



Watercare Services Limited Branch 3 Overflow Mitigation - Newmarket Gully CSO Storage Tank

- **Assessment of environmental effects for the construction of a combined sewer overflow (CSO) storage tank within Newmarket Park Reserve.**

- **February 2009**



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EXECUTIVE SUMMARY

Watercare Services Limited (Watercare) proposes to construct a wastewater storage tank within the Newmarket Park Reserve. This new tank will reduce the frequency of wastewater overflows from the Newmarket Gully Combined Sewer Overflow (CSO) by capturing these overflows during heavy rainfall, storing them and releasing the flows back into the wastewater system when the rainfall recedes. This proposed on-line storage tank will provide 3000m³ of storage capacity.

The current overflows from the existing system flow into the Newmarket Stream situated beside the metal access track in Newmarket Park, which is illustrated in Photo 1, and in turn is channelled out to sea at Hobson Bay.

Photo 1: Newmarket Stream after heavy rainfall



In order to allow construction of the proposed storage tank, resource consent approval from the Auckland Regional Council (ARC) is required for earthworks in accordance with the Auckland Regional Plan: Sediment Control, and stream works in accordance with the provisions of the Proposed Auckland Regional Plan: Air, Land and Water. In addition, Notice of Requirement for a designation of land has been given to Auckland City Council (ACC). The documents provided to ARC in support of the resource consent applications and ACC in support of this Notice of Requirement include a full description of the proposed activity and a supporting Assessment of Environmental Effects in accordance with s.88 and s.168 of the Resource Management Act 1991.



The long term positive effects anticipated from the proposed development include:

- A reduction in the volume and quantity of wastewater overflows to Newmarket Stream;
- A potential reduction in odour levels emanating from the subject area;
- An improvement in the function of the stream and estuarine habitats; and
- The enhancement of a portion of the reserve with lower amenity, which can be complemented further through future replanting programmes co-ordinated by Council.

The proposed facility would have no more than minor adverse effects for the duration of operation and maintenance as outlined in this report. Any long-term adverse effects would be avoided, remedied and/or mitigated by:

- The operation of the facility in accordance with the relevant standards and regulations; and
- Operation of the facility in accordance with established operating, maintenance, surveillance and monitoring procedures;

Short term effects from the construction of the new storage tank facility would include:

- Effects associated with the proposed earthworks (excavations and re-contouring of areas for the new tank and access road areas) inclusive of actual and potential sediment and silt, noise, dust, truck traffic, cultural, vegetation removal and watercourse effects;
- Temporary restrictions on vehicular traffic during construction within road reserves; and
- Restricted access for members of the public to the recreation reserve for the duration of the works, in particular within the area subject to the construction works.

These construction effects would be avoided, remedied and/or mitigated by a number of measures including:

- The construction of the new storage tank facility and associated works being undertaken in accordance with the relevant standards with respect to earthworks, works within the road reserve and construction noise;
- Adherence to operational procedures and management plans developed to manage the construction process, including standards for earthworks and the management of dust, noise, vibration and land restoration; and



- Implementation of appropriate protocols in the event of the discovery of any koiwi, taonga or archaeological sites.

Overall, the proposed works will have a significant environmental benefit by reducing the current adverse effects resultant from overflows in the Newmarket Catchment.

It is considered that the proposed development meets the relevant tests under the Resource Management Act 1991 and, in particular, are not considered to contravene the relevant objectives and policies under the Auckland Regional Policy Statement, Auckland City Operative District Plan 1999 – Isthmus Section and the Newmarket Park Reserve Management Plan.

Resource consents are required from the Auckland Regional Council for some construction activities within the existing stream and the required earthworks.

Consultation has been undertaken with those persons considered to be affected by the proposed designation and the storage tank facility, including:

- Landowners/Occupiers whom immediately adjoin onto the Council Reserve land;
- Auckland City Council Officers;
- Auckland Regional Council Officers;
- Tangata Whenua;
- Other network utility owners and operators; and
- Other community organisations and groups whom have an interest in the area, such as the Hobson Community Board, Newmarket Business Association and Orakei Basin Protection Society.

Consultation has taken the form of the provision of information with respect to the proposal and the seeking of views and information relevant to the proposed development. Where appropriate the proposed development has been modified to take into account feedback received during this process.

Construction of the proposed storage tank facility is expected to begin in Summer 2009, with an anticipated construction period of 18 months.



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1. Introduction

1.1 Watercare Services Limited – The Company

Watercare Services Limited (Watercare) is the largest water supply and wastewater treatment company in New Zealand, supplying bulk water services and a regional wastewater network to the Auckland Region.

The company is a council owned organisation under the Local Government Act 2002. The city and district councils of Auckland, North Shore, Manukau, Waitakere, Papakura and Rodney each have a stake in Watercare.

Watercare provides bulk water supplies to six water retailers through their regional water network – Metrowater, North Shore City Council, Manukau Water, United Water, Rodney District Council and Waitakere City Council. The water is supplied in turn to more than 1.2 million customers throughout the Auckland Region.

On average, the company supplies 347,000m³ of water each day, drawn from 12 sources, including 10 dams, the Waikato River and an aquifer at Onehunga.

Watercare also operates a regional wastewater network that receives and treats an average of 288,000m³ of wastewater a day at the Mangere Wastewater Treatment Plant, from four councils in the Auckland region.

1.2 Watercare’s Mission Statement

Watercare’s mission, as stated under Watercare’s 2008 Annual Report, is:

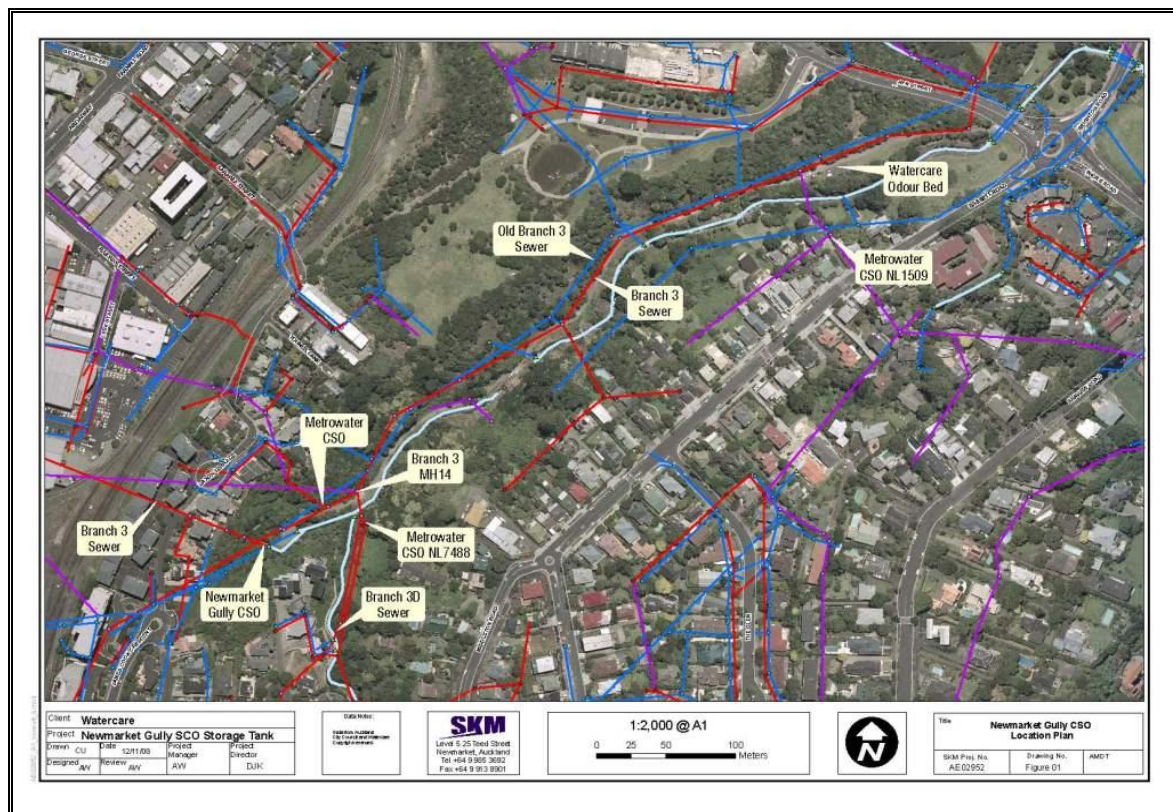
- To provide water and wastewater services that are economically viable, environmentally sound, socially responsible and responsive to customer needs.

1.3 Project Introduction and Justification

Watercare own and operate the Branch 3 sewer, which serves the Newmarket and Remuera areas, collecting flows from the local Metrowater reticulation. The sewer is laid through Newmarket Park, running parallel to the Newmarket Stream. A plan of the area including the Watercare and Metrowater systems in this area is shown in **Figure 1**. The Branch 3 sewer drains to Watercare’s Orakei Main Sewer in Parnell which conveys flows to the Mangere Wastewater Treatment Plant.



Figure 1: Existing Wastewater and Stormwater Services



The Branch 3 sewer does not have capacity to process the volume of stormwater draining from the Newmarket catchment. Consequently it overflows at the combined sewer overflow (CSO) located on Branch 3 at the head of the gully in Newmarket Park. When this occurs, the overflow discharges flows into an ACC 1800mm stormwater pipeline immediately upstream of its discharge into Newmarket Stream. The stream is channelized out to Hobson Bay. This CSO is one of a number that discharges to the stream and operates frequently, caused by the high number of combined sewers (i.e. sewers that drain both wastewater and stormwater) in the catchment. The Branch 3 sewer does not have capacity to handle the volume of stormwater draining from Newmarket and hence overflows at the CSO.

Watercare proposes to construct a wastewater storage tank within the Newmarket Park Reserve, which is administered by the Auckland City Council under the Reserves Act. This new tank will reduce the frequency and volume of wastewater overflows at the CSO by capturing these overflows during high levels of rainfall, storing them and releasing the flows back into the



wastewater system when the rainfall lessens. This proposed on-line storage tank will provide 3000m³ of storage capacity.

It is proposed to construct an above ground, on-line, reinforced concrete storage tank in Newmarket Reserve at the position of the existing CSO. To fit in with the site, which is a public park, and to minimise the visual impact, the tank will be constructed above ground and then buried, landscaped and replanted with natural vegetation, though still allowing access for Watercare's operational staff.

The work to be authorised by the designation is the construction, operation and maintenance of the new storage tank facility, upgrading of an existing access road within Newmarket Park Reserve and associated activities. Specific areas to be utilised for on-site storage and stockpiling, including an on-site office and associated facilities, are yet to be confirmed. These construction details will be addressed at the pre-construction stage of the project in an Outline Plan of Works. A summary of the proposed work is as follows:

- Slip stabilisation, upgrading and modification of the existing access track for construction vehicles;
- Mobilisation of site facilities, plant and equipment;
- Vegetation clearance;
- Pipeline diversions and stream culverting;
- Retaining walls, earthworks and foundation piles;
- Tank construction;
- Provision of mechanical and electrical equipment;
- Connecting pipework;
- Backfilling around structure, landscaping and replanting;
- Site reinstatement; and
- Associated activities.



1.4 Proposed Designation

The proposed designation area encompasses all or part of nine (9) individual land titles and one (1) road reserve, totalling an area of approximately 1.8 hectares. The extent of the proposed designation area is shown on SKM Drawing No: 2005317.021, at **Appendix A** of this report.

The purpose for this designation area is to cover both permanent and temporary works associated with the project and to provide long term security for the ongoing operation and maintenance of the proposed storage tank facility within the reserve. The Outline Plan of Works that will be submitted to Council prior to commencement of the project will provide further design and construction detail for the proposed works, in accordance with Section 176A of the Resource Management Act 1991. .

Watercare may remove areas of the designation upon completion of construction if not required for long term operation and maintenance requirements

1.5 Site Location

The physical address of the Newmarket Park Reserve is 51 Ayr Street.

The proposed designation is located over land within the jurisdictions of Auckland City Council and Auckland Regional Council. As stated above, a plan showing the proposed designated area, including the properties subject to designation, is at **Appendix A** of this report and referenced SKM Drawing No: 2005317.021. The property reference numbers on the plan correspond with the following table:

Table 1: Properties Subject to this Designation

| Property Ref. | Location | Legal Description | Certificate of Title | Owner |
|---------------|---|--|----------------------|---------------------------------------|
| 1 | No physical address (Recreation Reserve Land) | Lot 46 DP 176349 | NA108C/217 | The Auckland City Council |
| 2 | 1/66 Middleton Road, Remuera (Leasehold Estates – 1/6 shares) | Parent Title: Lot 1-2 DP 49867 Leasehold Title: Flat 1 DP 95146 & Carport 1 DP 95146 | NA51A/1020 | G T Darby & D P Darby |
| 2 | 2/66 Middleton Road, Remuera (Leasehold Estates – 1/6 shares) | Parent Title: Lot 1-2 DP 49867 Leasehold Title: Flat 2 DP 95146 & Carport 2 DP 95146 | NA51A/1021 | D Cooper, B Cooper & J A Curson |



| Property Ref. | Location | Legal Description | Certificate of Title | Owner |
|---------------|---|---|-------------------------|---|
| 2 | 3/66 Middleton Road, Remuera (Leasehold Estates – 1/6 shares) | Parent Title: Lot 1-2 DP 49867 Leasehold Title: Flat 3 DP 95146 & Carport 3 DP 95146 | NA51A/1022 | S D Morse |
| 2 | 4/66 Middleton Road, Remuera (Leasehold Estates – 1/6 shares) | Parent Title: Lot 1-2 DP 49867 Leasehold Title: Flat 4 DP 196461 & Carport 4 DP 196461 | NA125C/388 | J T B Smith & Robert Burnes Trustee Limited |
| 2 | 5/66 Middleton Road, Remuera (Leasehold Estates – 1/6 shares) | Parent Title: Lot 1-2 DP 49867 Leasehold Title: Flat 5 DP 105926 & Carport 5 DP 105926 | NA59A/840 | K A Cobbald, H M Egerton & A M Wilson |
| 2 | 6/66 Middleton Road, Remuera (Leasehold Estates – 1/6 shares) | Parent Title: Lot 1-2 DP 49867 Leasehold Title: Flat 6 DP 105926 & Carport 6 DP 105926 | NA59A/841 | M L Tsai |
| 3 | 3 Youngs Lane | Lot 1 DP 174768 and Section 1 SO Plan 67470 | 381227 | Sanctuary Apartments Limited |
| 4 | No physical address (Recreation Reserve Land) | Lot 2 DP 199245 | NA127D/744 | Auckland City Council |
| 5 | No physical address (Recreation Reserve Land) | Lot 1 DP 53284 | NA7A/744 | Auckland City Council |
| 6 | No physical address (Recreation Reserve Land) | Lot 4 DP 153189 | NA93D/98 | Auckland City Council |
| 7 | 134 Bassett Road, Remuera | Lot 3 DP 141980 | NA84B/37 | Auckland City Council |
| 8 | No physical address (Recreation Reserve Land) | DP 24765 | NA649/23 | Auckland City Council |
| 9 | 51 Ayr Street | Lots 4-5 DP 28796 | NA738/252 | Auckland City Council |
| 10 | No physical address (Vested as Road Reserve) | No Legal Description | No Certificate of Title | Auckland City Council |



Copies of these Certificates of Title are at **Appendix B** of this report.

