

14. RAWHITI DOMAIN - PROPOSED WATER SUPPLY WELLS AND PUMPING STATION

General Manager responsible:	General Manager City Environment Group, DDI 941-7305
Officer responsible:	Manager Asset & Network Planning
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PURPOSE OF REPORT

1. To obtain the approval of the Council under the Canterbury Earthquake (Reserves Legislation) Order 2011 ("the Order") for the drilling of wells and the installation of a water supply pumping station in Rawhiti Domain. This work is required to be completed urgently to strengthen the water supply to the New Brighton area and reduce/minimise the severity of water restrictions required over the height of the 2011/12 summer because of earthquake damaged water infrastructure.
2. Subsequent to obtaining the approval outlined in paragraph one above, to obtain Council approval to the granting of easements over Rawhiti Domain for the proposed new infrastructure under sections 48(1)(d) and (f) of the Reserves Act 1977 pursuant to the requirements of section 48(6) of the said Act.

EXECUTIVE SUMMARY

3. Christchurch City's water supply infrastructure network includes 65 primary pumping stations, with one or more wells associated with each pumping station. There are 177 wells supplying the Council's water supply. The September and February earthquakes have resulted in the permanent loss of approximately 25 wells, damage occurring to a further 108 wells most of which will be able to be repaired, leaving only 44 wells that were not damaged in some way by the earthquakes. More than half of these wells are located in the eastern suburbs (including the Palmers Road site) and as a result, have a significant impact on the Council's ability to meet the peak summer water demands for the City. The Palmers Road pumping station on the corner of Palmers and New Brighton Roads was totally destroyed during the earthquakes, this being the main pumping station for the New Brighton area.
4. Hydraulic modelling work has been undertaken to investigate alternative ways of supplying summer time demand through reconfiguration of the supply zones, installation of additional surface pumps at stations where there is an excess of well capacity and the installation of new wells at key locations in the network. The modelling also looked at improving the robustness of the pumping station network.
5. This modelling work identified that a new well in the vicinity of Rawhiti Domain is critical to maintaining the water supply to the eastern suburbs through the peak summer demand period and that a pumping station in the same area would improve the robustness of the system, in particular a pump station in this general area would provide support in the event of a failure of the Bexley pumping station, the wells of which have been damaged.
6. A review of the general area for suitable sites was undertaken. Suitable sites had to be at least 2000 square metres in area, quickly available for the sinking of wells and construction of a pumping station, (the wells needing to be connected to the reticulation system before the height of the summer), located reasonably close to existing trunk (300 millimetres or more in diameter), reticulation pipes, and on a site where there is the ability to discharge approximately 300 cubic metres of water per hour through the storm water system, this being generated during well development.

7. Sites at Queen Elizabeth II Park, Beresford Street, and Rawhiti Domain were considered as possible permanent sites for the replacement of the Palmers Road pumping station. The benefits and disbenefits of these sites including the preferred option are given in the following table. The letters in bold and contained in brackets indicate the general locations as shown on the location map in **Attachment A**.

Location	Benefits	Disbenefits
(A) Beresford Street car parks	<ul style="list-style-type: none"> • Not a park. • Easy access for construction and maintenance. 	<ul style="list-style-type: none"> • Proximity to neighbours. (well development & diesel generator operations) • Site size is too small for well development and construction to occur concurrently. • Generally the further north the pumping station is located the better the underground aquifer water yields are expected to be. • No potential for further well development (in the event of failure of any of the three proposed wells). • Distance to the required larger (300 mm) water main which is at the Pages/New Brighton Roads intersection.
(B) QEII Park between Travis Road and gymnasium	<ul style="list-style-type: none"> • No specific current use. • Proximity to large trunk water main size (300 mm) in Travis Rd. 	<ul style="list-style-type: none"> • Geotechnical reports show seismic stability of land not stable enough for the sinking of wells and the construction of such important Council infrastructure. • Lower aquifer capacity. • Area of lower demand than the Rawhiti site, which is more central to the area being reticulated.
(C) Rawhiti Domain behind the Keyes Road Grey Water Pumping Station	<ul style="list-style-type: none"> • Room to develop the “well farm’ and construct the pumping station infrastructure. • Central to area being reticulated. • Proximity to 11 Kva substation. • Geotechnical reports show the land is seismically stable. • Hydrological advice indicates that this site can be expected to yield more water than the Beresford Street, and QEII sites 	<ul style="list-style-type: none"> • Station and associated infrastructure would be located on a public recreation reserve. • Temporary disruption to formal park users during construction. • Proposed occupation not in alignment with the management plans policies and objectives. • A main trunk water main of 300 mm will need to be laid to the site from New Brighton Road.

