefits as compared to a flat roof.

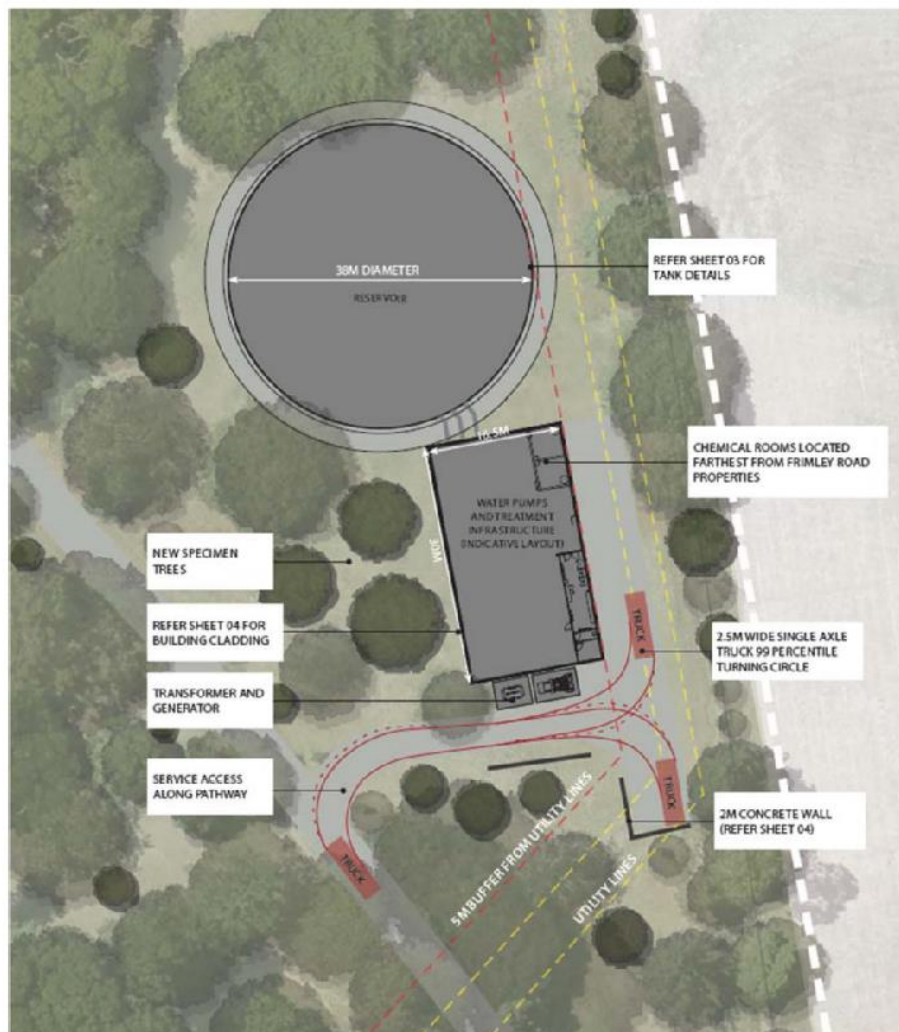


Figure 2.6
Overview of Proposed WTP and Reservoir

The location of the WTP and drinking water reservoir within the Park has been chosen so that it can nestle in amongst existing trees to screen it from view; utilise an under-used part of the Park; and be located in an area which minimises the number of trees affected. No notable trees are affected by any aspect of the proposal.



A number of visual effects mitigation measures around the WTP and reservoir are proposed. These include planting of more than 20 new trees to ensure depth in the view to the site and the use of dark colouring on the structures in keeping with the natural colours of the Park. Timber battens on the building will help break up the bulk appearance of the WTP building and strategically placed walls will screen vehicle movements from view. The site coverage of the WTP, reservoir and associated activities will be approximately the same as that of the current park maintenance sheds, which the Applicant proposes to remove in due course.

Construction of the facility will involve establishment of the construction area, securing of the site for the construction works with the provision of security fencing and the provision of temporary construction vehicle access to the site off Lyndhurst Road.

The site will be cleared, including vegetation removal and topsoil removal (to be stockpiled for re-use). The in-ground pipework associated with the WTP and reservoir will then be installed. Any unsuitable material will be excavated, and engineering fill will be placed to receive the foundations (concrete) for the water treatment plant and reservoir. The total volume excavated is expected to be approximately 3,500 m³.

The construction methodology for the reservoir remains subject to final design and procurement and will depend on the methodology proposed by the preferred tenderer. Nonetheless, the construction will most likely include the following steps.

- Construction of the tank foundation ring beam,
- Assembly and construction of the tank roof,
- Jacking up the roof and supporting it at the required height,
- Installation of a row of panels, connections, sealants, and any required penetrations, and
- Repeat the jacking sequence until the required height is achieved.

The water treatment plant is to be constructed as follows:

- Construction of the building foundation,
- Erect portal frame and precast wall panels,
- Install roof, and
- Install the mechanical process and electrical components.

Upon completion of the above works, the water treatment plant and reservoir will be commissioned. The final landscaping, external finishing (e.g. painting and planting) and a final reinstatement/make-good will occur prior to the construction site being de-established.

2.6.2 Installation of New Drinking Water Supply Bores

In order to ensure a safe and secure supply and enable better connectivity options, the Applicant proposes to install up to five new drinking water supply bores within Frimley Park. These new bores will replace the existing bore field and allow for future community water demand to be met. The Applicant proposes to install various visual treatments over/at each bore to soften their appearance and ensure a sense of cohesion with the rest of the Park and its features.

Installation of the bores will involve the establishment of a construction laydown area, drilling pad and securing area to allow the works to be undertaken. Drilling will then occur with a truck mounted drill rig and supporting infrastructure such as settling/recirculation pits. Throughout the drilling support vehicles will deliver items such as the drill casing, water and power generator. The bore casing will be driven into the ground using high frequency vibration technique which has been assessed as the best



practicable option to ensure that the emission of noise does not exceed a reasonable level, as required by Section 16 of the RMA. While the high frequency vibration technique has been adopted by the applicant as the preferred drilling method, it is noted that there may be short periods of time where standard drilling techniques are required due to ground conditions. This is not expected given current understanding of ground conditions. However, if difficult conditions are encountered, standard drilling techniques may be required for a short duration. Effects of this will be managed via a Construction Noise and Vibration Management Plan.

Drilling water recovery and artesian flows from the bore will be generated as it is being drilled. The management of these will be agreed with the Contractor, but at this stage these will generally be managed on site and discharged to the local storm water network as required.

Once the bores have been constructed, they will be developed (to flush/clean the screens). Then they will be pumped continuously for up to seven days to confirm the bore yield and to gather hydrogeological information needed for the variation to Consent No. WP120036Tb.

Upon successful pump testing the bore headworks will be completed. Once a variation to Consent No. WP120036Tb is granted, the bores will be commissioned. The final step is to reinstate the site to be as close as practicable to the site pre-bore construction.

It is also proposed that at/around each bore, a 'visual treatment' is installed to ensure that any visual effect associated with the bores is minor and that their appearance is in keeping with or does not detract from the amenity values of the Park. The specific treatment at each bore will be confirmed upon construction but the following have been identified as likely and appropriate treatments, noting that it is expected that four bores will be required. Consent is however sought for up to five bores and the need or otherwise for the fifth bore will be determined after pilot bores are established, pumping tests undertaken and an optioneering process undergone. If a fifth bore is necessary, it will be located within the general alignment of bores FR1-FR4 as shown in Figure 2.2 previously and would be subject to similar visual treatment as outlined below:

- Bore FR1 is the closest to the WTP and reservoir and will be covered by a steel box finished in Resene Ironsand to match the reservoir.
- Bore FR2 is to be located at the southern end of the Park. The Applicant has observed that this regularly frequented part of the Park lacks shaded seating and therefore proposes to construct a small gazebo structure which can seat up to 8 people. The bore will be located at the rear of and integrated into the design of this structure and the appearance of the gazebo will be similar to that of the gazebo structure in the centre of the Frimley Park rose gardens.
- Bore FR3 is to be located at in the northern part of the Park in an area also regularly frequented by visitors. It is proposed that a new drinking water tap is installed in this location with the bore integrated into the design, along with an educational sign outlining the water take and treatment process. Treatment for water supplied to the new drinking water tap will be either via a stand-alone UV treatment plant at the tap or via a pipeline delivering treated water from the WTP to be laid in the same trench as the raw water pipeline.
- Bore FR4 is to be located either within Frimley Road reserve, or just within the Frimley Park boundary, near the Frimley pool, in the vicinity shown in Figure 2.2. It is proposed that this bore is covered in the same way that Bore 1 is covered. This type of 'utilities box' is not unanticipated in road reserve, is similar to the existing bores along Lyndhurst Road. It will not be a dominant visual feature in this regard.



2.6.3 Installation of New Water Reticulation Pipes

New pipes are required in order to connect the new bores to the WTP and Reservoir and then to connect the reservoir to the existing drinking water reticulation network via Frimley Road and Hapuku Street. This element of the proposal involves standard pipe laying and network improvements which are routinely carried out as part of operating a network utility. They are included in the application in order to ensure that the entirety of the proposal is able to be understood.

The construction and establishment of the pipes to allow the new infrastructure (bores, water treatment plant and reservoir) to be connected to the existing reticulation network will require the following components (pipe sizing figures are preliminary and included for indicative purposes only):

- Raw water supply pipe from the new bores within Frimley Park to the new Water Treatment Plant in Frimley Park,
- Approximately 140m of DN800 treated water supply pipe within Frimley Park from Frimley Water Treatment Plant and Reservoir to Frimley Road,
- Approximately 530m of DN560 treated water supply pipe in road reserve down Frimley Road to Nottingham Road, connecting to the existing DN375 pipe, and
- Approximately 450m of DN630 treated water supply pipe in road reserve down Hapuku Street to Omaha Road, connecting to the existing DN300 pipe.

All pipes are to be installed via trenching (direct drilling would not be practicable in this instance due to the depth at which the pipes need to be installed). After establishment of the construction laydown area and securing of this area, excavation of the trenches will be undertaken using mechanical excavator(s). The trenches will typically be 1.5m wide, however in some places they may be up to 2.0m wide and will range from 2.0m to 4.5m deep. Where the treated water and raw water pipes are to be located next to each other they may be placed in a single trench (with an appropriate separation distance between them). The bulk of the trenching will occur within the legal road reserve and, where practicable, outside of the road carriageway. Throughout the trenching process, sheet piling or trenching shields may be required to ensure the sides of the pits do not collapse. It is expected that the volume excavated will be approximately 5,000m³, which equates to approximately 500 truck movements over the duration of pipe construction. Any surplus excavation material will be taken off-site and disposed at a site which is authorised to accept such material. Groundwater and stormwater are expected to accumulate in the trenches. The trenches will be dewatered via pumps which will discharge the water into the stormwater system or the roadside drainage system or otherwise disposed of appropriately where works are occurring in a potential HAIL site, with appropriate sediment control as per standard pipe laying practices.

Once all the pipes have been laid the ground surface will be reinstated to its pre-construction condition. The new water main will be tested and sterilised prior to existing connections being reinstated.

Traffic management measures will be in place throughout the pipe installation process. The work is likely to result in traffic lane closures, although at least one traffic lane will be kept open, and two-way traffic will be detoured or otherwise controlled accordingly. A Traffic Management Plan (TMP) will be prepared in accordance with the Code of Practice for Temporary Traffic Management and provided to the Road Controlling Authority for certification prior to the commencement of works.



2.6.4 Removal of the Park Maintenance Sheds and Yard

The proposed construction of the water treatment plant and drinking water reservoir is a significant infrastructure project occurring within a public park. The Applicant has recognised an opportunity to offset the use of Park space for infrastructure by removing the existing park maintenance sheds and yard whereby freeing up a high-profile area for public use as park space. The construction of the WTP and reservoir, the new bores and new pipes has priority over this removal work given that these works are required in order to ensure compliance with the drinking water standard by June 2021. Additionally, the removal cannot occur until such time as a suitable alternative location is identified and established for the park maintenance depot activities. It is expected that the removal therefore will occur within 3-5 years of any grant of consent.

2.7 Timing and Duration of Works

It is critical that works are able to get underway in order to ensure that compliance with the Drinking Water Standards is achieved by June 2021, but the works will occur over time, and the full proposal may take up to 5 years to implement particularly due to the need to find a suitable alternative location for the park maintenance sheds and yard.

- It is expected that the construction of the water treatment plant and reservoir will take between 34 and 52 weeks to complete.
- It is expected that the construction of each bore will take 6-7 weeks, therefore, the process could take up to six - seven months depending on whether the bores are able to be constructed concurrently.
- The installation of new drinking water reticulation pipes is expected to take between 17 and 20 weeks to complete.
- The removal of the park maintenance sheds and yard and other park improvements will occur over time upon completion of the primary upgrade activities

3 CONSIDERATION OF ALTERNATIVES INCLUDING SITE CHOICE AND CONSENTING APPROACH

The Council's Drinking Water Strategy implements a Council decision to provide treatment on all community water supplies to ensure safe drinking water is provided, and compliance with the Drinking Water Standards is achieved. This approach is an outcome of the Havelock North contamination event and the subsequent findings and recommendations of the Board of Inquiry, as well as technical investigations as to the quality of groundwater and potential risks to groundwater across the aquifer.

Having confirmed that treatment and reservoir storage are required to ensure safe drinking water is supplied, Council has undertaken a detailed consideration of various alternative sites for the proposed activities as well as alternative consenting approaches.

3.1 Site Selection

The Applicant acknowledges that the proposed infrastructure is large scale infrastructure and has potential to have a significant impact on adjacent properties (particularly in terms of view and outlook) if it is not sited and designed well. The Applicant has been cognisant of these potential impacts whilst trying to identify the best location for this critical and essential infrastructure. In determining where to locate the treatment plant and storage facility, the Council (as the Applicant) has adopted the following criteria:



Proximity to Existing Infrastructure	<ul style="list-style-type: none"> • Close to the borefield location is important for minimising pipe lengths (costs), and reducing pumping requirements from the abstraction point to the treatment plant. • Is it close to the existing large pipework within the network - this enables the water to be connected easily to the network for distribution while minimising the amount of new large pipe and construction disturbance.
Is the site away from any contamination sources?	<ul style="list-style-type: none"> • For example, is it far enough away from wastewater infrastructure, industrial land, contaminated land or other risks so that safety of drinking water supply can be ensured.
Is the site publicly owned land?	<ul style="list-style-type: none"> • While not critical, land that is already owned by the Council significantly reduces the overall cost and timeline for providing compliant drinking water.
Is there enough space?	<ul style="list-style-type: none"> • Council acknowledges the infrastructure is large and needs a lot of space to be located. There are a limited of number of sites that can accommodate the infrastructure.
Can the effects be mitigated?	<ul style="list-style-type: none"> • Some sites are better suited to be able to mitigate the effects. For example, one site considered would have meant the reservoir would be neighbouring on to several residential properties.

The Applicant undertook detailed consideration of alternative sites for the water treatment plant and drinking water reservoir, including a desktop assessment of available public space within sufficiently close proximity to the existing Frimley borefield. Consideration was also given to private land opportunities within close proximity to Frimley Park, however the need to obtain 3 or 4 developed residential size sections proved challenging. A similar approach was applied to productive land opportunities in the vicinity. This led to two sites being considered in detail, namely Frimley Park and St. Aubyn's Park.

With respect to the undeveloped nature of St. Aubyn's Park, it was initially considered feasible that significant improvements to the Park could be undertaken in association with the proposed works, which would bring significant benefit to the values of the Park overall. However, the overall size of the Park was a limiting factor in that the water infrastructure would have used 30 - 40% of the total available area and would have had to be located very close to a number of residential properties. It was determined that potential adverse effects associated with landscape amenity within the Park and visual effects on neighbouring properties, including shading, were not acceptable. Additionally, there were significant logistical and engineering constraints associated with this site including accessing the site for construction. The requisite installation of new bores would also be problematic at this site due to its size. In order to get necessary separation distance between bores, they would have to be located in various locations throughout the nearby residential neighbourhood and water piped from the bores to the treatment plant.

It was therefore determined that Frimley Park is the most appropriate location for the water treatment plant and reservoir, particularly given that the new bores can be installed within the Park and within the envelope of effects on the aquifer already authorised by the existing water take consent. The particular proposed location within the Park was chosen because it minimises the visual impact of the structures and rather than using areas heavily accessed by the public (such as the playing fields), it is located in a less used part of the Park.



3.2 Consenting Approach

In addition to the consideration of site and design alternatives, the Applicant has considered various consenting pathways for obtaining the requisite RMA approvals required to undertake the works that need to occur for the implementation of the drinking water improvement programme.

3.2.1 Combined or Separate Resource Consent Applications for Each Site where Upgrades are Occurring

The approach of bundling all resource consent applications required for the various upgrades to the Hastings drinking water network upgrades together was considered at the outset. However, the Frimley and Eastbourne proposals differ significantly from the small schemes upgrade proposals in terms of the nature and scale of potential effects. It was therefore determined that bundling all applications together would not be a useful approach for either the Applicant nor the relevant Consent Authorities.

The approach being used is to seek consent on a site by site basis and also to separate the applications to the Hastings District Council for the land use aspect of the upgrades and those to the Hawke's Bay Regional Council for variations to the water take permits to enable relocation or reconfiguration of the supply bores (where these are needed). This is primarily due to the desire to reduce confusion and overlap given the varying scope of works at each site and associated variance in levels of complexities at each. It is also due to the fact that the district and regional council considerations for each site are distinct and largely unrelated in terms of consent assessment and an overall bundling approach via joint applications is considered likely to cause complexity and not materially assist in ensuring the integrated management of resources occurs.

The option was also considered to combine just the proposals for Eastbourne and Frimley (and still treat the small scheme proposals separately). However, the sites are quite different in terms of the particular planning provisions that apply and it is considered there would be a risk of unnecessary overlaps if the two were included in the same application as well as a high risk of confusion/lack of clarity for affected parties which the Applicant seeks to avoid. Additionally, the logistics are such that the Frimley project is at a more advanced stage than the Eastbourne proposal, making a combined application unhelpful at this stage. The level of non-compliance, as identified by the Drinking Water Assessors, is also a primary factor in progressing the Frimley site first.

3.2.2 Frimley Upgrades - One Land Use Consent Application or Three

The matter of whether to seek consent for all land use activities required to occur at and around Frimley Park for the upgrades within one consent application to Hastings District Council or via several applications was also considered. Separate consents could be sought for the WTP and Reservoir, the removal of the park maintenance sheds and yard, the installation of new drinking water bores and the installation of new drinking water pipes within the park and within the road reserve. This approach was considered as potentially necessary due to the urgency with which works must be undertaken in order to comply with the Drinking Water Standard and the potential for confusion around which aspects of the proposal require consent and which could be undertaken as of right, particularly given that the application will be publicly notified. However, it is considered preferable to include the proposal in its entirety in this Application in order to ensure that the works are consented in a comprehensive way and to ensure that potentially affected parties are able to understand the nature and scale of all activities necessary to implement the Frimley Park upgrade.



3.2.3 Resource Consent Application or Designation

In addition to the matter of bundling, the Applicant has considered whether to make a Notice of Requirement for the proposed works at Frimley Park or to seek resource consent for these works.

The designation process provides benefits to the Applicant in terms of long-term certainty of the use of the site and a general preference to utilise the requiring authority provisions of the Resource Management Act where appropriate. However, designation of the Frimley Park site would be somewhat complex given that the proposed activities are only to occur on a portion of the site and that there is reticulation network infrastructure (bores and pipework) in various locations within the Park. It would therefore likely be necessary to designate the entirety of Frimley Park for water supply network purposes. The Applicant does not consider this to be an appropriate course of action given that the land within the Park was gifted to the Council for public park purposes. Rather, the resource consent pathway provides the ability for the water supply activities to occur at the site, provided any adverse environmental effects can be appropriately avoided, remedied or mitigated, whilst public recreation and enjoyment remain the primary, recognised purpose of the Park.

For the above reasons, the proposal contained herein presents a comprehensive application for all land use activities associated with the proposed upgrade works at and around the Frimley Park location. A separate application is being made to the Hawke's Bay Regional Council for the reconfigured bore field. This application will be lodged once the investigation and technical assessment work has been completed on the pilot bore and the final borefield configuration has been confirmed.

4 REGULATORY FRAMEWORK

The Proposed Hastings District Plan is the relevant District Plan. The provisions of the Plan which relate to the activities proposed in this application are not subject to appeals and the relevant provisions can be treated as operative. These provisions include those set out in the following chapters of the Proposed District Plan (PDP or the Plan):

- Chapter 22.1 Network Utilities District Wide Activity
- Chapter 13.1 Open Space Environments
- Chapter 18.1 Heritage Items and Notable Trees
- Chapter 25.1 Noise
- Chapter 26.1 Transport and Parking
- Chapter 27.1 Earthworks, Mineral, Aggregate and Hydrocarbon Extraction
- Chapter 29.1 Hazardous Substances

A detailed assessment of the activity status of the application, taking into account the relevant provisions, is set out below.

4.1 Activity Status Assessment

The proposal falls to be considered as a **Discretionary activity** under the Proposed Hastings District Plan due to the non-compliance of the water treatment plant and drinking water reservoir with the bulk and location rules relating to network utility activities and the non-compliance of the bore installation with the construction noise standards of the Plan.



4.1.1 Activities Requiring Resource Consent

The following aspects of the proposal require resource consent under the Proposed Hastings District Plan.

Water Treatment Plant and Drinking Water Reservoir

The primary activities proposed in this application, being the installation of a new water treatment plant building and drinking water storage reservoir, are provided for under the network utility provisions of the Plan, which includes the following definitions of network utility, network utility operator and network utility site:

"Network Utilities: means network utility operations and includes electrical lines, water, sewage and stormwater reticulation, streetlighting, telecommunications facilities, radiocommunications facilities, gas, petroleum or geothermal lines, roads, railway lines, airports, lighthouses, navigation aids and beacons, meteorological services and associated support structures and infrastructure for conveyance of water for irrigation. Amateur radio is excluded from this definition. See definition of amateur radio configuration.

Network Utility Operator: Has the same meaning as in the Resource Management Act 1991 and any subsequent amendments.

Network Utility Site: means an area of land required to accommodate a network utility operation, as defined by Section 166 of the Resource Management Act 1991, but shall not include a road or road reserve"

The Applicant is a Network Utility Operator as defined in the RMA and the water treatment plant and reservoir are for the purpose of the drinking water reticulation network. The site where these installations will be located is also encompassed by the Network Utility Site definition in the Plan.

With regard to the Water Treatment Plant (WTP) building, Rule NU2 (iii) provides for the construction, operation, maintenance, replacement, refurbishment or upgrading of above ground network utility structures that are not located within legal roads or service lanes and are not within any industrial zone as permitted activities provided the gross floor area of the structure does not exceed 30m². At approximately 500m² the proposed WTP building will be well in excess of 30m² and is therefore not a permitted activity under this Rule.

With regard to the drinking water storage reservoir, Rule NU10 specifically provides for the construction of new water reservoirs as a controlled activity subject to locational requirements with regard to vertical distance from the apex of a ridge or hill and with regard to the boundary of any neighbouring residential allotment. However, NU10 only provides for reservoirs up to 100 m² in plan area and 8 metres in height. The proposed Frimley Park reservoir will be approximately 14.5 metres in height and, with a diameter of approximately 38 metres, its plan area will be approximately 1134 m² and it is therefore not encompassed by Rule NU10.

As they are not specifically provided for by any other rule in Chapter 22 of the District Plan, **the WTP and storage reservoir are provided for as a Discretionary activity under Rule NU13 of the Plan.**

Bore Installation

The land use aspect of the proposed bore field reconfiguration is provided for in the Plan under Rule NU2(iii) which permits the construction, operation, maintenance, replacement, refurbishment or upgrading of above-ground network utility structures located outside legal roads, road reserves or services lanes in all zones other than industrial zones, provided the gross floor area of the structure does not exceed 30m². The definition of 'structure' included in the Plan is the same as that set out in the RMA which is:



"structure means any building, equipment, device, or other facility made by people and which is fixed to land; and includes any raft"

This definition encompasses the proposed bore heads, which will not be in exceedance of 30m² in gross floor area. Additionally, the proposed visual treatments to be installed at each bore, as confirmed at the time of construction, will meet all relevant standards of both the Network Utility and Open Space Zone rules.

However, the network utility standards require, inter alia, that compliance is achieved with the noise standards of the District Plan. This aspect of the activity is unlikely to be able to meet the construction noise standards of the Plan and therefore the installation of **up to five new drinking water supply bores falls to be considered as a Restricted Discretionary Activity under Rule NU11 under the District Plan².**

Demolition / Removal of Park Maintenance Sheds and Yard

The demolition/removal of the park maintenance sheds and yard is potentially a non-complying activity as it is not specifically provided for in the Open Space Zone. Rule OSZ15 is a 'catch all rule' that stipulates that all activities not provided for as permitted, controlled, restricted discretionary or discretionary in the activities table in the Open Space chapter are non-complying activities.

However, this does not appear to be the intent of the District Plan. It is understood from Applicant discussions with the consent authority that resource consent is not considered necessary for demolition of buildings except in instances where particular effects need to be considered such as heritage values of the building or effects on the anticipated outcomes of the zone (for example partial demolition of buildings in big box retail areas). In these instances, there are particular provisions set out in the Proposed District Plan.

If it is determined that the demolition/removal of the park maintenance sheds and yard is encompassed by Rule OSZ15, the Applicant notes that it will comply with the permitted activity standards for the Open Space Zone and that no Notable Trees will be affected by these activities. It is therefore considered that any adverse environmental effects associated with the demolition/removal will be minor or less than minor.

