



Infrastructure Committee Meeting

on

Tuesday 29 January 2019

9am

**Council Chambers
District Council Building
2 King George Place
Timaru**

Timaru District Council

Notice is hereby given that a meeting of the Infrastructure Committee will be held in the Council Chamber, Timaru District Council Building, 2 King George Place, Timaru on Tuesday 29 January 2019, at 9am.

Committee Members

Clrs David Jack (Chairperson), Paddy O'Reilly (Deputy Chairperson), Nigel Bowen, Peter Burt, Andrea Leslie, Richard Lyon, Sally Parker, Kerry Stevens, Steve Wills and the Mayor.

Local Authorities (Members' Interests) Act 1968

Committee members are reminded that if you have a pecuniary interest in any item on the agenda, then you must declare this interest and refrain from discussing or voting on this item, and are advised to withdraw from the meeting table.

Bede Carran
Chief Executive

Infrastructure Committee

29 January 2019

Agenda

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Timaru District Council
For the meeting of 29 January 2019

Report for Agenda Item No 6

Prepared by Ashley Harper
Group Manager Infrastructure

Confirmation of Minutes

Minutes of the November Infrastructure Committee meeting.

Recommendation

That the minutes of the Infrastructure Committee meeting, held on 27 November 2018 be confirmed as a true and correct record.

Timaru District Council

Minutes of a Meeting of the Infrastructure Committee held in the Council Chamber, District Council Building, King George Place, Timaru on 27 November 2018 at 9:24 am.

Present Clrs David Jack (Chairperson), Peter Burt, Nigel Bowen, Richard Lyon, Paddy O'Reilly, Sally Parker, Kerry Stevens, Steve Wills and the Mayor

Apology Proposed Clr Burt
Seconded Clr Bowen
"That the apologies from Clr Andrea Leslie and Ali Talbot (Temuka Community Board) be accepted."

Motion carried

In Attendance Bernie Wilson – Pleasant Point Community Board (for public part of meeting)
Jennine Maguire – Geraldine Community Board (for public part of meeting)
Chief Executive (Bede Carran), Group Manager Infrastructure (Ashley Harper), Land Transport Manager (Andrew Dixon), Development Manager (Frazer Munro), Communications Manager (Stephen Doran) and Infrastructure Executive Assistant (Kate Walkinshaw)

1. Identification of Items of Urgent Business – Water Issues

Proposed the Mayor
Seconded Clr Wills

"The Committee agreed to discuss water issues as a matter of urgent business."

Motion Carried

2. Declaration of Conflicts of Interest

There were no conflicts of interest declared.

3. Chairperson's Report

The Chairperson reported on meetings he had attended and duties he had carried out on behalf of the Committee since the last meeting including Environment Canterbury (ECan) Business After 5 event, ECan launch of Public Transport for the Timaru District, Douglas Street and Kitchener Square residents meeting in regards to stormwater issues, Tourism Strategy Workshop, District Plan Workshop, Citizenship and Hall of Fame Ceremony, visit to New South Wales with ECan, Clr Parker and Land Transport Manager to investigate the On Demand Bus Transport System, Downlands Joint Standing Committee Meeting, South Canterbury

Chamber of Commerce event supporting the Mayors talk and following that the Minister of Finance talk, Planning Workshop, District Licencing Committee hearing in Mackenzie District, lunch with Waste Management Board of Directors at Timaru District Council, various discussions with Group Manager Infrastructure in regards to Temuka wastewater odour and also current water storage issues.

Proposed Clr Jack
Seconded Clr Burt

“That the Chairperson’s report be noted.”

Motion carried

4. Confirmation of Minutes

Proposed Clr Lyon
Seconded Clr Parker

“That the minutes of the Infrastructure Committee meeting of 16 October 2018, excluding the public excluded items, be confirmed as a true and correct record.”

Motion carried

5. Land for Road – Geraldine

The Committee considered a report by the Development Manager seeking approval for land adjoining High Street, Geraldine, to be vested as road.