The proposed location of the new storage tank facility will be at the head of the gully and will be constructed over the existing stream and energy dissipation structure at the stream outlet.

Other areas encompassed within the proposed designation include the main access road from Ayr Street to the head of the gully. The access road will be subject to upgrading. At present this access road is utilised mainly by members of the public for pedestrian access and for public access and by contractor's vehicles undertaking works within this area of the reserve.

1.6 Regional Resource Consent Requirements

1.6.1 Works within the Watercourse and Required Earthworks

The following table outlines the activities that require resource consent from the Auckland Regional Council, the relevant Plan and Rule and the activity status.

■ **Table 2: Consents Required and Status**

| Activity | Plan and Rule | Activity Status |
|--|--|-----------------------------------|
| Placement of a structure over the bed of a permanent stream. | Proposed Auckland Regional Plan: Air, Land and Water - Rule 7.5.8 | Controlled Activity |
| Disturbance of a permanent watercourse. | Proposed Auckland Regional Plan: Air, Land and Water – Rule 7.5.18 | Controlled Activity |
| New impervious area on the site of more than 1000m ² but less than 5000m ² | Proposed Auckland Regional Plan: Air, Land and Water – Rule 5.5.2 | Controlled Activity |
| Earthworks greater than 0.25 hectares in area within the Sediment Control Protection Area. | Auckland Regional Plan: Sediment Control – Rule 5.4.3.1 | Restricted Discretionary Activity |



1.6.2 Discharge Consent

The existing combined sewer overflows into Newmarket Gully are a discharge of contaminants to the environment under Section 15 of the RMA. The overflow is deemed to be an 'existing authority' by virtue of Section 386 of the RMA.

An application to the ARC to continue discharge of contaminants from multiple structures within the Hobson Bay Catchment, including Newmarket Gully, was lodged by Watercare in 2001. The application (No. 25106, File Ref. 15585) remains with the ARC for processing. The existing authority for the overflow continues in force until the renewal application is finally determined.

The overflow from the proposed storage tank is from the same catchment and sewer as that described in the consent application for the Hobson Bay Catchment and is a discharge into the same receiving environment. The Newmarket Gully CSO Mitigation project is specifically intended to reduce the extent of the overflows and the associated adverse effects.

1.7 Lapsing Period

For the purposes of Section 184 of the RMA, the proposed lapse period sought within which to give effect to the designation is 10 years. The lapsing period sought for the ARC consents (for the purposes of Section 125 RMA) is also 10 years.

Watercare currently anticipates that construction of the new facilities authorised under the proposed designation would commence in November 2009 and be completed by early 2011. By this time, the Project Hobson scheme will have been commissioned, which will reduce overflow discharges to Hobson Bay, the same receiving environment as the Newmarket Gully CSO. These two projects combined will result in significant environmental improvements within the Hobson Bay catchment.



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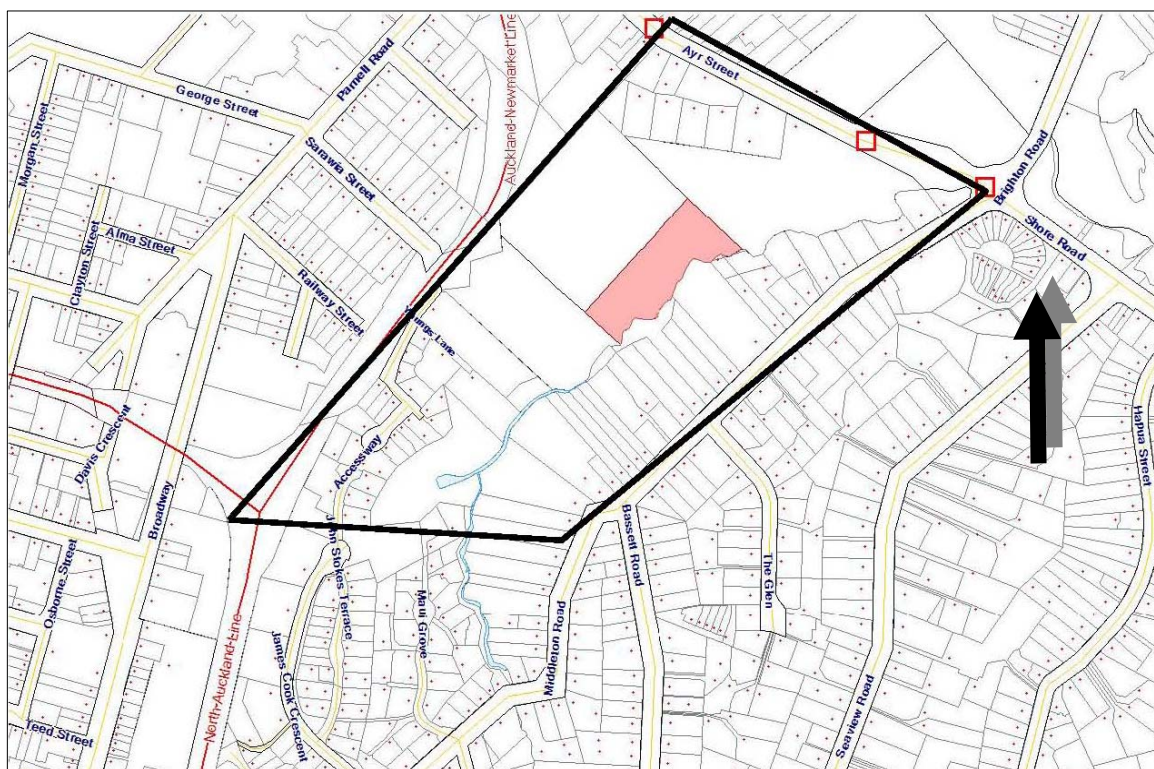
2. The Existing Environment

2.1 Designation Overview

The proposed designation is located within the wider urban environment of Newmarket, and within the confines of Newmarket Park. The general area in which the proposed designation is to be located is shown in **Figure 2** below. The site of the designation is located within the southern section of Newmarket Park, and is zoned Open Space 2 in the Auckland City District Plan – Isthmus Section. The surrounding land uses are predominantly zoned for residential use to the east (Residential 6a) and open space to the north, east and west (Open Space 2 and 3).

The proposed designation area, which will encompass approximately 1.8 hectares, is shown on SKM Drawing No: 2005317.021 and is at **Appendix A** of this report.

Figure 2: General Area of Newmarket Gully





2.2 Topography

The general topography is typical of Auckland City, with a generally gentle topography developed on the Waitemata Group sediments. The volcanic cone of the Domain Volcano rises moderately to the west of Newmarket Gully, above the gently rolling terrain of the surrounding urban area.

From Parnell Road, the land falls steeply at an angle of approximately 30° down towards the south-east, to the fill platform of Newmarket Park. The park is located immediately north-west of, and parallel to, Newmarket Gully. The fill platform then slopes steeply (at an angle of 30 to 35°) down to the gully.

Ayr Reserve is located north of Newmarket Park and the gully. From this reserve, the land falls gently to the south-east before falling steeply to Brighton Road and the level area of Shore Road Reserve - an area which is mainly reclaimed except for the small alluvial plain formed at the mouth of the gully stream.

St Stephens Avenue runs along the ridge of a headland in the eastern part of Parnell. East of this ridgeline, the land undulates and dips east, before falling sharply away to the foreshore of Hobson Bay, where steep rock cliffs can be seen (such as Tuhunga Crescent and at Logan Terrace). A number of natural valleys run towards the south-east, including the valley and stream in Ayr Reserve that runs to the south end of Brighton Road and the valleys where Tuhunga Crescent and Takutai Street are now formed.

The Newmarket Park Reserve is held in several Certificates of Title. The specific location of the proposed storage tank facility is at the south-western portion of the reserve and is held under Lot 4 DP 176349. This area of the reserve is located at the end of an existing metal track and can be accessed from Middleton Road, Ayr Street and existing pedestrian tracks from the upper recreational grounds of the park.

The proposed works area is located at the head of Newmarket Gully and as such is topographically recessive in relation to the surrounding steeper gully slopes, particularly to the north, and to a lesser degree the more moderate north facing slopes of the Maui Grove spur that bisects the Middleton Stream corridor and the Newmarket Stream Gully.

The remaining titles subject to the proposed works are detailed in **Table 1** of this report.



2.3 Historical Land Use

Newmarket Park, to the north of the project area, was used as an uncontrolled landfill site for refuse fill and industrial debris from the 1920's. There is a lack of detailed history of the landfilling, however, up to 18m of fill material (T&T, 2007) was deposited in an uncontrolled manner and included timber mill waste and other refuse fill.

The Newmarket Park site was re-worked in the 1930's and 1940's, with the placing of clean fill to level the site for recreational purposes. Although no compaction or treatment of this material was carried out, it was further developed in the 1960's as a sports football pitch with spectator stands. The material placed had been end tipped and was not compacted, although consolidation of the fill has occurred over time. A previous south-east trending gully creek running through the centre of the site had been filled to form what is now the level platform. Fill material consists of clean fill and refuse fill, the latter containing both organic and industrial inorganic matter.

The uncompacted and uncontrolled filling led to a number of landslips along the steep slope bordering the southern edge of the landfill area, including a major landslip in 1979 which caused the loss of part of the fill platform, significant structural damage of the sports stands and inundation of Newmarket gully below.

2.4 Current Land Use

Current land use in the vicinity of the project area includes residential properties, recreational open space park land and reserve land. Residential properties border the east side of the gully whilst Newmarket Park and its associated fill slope border the west side of the gully. The area adjacent to the footprint of Branch 3 between Ayr Street and Logan Terrace consists almost entirely of residential dwellings, with the exception of Ayr Reserve and Shore Road Reserve, lying west and east respectively of the lower end of Brighton Road.

The site of the project area is overlooked by apartment development at the northern end of the gully, on Sarawia Street and Laxon Terrace.

2.5 Existing Services

Figure 1 shows the layout of the existing wastewater and stormwater services within the site. Within the proposed designation area are wastewater and stormwater pipelines (both Watercare and ACC/Metrowater), including the Branch 3 trunk sewer and Newmarket Gully CSO. There are also Metrowater CSOs located on side branches to the trunk sewer, which also discharge into the Newmarket Stream. At the head of the Newmarket Stream is an energy dissipater structure



which reduces the energy of the flow from the 1800mm diameter stormwater pipeline that drains a significant portion of the Newmarket catchment.

A metalled access track links Ayr Street to the energy dissipater and CSO structures, to provide access for Watercare and ACC maintenance vehicles.

Watercare also operate an odour bed, which is located adjacent to the metal access track and stream. The odour bed was installed to mitigate the odours from the Newmarket Gully CSO. Air is extracted from the CSO structure by a fan with the abandoned Branch 3 sewer used as an air duct.

There are no other known services located in the vicinity of the proposed storage tank.

2.6 Ecology and Vegetation

The project area will be located in conjunction with the Newmarket Stream. Based on site visits and an Ecological Assessment, the stream appears to be of very poor ecological quality, has been subject to extensive modification and is characterised by a shallow, concrete lined bed and channel. The surrounding gully is infested with noxious weed species with sparse riparian vegetation in places. Existing structures within the Stream, manholes, fencing and the gabion walls that line the watercourse have been defaced with graffiti.



Figure 3: Newmarket Stream during a period of low rainfall



Boffa Miskell Limited has prepared an Assessment of Ecological Effects on the Newmarket Stream and Hobson Bay for the current proposal, which is included in **Appendix C** of this report. The assessment found that the benefits associated with the installation of the wastewater storage tank include the significant improvement in the function of the stream and the estuarine habitats.

2.7 Heritage/Cultural and Archaeological Values and Considerations

Previous archaeological investigations have found evidence of Maori occupation of Newmarket Park, however it was determined that development within the Park will have largely destroyed any archaeological evidence. It is possible that remnant shell middens may exist on the steep vegetated slopes above the stream.

The Park was cleared of native vegetation in the 1840s during subdivision of the area. The Park was originally developed as an employment relief scheme during the period of 1930 – 35 and just after the Second World War. The development involved the creation of an athletic track by earthworks to cut the ridges and fill the valleys of the Park. The first organized sporting use of the Park was as an athletics stadium from the 1940s to the 1960s. The Park was also used for a midget car racing circuit and a golf driving range during the 1950s.

In the 1960s the Auckland Football Association constructed two grandstands and associated facilities and the Park became a major soccer venue. This use ended abruptly in 1979 due to a



landslip that carried away a grandstand, a section of playing field and damaged many of the facilities.

The Grammar Old Boys Rugby Football Club (GOBRFC) premises adjoined the Park adjacent to Ayr Street. The GOBRFC enjoyed a long term lease of the Shore Road reserve for the purposes of their playing fields from the Auckland Harbour Board prior to that land being placed in Auckland City's control. In about 1990, the GOBRFC proposed the development of a rugby field with ancillary facilities on Newmarket Park and Council saw this as an opportunity to regain the Shore Road reserve for public use.