Furthermore, this application includes sufficient information to enable an assessment of the demolition/removal as a non-complying activity if considered necessary.

Given that any adverse effects will be minor or less than minor and that the proposal overall is consistent with and enabled by the objectives and policies of the Proposed District Plan, it is considered that the gateway tests set out in Section 104D of the Act are clearly able to be met and accordingly, the consent authority is able to consider grant of consent.

² A consent from the HBRC will be required to construct the bores. The bore construction is a Controlled Activity under the Regional Plan and therefore consent must be granted by HBRC.



4.1.2 Permitted Activities - Proposed Hastings District Plan

In accordance with the requirements of clause 3(a) of Schedule 4 of the Act, the following sections outline the activities which form part of the proposal and which are permitted activities under the District Plan and no resource consent is required for them under section 87A(1) of the Act.

Drinking Water Pipes in Road Reserve and Within the Park

Rule NU2 of the Proposed District Plan provides for the construction, operation, maintenance, replacement, refurbishment or upgrading of the following:

- (i) *In-ground network utilities including pipelines for the transmission or distribution of natural or manufactured gas not exceeding a gauge pressure of 2000 kilopascals and necessary incidental equipment, including household connections and compressor stations.*

The water reticulation pipes to be installed as part of the proposal are provided for by this Rule and can meet all other relevant standards of the District Plan and are therefore a permitted activity under the District Plan.

Storage of Hazardous Substances

The proposed storage of chlorine and fluoride for water treatment purposes is a permitted activity under Rule HS1 of the Plan as the site is not located within the Heretaunga Plains unconfined aquifer overlay and is not a major storage facility as defined in the Proposed Hastings District Plan.

Parking and Access

There is no new accessway proposed within this application and the rules set out in the transport chapter of the District Plan are not triggered in this regard. The development will comply with the requirement in Chapter 26.1 for network utilities to have one parking space available, noting that the requirement is for each full-time equivalent employee at the site and the WTP will not be staffed at all times. The design of the hammer head turning area for delivery trucks to access the WTP has been designed to minimise installation of impervious surfaces and any other amenity effects on the Park whilst ensuring the safe manoeuvrability of vehicles at the site. The final design may not meet HDC's dimension requirements but the intent of the transport section of the Plan will be met, and any effects associated with non-compliance are covered in the AEE given that the WTP and drinking water reservoir are discretionary activities.

Earthworks

Rule 27.1.5(c) specifically provides for earthworks in association with network utility operations as a permitted activity and states that such earthworks need not comply with the standards in Rule table 27.1.5. All earthworks to be undertaken as part of the proposed activities are in association with network utility operations and are therefore a permitted activity under the Proposed District Plan. It is noted that compliance with the network utility activity standards relating to land disturbance, which require reinstatement after works are completed, will also be achieved.

Discharges from the Site

Wastewater generated by the ablution facilities within the WTP building, stormwater from the newly developed area and any 'run to waste' water resulting from restarts of the UV reactors will be discharged to the Hastings District Council's reticulated wastewater and/or stormwater disposal networks, as appropriate. As such, there is no discharge to the environment and no resource consents are required for these activities.



4.1.3 Summary of Activity Status under the Proposed Hastings District Plan

In summary, consent is sought for the **proposal as a whole as a Discretionary activity**. The Proposed Hastings District Plan anticipates the construction and operation of network utility buildings and water storage reservoirs, and ancillary activities, in the Open Space Zone. However, the scale of the proposed reservoir and water treatment plant, which is required in order to achieve compliance with the New Zealand Drinking Water Standards, is such that these activities do not comply with the relevant standards of the Plan.

The installation of the new drinking water bores, which is required in order to ensure a secure and sustainable supply of drinking water, would be a permitted activity except that compliance is likely not to be achieved with the noise standards of the District Plan during construction. The installation of new water reticulation pipes within the road reserve along Frimley Road and Hapuku Street is a permitted activity under the District Plan (noting that consent for these is required under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health).

4.1.4 Resource Consent Sought under National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS)

A limited section of the alignment for the drinking water pipes within road reserve along Frimley Road and Hapuku Street is potentially a HAIL site under the NESCS due to its historic use for horticultural purposes. The current site of the park maintenance sheds and yard is also potentially a HAIL site given the use and storage of pesticides and herbicides at this location. No detailed site investigation or assessment has been undertaken at either site. For the purpose of this application, it is assumed that these locations are HAIL sites and that the NESCS is triggered. Resource consent is therefore sought for pipe installation and building removal within HAIL sites under the NESCS.

The Applicant is undertaking a desktop assessment to confirm the location of the potential HAIL sites within the project extent. This will inform the Soil Management Plan and confirm the location at which the SMP need apply in order to ensure the appropriate handling and disposal of soils within those locations.

5 ASSESSMENT OF ENVIRONMENTAL EFFECTS

The following sections set out a detailed assessment of the potential effects of the proposed activities on the environment. In undertaking the assessment of effects, particular regard has been given to the assessment criteria for network utility activities and for the Open Space Zone set out in the Proposed District Plan and information provided is done so with the intent of enabling an assessment against these criteria.

Given the location of the proposed activities within a highly valued and utilised public park, the potential effects of the activities on the existing amenity values at and around the Park has been a key focus in the development of the proposal and of this assessment of effects.

Amenity values are defined in the RMA as *“those natural or physical qualities and characteristics of an area that contribute to people’s appreciate of its pleasantness, aesthetic coherence, and cultural and recreational attributes”*.

The proposed activities have the potential to adversely affect the amenity values of Frimley Park both in a temporary way during the construction phase of the project, as well as on a permanent basis particularly in terms of the visual effects of the new WTP and reservoir.

Accordingly, the following assessment sections focus primarily on various amenity effects including, inter alia, construction noise and visual impacts of the new structures on neighbouring properties, as well as traffic impacts. Also addressed are potential effects in the event of a structural failure of the



drinking water storage reservoir and effects on the Heretaunga Plains aquifer and the drinking water supply network.

5.1 Visual Effects

The potential visual effects of the proposed activity include the landscape or park amenity effects and effects on neighbouring properties that look toward the Park, the visual effects of the new drinking water bores and the temporary landscape/visual effects associated with construction activities.

Landscape architecture and design firm Wayfinder has been involved in the development of the proposal from the early site selection stages in order to ensure that landscape and visual effects have been considered and provided for in a broader/more general sense during the site selection process through to undertaking the detailed design work including the landscape and visual impact assessment included in this application at Appendix B. The following four sections provide a summary of the assessment set out in that report. The methodology used to assign values to the potential effects associated with the proposal in line with the RMA (ie less than minor, minor, more than minor or significantly adverse) is consistent with accepted best practice in this regard. The findings of the Assessment of Landscape and Visual Amenity Effects are:

The effects of the proposed activities on the amenity of Frimley Park will be low-moderate or minor, diminishing to low or less than minor over time. At a wider landscape scale, these effects are considered to be low or less than minor. The visual effects for properties with views to the Park will range from low to very low and overall will be less than minor.

5.1.1 Landscape Effects and Park Amenity

The landscape context for the proposed activities is Frimley Park which is an open green space that is valued for its aesthetic and recreational purposes and is not a landscape in and of itself but rather forms part of its wider suburban environment. The Park has not been assigned any significant landscape, cultural or heritage value in a formal sense, noting that it has some historical importance in terms of it being gifted to the City of Hastings. Likewise, the biophysical values of the Park are somewhat limited in that it is a highly modified space. That said, the Park is valued highly by the community it serves as significant open, recreational space within a built-up area of Hastings.

The siting and design of the WTP and reservoir has been undertaken in such a way so as to 'nestle' these structures within the Park landscape as much as possible, the goal being to ensure that they are a recessive rather than dominant feature within the Park landscape. This has been achieved by locating the WTP and reservoir in a lesser frequented part of the Park behind large trees which are able to be retained. Additionally, the exterior appearance of the structures has been designed to ensure its recessive nature and new trees to be planted around the WTP and reservoir site will provide additional screening over time.

For these reasons, it is considered that the landscape and park amenity effects of the proposal will be minor and will diminish to less than minor over time.

5.1.2 Visual Amenity Effects on Neighbouring Properties

In addition to consideration and particular regard for minimising the visual effects on the landscape and amenity values of Frimley Park, potential visual effects on neighbouring properties that look towards the Park has been a significant driver in the development of the proposal. Other sites, particularly St Aubyn's reserve, were ruled out due to the potential for significant effects on neighbours especially in terms of views and shading.



There are a number of properties that will have views to the proposed WTP and reservoir at the Frimley site (refer Image 6: Map of Neighbouring Properties in the Assessment of Landscape and Visual Amenity Effects). Houses that are closer to the site will have more direct views to the WTP and reservoir than the more oblique views of dwellings further away. That said, no property will have views of the installation in its entirety.

The most affected residential properties will be those directly opposite the Park, namely 210 and 212 Frimley Road. However, the distance to the WTP and reservoir and visual 'layers' of trees between these structures and the houses means that only the base of the structures will be visible.

Even numbered houses along Frimley Road from addresses 300-310 (noting that the house numbering of properties with frontage to Frimley Road opposite the Park is not consecutive) will also be able to see the WTP and reservoir, although they will appear as non-distinct dark features given the distance between them and the dwellings.

The WTP and reservoir will be visible especially from the playing fields and courts at Hastings Girls' High School, but given the screening and colouring proposed, it is considered that the structures will not be dominant in the view and would not be expected to be a focal point from this area in any case.

Similarly, the facilities will be visible from people travelling northwest on Frimley Road as well as from the grounds of Frimley School. The height and scale of the WTP and reservoir will be appreciated from these vantage points although this will diminish over time as plantings grow, and the structures will be in the background rather than forefront view.

Visual effects associated with vehicle movements during on-going operations at the site will not be significant in terms of drawing attention to the facilities, as more significant traffic movements to and from the site are already part of the existing environment.

For these reasons, and as concluded in the Assessment of Landscape and Visual Amenity Assessment, the potential visual effects of the proposed WTP and reservoir on neighbouring properties are considered to be low to very low, or minor.

5.1.3 Landscape and Visual Effects of the New Drinking Water Bores

The new drinking water bores will be approximately 1 to 1.2 metres above ground. Whilst they will be visible within the Park and some of them are located within regularly frequented areas, their appearance is not necessarily obtrusive given their scale within the Park landscape. It is nonetheless proposed that 'visual treatments' are installed at each bore head to ensure that their appearance is not incongruent with the amenity values of the Park and/or are a recessive part of this localised landscape.

The exact nature of the visual treatments proposed at each bore will be determined at the bore construction stage, noting that preliminary design is based on the construction of 4 bores, with allowance for a fifth bore, pending the outcome of the initial pilot bore development and testing. However, the following have been identified as appropriate visual treatments for each bore and any such treatments at the time of construction will generally be as follows:

- Bore FR1 is the closest to the WTP and reservoir and will be covered by a steel box finished in Resene Ironsand to match the reservoir.
- Bore FR2 is to be located at the southern end of the Park. This is a regularly frequented part of the Park that lacks shaded seating and therefore the Applicant proposes to construct a small gazebo structure which can seat up to 8 people. The bore will be located at the rear of and integrated into the design of this structure and the appearance of the gazebo will be similar to that of the gazebo structure in the centre of the Frimley Park rose gardens.



- Bore FR3 is to be located at in the northern part of the Park in an area also regularly frequented by visitors. It is proposed that a new drinking water tap is installed in this location (with either a small treatment system in place there or treated drinking water piped back to this location from the WTP) with the bore integrated into the design, along with an educational sign outlining the water take and treatment process.
- Bore FR4 is to be located either within Frimley Road reserve, or just within the Frimley Park boundary, near the Frimley pool, in the vicinity shown in Figure 2.2. It is proposed that this bore is covered in the same way that Bore 1 is covered. This type of 'utilities box' is not unanticipated in road reserve and will not be a dominant visual feature in this regard.
- Bore FR5 location and visual treatment to be confirmed if this bore is necessary.

It is considered that any potential adverse visual effects associated with the new drinking water bores are not likely to be significantly adverse, even without any visual treatments. The proposed treatments will ensure that any such effects are in fact minor or less than minor, and in the case of the gazebo seating, will have a positive effect on Park amenity values.

5.2 Effects on Values of the Site as a Reserve

The Applicant recognises that the proposed installation of the new WTP and drinking water reservoir are taking up space in a public park that is valued by the community as an amenity and recreational reserve. Whilst the visual impacts of the proposed activities are considered to be minor, the Applicant considers it important and advantageous to offset the loss of public park space.

The Hastings District Council (HDC) park maintenance sheds and yard are a council owned depot that is currently used by contracting firm Recreational Services. Hastings District Council has in place a resolution to be able to terminate the use of the park maintenance sheds by the current contractor. This will be done when a suitable alternative location is found for this important service. Subsequent removal of the building and yard will make this space available for uses in line with the amenity and recreational purposes of Frimley Park.

As presented at the Public Open day in October (refer section 7 for more details), several opportunities have been identified for park improvements that could occur at the park maintenance sheds and yard, and/or in conjunction with its removal. These include primarily the extension of the existing perennial gardens, and new planting to fill in the space around the maintenance facility when this is removed. The area required for the proposed water infrastructure works is approximately 3,000 m² (not including new bore sites) and the area to be returned for further park development is approximately 2,100 m².

The detailed nature of the way in which this space will be reinstated, and any further development is not yet determined, and this will occur at the time that the park maintenance facility is removed and will be in accordance with the existing Park environment and values.

As discussed in the Assessment of Landscape and Visual Amenity Effects, the proposal has been developed in order to avoid any effects on Notable Trees as identified in the Proposed District Plan. avoidance of the need to remove any of these trees has been a key consideration in the siting, sizing and design of the WTP and reservoir as well as placement of bores and pipes, and this has been achieved by the proposal set out in this application.

It is considered that the potential adverse effects associated with the proposed network utility activities on the values of Frimley Park as a public reserve have been avoided, remedied or mitigated appropriately such that the effects of the overall proposal are less than minor. Further, once the park maintenance sheds are removed, there is likely to be a net benefit to these values as a result of the proposed activities.



5.3 Noise Effects

The proposed activities have the potential to create adverse noise effects during the construction phase as well as during on-going operations of the WTP. The Applicant engaged Marshall Day Acoustics to undertake a desktop noise assessment of the proposal to identify any potential non-compliances with the relevant noise rules and standards. It was identified in the undertaking of this assessment that whilst the majority of the activities are expected to be compliant and not have significant adverse noise effects, the bore construction activity does have the potential to have significant noise effects, albeit temporarily.

The Applicant has been cognisant of its duty under section 16 of the RMA to avoid unreasonable noise. Accordingly, it has taken steps to identify potential alternative methods for bore construction that would be 'less noisy' than the traditional method initially proposed. This is discussed in more detail in the sections following.

The Desktop Acoustic Assessment Report undertaken by Marshall Day Acoustics is included in Appendix C of this Application and it includes a detailed discussion of the relevant noise standards that apply for the assessment of the proposal. With the exception of the bore construction activity, all construction and operational activities are assessed as being compliant with the relevant standards at sensitive receiving locations (subject to recommended mitigation measures in the building construction, which the applicant will implement), and it is only the bore construction activity that will not be.

The Applicant therefore proposes to further mitigate the potential noise effect of bore construction by adopting the high frequency vibration methodology as the preferred method of bore drilling, and by ensuring that the construction activity occurs as quickly as possible in order to limit the duration of this non-compliance and any associated nuisance effects for neighbouring properties and the wider public. It is considered that the Applicant has taken significant actions to avoid, remedy or mitigate the bore construction noise effect to the extent reasonably practicable. The Applicant is also willing to ensure that affected parties are able to contact its contractors during construction to ensure that parties are aware of the occurrence and timing of bore construction activities. This will occur via a Construction Noise and Vibration Management Plan to be put in place by way of the tender and plan process for construction and as recommended by Marshall Day Acoustics.

Whilst the noise effects associated with the bore construction cannot be considered to be less than minor, given that these effects will be temporary in nature and are an inevitable part of drinking water supply bore construction (ie cannot be avoided entirely), it is considered that the significant benefits of the proposal outweigh the adverse noise effects associated with bore construction.

5.3.1 Bore Construction Noise and Vibration Effects

The initial assessment of potential construction noise identified that the bore construction activity would be significantly non-compliant with the construction noise standard, NZS 6803. This was due to the impact piling methodology which creates a metal on metal noise and vibration effects for the duration of the casing and bore installation. The Applicant subsequently undertook testing to identify an alternative method that could be used to reduce these effects.

Testing of the high frequency vibration method was undertaken, including noise measurements, during installation of pilot bores at the applicant's Eastbourne site in central Hastings. Ground vibration measurements were also conducted. Geotechnical investigations had identified that the site is similar to the proposed Frimley site in terms of both ground conditions and drilling methodologies and the test results can be considered representative of what would be expected to be experienced at the Frimley site. Two drilling methodologies were tested being impact drive casings and the high frequency vibration methodology. The high frequency vibration methodology was measured to be 8 dB less noisy than the impact methodology, and therefore the high frequency vibration methodology



has been adopted as the preferred drilling method for the new Frimley bores. Marshall Day Acoustics has identified this as an example of employing the best practicable option to ensure that the noise of the activity does not exceed a reasonable level.

The desktop acoustic assessment undertaken by Marshall Day Acoustics have assessed the noise from the bore construction using the proposed high frequency vibration methodology would result in exceedance of the relevant noise limits during the drilling of bore FR4 at dwellings located at 317 Frimley Avenue and at 402 to 408 Frimley Road.

Marshall Day Acoustics have recommended that a Construction Noise and Vibration Management Plan (CNVMP) be developed and implemented to manage these effects. The applicant has accepted this recommendation and will implement a CNVMP as recommended by Marshall Day (refer section 6). That is, the CNVMP will include details regarding:

- Community liaison;
- Noise and vibration mitigation measures;
- Monitoring. This would include monitoring of construction noise levels, received at selected representative receiver locations. Noise measurements would identify any processes that are unnecessarily noisy; provide confidence to potentially affected residents that their concerns are being considered; and identify compliance or non-compliance with the relevant noise limits.
- Contingency measures including, but not limited to, limiting the hours of some activities (specifically borehole casing installation) to mutually agreed times, review of construction methodology, mitigation measures and management strategies to ensure they represent the BPO, consideration of the installation of mechanical ventilation for noise sensitive receivers where external windows must be closed to avoid significant adverse noise effects and no alternative ventilation system is present; and
- Staff training.

Vibration effects of the drilling have been assessed as potentially producing vibration at the nearest Frimley Road dwellings of up to 0.5 mm/s PPV. This is assessed as being comfortably within the building damage limits of DIN4150 (the relevant standard for vibration in buildings relating to effects on the building – refer Appendix C) and marginally over the BS5228 (code of practice for noise and vibration controls on construction and open sites) level for “just perceptible in normal residential environments”. Therefore, residents of the closest dwellings may experience some vibration effects but building damage is unlikely. A Construction Noise and Vibration Management Plan will be implemented to manage these effects.

The desktop assessment is based on the most likely scenario of four new bores as set out in Figure 2.2. As noted earlier in this application, there is a possibility that five bores would be located within the general alignment of bores FR1-FR4 as shown in the figure in Section 2. If a fifth bore were required it is expected that construction noise effects associated with its installation would be generally consistent with the effects outlined in the desktop acoustic assessment and this would be confirmed via the construction noise monitoring that would be undertaken in accordance with the Construction Noise and Vibration Management Plan.

In summary, the drilling has the potential to result in some noise exceedances and some minor vibration effects at the closest dwellings. The Applicant has adopted the high frequency vibration drilling method as the preferred method which has been assessed as the best practicable option as required by Section 16 of the RMA. The effects are temporary in nature and the noise exceedances at individual dwellings occur during the drilling of one of the proposed bores only, thereby limiting the duration of exceedance at each dwelling. A Construction Noise and Vibration Management Plan will be developed and implemented in order to ensure that the applicant is able to meet its obligations



under Section 16 and 17 of the RMA, being to ensure noise does not exceed a reasonable level and adverse effects are avoided, remedied or mitigated.

5.3.2 Operational Noise

In addition to the potential noise effects associated with the construction phase of the proposal, there is the potential for on-going operational activities to result in adverse noise effects. Ongoing noise sources are outlined in detail in the Noise Assessment Report and include traffic to and from the site, use of the roller door and air conditioning units on the WTP building, as well as use of the emergency back-up generator to bring power to the site. Any operational noise associated with the use of the bores will be de minimus given that submersible pumps will be used to extract water from the aquifer, meaning the pumps will be located within the bores.

The Acoustic Report has identified a number of building design mitigation measures required to ensure that the noise from the operational facility does not exceed permitted levels at noise sensitive locations. These mitigation measures have been accepted by the applicant and will be incorporated into the final design of the facility.

As set out in the Table 5 of the Acoustic Assessment Report, predicted operational noise at all potentially affected neighbouring residential properties will be well below the night-time noise limit. It follows that the higher daytime limits would also be complied with because the operational noise output from the WTP operation is consistent, noting that vehicle noise would be higher in the daytime but the nature and frequency of these is such that compliance would still be achieved.

Table 6 of the Acoustic Assessment Report identifies that the District Plan noise limits are also met at all of the Education Facilities in close proximity of the site (Hastings Girls High School, Lindisfarne College and Frimley School), with the exception of the closest points on the boundary of the Hastings Girls High School playing field boundary with Frimley Park. At this location, there is a marginal exceedance of the daytime guideline limit and the night-time guideline limit. However, the playing field is not considered to be a noise sensitive location and the effect of the exceedance at this location can be considered less than minor.

Noise associated with use of the back-up generator is explicitly exempt from the noise standards of the Proposed District Plan, although the Noise Assessment Report finds that compliance with the relevant limits is expected, with the exception of an exceedance with the daytime limit at the boundary of Hastings Girls' High School. However, this location is not considered to be noise sensitive. Accordingly, it is considered that any noise effect associated with the non-compliance can be disregarded in accordance with the specific noise standard exemption for temporary emergency use of generators for continued power supply in Rule 25.1.6B(g) of the Proposed District Plan. It is noted that some routine testing of the generator may need to occur, and this will be temporary and would also be expected to comply as per the above.

It is considered that, given the extent of compliance with the relevant noise limits, any adverse effects associated with the operational noise associated with the proposed activities will be minor.

5.4 Traffic Effects

The proposal includes the change of use of part of Frimley Park for a new activity which will generate some vehicle movements on Frimley Road which is a Collector Road as per the District Plan roading hierarchy. These movements have the potential to have adverse effects on the safe and efficient operation of the roading network. The construction activities associated with the proposal also have the potential for such effects, as well as safety and nuisance/disruption effects on surrounding existing activities.



Construction traffic effects will be temporary and are able to be managed via site and activity specific Traffic Management Plans, in conjunction with communications between the Applicant, its contractors and neighbouring parties.

The on-going traffic movements associated with the site include approximately daily visits by staff to the WTP via ute and bulk chemical deliveries to the site on a weekly or fortnightly basis.

The nature and frequency of the traffic that will be generated by the proposed activities is such that a traffic impact assessment has not been deemed necessary for the development of this application, and it is considered that any potential adverse traffic effects can be appropriately managed by way of conditions of consent and/or relevant management plans to be implemented at the time of construction.

5.4.1 Construction Traffic Effects

Access to the site during the construction of the WTP and reservoir will be via the existing Park entrance off Lyndhurst Road. Movements will consist of various trucks delivering materials, gear and machinery to the site. The primary potential effect of these traffic movements is on Lindisfarne College and the Applicant has been in consultation with the school and will ensure that communications plans are in place and implemented during the undertaking of works to ensure that construction traffic effects are minimised to the extent possible and that neighbouring schools and residents are aware of the occurrence and timing of construction activities. Access to the Lyndhurst Road entrance to the Park will be restricted as required during construction to ensure the safety of Park users is maintained. Similarly, access to the bore location sites will be restricted to enable the drilling rig and other vehicles to safely access the area.

The installation of the drinking water reticulation pipes will create disruption to the normal flow of traffic along Frimley Road and Hapuku Street. Such disruption is not unanticipated by the Proposed District Plan which permits underground network utilities and enables activities in road reserves. Contractors undertaking works will be required to have compliant Traffic Management Plans in place which include consideration of minimising disruption as far as possible whilst protecting worker and public safety.

It is noted that pedestrian access around the work site for the bore and pipe installations, as well as vehicle access to private properties, will be maintained at all times throughout the construction process. Where this is not achievable, alternative access will be provided.

5.4.2 Operational Traffic Effects

Access to the site on an on-going basis will consist of approximately daily vehicle movements (ute or similar) by Council staff to access the water treatment plant for regular operational and maintenance checks. There will also be deliveries via tanker of hypochlorite and hydrofluorosilicic acid, and possibly chlorine gas to the site. The frequency of these deliveries is dependent upon maximum flow conditions and requisite dosing conditions as well as the length of time that hypochlorite is able to be stored before degradation occurs. This period is 30 days under average (most of the year) conditions. The frequency of delivery is influenced by tank sizes and delivery volumes as well as combined delivery programmes with other water treatment plant sites within the district. For the maximum flow and maximum dose regime that would need to occur (during summer), the Applicant estimates that delivery to the site for hypochlorite could occur weekly, hydrofluorosilicic acid fortnightly and chlorine gas monthly.

The specific standards set out in the Proposed District Plan Chapter 26.1 Transport and Parking are of somewhat limited relevance to the assessment of the proposal, given that no new accessways are being created. Access to the WTP and reservoir is available via existing park accessways from Lyndhurst Street to the northeast and Frimley Road to the south. It is expected that the access off



Frimley Road will be the primary way in which the WTP and reservoir are accessed by vehicle. There are no changes or upgrades required to these accessways to facilitate any new vehicle movements expected as a result of the proposed activities.

