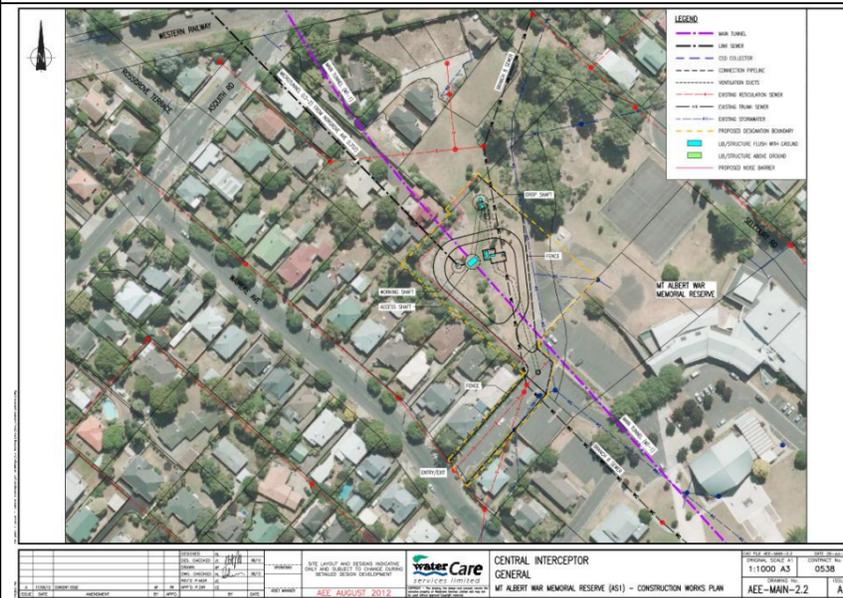


Mt Albert War Memorial Reserve Alternative Sites

Option 1: NOR & Consent Application



waterCare CENTRAL INTERCEPTOR GENERAL - OPTION 1 MT ALBERT WAR MEMORIAL RESERVE (AS1) - CONSTRUCTION WORKS PLAN AEE-MAIN-2.2 A

Separation distance:	nearest dwelling	Recreation Centre
Access shaft:	15 m	70 m
Drop shaft:	20 m	80 m
Control chamber	25 m	60 m
Trenched pipeline	10 m	50 m

Depth of CI tunnel below ground approx. 40m

Noise:
The construction sound levels are predicted to comply with the Construction Noise Standard for Monday to Saturday day-time (0730 – 1800hrs) for all receivers with the exception of the first floor of receiver at 65B and 65C Asquith Ave. A non-compliance of 3 decibels is predicted for that site during rock breaking (longest duration will be during shaft sinking, with the rock breaking phase expected to take several weeks to complete). Designing a barrier to mitigate levels to comply with the limit of the Construction Noise Standard is not practicable for this receiver as it would need to be excessively high and alternative noise mitigation may be required. General day-to-day construction sound levels would be lower.

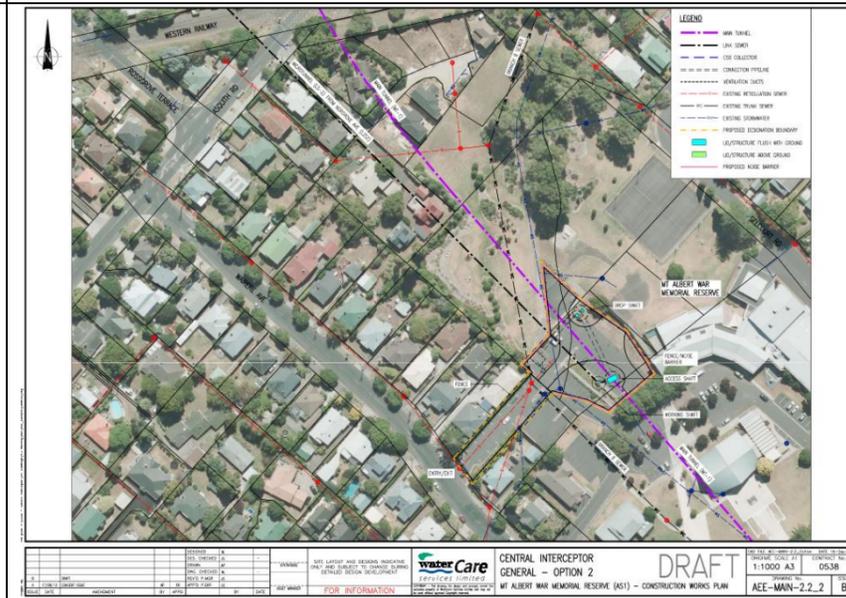
Vibration:
Minor disturbance effects possible during rock breaking and blasting (if required) for shafts and for trenching at sites at 65 B & C Asquith Ave and 9 – 17 Wairere Ave, with effects mitigated via Construction Vibration Management Plan. No damage to structures expected.

Settlement:
Houses on Wairere Ave (9, 11, 13, 15, 17) & Asquith Ave (65C & B) next to the shaft site are exposed to the highest potential settlement hazard, but damage is not expected due to settlement. Practical methodologies are available to construct the shafts at the locations as shown without resulting in settlement related damage.