However, the development of a rugby field did not proceed due to considerable concern expressed by local residents and the Newmarket Park Protection Society, over the loss of open space and stability issues related to further large scale development of the land. As a result, the GOBRFC and Council reached agreement on a development and use strategy for the Shore Road reserve land which enhances public use of that reserve and facilitates the Club's use. With organised sport in the local area thus addressed, the pressure on Newmarket Park for organised sporting activity disappeared. The final settlement of the District Plan zoning for the land confirmed passive open space activities for the majority of the Park.



3. Proposed Works, Construction Methodology and Operation

3.1 Proposed Works

Detail of the storage design is shown on SKM Drawings 2005317.001 - 008, which are at **Appendix A** of this report.

The general arrangement of the tank is an online, above ground storage tank supported on piles and then buried and landscaped to retain the amenity value of the area as far as possible and reduce the visual impact. The tank dimensions are 56m (maximum length) x 23m wide. The internal height varies from 2m to 5m. The tank is positioned over the stormwater energy dissipater and the Newmarket Stream.

The existing energy dissipater at the end of the 1800mm diameter stormwater culvert is a very sturdy structure and would be difficult to demolish and is functioning well. Therefore, the proposed tank will be built over it and Newmarket Stream. The modified stream immediately downstream of the energy dissipater is proposed to be reconstructed (a length of approximately 21m) and then diverted into a new 4m wide by 2m high box culvert (a length of 14m). The culvert protrudes from the front of the tank and will allow the front face of the tank to be hidden by an earth batter and planting. Immediately downstream of the culvert the existing modified stream will be reconstructed in open channel (a length of 11m) where a tributary of the stream joins the main flow. The extent of the stream works are shown on SKM Drawings 2005317.023 – 024 in **Appendix A** of this report.

Flows will be diverted to the tank from the existing CSO structure via a new 1500mm diameter inlet pipe and the existing CSO abandoned. A dry weather flow channel will be provided in the tank as a steeply sloped sump that will minimise the accumulation of sediment within the tank. The continuation flow from the tank will be piped via a new 600mm diameter sewer to the Branch 3 Manhole 14, and rejoin the existing Branch 3 sewer flows.

Outlet flows from the tank will be controlled during wet weather events to fill the tank which will be divided into lanes, each with a cleaning system. A new overflow will be provided in the tank, which will discharge into the stream. The overflow will be fitted with a mechanical screen to remove gross solids and material from the overflow discharge.



The existing odour duct in Old Branch 3C sewer is to be retained and a new connection to the top of the tank will allow the transmission of the odour laden air to Watercare's odour bed further down the access track (refer to SKM Drawing No: 2005317.021).

An existing stormwater open channel at the head of the gully transfers storm flows from a disused railway tunnel and overland flows from the gully slope into the Newmarket Stream at the side of the energy dissipater structure. The tank will block this channel and overland flow path and hence it is proposed to pick up and divert these flows in a new 1200mm diameter pipeline under the new tank and discharge into the reconstructed stream.

The access track into Newmarket Gully will require localised widening, repair and modification to accommodate construction vehicles and turning areas. SKM Drawing 2005317.011 in **Appendix A** outlines the extent of works including the modifications to the entrance at Ayr Street and a temporary turning area for construction vehicles further along the track.

The effects of the proposed works to modify the entrance at Ayr Street had earlier been assessed on a design allowing for left-turn out of the access track onto Ayr Street. On-going discussions with Auckland City Council have identified that a right turn from the access track onto Ayr Street is preferred and the drawing in **Appendix A** incorporates this.

3.2 Construction Methodology

The subject site is geographically constrained and there is limited area for materials storage or vehicles during the construction phase of the project. The proposed construction methodology aims to create working spaces as the project progresses. However, there will be occasions during construction where there are constraints on access. As such, it is proposed that construction is undertaken through a staged process, as follows:

- Upgrade the access track, slip repairs and entrance of Ayr Street;
- Mobilise site facilities, plant and equipment, procure pipework and culverts;
- Temporarily divert stream flows by over-pumping and/or piping the watercourse;
- Install new stormwater pipe on south side and 4m x 2.0m box culvert, pipe connections and reconstruct the stream;
- Install retaining walls to existing slopes and permanent piles for new structure support;
- Construct the tank from south side and west end, working out to the north and east end;
- Install mechanical and electrical equipment into the tank;
- Install connecting sewers and backfill structure, replant and landscape; and



- Commission tank.

This methodology is an outline only at this stage as a Contractor has yet to be appointed for the scheme. The detailed construction methodology will be the responsibility of the Contractor and hence may be subject to modification.

3.3 Storage Tank Operation

3.3.1 Flow Control

The outlet flow from the tank needs to be controlled during storm events to fill the tank. The flow control mechanism will need to modulate the continuation flow to the downstream sewer as peak flows increase. This is so that the tank does not start to fill prematurely, when there is still capacity in Branch 3.

The proposed control system is an actuated penstock mounted over a 60° v nape channel to form a triangular orifice. The 60°benching in the outlet channel will prevent the accumulation of sediments and allow the minimum penstock opening height to be greater than 200mm, thus reducing the chances of blockage by large debris. Actuating the penstock will allow it to be fully open during the tank flushing cycles to ensure the accumulated screenings and sediments will not accumulate behind the penstock. The penstock will be controlled by a Programmable Logic Control (PLC) utilising two levels sensors, one in the tank and the other in MH14. The flow control penstock will be housed in a separate chamber within the tank. A 300mm diameter bypass is proposed around the chamber which will be isolated by two hand operated penstocks. The bypass will allow the tank to be emptied if the actuated penstock fails in the closed position. It will also allow the penstock chamber to be isolated for maintenance access.



3.3.2 Tank Cleaning

To avoid deposition of material in the tank due to the regular filling and emptying cycles and the associated issues of odour and blockages, a tank cleaning system is proposed. It is possible to avoid fitting cleaning systems in online wastewater tanks through the use of steep sided benching and good hydraulic design but in this case, the increased height of the tank to provide such a design and retain the required volume, is a barrier to such an approach as the tank height is a critical parameter of the scheme. Also, with the history of odour in this location, the risks associated with an uncleaned tank do warrant a cleaning system and evidence from other tanks built by North Shore City Council is that mechanical systems work efficiently to clean the tank and prevent odours. A flushing gate system uses a wave of flow to clean the tank. This system uses sumps with flushing gates at the base of the tank which are filled with wastewater as the tanks starts to fill. There is no need for a clean water supply with this system. After the tank empties, the flushing gate closure is released by a control float, and the wave of water cleans the floor of the lane. The flush is caught in a sump and then discharges through the tank outlet via flapgates in the dividing wall between the tank and outlet channel.

3.3.3 Overflow and Screening

The existing CSO and discharge point will be abandoned. A high level overflow weir will serve as the tank overflow with a new discharge point to be incorporated into the new box culvert underneath the earth batter in front of the tank. This will allow mixing of the overflows with the storm flows before they discharge into the watercourse ensuring the maximum dilution and minimising visual impact.

The overflow structure is contained within the tank to minimise the number of external structures and lessen the visual impacts. The overflow pipe will drop vertically 4m and a small stilling pond has been proposed to dissipate the energy from the dropper to minimise the erosion of the concrete base. A new flap gate at the connection to the box culvert will prevent back flows into the tank and also prevent odours from escaping. To further alleviate the aesthetic impact of discharge to the stream, a screen will be provided as a physical barrier to material entering the watercourse.



3.3.4 Power Supply and Control Panels

The nearest power supply is on James Cook Crescent at the top of the gully approximately 120 meters from the tank. The tank control systems will require a standard 3 phase supply that would be contained within a 50mm duct, installed by directional drilling.

A 3m long, 1.5m wide, 2m high control cabinet is proposed at the front of the tank next to the access road. The top of the control cabinet is proposed to be level with the top of the tank to minimise its profile and visual impact.

The control cabinet will contain the screen control panels, screen hydraulic oil reservoir, cleaning system control panel, SCADA base station, penstock control panel, and electricity meter. The kiosk will need to be very robust to withstand vandalism which is likely in the location.



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4. Alternative Options Considered

4.1 Alternative Sites and Options

4.1.1 Overview

SKM were appointed by Watercare to carry out the design of network improvements to mitigate wastewater overflows from the Branch 3 Combined Sewer Overflow (CSO) at Newmarket Gully. The CSO is believed to be the single largest contributor of overflows to Hobson Bay, discharging to the Bay via Newmarket Stream that runs along the gully.

The following provides an assessment of the alternative sites, options, methods and location options of the tank within the reserve itself.

4.1.2 Design Options

Investigation into the overflow and opportunities to mitigate the wastewater discharges from the CSO was first undertaken in 2005 (MWH report: Newmarket Gully Overflow Study, March 2005) and subsequently in 2007-08 (SKM Report: Branch 3 Overflow Mitigation – Newmarket Gully CSO Storage Tank). A number of options were developed as part of these investigations, including storage, conveyance and flow reduction and these are discussed further:

- **Storage.** The storage of peak flows in a tank, tunnel or pond to alleviate overflows is a recognised practice and common in Auckland. In this case, storage could either be off-line (separate to the existing sewers and only utilised during overflow events) or on-line (part of the live sewerage system with continuous flow through the tank).
- **Conveyance.** In this case conveyance would entail the duplication or replacement of the Branch 3 sewer from the sewer to its discharge point to the Orakei Main Sewer, approximately 1.3 km distance. The new sewer would need to be sized to contain the peak wet weather flows that currently discharge from the overflow.
- **Flow Reduction.** As previously outlined, the cause of the overflows is the high volume of stormwater entering the combined sewer systems of Newmarket and the incapacity of the Branch 3 sewer to handle the storm flows. Sewer separation, stormwater improvements, infiltration and inundation reduction are means of reducing the flows within the wastewater system and Metrowater and NSCC have implemented a number of such schemes in Auckland. The Newmarket catchment would be suitable for such a scheme and stormwater works are being carried out and planned in the catchment by Metrowater/ACC. However those



measures, even if implemented to the fullest extent, would still not be sufficient to avoid overflows in wet weather events.

- Do-Nothing. Retaining the current overflow and its significant discharges to Newmarket Stream and Hobson Bay is considered environmentally unacceptable. Watercare are currently constructing the Project Hobson sewer tunnel and pumping station which will significantly alleviate discharges into Hobson Bay from other overflows. The proposed Newmarket Gully CSO storage tank is an integral part of the overall improvements to Hobson Bay.

4.1.3 Preferred Option

The preferred option to alleviate overflows is a combination of storage and flow reduction. Watercare's view is that the likely impact of stormwater separation and Infiltration/Inundation (I/I) reduction in the Newmarket catchment should be considered within this scheme and that continuing consultation with Metrowater to instigate such work to relieve the pressure on the Branch 3 sewer should be continued. However, sewer separation on its own is unlikely to be sufficient and the timing of such work is uncertain. Taking account of the current unsatisfactory discharges from the CSO, the balance of probability of the catchment work proceeding and the success of that work, additional storage is also required. A storage tank of 3,000m³ should significantly reduce the number of spills from the CSO in the short term (from 100 times to 10 -20 times per annum) with the potential to reduce them to 3 – 4 times per annum if separation and I/I reduction measures are successful in the longer term. The 3,000m³ storage tank is the subject of this application and Watercare will continue to consult with Metrowater/ACC over the catchment works.

4.2 Alternative Sites to Newmarket Park

In short, the location of the proposed storage tank facility within another site, outside of the reserve land, would be impractical and therefore not considered a feasible option. The area in the vicinity of the existing CSO, outside of the park, is heavily urbanised with Watercare's Branch 3 sewer running under private properties, the railway and commercial properties in Newmarket. Positioning a storage facility in these areas would be extremely disruptive and may require extensive piping between the existing sewer and the facility and would have significant construction costs associated with it.



4.3 Alternative Locations within Newmarket Park Reserve

A number of locations for the tank were reviewed during the early stages of the design. Constraints that influence the position of the tank are:

- The existing position of the Branch 3C sewer and Newmarket Gully CSO at the upstream end of the gully;
- The connection of the Branch 3D diversion sewer into Manhole 14 (MH14);
- Other stormwater and wastewater pipelines including the abandoned Branch 3 sewer which conveys flows from Metrowater's stormwater and wastewater systems as well as air to Watercare's odour bed;
- The steep slopes on the northern side of the gully which pose potential geotechnical risks;
- The proximity of neighbouring properties;
- Newmarket Stream which runs the length of the gully and the energy dissipater structure at the head of the stream; and
- The existing access road which runs the length of the gully.

The location of the sewers and properties referenced in the above are shown on the plan at **Figure 1**.

Options for locating the tank completely in the gully slope were discounted primarily due to the geotechnical risks associated with cutting into slopes with existing slip zones and a history of slips. Locating the tank downstream of MH14 would necessitate the tank to be built below the existing sewer levels, which would then mean a pumped return of the stored flows.

Given these constraints, it was decided that locating the tank upstream of MH14 would allow it to be built above ground, utilising the height available from the Branch 3C sewer. Positioning the tank over the watercourse would reduce the geotechnical risk, however this has the disadvantage of making the structure very conspicuous and creating significant visual impacts if not mitigated. Initial consultation with Auckland City Council urban designers indicated their preference for a buried structure, as opposed to an above ground tank. To facilitate this, positioning the tank at the top of the gully provides the best solution for a buried structure.

The proposed tank location is immediately downstream of the existing CSO, over the stream and energy dissipater structure. Although kept to the minimum footprint possible, this scheme will still require excavation of the toe of the slope in front of the residential properties at 33 and 35 Maui Grove and into the northern slope. Special consideration will need to be given to protecting the slopes and foundations of the houses on these properties during construction.



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5. Resource Management Act 1991 (RMA)

5.1 PART 2 – Purpose of the Act

The RMA sets the statutory framework for managing the use and development of our natural and physical resources. The purpose of the Act, as set out in Section 5, is to promote the sustainable management of natural and physical resources. This is defined as:

“managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while –

- a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.”*

The exercise of all functions in the making of all decisions in relation to the allocation, use and management of land and water (with the exception of water conservation orders) are subject to this concept of sustainable management.