The layout of the WTP and reservoir has been designed to provide a 'hammer head' manoeuvring area that enables delivery vehicles to reverse into position adjacent to the WTP in an area that is away from the public area of the park. Given the low volume of traffic movements to and from the site, it is considered that the intent of the Proposed District Plan with regard to parking and manoeuvrability is met.

In terms of any effect on the safe and efficient operation of the roading network, the volume of vehicle movements generated by the proposed activities is insignificant within the existing traffic environment. It is therefore considered that any traffic effects resulting from the proposed activity will be minor or less than minor.

5.5 Effects of Proposed Earthworks

Earthworks associated with network utility activities are not restricted by the Proposed District Plan and it is therefore appropriate to disregard any such effects. In any case, the earthworks required in association with the proposal are not significant in the sense that no areas of landscape or ecological value will be affected and there are no watercourses within the vicinity of the subject site. As such, the earthworks are not restricted by any regional plan.

Requisite geotechnical investigations have been undertaken at the site (reports available upon request) and there are no particular issues in this regard.

In terms of any amenity effects associated with the proposed earthworks, normal, best practice operating procedures for earthworks will be implemented including reducing the area of exposed ground to the extent reasonably necessary and dust suppression measures if needed. It is considered that any effects resulting from the earthworks aspect of the proposal will be minor or less than minor.

5.6 Effects Associated with Works in Potential HAIL Sites

The Applicant is aware that there is the potential that parts of the area where the drinking water pipe is to be installed along Frimley Road and Hapuku Street may be HAIL sites as per the National Environmental Standard for Assessing and Managing of Contaminants in Soil to Protect Human Health (NESCS). For Frimley Road, the potential HAIL activity is related to historic use for horticulture. Hapuku Street is identified as some low-level PAH and Total Petroleum Hydrocarbons (heavy-end hydrocarbons) were identified during the course of geotechnical investigations. This indicates the potential of a historical HAIL land use or may be associated with a spill during road construction.

Similarly, the park maintenance yard may be a HAIL site due to the storage and use of chemicals in this area. Accordingly, the Applicant anticipates that conditions will be imposed on any grant of consent that will require a Soil Management Plan to be submitted to the Council for approval at the time of construction to ensure that any contaminated soil is handled and disposed of appropriately. Prior to commencement of works in these areas, the Applicant will confirm the location of potential HAIL sites so that these are able to be included appropriately in the Soil Management Plan. It is therefore considered that any effects associated with the proposed works in potential HAIL sites will be minor.



5.7 Disruption/Restriction of Access to the Park including Health and Safety Considerations

The proposed activities necessitate disruption to normal access to areas of Frimley Park during construction activities. Restriction of access will occur where necessary to ensure the health and safety of the public and workers undertaking the construction activities. This will be temporary and at no time will the public be excluded from accessing the Park in its entirety.

With regard to on-going restriction of access to areas of the Park, the Applicant does not propose to fence off the area around the WTP and reservoir. Evidence suggests that doing so can encourage rather than discourage vandalism and the Applicant also wishes to ensure that the WTP and reservoir are recessive features in the Park landscape. Fencing the area can cause them to be more dominant. Anti-graffiti paint will be used to reduce the potential for long term damage to the facilities as a result of vandalism and whilst the area will not normally be lit at night, security (sensor) lighting along with CCTV cameras and alarms will be installed.

It is considered that any disruption and health and safety effects associated with the proposed activities can be adequately managed during the construction process and that any such effects associated with on-going operations at the site will be minor.

5.8 Construction Effects Associated with Removal of the Park Maintenance Sheds and Yard

The removal of the park maintenance sheds will require temporary restriction of access to this part of the Park and will have effects such as noise and dust creation that are normally anticipated in association with demolition work of this nature. These effects will be temporary in nature and are expected to comply with any relevant standards of the Proposed District Plan. The activity will free up space to subsequently be used for Park enhancement features and use and enjoyment by the public. Any effects associated with the removal of the park maintenance sheds and yard are therefore considered to be minor or less than minor.

5.9 Potential Effects Associated with Failure of the Water Storage Reservoir

The reservoir, at full capacity, will store up to 8,000 m³ of treated water. Consideration has been given to the potential for failure of the reservoir and resultant flooding of the immediately adjacent area. One of the purposes of the reservoir is to improve the resilience of the water supply and therefore its design and construction is to standards to ensure that it will be operable during or after a civil defence emergency. The structures will be designed to the requirements of the New Zealand Building Code and the relevant material structures standard. With respect to the Building Code, the facility is being designed to Building Importance Level 4 (IL4), 50-year return period event. Importance level 4 is for 'Buildings that are essential to post-disaster recover' (Building Code Clause A3). This categorisation means that it is required to be designed to a higher standard than required for other buildings or structures. Therefore, the risk of failure is extremely low.

The above notwithstanding, consideration has also been given to potential failure modes. The reservoir is steel construction and catastrophic failure is extremely unlikely to occur with such materials. The most likely failure scenario is of a wall/floor joint in an Earthquake (EQ). A failure of this type would release a low flow through the damaged joint but the tank itself would remain intact. Flow rates would be relatively low.

Other potential steel tank failures may be via corrosion of bolts or the steel plate, however, early signs of this are obvious and would be picked up in routine inspection and dealt with. Liquefaction in an earthquake may also occur causing significant or differential settlement of the ground below the tank. Work completed to date on geotechnical ground conditions shows favourable foundation conditions at the preferred reservoir site. Council's design engineers have advised that the steel tank would



remain intact during such an event but there might be significant cracking in the concrete floor which could permit water release. As with the above potential failure mechanisms, this is likely to be low flow.

Therefore, the potential for a failure of the tank is extremely low, and in the event of failure, leakage would be minor and there would not be a catastrophic failure of the tank. The risk of flooding / inundation of adjacent land and properties is therefore considered to be de minimus.

5.10 Effects on the Existing Drinking Water Reticulation Network and Effects on the Heretaunga Plains Aquifer

The purpose of the proposed activities is to improve delivery of the Hastings public drinking water supply in terms of the way treatment is undertaken and how the network operates. Additionally, the proposed drinking water reservoir will aid in the reduction of potential adverse effects of the Frimley borefield abstraction on the aquifer by enabling abstraction to occur at a steady rate.

The matter of the effects of the Frimley take on the aquifer are not, in and of themselves, a matter for consideration in this application, particularly given that proposed new bores are able to be used by way of a variation to the existing water take resource consent from HBRC (as opposed to requiring a new resource consent). However, it is considered appropriate to recognise the reduction in potential adverse effects on the aquifer that is enabled by the proposed land use activities in the overall weighing up of the proposal. Furthermore, the benefits to be derived from the proposed activities in terms of the delivery of a safe and secure drinking water supply and the positive effects of these activities in terms of the way in which the reticulated network operates are considered significant.

The proposal has been developed in a way that sought and identified a pathway to achieve the necessary upgrades to the network that will not have significant adverse effects in terms of either regional consenting matters (ie effects on the aquifer) or district consenting matters (ie land use effects). In fact, the proposal will achieve an overall benefit in both regards. It is therefore considered that the proposal is one that achieves the integrated management approach promulgated in the Resource Management Act.

5.11 Summary of Effects

The ongoing operational effects of the proposed WTP and reservoir are minimal and not in conflict with the use of the site for a public park, especially given the various park improvement measures proposed. The effects of the WTP, reservoir and bores on the Park and the neighbouring properties have been mitigated through the design and proposed planting / mitigation measures such that the overall effects of the proposal are considered to be minor or less than minor.

Any potential construction effects are able to be appropriately mitigated through construction management practices including standard construction methodologies; construction management plans including both a Soil Management Plan for managing potential contaminated soils in areas where these may occur and a Construction Noise and Vibration Management Plan. In order to mitigate potential noise associated with bore drilling, alternative construction methodologies will be adopted which will minimise noise as far as possible. Further restriction on hours of working for such activities will occur. The applicant and its contractor will also ensure effective communication protocols with the adjacent schools are implemented to avoid potential effects of construction activities on the schools.

Overall, the effects of the proposal will be positive in terms of the significant benefits to the drinking water network and the reduction of potential effects on the aquifer.



6 PROPOSED MITIGATION MEASURES

The proposed activities have been developed and designed in such a way so as to incorporate various mitigation measures. As a result, the need for additional, separate mitigation measures is limited. The key mitigation measures built into the proposal are:

- Site and design choice.
- Identification and implementation of an alternative bore construction methodology (high frequency vibration technique) to reduce construction noise effects.
- Development and implementation of a Construction Noise and Vibration Management Plan for the bore construction to include, as a minimum, details regarding community liaison, noise and vibration mitigation measures, monitoring, contingency measures, and staff training.
- Acoustic treatment to be incorporated into the design and construction of the WTP facility as recommended in the Acoustic Assessment Report.
- Planting of at least 20 new trees at and around the WTP and reservoir site to ensure that the visual effects of these structures is minimised and to enhance the 'avenue' appearance/feel of the existing Park pathway that runs from Frimley Road and past the site.
- Borehead 'visual treatments'.
- Implementing best practice measures during construction.
- Limiting construction activities to normal working hours.
- Communications with neighbours, especially schools during construction.
- Removal of the park maintenance sheds and yard serves to offset the loss of open space that will result from the presence of the WTP and drinking water reservoir within the Park.

The Applicant anticipates that conditions regarding a Construction Noise and Vibration Management Plan and Soil Management Plan and, in line with the assessment of effects regarding bore construction noise in particular and the NES for Managing Contaminants in Soil to Protect Human Health will be imposed on any grant of consent.

7 CONSULTATION AND NOTIFICATION

The Applicant has undertaken a number of actions with respect to consultation with directly affected parties and the wider community in regard to the proposed activities. These include:

- Public Open Day at the Frimley Park Playground;
- In person discussions and letter drops with immediate neighbours of the site;
- Discussions with the William Family Trust, who gifted the land contained within Frimley Park to the Hastings District Council;
- Specific meetings with Hastings Girls High School, Lindisfarne College and Frimley School;
- Consultation with mana whenua.

The purpose of consultation has been to inform the community of the proposal, to understand how the Park is used and valued, to identify any effects which may have not been understood by the project team, and to ensure that the proposed mitigation package is appropriate.



7.1 Details of Consultation, Feedback Received and Applicant Responses/Actions

7.1.1 Public Open Day

On Saturday 19th October 2019 an information morning was held in Frimley Park to inform the public of Hastings District Council's plans for the water storage reservoir, WTP building and other associated infrastructure which is proposed to be constructed in the park. The session was hosted by key project staff and supported by attendance from several HDC Councillors. Those directly affected residents in Frimley, identified by HDC, were invited personally and residents in an area 500 metres around the Park had been invited via a flyer in their mailbox. The broader public was informed of the morning via posts on social media and advertisement in Hawke's Bay Today and the Hastings Leader newspapers.

Approximately 100 people attended the information session, viewing concept information, plans and images in a marquee, having queries and questions answered by members of the project team and visiting the site where the position of the tank and building had been marked out on the ground. 13 people signed the attendance registers. The vast majority of the people were positive, understood the need for the project and agreed with the site and the opportunity provided by the established trees. A very small number had initial concerns but after the project was explained and the mitigation measures understood they also indicated support. A range of other issues were canvassed by visitors, such as chlorination, fluoridation, site selection process and the Eastbourne project. A coffee cart was available for the community and 60 coffees were registered from the cart.

Concept plans, initial visual assessments and proposed mitigation packages were available for viewing along with HDC staff and Councillors on site to answer questions.



Figure 7.1
Photos of Public Open Day 19 October 2019
Source: Hastings District Council

7.1.2 Immediate Neighbouring Properties

Council staff provided information directly to immediately neighbouring properties regarding the proposal and Open Day via a letterdrop and door knocking to talk directly with occupiers where possible.



7.1.3 Williams Family Trust

Council staff met with the Williams Family Trust, as representatives of the Williams Family who gifted the Park to the Council to discuss the project and to invite the Trustees to the Open Day. While not related to the specific proposal, as part of this consultation, Council officers noted the intention of Council to vest the park under the Reserves Act 1977 as a Local Purpose Reserve.

7.1.4 Correspondence and Meetings with Schools

Hastings Girls High School

Council staff met with the Deputy Principal to discuss the proposal, including context and background of the Council's drinking water strategy and capital works programme. The draft visualisation and mitigation package were discussed.

Frimley School

Council staff met with the Frimley School Principal and provided details of the proposal including the draft visualisation and mitigation package. Images demonstrating the changes to the view from the school as a consequence of the proposal were discussed. No specific issues were identified and there was general support for the proposal as well as support for a public notification process for the consent application.

Lindisfarne College

Council staff met with the Principal and discussed the details of the project including providing draft plans and layouts. The effect of the new bores on the school's bore was discussed and Council undertook to provide bore modelling details and hydrogeological assessment outcomes to the School. It is noted that the effect of the abstraction from the new bores on the School's bore and water take is a subject of the variation to the Council's water take consent which will be determined by Regional Council and is not a matter for this application.

The Principal advised that they had no specific issues with the proposal and were more interested in construction timing, access arrangements and ability to work around accessing the Park and sports fields during construction, as well as effects of construction activities on exam times. The Council has undertaken to work directly with Lindisfarne College (and will do so with the other schools) to ensure that appropriate arrangements are in place to avoid any adverse effects during the construction phase.

Consultation with Mana Whenua

An update on the Hastings District Council Drinking Water Capital Upgrade Project was presented to Mana Whenua representatives at a hui at the Te Taiwhenua o Heretaunga community centre in Hastings on 27 November 2019. The presentation focused on the proposed upgrades at the Frimley site and also traversed the background to the work, including the Havelock North Crisis in 2016; the development of the Drinking Water Strategy and \$50m budget in 2017; as well as work that has progressed since the work commenced in 2018.

The specific detail presented at this hui was the Drinking Water Strategy, the \$50m programme of works and where the programme had progressed to, the proposed infrastructure elements, including treatment buildings, pumpstations and reservoir requirements. These included images of site plans, building locations and impacts on trees within Frimley Park. The meeting also covered the various stages of the project and the proposed consent application process for the Frimley site scheduled for early December 2019. The discussion was constructive and informative for all parties and no significant issues or concerns were raised.



Members of the committee acknowledged earlier involvement and understanding of the crisis event and the detail that formed the Drinking Water Strategy. They also acknowledged that updates had been provided by the Group Manager: Asset Management during the period between 2016 and the present hui.

7.2 Section 95 RMA

With the exception of temporary construction noise associated with the installation of the new drinking water bores, the proposed activities will not have adverse effects that are more than minor. As such, there is potentially a case to be made that the application could be processed on a non-notified or limited notified basis as per the pathways available in Section 95 of the Act.

However, to enable the community to have additional opportunity to provide feedback regarding the proposal and for the purpose of transparency, **the Applicant requests that the proposal be publicly notified.** This is considered appropriate given the significance of the proposed activities in terms of the overall drinking water safety project and the importance of this project for the well-being of the Hastings community.

8 SECTION 104 RMA CONSIDERATIONS

The matters regarding consideration of the application as set out in section 104(1)(a) and 104(1)(ab) RMA have been addressed already in the application, noting in particular the proposed park improvement measures proposed by the application in terms of the 104(ab) off setting considerations. Additional section 104 RMA matters are addressed in the following sections.

8.1 Section 104(1)(b) Policy Considerations

Section 104(1)(b) of the Resource Management Act states that:

“(1) When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to - ...

(b) any relevant provisions of:

- (i) a national environmental standard*
- (ii) other regulations:*
- (iii) a national policy statement:*
- (iv) a New Zealand coastal policy statement:*
- (v) a regional policy statement or proposed regional policy statement:*
- (vi) a plan or proposed plan;”*

8.1.1 National Environmental Standards

The status of the proposal under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health is discussed previously in this application and consent is being sought under the NESCS for the pipes located within road reserve and the removal of the park maintenance sheds and yard. There are no other National Environmental Standards of direct relevance to the assessment and determination of this application.



8.1.2 National Environmental Standards for Sources of Human Drinking Water

Regulations 7 and 8 only apply to water and discharge permits and therefore are not relevant to the consideration of this application. Regulation 10 only applies to permitted activities regulated by regional councils and are therefore also not relevant to this application. Regulation 12 applies to an activity that may increase the risk of adverse effects on the quality at any drinking water abstraction point. The proposal is unlikely to have any adverse effects on the water quality at any drinking water abstraction point, this notwithstanding, an assessment follows.

Regulation 12 Condition on resource consent if activity may significantly adversely affect registered drinking-water supply

- (1) *When considering a resource consent application, a consent authority must consider whether the activity to which the application relates may—*
 - (a) *itself lead to an event occurring (for example, the spillage of chemicals) that may have a significant adverse effect on the quality of the water at any abstraction point; or*
 - (b) *as a consequence of an event (for example, an unusually heavy rainfall) have a significant adverse effect on the quality of the water at any abstraction point.*
- (2) *If the consent authority considers that the circumstances in subclause (1) apply, and it grants the application, it must impose a condition on the consent.*
- (3) *The condition must require the consent holder to notify, as soon as reasonably practicable, the registered drinking-water supply operators concerned and the consent authority, if an event of the type described in subclause (1) occurs that may have a significant adverse effect on the quality of the water at the abstraction point.*

It is unlikely that the proposed activities will result in an event occurring that may have significant adverse effects on the water quality at any abstraction point or have any significant adverse effects on the water quality at any abstraction point as a result of an event. The purpose of the proposal is to achieve a compliant, safe and secure drinking water supply at Frimley. The steadier abstraction (rather than on demand pumping) enabled by the installation of the reservoir reduces the risk of aquifer contamination. The Applicant in this case is the Water Supplier. Hence in the unlikely event the proposed activities result in any significant adverse effect on the water quality at an abstraction point, the Applicant would need only to notify Hawke's Bay Regional Council.

The Consent Authority can therefore be satisfied that the proposal achieves the intent of Regulation 12.

8.1.3 Other Regulations

- Hazardous and Substances and New Organisms Act 1996 and Regulations
- Health and Safety at Work (Hazardous Substances) Regulations 2017

The proposed water treatment plant includes facilities for the bulk storage of hydrofluorosilicic acid, hypochlorite or chlorine gas. The building is being designed to ensure that all relevant requirement under the HASNO Act are complied with and works and ongoing operations will be carried out in accordance with the Health and Safety at Work Act 2017.



8.1.4 National Policy Statements

The National Policy Statement for Freshwater Management 2014 (revised 2017) seeks to recognise and provide for Te Mana o te Wai in the management of freshwater. The relevant objectives and policies of the NPSFM are contained in Part B – Water Quantity. The objectives of Part B seek to safeguard life supporting capacity; avoid over-allocation of water resources; improve and maximum efficient use and allocation of water; protect significant values of freshwater bodies; and enable communities to provide for their economic well-being by sustainably managing freshwater quantity within limits.

The policies which support these objectives place obligations on Regional Councils to undertake specific actions to achieve the objectives.

While those policies do not place any specific obligation on the Applicant, the applicant has undertaken significant steps to ensure that its abstraction of water for drinking water purposes is consistent with the objectives and policies of the NPSFM. Water is abstracted in accordance with the conditions of water permit WP120036Tb (the Hastings water supply consent) which was granted by HBRC following determination that the abstraction was within the sustainable limits of the aquifer and the effects of the abstraction were minor or less than minor. Further, the consent requires the Council to demonstrate efficiency of water use. Council monitors its water use and reports annually on efficiency of water use and the effectiveness of its water demand management and conservation strategy. The reservoir, along with the remainder of the drinking water improvement upgrades throughout the supply, will further enable improved network management to be implemented. The application is therefore consistent with, and supports, the objectives of the NPSFM.

8.1.5 Regional Policy Statement and Regional Plan

The relevant Regional Policy Statement and Regional Plan are the Hawke's Bay Regional Council's Regional Resource Management Plan (RRMP) and regard has been had to the provisions and requirements of the RRMP in developing the proposal. The key consideration in this respect has been about ensuring that a proposal for the upgrade of the Frimley component of the Hastings drinking water supply network aligns with the scope and intent of the Applicant's current water take permit for the scheme, and that any changes (s127 RMA variations) needed to that consent as a result of this proposal are favourable in terms of not presenting a risk of any new or significant adverse effects on the environment and are consistent with the objectives and policies of the RRMP.

That said, the provisions of the RRMP are not considered a critical factor in terms of the assessment and determination of this proposal, given that it is a land use proposal for a network utility and thus subject to a specific planning framework provided for primarily in the relevant district plan. It is considered that the proposed activities are generally enabled by the RRMP, and as there will be no significant adverse effects on the environment as a result of the application, it is one that is not contrary to the objectives or policies of the RRMP.

It is noted that the Applicant considers that the proposal is consistent with the intent of the not-yet-notified proposed TANK plan change to the RRMP, particularly in terms of the importance afforded in TANK to drinking water supplies.

The following sets out an assessment of the proposed activities with regard to the relevant objectives and policies of the RRMP.

Objective UD5

Ensure through long-term planning for land use change throughout the Region, that the rate and location of development is integrated with the provision of strategic and other infrastructure, the provision of services, and associated funding mechanisms.

**Policy UD7**

In the Heretaunga Plains sub-region, district plans shall include objectives, policies and methods promoting intensification by redevelopment of suitable locations within existing residential areas

Policy UD13 Servicing of Developments

Within the region, territorial authorities shall ensure development is appropriately and efficiently serviced for the collection, treatment, disposal or re-use of sewage and stormwater, and the provision of potable water by:

- a) *Avoiding development which will not be serviced in a timely manner to avoid or mitigate adverse effects on the environment and human health; and*
- b) *Requiring these services to be designed, built, managed or upgraded to maximise their ongoing effectiveness.*

Through HPUDS and District Plan provisions, the focus of these provisions is about encouraging intensification of development rather than new areas and ensuring that the areas already identified for development are properly serviced (ie with a safe and secure drinking water supply). **Policy UD13 in particular is an enabling policy** for the proposed activities because they constitute an 'upgrade to maximise their on-going effectiveness' of the existing potable water supply services within Hastings.

Objective 32

The ongoing operation, maintenance and development of physical infrastructure that supports the economic, social and/or cultural wellbeing of the region's people and communities and provides for their health and safety.

Objective 33

Recognition that some infrastructure which is regionally significant has specific locational requirements

Objective 33B

Adverse effects on existing landuse activities arising from the development of physical infrastructure are avoided or mitigated in a manner consistent with Objectives 16, 17, 18, 32 and 33.

The listed objectives focus on avoiding conflicts and reverse sensitivity effects where infrastructure activities are located near other land uses which may be conflicting. This is not a particular concern in the consideration of this application because the potential for changes in land use around the installation are limited. The key consideration regarding conflicting land uses is the demonstration of the fact that the proposed site has been chosen because of the lack of conflicting land uses and the nature of the proposal being to ensure that the effects of the proposal on the existing environment will not be significant. It is also noted that there are existing drinking water bores and buildings at Frimley Park, which needs to be afforded some weight in the consideration of the proposal. The nature of what is now required to ensure compliance with the Drinking Water Standards (ie treatment and storage) was not required previously, at the time that the existing borefield was developed. Whilst the Applicant is not seeking or relying on existing use rights in any way, it is considered appropriate to account for the fact that the proposed activities are not unrelated to an existing infrastructure installation on the site and in this way the objective 33B is considered to be met.

Objective 23

The avoidance of any significant adverse effects of water takes on the long-term quantity of groundwater in aquifers and on surface water resources

Objective 44

The maintenance of a sustainable groundwater resource

This application is only for the land use aspects of the proposed new drinking water network utilities. However, a key driver for the package of work proposed at Frimley Park is to enable the water supplier to interact with the aquifer in a better way than is currently possible and helps to ensure the sustainable use of this resource.



8.1.6 District Plan

As an application for land use consent, the provisions of the Proposed Hastings District Plan have formed the basis for the development of the proposal in terms of ensuring that it is consistent with and enabled by the relevant planning framework. From the site selection to the detailed design of each element of the proposed activities, particular regard has been had for the objectives and policies of the Proposed District Plan.

The assessment of environmental effects of the proposal demonstrates that the adverse effects will not be significantly adverse, and there will be a net positive effect overall in terms of the amenity values at Frimley Park and the appropriateness of the site and design in terms of implementing the Hastings District Council's Water Strategy in a socially and environmentally acceptable manner. It is also considered that the proposal is consistent with the objectives and policies of the Plan and the relevant assessment is provided below.

An assessment against the relevant objectives and policies of the District Plan is provided as follows:

Network Utility Provisions

OBJECTIVE NUO1

To provide for the safe, effective and efficient construction, operation, maintenance, replacement, refurbishment and upgrading of Network Utilities, for the social and economic wellbeing of the community, and whilst recognising the technical and operational requirements and constraints of Network Utilities.

This objective is an enabling objective that signals the intent of the District Plan to provide for the establishment of new network utilities in recognising their role in provided for social and economic well-being of communities and recognising the need for these to be located in technically and operationally feasible locations. These have been the key drivers for the choice of Frimley Park as the site for the new WTP and reservoir and it is considered that the proposal meets this objective.

POLICY NUP2

To enable the establishment and upgrading of network utilities while ensuring that any adverse effects on the environment and adjoining land use are avoided, remedied or mitigated.

The assessment of effects set out in this application demonstrates that that potential adverse effects of the proposed activities have been and will be avoided, remedied or mitigated and the intent of this policy is achieved.

