

Ohiro Properties Ltd

**Private Plan Change Brooklyn
Ohiro Road Plan Change -
Infrastructure**

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Quality Assurance Statement	
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1. INTRODUCTION

This report addresses infrastructure needs relating to a private plan change request for rezoning from Rural Area to Residential Area. The area and its present development is described in a number of specialist reports relating to the plan change request.

Infrastructure for development resulting from the plan change will be provided in accordance with the Wellington City Council Code of Practice for Land Development, November 1994

An assumption is made of development of 200 to 500 new dwellings for the purpose of this assessment. All subdivision development would require detailed evaluation through consent processes.

2. STORMWATER

An approximately 15 hectare area identified for potential plan change comprises land rising from the western side of Ohiro Road to the eastern boundaries of existing Mitchell Street properties. Included in this area are about five separate valleys, although some of these are only minor depressions in the sloping hillside. None appears to contain an active stream and no springs have been identified (see separate report by Connell Wagner – Appendix 3).

A changed planning status for this area of land will create additional stormwater run-off because the residential development of the land would retain less of the rainfall than the existing vegetation cover. This is reflected in the Rational Method runoff coefficient which assesses 50% of rainfall running off Outer Residential city development compared with 35% off undeveloped, vegetated land. Ohiro Road, being a bus route and providing access to the City's Southern Landfill, would be defined as a primary road for purposes of Code of Practice definition of pipe and channel system minimum design storm return period. The resultant 15% extra flow can be calculated as 440 l/s using the Rational Method assuming the time of concentration of twelve minutes for main valley flow in the Owhiro Stream / culvert system adjacent to the proposed plan change area.

The main catchment design flow is assessed as 10,500 l/s adjacent to the proposed plan change area, so the increase in flow due to the plan change is 4%, which is not significant. This increase becomes comparatively smaller as the main stream/culvert system proceeds down the catchment. The existing main stormwater system in Ohiro Road typically comprises the open channelled Owhiro Stream which has adequate capacity and several minimum-standard culverts.

The sloping topography of this land and the outer residential housing density criteria will make measures that can be used to slow stormwater runoff response to a rainfall event relatively impractical. Such measures in other areas could include storage tanks linked to house roof guttering on individual properties and grass swales used as an alternative to stormwater pipes in the subdivision road reserves or designated drainage reserves. These are unlikely to be appropriate in this area.

Any stormwater flow from the existing Mitchell Street subdivision above the site which is directed into existing valleys would need to be incorporated into the design for the new subdivision.

Stormwater pipelines for the new subdivision will be located either on road reserve or in dedicated drainage reserves located in existing valley locations within the area, dependent on the subdivision roading layout.

Due to site topography, care will need to be taken with the flow velocities at which the stormwater runoff will enter the Owhiro Stream channel below the subdivision. A number of methods may be used to managed the flow and/or to provide channel protection. As the stream is understood to have significance to tangata whenua, consultation will be required over detailed design and ecological effects will need to be taken into account.

At the commencement of any earthworks within the individual valleys of the subdivision, subsoil drainage will need to be provided in accordance with Code of Practice requirements.

During the earthworks activities, temporary control of stormwater runoff will need to be provided in accordance with the Wellington Regional Council's Erosion and Sediment Control Guidelines.

3. WATER SUPPLY

The existing subdivision which is currently being developed on outer residential zoned land by Brooklyn Holdings at 282 Ohiro Road is fed from the medium pressure water supply zone pipelines below the subdivision in Ohiro Road. Pressure tests taken near the supply point in Ohiro Road provided the following existing status data;

Normal draw-off	110m head
Normal draw off plus 40 l/s	70m head

There is current ribbon type subdivision development on both sides of Mitchell Street at the top of the hill above the land to be rezoned. This Mitchell Street subdivision is fed by a higher pressure water supply zone than that which feeds the 282 Ohiro Road subdivision.

It is anticipated that housing development following plan change will involve between 200 and 500 houses, which implies a subdivision population of between 620 and 1550. Using Code of Practice criteria, resultant peak flows required to service these houses (excluding fire requirements) would range between 10 l/s for 200 houses and 25 l/s for 500 houses. Fire fighting requirements will need to be provided in accordance with the Code of Practice and the NZ Fire Service "Code of Practice for Fire Fighting Water Supplies" 1992.

Whilst individual water pressure zone data would need to be confirmed with Council, it appears likely that at least the higher parts of the rezoned area may need to be supplied with higher pressures that may involve connection to the higher pressure zone serving the Mitchell Street subdivision. It is recognised that the impact of the increased water supply demand will need to be analysed in detail and that financial contribution towards upgrading may need to be provided for the feed infrastructure as set out in section E1.1.5 of the Code of Practice.

4. WASTEWATER (SEWAGE)

For the purposes of this assessment, it is anticipated that housing development following plan change would involve between 200 and 500 houses with the type of development being similar to that currently being implemented at the Brooklyn Holdings site, 282 Ohiro Road.

The additional wastewater flow generated by the plan change from rural to outer residential is calculated following Council Code requirements as;

Average wastewater flow	3.7 l/s
Peak sewage wastewater flow	16 l/s (with no allowance for inflow)

By comparison, the existing peak design wastewater flow in the main Ohiro Road sewer adjacent to the subdivision would be about 140 l/s after full development and allowing for infiltration and inflow. The additional peak flow of 16 l/s from the plan change land is 11% of flow from the currently designated land.

The existing wastewater from Brooklyn at the top of the Owhiro Valley is piped down Ohiro Road to feed the major Island Bay Wastewater Pump Station, which is located at no 430 The Parade, just west of The Bach coffee bar. This pump station collects wastewater from both the Owhiro Bay and Island Bay catchments and delivers this through a rising main / tunnel system to the City's main interceptors feeding the Moa Point Wastewater Treatment plant.

The Island Bay Wastewater Pump Station, which was constructed in 1993/94 has a design capacity of 750 l/s, so the peak flow of 16 l/s from the proposed land change is 2% of this capacity. The capacity of any major pump station would incorporate allowance for development of the catchment as zoned in the District Plan at the time, so the impact of the required plan change on the performance of the pump station will depend on these assumptions along with the overall extent of development in the Owhiro Bay and Island Bay catchments.

Without full information of existing system details it is not possible to make any further observations about the ability of the Council infrastructure to carry the additional wastewater load. However the extent of additional flow compared with flows generated by full development of the catchment appears small.

There appears that wastewater flows from the Mitchell Street subdivision above the area proposed for rezoning are directed north and are not piped down through the area.

As for the stormwater, sewer pipelines for the new subdivision will be located either within road reserve or in dedicated drainage reserves located in existing valley locations within the land concerned.

5. POWER

Power to the area of the proposed plan change is supplied for the Central Park Main Feeder.

Domestic power will need to be supplied by underground cables generally laid in footpath in accordance with the specifications of the District Plan, the local lines supplier and AS/NZS 3000/2000. Up to four transformers will need to be provided on suitable sites clear of roads and footpaths. The number of transformers required will be dependent on the type and number of houses provided by the development.

Street lighting will need to be provided in accordance with the A/S/ NZS 1158 series of standards and be run-off the domestic power cables.

6. GAS

Gas supply will not be available for the proposed development.

7. TELECOMMUNICATIONS

Telecommunications will need to be supplied by underground cables generally laid in the footpath in accordance with the specifications of local supplier Telecom.