Assessment

The proposed works will allow Watercare to sustainably manage this part of its network and, therefore, this work will promote the sustainable management of physical resources.

As such, it is considered that the works to be undertaken will achieve the purpose of the RMA by significantly improving the life supporting capacity of air, water, soil or ecosystems, given that the existing and potential adverse environmental effects will be appropriately mitigated. Furthermore, this improvement to the existing sewerage system will enable people and communities to provide for their environmental and cultural being, including their health and safety.



The actual and potential adverse effects associated with the project are evaluated in Section 6 of this report. This assessment of effects demonstrates that adverse effects on the environment can be adequately avoided, remedied or mitigated and the life supporting capacity of air, water, soil and ecosystems safeguarded as a direct result of this work.

5.2 Broader Principles – Sections 6 to 8 (RMA)

The broader principles of the Act are set out in Sections 6 through to 8.

5.2.1 Section 6 – Matters of National Importance

Section 6 identifies a number of matters of national importance. The matter of national importance considered most relevant to this proposal is as follows:

- (e) *The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.*

5.2.2 Section 7 – Other Matters

Section 7 of the Act sets out a number of “*other matters*” to which particular regard must be given when considering the application. Those matters relevant to this application include:

- (a) *Kaitiakitanga;*
- (aa) *The ethic of stewardship;*
- (b) *The efficient use and development of natural and physical resources;*
- (ba) *the efficiency of the end use of energy;*
- (c) *The maintenance and enhancement of amenity values;*
- (d) *Intrinsic values of ecosystems; and*
- (f) *Maintenance and enhancement of the quality of the environment.*



5.2.3 Section 8 – Treaty of Waitangi

Section 8 of the RMA states:

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

5.3 Assessment

The proposal is considered to be consistent with these relevant provisions under Sections 6 to 8 of the RMA as follows:

- There is neither significant indigenous vegetation nor significant habitats of indigenous fauna within the subject area of the reserve. The majority of indigenous vegetation that requires removal is considered to be negligible in relation to the established trees and other vegetation that provides the existing setting. The clearing of overgrown weed species within the area, coupled with replacement planting, will add to the revitalisation of the existing landscape;
- Consultation with the local Iwi for the area will continue to be undertaken to ensure that their culture and traditions and their ancestral land, water, sites, waahi tapu and other toanga will not be adversely affected by the proposed works;
- The completed project will provide an enhancement to the amenity values of the area through the proposed replanting, a reduction in the rate of overflows within the watercourse, a potential reduction in odour levels and the provision of a more visually appealing area to the general public;
- The installation of the proposed storage tank will have a significant improvement in the function of the stream and the estuarine habitats; and
- The required physical works will not compromise the quality of the environment or any finite characteristics of natural and physical resources.

It is considered that there will be a direct improvement to this existing environment as a result of the works that will be undertaken. Overall the proposal is considered to promote the sustainable management of a physical resource in accordance with Part II of the Resource Management Act 1991.



5.4 RMA Considerations – Regional Consent Assessment

5.4.1 Section 93/94 Assessment

For an activity to be processed without public notification it must meet the relevant requirements of Sections 93 & 94 of the Resource Management Act 1991.

Sections 93 & 94 of the Resource Management Act 1991 (The Act) states that:

93. When public notification of consent applications is required

- 1) A consent authority must notify an application for a resource consent unless –*
 - (a) The application is for a controlled activity; or*
 - (b) The consent authority is satisfied that the adverse effects of the activity on the environment will be minor.*

The proposed activity is controlled under the Auckland Regional Plan: Air, Land and Water and a restricted discretionary under the Auckland Regional Plan: Sediment Control.

Section 94A of the Act further states that:

94A. Forming opinion as to whether adverse effects are minor or more than minor

When forming an opinion, for the purpose of Section 93, as to whether the adverse effects of an activity on the environment will be minor or more than minor, a consent authority-

- (a) May disregard an adverse effect of the activity on the environment if the plan permits an activity with that effect; and*
- (b) For a restricted discretionary activity, must disregard an adverse effect of the activity on the environment that does not relate to a matter specified in the plan or proposed plan as a matter for which discretion is restricted for the activity; and*
- (c) Must disregard any effect on a person who has given written approval to the application.*

It is considered that the actual and potential effects of the proposal may be assessed by reference to the relevant development controls, the assessment criteria contained in the relevant Plans and any other adverse effects considered relevant to the proposal.



A detailed assessment of the potential adverse effects associated with the proposal is provided in Section 6 of this report.

5.4.1.1 Section 94c

It is not considered that any special circumstances exist in relation to the subject resource consent applications to the ARC, which would warrant full notification.

5.4.1.2 Consultation

Consultation has been undertaken with a number of parties and this is detailed in Section 7 of this report.

5.4.1.3 Notification Conclusion

Based on the assessment undertaken it is concluded that any potential adverse effect of the proposed works for which ARC consent is sought (streamworks, earthworks and impervious areas) will be no more than minor and limited to the immediately surrounding environment. However, some of the land on which the required works are to be undertaken is in private ownership. If written approval of these landowners for the proposed works is not provided, limited notification may be considered.

NOTE: The notice of requirement for the proposed designation will be processed by Auckland City Council on a notified basis in accordance with Section 169(2) of the Resource Management Act 1991.



5.4.2 Section 104 Assessment

5.4.2.1 National Policy Statements

The only operative National Policy Statement is the New Zealand Coastal Policy Statement (NZCPS - 1994). There is also a proposed National Policy Statement on electricity transmission and freshwater management. None of these documents are considered relevant to this proposal.

5.4.2.2 Auckland Regional Policy Statement

The Auckland Regional Policy Statement (ARPS) is a statement about managing the use, development and protection of the natural and physical resources of the Region. It sets in place the policy for promoting the sustainable management of these resources. Its aim is to provide greater certainty over the ways that natural and physical resources are to be managed and hence create an awareness of the constraints and opportunities in this region.



5.4.2.2.1 Regional Overview and Strategic Direction

The ARPS recognises that regional infrastructure, such as that applicable to drainage reticulation, are essential to the community's social and economic wellbeing.

Policy 2.6.7 (Regionally Significant Infrastructure or Services) of the RPS states that:

The safe and efficient operation of existing Regional infrastructure and the provision of necessary new Regional infrastructure is to be enabled, planned and undertaken in ways that:

- Give effect to Part 2 of the RM Act;

Two of the key reasons for the provision of new infrastructure, as identified under Part 2.6.9 of the ARPS, are:

- The need for expansion, replacement or upgrading of infrastructure in order to avoid environmental problems and/or increase the capacity of infrastructure to accommodate growth; and
- The need to avoid, remedy or mitigate the adverse effects generated by proposed changes to infrastructure and to consider alternative ways of avoiding or remedying them. Relocation of infrastructure or restrictions on the location of infrastructure or restrictions on the establishment of sensitive land uses in close proximity may be required to overcome the environmental problems faced.

Assessment

- The construction of the proposed storage tank will, once in operation, alleviate the adverse effects of overflows that the existing wastewater system experiences in the event of excess stormwater volumes.
- The works will be undertaken within recreation reserve land and close to adjoining residential development. The required construction methodology and procedures will be structured to ensure minimal disturbance of the existing amenity within the area.
- It is considered that this new infrastructure will give promote the sustainable of a physical resource in accordance with Part II of the RM Act, in particular that it will mitigate the adverse effects associated with the current overflow of diluted sewage on the immediate environment.



5.4.2.3 Proposed Auckland Regional Plan: Air, Land & Water

The relevant objectives and policies with regard to this aspect of the application are provided in **Appendix D** to this report. Analysis with regard to these objectives and policies is provided below. Assessment against the relevant criteria is provided in Section 6.13.1 of this report.

Objectives and Policies

The key objectives and policies seek to provide for regionally significant infrastructure in, on or under the beds of lakes and permanent rivers or streams where this is the best practicable option with respect to protection of the environment and enabling the wellbeing of people and communities. However, any such development must be undertaken in a manner which will maintain and enhance the natural characteristics of lakes and permanent rivers and streams in the region and avoid, remedy or mitigate effects upon the environment.

In summary, the plan requires that development shall promote the efficient use of the lake, permanent river or stream and ensure consistency with the Urban River and Stream Management Framework. Significant adverse effects on the physical characteristics of the waterbody including the morphology and flow hydraulics, effects on ecological and habitat values and on the surrounding environment inclusive of recreational and amenity values resultant from the development shall be avoided, remedied or mitigated. In addition, development shall not exacerbate the flooding of land either adjacent to the activity or further upstream or downstream.

The following discussion provides an assessment of the relevant objectives and policies with respect to the subject proposal:

Assessment

The proposal involves the construction of a wastewater storage tank within the Newmarket Park Reserve. The purpose of the project is to reduce the number of overflows and the volume of these overflows, which will have significant ecological benefits to the stream and, in particular Hobson Bay, that is especially affected by sewage overflows. The project will address current cumulative effects rather than create further issues.

As discussed in Section 4.2 of the report, the location of the proposed storage tank facility within another site, outside of Newmarket Park, would be impractical and therefore not considered a feasible option. The area in the vicinity of the existing CSO, outside of the park, is urbanised with Watercare's Branch 3 sewer running under private properties, the railway and commercial properties in Newmarket. Positioning a storage facility in these areas would be extremely



disruptive and may require extensive piping between the existing sewer and the facility and would have significant construction costs associated with it.

A number of locations for the tank were reviewed during the early stages of the design as there are a number of constraints that influence the position of the tank. Options for locating the tank completely in the gully slope were discounted primarily due to the geotechnical risks associated with cutting into slopes with existing slip zones and a history of slips. Given these constraints, it was decided that locating the tank upstream of MH14 would allow it to be built above ground, utilising the height available from the Branch 3C sewer.

Additional impervious area within the reserve will be required to provide adequate width and manoeuvring area to the existing access road for construction vehicles. The metalled access track is flanked by grassed and planted areas and the stream, which is considered sufficient to provide adequate permeable area and drainage in the event of run-off from this surface (as occurs currently). To allow for adequate surface run-off from the access path on the tank, the path will be designed with a fall to allow for surface run-off into the planted areas.

Whilst the project will result in the disturbance of the bed of the Newmarket Stream and the placement of structures within the stream resulting in the loss of approximately 40 – 50m of the concrete lined stream bed and channel, it is considered that the associated effects on the environment will be no more than minor. An ecological assessment of the proposal by Boffa Miskell Limited, confirmed that the Newmarket Stream is a highly degraded environment. The habitat within the stream is 'severely limited' by the straight, shallow, concrete lined bed and channel. Thus, the proposal will have negligible adverse ecological effects on the existing terrestrial and freshwater species and habitats. The required works will not compromise the quality of the environment or any finite characteristics of natural and physical resources. Erosion and Sediment Control Measures in accordance with ARC TP 90 will be implemented to ensure that any adverse effects on the watercourse are minimised. The stream does not contain any fish species, thus fish passage will not be an issue as a result of the temporary diversion. Additionally, it is considered that no cumulative effects will result from the proposed works.

It is considered that the nature of the stream including the flow hydraulics and stream morphology (given it is a concrete lined channel) will remain the same, without any additional loss of habitat as a result of the proposed culvert and storage tank. The proposal will not result in impediments to water flow during flood conditions.



Whilst the section of the Newmarket Stream covered by the tank will not be able to be accessed by the public following construction of the tank, the remainder of the Newmarket Stream will remain accessible to the public. Thus, it is considered that any effects with respect to the maintenance of public access along the Newmarket Stream are considered no more than minor.

The proposed works are considered consistent with the objectives and policies of Chapters 2.1, 2.2 and 2.3 and the Urban River and Stream Management Framework. It is considered that the completed project will provide an enhancement to the amenity values of the area through the proposed replanting, a reduction in odour levels and the provision of a more visually appealing area to the general public. It is anticipated that the installation of the proposed storage tank will have a significant improvement in the function of the stream and the estuarine habitats. The works will ensure that the wastewater system can serve the community and reduce the current adverse effects in the catchment resulting from the current overflows. Thus, the proposed works will result in the protection of the environment, and enable the community to provide for their health and safety, economic, social and cultural wellbeing.

As stated, an application to the ARC to continue discharge of contaminants from multiple structures within the Hobson Bay Catchment, including Newmarket Gully, was lodged by Watercare in 2001. The application (No. 25106, File Ref. 15585) remains with the ARC for processing. The existing authority for the overflow continues in force until the renewal application is finally determined. The overflow from the proposed storage tank is from the same catchment and sewer as that described in the consent application for the Hobson Bay Catchment and is a discharge into the same receiving environment. The Newmarket Gully CSO Mitigation project is specifically intended to reduce the extent of the overflows and the associated adverse effects.

It is considered that the project will result in the use and development of natural and physical resources in a sustainable, efficient and integrated manner that is consistent with the strategic growth management provisions of the Auckland Regional Policy Statement and the Auckland Regional Growth Strategy. In addition, the project will support increased urban densities within the Newmarket Catchment, while maintaining and enhancing the in-stream environment of the Newmarket Stream and the downstream environment of Hobson Bay.

The proposed works has the potential to assist in the sustaining of the mauri of natural and physical resources in ways which enable provision for the social, economic and cultural wellbeing of local iwi, by way of reducing the number of overflows from the combined sewer overflow occurring during wet weather.



Overall, the proposal is considered to be consistent with the objectives and policies of the Auckland Regional Plan: Air, Land and Water.

5.4.2.4 Auckland Regional Plan: Sediment Control

The Objectives and Policies of the Auckland Regional Plan: Sediment Control considered relevant are addressed below. Assessment against the relevant criteria is provided in Section 6.13.2 of this report.

Objectives

Objective 5.1.1 Maintain or enhance the quality of water in water bodies and coastal water.

Objective 5.1.2 Sustain the mauri of water in water bodies and coastal waters, ancestral lands, waahi tapu and other taonga.

Objective 7.1.1 Reduce the exposure of land to the risk of surface erosion leading to sediment generation.

Objective 7.1.2 Minimise sediment discharge to the receiving environment.