POLICY NUP3

Recognise the need for Network Utilities to be reliable in operation, and for Network Utility Operators to be able to act promptly in an emergency, or following any sudden event or circumstance which puts people, property or places at risk, or which requires action without delay to maintain the safe, effective and efficient operation of the Network Utility.

The activities proposed in this application are part of the wider drinking water improvement programme which is being implemented in response to the Havelock North drinking water contamination incident. The proposed activities contribute to the ability of the Applicant as Water Supplier to ensure that a safe and secure water supply is able to be delivered to the community and the proposal is consistent with this policy.

POLICY NUP4

Recognise special technical and operational requirements and constraints of Network Utilities including those associated with their scale, location, design and operation.



The considerations set out in this policy are the key aspects considered by the Applicant in the selection of Frimley Park as the proposed site. Any adverse effects associated with the proposal, namely temporary construction noise effects and visual effects, need to be considered within the context of the technical and operational reasons for the choice of this site. A decision to grant consent on the basis that those effects are not significant when considered overall and in the context of the benefits to be derived from the proposed activities would be consistent with the intent of Policy NUP4.

POLICY NUP5

New transmission infrastructure or Network utility infrastructure should avoid outstanding and significant landscapes, or areas of significant historical, cultural and recreational value unless the infrastructure is subject to a significant functional constraint, or where there is no practicable alternative route and/or that significant adverse effects can be outweighed by the overall benefits of the proposal.

The Applicant recognises that Frimley Park is highly valued for amenity and recreational purposes. There is however a functional need for the WTP and reservoir to be located at the site, particularly given the existing borefield at Frimley Park and the ability to continue to take water at this site under the existing water permits but via new, upgraded water supply bores (subject to the variation to the location of the bores aspect of that consent). With the exception of the construction noise associated with the new bores, there are no potentially significant effects associated with the proposal. Furthermore, whilst the visual effects of the proposed activities have been assessed as minor, the Applicant proposes to offset the loss of recreational space by locating the WTP and reservoir in the Park by removing the park maintenance sheds and yard from a prominent area of the park. For these reasons, it is considered that the proposal is one that the District Plan and Policy NUP5 seek to enable rather than restrict.

Open Space Zone Provisions

OBJECTIVE OSEO2

To ensure that open space is used and developed in a manner which is compatible with its function and character and to ensure any adverse effects on surrounding activities, particularly residential, are avoided or mitigated.

POLICY OSEP2

Manage the scale, size, design and location of buildings so as to avoid, remedy or mitigate any adverse effects on the amenity of surrounding areas and the function and character of the open space.

POLICY OSEP3

Manage activities on open spaces to ensure that adverse effects of activities on the surrounding environment is minimal and/or temporary.

As demonstrated throughout the application, the proposal has been developed in such a way so as to avoid, remedy or mitigate its potential adverse effects on the open space values of Frimley Park. With the exception of bore construction noise, there will be only minor effects on amenity values at and around the Park, and the bore construction is a temporary activity that is functionally necessary to establish the new drinking water bores. It is therefore considered that the proposal is not inconsistent with and in fact achieves the relevant Open Space objectives and policies of the Proposed District Plan.

Notable Trees Objectives and Policies

OBJECTIVE HO6

To protect trees which make an outstanding contribution to the District's amenity and/or heritage.

POLICY HP11

Ensure activities do not have adverse effects on the long-term well-being of trees which have outstanding or significant heritage and/or amenity value.

**OBJECTIVE HO7**

To encourage the preservation of trees which make a significant contribution to the District's amenity and/or heritage.

The WTP, reservoir and drinking water pipes have been designed and located so as to avoid the need to remove or alter notable trees and in this way the proposal achieves the objectives for notable trees and is consistent with the policies.

8.1.7 Section 104(1)(c) Other Matters

It is considered that the District Wide Reserve Management Plan is a relevant 'other matter' to be considered in the assessment of this application.

District Wide Reserve Management Plan

Regard has been had for the Hastings District Council's District Wide Reserve Management Plan in the development of the proposal and the drafting of this Application. The purpose of that Plan is to guide the way in which reserves are managed and developed in terms of reserves activities. That is, it is not particularly focused on non-reserves activities and is of somewhat limited relevance to the assessment of this application. That said, the clear acknowledgement of placing a non-reserve activity in a public park has, as demonstrated throughout this application, been a key focus for the way in which the siting and physical appearance of the WTP and reservoir in particular have been determined.

Objective 5.5.1 of the DWRMP is an enabling provision which, it is considered, provides a gateway for the contemplation of locating network utilities on reserves. It states:

Objective 5.5.1 To allow network utilities to locate on reserves where the effects on the recreation and natural values of the reserve can be remedied or mitigated.

Had there been no such gateway available in the DWRMP, it is likely that that Applicant may not have considered the use of a public reserve for the proposed installations because to do so would be contrary to the Council's own policy. Early planning and policy considerations were cognisant of the need to ensure that effects on the recreation and natural values of Frimley Park were able to be managed appropriately and as demonstrated in this AEE, it is considered that the proposal ensures that any such effects can and will be remedied or mitigated.

8.2 Section 104(2) Permitted Baseline Considerations

Section 104(2) of the Act provides that:

When forming an opinion for the purposes of subsection (1)(a), a consent authority may disregard an adverse effect of the activity on the environment if a national environmental standard or the plan permits an activity with that effect

The aspects of the proposal that are permitted by the District Plan are outlined in detail in the activity status assessment in section 4. Given that the proposal is for a network utility operation and that the intent of the District Plan is to generally enable these activities, it is considered that use of the permitted baseline approach available in section 104(2) of the Act is appropriate for the consideration of this application. Accordingly, effects associated with the following aspects of the proposal are able to be disregarded:

- Amenity or other effects associated with the installation of in ground water reticulation pipes
- Amenity or other effects associated with the installation of the drinking water bores, with the exception of the noise resulting from the installation of these
- Any effects associated with the earthworks required to undertake the proposed works



8.3 Summary of Section 104 RMA Considerations

The proposal set out in this application has been informed throughout its development by the matters to be considered under section 104 of the Act and the key matters for consideration in this regard were identified early in the process. The detailed proposed set out herein is considered to be clearly in line with the intent of the District Plan in terms of both the network utility provisions as well as the Open Space Zone provisions. Significant adverse effects have been avoided, remedied or mitigated and furthermore the loss of park space is offset by the removal of the park maintenance sheds and yard.

It is considered that the proposal is one that both the Proposed District Plan and the Regional Resource Management Plan seek to enable, given its significance in terms of the provision of a safe and secure drinking water supply in Hastings. There are no other section 104 matters that would limit the grant of consent to the application.

9 PART 2 RMA ASSESSMENT

9.1 Part 2 of the RMA

The proposal has been developed with regard to the sustainable management purpose of the RMA and it has been developed in such a way so as to avoid, remedy or mitigate any adverse effects to the extent reasonably practicable. In terms of sections 6 and 7 of the Act, there are no matters of national importance set out in section 6 of the RMA that are of particular relevance to the consideration of the application. Particular regard has been had to the following section 7 matters both in the development of the proposal and the preparation of this application:

- (b) *the efficient use and development of natural and physical resources:*
- (c) *the maintenance and enhancement of amenity values:*
- (f) *maintenance and enhancement of the quality of the environment:*

One of the key considerations of the optioneering undertaken to identify the most appropriate location for the new drinking water bores, the water treatment plant and drinking water reservoir was making best use of the existing reticulation network and ensuring viable connectivity options. In this way, the proposal represents an efficient development of physical resources. Primary considerations in developing the specific design details of the proposal have included how to ensure that any effect on the amenity values of the park are minimised. It is considered that the park improvements proposed outweigh the use of park space for the infrastructure installation. Furthermore, the proposal enables the Applicant, as a Drinking Water Supplier, to improve the way in which it interacts with the Heretaunga Plains Aquifer. It is therefore considered that the proposal achieves maintenance and enhancement of both amenity values and the quality of the environment.

With regard to section 8 of the Act and the principles of the Treaty of Waitangi, the Applicant has consistently engaged with mana whenua on drinking water matters since the Havelock North event, including throughout the development of the Drinking Water Strategy and continuing in to the implementation phase of which this application is a key element. Council has engaged in a manner which gives effect to the principles of the Treaty of Waitangi as evidenced by the nature of the hui held in respect of this application in November 2019 and through the active participation of the Council (along with other Councils in the Hawkes Bay Region) and tangata whenua representatives on the Joint Working Group for Drinking Safety which was established following the Havelock North event.



9.2 Conclusion

The proposed activities are part of a significant programme of work being undertaken to ensure a sustainable, safe, and secure drinking water supply can be supplied within the area serviced by the Hastings urban drinking water supply. The Applicant has considered various alternative ways, including sites, approaches, designs and methods, to achieve the upgrades that need to occur to ensure compliance with the Drinking Water Standards by June 2021. Any adverse effects of the proposed activities have been avoided, remedied or mitigated to the extent reasonably practicable. It is considered that the significant positive effects of the proposed activity in terms of the well-being of the Hastings community and benefits to be derived from a compliant and safe and secure drinking water supply outweigh any adverse amenity effects of the proposal, particularly noise and disturbance during construction. The proposal achieves the sustainable management purpose of the RMA.

Item 2

Attachment 3



Item 2

Attachment 3

Appendix A

CERTIFICATE OF TITLE

Item 2

Attachment 3



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy**



Identifier **HB136/54**
Land Registration District **Hawkes Bay**
Date Issued 04 August 1952

Estate Fee Simple
Area 19.3384 hectares more or less
Legal Description Lot 2 Deposited Plan 3197 and Part Lot
 254 Deposited Plan 2101 and Part Lot 254
 Deposited Plan 2101 and Lot 6 Deposited
 Plan 3374 and Section 38 Block XV
 Heretaunga Survey District

Registered Owners
 Hastings District Council

Interests

Subject to Section 8 Coal Mines Amendment Act 1950 (affects Section 38 Blk XV Heretaunga SD)
 Appurtenant hereto are drainage rights created by Transfer 102821 (affects Lot 2 DP 3197 and part Lot 254 DP 2101)

Transaction Id
 Client Reference chpublic1

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 Register Only

Item 2

Attachment 3

Item 2

Attachment 3



Item 2

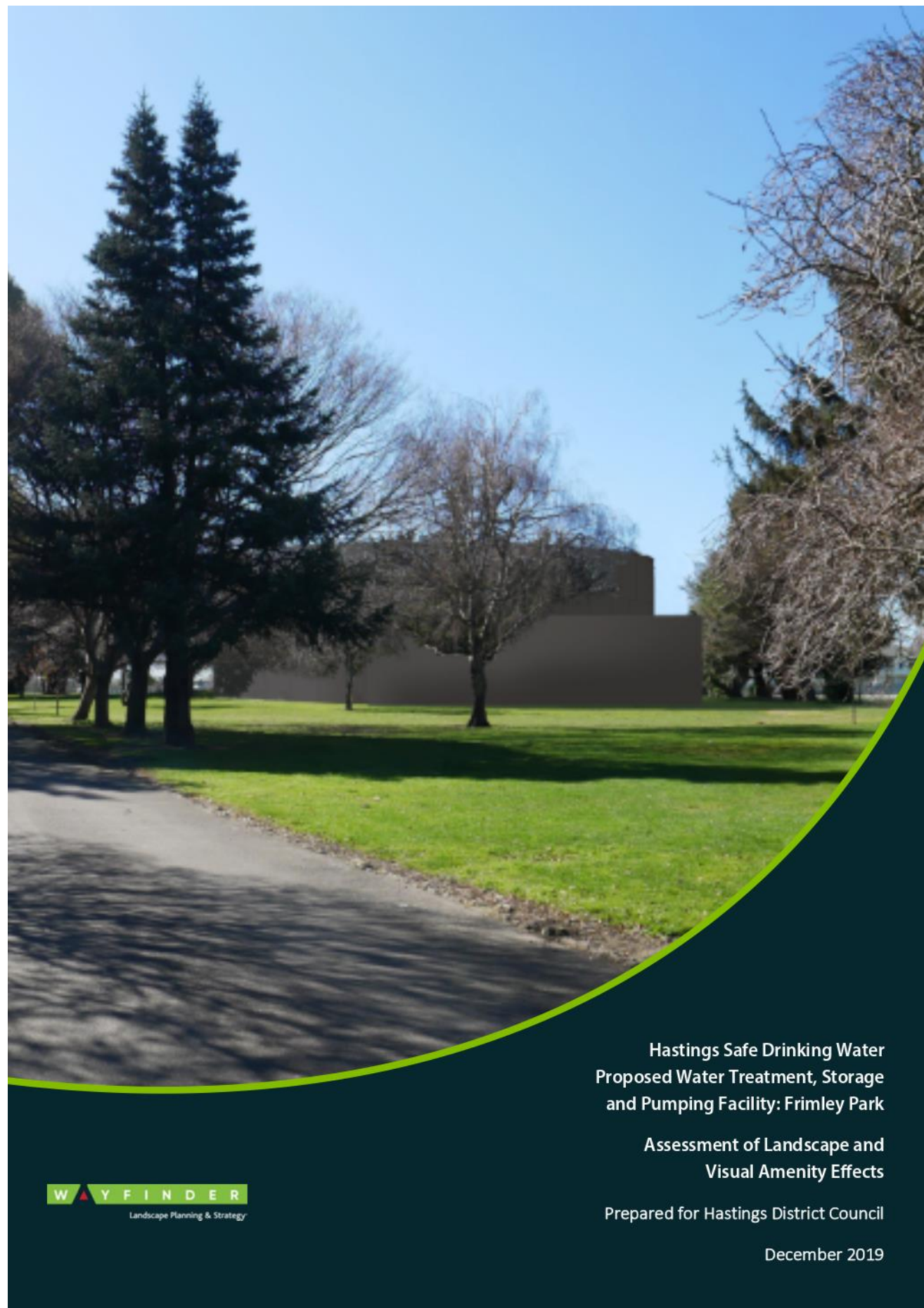
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Appendix B

ASSESSMENT OF LANDSCAPE AND VISUAL AMENITY EFFECTS (WAYFINDER)

Item 2

Attachment 3



W Y FINDER
Landscape Planning & Strategy

Hastings Safe Drinking Water
Proposed Water Treatment, Storage
and Pumping Facility: Frimley Park

Assessment of Landscape and
Visual Amenity Effects

Prepared for Hastings District Council

December 2019



Document Information

Project: Proposed Water Treatment, Storage and Pumping Facility: Frimley Park

Title: Assessment of Landscape and Visual Amenity Effects

Prepared for: Hastings District Council

Prepared by: Wayfinder Landscape Planning and Strategy Ltd

Cover Photo: Photo visualisation, prepared by Wayfinder

Revision History

Rev	Date	Author	Reviewer
1	19.11.19	S Bray	M McBain
2	28.11.19	S Bray	A Sweeney
3	06.12.19	S Bray	A Sweeney



Item 2

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Proposal	2
Context	5
Potential Effects	7
Conclusions	14

- Appendix A: Rating Scale and Methodology
- Appendix B: Author Credentials
- Appendix C: Landscape Mitigation Package (Attached Separately)

Attachment 3



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Item 2

Attachment 3



Introduction

Hastings District Council (Council) has committed \$47.5m through the 2018-2028 Long Term Plan for the enhancement of safe drinking water across Hastings City and small communities. The aim of this investment is to deliver comprehensive treatment of all Council's drinking water supplies by 2021.

This project involves the construction and operation of a water treatment and pumping facility, together with an 8,000m³ storage reservoir, in Frimley Park, Hastings. Up to five new water-take bores will also be installed near to the facility. The site was selected after a detailed process that considered proximity to the Council water network, potential environmental effects, and availability of land.

This report provides an assessment of the potential landscape and visual amenity effects of the proposal, and also identifies potential effects on Frimley Park's amenity and recreational values. The report has been prepared following a lengthy preliminary design process, through which amendments to the location, design, colour and layout of the facility were undertaken to help avoid and reduce effects. A 'landscape mitigation package' is attached separately, as Appendix C, which contains various plans and visualisations of the proposal.

The assessment concludes that the potential effects of the proposal on the amenity of Frimley Park will be **low-moderate**, diminishing to **low** as proposed tree planting establishes. Wider landscape effects will be **low** and the potential visual effects will be **low to very-low**.

Methodology

The author of this report has been involved in the project since early 2019, prior to the completion of the site selection process. During this process, several potential sites for the facility were assessed by a multi-disciplinary team, before the Frimley Park site was determined as the most suitable. The design process then involved a review of the proposed site location within the park, the size and height of the the storage reservoir, and the orientation and design of the treatment and pumping building. Further information on the design process is detailed in the following section of this report.

A public open day was held at Frimley Park on Saturday 19th October 2019 (and attended by the author). Following feedback from and discussion with attendees, including neighbouring residents, further changes were made to the design with the express purpose of reducing and/or avoiding potential visual amenity effects.

Numerous site visits have been undertaken throughout 2019, including detailed site visits around the proposed site location, and assessments from further afield within the park and from the neighbouring road network. All assessments have been undertaken on publicly accessible land only.

A tree survey was undertaken in the the immediate vicinity around the site. Some information on tree species, health and location were provided by the parks team in Council, but this was corroborated on site. Tree heights were measured using a laser rangefinder.

In preparation for the open day, a 'Landscape Mitigation Package' was prepared. This was designed to provide a brief overview of the values and qualities of Frimley Park, describe the project, and provide



preliminary concept designs to help mitigate the proposal. As part of the development of this package, it was agreed by Council that, when possible, the park maintenance sheds would be removed.

As part of the mitigation package a series of visualisations of the proposal were prepared. These visualisations are designed to show the bulk and form of the proposed facility only, and should not be considered as fully rendered or certified visual simulations. However, each visualisation has been checked for accuracy on the ground, and using tree survey data. The visualisations attached to this assessment have been updated since the open day, following the revisions made to the design.

Following agreement by the project team on the overall design of the proposal, the landscape mitigation package (including the plans and visualisations) were updated to reflect changes made to the proposal following the open day. The revised version of this package is attached as Appendix C.

Finally, this report was prepared.

Proposal

Proposal Overview

The proposal involves the construction of the following elements (refer also to Appendix C, Pages 6-10):

- ▶ An 8,000m³ water reservoir measuring approximately 38m in diameter and 10m high, with a 4.5m geodesic domed roof;
- ▶ A 16m x 30m utility building, approximately 6m high to the top pitch of the roof;
- ▶ Exposed pipework between the utility building and reservoir;
- ▶ Two smaller buildings to house a generator and electrical switchboard;
- ▶ Formed service access and hard stand area; and
- ▶ Up to five permanent water-take bores located throughout the park.

The water-take bores will be located in various locations throughout the park (Appendix C, Page 11), and will be connected to the utility building via a set of pipes to be undergrounded. Each of the bores consists of a 600mm diameter pipe that protrudes vertically from the ground, up to a height of approximately 1.2m. Various shut-off valves and meters are connected to this pipe, before it is elbowed through 180° and connected to an underground supply pipe that runs to the treatment and pumping facility.

The water reservoir is to be constructed of steel, finished with an epoxy-resin coating. It is understood that this coating can be finished in any colour. A 1.0m gravel foundation will extend around the perimeter of the tank.

Design Process

As outlined, the author has been involved in the site selection and design process since early 2019.

The site selection process involved a number of disciplines that considered proximity to the Council water network, potential environmental effects, and availability of land. Various alternative sites, particularly one favoured by the design engineers in St Aubyn Park, were rejected due to potential visual amenity effects.

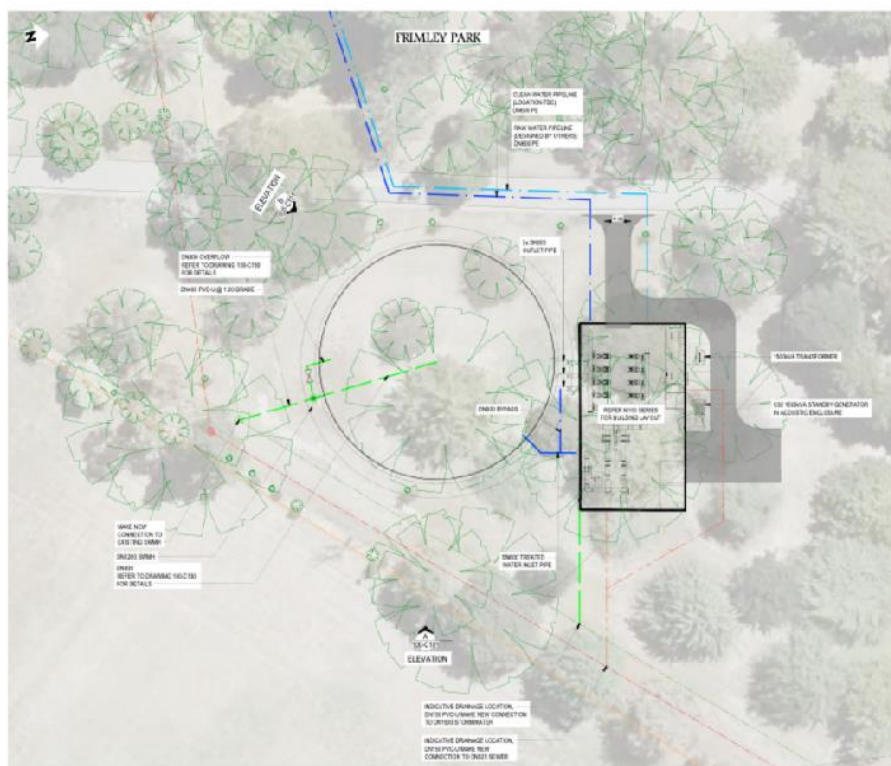


Image 1: Preliminary Site Plan (Prepared by Stantec, Not to Scale)

Various alternative sites within Frimley Park, including on the site of the park maintenance sheds, were also rejected, before the proposed site was finally determined in mid-2019.

The design engineers (Stantec) prepared a preliminary site plan, which included a 40m diameter reservoir located within a clearing within the proposed site (only 2 trees would have needed to be removed). The treatment and pumping building was initially identified on the eastern side of the reservoir (Image 1).

After an assessment of the preliminary site plan in collaboration with the Council Park's Manager, it was determined that it would be preferable to locate the reservoir further into the proposed site area, away from the pathway leading from the main gates. Whilst this would necessitate the removal of additional trees (up to 12 in total), more vegetation could be retained around the perimeter of the reservoir which would help to anchor it into the site and provide a degree of visual screening. The reservoir diameter was also reduced to 38m to minimise potential effects on trees to be retained.

The treatment and pumping building was then located to the western side of the reservoir, initially orientated with the long side perpendicular to the boundary. However, following the public open day where comments were received from neighbours on Frimley Road, the building was rotated 90° so that the long side was parallel to the boundary. The revised, and proposed site plan is illustrated in Image 3, and included (to scale) in Appendix C, Page 10.

With the layout determined, attention was then turned to the colour and design of the building and reservoir. Observations of the proposed location indicated that for most of the day, the site is shaded by the tree canopy – including winter as a result of the evergreen conifer trees. Although there are bright

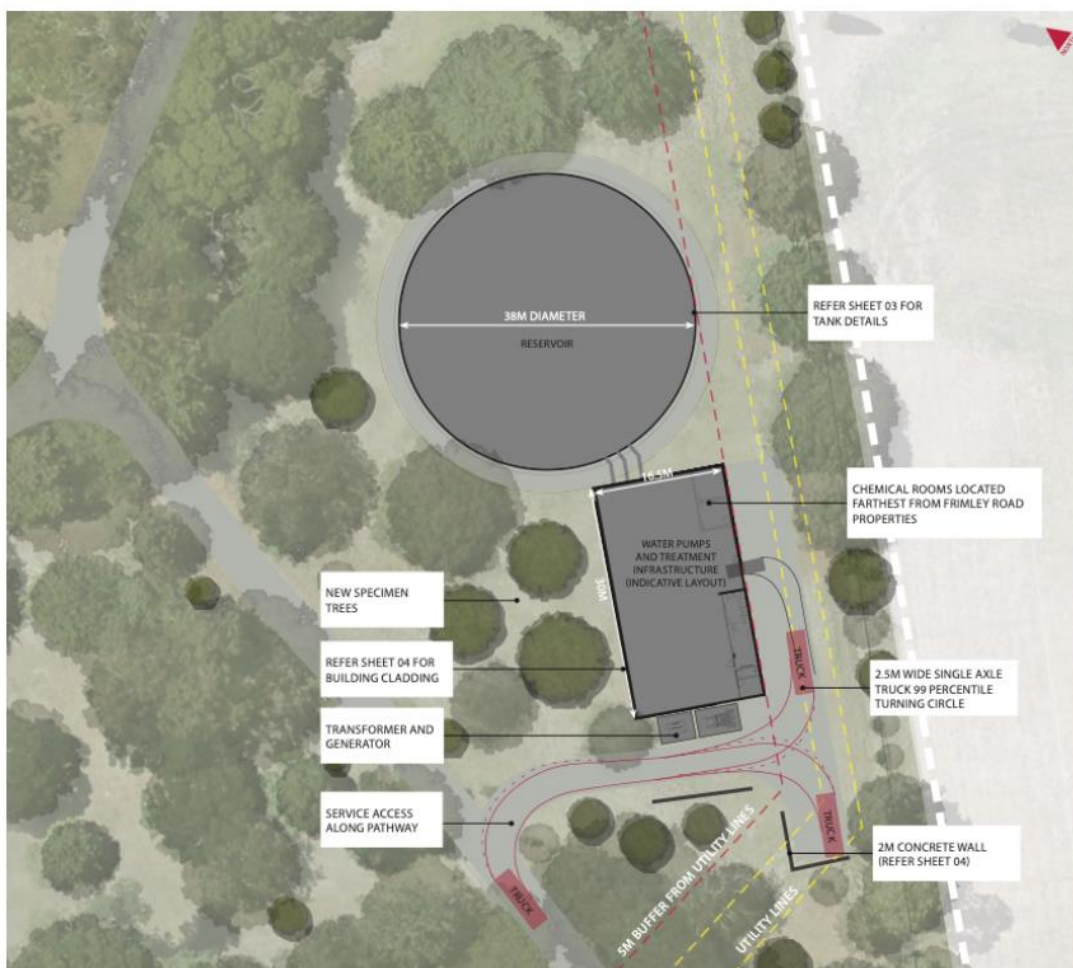


Image 3: Proposed Site Plan (Prepared by Wayfinder, Not to Scale)

patches of green, both in longer patches of grass and on some trees, the underlying hue is grey/brown. Therefore, it was determined that the most appropriate colour for the reservoir would be a non-reflective dark grey/brown, similar to Resene CoolColour Ironsand (with a 9% reflectivity value, Image 4).