Proposed Clr Burt
Seconded Clr O’Reilly

- a. “That the portions of land identified be vested as road pursuant to Section 114 of the Public Works Act 1981.
- b. That the Chief Executive be delegated authority to sign the Section 114 Public Works Act 1981 certificate accepting the land to be vested as road.”

Motion carried

6. Petition: Traffic Calming Orbell Street and Broadway Avenue

The Committee considered a report by the Land Transport Manager on a petition that has been submitted by residents of Orbell Street and Broadway Avenue, Highfield, Timaru on traffic speed and noise and which requests mitigation measures to address these issues.

The Land Transport Manager advised that the Road Safety Coordinator had been in contact with the residents but no further complaints have been made since the petition was undertaken. There are steps that Council can look into to mitigate the issues however this is generally a Police issue. It was agreed the most important aspect going forward is communication and monitoring.

Proposed Clr Burt
Seconded Clr Wills

- a. “That the petition from Orbell Street and Broadway Avenue residents be received and noted.
- b. That traffic flows and speeds in the area continue to be monitored.
- c. That the Road Safety Coordinator continues to liaise with the residents and to keep Councillors and the Police informed. ”

Motion carried

7. Revision of Footpath Funding Allocations

The Committee considered a report by the Land Transport Manager on revised footpath funding allocations following the \$714,000 annual funding increase for footpaths approved by the Infrastructure Committee and the Policy and Development Committee in October 2018.

It was noted that in the latest road user satisfaction survey that footpaths have the lowest satisfaction rating. There was a lengthy discussion in regards to rural footpaths receiving a fair amount of funding for construction and maintenance as they have a substantial need. The NZTA funding should be fairly divided throughout all of the communities. There was also discussion about the design process and that the design needs to be fit for purpose to cater for all individuals including mobility impaired residents.

The Committee discussed the options available and agreed on a modified Option 1.

Proposed the Mayor
Seconded Clr Parker

“That the additional NZTA financial assistance for footpaths be allocated to footpaths maintenance, renewal and new on a pro-rata basis as per Option 1 but reallocating Timaru Footpaths ‘new’ budget to ‘renewals’.

Motion carried

8. Petition: Extension of free parking in Stafford Street

The Committee considered a report by the Group Manager Infrastructure on a petition received from the Timaru CBD Group with respect to free parking in Stafford Street.

There was considerable debate over the request. There is a need for further investigation into the traffic/directional flow, parking and how the current CBD is laid out. It was agreed that further engagement and consultation is required before any master plans can be developed and implemented.

Proposed Clr Bowen
Seconded Clr Stevens

“Consult with CBD group and do a variety of trials. Delegate his Worship and Councillors Jack, Bowen and Parker to liaise with CBD group. Agreed meeting time to be arranged prior to Christmas. “

Motion Withdrawn

Clr Lyon called a Point of Order.

Meeting adjourned at 10:48am to review Standing Orders.

Meeting reconvened at 11:09am.

Under Section 3.9.3. the Mover and Seconder withdrew the current motion.

Proposed Clr Bowen
Seconded Clr Wills

- a. “That a meeting be held before Christmas 2018 with the Timaru CBD Group and other interested parties on the petition request to extend the free parking time limit in Stafford Street to 1 hour for a 6 month trial period.”
- b. “That the Council attendees at the meeting are his Worship the Mayor, Clrs Jack, Bowen and Parker.”
- c. “That this matter be further reported to the Infrastructure Committee at its next meeting.”

Motion Carried

Clr Parker requested her dissenting vote be recorded.

Subsequent motion:

Proposed the Mayor
Seconded Clr Lyon

“That at a future Infrastructure Committee meeting, a clearly detailed report be presented on how we can address, with the correct resourcing, parties, funding and timeframes, the master plan for all of the CBDs within the district.”

Motion Carried

9. Consideration of Urgent Business – Water Issues

The Mayor discussed the current issues around water availability due to wet weather conditions. The staff involved with the current water issues and monitoring were commended for their efforts.