Policies

Policy 5.2.1 Land disturbance activities which may result in the generation and discharge of elevated levels of sediment will be required to employ methods which avoid, remedy or mitigate adverse effects on the quality of water in waterbodies and coastal waters.

Policy 7.2.1 The extent and duration of vegetation removal and earthworks will be minimised.

Policy 7.2.2 Strategies and initiatives which prevent and limit sediment generation from earthworks will be developed and implemented.

Assessment

The project area will be located both within and adjacent to the Newmarket Stream. The proposed location of the new storage tank facility will be at the head of the gully and will be constructed over the existing stream and energy dissipation structure at the stream outlet. Earthworks / tracking will be required for the excavation and re-contouring of areas for the proposed tank and access road areas, located adjacent to the stream. It is estimated approximately 2000 - 4000m³ of excavation and approximately 4000m³ of fill will be required for



the project. The area of earthworks for the proposed tank is approximately 3770m², and the area of earthworks for the proposed access road upgrade is approximately 1000m² (refer to SKM Drawing No: 2005317.028 in **Appendix A**). An Ecological Assessment of the proposal and any effects on the Newmarket Stream and the Hobson Bay receiving environment has been undertaken by Boffa Miskell Limited. The assessment found that the Newmarket Stream is of very poor ecological quality, has been subject to extensive modification and is characterised by a shallow, concrete lined bed and channel.

Despite the degraded nature of the Newmarket Stream, a great deal of effort will be put into the implementation of sediment and erosion control mitigation measures to ensure that the potential adverse effect on the environment as a consequence of the proposed works are minimised and the works will have a no more than a minor effect on the surrounding environment. The erosion and sediment control measures will enable the mauri of the stream and the receiving coastal environment to be sustained.

Erosion and Sediment Control measures will be implemented for the duration of the proposed works to prevent the discharge of sediment laden water into the adjacent watercourse. Such measures are likely to include the use of silt fences and the placement of geo-textile material on the banks of the Newmarket Stream to prevent the discharge of sediment into the Newmarket Stream and the downstream receiving environment. All measures will be in accordance with the Auckland Regional Council Council's TP90 'Erosion and Sediment Control – Guidelines for Land Disturbing Activities, 1999'. In addition, the works will be undertaken in a manner which minimises the extent and duration of the earthworks and thus the area of exposed earth, thus minimising the potential for sediment discharge in the watercourse.

An Erosion and Sediment Control Plan will be submitted to the ARC for approval, prior to the commencement of earthworks.

5.4.3 Section 104(1)(c) - Other Matters

There are no other matters that are considered relevant and reasonably necessary to determine the application.



5.5 RMA Considerations – Notice of Requirement Assessment

5.5.1 Section 171 Assessment

Section 171 of the RMA – Recommendation by a Territorial Authority – sets out the matters that must be given regard to by a territorial authority when considering a Notice of Requirement. This section of the Act states that:

- 1) *When considering a requirement and any submissions received, a territorial authority must, subject to Part 2, consider the effects on the environment of allowing the requirement, having particular regard to –*
 - (a) *Any relevant provision of –*
 - i) *A national policy statement;*
 - ii) *A New Zealand coastal policy statement;*
 - iii) *A regional policy statement or proposed regional policy statement;*
 - iv) *A plan or proposed plan; and*
 - (b) *Whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work if –*
 - i) *The requiring authority does not have an interest in the land sufficient for undertaking the work; or*
 - ii) *It is likely that the work will have a significant adverse effect on the environment; and*
 - (c) *Whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought; and*
 - (d) *Any other matter the territorial authority considers reasonably necessary in order to make a recommendation on the requirement.*
- 2) *The territorial authority may recommend to the requiring authority that it –*
 - (a) *Confirm the requirement;*
 - (b) *Modify the requirement;*
 - (c) *Impose conditions;*
 - (d) *Withdraw the requirement.*
- 3) *The territorial authority must give reasons for its recommendation under subsection (2):*
 - (a) *Whether the designation is reasonably necessary for achieving the public work;*
 - (b) *Whether adequate consideration has been given to alternative sites or methods of achieving the public work;*



(c) Whether the nature of the public work means that it would be unreasonable to expect the requiring authority to use an alternative site or method;

The above matters are addressed below.

5.5.1.1 Section 171(1)(a) i) - National Policy Statements

Please refer to Section 5.4.2.1 of this report.

5.5.1.2 Section 171(1)(a) iii) - Auckland Regional Policy Statement

Please refer to Section 5.4.2.2 of this report.

5.5.1.3 Section 171(1)(a) iv) - Auckland City Operative District Plan 1999 – Isthmus Section

The Operative District Plan (“The Plan”) for the Auckland Isthmus area provides guidance for land development and sets out the relevant objectives and policies that it looks to achieve.

The relevant sections of this district plan to the proposal are:

- Part 4A Network Utility Services
- Part 5C Heritage (Trees)
- Part 9 Open Space and Recreational Activity

5.5.1.3.1 Network Utility Services

The Plan has aimed to adopt an approach that maintains a high environmental quality of the district while providing for the development, use, maintenance and upgrading of network utility services to meet the reasonable needs of the businesses and residents of the City. The Plan recognises that while there is a need to provide such infrastructure, a process is required whereby the quality of the visual environment is protected and, where practical, enhanced.

The key objectives and policies applicable to new network utility service development is provided for in Part 4A.4 of the Plan and is as follows:

Objectives

- *To maintain high levels of infrastructure which provide for the citizens of the district;*
- *To ensure that activities and development recognise the constraints of servicing capabilities;*
- *To monitor the development of the Isthmus so that growth may be balanced with the environmental capacity of the district.*



- *To allow for the provision of new network utility services whilst mitigating adverse environmental effects.*

Policies

- *By providing for new network utility services, provided that any adverse effects on amenity values are avoided, remedied or mitigated.*
- *By ensuring that proposed network utility services which may create significant adverse effects on the environment are subjected to an assessment procedure and that any adverse effects are avoided, remedied or mitigated where practical.*

Assessment

A detailed options study has been undertaken, which concluded that the proposed storage tank facility was determined to be the best practicable solution to address the current overflow issues pertaining to the existing system. It is considered that the completed project will provide some revitalisation to the area, in particular through the proposed replanting and overall reduction in the frequency of overflows within the stream. The proposed storage tank will significantly reduce adverse effects associated with overflows within the Newmarket Stream, in particular the adverse odour levels and the actual stream overflows.

The construction, operation and maintenance of the proposed facility will be undertaken to ensure adverse effects on amenity values are avoided, remedied or mitigated to the greatest extent possible.

A detailed assessment of effects is provided in Section 6 of this report, in which it is concluded that the adverse effects associated with the proposed project will be no more than minor.

5.5.1.4 Heritage (Trees)

The Plan makes provision for the protection of trees over a certain size throughout the district, including trees planted within reserve land. The purpose of this is to ensure that the existing general tree cover within the city is retained and to reduce the risk of serious or irreparable damage being done to the local environment through unnecessary or undesirable tree removal.

The Plan acknowledges that tree works will be required in certain circumstances, whether it involves trimming, works within a drip line or complete removal, but aims to ensure that any work is neither done in haste nor executed without care.

As such the main objective for generally protected trees in the region is to retain them, including groups of trees, which significantly contribute to the district's amenity. This is done by protecting mature trees and groups of trees as an important character element in maintaining and



enhancing the environment of the district, as well as continuing the practise of planting trees in public reserves and protecting these from unnecessary interference or destruction.

Assessment:

The necessary construction works will require the removal of a variety of vegetation within the reserve, which is detailed in the arborist report prepared by Treecare Services Limited, which is included at **Appendix E** of this report.

The report details the required clearing of trees and other vegetation for the construction works. As stated in the report, the proposal will require the clearing of several generally protected trees, however the main area of vegetation subject to clearance is non-protected and in the form of weeds.

The implementation of tree protection measures will ensure the health and safety of the surrounding trees will not be compromised by the proposed works. To compensate for tree removal, replanting will be undertaken at the completion of the project in the area of the proposed works.

5.5.1.4.1 Open Space and Recreation Activity

The recreation reserve land subject to this designation proposal is zoned Open Space 2.

Open Space 2 zoned land is recognised as land set aside for the enjoyment of informal recreation, with several of the zones main policies aiming to maintain the visual amenity of the area and to restrict the removal of native trees and bush.

Recognised for its scenic, heritage, natural or habitat value, it is the intent of the zone's strategy that the natural character and any features of value within this zone are conserved. As such one of the main policies for this zone is restricting earthworks and the removal of native trees and bush. The effect of the zone will be to protect the finite characteristics of natural resources and to conserve open space and the particular features of ecological, scenic, heritage, natural or habitat value.



Assessment:

The Newmarket Park Reserve provides areas that allow for both passive and active recreation. It is acknowledged that the construction phase of the project will limit public access within the park, as the lower access road subject to the construction works will be off-limits to the public for health and safety reasons. However, this will be temporary and limited to the construction period. The upper area of the reserve, which provides an area for both passive and active recreation, will not be compromised by the proposed works.

As stated previously, the required vegetation removal for the vehicle access and the tank development itself predominantly comprises weeds, which have significantly overgrown within the area. Replacement planting of this area would take place at the completion of construction of the proposed storage tank and access roads.

5.5.1.4.2 Newmarket Park: Reserve Management Plan

Newmarket Park is administered by the Auckland City Council through the Newmarket Park Management Plan, under the Reserves Act. The management plan outlines the Council's intentions for the use, development and maintenance of the reserve. The following provides an assessment of the relevant objectives and policies of the Management Plan.

8.1 Role of the park

Objective 1

To manage and protect the natural attributes of the Park and encourage the enhancement of these.

Assessment:

The proposal will support this objective. The proposal will generate positive ecological effects in relation to the Newmarket Stream, the Hobson Bay receiving environment and the vegetation of the Park. The proposed storage tank will improve the quality of the stream by reducing the frequency and volume of overflows. The construction phase will require the removal of existing noxious vegetation that will be replaced with native species.



Policy 1.1

Undertake enhancement of the street appeal of the Park so that it has a greater visual impact on the local environment, particularly at the Ayr Street frontage and through the visual linkage with the adjoining Council owned land at the intersection of Ayr Street and Bassett Road.

Assessment:

The proposed area of works will not be visible from nearby street frontage.

8.2 Vegetation management

Objective 2

To ensure vegetation management addresses the issues of weed clearance, ecological enhancement, passive surveillance and land stability.

Assessment:

The proposal will be in accordance with this objective. The construction of temporary and permanent access routes for the construction phase will require vegetation removal within defined areas of the reserve where specific works are required. A mix of noxious weeds, exotic species and some generally protected species characterizes the adjacent surroundings. Generally protected species will be retained where practicable, whilst noxious weeds will be removed to facilitate construction. The replacement planting will feature native species to enhance the immediate environment, and encourage growth of native species within the Park. The replacement and enhancement planting will be designed to mitigate the modified landform created by the underground tank, while maintaining sight lines and avoiding the creation of places of concealment. It is considered that the proposed vegetation removal will not affect the stability of the adjacent bank.



Policy 2.1

Undertake the development of a vegetation management strategy which will set out a programme of weed eradication and appropriate replanting, building on the existing native vegetation.

Assessment:

The proposal will not contravene this policy. Watercare propose to undertake planting to replace vegetation removed as part of the construction phase. A further aim of the planting will be to mitigate the appearance of the modified landscape, and to enhance the general appearance of the immediate surroundings. As described previously, this will include the removal of noxious weeds and the planting of native species within the area of works.

Policy 2.2

Ensure the vegetation management strategy includes weed clearance techniques which will not threaten land stability, avoiding chemical sprays where appropriate in accordance with current practice as outlined in the weed management policy of Council.

Assessment:

The vegetation management strategy for the replacement planting will be developed in accordance with Council's weed management policy, and with this policy.

Policy 2.4

Ensure future planting and maintenance will foster bird and other wildlife in the Park.

Assessment:

The proposed replacement planting will utilise native species that will have positive ecological effects on the Park. It is considered that the outcome of this planting will be supportive of this policy. Details of the proposed replanting and tree protection measures applicable to the required works will be addressed in more detail in the Outline Plan of Works to Council.



Policy 2.5

Ensure existing vegetation and new planting are designed to encourage passive surveillance within and from outside the Park.

Assessment:

The proposed planting will be designed to protect sightlines and avoid the creation of blind spots and opportunities for concealment. The design of the project has been finalized in consultation with adjacent residential property owners to address security concerns. The location and orientation of the residential dwellings at these properties contribute to passive surveillance of this area of the Park.

8.3 Future uses

Objective 3

To enhance the opportunity for the general public to use this reserve for a variety of passive recreation purposes.

Assessment:

The proposed storage tank will not interfere with the opportunity for passive recreational activities within the Park in the long term. The proposed location for the tank is adjacent to an existing walkway along the gully above Basset Road. During the construction phase of the project, the walkway directly adjacent to the proposed area of works will be unavailable to members of the public, for health and safety reasons. The construction site will be cordoned off appropriately, however this will limit public access to this area of the Park during all or part of the construction period. It is anticipated that the construction phase will be in the order of 18 months. Following the completion of the works, the walkway will be reinstated and available to the public.



Policy 3.1

Ensure that all proposed future uses for the Park are assessed in terms of the spatial qualities and passive recreational role of the Park, with particular emphasis on serving the local community.

Assessment:

The wastewater storage tank will not detract from the passive recreational role of the Park, as the proposed structure will be buried and landscaped accordingly. The tank will be located above the existing stream, which is currently inaccessible, and therefore the proposal will not be taking up any existing recreational space.

Policy 3.2

Ensure that any proposed activities are compatible with the character of the Park and will not generate unacceptable levels of traffic, noise, night lighting, nor have any negative impacts on the passive recreation values and local community use of the reserve.

Assessment:

The construction phase will generate a number of vehicle movements and noise from construction machinery. The volume of traffic movements and noise will vary over the course of the construction period depending upon the nature of the equipment and activities to be carried out. The construction phase will have an impact upon the use of the walking track adjacent to the proposed area of works, as public access will be curtailed as a health and safety precaution.