The proposed building will be constructed of pre-fabricated concrete (tilt-slab). To achieve a similar hue, it is proposed that exposed aggregate concrete be used as the wall texture, this creating a dappled shading effect on the concrete surface. To reflect its setting amongst a number of trees, the two sides of the building that face into the park will also be clad with a series of timber battens, adding a natural element and a degree of architectural style. The battens will be coated with a clear graffiti guard to minimise and issues that might arise from vandalism.

The vehicle access requirements were then considered and located between the building and site boundary, such that the operational activities associated with the facility will be largely screened from the park. To help further reduce potential visibility into the working part of the site, particularly from residential properties on Frimley Road, two screening walls were added.



Image 4: Proposed Reservoir Colour



Finally, new tree planting was conceptually laid out, with the addition of over 20 new amenity trees (of mixed species to be determined). The purpose of additional trees is not to fully screen the proposal, but to help it become more recessive as a 'background layer' in views from areas within the park. It is proposed that the new trees will be planted at a large grade (60L bag, at least 2m high).

The final proposal was then re-assessed for the purposes of this report.

Context

Wider Landscape Context

The proposal is to be located within Frimley Park, an approximately 19ha recreational reserve situated between Frimley and Lyndhurst Roads in north Hastings.

The park is located in the rohe of Ngāti Kahungunu. Historically it would have been vegetated in lowland grasses and forests, although areas may have been burned by early Māori.

In the late 1800's, the land around and including the park was incorporated into Frimley Station, and cattle and sheep farm owned by J.N. Williams. In 1894, Mr Williams built an impressive 22-roomed kauri homestead, located adjacent to the sunken gardens in the centre of the park (Image 5). Over time, the station was subdivided and sold off as part of the expansion of Hastings, and the homestead was destroyed by fire in 1950. In 1951, the area that is now known as Frimley Park was donated to the Council in memory of their parents.



Image 5: 1940's aerial image of Williams homestead (with Frimley Park boundary marked out) Source: HDC-GIS

The park retains a strong homestead garden character, reflective of the early garden planted by the Williams family during their residence. Around the sunken garden, the style is more manicured and detailed, with hedgerows and flowering shrubs. Much of the area to the south and west, including the proposed site, has an English Parkland character, with large amenity trees scattered somewhat randomly across open grassland. Frimley Pool was constructed in 1966 in the northwestern corner of the park, and in 1967 the Hastings Rose Society developed the rose garden, which has since become a key focal area of the park. The eastern side of the park is now utilised as sports grounds, and a small playground has been installed adjacent to Frimley Road.

Near to the sunken garden, a set of maintenance sheds provides space for storage of various machinery, stockpiles of materials and maintenance staff. It is understood that the maintenance sheds also house equipment that is used for other nearby parks, and is not used just for Frimley Park.

Directly to the south of Frimley Park is Hastings Girls High School (HGHS) and Lindisfarne College, with Frimley School being located diagonally across from the park on Frimley Road. The open playing fields of HGHS are located directly adjacent to the park, and as a result form somewhat of an extension to it, albeit



separated by a post, batton and wire fence. The fence posts and battons are painted white, and the fence is in moderate-poor condition most likely as the result of it being regularly climbed over by students. The 'Ranui Block' is an additional sportsfield owned by Lindisfarne College, located opposite the park on Lyndhurst Road.

Other than the schools, the urban landscape surrounding the Park is largely residential. It is characterised by many single storey, bungalow style homes, many of which have open or low front boundaries. As a result, the area has a generally leafy, green character. East of the park, residential development is newer, or still under development,

A small collection of retail shops, including a cafe and small superette is located adjacent to the pool.

There are no natural waterways within or near to the park.

Site Description

The proposed site is described as the area in which the reservoir and utility building will be located. Up to five additional water-take bores may also be required, which are to be located throughout the wider park.

The proposed site is located at the southern end of Frimley Park, with access through the main gates from Frimley Road. It is roughly defined as a triangle bounded on the northeast and northwest by wide asphalt paths, and to the south by HGHS. A narrower path leads to a right of way between HGHS and Lindisfarne College, but this is blocked by a locked gate.

The site is covered by scattered amenity trees, most of which are mature conifer species. A detailed list of the trees, their height and condition is contained within Appendix C.

Although generally the topography is flat, there is a slight elevation in height (approximately 0.5m) towards the centre of the site.

There are no buildings or other modifications above ground in the site area, although there are two underground services that run generally parallel to the park boundary.

A further description of the site, and the values of the park, was included in the landscape mitigation package prepared for the public open day. This has been retained in the revised package, refer to Appendix C, Pages 4-5.

Planning Context

The site is zoned General Residential under the Operative District Plan, although will be rezoned as Open Space under the Proposed District Plan. The zoning and provisions of the Proposed Plan relevant to the application are not subject to appeals and the zoning and relevant provisions of the Proposed Plan can be treated as Operative.

The park contains a number of 'Outstanding Trees' (including T44, T45, T46, T48, T49, T50, T52, T53(a), T58, T59(a) and T59(b)), although none of these trees are located within the proposed site. A plan on Page 8 of Appendix C provides a summary of these trees (including their location), in addition to a detailed assessment of other trees around the site area.

The site is not located within an Outstanding Natural Landscape or Significant Amenity Landscape. It does not have wahi tapu or Wahi Taonga status under the District Plan, and does not contain any known



heritage features. It is not located within the coastal zone, and is not within or adjacent to any specifically identified rural landscape character areas.

The Council manage the Park as part of a District Wide Reserve Management Plan (DWRMP)¹, where it is given the status of a 'District Reserve' (D5). Objective 5.8.2 of the DWRMP seeks to identify the park as one of the premier parks of the District, although it doesn't have a specific status or classification under the Reserves Act 1977.

The Williams family have an ongoing interest in the park, but do not have any formal legal status in regard to the management or activities within the park.

Potential Effects

Assessment Approach

Landscape effects are created when a proposal physically changes the landscape character of value of an area – usually through changes to landform, landcover or landuse. Landscape character is largely defined by the biophysical and cultural factors that make an area particularly unique or distinctive from other areas. For larger infrastructure projects, landscape effects are often considered at a relatively broad regional or district scale, rather than at a site level. However, the appropriate scale for assessment depends on the extent of the proposal and how far it is likely to influence the character of the landscape around it.

For this project, the scale of influence on the surrounding landscape is relatively small. Whilst it involves the construction of two structures (which individually could be described as large), it will occupy only a small part of a large park that is fully surrounded by urban development, requires little change in landcover and very little changes to landform. In this regard, it is considered that the assessment of landscape effects is best undertaken at a local or suburban scale, extending as far as the city block in which the park is located.

However, it is also recognised that the project will likely have an impact on the landscape character of Frimley Park itself. Whilst the park is too small to be considered a 'landscape' in its own right, it has a parklike amenity that specifically sets it apart from the wider urban local. This amenity is enjoyed by people who visit the park for leisure and recreation. It is therefore appropriate, in addition to an assessment of landscape effects at a suburban scale, to also consider potential effects on the landscape amenity of the park.

Visual effects relate to how the composition of elements in a view might be altered by a proposal. Whilst a proposal might be considered appropriate in a landscape at a broader level, it might result in the diminishing of a particular, cherished view or might result in certain elements becoming prominent features that change the viewers experience. It is therefore also necessary to consider potential effects on the

¹ <https://www.hastingsdc.govt.nz/assets/Document-Library/Reserve-Management-Plans/District-Wide-Reserve/District-Wide-RMPlan.pdf>



views experienced from neighbouring residents and from various locations in the surrounding street network.

A preliminary shadow analysis was undertaken during the early design stages of the project. However, the proposed reservoir and building will be located amongst trees that are both taller and closer to the boundary. These trees already cast shadows that extend beyond the site, and which would be greater than any shadows created by the proposal. Therefore, it is considered that there will be no specific shading effects resulting from the proposal.

The proposal includes up to five water-take bores to be located at various locations throughout the park. Various mitigation measures are proposed for each of the bores, depending on their location. It is appropriate to provide comment on the potential effects of these bores.

Construction of the project is also likely to create various landscape, landscape amenity and visual amenity effects. Therefore, a brief assessment of construction effects is also considered.

Therefore the following sections of this report explore:

- ▶ Landscape effects, considered in terms of effects on park amenity and at a wider suburban scale;
- ▶ Visual amenity effects experienced by neighbours that look toward the park;
- ▶ Potential landscape and visual effects of the proposed water-take bores; and
- ▶ Potential landscape and visual effects during construction.

Scale of Effects

This assessment uses a 7-point rating scale for effects, the details of which are contained in Appendix A and summarised by the following table:

Effect Level	1	2	3	4	5	6	7
Rating Scale Used	Very-Low	Low	Low-Moderate	Moderate	Moderate-High	High	Very-High
RMA	Less than Minor		Minor	More than Minor		Significant	

This use of this scale is considered consistent with best practice landscape and visual assessment methodologies.

Landscape Effects

As outlined earlier in this report, Frimley Park is a large, manicured green space located within a suburban residential context. The eastern side of the park is utilised for organised sport, and a rose garden, sunken garden and playground give the northern area of the park a more formalised amenity. Immediately around the proposed site, the park is less structured and enjoyed for its random placement of trees as a place to leisurely walk through or picnic under.



The proposal will introduce built form into this area of the park, reducing the feeling of open space and potentially reducing people's enjoyment of the treescape. Both the reservoir and building are relatively large, somewhat utilitarian structures that have a bulk and style that is unlike anything else in the immediate area and which can easily be considered foreign in this location. The building is large in comparison to neighbouring residential properties, its industrial character emphasised by its simple shape and lack of windows (although it is of a similar scale to the gymnasium in HGHS).

Both structures will reduce views underneath the tree canopy towards the school grounds, and potentially diminish the experience of depth that is created by the varying layers and scales of tree trunks in the view. On a more tangible level, the proposal will result in the loss of up to 12 mature trees, and some smaller trees (although it is proposed to relocate any tree under 3m in height).

However, the reservoir and buildings will only occupy approximately 850m², less than 0.5% of the total 19ha (190,000m²) area of the park as a whole, and the accessway and hardstand area will occupy approximately 500m². In this context, much of the park will be unaffected by the proposal – it will not change people's experience of the rose gardens (it's unlikely to be seen from this location), nor of the sunken gardens or playground. Even around the proposal, it will still be possible to walk amongst the trees, and navigate past the proposal along the boundary or the formed paths.

All trees that will be removed have been planted as part of the development of the park following its donation to the Council by the Williams family, and none are naturally occurring (refer to a tree assessment contained in Appendix C, Page 8). Only one of the trees is native, that being an 8.4m Totara tree, and there is one English Oak (10.4m in height), with all other trees being exotic conifers. None of the trees are registered as protected or notable. Trees within the park are regularly pruned, trimmed or felled as part of overall park maintenance.

Generally it is considered that the natural biophysical value of the park is relatively low. Whilst the park is an open green space, enjoyed for its general lack of buildings and structures, it is not 'natural' in the true sense. The park layout, with formalised rose garden, playground, network of paths and regularly mowed lawns reflects a managed, manicured landscape, and whilst it is home to many birds, it cannot be considered as pristine or even significant natural habitat. It is an urban park, surrounded by built forms and urban activity.

Further, the site is not located within any Outstanding Natural Landscapes or Significant Amenity Landscapes. It does not have any notable or specific cultural value. It has some historical importance related to it being gifted to the city, but the lack of any formalised heritage orders or wahi tapu status means that it is not particularly revered for its history or cultural value. Rather, it is simply an enjoyable recreational space, well loved by the community who use it.

Nevertheless, the project team have been very cognisant that the proposal has the potential to be an imposition within the park. Care was taken to site the reservoir in a visually recessive location, behind large mature trees that can be retained. The proposed access to the site utilises the existing paths, with the hardstand located around the 'rear' of the building such that it is less visible from within the park.

The proposed landscape concept plan introduces additional trees (more than 20 in total) around the building, helping to restore depth in the view. Larger specimen trees (at least 60L planting size, 2m tall) will be used to provide more immediate impact, and where possible some removed trees will be replanted. The use of dark colouring on the reservoir and building reflects the natural hues and colours of the park, and the addition of timber battens as cladding will help to break up the bulk and form of the building.



whilst lifting the architectural quality of the facility. Strategically placed walls will help to screen vehicle movements, balanced with the retention of longer views through to the school grounds.

The site coverage of the proposal (approximately 3,000m²) will be larger than is currently occupied by the park maintenance sheds (approximately 2,100m²), however in time, the removal of the park maintenance sheds will provide significant offset to the new infrastructure, allowing for the centre of the park to be improved through provision of new planting and paths, strengthening links between the most historic part of the park, the sunken garden, with Frimley Road.

Additionally, the nature of the activity is an important mitigating factor. Unlike other infrastructure, such as electricity substations or 'dirty water' treatment, this proposal is focussed on delivering safe drinking water. It needs to be located in a 'clean' environment. Other locations for the facility considered by the project team, such as near to the Stortford Lodge stock sales grounds, were discounted largely due to the perception of mixing incompatible activities (even though the reality is that the proposed treatment facility is a closed system).

How people perceive an activity affects their response to that activity within a landscape. Whilst physically the project might have a somewhat industrial appearance, perceptually it aligns better with being placed in a 'green' landscape than within an industrial area. It is considered that many people will be much more forgiving of the presence of the proposal on the site than they would be if it were the same scale and form, but provided for a different activity.

Considered at the local suburban scale, the extent of landform and landcover change will be negligible. A limited amount of earthworks will be required to create the foundation, but this is on a largely flat site and overall flat landscape. Up to 12 trees will need to be removed, but these will be replaced by over 20 new trees that provide a similar level of amenity (further outlined in the next section). The proposal will alter the landuse of the immediate site, but will not affect the overall operation of the park.

Overall, it is therefore considered that the effects of the proposal on the landscape amenity of Frimley Park will be **low-moderate**, diminishing to **low** once trees become established (3-5 years) and the park maintenance sheds are removed. Certainly the proposal will not go unnoticed as a somewhat foreign activity within the park, particularly when it is newly completed, but it is considered that it will be largely accepted for what it is and that the improvements to the design of the facility and the replanting of trees will help to integrate it into the park as a whole.

At a wider, suburban scale, the potential effects best align with a **low** rating – that is the physical modifications will be relatively inconsequential and the overall character of the landscape will remain generally unchanged.

Visual Effects

A key factor in the consideration of potential locations for the proposal was its potential for visual effects on immediate neighbours. Other locations, such as St Aubyn Reserve, were ruled out as potential sites for the facility as it was recognised that mitigation of visual effects would be difficult to achieve. The site's location within Frimley Park, amongst a grove of tall mature (and largely evergreen) trees, was one of the best locations where the reservoir and building could be effectively screened from neighbouring properties.



Image 6: Map of Neighbouring Properties

As a result, there are few locations beyond the park in which the facility will be seen. Image 6 provides a map showing neighbouring properties (this is also contained in Appendix C, Page 2).

The most likely residential properties that might see the facility and reservoir are those directly opposite the park on Frimley Road, notably 210 and 212 Frimley Road. Both these properties have low front boundary fences, and relatively open front gardens, and therefore enjoy views into the park. However, the facility will be set back from the road boundary by some 100m, behind several 'layers' of trees. The tree canopy, even in winter months when deciduous trees have lost their leaves, is relatively dense and much taller than the reservoir. Therefore, generally only the base of the facilities will be visible, the top hidden by the tree canopy.

Similar views will be experienced from residential properties further along Frimley Road (even numbered properties 300-310), albeit with the facility much further back in the view. In such views, it will be difficult to specifically ascertain the details of the building. Rather, it will appear as a relatively dark element sitting amongst the shadows.

Vehicle movements in and around the facility, required for its operation, will potentially draw the attention of a viewer, although the placement of visual screening walls will provide a degree of mitigation (as well as screening the more utilitarian part of the facility). Further, vehicle movement within the park is an activity that already occurs, including mowing lawns or service vehicles undertaking park maintenance.

Additionally, any views of the facility will be seen in the context of Frimley Road itself, a relatively busy local road that regularly contains numerous parked vehicles.



As such, it is considered that the proposal will have **low** to **very-low** visual effects on neighbouring properties on Frimley Road. Residents closer to the site that have more direct views towards the proposal are more likely to be aware of it than those who have more oblique views, but no property will experience the facility in its entirety. Equally, the bulk and scale of the facility will be difficult to ascertain, as much of it will be screened by foreground trees.

Some properties will also experience more positive effects when the park maintenance sheds are removed and the centre of the park is returned to planted green space.

Views of the facility will be possible for people travelling northwest along Frimley Road (towards Nottingham Road), particularly as they pass between the two schools, and also from the grounds of Frimley School. From such locations, the height and scale of the reservoir will be appreciated, although it will be set amongst vegetation that will help to anchor the structure into the background view (further enhanced by the dark colouring). From this location, it is likely that some people will notice the facility – likely because of its contrast to the tree canopy – but it is unlikely to be a distraction in the view that specifically catches a viewers attention. Proposed boundary planting will diminish such views.

It is therefore considered that the visual effects of the proposal from Frimley Road will be **low**, reducing to **very-low** as boundary vegetation becomes established (3-5 years).

The facility will be visible from HGHS, particularly from within the playing fields and courts. However, given the nature of the activities within the school, it is unlikely that the proposal will be a specific focus (unlike a view experienced from a residential living room). The mitigation previously described, including the dark colouring and boundary plating, will help to mitigate any potential effects. It is therefore considered that the visual effects of the proposal from HGHS will be **low**.

The site may just be visible from locations on Lyndhurst Road, including properties at 211 and 215 Lyndhurst Road. However, from this location it will be heavily screened by foreground trees, and difficult to distinguish in the background. It's unlikely any users of Lyndhurst Road will be aware of the facility within the park.

Overall, it is therefore considered that the visual effects of the proposal will be **low** to **very-low**. Principally this has resulted from careful site selection, such that the reservoir is not located directly adjacent to any residential properties, but rather is tucked into mature vegetation away from key viewpoints. Dark, recessive colouring and additional proposed planting will further mitigate any potential effects.

Effects resulting from the Water-take Bores

It is proposed that up to five water-take bores will be established within the park (refer to Appendix C, Page 11). The proposed mitigation treatment for each bore is as follows:

- ▶ Bore FR1 is to be located close to the reservoir and treatment building, and will be covered by a simple 1m x 1m x 1m steel box finished in Resene Ironsand to match the reservoir.
- ▶ Bore FR2 is to be located south of the playground, in an area that is regularly frequented by users of the park. Following observation of the way in which people use this area of the park, it was determined that it lacked shaded seating. Therefore, it is proposed to construct a small 'gazebo' type structure to provide seating for up to 8 people, in a style similar to the larger structure in the centre of the rose gardens. The water-take bore will be located in a small box at the rear of this structure, integrated into the overall design.



- ▶ Bore FR3 is to be located north of the playground, in an area regularly frequented by users of the park. It is proposed that this bore be integrated into a new drinking water tap, together with an interpretative sign that briefly outlines the water-take and treatment process.
- ▶ Bore FR4 is to be located within the Frimley Road reserve, near to the Frimley Pool. It is proposed to simply cover this bore with a small cabinet similar to Bore 1, finished in Resene Ironsand.
- ▶ The fifth bore has not been located on a plan at this time, as the requirement for this bore will only be determined once pilot bores have been installed, pumping has been tested and the final bore configuration determined. If this bore is deemed necessary, it is understood that it will be installed within the general alignment of the other bores, potentially near to the playground. Appropriate mitigation for this bore will then be developed, such as integration into an additional gazebo or other park-related structure.

The final design of each bore and its particular mitigation will be undertaken once further information of the actual water-take requirements are understood (refer to the AEE). However, it is considered that each bore can be appropriately integrated into the park, and in the case of Bores FR2 and FR3 (and the fifth bore if it is necessary), are likely to result in positive outcomes for park users. It is therefore considered that the potential landscape and visual effects of the water-take bores will be **very-low**.

An underground supply pipe will connect all of the water-take bores with the treatment facility. The alignment of this pipe has been carefully considered to ensure that it avoids the dripline of any Outstanding or Notable Trees, and where possible avoid impacts on all other trees. It is considered that the effects of this supply pipe on trees will be **very-low**.

Construction Effects

The proposed construction period for the whole project is approximately 12 months. However, not all elements of the project will take this long – once the reservoir and buildings have been erected (approximately 20-26 weeks), most construction works will be contained inside the building.

The construction site around the reservoir and treatment building will be fenced with a 1.8m netting construction fence, which will extend right to the park boundary. It is proposed to attach black wind-break to the inside of this fence in order to screen the construction activity, and help the fence recess into the background view. All construction activity will occur within the fenced area, and no additional storage yards will be required.

Nevertheless, users of the park, particularly at the southern end around the site, will be aware of the construction activity and may temporarily alter the way they use the park. It is likely that some of the immediate effects of the proposal, such as the loss of trees and construction of the reservoir, will create heightened sensitivity, resulting in higher perceptual effects. However, these will be temporary, and as the reservoir and buildings are completed and replacement trees are planted, such sensitivity is likely to wane.

It is proposed that all construction vehicles will utilise the Lyndhurst Road entry to the park. This is an existing formed access road that is currently used by park maintenance vehicles on a regular basis, and as such the use of this access by smaller construction vehicles is unlikely to have a notable effect on the park amenity. Larger vehicles, such as the delivery of prefabricated walls of the reservoir or building, is likely to be more noticeable, although may also be of interest to some people. It is proposed to restrict deliveries



of larger items to daylight hours, such that hazard warning lights on vehicles will not flicker on neighbouring properties.

Each of the water-take bore sites will be set up as temporary sites, and fenced from the public using 1.8m temporary fencing (as per the main site). Each site will be kept as small and discrete as possible.

Overall, it is recognised that the construction will likely create some disruption in the park, and will have effects on the landscape amenity enjoyed by park users. However, the extent of such effects will vary depending on the construction activity taking place and the interest of park users in the activity. Ultimately, the construction effects will be temporary, and will reduce through the construction period as the larger structures are completed and works move inside.

Conclusions

The proposed project represents a significant element of Hastings District Council's commitment to delivering safe drinking water by June 2021. However, the design team have been very cognisant that the proposal represents the construction of potentially utilitarian infrastructure in one of Hastings City's most loved parks. The final proposal has been subject to a detailed site selection and site layout process, in which numerous refinements were undertaken. The reservoir and treatment building will be finished in a low reflectively dark colour that matches the underlying hue of the area of the park in which it will be located, and over 20 mature trees will be planted to help anchor and screen the facility.

Overall it is considered that the effects on the landscape amenity of the park will be *low-moderate*, or *minor*, however over time such effects will diminish as people become used to the presence of the facility and the planted trees become established. After 3-5 years, it is anticipated that the potential effects will be *low*, or *less than minor*.

At a wider landscape scale, considered at a suburban scale, it is considered that the potential landscape effects of the proposal will be *low*, or *less than minor*. The location of the proposal is such that it will generally be hidden, and its scale is such that there will be negligible changes to landcover and landform. People will still be able to use the park in the same way as they do now.

Some properties on Frimley Road, and both Frimley School and Hastings Girls High School will have views of the proposal. However, its dark colour will help it be recessive against the surrounding trees, and in time further tree planting will increase visual screening. Overall, it is considered that the visual effects of the proposal will vary from *low* to *very-low* depending on the exact location it is viewed from, or overall will be *less than minor*.

It is recognised that there will be some effects on landscape amenity during construction, and that these will vary depending on the activity being undertaken and the stage of construction. However, these will be temporary only.

Shannon Bray
NZILA Registered Landscape Architect

Appendix A: Rating Scale and Methodology

The New Zealand Institute of Landscape Architects Best Practice Note on Landscape Assessment promotes the use of a seven-point scale assessment rating². In more recent times, the wording used in this assessment has been a topic of discussion, and emerging best practice guidance suggests the replacement of more emotive words such as 'extreme' and 'negligible' with more neutral terms ('very-high' and 'very-low'), with more even graduations across the scale. This assessment has adopted this latter approach.

