

4.2. Water and Sewerage Capital Budgets

(Report prepared by S Donaldson/R Coningham)

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Purpose of report

1. To provide an overview of Water and Sewerage projects and capital budgets¹ over the 2023-33 period.

RECOMMENDATION

That the water and sewerage budget and programme for the 2023-33 period be received and the information be adopted as supporting information.

Water

Awatere - Rural

2. \$1.5M is budgeted in 2024-25 for point of entry treatment for rural households not served by the Seddon water treatment plant.
3. The Lions Back tanks were going to be replaced by a single steel or stainless-steel reservoir, however the price received exceeded the estimate and budget. All available options are now being scoped in an effort to find a suitable and affordable solution. There is \$1,270,000 budgeted in 2023-24.
4. A reservoir is planned for the Dashwood (north side of the Awatere River) and there is budget provision of \$170,000 in 2027-28 and \$455,000 in 2028-29. Winery redevelopments in this area have queried whether additional capacity could be added to the reservoir for their requirements. Any increase reservoir size for this would need to be funded by the winery developments.
5. Computer hydraulic modelling has been used to assess the performance of the reticulation. Pipelines that require upgrading to increase their capacity have been identified. Upgrades are prioritised and programmed.
6. There is a budget of \$940,523 for water mains over the period 2023-30.

Seddon

7. \$328,000 is budgeted in 2024-25 for water pipeline upgrades to service currently undeveloped urban zoned land in Seddon. The timing for the work will depend on when the land is developed.
8. In 2023/24 there is \$190,000 budgeted to reduce backwash volumes and reduce the discharge to the sewage treatment plant. It is important now that the sewage treatment plant is to be changed to land disposal, that the volume discharged to the ponds is reduced.
9. Seddon water treatment plant was constructed with a single reservoir with provision of a prepared site and pipework for an additional reservoir of the same capacity. High summer demand has occurred on days when the temperature is high, and it is proposed to construct the second reservoir in 2023-24 with a budget of \$1,270,000.

¹ All capital budgets in this paper exclude overheads and inflation.

Blenheim

Reticulation Upgrades

10. Computer hydraulic modelling has been used to assess the reticulation. Pipelines that require upgrading to increase their capacity have been identified and budget has been made for \$4.31M over the period 2023-31. The first upgrade, in 2023-24, is replacement of the water main in McLauchlan St.

Pump Stations and Reservoirs

11. In 2024-26 there is budget of \$285,000 for the supply and installation of a standby generator for the secondary Blenheim water treatment plant. \$190,000 is budgeted in 2025-26 for upgrades to reservoirs. There is budget of \$2,320,000 in 2026-28 for replacement of the Wither Road booster pump station.

Chlorination

12. It is expected that chlorination will be required for all water supplies in NZ unless a significant investment is made to upgrade the reticulation. There is \$5,220,000 budgeted for chlorination and some other treatment improvements of the Blenheim supply over the period 2023-25.

New Wells and Treatment

13. New wells to the north of Blenheim are proposed to increase the resilience and capacity of the supply.
14. \$400,000 is budgeted for new wells and investigations in the period 2023-25. Pipelines for the new wells are budgeted in 2024-27 for \$10M. A budget of \$10M is allocated to a distribution pump station and treatment plant in 2026-27.

Universal Metering

15. Budget of \$10,725,000 is provided for universal metering in 2028-30.

Havelock

Water Treatment

16. There is \$8,145,000 in 2023-25 for a water treatment plant with supply pipeline for Havelock which will ensure the supply complies with the Drinking Water Standards for New Zealand (DWSNZ).

Reticulation Upgrades

17. There is budget of \$180,000 in 2023-24, \$120,000 in 2025-26 and \$150,000 in 2031-32 for reticulation upgrades.

New Source

18. Havelock's existing water source is a shallow aquifer near the Kaituna River. The groundwater has been affected by saltwater intrusion in dry summers, in particular in 2015 when restrictions on water use had to be imposed.
19. Reports have been received on the issue of salinity and potential alternative water sources. A new source in the high yielding Pelorus River catchment will be a significant cost, primarily because of the distance from the town to an abstraction point that is reliable and free from the risk of saltwater intrusion. There is budget provision of \$12,545,000 in 2032-33 for supplying Havelock from the Pelorus.
20. A new well has been drilled at Readers Road by the Kaituna River, 1750 metres further inland from the existing wells. This well has been shown to produce a good supply of water with less risk of saline intrusion. Resource consent has been granted to use this well.

Picton

Speeds Road Additional Wells and Treatment and Pipeline

21. New wells have been drilled to improve resilience and it is proposed to bring these into service with a filtration stage. Drilling and testing additional wells across the valley has highlighted considerable variation in water quality which needs to be planned for. There is budget of \$8,120,000 in 2024-26.