Proposed the Mayor
Seconded Clr Bowen

“That at the next Infrastructure Committee meeting, reports are to be presented on the following -

- i. Landsborough Road old reservoir storage options.
- ii. Assessment of the option of a low volume water filtration/treatment facility.
- iii. Bore water options as per LTP discussions.”

Motion Carried

10. Exclusion of the Public

Proposed Clr Jack
Seconded Clr Burt

“That the Committee resolves to exclude the public on the grounds contained in Section 48(1) of the Local Government Official Information and Meetings Act:

Confirmation of Minutes

- **Water Shares**

Section 7(2)(i)

The withholding of the information is necessary to enable the Council to carry out, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations)

- **Water Race**

Section 7(2)(b)(ii)

The withholding of the information is necessary to protect information where the making available of the information would be likely unreasonably to prejudice the commercial position of the person who supplied or who is the subject of the information.”

Motion carried

11. Readmittance of the Public

Proposed Clr Stevens
Seconded Clr Wills

“That the public be readmitted to the meeting.”

Motion carried

The meeting concluded at 11:24am.

Chairperson

Infrastructure Committee
for the Meeting of 29 January 2019

Report for Agenda Item No 7

Prepared by Grant Hall
Drainage and Water Manager

Timaru Water Supply

Purpose of Report

1. The purpose of this paper is to provide a progress report back to the Committee on the following matters:
 - Landsborough Road old reservoir storage options
 - Assessment of the option of a low volume water filtration/treatment facility
 - Bore water options as per LTP discussion.

Background

2. At the Timaru District Council Infrastructure Committee meeting on 27 November 2018 the issues regarding resilience for community drinking water due to wet weather conditions were discussed. It was resolved that a report be presented at the next Infrastructure Committee meeting on the existing Landsborough Road reservoir options, the option of a low volume water filtration/treatment facility, and the possible utilisation of bore water.
3. This work builds on that contained in the 2018-2028 Long Term Plan (LTP).
4. Frequent and heavy rain in October and November 2018 resulted in turbidity levels in the Pareora River that were consistently too high to take the water for drinking water purposes for a considerable period of time. The weather also impacted on the quality of the Opihi River water, also compromising the ability to use this water source for a limited time. The combined effect was that the community drinking water supplies at the Claremont reservoir were drawn to low levels (approximately 3½ - 4 days of average use –from a maximum storage capacity of 10 days average consumption). This presented a distinctly possible risk that the water supplied to consumers would not comply with Drinking Water Standards for New Zealand and would result in a Precautionary Boil Water Notice, and would have resulted in major issues for many users.
5. Options for improving the resilience of water supply in these circumstances generally consist of increasing the volume of water storage, providing some treatment for water from the existing sources, or taking (and treating) water from an alternative source such as a secure bore.

6. Water resilience was a significant issue in the Long Term Plan 2018 – 2028 (LTP) and Council resolved to strengthen Timaru’s water resilience. A number of initiatives were budgeted to be completed including abstracting the fully consented volumes from the Opihi source, reducing demand by installing water meters and securing other sources of water.
7. The LTP work followed and built on an internal 30 year issues and options investigation for the Temuka and Timaru water supplies that was completed in December 2015 (following a very dry summer in 2014/15).
8. Many of the initiatives addressed water scarcity arising from drought low rainfall events and covered the long term provision of treated water from source to point of distribution to the reticulation. What Timaru experienced in October and November of 2018 was water quality issues arising from what were historically very high rainfall events within the drinking water catchments. High rainfall becomes problematic at high levels as it has adverse effects on turbidity. Turbidity is a measure of water purity. Drinking water standards in New Zealand require turbidity of less than 1 NTU (Nephelometric Turbidity Unit). To give context, the river turbidity was reaching levels of over 20NTU in the Pareora River and 6NTU at the Opihi intake. Council has robust processes and systems in place to ensure turbid water does not enter the reservoirs.