The avoidance of RMA terminology within the assessment is deliberate – as the focus is on providing a detailed analysis of individual effects that will inform a broader planning judgement (which is provided as part of the overall conclusion). Nevertheless, by way of guidance, it is generally accepted that 'minor' sits at level 3 on the seven-point scale ('low-moderate' in terms of this assessment), as demonstrated in the following table:

Effect Level	1	2	3	4	5	6	7
NZILA Existing	Negligible	Very-Low	Low	Moderate	High	Very-High	Extreme
Rating Scale Used	Very-Low	Low	Low-Moderate	Moderate	Moderate-High	High	Very-High
RMA	Less than Minor		Minor	More than Minor		Significant	

Scoring an effect on the scale depends on a number of factors, beyond just visibility – just because the Proposal (or part of it) can be seen does not mean that its landscape or visual effects are very-high. The following list provides an overview of the other factors considered in an assessment:

- ▶ Whether the elements associated with the Proposal will be located in a secondary side or rear view – one that a viewer wouldn't ordinarily consider or be drawn to;
- ▶ Whether the main aspect of a dwelling or activity space is generally designed or orientated to capture an alternative view to the one in which the Proposal will be seen;
- ▶ Whether the nature of the view is complex, with a variety of different forms, elements and activities set at varying distances from the viewer, or has more clarity with few or no elements or features that impose on the most valued elements;
- ▶ Whether the Proposal elements are located in an urban, industrial, residential, rural, natural or coastal landscape (and how their overall design and layout responds to this setting);

² https://nzila.co.nz/media/uploads/2017_01/nzila_ldas_v3.pdf (page 8)

- ▶ Whether the visible Proposal elements will be located off to the side or edge of the most prominent focal point of the view, or in the most prominent focal point of the view;
- ▶ Whether the visible Proposal elements will be seen as part of a wider mid-ground or background landscape, or whether they sit prominently in the foreground;
- ▶ Whether the visible Proposal elements are screened or partially screened by foreground vegetation or other landscape elements, or whether there is a likelihood that permitted foreground activities, such as tree planting, could reduce the visibility of the road elements in the future;
- ▶ Whether the overall scale and form of the Proposal reduces its visual prominence, including how many detailed elements there are that might draw the attention of the viewer; and/or

In addition, it is important to recognise that there may already be views of various elements of the hospital context from particular locations. In such instances, the magnitude of effects is derived by considering the change to the view – will the addition of new road elements that result in greater or lesser prominence of those elements from a particular location?

Assessing each of these factors and reaching an overall conclusion on the significance of an effect is not a linear or mathematical process. During the assessment, an analysis of all of the factors is considered and weighted for a variety of viewpoints. Rarely will a single factor result in a very-high rating – rather it is a combination of factors, and particularly the overall context in which the mast will be located that ultimately leads to the rating given. However, the following table provides an overview of how the ratings would generally be applied:

Level of Effect	Example Landscape Effect	Example Visual Effect
Very-low	The Proposal is for an activity that already takes place (or is permitted) immediately around the site and/or will result in inconsequential changes to land-use or land-cover, such that the overall character of the landscape is unchanged.	The Proposal would be visible in a generally unremarkable view, but would not be a distinctive element that the viewer is naturally drawn to.
Low	The Proposal is to extend an activity that already takes place (or is permitted) in the wider landscape and/or will result in relatively inconsequential changes to land-use or land-cover, such that the overall character of the landscape remains generally unchanged.	The Proposal would be a distinctive element in a generally unremarkable view but would be unlikely to capture the focus of the viewer.
Low-Moderate	The Proposal is similar to other activities already taking place (or are permitted) in the wider landscape and/or will result in some changes to land-use or land-cover, such that the	The Proposal would be an eye-catching element in a generally unremarkable view.

Appendix A: Rating Scale

Level of Effect	Example Landscape Effect	Example Visual Effect
	overall character of the landscape remains generally unchanged.	
Moderate	The Proposal is similar to other activities already taking place (or are permitted) in the wider landscape, but will result in some displacement of those activities, and/or will result in some changes to land-use or land-cover, such that there are some noticeable changes to the character of the landscape.	The Proposal would be located to the side of a view that naturally captures the focus of the viewer.
Moderate-High	The Proposal introduces a new activity into the landscape, results in some displacement of existing (or permitted) activities, and/or will result in noticeable changes to land-use of land-cover, such that there is a noticeable change to the character of the landscape.	The Proposal would be distinctly visible in a view that naturally captures the focus of the viewer but would not screen or interrupt views of the key elements of the view.
High	The Proposal introduces a new activity into the landscape, causing displacement of existing (or permitted) activities, and/or creates distinctive changes to land-use or land-cover, such that there is a distinctive change to the character of the landscape.	The Proposal would compete for attention in a view that naturally draws the focus of the viewer.
Very-High	The Proposal introduces an entirely new activity into the landscape, and/or results in significant changes to land-use or land-cover, such that there is a significant change to the character of the landscape.	The Proposal is likely the only thing that the viewer can focus on.

Appendix A: Rating Scale

Appendix B: Author Credentials

This report was principally prepared by Shannon Bray, Principal Landscape Architect and Director of Wayfinder Landscape Planning and Strategy Ltd.

Shannon Bray | Curriculum Vitae and Experience

Background:

- ▶ Bachelor Landscape Architecture (with Honours), Lincoln University 1996
- ▶ Bachelor Forestry Science, Canterbury University 1994
- ▶ NZILA Registered Landscape Architect
- ▶ NZILA National President 2014 to present
- ▶ RMLA Member
- ▶ 2016 to present – Director, Landscape Architect, Wayfinder Landscape Planning & Strategy Ltd
- ▶ 2012 to 2016 – Senior Principal, Landscape Architect, Boffa Miskell Ltd
- ▶ 2004 to 2012 – Landscape Architect, Shannon Bray Landscape Architect Ltd
- ▶ 1997 to 2004 – Various Management and Strategy Roles in England, UK

Roading & Infrastructure Project Experience:

- ▶ Spark 4G Network, Countrywide (Spark) *Assessment, Stakeholder Engagement*
- ▶ Papakura to Bombay, Auckland (NZTA) *Project Design, Stakeholder Engagement*
- ▶ SH20B, Auckland (NZTA) *Project Design, Landscape Assessment, Stakeholder Engagement*
- ▶ Northern Corridor, Auckland (NZTA) *Urban Design and Landscape Framework, Board of Inquiry*
- ▶ Southern Corridor, Auckland (NZTA) *UDLF, Project Design, Tendering, Hearing, Compliance*
- ▶ SH16/18, Auckland (NZTA) *Preliminary Landscape Assessment, Long List Options Assessment, Short List Options Assessment*
- ▶ SH29, Tauranga (NZTA) *Preliminary Landscape Assessment, Long List Options Assessment*
- ▶ SH3 Awakino, Waikato (Downer) *Project Design (bid stage)*
- ▶ He Ara Kōtahi – Manawatū Shared Path River Bridge (Palmerston North City Council) *s42a reporting, Council Hearing*
- ▶ Waterview, Auckland (NZTA) *Effects Assessment Northern Interchange Design Changes*
- ▶ Waterview Shared Use Path, Auckland (AT) *Effects Assessment, Project Design, Hearing*
- ▶ Puhoi to Warkworth, Auckland (Bid Stage) *Project Design, Interactive Sessions*

- ▶ Waikato Expressway, Cambridge (Council) *Effects Assessment*
- ▶ Penlink, Auckland (AT) *Effects Assessment, Project Design, Open Days, Council Hearing*
- ▶ Glenvar Ridge Road, Auckland (AT) *Effects Assessment, Submitter Mtgs, Design, Hearing*
- ▶ Transmission Gully, Wellington (NZTA) *Effects Assessment, Submitter Meetings, Project Design*
- ▶ Westmere Coastal Walkway, Auckland (AC) *Effects Assessment, Council Hearing*
- ▶ Orakei Basin Coastal Walkway, Auckland (AC) *Effects Assessment, Council Hearing*
- ▶ Wainui Interchange, Orewa (AT/NZTA) *Effects Assessment, Council Hearing*
- ▶ iWay, Hastings (Council) *Project Development and Strategy*
- ▶ Ultra-Fast Broadband Rollout, National (Chorus) *Project Design, Effects Assessment, Meetings*
- ▶ ONFL Unitary Plan Submissions, Auckland (Telecom/Vector) *Expert Conferencing, Hearing*
- ▶ Puke Coal, Huntly (Puke Coal) *Effects Assessment, Project Design, Hearing*
- ▶ Howick Pump Station, Auckland (Watercare) *Effects Assessment, Project Design*
- ▶ Mangatangi Coal Mine, Pokeno (Council) *Effects Assessment, Hearing*
- ▶ Waverley Wind Farm (Council) *Commissioner*
- ▶ Over 10 Wind Farms (Meridian Energy, Council, Community) *Effects Assessments and Hearings*

Professional Development

- ▶ 2019 – New Zealand Institute of Landscape Architects, Christchurch Conference
- ▶ 2019 – New Zealand Planning Institute, Napier Conference
- ▶ 2018 – Making Good Decisions, Refresher
- ▶ 2018 – New Zealand Institute of Landscape Architects, Auckland Conference
- ▶ 2017 – Australian Institute of Landscape Architects, Sydney Conference
- ▶ 2017 – New Zealand Institute of Landscape Architects, Wellington Conference
- ▶ 2017 – Judge, Asia Pacific Landscape Architecture Awards
- ▶ 2017 – Project Director NZILA Code of Practice for Landscape Assessment

Appendix B: Author Credentials

Item 2

Attachment 3



Item 2

Attachment 3

Frimley Park Water Treatment and Storage Facility
Appendix C - Landscape Mitigation Package

Prepared for Hastings District Council
December 2019



W Y F I N D E R

Landscape Planning & Strategy

Frimley Park

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Title: Frimley Park Water Treatment and Storage Facility
Prepared for: Hastings District Council
Date: October 2019
Prepared by: Wayfinder Landscape Planning and Strategy Ltd

Revision	Date	Authors	Reviewers	Council Approval
A	September 2019	L Burn M McBain	S Bray	
B	October 2019	M McBain	S Bray	S Cave
C	November 2019	L Burn	S Bray	

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Introduction



Frimley Park - Mature Trees



Frimley Park - Open Space

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Introduction

Hastings District Council (Council) is undertaking a significant project aimed at delivering safe drinking water across Hastings City and Suburbs. It involves the construction and operation of new water treatment and storage facilities in two locations within the city. Following a detailed site selection process (outlined later in the document), Frimley Park was identified as one of the project sites.

In order to deliver the project successfully, it is important to consider the potential adverse effects of the proposed infrastructure (particularly the storage reservoirs). Whilst careful site selection has assisted in this process, the project team considers that there are further opportunities available to help the facility integrate into the Park.

This document provides an overview of the Frimley Park qualities and values, before providing a brief assessment of the proposal and the potential opportunities for its mitigation. It includes an assessment of the potential trees that will need to be removed in order to accommodate the facility, and a concept plan that demonstrates the overall outcomes sought.

Finally, a set of visualisations are provided that show how the location and size of the reservoir and buildings, together with the proposed planting and screening.

Park Qualities



All abilities Playground.
Photo credit: Playground Centre



Historic Williams Homestead

History

An historic 22-roomed kauri homestead was built in 1894 by Frimley Station owner, J.N. Williams, a cousin of the noted Archdeacon Samuel Williams, founder of Te Aute College. The pioneering station of once 2,000 acres was gradually reduced by subdivision and other developments including the expansion of Hastings.

Sadly the Frimley Homestead was destroyed by fire in 1950. By the time the Hastings Fire Brigade arrived, the unoccupied house was well ablaze with the flames reportedly soaring 500 feet. The glow could be seen as far away as Napier and as far south as Waipukurau.

Elsie Williams, A.B and H.B Williams donated the magnificent grounds of over 47 acres to the Hastings Borough Council in memory of their pioneering parents. They gifted the memorial sundial in the Sunken Garden to mark the house site.

Trees

Many of the original trees from around the historic Frimley Homestead still exist today and form the framework of Frimley Park. One better known tree is the *Populus deltoides* “*Virginiana*” and is reputed to be the largest of its kind in the Southern Hemisphere.

The park boasts several other notable trees as identified in the Council District Plan. Frimley Park is valued for its mature tree specimens, open space character and views throughout the park. This ‘Old English’ style provides the main character this Park is associated with.

Rose Garden

The Hastings Rose Society was an offshoot of the Hawke’s Bay Rose Society and officially became a Society in its own right in 1959. The idea of a Civic Rose Garden was first mentioned during the Society’s AGM in 1954. The recently bequeathed Williams homestead and grounds in Frimley to the Borough Council was suggested as a possible location.

By the end of 1967, 4,000 rose bushes and over 300 cultivars had been planted. The Rose Garden was officially opened on Sunday 26 November 1967. Further development of the Rose Garden included a pergola and a walkway flanked by rose beds that lead park visitors to the Frimley Rose Garden.

Rose Sunday has also been revitalised over the years, with spectators being presented with buttonholes and entertained by the Hastings City Band.

Playground and Sporting Facilities

The play area is specially designed to suit all mobilities. Children are drawn into different play zones through the use of brightly coloured astro-turf that separates each area. This vibrant use of colour and textured surfacing is also designed to help those with poor vision or learning disabilities. Play equipment includes bongo drums, talk tubes, wheelchair-friendly roundabout, swings, slides, rope climb and scooter path.

On the park’s Frimley Rd boundary is the Frimley Aquatic Centre, an outdoor swimming complex open over the summer months.

The park also has sports fields catering for football and cricket, a picnic area with tables and a petanque court.

Park Values



Photo credit: Michael Schultz Photography



Weetbix Kids TRYathlon hosted at Frimley Park.
Photo credit: Weetbix Kids TRYathlon

Open Space

Strengths

The Park is a large open green area with minimal hard space and few buildings. The arboretum of tall, established trees are regularly pruned and maintained to ensure open views throughout the site, adding to the open park value of Frimley. The open nature, connected to the sports fields, is well suited to large family events such as the Weetbix Kids TRYathlon.

Weakness

The Park Maintenance Sheds are located in the centre of the Park, blocking views throughout the Park and disconnecting Park features from one another. This building is also lit at night, which detracts from evening enjoyment of the Park.

Connectivity

Strengths

Frimley Park has good pedestrian links with the neighbourhood particularly with the neighbouring two Secondary Schools, Primary School and Kindergarten. There is a sealed access from Frimley Road through to Lyndhurst Road, passing through the sports fields.

Weakness

There are few defined axis lines through the Park, particularly from Frimley Road. Whilst there is a direct path to the Rose Gardens, there is more limited formed connection to the sunken gardens in the centre of the Park.

Vegetation

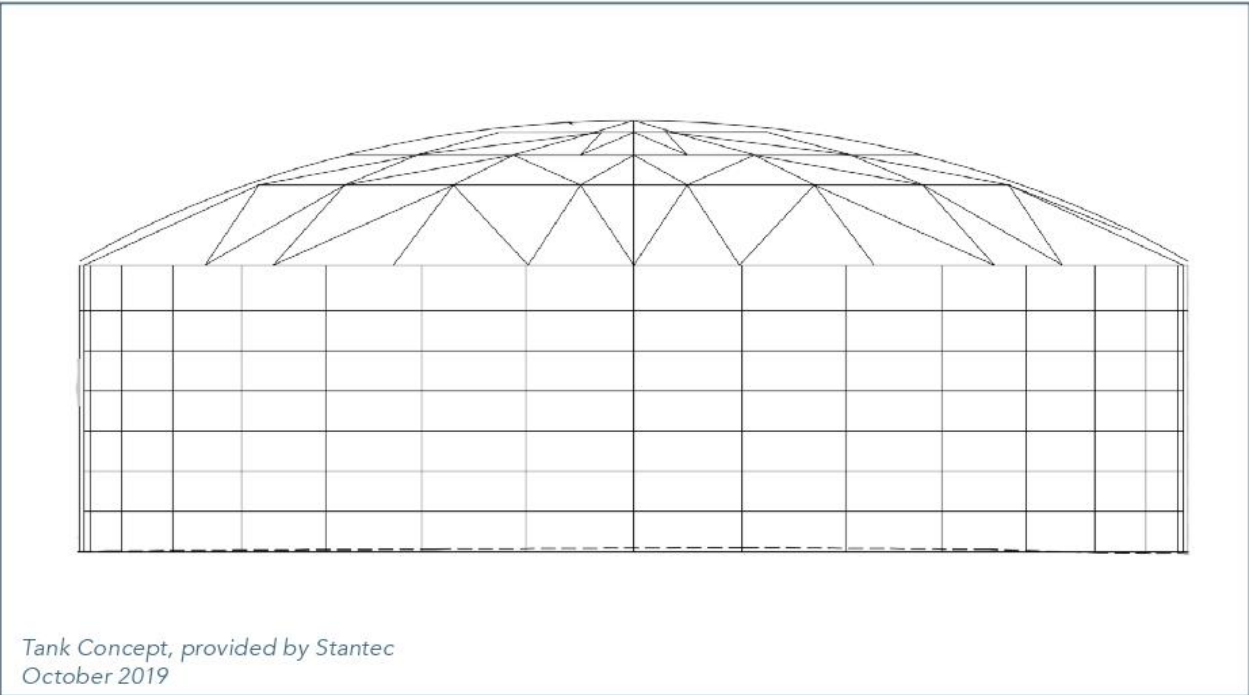
Strengths

Highly maintained gardens are resonate of the original homestead gardens. The gardens seasonal variety are highly valued and bring celebrations to Frimley Park such as Weddings and Art Deco events. Mature tree specimens throughout the Park are particularly balanced, providing a contrast to the surrounding residential environment.

Weakness

The perennial garden beds (the site of the old homestead) are located in the centre of the Park with no connection to other significant sites within the Park and without any direct connection to Frimley Road.

Proposal



Proposal

To meet the requirements of the Local Government Act (2002), Council is constructing new water storage, treatment and pumping facilities on two separate sites within Hastings City. A detailed site selection process was undertaken to find the optimum location for each facility. This involved the consideration of:

- Proximity to the existing water main network;
- (minimising cost to connect and street disruption);
- Land ownership (Council land preferable, to minimise land acquisition costs and timing);
- Potential effects on neighbouring properties;
- Potential effects on existing land-users; and
- Potential geotechnical requirements.

Following this process, a preferred site was selected on the southern end of Frimley Park immediately adjacent to Hastings Girls High School. The site is suitably

located near existing water sources and infrastructure, is owned by Council, and is currently used less than other areas of the Park. Further details on the site-selection process can be found on the Council website.

Development of this facility would involve the construction of a 8,000m³ reservoir (approximately 38m diameter and 11m tall), together with an ancillary building to house associated pumps, filtration, chlorination and UV treatment infrastructure.

It is recognised that the preferred site is located within a valued Open Space therefore it was quickly identified that any facility in this location be appropriately sited and designed to avoid, remedy and mitigate any potential effects, particularly in regard to visual amenity and the qualities of the Park.

Site Location

A location has been chosen along the boundary of Frimley Park purposefully away from any significant park features.

Topography

The site has natural topography which will aid in grounding the reservoir and ancillary building in the landscape.

Existing Trees

Detailed analysis of existing trees has been undertaken including their identification, current condition and height. This area of the Park contains numerous conifer and evergreen species that will aid in visually mitigating the structures.

Setbacks

The proposal is set back from Frimley Road and any affected residential properties.

View towards proposed project site

Proposed Site Location



Tree Assessment



Existing trees to be retained:				
Number	Species	Common name	Current Height	Current Quality
A4	Abies Spp	Fir		Excellent
A7	Betula pendula	Silver birch		Poor
A12	Japanese zelkova	Keyaki	12.6m	Average
A13	Japanese zelkova	Keyaki	12.6m	Average
A14	Japanese zelkova	Keyaki	12.6m	Average
B1	Quercus robur	English oak		Good
B2	Quercus robur	English oak		Good
B4	Malus Spp	Flowering crabapple		Unknown
B5	Quercus robur	English oak		Good
B12	Cedrus deodara	Himalyan cedar		Good
B13a	Quercus ilex	Holly oak	17m	Very poor
B13b	Quercus ilex	Holly oak	17m	Good
C1	Quercus robur	English oak		Good
C2	Fraxinus ornis	Mana ash		Poor
C2a	Robinia pseudoacacia	Black locust		Average
C3	Keyaki	Japanese zelkova		Average
C9	Cupressus Spp	Cyprus	17.6	Average
C11	Cedrus deodara	Himalyan cedar	11.2	Average
C12	Cedrus deodara	Himalyan cedar	14.6	Good
C13	Platanus orientalis	Plane tree		Good
C14	Cedrus deodara	Himalyan cedar	17m	Good
C15	Cedrus deodara	Himalyan cedar	18.2	Good
C16	Quercus robur	English oak		Good
C17	Cupressus Spp	Cyprus		Average
C18	Cedrus deodara	Himalyan cedar		Good
C19	Alectryon excelsus	Titoki		Good
C20	Ginkgo biloba	Maidenhair tree		Poor
C21	Pseudopanax lessonii	Houpara		Good
C22	Pseudopanax lessonii	Houpara		Average
C23	Pseudopanax lessonii	Houpara		Good
C24	Alectryon excelsus	Titoki		Good
C24a	Alectryon excelsus	Titoki		Average
C24b	Alectryon excelsus	Titoki		Good
D1	Eriobotrya japonica	Loquat		Good
D2	Quercus ilex	Holly oak		Good
D3	Schinus molle	Pepper tree		Good
D4	Fraxinus excelsior	Ash		Good
D4a	Ulmus procera Louie Van H	Golden Elm		Average
D4b	Quercus robur	English oak		Good
D5	Cedrus atlantica glauca	Atlas cedar		Good
D6	Cupressus Spp	Cupressus		Good
D7	Casuarina cunninghamiana	River she-oak		Good
D8	Eucalyptus Spp	Gum		Good
D8a	Quercus ilex	Holly oak		Good
D8b	Eucalyptus Spp	Gum		Good
D9	Pinus Spp	Pine		Good

Mitigation Opportunities Plan






Scale 1:1000 @ A3

Opportunities

- 1 Site the facility in context of surrounding trees
- 2 Set back from boundary and avoid underground services
- 3 Utilise the site topography to 'sink' the Water Storage reservoir into the landscape
- 4 Set back from historic entrance and driveway
- 5 Use recessive colour on reservoir and ancillary building (Resene 'Ironsand' or similar)
- 6 Plant additional large tree specimens
- 7 Plant a double avenue of trees along original driveway
- 8 Screen ancillary building
- 9 Remove the Park Maintenance Sheds as offset mitigation
- 10 Extend perennial gardens and formal accessway through to Frimley Road
- 11 Install a feature at the conclusion of the extended perennial path

Legend

- ■ ■ Frimley Park boundary
-  Existing trees to remain
-  Trees to be removed for construction
-  Approximate locations of reservoir and ancilliary building

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Concept Plan



Scale 1:1000 @ A3

Bore Locations



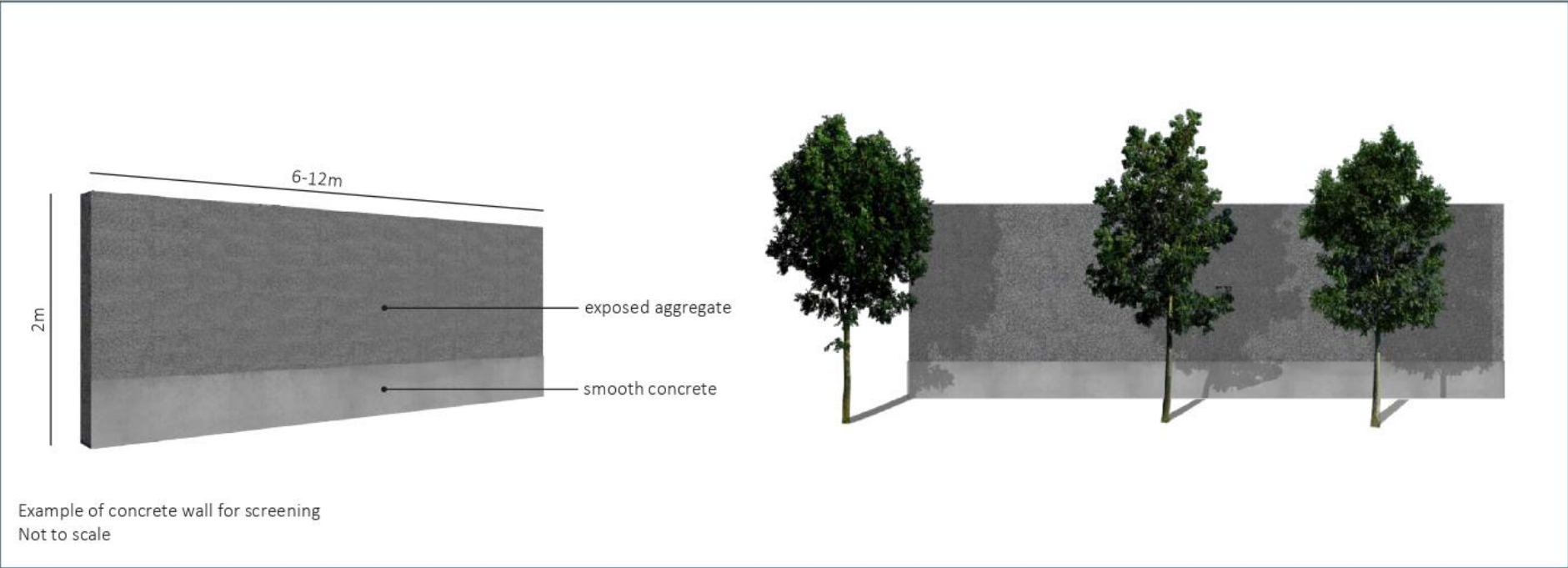
Water-take Bores

It is proposed that up to four water-take bores will be located within the park. Various mitigation of each of these bores is proposed, as follows;

- FR1**
Located close to the reservoir and treatment building, and will be covered by a simple 1m x 1m x 1m steel box finished in Resene Ironsand to match the reservoir
- FR2**
Located south of the playground. It is proposed to construct a small gazebo type structure to provide seating up to 8 people, in style similar to the larger structure in the centre of the rose gardens. The water-take bore will be located in a small box at the rear of this structure, integrated into the overall design.
- FR3**
Located north of the playground. It is proposed that this bore be integrated into a new drinking tap together with an interpretive sign that briefly outlines the water-take and treatment process.
- FR4**
Located within the Frimley Road reserve, near the Frimley Pool. It is proposed to simply cover this bore with a small cabinet similar to Bore FR1, finished in Resene Ironsand.