Universal Metering

22. Only commercial and industrial connections in Picton are currently metered. It is planned to investigate metering all connections and there is budget of \$120,000 in 2023-24 and \$1,915,000 in 2024-25.
23. Metering has been shown to reduce consumption. Picton is at the limit of its existing two sources and a third source would be a substantial cost, in the order of \$13.0M. Demand management using metering and using reclaimed water for non-potable uses is considered a better option than a third source. Treatment of sewage treatment plant effluent for reuse is discussed in paragraph 69 below.

Treatment for pH Control

24. Treatment for improved pH control is proposed and there is budget of \$780,000 in 2023-24.

Pressure Management Zone

25. A pressure management zone is proposed for the lower parts of Waikawa. The zone will reduce usage and leakage. Budget is provided of \$503,303 in 2024-25. The Waikawa Pressure Management Zone is subject to resolving some difficulties maintaining sufficient pressure to several elevated properties.

Essons Valley Raw Water Pipeline

26. There are two existing pipelines from Barnes Dam to Essons Valley water treatment plant, one cast iron, the other steel. The steel pipeline was installed for the supply of water to the Picton freezing works and has had to be taken out of service due to the increasing rate of failure. There is budget of \$1,200,000 in 2025-26 to re-line the cast iron pipeline.

Essons Water Treatment Plant Upgrade

27. The Essons Valley water treatment plant complies with the Drinking Water Standards, but there is an aesthetic issue with taste and odour. A significant upgrade would be required to resolve this which is not budgeted for at present. There is budget provision of \$160,000 for replacement of the filter media in 2024-25.

Barnes Dam

28. Consultants are currently assessing the structural integrity of the dam. Budget provision has been made for \$280,000 in 2023-25.

Reservoirs

29. There is budget of \$180,000 in 2023-25 to replace a set of plastic tanks.

New Source

30. There is a budget of \$13,300,000 in 2031-32 for a new source including pipelines and treatment. The new source could be put back several years depending on how successful the proposed demand management is (Refer to paragraph 23).
31. The preferred location of a third source is the Wairau Aquifer; however, it may be difficult to obtain a resource consent. There is a possibility that highly treated effluent from the Blenheim Sewage Treatment Plant could in future be used for irrigation that replaced consented groundwater abstraction and thereby free up groundwater for Picton. Refer to paragraph 46.

Renwick

Water Treatment and Condens Bend Road Bores

32. There is budget of \$4,952,000 in 2023-24 for the completion of construction of a new water treatment plant and connection to the bores in Condens Bend Road.

Reticulation Upgrades

33. Groundwater used to supply Renwick is of low alkalinity, and because of that the water corrodes the asbestos cement (AC) reticulation piping. As a result, a replacement programme has been budgeted.
34. There is \$2.1M budgeted for renewals in 2023-24 and the same again in 2024-25.

Riverlands

35. If the current wells supplying water to Riverlands were to be retained, relatively involved treatment would be required to reduce the concentration of manganese and to meet the Drinking Water Standards. The preferred option is an alternative source within the same freshwater management unit that is low in manganese. Low manganese simplifies treatment significantly.
36. New wells have been drilled further inland close to Blenheim. The pump testing of the two new wells shows they are suitable for supplying Riverlands and a filter trial is to be conducted to determine the type of treatment required.
37. Budget is provided for upgrading of \$17,030,000 in 2023-25 to bring the new wells in to operation with treatment meeting the drinking water standards.

Wairau Valley

38. Properties on the south-east side of the highway are using groundwater which is elevated in arsenic and allowance has been made in the budget for connecting these properties subject to consultation. The supply would be limited to household usage. Budget is provided in 2025-26 of \$385,000.

Sewerage

Blenheim

Sewage Treatment Plant – Industrial Upgrade (Riverlands)

39. Grape vine plantings continue to expand and increasing wine production at Riverlands is forecast.
40. There is a budget in 2026-27 of \$3M for sludge management. This will take industrial sludge out of the ponds system and thereby reduce future pond desludging requirements.
41. Capital upgrade costs are recovered from users by tradewaste charges.

Sewage Treatment Plant – Domestic Upgrades

42. There is a budget of \$2,235,000 in 2028-29 for the construction of a large high flow buffer pond as part of the strategy to reduce overflows from the sewer network.
43. \$4,200,000 is budgeted in 2023-25 to desludge Domestic Pond 2.

Sewage Treatment Plant – Domestic and Industrial - Resource Consent Upgrading

44. The sewage treatment plant will require upgrading for the next resource consent. The details of the upgrade will not be known until options are reviewed, consultation completed, Council approval is given and a resource consent granted. Assumptions have been made for budgeting, however the range in potential costs is large.

45. Industrial and domestic discharges share the cost. The following budgets are included:

	2023-25 per annum	2025-26	2026-27	2027-30
Domestic	\$350,000	\$21,000,000	\$175,000	\$125,000
Industrial - Riverlands	\$150,000	\$9,000,000	\$150,000	\$150,000

46. The \$30M budgeted for treatment in 2025-26 is an allowance for an upgrade for the next resource consent. It assumes a high standard of treatment so that the effluent can be safely used for irrigation and other non-potable uses.
47. In 2026-28 there is \$10M budgeted for reticulation to distribute the highly treated effluent to end users.