Once complete, the operation of the storage tank will generate minimal traffic movements and noise associated with scheduled maintenance work. These activities will have minimal impact upon the character and recreational values of the Park.



Policy 3.3

Ensure that any future use has a need to be located in the Park, with reference to other opportunities provided elsewhere in the city.

Assessment:

The Newmarket Stream is severely degraded from wastewater overflows from infrastructure networks throughout the Park. The proposed location of the storage tank was identified as the most appropriate to address the adverse ecological effects generated by the frequency and volume of overflows, prior to the marine receiving environment.

8.4 Access

Objective 4

To ensure pedestrian and vehicle access to the Park, and pedestrian linkages through the Park are sufficient to provide for public use while protecting the passive recreational amenities of the Park.

Assessment:

Although the proposed construction works will limit pedestrian access to part of the walkway within the Newmarket gully, access will be fully restored once construction is complete.



8.6 Buildings

Objective 6

Limit the number of buildings on the Park to those which are appropriate within the District Plan zoning and complement the passive recreation amenity of the Park.

Assessment:

The proposed storage tank falls within the definition of a building under the Auckland City District Plan – Isthmus Section, being located more than 1 metre above ground level. The tank is designed to sit above the existing energy dissipation structure within the Newmarket Stream, and will be approximately 5m above ground level at its highest point. Extensive landscaping to mitigate any adverse visual effects will screen the structure. The proposal will improve the ecological quality of the stream, and will enhance the passive recreation amenity of the surrounding gully.

Policy 6.1

Ensure buildings proposed to be located on Newmarket Park comply with the following criteria:

Are directly related to the community based passive recreation role of the Park and cannot be accommodated more appropriately elsewhere;

The impact(s) of any future building on the visual integrity of the Park and its landscape setting is minimal and that the buildings physical presence does not compromise the use of the Park for passive recreational purposes.

Assessment:

The project will benefit community based passive recreation through reduction of overflow and odour effects. The project location and the consideration of alternative locations have been discussed earlier in section 4.2. It was considered that the proposed location was the most appropriate, as an alternative location outside of Newmarket Park would have required extensive piping between the CSO and the facility. Taking into consideration geotechnical risks, access and proximity to neighbouring properties, the proposed location is the most appropriate and will have



the least impact upon the passive recreation role of the Park. The visual impact of the tank will be mitigated by landscaping that will improve the landscape values of the gully.

8.9 Water quality

Objective 9

To provide for a safe environment in which children can enjoy the Park and the public generally are not disturbed by unpleasant influences on the environment.

Assessment:

The proposal will support this objective. The proposed storage tank will have a positive impact on the amenity of the stream by reducing the number of wastewater overflows and associated adverse effects such as odour. Further, the proposal will involve the removal of noxious weed species, and replacement planting of native species, that will contribute to an attractive passive recreation space.

Policy 9.1

Ensure improvements to the existing drainage infrastructure and further public utility systems will be subject to the provisions of the RMA and shall be designed to minimise any impact on the Park and the enjoyment of the Park for passive recreation purposes.

Assessment:

The proposal will be consistent with this policy. The proposal is the subject of the current application and will require consents from the Auckland Regional Council, as per the Resource Management Act 1991. The proposal has been designed to generate positive effects upon the nature of the Newmarket Stream and the receiving environment, which will be of benefit to visitors to Newmarket Park.



Policy 9.2

Ensure Council cooperates with Watercare Services Ltd and Metrowater to reduce odour effects and pollution in the adjacent water course and leakages which may impact on land stability in the Park.

Assessment:

The current application has been prepared following consultation with Auckland City Council officers and Metrowater. Where possible, suggested amendments to the proposed design have been incorporated.

Policy 9.3

Retain the vehicle accessway across the Park for servicing existing drainage infrastructure but keep closed to other than service vehicles.

Assessment:

The proposal will not remove the existing vehicle accessway, in accordance with this policy. However, this accessway will be upgraded for the construction phase of the project..

5.5.1.5 Section 171(1)(b) - Alternative Sites / Routes / Methods

An assessment of the alternative sites applicable to the proposed development is addressed under Section 4.2 of this report.

5.5.1.6 Section 171(1)(c) - Achieving the objectives of Requiring Authority

Watercare's mission is:

To provide water and wastewater services that are economically viable, environmentally sound, socially responsible and responsive to customer needs

The storage tank development is considered to be reasonably necessary to achieve Watercare's objectives, in particular as the development will provide for:

- A reduction in the volume and quantity of wastewater overflows to Newmarket Stream;
- A potential reduction in odour levels emanating from the subject area;
- An improvement in the function of the stream and estuarine habitats; and



- The enhancement of a portion of the reserve with lower amenity, which can be complemented further through future replanting programmes co-ordinated by Council.

5.5.1.7 Section 171(1)(d) - Other Matters

There are no other matters considered reasonably necessary that the territorial authority needs to be aware of in order to make a recommendation on the requirement.



6. Assessment of Environmental Effects and Mitigation Measures

The actual and potential effects pertaining to the construction, on-going operation, maintenance and repair of the proposed storage tank are identified and addressed in the following section. The effects considered are:

- Ecological Effects ;
- Neighbourhood / Recreational Amenity;
- Effects on Trees and Vegetation;
- Visual and Landscape Effects;
- Construction Effects;
- Traffic Effects;
- Noise Effects;
- Hazardous Substances;
- Odour Effects;
- Stormwater Run-off;
- Effects on Existing Network Utility Services; and
- Cultural / Archaeological Effects.

6.1 Ecological Effects

Boffa Miskell Limited (BML) has prepared an Assessment of Ecological Effects on the Newmarket Stream and Hobson Bay for the current proposal, which is included in **Appendix C**. The BML assessment found that the benefits associated with the installation of the wastewater storage tank include the significant improvement in the function of the stream and the estuarine habitats.

The BML assessment identified the following activities that may give rise to adverse ecological effects:

1. Clearance of indigenous vegetation;
2. Loss of significant specimens of flora;
3. Increases in the extent of edge effects;
4. Fragmentation of habitats;
5. Disturbance to wildlife;



6. Construction phase earthworks and sedimentation of streams;
7. Sediment and contaminant inputs to the coastal marine area; and
8. Loss of in-stream habitat.

Of these potential adverse ecological effects, the most significant to the current proposal are the sedimentation of the Newmarket Stream, the marine environment of Hobson Bay from the construction phase, the required culverting of the stream over a length of 43m and the potential loss of stream habitat.

The habitat of the Newmarket Stream and the marine receiving environment are currently ecologically compromised. The habitat within the stream is 'severely limited' by the straight, shallow, concrete lined bed and channel and is extremely degraded. Sedimentation from the construction phase would have very little impact on the stream due to the highly modified (concrete) environment. However, it would be appropriate to employ best practice erosion and sediment controls, in accordance with the ARC Technical Publication 90, to avoid exacerbating the already polluted stream and marine environment.

The proposed culvert will replace an existing concrete channel. In this way, the nature of the stream will remain the same, without any additional loss of habitat. It is considered that the proposal will have negligible adverse ecological effects on the existing terrestrial and freshwater species and habitats.

The purpose of the project to reduce the number of sewer overflows and the volume of these overflows will have significant ecological benefits to the stream and, in particular Hobson Bay, that is especially affected by sewage overflows. It is considered that these benefits are sufficient mitigation for the loss of 43m of the concrete lined stream bed and channel.

6.2 Neighbourhood / Recreational Amenity

Amenity is defined in Section 2 of the Resource Management Act 1991, as:

"...those natural and physical qualities and characteristics of an area that contributes to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes".

The amenity values and neighbourhood characteristics of an area are those special qualities, in particular natural and physical characteristics, which make an area unique and different.

- The lower gully region of the reserve, which is subject to the proposed works, has a predominantly residential viewing audience who adjoin onto the land. The current outlook



these residents in the area are exposed to is at present an array of overgrown weeds, which is not considered to be a visually vibrant area of the overall reserve. The proposed construction works will require the clearing of a large area of this vegetation for the necessary building footprint, which in turn will be largely replanted at the completion of the works.

- It is acknowledged that the construction phase of the project will have an impact on the existing amenity of the area, in particular the immediately adjoining landowners, such as effects relating to noise, visual appearance and restrictions on access through the reserve; however this will be temporary in nature and restricted to the construction period. Furthermore, the implementation of a construction management plan will provide mitigation measures that will minimise the effects associated with the construction and operation of the storage tank on the immediately surrounding environment.
- The existing access road traverses across the lower end of 3 Youngs Lane, which will require earthworks and the clearing of vegetation within this lower end of the site to facilitate an adequate turning area for vehicles. It is considered that these works will have a no more than minor effect on the existing amenity of this property, as the area subject to these works is currently overgrown with unprotected vegetation and physically removed from the upper portion of the site that will accommodate a future apartment development. Where required, areas within the site will be appropriately reinstated. Furthermore, it is noted that a 20m Esplanade Reserve, which includes this area of land subject to works, is intended to be vested to Council by the landowner prior to the commencement of development on this site.
- The works at the lower end of 66 Middleton Road will involve the reconstruction of the existing stream bank and some temporary works within the lower end of the property during the construction phase. Again the effects associated with these works are considered to be no more than minor, as they will be temporary and specific to the construction period. Where required, areas within the site will be appropriately reinstated.
- From a visual perspective it is considered that the burying of the tank, coupled with the proposed planting at the completion of the works, would not be obtrusive to the surrounding area but will re-assimilate into the existing recreational setting. Based on the above, it is considered that the completed works will be a visual improvement to the area and improve its aesthetic presence within the area.



6.3 Effects on Trees and Vegetation

The construction phase of the facility, including the upgrading of the access road and associating turning areas within the reserve land, will involve the removal of a variety of vegetation within the site, which will consist mainly of weed species and some generally protected trees. This aspect of the development has been assessed by Treecare Services Limited, whose report is at **Appendix E**.

The bulk of the vegetation to be cleared within the park consists of swathes of rampantly spreading scrambling/climbing weeds among relatively-recently planted to established young natives, together with occasional weedy tree species (tree privet and brush wattle in particular). Heights ranging up to 7m or so are typical for the native vegetation. An occasional established young to early-mature tree to 8 or 9m in height is representative of the largest of the native trees to be removed. Under the rules of the Auckland City Operative District Plan 1999 – Isthmus Section, all native vegetation in the park would be protected, regardless of size.

A row of eleven (11) pussy willows (weeds) and several large tree privets (again weeds) will need to be removed from 3 Youngs Lane, together with a few small/young native trees among the privet and willows. Two ring-barked 15m privet straddling the boundary of 3 Laxon Terrace and Newmarket Park would need to be removed at the same time as removing the 3 Youngs Lane trees.

In addition to the tree removals, occasional pruning of trees will be required within the park, typically to improve clearance for large trucks along the access track, and can be readily undertaken without compromising the long term health, character, or viability of the trees.

Appropriate tree protection measures will be initiated during the construction phase of the project so as not to compromise the health and safety of the trees and vegetation outside of the works area.

Replacement planting will be undertaken at the completion of the construction phase, which will be undertaken in liaison with Auckland City Council's Parks Division.

Subject to works being undertaken in accordance with appropriate tree protection measures, it is considered that the existing park setting will not be compromised.



6.4 Visual and Landscape Effects

Boffa Miskell Limited have prepared an assessment of the landscape and visual effects associated with the implementation of the proposal (see **Appendix F**). The assessment concludes that the proposal represents an improvement in overall site amenity, particularly when considering the wider environmental, public health and amenity value benefits. A Landscape Concept Plan is also included in **Appendix F** (refer to Figure 18). The plan was prepared in consultation with Auckland City Council Urban Design staff.

The subject site and the proposed storage tank will be visible from a number of private properties that overlook Newmarket Gully, in particular those on Laxon Terrace, Furneaux Way, John Stokes Terrace and Nos. 33 & 35 Maui Grove. These properties are orientated towards the northeast to capitalise on views of Hobson Bay and the Waitemata Harbour, with their focus drawn away from the subject site.

To minimise the visual impact of the proposed development on the surrounding area, the landscape concept plan incorporates some key design elements. These are:

- Re-vegetation of the access road widening areas where appropriate;
- Earth mounding over the tank to match existing terrain as far as practically possible; and
- Planting of the earth mound areas to tie in with the surrounding reserve area.

It is considered that the proposed changes to the subject site will improve the visual and landscape amenity of the gully, with minimal effects upon surrounding properties. The proposed storage tank and retaining walls will be screened by extensive planting, sympathetic to the surrounding natural visual character of the gully and Newmarket Park.

Based on this assessment, it is considered that the landscape and visual effects arising from the proposed construction and operation of the storage tank will be no more than minor.



6.5 Construction Effects

Construction works on the site for the proposed facility and required access roads would mainly involve the necessary excavations and vegetation clearance, the physical construction of the storage tank itself and the restoration of the land affected by the construction activities.

In addition to the required vegetation clearance, it is estimated approximately 2000-4000m³ of excavation and 3000-4000m³ of fill will be required for the project. Given the limited work area, it is proposed that excavated material will be predominantly stockpiled off site and returned at the completion of the works for the required burying of the tank. The area of excavation for the proposed tank is approximately 4500m². The proposed works will require some works within the stream, which is addressed under Section 3.1 and 6.1 of this report. It is proposed that earthworks will be staged, and progressively stabilised, to minimise the period through which areas of bare earth surface is exposed. In order to meet the required construction programme, it is envisaged that some earthworks may be undertaken outside of earthworks season. Authorisation to undertake this is sought from the ARC as part of this current consent application.

The construction phase of the project will be governed by a Construction Management Plan which, among others aspects, will address the following matters:

- Liaison with the relevant authorities, landowners/occupiers and general public;
- Proposed construction techniques;
- Dust control methods;
- Earthworks and sediment control measures, developed in accordance with the Auckland Regional Council's Technical Publication 90 (TP90);
- Noise and vibration; associated with use of construction equipment;
- Identification of proposed stockpiling and lay-down areas;
- Monitoring; and
- Construction hours.

Subject to adherence of this management plan, it is considered that any adverse effects on the surrounding environment during the construction phase will be no more than minor.