FR5 - NOT SHOWN ON PLAN
The requirement for this bore will only be determined once pilot bores have been installed, pumping has been tested and the final bore configuration determined. If this bore is deemed necessary, it will be installed within the general alignment of the other bores, potentially near to the playground. Appropriate mitigation for this bore will then be developed, such as integration into an additional gazebo or other park-related structure.

Mitigation Details



Visualisation V1



Proposed



Existing



Location Map

View towards proposed site location from Frimley Road, adjacent to Hastings Girls high School

No additional planting or mitigation shown

Building and reservoir rendered for size and location only

Subject to final design

Visualisation V2



Proposed



Existing



Location Map

View towards proposed site location from main entrance on Frimley Road.

No additional planting or mitigation shown

Building and reservoir rendered for size and location only

Subject to final design

Visualisation V3



Proposed



Existing



Location Map

View from inside the park looking towards Hastings Girls High School

No additional planting or mitigation shown
Building and reservoir rendered for size and location only
Subject to final design

Visualisation V4



Proposed



Existing



Location Map

View from Primley Road towards proposed site showing view from the street side

No additional planting or mitigation shown

Building and reservoir rendered for size and location only

Subject to final design

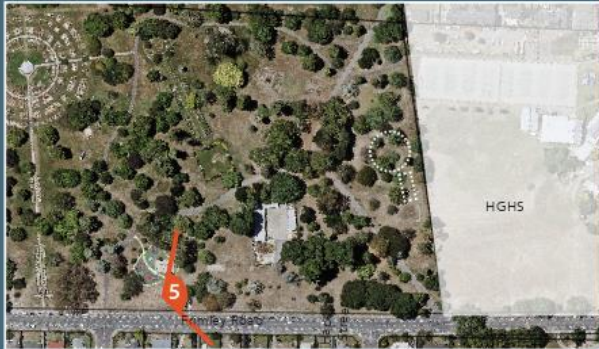
Visualisation V5



Proposed



Existing



Location Map

View from inside the park, near the playground looking towards Hastings Girls High School

Some additional planting has been shown

Building and reservoir rendered for size and location only

Subject to final design



Landscape Planning & Strategy





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Item 2

Attachment 3



Item 2

Attachment 3

Appendix C

DESKTOP ACOUSTIC ASSESSMENT (MARSHALL DAY ACOUSTICS)

Item 2

Attachment 3



Item 2

Attachment 3

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Item 2

Project: **FRIMLEY WATER TREATMENT PLANT**

Prepared for: **Hastings District Council C/- Stantec New Zealand
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Attention: **Rico Parkinson**

Report No.: **Rp 001 R02 20191195**

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Document Control

Status:	Rev:	Comments	Date:	Author:	Reviewer:
			20/11/19	B. Wood	S. Arden
	01	Additional Client information; construction noise updates	06/12/19	B. Wood	S. Arden
	02	Further information from Client	09/12/19	B. Wood	S. Arden

Cover picture: HDC GIS

Attachment 3



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APPENDIX A GLOSSARY OF TERMINOLOGY

APPENDIX B OPERATIONAL NOISE CONTOURS

APPENDIX C EMERGENCY GENERATOR NOISE CONTOURS



1.0 INTRODUCTION

It is proposed to install four new bores, a water treatment plant (WTP) building including a booster pump station, and a reservoir within Frimley Park, Hastings. Stantec New Zealand, on behalf of Hastings District Council, has engaged Marshall Day Acoustics (MDA) to assess the noise and vibration generated during both the construction and operational phases of the project.

This report would inform an Assessment of Environmental Effects (AEE) should one be required for any Land Use Consent or Notice of Requirement.

This assessment is based on the following information and drawings provided to MDA by Stantec:

- “Frimley Park WTP & Res Concept Design Report” dated September 2019;
- “Frimley_WTP_Pipelines_Combined_Concept_Drawings” dated 18.09.19
- “Revised Cladding Concept_13 Nov 19” dated 13/11/19;
- “New Concept Design Overlay” received by MDA 14/11/19.

Further information regarding various WTP equipment has been obtained via correspondence with Stantec, Tonkin & Taylor, Focus Project Management Ltd and Honnor Drilling Ltd.

Information regarding borehole installation noise and vibration was obtained during a site visit on December 3, 2019.

A Glossary of Terminology is provided in Appendix A.

2.0 SUBJECT SITE AND RECEIVING ENVIRONMENT

The proposal is for:

- 4x boreholes, each equipped with submerged pumps;
- WTP and included booster pumps;
- Steel reservoir of 8ML capacity;
- 1500 kVA transformer;
- 1500 kVA standby generator in an acoustic enclosure.

2.1 Site Description

The subject site is located within Frimley Park which is zoned Open Space in the Hastings District Council's (HDC) Proposed District Plan.

The land areas immediately adjacent to Frimley Park to the north are typically zoned Hastings General Residential (with one section zoned Suburban Commercial). In the wider area, all sites are zoned Hastings General Residential.

2.1.1 Nearest potentially affected receivers

There are several schools within reasonably close proximity to the subject site. These all have the underlying zone of Hastings General Residential. These are:

- Lindisfarne College, east of the subject site;
- Hastings Girls High School (HGHS), southeast of the subject site; and
- Frimley School, south of the subject site.

In addition, there is a group of residential dwellings fronting on to Frimley Road which are potentially affected by noise from the construction and operation of this facility. These include 210 to 408 Frimley Road.

Properties located at greater distances from the proposed pumping station may also be exposed to noise from the WTP construction and operation, but noise levels would be less than for the properties considered in this assessment. This is due to additional attenuation from increased distances and screening due to buildings.

Figure 1 shows the proposed site within its wider environment. Figure 2 shows the location of the site within the District Plan zoning.



Figure 1: Approximate location of the proposed WTP and reservoir (white) and boreholes (red, marked "FR x") within the wider environment. (Base image: Koordinates and Stantec).



Figure 2: Subject site and surrounds zoning within the Proposed Hastings District Plan (Base Image: HDC e-Plan)

3.0 ACOUSTIC PERFORMANCE STANDARDS AND LEGISLATION

3.1 Resource Management Act (RMA)

Under the provisions of the RMA there is a duty to adopt the best practicable option to ensure that noise (including vibration¹) from any development does not exceed a reasonable level. Specifically, Sections 16 and 17 reference noise effects as follows.

Section 16 states that "every occupier of land (including any premises and any coastal marine area), and every person carrying out an activity in, on, or under a water body or the coastal marine area, shall adopt the best practicable option to ensure that the emission of noise from that land or water does not exceed a reasonable level".

Section 17 states that "every person has a duty to avoid, remedy, or mitigate any adverse effect on the environment arising from an activity carried on by or on behalf of the person, whether or not the activity is in accordance with –

- (a) Any of sections 10, 10A, 10B and 20A; or*
- (b) A national environmental standard, a rule, a resource consent, or a designation"*

This report uses the guiding principles of Section 16 and 17 of the RMA as noted above in assessing noise effects and recommending mitigation measures.

¹ RMA 1991 Part 1 Section 2 Interpretation: Noise includes vibration



3.2 Proposed Hastings District Plan

The Hastings District Plan is currently undergoing transition from the Operative District Plan (2003) to the Proposed District Plan. Section 25.1 "Noise" notes that *"There are no appeals to this section. This section now has full effect (any equivalent provisions of the Operative Plan 2003 now cease to have effect)."*

From discussion with Stantec, we understand that the proposed WTP is provided for under the network utilities provisions of the Proposed District Plan (chapter 22). However, we understand that the proposed structures (WTP building and associated reservoir) do not comply with the bulk and location requirements of the District Plan. As a consequence, the overall proposal is a discretionary activity.

For activities within the Open Space zoning, there are no specific noise criteria set out in the District Plan for Discretionary activities. Nonetheless, as discussed above, there is a general obligation in terms of Section 16 of the Resource Management Act (RMA) which, in summary, states that an activity shall adopt the best practicable option (BPO) to ensure that the emission of noise does not exceed a reasonable level.

In forming an opinion on what would constitute a "reasonable noise level" for an activity such as this, we consider the permitted activity noise criteria within the Proposed District Plan to provide appropriate guidance.

Chapter 25.1.6H of the Proposed District Plan sets out the permitted activity noise rules for Open Space activities, received within a Residential Zone. These are as follows:

"25.1.6H

OPEN SPACE ZONES

The following noise conditions shall apply to all land uses within all Open Space Zones, other than those exempted in Rule 25.1.6B:

(a) The following noise limits shall not be exceeded at any point within any Residential Zone or within the notional boundary of any noise sensitive activity:

<u>Control Hours</u>	<u>Noise Level</u>
0700 to 1900 hours	55 dB L_{Aeq} (15 min)
1900 to 2200 hours	50 dB L_{Aeq} (15 min)
2200 to 0700 hours the following day	45 dB L_{Aeq} (15 min)
2200 to 0700 hours the following day	75 dB L_{AFmax} "

The District Plan requires that noise be measured in accordance with New Zealand Standard NZS 6801:2008 "Acoustics – Measurement of environmental sound" and assessed in accordance with New Zealand Standard NZS 6802:2008 "Acoustics - Environmental Noise"

Because the WTP operates on a 24-hour per day basis, the relevant permitted activity criteria for WTP operational noise within the receiving environment are:

- As the schools are typically operational during the daytime hours of 0700 to 1900 hours only, 55 dB L_{Aeq} (15 min) at the neighbouring educational facilities; and
- 45 dB L_{Aeq} (15 min) within the remaining Residential Zones.

These criteria have been selected as a guideline to assess the appropriateness of the noise levels predicted, resulting from the operation of the pumping station. We consider these limits to be reasonable for this type of environment.



Rule 25.1.6B referred to above contains a list of activities exempted from these noise limits. 25.1.6B (g) notes that the exemptions include “In any zone to the emission of noise from the temporary emergency use of generators for continued power supply”. However in our opinion, it is reasonable to expect the noise from the emergency generator to comply with the 55 dB $L_{Aeq(15min)}$ daytime noise guideline at noise sensitive assessment locations, during daytime maintenance operations.

3.2.1 Operational Vibration

The Proposed Hastings District Plan does not contain any specific operation vibration performance criteria and only makes general reference to vibration in Note 2 of Rule 25.1.6B, referring to the definition of ‘Noise’ in the RMA “as including vibration”.

Notwithstanding, given the minimum setback distance to the closest noise and vibration sensitive receivers, we consider there to be a low risk of adverse ground-borne vibration effects from the operation of the pump station. Therefore, no performance criteria have been recommended and operational vibration has not been assessed in this report.

3.3 Construction Noise

Section 25.1.6I of the Proposed Hastings District Plan requires that noise from construction shall be measured and assessed in accordance with New Zealand Standard NZS 6803:1999 “Acoustics – Construction Noise”.

It is expected that the duration of the water treatment plant and reservoir construction would be 34 to 52 weeks. Additionally, construction of each bore would take 6 to 7 weeks. Installation of the associated water reticulation pipework would extend over a period of 17 to 20 weeks. Although some of these activities may occur concurrently, the construction period would be sufficient to qualify as “long term” as defined by NZS 6803 (over 20 weeks). Therefore, the relevant construction noise limits are the “long term duration” limits of NZS 6803, which are the most stringent in this Standard. These are reproduced as follows:

Table 1: Recommended upper limits for construction noise received in residential zones (from New Zealand Standard NZS 6803: 1999 “Acoustics - Construction Noise” Table 2)

Time of week	Time of period	Duration of work Long-term duration (dBA)	
		L_{eq}	L_{max}
Weekdays	0630-0730	55	75
	0730-1800	70	85
	1800-2000	65	80
	2000-0630	45	75
Saturdays	0630-0730	45	75
	0730-1800	70	85
	1800-2000	45	75
	2000-0630	45	75
Sundays and Public Holidays	0630-0730	45	75
	0730-1800	55	85
	1800-2000	45	75
	2000-0630	45	75



At this stage, the timing of construction activities has not been determined. However, it should be noted that the noise limits for the times identified by the shaded areas of Table 1 may mean that no construction activity can take place at those times, or that the noise limits of this table would not be able to be complied with.

3.4 Vibration – Cosmetic Building Damage

As for operation vibration discussed in Section 3.2.1, the District Plan does not specifically address construction vibration. Given the distances to the receivers closest to the proposed boreholes, we consider it prudent for the project’s construction to have vibration controls in place. Appropriate guidance can be found in DIN 4150-3:2016 “*Vibrations in buildings – Part 3: Effects on structures*”. This standard is used widely in New Zealand to assess potential for vibration causing damage to buildings. For construction vibration the relevant DIN 4150 criteria for this project are the ‘Short-term vibration’ criteria. These are shown in Table 2 below.

Table 2: Vibration Units to avoid Building Damage (from DIN 4150-3: 2016 Tables 1 and 3)

Building Type	Short-term vibration				
	PPV (all directions) at the foundation at:			PPV (horizontal plane) of highest floor (mm/s)	PPV Floor slabs, (vertical) mm/s
	1-10Hz (mm/s)	10-50 Hz (mm/s)	50-100 Hz (mm/s)		
Residential, schools	5	5-15	15-20	15	20

3.5 Vibration – Amenity

While the primary vibration concern is cosmetic building damage, people may be disturbed at levels significantly below the limits for cosmetic building damage in Section 3.2. British Standard BS 5228-2:2009 “*Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration*” provides the following guidance on the amenity effects of vibration:

- 0.14mm/s PPV Just perceptible in the particularly sensitive environments
- 0.3 mm/s PPV Just perceptible in normal residential environments
- 1 mm/s PPV Typically acceptable with prior notification
- 10 mm/s PPV Likely to be intolerable for any more than a very brief period

4.0 OPERATIONAL NOISE ASSESSMENT

4.1 Noise Prediction Methodology

Operational noise has been predicted in general accordance with ISO 9613-2:1996² as implemented in SoundPLAN® environmental noise modelling software.

ISO 9613 considers a range of frequency dependent attenuation factors, including spherical spreading, atmospheric absorption, and ground effect.

² ISO 9613-2: 1996 “*Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation*”



4.2 Noise Modelling Inputs and Assumptions

The model considers the noise emission from the following noise sources. These would be housed inside the WTP building, or located nearby:

- 5x 160 kW booster pumps (maximum of 4x operating at any time);
- 4x Cabinet-built variable speed drives (VSDs) (switch room inside the WTP building);
- 8x outdoor units for HVAC. These include:
 - 5x 14 kW units;
 - 3x 5 kW units.
- 1x 1500 kVA transformer (standalone cabinet).

In addition, separate consideration has been given to the maintenance operation of the 1500 kVA standby generator in an acoustic enclosure.

Based on the pump noise information provided by Stantec and size of the pump room shown on the drawings, we calculate the reverberant noise level within the pump room to be no more than 87 dB L_{Aeq} . This includes a small allowance for additional noise from other equipment within the pump building such as valves and pipework. However, no significant cavitation noise has been allowed for. We recommend that any cavitation be eliminated at source through pipework/pump design.

4.2.1 Assumptions

We have not been provided with acoustical data for the VSDs. However, based on generic information and the size of the electrical room shown on the drawings, we calculate the reverberant noise level within the electrical control building to be no more than 87 dB L_{Aeq} .

At this stage we have not been provided with noise data for the proposed 1500 kVA transformer. We have therefore based this assessment on previous noise measurements of similar sized transformers carried out by us.

We have no information regarding the proposed WTP building rooftop fans. For the purposes of this assessment we have assumed that they would be the acoustic equivalent of Fantech FSU Series 3 (L_{WA} 62 dBA each fan).

We have assumed that all fans, HVAC outdoor units, and other proposed machinery, do not produce noise that contains special audible characteristics (“whine”, “hum”, etc.).

It is likely that the transformer would produce a tonal noise, but we have calculated this to be of sufficiently low noise level as to not present an adverse noise effect to any noise sensitive assessment location.

The following details aspects of the facility design that contribute positively to noise mitigation.

4.2.2 WTP Building

- Walls of precast concrete, 200mm thick;
- Roof construction to be Kingspan cladding with a 17.5mm plywood ceiling;
- Electrical room located within the WTP building.

4.2.3 Reservoir

- Of bolted steel with an aluminium roof. This eliminates much of the construction noise otherwise associated with a cast-in-situ type concrete structure.



4.2.4 Borehole Pumps

These are proposed to be submersible pumps which would therefore be relatively deeply located underground. This would significantly reduce any resulting pump noise received in within the residentially zoned sites.

4.3 Recommended Further Mitigation

Additional noise mitigation measures are required to ensure that noise from the new pump station remains within a reasonable level. These details would be confirmed during the detailed design stage of the project.

4.3.1 WTP Building Doors

At this stage, the acoustical weak link in the building façade is the standard roller door. The revised cladding drawing Sheet 04 shows this door to be located in the WTP building façade facing the HGHS playing field.

Options for improving this include replacement with a more acoustically effective roller type door such as those of the Efaflex range. However, we recommend any selected roller door is reviewed by us prior to installation.

All other doors should be of solid core construction (minimum 24 kg/m²) with compression seals to the head, threshold and jambs of the doors. Table 3 lists the recommended door seals.

Table 3: Door Seals

Head and Jambs seals	Threshold Seals	Meeting Stile Seals
Kilargo IS1212, IS1515 Lorient LAS1212 and LAS1515Raven RP10, RP 24, RP 47, RP120 or RP150 Schlegel Aquamac 21, 124, or 836	Raven RP38	Raven RP71Si (Double Row), RP16 or RP85

4.3.2 Ventilation Louvres

The revised cladding drawing Sheet 04 shows two ventilation louvres located in the WTP building façade facing the HGHS playing field. Each of these is approximately 3.7m² in area. To control the noise transmission from these louvres, they should be acoustic louvres with the transmission loss (TL) shown in Table 4:

Table 4: Acoustic Louvre Minimum TL

Frequency (Hz	63	125	250	500	1000	2000	4000
TL (dB)	3	6	8	12	19	20	18

Typically, a single depth (300mm deep) acoustic louvre can provide this level of attenuation.

4.3.3 Roof fans

Although we have assumed Fantech FSU Series 3 fans, we recommend that 2 pole fans are avoided as our experience shows that these fans can be tonal.



4.3.4 Internal reverberation control

To control noise build-up within the WTP building (and therefore noise emissions to the receiving environment), the ceiling plus one long wall of each room within the building (including the main pump room) should be lined with acoustic absorption. This material should have a minimum sound absorption performance of NRC 0.75. Suitable materials include 50mm thick Sorberpoly 3D ALR (NRC 0.75); Autex AAB 35-50 (NRC 0.85); Autex AAB 20-100 (NRC 0.95); or other acoustically equivalent material.

4.4 Predicted Operational Noise Levels

4.4.1 Residential Receivers

Taking into account the noise sources, construction materials used in the façade/roof of the WTP building and proposed mitigation measures noted above, noise emissions from the proposed WTP have been predicted to adjacent receiver locations and assessed against the 45 dB L_{Aeq (15 min)} night-time guideline noise limit.

The predicted noise levels from the WTP operation, received within residential sites, are shown in in Table 5. These show compliance with the 45 dB L_{Aeq (15 min)} night-time guideline limit. Due to the operational activities of the WTP generating consistent noise levels, it follows that the the higher limits during the daytime and evening shoulder period would also be complied with.

Table 5: Predicted WTP Operational Noise Levels - Residential

Receiver Location	Guideline Night-time Noise Limit (dB L _{Aeq 15 mins})	Predicted Noise Level (dB L _{Aeq 15 mins})
210-212 Frimley Road	45	31
300-304 Frimley Road	45	<30
310-318 Frimley Road	45	<30
328-400 Frimley Road	45	<30
406-408 Frimley Road	45	<30

4.4.2 Educational Facilities

As noted, the proposed WTP is located adjacent to HGHS and Lindisfarne College. Frimley School is located across Frimley Road. Schools typically operate during the day, although some may have boarding facilities. Table 6 therefore sets out the predicted noise levels compared with the daytime, evening shoulder period, and night-time guideline limits.



Table 6: Predicted WTP Operational Noise Levels - Educational

Receiver Location	Guideline Daytime Limit (dB LAeq 15 mins)	Guideline Shoulder Limit (dB LAeq 15 mins)	Guideline Night-time Limit (dB LAeq 15 mins)	Predicted Noise Level (dB LAeq 15 mins)
Closest HGHS building	55	50	45	38
Closest HGHS boundary	55	50	45	57
HGHS tennis courts	55	50	45	40
Closest Lindisfarne building	55	50	45	36
Frimley School grounds	55	50	45	35
Frimley School building	55	50	45	31

Locations within these educational facilities considered to be noise sensitive are the various school buildings and classroom areas. As shown in Table 4, the operation of the WTP is predicted to comply with all guideline noise limits (including the most stringent night-time limit) at all educational assessment locations, with the exception of the closest points on the boundary of the HGHS playing field boundary with Frimley Park.

At the closest points on the boundary of the HGHS playing field boundary with Frimley Park we have calculated marginal exceedance of the 55 dB LAeq (15 min) daytime guideline limit, as well as exceedance of the evening shoulder period (7pm – 10pm) guideline limit, and the night-time guideline limit. However, it is not likely that this playing field location would be considered noise sensitive, unless this area is specifically used for outdoor teaching activities.

Appendix B shows the predicted noise contours, resulting from the operation of the WTP.

4.5 Emergency Generator Operation Noise

We understand that the emergency backup generator may be operated at regular intervals as part of the maintenance programme. Although the District Plan exempts noise associated with the temporary use of generators during power outages from having to comply with any noise rule, we consider it prudent to determine the level of generator noise during daytime testing.

Information provided by Stantec for this genset housed inside an acoustic enclosure is for 75 dB LAeq at a distance of 7 metres. This is consistent with our experience of typical enclosed generators of this capacity. The noise from the operation of this generator is predicted to comply with the daytime guideline noise limit at all noise sensitive assessment locations.

An exceedance of the daytime guideline limit is predicted for the boundary with HGHS playing field immediately adjacent to the facility. In this location, an exceedance of up to 6 dB is predicted during the operation of the generator. However, as noted we do not consider this location to be noise sensitive.

Appendix C shows the predicted noise contours, resulting from operation of the generator. The extent of the daytime non-compliance into the HGHS playing field is shown by the purple contour.



5.0 CONSTRUCTION NOISE ASSESSMENT

On 21 November 2019 we received a preliminary construction schedule, provided by Stantec and Tonkin & Taylor. From this we understand that the proposed construction staging is as follows:

5.1 WTP Building and Reservoir (34 - 52 weeks)

- Site establishment, including security fencing and temporary construction vehicle access to the site off Lyndhurst Road;
- Site clearing, including vegetation removal, tree clearance and trimming, and topsoil removal;
- Installation of in-ground pipework associated with the WTP and reservoir;
- Construction of the reservoir, including tank foundation, tank roof, panels;
- Construction of the WTP building;

5.2 Borehole Installation

This would include:

- Establishment of a construction laydown area and drilling pad;
- Drilling (truck mounted drill rig);
- Support vehicles for delivering items such as the drill casing, water and power generator;
- Installation of the borehole casings;
- Construction of gazebo type structures over each bore.

To determine the likely noise and vibration from the installation activity, we visited a borehole casing installation site at Eastbourne, Hastings, on Tuesday 3 December 2019. During that visit we conducted noise measurements generally in accordance with New Zealand Standard NZS 6801:2008.

At the same time, we carried out ground vibration measurements, to be assessed in accordance with DIN 4150 and BS 5228.

From discussions with the Client we understand that this site is similar to the proposed Frimley site in terms of ground conditions and installation methodologies. Additionally, we understand that the casings being installed are similar to those proposed for the Frimley site.

Two installation methodologies were assessed during our site visit. These were:

- Impact driven casings; and
- High frequency vibration.

The high frequency vibration methodology was measured to be up to 8 dB less noisy than the impact methodology. Subsequent discussions with the Client and Project Manager established that the boreholes FR 1 to FR 4 would be installed using a high frequency vibration technique. We consider this to be an example of employing the best practicable option to ensure that the noise of this activity does not exceed a reasonable level.

5.3 Sound Power Levels

The equipment noise level data for individual items of plant used in this assessment have been obtained from measurements of similar equipment carried out by MDA, and from reference noise levels taken from NZS 6803. These levels are presented in Table 4 below.



Table 4: Equipment sound power levels (All Stages)

Equipment	Sound Power Level (L _w dBA) (per individual item)
20T excavator	103
35T Mobile Cane	98
Borehole casing installation (vibratory)	114
Static roller	104
7T Vibrating roller	103
Wheeled loader	107
Trucks	106
Truck-mounted concrete pump	106
Concrete vibrator	94
Plate compactor	108
Chainsaw	99

5.4 Noise Prediction Methodology

Noise levels have been predicted at the assessment locations in accordance with the methods described in NZS 6803. For construction activities, there is a level of uncertainty in the noise prediction and the impact on affected parties. There are numerous variables and factors affecting the accuracy of the noise predicted. These factors include the variations in the specific models and individual items of equipment, the exact location of each item, the individual operators and the exact location of the various receiving environments. The predictions provided in the following sections are therefore the most reasonable estimates for the worst-case scenario.

In accordance with Annex D of NZS 6803 “*Estimating Noise from Sites*” the calculations were carried out using the sound power outputs of processes and plant. Noise source characteristics, sound absorption due to soft ground in the intervening topography between each noise source and each receiver, reflections and downwind (or mild temperature inversion) meteorological conditions were considered.