8. Potential locations between 341 and 383 Keyes Road were reviewed, the selected location being between the existing utilities (waste water pumping station and Orion substation) located on the park and the car park adjacent to the athletics track, because of its minimal impact on the amenity value and sight lines into the park. It is understood that the pumping station will consist of a large tank partly built below ground level, into which artesian water will flow from the wells, a pump house, in which there will be two pumps to pump water from the tank into the mains system, and a standby generator building to house a one megawatt generator. These above ground structures and surrounding sealed area will occupy approximately 1,000 square metres of park space, (40 x 25 metres). The pump house will be approximately 4.8 metres in height at the generator end, and 3.2 metres at the suction tank end. The generator exhaust and radio aerial will protrude. The square well heads will be located out in the park measuring 2 x 3 metres, being raised out of the ground approximately 300 millimetres to ensure surface water does not enter the wellhead, and accompanying water sampling cabinets. These well heads may need to be situated 100 metres apart if drawing water from the same aquifer, to ensure that the well 'draw down' does not affect the water levels in the other wells. **Attachment E** shows views of the site with the entrance to a waste water biofilter on the left and a small Orion substation in the foreground.
9. Some of the pipes and accompanying electrical cables to the well head control gear, and maybe pumps, if the well is required to be pumped this will need to be laid within the drip lines of trees in the park. The City Arborist will require any trenches to be hand dug within the drip lines of the trees or thrust at a depth of approximately 1.5 metres under the ground beneath the trees drip line, to ensure that the root systems are not damaged.
10. There may be a requirement to undertake appropriate landscaping around the structures/buildings to better integrate them into the park environment as has been done for the 66Kva substation in the park. The photo in **Attachment D** illustrates a recently completed well head installation (the two metre diameter circular structure in this instance being the well head). The latest well head structures have been modified, from the circular structures to rectangular ones that are seismically stronger.
11. Construction of the pumping station will take up to two years to complete and commence approximately one month after the well is drilled, but the immediate imperative is to commission a well with submersible pump prior to December in order to help meet the water demand in the eastern suburbs over the summer period. In order to complete the well prior to December, drilling work must begin without delay. Even utilising the Canterbury Earthquake (Reserves Legislation) Order 2011, gaining approval to drill the well within the reserve via a report to Council would normally take, at best, six weeks. Such a timeframe will not allow the well to be completed in time to be available for the peak summer pumping period, which commences at the start of December. The management approvals process for this report have therefore been expedited, and it has been placed before the Executive Team for a decision, the Chief Executive Officer of the Council having authority under the Order to approve the use of the reserve for this purpose, (section 4 Interpretation: Council (b) (ii)).
12. Rawhiti Domain is a long established recreation reserve in the City, being just over sixty three hectares in area. It is utilised by a number of sporting codes including cricket, athletics, hockey, tennis, archery, softball and rugby and a golf course. Under the Council's park classification system, Rawhiti Domain is a sports park.
13. Officers consider the proposed installation of new wells, pumping station and associated underground piping and cabling in Rawhiti Domain will have a small impact on the park environment and its use, this impact being greatest during the temporary construction period. The effects are listed in the following table, with comment on how each of these may be mitigated in italics.