6.6 Traffic Effects (Construction and Storage Tank Operational Phases)

Construction activities pertaining to the project would involve traffic movements entering and exiting the site, which in turn will impact upon the traffic movements along Ayr Street.

During the construction phase of the project, six-wheeler tip trucks will be required for the removal of soil and importing of fill. Concrete trucks will be required during the construction of the storage tank, including flat-deck trucks that will deliver pre-fabricated units and reinforcing steel. It is estimated that during the construction period these vehicle will generate 1000+ traffic movements.

Based on the anticipated number of traffic movements during the construction phase of the project, a Traffic Management Plan would be prepared accordingly so that the works are undertaken in a manner that will ensure the safety of both motorists and pedestrians. In reference to vehicles entering and exiting the site, it is proposed that a left-in right-out system along Ayr Street operates during the construction phase for heavy vehicles (refer to SKM Drawing No: 2005317.011).

Once the storage tank is operational, under normal operating conditions only monthly visits by Watercare staff will be required, which will be undertaken in a standard utility vehicle. Six-monthly visits will be made to the site by Watercare staff in a Hiab truck, which has a mechanical crane and allows for equipment to be safely lifted on and off the truck.

6.7 Noise Effects (Construction and Storage Tank Operation Phase)

The construction phase of the project will require the use of heavy machinery for the necessary earthworks and construction of the storage tank itself,. The construction management plan will require the necessary construction works to be undertaken in accordance with NZS6803:1999 “Acoustics – Construction Noise”.

The proposed storage tank will not require any associated machinery or operating equipment, which could potentially generate adverse noise levels to the surrounding environment. As discussed, the proposed tank is to be buried, which in effect will provide a form of “acoustic covering” to the structure.

There will be noise generated by the periodic maintenance required and the operation of the storage tank facility, however it is considered that the noise levels associated with these aspects will be within the standards which apply to the Open Space 2 zone under the Auckland City Operative District Plan 1999 – Isthmus Section.



6.8 Hazardous Substances

The proposed storage tank development will not require the use, storage or handling of any hazardous substances during the construction phase of the project and operation phases of this facility. Should any soils to be removed from the site are found to be contaminated; these will be removed accordingly to a licensed landfill.

6.9 Stormwater Run-off

As previously stated, additional impervious area within the reserve will be required to provide adequate width and manoeuvring area to the existing access road for construction vehicles. The metallised access track is flanked by grassed and planted areas and the stream, which is considered sufficient to provide adequate permeable area and drainage in the event of run-off from this surface (as occurs currently).

At the completion of the development of the storage tank, the top of the tank is to be buried and planted over. Access will be provided on the tank roof for maintenance purposes. This area will not be covered with fill and will be designed with a fall to allow for surface run-off into the planted areas. This detail will be addressed at the detailed design stage. These planted areas will enable run-off to permeate in the immediately existing planted areas within the reserve.

6.10 Odour Effects

Odour levels which emanate from the CSO are unpleasant and considered offensive to both adjoining landowners and members of the public who utilise this area of the reserve. The provision of this new storage tank facility will aid in the removal of the current odour levels, as the existing CSO will be abandoned and the design of the tank will allow for the transmission of the odour laden air to Watercare's odour bed further down the access track. The existing odour duct in the Old Branch 3C sewer is to be retained and a new connection to the tank will be provided. Also, with the history of odour in this location, the risks associated with an uncleaned tank warrant a cleaning system, which will be installed and hence prevent the build up of odours.

6.11 Effect on Existing Network Utility Services

The following changes to network utility services will be made by this scheme:

- Newmarket Gully CSO chamber will be modified to divert flows to the new tank and the overflow within the chamber will be removed.
- Watercare's Branch 3 sewer and Old Branch 3 wastewater sewers will be removed where their location clashes with the proposed tank.



- A Metrowater 380mm diameter sewer will be diverted into the tank and the existing CSO structure demolished.
- At the intersection of the access track and Ayr Street, an electricity pole will require relocation as part of the access improvement works.

These proposed works are designed so as not to place undue pressure on the respective operation of these services, therefore the effects associated with these modifications are considered to be no more than minor.

6.12 Cultural Effects / Archaeological Effects

A review of the Auckland Regional Cultural Heritage Inventory (CHI) of the subject area has been carried out to determine recording of any archaeological sites within the subject land. The nearest recorded sites are located away from the area subject to works and in adjoining land. Records from the CHI, which show the location of these recorded sites, are provided in **Appendix G** of this report.

The area subject to the proposed works is highly modified, however there are some areas along the stream banks which have not been disturbed. As such, the area may hold archaeological remnants. Therefore, in the event that sub-surface archaeological evidence is unearthed during construction, work in the immediate vicinity of the discovery would cease and the NZ Historic Places Trust would be contacted.

If Koiwi (human remains) were uncovered, work in the immediate vicinity of the discovery would cease and the tangata whenua, the NZ Historic Places Trust and the NZ Police would be contacted so that appropriate arrangements could be made.

Consultation with Ms. Bernadette Papa of Ngati Whatua o Orakei has been undertaken. Ms. Papa highlighted the historical associations the iwi had with the Newmarket Stream, in particular the use of the stream for fishing and swimming. In addition, Ms. Papa spoke of the original course of the existing watercourse being upstream and originally in the form of a waterfall. Ms. Papa said that the provision of replanting and, if possible, the provision of a visual screening of prominent infrastructure within the reserve, would aid in the revitalisation of this area of reserve. These comments by Ms. Papa are acknowledged by Watercare and will be given further consideration at the detailed design and construction phases of the project.



6.13 Effects on Watercourses

6.13.1 Proposed Auckland Regional Council Air, Land and Water Plan

a) Placement of Structures and Diversion

The placement of the tank over the bed of the stream, including the proposed boxed culvert, is a controlled activity under Rule 7.5.8. The Council has reserved its control to the following matters:

Rule 7.5.8.1 The ARC will exercise its control over the following matters when assessing applications under Rule 7.5.8:

(a) The actual and potential adverse effects (including any cumulative effects) arising from the matters in the conditions of Rules 7.5.2 to 7.5.6 that the activity is unable to comply with, together with the following additional matters:

The proposed works are unable to comply with the following conditions:

Rule 7.5.5.1 (hh) For any culverting or piping of a river or stream in Urban Areas the nominal internal culvert diameter shall not exceed 900 mm, the actual internal diameter shall not exceed 920 mm and the cross-sectional area of any box culvert shall not exceed 0.67m² and multiple culverts shall not be erected or placed across the bed;

Rule 7.5.5.2 (a) The length of any new structure shall not exceed 30m in total when measured parallel to the direction of water flow, and no new structure shall be erected or placed in individual lengths of 30m or less where this would progressively encase or otherwise modify the bed of a Permanent river or stream;

Rule 7.5.6 (g) Any bed disturbance or deposition associated with the activity shall comply with the following conditions:

i) The length of bed disturbance upstream or downstream of the structure shall not exceed 10m each side. This disturbance length excludes the structure itself;

v) Machinery shall not sit directly on the wetted cross section of the bed at the time of the work;

As discussed earlier, an ecological assessment on the Newmarket Stream and Hobson Bay has been prepared by Boffa Miskell Limited for the proposed works. The report concluded that the habitat of the Newmarket Stream is currently ecologically compromised. The habitat within the stream is 'severely limited' by the straight, shallow, concrete lined bed and channel and is



extremely degraded. The stream does not contain any fish species, thus fish passage will not be an issue as a result of the temporary diversion. Overall, the effects resulting from the placement of the proposed culvert within the stream and the construction of the proposed storage tank, which exceeds 30m in length, over the stream will be no more than minor.

The proposed culvert will replace an existing concrete channel. It is considered that the nature of the stream will remain the same, without any additional loss of habitat as a result of the proposed culvert. There is an expectation that the ecological values (including species diversity) will recover readily if the discharge of sewage into the stream is significantly reduced.

The stream bed will be disturbed to allow the proposed works to be undertaken including the placement of piles beneath the stream bed to a depth of greater than 5m. The disturbance will exceed 10m either side of the proposed structures. Additionally, given the nature of the proposed works, machinery will sit directly on the wetted cross section of the bed of the Newmarket Stream during the proposed works. As the habitat is severely degraded and the bed is concrete lined the effects from the disturbance and placement of machinery on the bed are considered to be no more than minor. In addition, the bed will be restored to its original condition (i.e. concrete) following the proposed works. Thus any effects with respect to these matters are considered to be no more than minor and no cumulative effects are anticipated to result from the proposed works.

(b) The method of diversion and discharge (inlet works, overland flow path, outlet works and erosion control works) and the effects arising from the method chosen;

The exact method of temporary diversion of the Newmarket Stream to enable the works within the stream will not be known until the contractor is appointed. The method will be determined as part of the temporary works design by the contractor. However, it is anticipated that the temporary diversion will involve piping the flow around the existing stream or piping within the stream. It is also anticipated that sandbags will be placed within the stream to create a dry area in which the works will be undertaken.

(c) Effects on archaeological sites, waahi tapu and the matters listed in Policy 2.3.4.4.

As discussed in Part 2.7 of this report, previous archaeological investigations have found evidence of Maori occupation of Newmarket Park. However, it was determined that development within the Park will have largely destroyed any archaeological evidence.



According to the Auckland Regional Cultural Heritage Inventory (CHI) of the subject area, the nearest recorded sites are located away from the area subject to works and in adjoining land. However, it is possible that remnant shell middens may exist on the steep vegetated slopes above the stream.

In the event that sub-surface archaeological evidence was unearthed during construction, work in the immediate vicinity of the discovery would cease and the NZ Historic Places Trust would be contacted.

b) Disturbance of the Stream

The disturbance of the watercourse is a controlled activity under Rule 7.5.15. The Council has reserved its control to the following matters:

7.5.18.1 The ARC will exercise its control over the following matters under Rule 7.5.18:

(a) Any actual or potential adverse effects (including cumulative effects) arising from the matters in the General Conditions of Rule 7.5.15 that the activity is unable to comply with, together with the following matters:

The proposed works are unable to comply with the following conditions of Rule 7.5.15:

(a) The activity does not divert any part of the lake or Permanent river or stream to a new course;

(f) Machinery shall not sit directly on the wetted cross section of the bed at the time of the work;

The proposed works will result in the temporary diversion of the Newmarket Stream in order to create a dry area in which to undertake works within the stream namely the construction of the proposed storage tank and the box culvert. As discussed earlier, an ecological assessment on the Newmarket Stream and Hobson Bay has been prepared by Boffa Miskell Limited for the proposed works. The report concluded that the habitat of the Newmarket Stream is currently ecologically compromised. The habitat within the stream is 'severely limited' by the straight, shallow, concrete lined bed and channel and is extremely degraded. The stream does not contain any fish species, thus fish passage will not be an issue as a result of the temporary diversion. Overall, the effects resulting from the proposed diversion will be no more than minor.

Given the nature of the proposed works, machinery will sit directly on the wetted cross section of the bed of the Newmarket Stream during the proposed works. As the habitat is severely



degraded and the bed is concrete lined the effects from the machinery on the bed are considered to be no more than minor. In addition, the bed will be restored to its original condition (i.e. concrete) following the proposed works. Thus any effects with respect to these matters are considered to be no more than minor and no cumulative effects are anticipated to result from the proposed works.

(b) The content and implementation of an Erosion and Sediment Control Management Plan;

Erosion and Sediment Control measures will be implemented for the duration of the proposed works to prevent the discharge of sediment laden water into the Newmarket Stream and the downstream receiving environment. Such measures are likely to include the use of silt fences and the placement of geo-textile material on the banks of the Newmarket Stream to prevent the discharge of sediment. All measures will be in accordance with the Auckland Regional Council Council's TP90 'Erosion and Sediment Control – Guidelines for Land Disturbing Activities, 1999'. An Erosion and Sediment Control Plan will be submitted to Council for approval, prior to the commencement of earthworks. Implementation of the Erosion and Sediment Control will be the responsibility of the appointed contractor.

(c) Effects on archaeological sites, waahi tapu and the matters listed in Policy 2.3.4.4;

The nearest recorded archaeological sites are located away from the area subject to works and in adjoining land. However, in the event that sub-surface archaeological evidence was unearthed during construction, work in the immediate vicinity of the discovery would cease and the NZ Historic Places Trust would be contacted.

c) The Diversion and Discharge of Stormwater

The provision of new impervious area on a site of more than 1000m² but less than 5000m² is a controlled activity under Rule 5.5.2. The Council has reserved its control to the following matters:

(a) The provision of methods to avoid downstream channel erosion;

Any surface run-off from the metal access road permeates into the grassed/planted areas either side of the access road. Furthermore, the proposed planting upon the storage tank will provide a permeable layer that will alleviate any significant run-off from this area of the site.

*(b) The methods to achieve Rule 5.5.2 (c), (d) and (e) and **erosion control**, including the extent and type of vegetation and/or revegetation cover on **site**;*



There is no stormwater outfall associated with the proposed works. There is no specific point of discharge, as discharge will be over the length of the watercourse. To reiterate, grassed/planted areas flank the access road and provide good permeation during inclement weather. The provision of planting upon the storage tank will provide a permeable layer to mitigate extensive surface run-off.

(c) The location of the point of discharge;

To reiterate, the point of discharge will be over the length of the existing watercourse.

*(d) The degree of consistency and integration with any **Integrated Catchment Management Plan** within the same catchment;*

To assess the effect of the additional impervious area from the access road upgrade and service access path for the storage tank (approximately 1445m²), the ACC/Metrowater Newmarket Integrated Catchment Study Flood Hazard Mapping was reviewed. In the 2050 Maximum Probable Development (MPD), Flood Hazard Mapping model, an additional impermeable surface area of over 4000m² has been incorporated to cater for changes to the current Newmarket Park reserve catchment area. The increase in area from this development is within this MPD scenario and hence it is considered that there will be no increase in the flood risk downstream of the development. It should also be noted that there is no habitable floor flooding predicted within Newmarket Gully in MPD scenario.

*(e) The degree of consistency and integration with any **structure plan** prepared for the catchment;*

It is considered that the proposed works align with the vision and principles of Newmarket's Future Framework that provide the basis for the Structure Plan through and enhancement of the overall amenity within the area.