5.5 Construction Noise Compliance

For the purposes of this assessment we have assumed that the construction hours would be from 7:30 am to 6:00 pm, Monday to Saturday. Lower noise limits would apply outside those hours, and on Sundays and public holidays.

Noise from construction activities is generally predicted to comply with the relevant NZS 6803 noise limits at all construction noise receiver locations, both residential and educational. The exception to this is during the borehole casing installation phase.

5.5.1 Borehole Installation

During this phase, construction noise is predicted to comply with 7:30am – 6:00 pm Monday to Saturday construction noise limits (70 dB L_{Aeq}) at all dwellings, with the exception of 317 Frimley Avenue, and 402 to 408 Frimley Road, during the installation of borehole FR 4. For these dwellings,



exceedances of 1 to 5 dB are predicted. This should be addressed as discussed in Section 7.0 of this report.

6.0 CONSTRUCTION VIBRATION ASSESSMENT

Because of the distance of the proposed WTP building from identified noise sensitive locations, we do not anticipate any building damage effects from the general construction activities.

The installation of the borehole casings may produce vibration at the nearest Frimley Road dwellings, of up to 0.5 mm/s PPV. This is comfortably within the building damage limits of DIN 4150, and marginally over the BS 5228 level for "just perceptible in normal residential environments".

Therefore at the closest dwellings, the vibrations produced may be noticed by some residents, although building damage is unlikely. As a consequence, community liaison as discussed in Section 7.0, is paramount prior to such activity.

7.0 CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN

A Construction Noise and Vibration Management Plan (CNVMP) should be prepared by a suitably qualified person and implemented as part of this project. The overarching criterion of such a CNVMP should be Section 16 of the RMA which, in summary, states that an activity shall adopt the best practicable option to ensure that the emission of noise does not exceed a reasonable level. Section 17 of the RMA also states that there is a duty to avoid, remedy or mitigate any adverse effect on the environment.

The CNVMP should include (but not be limited to) details regarding:

- Community liaison;
- Noise and vibration mitigation measures;
- Monitoring. This would include monitoring of construction noise levels, received at selected representative receiver locations. Noise measurements would identify any processes that are unnecessarily noisy; provide confidence to potentially affected residents that their concerns are being considered; and identify compliance or non-compliance with the relevant noise limits.
- Contingency measures including, but not limited to, limiting the hours of some activities (specifically borehole casing installation) to mutually agreed times, review of construction methodology, mitigation measures and management strategies to ensure they represent the BPO, consideration of the installation of mechanical ventilation for noise sensitive receivers where external windows must be closed to avoid significant adverse noise effects and no alternative ventilation system is present; and
- Staff training.



8.0 SUMMARY AND CONCLUSIONS

Marshall Day Acoustics has carried out a desktop acoustic assessment of a proposed boreholes and water treatment plant to be located at Frimley Park, Hastings.

The relevant noise provisions from the Decisions version of the Proposed Hastings District Plan have been referenced.

In the absence of vibration performance standards in the District Plan, we recommend the project adopts the criteria contained in DIN-4150-3:1999 as a best-practice provision for the prevention of cosmetic building damage to residential buildings during construction activities.

For vibration amenity assessment, we have adopted the criteria as set out in BS 5228.

For the layout considered, the operation of the new pump station is predicted to comply with the relevant noise criteria at all noise sensitive assessment locations. Note that this is dependent on the implementation of the additional acoustic mitigation measures set out in this report.

The construction works described in this report are typical and to some extent generic. This assessment predicts general compliance with the relevant limits from NZS6803:1999. The exception to this is during the installation of borehole FR 4, where exceedances are predicted for some dwellings closest to this borehole location.

A project CNVMP is recommended, which would be formulated and submitted to the Council prior to construction starting.

Noise from monthly maintenance testing of the emergency backup generator (housed in an acoustic enclosure) is predicted to comply with the relevant daytime guideline noise limits at all noise sensitive assessment locations.

Based on the above, we consider that, with the recommended mitigation and management measures in place, construction and operation of the WTP would result in acceptable levels of noise and vibration.

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APPENDIX A GLOSSARY OF TERMINOLOGY

Noise	A sound that is unwanted by, or distracting to, the receiver.
SPL or L_p	<u>Sound Pressure Level</u> A logarithmic ratio of a sound pressure measured at distance, relative to the threshold of hearing (20 µPa RMS) and expressed in decibels.
SWL or L_w	<u>Sound Power Level</u> A logarithmic ratio of the acoustic power output of a source relative to 10 ⁻¹² watts and expressed in decibels. Sound power level is calculated from measured sound pressure levels and represents the level of total sound power radiated by a sound source.
dB	<u>Decibel</u> The unit of sound level. Expressed as a logarithmic ratio of sound pressure P relative to a reference pressure of P _r =20 µPa i.e. dB = 20 x log(P/P _r)
dBA	The unit of sound level which has its frequency characteristics modified by a filter (A-weighted) so as to more closely approximate the frequency bias of the human ear.
A-weighting	The process by which noise levels are corrected to account for the non-linear frequency response of the human ear.
L_{eq}	The equivalent continuous (time-averaged) sound level. This is commonly referred to as the average noise level.
L_{Amax}	The A-weighted maximum noise level. The highest noise level which occurs during the measurement period.
NZS 6803:1999	New Zealand Standard NZS 6803: 1999 "Acoustics - Construction Noise"
Vibration	When an object vibrates, it moves rapidly up and down or from side to side. The magnitude of the sensation when feeling a vibrating object is related to the vibration velocity. Vibration can occur in any direction. When vibration velocities are described, it can be either the total vibration velocity, which includes all directions, or it can be separated into the vertical direction (up and down vibration), the horizontal transverse direction (side to side) and the horizontal longitudinal direction (front to back).

APPENDIX B OPERATIONAL NOISE CONTOURS



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APPENDIX C EMERGENCY GENERATOR NOISE CONTOURS



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Appendix D

CONSULTATION MATERIAL

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WHY IS THIS WORK IMPORTANT?

Enhanced water storage will make our drinking water supply safer, more resilient, and reduce our reliance on continuously extracting drinking water from the aquifer to meet consumer demand.

The benefits of this proposed work include:

1

Enhanced barriers to contamination i.e. storing treated water, ready for supply into homes.

2

Improvements to existing continuous monitoring and control of source water.

3

Create supply resilience i.e. having enough water available in the event of a natural disaster where pipelines or services may be damaged.

4


Managing water during periods of high use (e.g. summer) so that demand is met from the treated water that is stored in the reservoir, not drawing directly from the aquifer.

5

Reducing drawing from the aquifer to minimise the potential for surface impurities going into the aquifer.

6

Reducing pressure within the reticulation network to minimise leakage and stresses on our pipe assets.



INVITATION


MORE INFORMATION

If you would like more information about this project you are welcome to attend an open informal session to speak to council staff. Join us for a coffee at the Frimley Park Playground on **Saturday 19 October, 9am-12pm.**

Wet weather alternative date will be Wednesday 23 October, 5-7pm, keep an eye on the Hastings District Council Facebook page for confirmation. Please contact Steve Cave, Senior Projects Engineer, on (06) 871 5000 or stevec@hdc.govt.nz with any questions.

HAVE YOUR SAY

In late November 2019 a resource consent will be submitted for this work. Under this formal process you will have the opportunity to have your say. We expect that the consenting authority will notify this application for feedback in mid-January 2020 – at this time you will have 20 working days to make a submission.

 **@hastingsdc**
www.hastingsdc.govt.nz



Safeguarding our water

Hastings District Council's water strategy (2018) ensures that residents connected to the water network are provided with a safe, reliable, resilient drinking water supply.

PLANS FOR WATER TREATMENT AND STORAGE

The council continues to plan the remaining significant work for the Frimley and Eastbourne urban supplies, as part of the already committed funding package, to deliver safe drinking water across Hastings.

Proposed projects involve the construction and operation of new water treatment and storage facilities in two locations within the city.

Frimley

INVITATION Details on back

WATER STRATEGY

The council has committed \$47.5million through the 2018-2028 Long Term Plan to enhance drinking water safety. The aim of this investment is to have comprehensive treatment of all Hastings District Council's drinking water supplies by 2021.

To date, projects achieved in this package include:

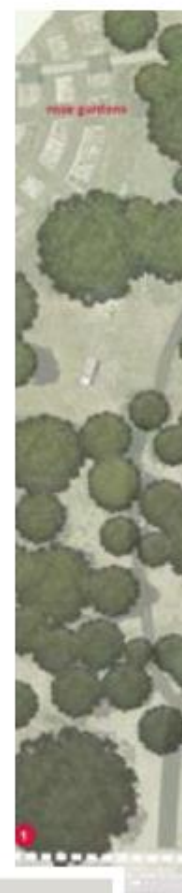
- Upgrade of Wilson Road, Waipatu, Omaha and Brookvale bores with UV as well as chlorine treatment.
- Chlorination of Hastings District Council reticulated drinking water supplies (as recommended by the Havelock North water inquiry).
- Hastings to Havelock North water main – this 4.8km water main provides Havelock North with water sources from the Hastings groundwater bores.
- Construction of the Havelock North booster pump station in progress (50% complete).
- Progress towards building the infrastructure and associated treatment of small urban water supplies at Te Awanga/Haumoana, Clive and Whakatū, and small community supplies at Waimarama, Waipatiki and Esk/Whirinaki.

WHERE WILL THIS WORK HAPPEN?

Council went through a detailed site selection process before presenting proposed sites to councillors for approval. The following questions were considered:

- How close is the potential site to existing water sources (ideally as close as possible)?
- Can the new infrastructure connect easily to the main arterial water supply pipe network?
- Can we use existing infrastructure (where appropriate)?
- Is the site well removed from any potential contamination sources? e.g. not in an industrial area.
- Is there enough space for new infrastructure?

Taking all of this into account, and after numerous council workshops, two sites in Hastings have been selected: Frimley Park and Eastbourne (corner of Southampton Street East and Hastings Street South).



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Attachment 3



- Legend
- Tree Opportunities
- 1. Maintain tree location with plant screening
 - 2. Maintain tree location integrated with a new 2 plant garden
 - 3. Future removal of maintenance sheds
 - 4. Existing gardens and retain all existing trees
 - 5. Existing gardens and plant new where maintenance sheds are removed
 - 6. Enhanced avenue with additional specimen trees
 - 7. Plant additional screening specimen trees in open area
 - 8. Plant additional specimen trees along the park boundary
- Vegetation Key
- Existing trees
 - Proposed trees

FRIMLEY PARK

The preferred site at Frimley is on the southern end of Frimley Park next to Hastings Girls High School, near existing water sources and infrastructure. It is an area of the park that is not highly used, set among established trees that will reduce the

visual impact of the works for nearby residents and street traffic. Tree planting is anticipated to create a formal avenue of trees along the original driveway to further mitigate visual impacts.

The facility will include an 8,000m3 reservoir approximately 38m in diameter and 11m tall (subject to final approved designs), together with an additional building to house associated pumps, filtration, chlorination and UV treatment infrastructure.

To free up more space for the public, we are actively working, as part of this project, to negotiate moving the maintenance sheds out of the park. This space near the playground will then be returned to parkland.



WHAT WILL IT LOOK LIKE?

View towards
proposed site location
from main entrance
off Frimley Road.



View from interior
Park pathway facing
towards Hastings Girls
High School.



Frimley

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Site Map

Safeguarding
our water

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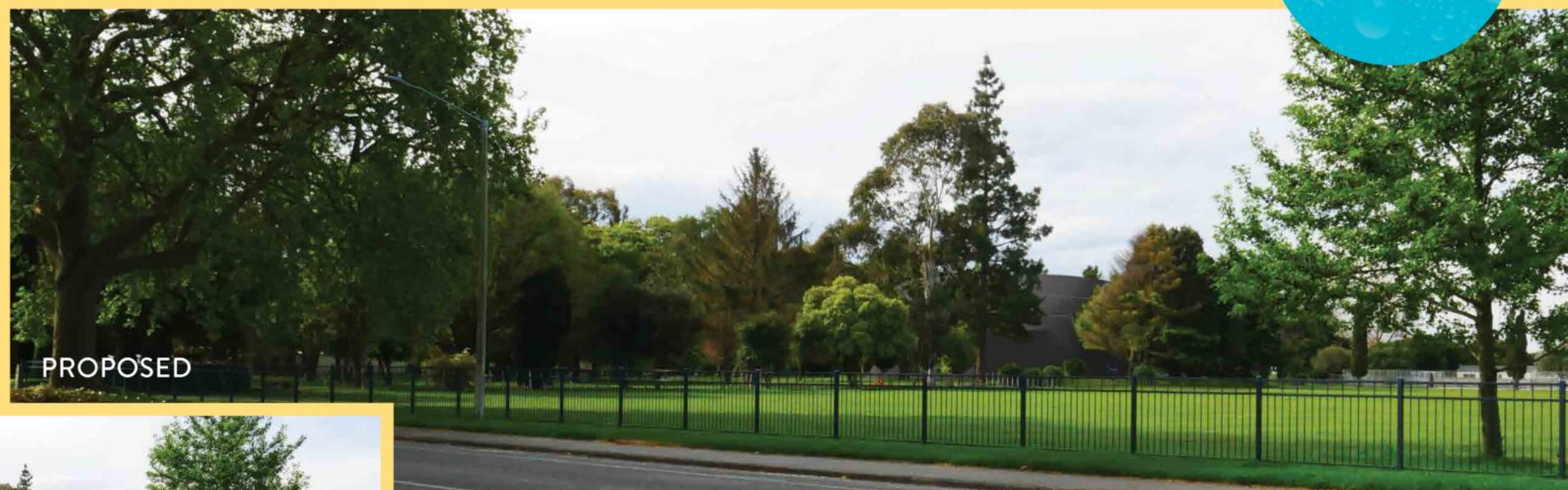
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View towards proposed site location from Frimley School

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our water**

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View towards proposed site location from main entrance off Frimley Road

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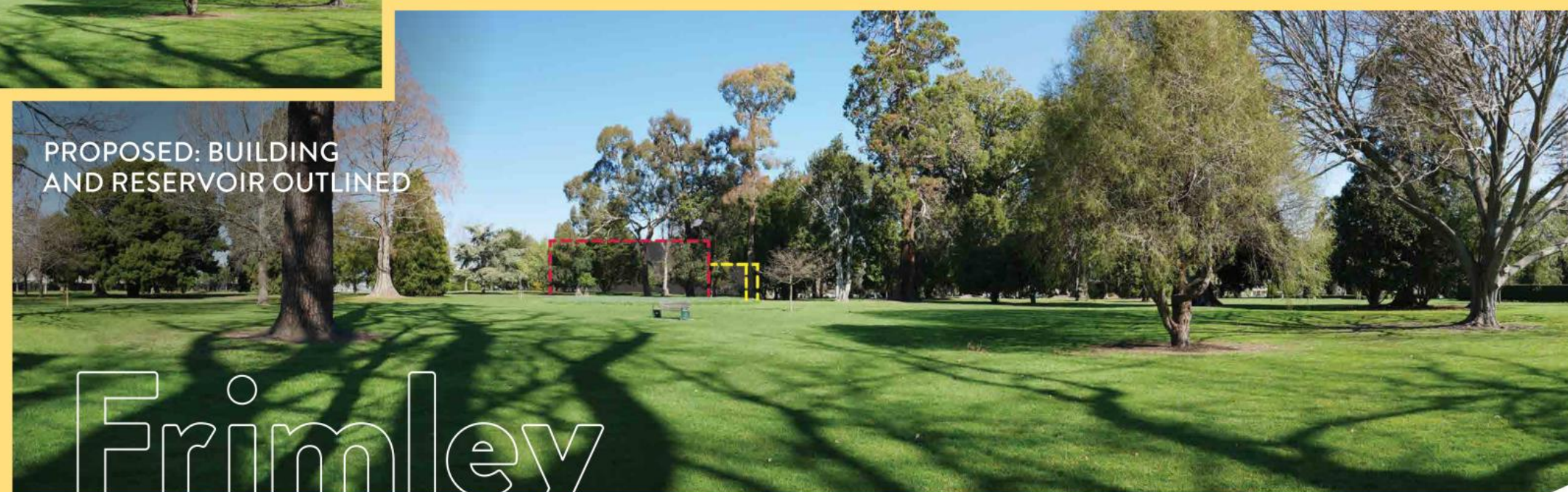
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View from interior Park pathway facing towards Hastings Girls High School

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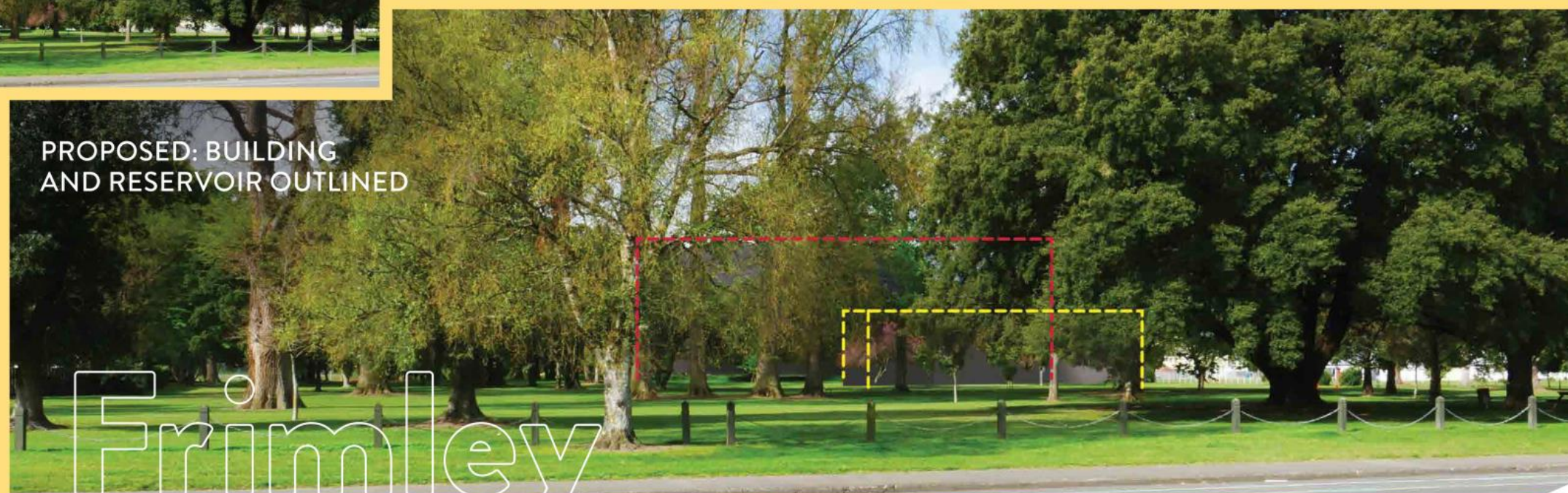
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View towards proposed site location from Frimley Road

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Why does our water need to be treated?

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**Safeguarding
our water**

-  Untreated drinking water can contain bugs, that can make you sick.
-  Because of the risk of contamination from bacteria, viruses and protozoa.
-  Treatment of every water supply and use of chlorine is now strongly recommended by the government inquiry and director general of health and is likely to become mandatory.
-  Chlorine provides insurance against bugs entering water supply after it leaves treatment plant.

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Source protection

its bigger than you think

Did you know that water can travel a long way in a year?

Water moves quickly above and below ground. We need to make sure that we reduce the risk of contamination by controlling the activities in our water catchment area.

This map shows an example of just how large our source protection zones need to be.

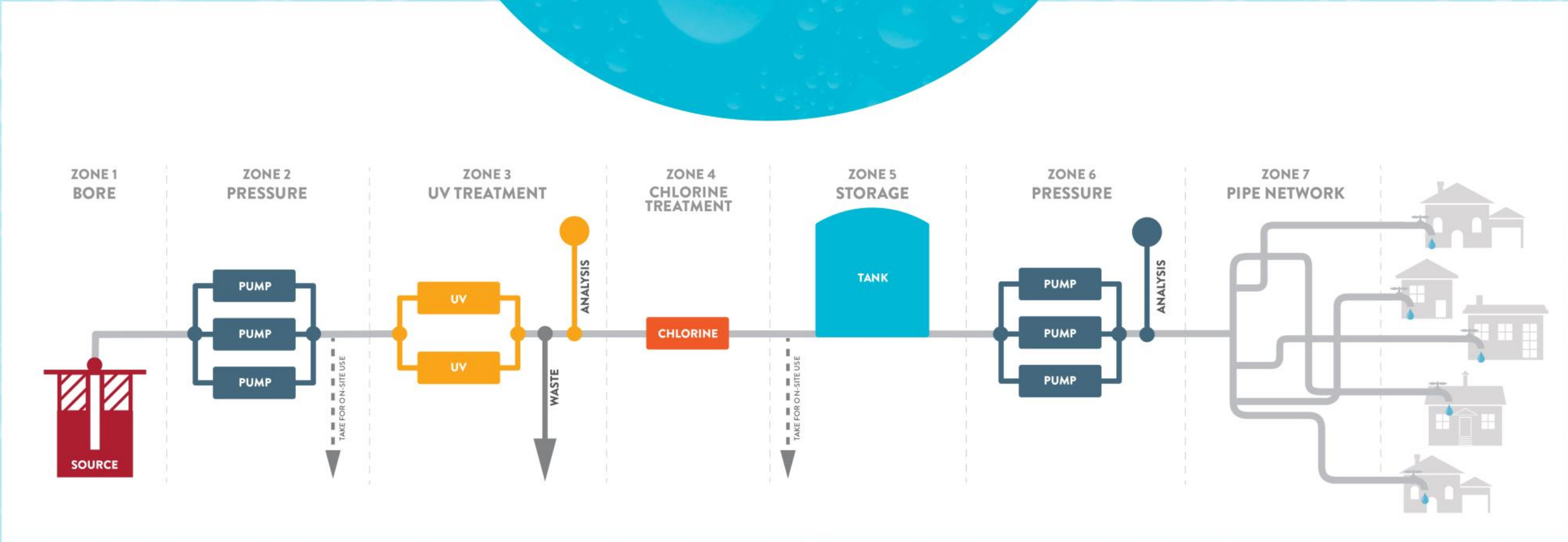


Safeguarding
our water

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How we treat the water to make it safe



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Safeguarding our water

Hastings District Council's water strategy (2018) ensures that residents connected to the water network are provided with a safe, reliable, resilient drinking water supply.

HAVE YOUR SAY

In late November 2019 a resource consent will be submitted for the Frimley work. You will have the opportunity to have your say. From time of notification in mid-January 2020 – you will have 20 working days to make a submission.

More info on website
www.hastingsdc.govt.nz

Frimley

WHAT WILL IT LOOK LIKE?

View towards proposed site location from main entrance off Frimley Road.



The council has committed \$47.5million through the 2018-2028 Long Term Plan to enhance drinking water safety. The aim of this investment is to have comprehensive treatment of all Hastings District Council's drinking water supplies by 2021.

Part of the already committed funding package includes proposed projects involving the construction and operation of new water treatment and storage facilities in two locations within the city.

Two sites in Hastings have been selected after a detailed site selection process: Frimley Park and Eastbourne (corner of Southampton Street East and Hastings Street South).

FRIMLEY PARK

The preferred site is on the southern end of Frimley Park next to Hastings Girls High School. It is a discrete area of the park set among established trees that will reduce the visual impact of the works for nearby residents and street traffic.

The facility will include an 8,000m³ reservoir approximately 38m in diameter and 11m tall (subject to final approved designs) and an additional building to house associated treatment infrastructure.

WHY IS THIS WORK IMPORTANT?

Enhanced water storage will make our drinking water supply safer, more resilient, and reduce our reliance on continuously extracting drinking water from the aquifer to meet consumer demand.

The benefits of this proposed work include:

- 1 Enhanced barriers to contamination i.e. storing treated water, ready for supply into homes.
- 2 Improvements to existing continuous monitoring and control of source water.
- 3 Create supply resilience i.e. having enough water available in the event of a natural disaster where pipelines or services may be damaged.
- 4 Managing water during periods of high use (e.g. summer) so that demand is met from the treated water that is stored in the reservoir, not drawing directly from the aquifer.
- 5 Reducing drawing from the aquifer to minimise the potential for surface impurities going into the aquifer.
- 6 Reducing pressure within the reticulation network to minimise leakage and stresses on our pipe assets.

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Safeguarding our water

Hastings District Council's water strategy (2018) ensures that residents connected to the water network are provided with a safe, reliable, resilient drinking water supply.

The council has committed \$47.5 million through the 2018-2028 Long Term Plan to enhance drinking water safety.







Proposed projects involve the construction and operation of new water treatment and storage facilities in two locations within the city.

The preferred site at Frimley is on the southern end of Frimley Park next to Hastings Girls High School, near existing water sources and infrastructure.

Why is this work important?

Enhanced water storage will make our drinking water supply safer, more resilient, and reduce our reliance on continuously extracting drinking water from the aquifer to meet consumer demand.

The benefits of this proposed work include:

-  Enhanced barriers to contamination i.e. storing treated water, ready for supply into homes.
-  Improvements to existing continuous monitoring and control of source water.
-  Create supply resilience i.e. having enough water available in the event of a natural disaster where pipelines or services may be damaged.
-  Managing water during periods of high use (e.g. summer) so that demand is met from the treated water that is stored in the reservoir, not drawing directly from the aquifer.
-  Reducing drawing from the aquifer to minimise the potential for surface impurities going into the aquifer.
-  Reducing pressure within the reticulation network to minimise leakage and stresses on our pipe assets.

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