Traffic:
Loss of some 23 parking spaces

Arboriculture:
Removal of native plantings on southern boundary of reserve and on rise near access shaft location

Option 2: Lower Carpark



waterCare CENTRAL INTERCEPTOR GENERAL - OPTION 2 MT ALBERT WAR MEMORIAL RESERVE (AS1) - CONSTRUCTION WORKS PLAN AEE-MAIN-2.2 B

Separation distance:	nearest dwelling	Recreation Centre
Access shaft:	40 m	15 m
Drop shaft:	35 m	35 m
Control chamber	10 m	50 m
Trenched pipeline	12 m	15 m

Depth of CI tunnel below ground approx. 40m

Noise:
The construction sound levels are predicted to comply with the Construction Noise Standard for Monday to Saturday day-time (0730 – 1800hrs) for all receivers with the exception of 11 Wairere Ave, 9 Wairere Ave and the AC Recreation Centre. A non-compliance of 4 to 11 decibels is predicted for these locations, mainly attributable to rock breaking (longest duration will be during shaft sinking, with the rock breaking phase expected to take several weeks to complete). Other activities such as bored piling would generally be compliant with the Construction Noise Standard, based on screening from the recommended acoustic barrier. General day-to-day construction sound levels would be lower.

Vibration:
Minor disturbance effects possible during rock breaking and blasting (if required) for shafts and for trenching at sites at 5 and 9 Wairere Ave, and at Recreation Centre, with effects mitigated via Construction Vibration Management Plan. No damage to structures expected.

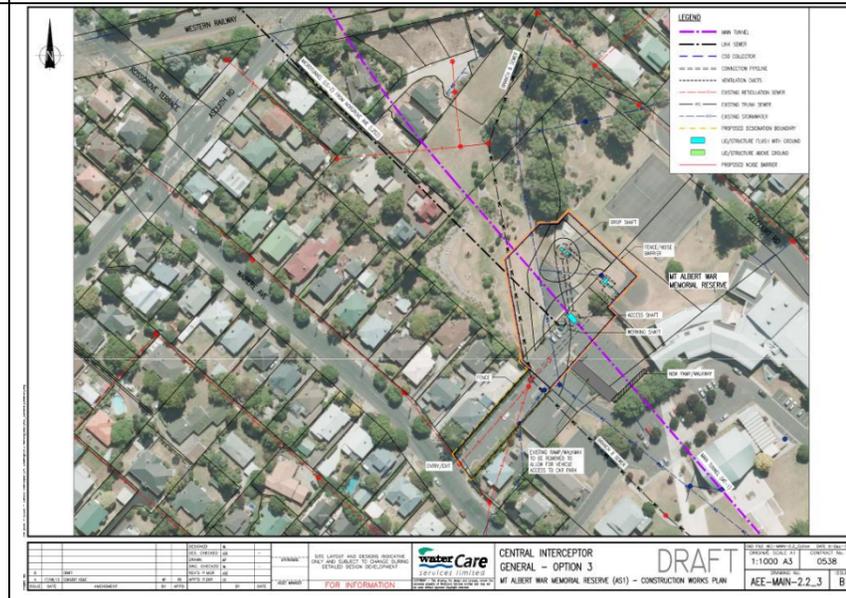
Settlement:
Settlement hazard is shifted away from residential structures to the AC Recreation Centre buildings adjacent to the western car park. Settlement is not expected to result in damage to the council buildings (but could affect kerb lines and asphalt surfaces of carpark). Practical methodologies are available to construct the shafts at the locations as shown without resulting in settlement related damage.

Traffic:
Loss of some 67 parking spaces (44 additional parking spaces compared to Option 1).

Arboriculture:
Removal of exotic tree on slope towards northern end of existing retaining wall

Cost differential (compared to Option 1):
Additional: ≈ \$800K (additional length of Link Sewer ≈ 82m)

Option 3: Basketball Court



waterCare CENTRAL INTERCEPTOR GENERAL - OPTION 3 MT ALBERT WAR MEMORIAL RESERVE (AS1) - CONSTRUCTION WORKS PLAN AEE-MAIN-2.2.3 B

Separation distance:	nearest dwelling	Recreation Centre
Access shaft:	25 m	30 m
Drop shaft:	50 m	50 m
Control chamber	60 m	20 m
Trenched pipeline	30 m	30 m

Depth of CI tunnel below ground approx. 40m

Noise:
The construction sound levels are predicted to comply with the Construction Noise Standard for Monday to Saturday day-time (0730 – 1800hrs) for all receivers with the exception of the first floor of receiver at 65B and 65C Asquith Ave. A non-compliance of 3 decibels is predicted for that site during rock breaking (longest duration will be during shaft sinking, with the rock breaking phase expected to take several weeks to complete). Designing a barrier to mitigate levels to comply with the limit of the Construction Noise Standard is not practicable for this receiver as it would need to be excessively high and alternative noise mitigation may be required.

Vibration:
Minor disturbance effects possible during rock breaking and blasting (if required) for shafts and for trenching at sites at 65 B & C Asquith Ave and 9 – 17 Wairere Ave, with effects mitigated via the Construction Vibration Management Plan. No damage to structures expected.

Settlement:
Greater separation distance from residential structures and council buildings results in lowest shaft settlement hazard (but could affect kerb lines and asphalt surfaces of carpark). Practical methodologies are available to construct the shafts at the locations as shown without resulting in settlement related damage.

Traffic:
Loss of some 39 parking spaces (16 additional parking spaces compared to Option 1).

Arboriculture:
Removal of exotic tree on slope towards northern end of existing retaining wall; possibility of avoiding trees in western part of reserve

Cost differential (compared to Option 1):
Additional: ≈ \$507K (additional length of Link Sewer ≈ 52m)

Note; Comparative alternatives assessment table as provided to Albert-Eden Local Board and AC Parks on 8 February 2013