Recommissioning of the Landsborough Rd reservoirs for storage enhancement

9. Recommissioning of one or both Landsborough Rd reservoirs (estimated volumes of 25 ML and 82 ML) would require additional infrastructure (pipelines, treatment plant and booster pump stations) depending on whether raw water or treated water from Claremont Water Treatment Plant (WTP) is supplied to the reservoirs. Increasing the total storage from the current 226 ML (Claremont reservoirs) to 308 ML would increase the effective storage by approximately just over 3 days (at 24 mega litres use per day).
10. An aerial photograph of the Landsborough Rd Reservoirs is attached at the end of this report. The reservoirs are listed as Historic Place Category 2 in the Heritage NZ register and they have not been used for storing water since 1984.
11. Operationally the storage could not be drawn down to completely empty before turbid water was taken. The turbid water would blend with the previously stored water, and the additional storage of the Landsborough Rd reservoirs would increase the time before the combined turbidity of the water was non-compliant with the drinking water standards by an estimated 3 days.
12. However, it is important to note that unless the raw water taken has a turbidity of no more than 2 NTU (a measure of water clarity and treatability) the water supplied to consumers would relatively quickly not comply with the drinking water standards, regardless of having the additional storage or not.
13. Additional storage does provide additional resilience and reliability in terms of source unavailability or raw water pipeline failure.

14. Further investigations are required to confirm the feasibility and a budget of re-commissioning the structures. Consultation with the NZ Society on Large Dams is needed to confirm the Potential Impact Classification of the structures (and subsequent reporting and dam management requirements). The structural strength and resilience of the reservoir embankments also needs to be confirmed.

Low volume filtration plant at Claremont Water Treatment Plant

15. This option is to construct a filtration plant to take a partial flow of raw water (say 10 ML/d) with a high turbidity (of up to say 50 NTU), which is treated to 0.1 NTU and blended with stored water. The turbidity of stored water is usually 0.1 NTU.
16. The advantage of this option is that some raw water could be taken and treated even when it has high turbidity which, in conjunction with the reservoir storage, would provide additional time for the raw water turbidity to reach an acceptable level (of 2 NTU). Once the raw water turbidity is at that level, in combination with the treatment plant contribution, sufficient water can be abstracted to meet demand while minimising the risk of disinfection non-compliance.
17. In a typical weather event scenario this option would result in the number of days before the combined turbidity of the water was non-compliant with the drinking water standards to greater than 20 days.
18. Construction of a filtration plant of 20 ML/d would result in minimal risk of not being able to supply sufficient quantities of water that was always fully compliant with the drinking water standards. An initial 10 ML/d filtration plant could be constructed which is capable of expansion to 20ML/d in the future.
19. Further investigation of this option is being programmed and a budget allowance of \$100,000 is currently being included in the 2019/20 draft budget.

Deep bores in Levels Plain

20. Construction of deep bores at 2-3 sites in the Levels Plain area with a capacity of 100 L/s to 200 L/s (which equates to 8.5 ML/d and 17 ML/d respectively) will require additional pipe infrastructure to connect the bores to the Opihi pipeline. The bores would be utilised primarily at times when the Opihi and/or the Pareora sources are unavailable or during high demand periods, and would provide resilience in terms of quantity. Typically ground water has a turbidity of less than 0.1 NTU.
21. A groundwater source is potentially more sustainable in terms of long-term abstraction of the water quantity compared to surface water sources. The treated bore water could be used to provide a blending effect for when the Opihi or Pareora source water is greater than 1 NTU.
22. The likelihood of needing to treat the bore water for iron (Fe), manganese (Mn) and hardness is high, and carries significant capital and operational costs due to

sludge handling and disposal and is not considered environmentally sustainable. There is the potential for domestic, industrial and commercial Timaru customers to be adversely affected by an increase in hardness, iron and manganese levels in the treated water.