*(f) Effects on **archaeological sites, waahi tapu**, and the matters listed in Policy 2.3.4.4.*

To reiterate, the nearest recorded archaeological sites are located away from the area subject to works and in adjoining land. However, in the event that sub-surface archaeological evidence was unearthed during construction, work in the immediate vicinity of the discovery would cease and the NZ Historic Places Trust would be contacted.



(g) Monitoring and reporting requirements; and

It is not intended to monitor the surface run-off within the site.

(h) The duration of the consent

The lapsing period sought for this consent is 10 years.

6.13.2 Auckland Regional Plan: Sediment Control

The earthworks within the Sediment Control Protection Area will be a restricted discretionary activity under Rule 5.4.3.1. The Council has reserved its control to the matters outlined in 5.4.3.2, which are as follows:

The ARC will restrict the exercise of its discretion to the following matters to the extent which they are relevant in each case:

(i) Techniques used to restrict or control sediment being transported from the site and the effects or impacts of sediment on water quality from the techniques chosen, including the practicality and efficiency of the proposed control measures;

Erosion and Sediment Control measures will be implemented for the duration of the proposed works to prevent the discharge of sediment laden water into the adjacent watercourse. Such measures are likely to include the use of silt fences and the placement of geo-textile material on the banks of the Newmarket Stream to prevent the discharge of sediment into the Newmarket Stream and the downstream receiving environment. All measures will be in accordance with the Auckland Regional Council's TP90 'Erosion and Sediment Control – Guidelines for Land Disturbing Activities, 1999'. An Erosion and Sediment Control Plan will be submitted to Council for approval, prior to the commencement of earthworks.

(ii) The proportion of the catchment which is exposed;

It is estimated approximately 2000 - 4000m³ of excavation and approximately 4000m³ of fill will be required for the project. The area of excavation for the proposed tank is approximately 3770m², with the upgrading of the access road requiring earthworks over an area of approximately 1000m² (refer to SKM Drawing No: 2005317.028 in **Appendix A**).



(iii) The proximity of the operation to the receiving environment;

The project area will be located both within and adjacent to the Newmarket Stream. The proposed location of the new storage tank facility will be at the head of the gully and will be constructed over the existing stream and energy dissipation structure at the stream outlet. Earthworks / tracking will be required adjacent to the Newmarket Stream. The stream is of very poor ecological quality, has been subject to extensive modification and is characterised by a shallow, concrete lined bed and channel. Despite this, sediment and erosion control mitigation measures will be implemented to ensure that the adverse effect on the environment as a consequence of the proposed works are minimised and the works will have a no more than a minor effect on the surrounding environment.

(iv) The concentration and volume of any sediment that may be discharged;

The concentration and volume of any sediment that may be discharged into the watercourse is unknown at present. However, the use of erosion and sediment controls measures discussed in item (i) above will be implemented to ensure than the discharge of sediment laden water into the Newmarket Stream and the downstream receiving environment is minimised as far as practicable. It is considered that the effects associated with any discharge of sediment as a result of the proposed works will be no more than minor.

(v) The time during which the bare earth surface is exposed;

As stated above, it is proposed that earthworks will be staged, and progressively stabilised, to minimise the period through which areas of bare earth surface is exposed. In order to meet the required construction programme, it is envisaged that some earthworks may be undertaken outside of earthworks season. The bulk of the earthworks, being the excavation at commencement of the project, and later, the importation of fill, are programmed to occur over the 2009/2010 and 2010/2011 earthworks seasons respectively.

(vi) The time of year when the activity is undertaken;

It is envisaged that the required construction phase of the project will progress right through the 18 month construction period.



(viii) Monitoring the volume and concentration of any sediment that may be discharged;

The Contractor will be required to carry out routine daily observation of the measures and note and respond to any defects. This is particularly important immediately after a significant rainfall event, where the Contractor will be required to carry out a specific inspection of all E&SC measures



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7. Consultation

7.1 Consultation Principles and Approach

Consultation has been an important aspect of this proposed storage tank facility. In preparing a consultation plan, consultation principles and an approach were adopted to:

- Recognise consultation as an on-going and integral part of the whole Watercare project, both prior to and after the lodgement of the Notice of Requirement and Resource Consent;
- Identify parties who may be affected by the proposed development;
- Identify other parties who may be interested in the proposed development;
- Prepare consultation material that introduces the Project and outlines the consenting process for potentially affected parties;
- Obtain feedback, lists of concerns and suggestions from affected parties;
- Remain open to mitigation to allay any outstanding concerns; and
- Be available throughout the course of the Project to any party who wishes to meet to discuss the Project.

7.2 Overview of Consultation Process

A comprehensive consultation process involving individual meetings and correspondence with the affected parties has been carried out in accordance with a Communications Plan developed for this Project.

The objectives of the consultation were to:

- Inform stakeholders of the project;
- Allow stakeholders to provide feedback on the project;
- Take into account the feedback from the stakeholders in the final design where possible; and
- Allow for the consultation process to be open and transparent.

A copy of this Communications Plan, including a register detailing those consulted and subsequent feedback is provided in **Appendix H** of this report.



7.3 Adjoining Landowners and/or Occupiers

The consultation with the landowners/occupiers who adjoin onto the reserve has included:

- A hand delivered proposal letter and concept plan to the adjoining properties, in which confirmation of owner/occupier details were sought from those who were home at the time of the letter circulation;
- Follow up calls to those properties where no-one was home at the time of the visit; and
- An invitation to a public meeting to discuss the project.

7.4 Public Meeting

The public meeting was held at Watercare Services Ltd. office on 12 November 2008, and was attended by landowners of the following three (3) adjoining properties:

- 62 Middleton Road
- 3/66 Middleton Road
- 27 Laxon Terrace

Some of the key issues raised by these landowners at the public meeting included:

- The legitimacy of separating the stormwater and wastewater systems;
- The issue of future development and whether increased flows into the combined system would increase the number of times the tank itself would overflow;
- Whether the construction of the storage tank facility would open up issues regarding the stability of land within the immediate area; and
- Reductions in odour.

7.4.1 Landowners at Nos. 33 & 35 Maui Grove

Watercare has engaged in direct consultation with the owners/occupiers of 33 & 35 Maui Grove, these properties are located immediately adjacent to the tank site and are subject to the greatest impact of all properties in the vicinity, both during construction and longer term. A meeting was held at their property on 14th November 2008 when design drawings and landscaping simulations were presented.



The owners of the sites raised the following concerns in regards to the scheme:

- The close proximity of the tank to both properties, both horizontally and vertically;
- The visual impact of the tank and the loss of existing trees and vegetation;
- The vehicular access on top of the tank (required for maintenance activities) meaning vehicles may be parked directly across from the No.33 deck;
- Security issues as the tank provides a potential platform across to the properties;
- The location of access covers on the tank edge closest to the properties. These covers provide access to the tank flushing system – a tipping bucket system which cleans the tank after it empties to remove any deposits on the floor of the tank;
- The impact of construction on their lives – particularly as one of the residents works night shifts; and
- Geotechnical risks associated with building such a structure close to their properties.

In order to address their concerns, the tank design was reviewed further and the following changes made in response to the concerns raised:

- Vehicular access to the top of the tank was removed. Access will still be maintained for vehicles and operational staff but the access road and turning area has been revised to finish in front of the tank. Removing the road from the tank allows further landscaping and planting on the tank roof to minimise the visual impact and also reduces work with the northern slope of the park. The position of the overflow screens and covers have also been moved to above the tank dry weather flow channel, further away from the properties.
- Access covers have been moved to the western end of the tank by changing the proposed tank cleaning system from tipping buckets to hydraulic flushing gates which will drain lanes running the length of the tank rather than across the width.
- Geotechnical risks have been reduced by a revised geometry of the tank which reduces the depth of cutting on the southern side adjacent to their properties.
- Public pathway routes have been revised away from the tank roof to increase security and maintain privacy.
- Consultation with these two landowners is currently on-going.



7.5 Tangata Whenua

Watercare has consulted with the iwi/hapu groups identified by both the Auckland City Council and Auckland Regional Council as having geographical interest in the area, whom are as follows:

- Ngati Whatua o Orakei;
- Ngaitai; and
- Ngati Paoa.

At the time of writing Ngati Paoa has confirmed that they do not need to be consulted in regards to this project, and there has been no response from Ngaitai.

Consultation with Bernadette Papa of Ngati Whatua o Orakei has been undertaken. Ms. Papa highlighted the historical associations the iwi had with the Newmarket Stream, in particular the use of the stream for fishing and swimming. In addition, Ms. Papa spoke of the original course of the existing watercourse being upstream of the proposed site and the need for more focus on separation of the stormwater and sewage before it comes down the gully. Ms. Papa does however view the proposed works as an opportunity to revitalise the area and the life of the Newmarket Stream, which is currently in a state of “Waimate”. The planting of certain native species, coupled with a natural screening of existing infrastructure within the subject area, were identified by Ms. Papa as ways of restoring vitality back in the reserve.

It is hoped that the proposed development will help restore the stream to a state of “Waimaori” and therefore be able to sustain life. Furthermore, it is hoped that the reduction in discharges to Waitaramoa (Hobson Bay) would help preserve and enhance the important patiki (flounder nursery) that is valued by Ngati Whatua o Orakei.

Consultation with tangata whenua would continue throughout the project as Watercare acknowledges the special relationship that Maori have as kaitiakitanga.

7.6 Auckland City Council

Consultation has been undertaken with various Auckland City Council (ACC) officers in regards to the proposed development in regards to the following:

- **ACC Parks Division** – various meetings have been held both on-site and at Council offices in regards to the proposed works within the reserve land, in particular with regards to the required earthworks, vegetation clearance and construction period;



- **ACC Urban Design** – several meetings have been undertaken in regards to the Urban Design aspects of the proposal, in particular regarding the modification to the existing landform and the replanting of the subject area;
- **ACC Traffic and Roading Division** – discussions have been undertaken to establish the requirement for traffic safety and management during the construction phase of the project, and the safety of pedestrians within the vicinity of the proposed works;
- **ACC Utility Services Relationship Division** – consultation with this division of Council pertained to the proposed development and any potential impacts on existing utility providers who may be affected by the proposed development; and
- **ACC Advisor (Utilities)** – these discussions were specific to any required works within the area of the reserve identified as weak/filled ground and is now a closed landfill.

7.7 Auckland Regional Council

A formal pre-lodgement meeting has been undertaken with the Auckland Regional Council in regards to the regional consents required for the necessary streamworks and earthworks.

7.8 Metrowater

Regular consultation has been held with Metrowater during the design development of the scheme to discuss the interaction of the Watercare and Metrowater systems in the area, their Newmarket Drainage Management Area options study and to inform them of the storage tank proposals and the impact on their facilities.

The diversion of their 380mm diameter sewer into the tank at the junction of the sewer with the Branch 3 sewer provides benefit to Metrowater in that it removes a CSO.

7.9 Consultation with Other Parties

Consultation has also been undertaken with the following parties identified by both Auckland City Council and Auckland Regional Council:

- Hobson Community Board;
- Newmarket Business Association; and
- Orakei Basin Protection Society.

No response has been received from these groups to date.



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8. Conclusions

For the reasons outlined in this report, once implemented, it is considered that the project will result in significant positive effects and would not cause more than minor adverse effects on the environment. It is considered that any adverse effects will be avoided, remedied or mitigated by establishment of appropriate measures during construction.

The proposed work is considered to be consistent with the relevant provisions of the Auckland Regional Policy Statement, Auckland City Operative District Plan 1999 – Isthmus Section, the Newmarket Park Reserve Management Plan, the Auckland Regional Plan: Air, Land and Water and the Auckland Regional Plan: Sediment Control.

An appropriate examination of alternative sites, routes and methods for achieving Watercare's objectives has been undertaken. In conclusion:

- The proposed work is necessary to provide the required infrastructure to mitigate the adverse environmental impact that the subject area is exposed to when the current system overflows;
- It is considered that most adverse effects associated with the proposal would be temporary, as they would relate mainly to the construction phase and these temporary effects are proposed to be managed through appropriate management protocols;
- It is considered that with careful application of working procedures and protocols, adverse effects would be substantially avoided, remedied or mitigated; and
- The proposed construction works will be undertaken in a manner that provides for the health and safety of the construction workers, utility operators and the general public, and appropriate mitigation measures put in place so as not to compromise the amenity of the area.

The long term positive effects anticipated from the proposed development include:

- A reduction in the volume and quantity of wastewater overflows to Newmarket Stream;
- A potential reduction in odour levels emanating from the subject area;
- An improvement in the function of the stream and estuarine habitats; and
- The enhancement of a portion of the reserve with lower amenity, which can be complemented further through future replanting programmes co-ordinated by Council.



The proposed facility would have no more than minor adverse effects for the duration of operation and maintenance as outlined in this report. Any ongoing adverse effects would be avoided, remedied and/or mitigated by:

- The operation of the facility in accordance with the relevant standards and regulations; and
- Operation of the facility in accordance with established operating, maintenance, surveillance and monitoring procedures.

Short term effects of the construction of the new storage tank facility would include:

- Effects associated with the proposed earthworks (excavations and re-contouring of areas for the new tank and access road areas) inclusive of actual and potential sediment and silt, noise, dust, truck traffic, cultural, vegetation removal and watercourse effects;
- Temporary restrictions on vehicular traffic during construction within road reserves; and
- Restricted access for members of the public to the recreation reserve for the duration of the works, in particular within the area subject to the construction works.

These construction effects would be avoided, remedied and/or mitigated by a number of measures inclusive of:

- The construction of the new storage tank facility and associated works being undertaken in accordance with the relevant standards with respect to earthworks, works within the road reserve and construction noise;
- Adherence to operational procedures and management plans developed to manage the construction process, including standards for earthworks and the management of dust, noise, vibration and land restoration; and
- Implementation of appropriate protocols in the event of the discovery of any koiwi, taonga or archaeological sites.

Overall, the proposed works will have a significant environmental benefit by reducing the current adverse effects resultant from overflows in the Newmarket Catchment.

It is considered that the proposal will promote the sustainable management of natural and physical resources.