Temporary Effects (How these can be mitigated)	Permanent Effects (How these can be mitigated)
<p>Closing off with temporary fencing a small part of the park and the car park by the Athletics Club to public access and use during the construction period, this may be for a period of up to two years. The effect will be to make vehicle access to the club and track more difficult for that period of time. Will have a minor visual impact.</p> <p><i>If significant athletic and construction events coincide, temporary access to the club and track can be gained via an internal road off Shaw Avenue. Alternatively, temporary closer road access could be gained from Keyes Road 50 metres closer to Lonsdale St if necessary.</i></p>	<p>There will be a pumping station and at least one well head located in the corner of the park that is not required for formal (sports field) recreational use. The proposed infrastructure will provide no direct benefit to recreational users of the park.</p> <p><i>(Although not a recreational facility the wells and pumping station will provide a wider community benefit in contributing to ensuring an adequate water supply to the community, as well as for the irrigation systems on the park. The wells are proposed to be located on the park at sites that will have the least impact on the park environment and its use.)</i></p>
<p>Excavation of trenches for the underground pipes and cables to the well sites may be required through areas of the park covered in trees.</p> <p><i>Where possible trench alignments outside of the drip lines of trees will be preferred and investigated. Trench lines within the drip line of trees are to be 'hand' dug or thrust beneath the trees so as to avoid damaging the root systems. This work is to be undertaken in accordance with the requirements of the City Arborist or his designates.</i></p>	<p>Being raised from the ground surface, the fence, pumping station building, generator exhaust, radio aerial, well head and switch gear structures will present obvious profiles, which will have an impact on the visual/landscape values of this part of the park.</p> <p><i>This impact can be lessened in a variety of ways, including landscaping, structures materials and colour, and planting, or by utilising the low structures, e.g. well heads, the top of which are raised approximately 300 mm above the ground for park structures such as a movable table or seat. By locating the station in this area, all the above ground Council owned utility structures within the park will be located in one area of the park, thereby limiting the impact of these utilities upon the park. The view from the road into the park will not change significantly the pump station structure being located behind the existing Orion substation and vegetation, thereby complying with "Safer City Design Principals".</i></p>
<p>Heavy machinery and vehicle access on to the park will be required during the construction phase.</p> <p><i>Access to the construction sites will be from the internal park driveway off Keyes Road, which leads to the car park by the New Brighton Athletics Club facilities. A short sealed driveway will be formed from this driveway into the pumping station complex. Access to the well sites will be over grassed areas which will be reinstated upon completion of the works.</i></p>	<p>Heavy machinery and vehicle access on to the park to the well sites will be required on a periodic basis for maintenance purposes.</p> <p><i>Park access will be via the existing driveway into the park from Keyes Road, which is located in the southwest corner of the park. Access is expected to be infrequent – probably no more than once a year therefore not requiring a formed driveway</i></p>

	<p>Likely that cabling and pipe-work will cross over services to the Athletics club building. Also, power and telephone to clubhouse are overhead with a pole in the way.</p> <p><i>Likely CWW will have these existing services undergrounded to remove an overhead hazard. New services will be at a different depth where they cross over.</i></p>
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14. Non recreational infrastructure, such as water pumping stations and wells, have previously been sited on recreation reserves (for example Burnside Park) but only where this has been shown to be absolutely necessary, in the wider public benefit, and any effects on the reserve have been minimal or mitigated. In general though, non recreational facilities on recreation reserves have not been supported.
15. Rawhiti Domain is a classified recreation reserve pursuant to section 17 of the Reserves Act 1977, made up of Part Rural Section 1579 (35.9107 ha), [the proposed infrastructure will be built on this area of the reserve], PT RS 1616 (27.2309 ha), Reserve 4467 DP 3213 (0.2507 ha), Lots 2 & 3 DP 3276 (0.0622 ha), and Lot 9 DP 5123 (0.1085 ha).

FINANCIAL IMPLICATIONS

16. The cost of the proposed developments, including the reinstatement of the park surface and required landscaping and amenity enhancements to mitigate park impacts will be met through the Local Authority Protection Programme Disaster Fund (LAPP) or other insurance.

Do the Recommendations of this Report Align with 2009-19 LTCCP budgets?

17. No, see above.

LEGAL CONSIDERATIONS

18. In ordinary circumstances the proposal to drill wells and to install a water pumping station on Rawhiti Domain would be dealt with by way of a grant of an easement under section 48 of the Reserves Act 1977 and/or by reclassifying that part of the reserve affected by the proposed works as a local purpose reserve for that purpose. Both procedures ordinarily require public consultation.
19. In response to the circumstances arising from the 22 February 2011 earthquake, the Government made the Canterbury Earthquake (Reserves Legislation) Order to enable reserves to be used for certain purposes that would not ordinarily be permissible under the Reserves Act 1977 and to avoid unnecessary delay in responding to circumstances arising from the earthquake.
20. The Order is available to provide temporary solutions. Whilst the Order currently expires on 31 March 2012, the Department of Building and Housing and the Department of Conservation have recommended to the Government that the Order be extended to 18 April 2016 (which is the expiry date of the empowering legislation under which the Order has been made). It is expected that extension will be made in September 2011. The Order does not permit use for reserves for earthquake related purposes after its expiry date.
21. Clause 5(b)(vii) of the Order provides that the Council, or any person authorised in writing by the Council, or the Council's Chief Executive, may use a reserve or erect a structure on a reserve for works associated with the repair and renewal of council infrastructure.