Options

23. Rough order of costs (+/-30%) for some of the components discussed above, in context with the options considered as part of the 30 year strategy produced in 2015, are presented in the following Table 1:

Table 1

Option	Details	Rough order of costs
1	New DN250 treated water pipeline to recommissioned Landsborough Reservoirs (107 ML). Chlorination WTP and booster Pump Station at Landsborough to supply 5.5 ML/d to south Timaru	\$6.5 - \$7.5 M
2	Install 10 ML/d turbidity removal water treatment plant at Claremont WTP to achieve 35 ML/d via blending.	\$10 - \$12 M
3	Install 20 ML/d turbidity removal water treatment plant at Claremont WTP to achieve 35 ML/d via blending.	\$18.6 - \$20.0 M
4	New 100-200 L/s deep bores in Levels Plain at 2-3 sites. 2 km DN450 transfer pipeline. New Water Treatment Plant to treat for Fe/Mn	\$21.9 - \$23 M
5	New multiple deep bores at 4 sites close to Timaru with yield up to 100 L/s. New WTP to treat for Fe/Mn removal. 4km DN300 transfer pipeline between bores, WTP and trunk Opihi mains	\$13.3 - \$15 M

24. Note that the estimated cost for a 10 ML/d filtration plant at Claremont is an assessment only. A refined estimate of both capital and operating costs would be part of next year's work if Council wishes to proceed with further investigations.
25. Officers will report back prior to the end of the financial year with further analysis on the advantages and disadvantages of each option.

Identification of Relevant Legislation, Council Policy and Plans

26. Relevant legislation and Council plans include:
- Canterbury Land and Water Regional Plan
 - Orari-Temuka-Opihi-Pareora Zone Implementation Programme Addendum
 - Environment Canterbury resource consents
 - TDC Long Term Plan, Infrastructure Strategy and Activity Management Plans.

Assessment of Significance

27. This matter is not deemed significant under the Council's Significance and Engagement Policy.

Consultation

28. No consultation has taken place.

Other Considerations

29. There are no other considerations relevant to this matter.

Funding Implications

30. There are no current allocations within the approved budgets to implement any of the identified options for enhancing the Timaru water supply. There is an allocation for renewing the current ozone water sterilisation plant at Claremont in the approved LTP budgets for \$11 million in 2025/26.
31. It is proposed that \$100,000 be allocated in the 2019/20 budget for further investigation and development of Timaru Water enhancement options for inclusion in the 2021-2031 draft LTP.

Conclusions

32. The strategy for the Timaru water supply has progressed to include retention of the Pareora River source, upgrade of the Opihi source infrastructure to take the full consented allocation, and development of appropriate demand management, including implementation of urban universal water metering.
33. Although this strategy addresses the long term security of supplying sufficient quantities of drinking water, the issue of the treatability of the existing source waters for extended periods due to weather conditions, as experienced in November 2018, has resulted in the re-consideration of some of the components.
34. Options for improving the resilience of water supply in circumstances where the weather has impacted on the quality of the water sources generally consist of increasing the amount of water storage, providing treatment to water from the existing sources, or taking (and treating) water from an alternative source.
35. Options being considered are recommissioning of one or both of the Landsborough Rd reservoirs, construction of a filtration plant at Claremont to treat a partial flow of raw water with high turbidity and blend it with the stored water, and construction of deep bores at 2-3 sites in the Levels Plain area.
36. A comparison of the impact of recommissioning the Landsborough Rd reservoirs or installing a low volume filtration plant at Claremont in a typical weather event scenario shows that construction of the filtration plant results in a greater number of days before the combined turbidity of the water becomes non-compliant with the drinking water standards.

37. However, this is dependent on the quality of a raw water source recovering to a turbidity level of around 2 NTU within 8 to 10 days. The best way to significantly reduce, but not eliminate, the risk of not being able to supply sufficient quantities of water that always meets full compliance with the drinking water standards would be to construct a 10 ML/d filtration plant, option 2 in Table 1 above.
38. There were a number of learnings which have enhanced our understanding of managing the drinking water supplies in periods where prolonged wet weather impacts adversely on the water sources. The events also underscored the importance of investment in training of team members and good quality processes and plant and equipment.

Recommendation

That this report be received and noted.