Purkiss Street Reticulation and Pump Station

48. There is \$3,050,000 budgeted in 2023-24 for upgrading of the Purkiss Street north pump station and pipelines.

Reticulation – Sewer Relining

49. The Kaikoura Earthquake on 14 November 2016 caused damage to a significant portion of Blenheim’s earthenware sewer mains. The sewers are being relined where practicable.
50. There is sewer renewal budget of \$985,600 in 2023-24 and \$957,440 per year for the four years, 2024-28.

Main Terminal Pump Station – Alabama Road (MOPS)

51. This station pumps all of the sewage from Blenheim, Woodbourne, Renwick and Marlborough Ridge through a 5.1km long pipeline to the Blenheim sewage treatment plant. The station is built in an area that is susceptible to liquefaction. Consideration was given to ground improvement and strengthening but that proved impractical. A new station will provide improved seismic and hydraulic performance.
52. \$250,000 is budgeted in 2022-23 for investigations and design. \$3,000,000 is budgeted in 2023-24 and \$11,000,000 in 2024-25 for construction.
53. Relining of the original MOPS to treatment plant pipeline is budgeted in 2023-25 for \$3,450,000. This is part of the plan to provide for growth and limit overflows.

Battys Road South Pump Station

54. If the population of Blenheim keeps growing, an additional large pump station will be needed in Battys Road. Council has already purchased the land and an interim small pump station is on the site.
55. There is budget of \$6,690,000 in 2027-28 but the timing is very much dependent on growth.
56. Budget has been provided in 2027-29 for \$6,830,000 for high flow storage as part of the strategy to reduce sewage overflows.

Other Works

57. \$1.3M is budgeted in 2023-24 for sewage pump station upgrades and reticulation.
58. Provision is made for sewerage in Burleigh in 2025-27 with a budget of \$2,464,000.
59. There are several other smaller pump and pipeline upgrades budgeted in the ten-year period.
60. There is \$300,000 budgeted in 2025-26 and 2029-30 for increasing resilience at smaller sewage pump stations.

Havelock

61. A new sewage treatment plant is planned for Havelock. The new treatment plant will significantly improve effluent quality.
62. A detailed geotechnical study identified significant issues with the land around the existing ponds which means the site is unsuitable for further development. Consideration will be given to retaining the ponds for a wetland to give some additional treatment and act as a buffer between the treated effluent from the new sewage treatment plant and the Kaituna River.
63. The budget over 2023-25 for the new treatment plant at a new site and the construction of a new terminal pump station is \$13,052,000.
64. Budget of \$6,025,000 is provided in 2029-31 for a land treatment system. This system would be an add on to the new sewage treatment plant.

Picton

Trunk Sewer

65. There is budget in 2024-25 of \$2,312,000 for an overflow storage tank.

Reticulation – Sewer Replacements

66. \$3,410,000 is budgeted over 2024-26 for sewers in Picton and Waikawa.

Reticulation – Sewer Relining

67. Earthenware sewers are in poor condition. The sewer renewals budget for Picton was brought forward and the relining work is expected to be completed by the end of the 2022-23 financial year.

Treatment

68. New blowers and other upgrading work has a budget of \$417,000 in 2023-24
69. A reclaimed water treatment plant is budgeted in 2024-25 for \$7,700,000 and there is \$2,000,000 in the following year for tanks and pipeline. This system will treat effluent from the Picton Sewage Treatment Plant to a high standard for non-potable uses. This will take pressure off the water supply which is extended during summer.
70. In 2026-27 there is \$6,700,000 budgeted for a second aeration basin. The timing of this project will depend on growth.

Renwick

71. There is budget of \$150,000 in 2024-25 for a standby generator and in 2026-27 there is \$1,600,000 for a high flow storage tank which will allow Renwick to grow beyond the current boundaries. Timing will depend on population growth.

Seddon

72. The Seddon sewage treatment plant requires major upgrading. The ultimate aim is to eliminate the discharge to Starborough Creek. A significant volume of winter storage and large area of land is required for land treatment.
73. The preferred option for the initial upgrade includes storage, high level treatment, irrigation of the golf course and other sites adjacent to the highway.
74. Budgets have been provided for the upgrade as follows:

Year	2022-23	2023-24	2024-25
Budget	\$250,000	\$3,550,000	10,650,000

Spring Creek

75. A budget of \$80,000 is provided in 2024-25 for aerators on the existing ponds.

St Andrews

76. Part of St Andrews is now served by a grinder pump system. There is budget of \$900,000 in 2023-24, \$900,000 in 2025-26 and \$152,000 in 2027-28 to complete the scheme.

77. A report by Pattle Delamore Partners in 2008 into the on-site septic tank systems at St Andrews concluded that a community scheme was required to avoid an unacceptable public health risk. The report used the proposed protocol by Auckland Health Care Services which assesses the environmental conditions and management practices to determine whether a community requires sewer reticulation in order to prevent possible risks to public health from existing septic systems.

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