22. The Order provides that when the Council authorises any use of a reserve, or the erection of any structure on a reserve, that it does not need to comply with any relevant management plan or the usual Reserves Act processes. However, the Council is required to take all reasonable steps to protect the integrity of the reserve and to ensure that the reserve is reinstated at the end of the use or when the structure is removed.
23. In addition to Council authorisation under the Order, the Council will also need to obtain all necessary resource and building consents required (if any) under the Building Act 2004 and the Resource Management Act 1991 for the proposed use. Approval under the Order will not constitute consent under those Acts.
24. Subsequent to approval being given under the Order for the temporary use of Rawhiti Domain, the Council will need to consider a permanent solution to formalise the permanent components of the occupation of the reserve.
25. As the construction of the proposed pumping station and associated infrastructure in Rawhiti Domain is contrary to the objectives and policies contained in the current Rawhiti Domain Management Plan, it will be necessary to change the classification of that part of the Domain on which the pumping station is to be built from recreation reserve to local purpose (utilities) reserve. Once this has occurred it will then be necessary for an easement to be granted to the Council. However, the 'business as usual' processes provided for in the Reserves Act 1977 are deficient as both of these processes involve public consultative processes and Ministerial approval. Given that by the time these processes are employed, the works will have been completed, it is not considered appropriate to embark on an approval process the outcome of which could be contrary to the physical reality on the ground.
26. Identical circumstances have arisen with the respect to the use of a 3,000square metre part of Rawhiti Domain for the construction of a 66Kva electricity substation by Orion Limited and an Order-in-Council is currently in the process of being made by the Government to amend that Reserves Act 'business as usual' processes by reclassifying the part of the reserve affected by the substation and allowing the Council to grant the required easement without public consultation being required. Officers suggest that it will be necessary for a similar Order-in-Council to be made to provide a permanent legal solution for the proposed pumping station and associated works.

Have you considered the legal implications of the issue under consideration?

27. Yes, see above.

ALIGNMENT WITH LTCCP AND ACTIVITY MANAGEMENT PLANS

28. Yes – earthquake recovery.

Do the recommendations of this report support a level of service or project in the 2009-19 LTCCP?

29. As above.

ALIGNMENT WITH STRATEGIES

30. Not applicable.

Do the recommendations align with the Council's strategies?

31. Not applicable.

CONSULTATION FULFILMENT

32. Clause 6 of the Order expressly provides that the Council may act under the Order without complying with the Reserves Act 1977 (including any provision relating to public notification or the hearing of objections).
33. Clause 7 of the Order requires the Council to give notification to parties who have an easement, lease, licence, covenant or other legal right over the area of reserve to be temporarily occupied under the Order. Discussions will be held with the New Brighton Athletics Club over the use of the park road leading to the club's facilities in relation to any disruption that this will cause to the clubs' activities.
34. In addition, the Canterbury Earthquake (Local Government Act 2002) Order 2010 exempts the Council from compliance with some of the decision-making processes set out in the Local Government Act 2002. These include the requirement that the Council considers community views and preferences.
35. The exemptions can be relied upon in this case because it is necessary for the purpose of ensuring that Christchurch, the Council, and its communities respond to and recover from the impacts of the Canterbury Earthquakes.

STAFF RECOMMENDATION

It is recommended that pursuant to clause 5(c) of the Canterbury Earthquake (Reserves Legislation) Order 2011, the Burwood/Pegasus Community Board recommend to the Council that it:

- (a) Authorises the use by the Christchurch City Council of that part of the recreation reserve known as Rawhiti Domain as is approximately shown on the plans attached to this report (being **Attachments B and C**) for the purpose of the drilling of three wells and the installation and operation of a pumping station and associated infrastructure; and
- (b) Agrees that the period for which the authority referred to in paragraph (a) of this recommendation shall apply is that period commencing on the date of this authority until the date on which the Canterbury Earthquake (Reserves Legislation) Order 2011 shall expire (including any amended expiry date).