

Executive Summary

Applications for Resource Consents and Discharge Permits from Greater Wellington Regional Council and Wellington City Council

Expansion of Existing Landfill

Applicants – Burrell Demolition Ltd and C&D Landfill Ltd

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1 Introduction

The purpose of this document is to provide a summary of information relevant to applications for consents and permits from Greater Wellington Regional Council (GWRC) and Wellington City Council (WCC) in relation to the expansion of an existing construction, demolition and cleanfill materials landfill.

2 Background

2.1 History

In 1971, Burrell Demolition Limited (BDL) purchased 2124 acres of land in Owhiro Bay to use as a tip site for its demolition activities. Historically, the land had been used for sheep farming.

In 1972, Wellington City Council took the land under the Public Works Act. Alex Burrell undertook Court proceedings against Wellington City Council which were settled with Council retaining the land, while agreeing to grant Alex Burrell a 21 year lease of a 41.5 ha portion of the land addressed as 50 Landfill Road, Happy Valley. The lease was from January 1978, and expired in 1999.

In June 1976 a water right (WGN760090) for the diversion and piping of the water course (called Burrell's Gully stream) was issued to the Wellington City Corporation by the Wellington Regional Water Board.

Between 1978 and 1993, BDL used the site for non-hazardous construction and demolition materials taken from demolition projects carried out by BDL. Material deposited included concrete (reinforced and unreinforced), brickwork, masonry, timber, roofing iron, ridging and spouting. After 1993, with increased demand for disposal of construction and demolition waste, BDL started receiving construction and demolition fill and cleanfill from demolition and other contractors.

In 1994, following the advent of the Resource Management Act (RMA), BDL applied for consents from GWRC and WCC to extend the landfill by the piping and diversion of the watercourse by approximately 100m; and to increase the landfill to a height of 150m Relative Level ("RL").

Resource consents and permits for that application were approved by a joint notified decision WGN940057 on 20 June 1995. The approved consent was to expire on 14 June 2026. The Commissioners who heard the appeal considered that the actual and potential adverse effects on the environment of the proposed landfill operation would be minor. End rehabilitation and re-use of the site would be beneficial.

A new lease for the landfill operation was granted to BDL by the WCC in January 2000 for the same land area of 41.5 hectares, providing for an occupation of land running approximately parallel with the 300m contour Above Mean Sea Level (AMSL). The lease term is for 15 years, commencing 1 April 2000 with a stated expiry date of 31 March 2015. However the lease did not commence until 2009. Burrell Demolition Limited has given the Council notice that it disputes the expiration date of the lease, which it says expires in 2024.

Since the granting of WGN940057 the applicant has sought to apply to the regional and district consent authorities to change conditions of consent. The applicant made a formal application for new consents from GWRC and WCC in 2009.

The 1994 consent application and 1995 consent decision did not define the base altitude that the "150 m RL" landfill height related to. The applicant was told by its engineer at the time of

application that the “relative level” was measured from the existing level of the site at its access point off Landfill Road, which was approximately 120 m above mean sea level. By August 2012, the existing landfill maximum operating height was approximately 230m above mean sea level. In July 2012, the High Court ruled that “150m RL” meant 150 m AMSL. That decision has been appealed, with a hearing date by the Court of Appeal in October 2013.

The applicant wishes to regularise its business operation so that, irrespective of the outcome of the appeal, it is fully compliant. It also wishes to extend the area within which the landfill can operate. In June 2012, BDL and C&D Landfill Ltd (CDLL) instructed Opus International Consultants Ltd (Opus) to provide planning and project expertise for the purpose of obtaining resource consents and permits related to the operation of the landfill.

In early October 2012, BDL and CDLL made applications for consents and permits to GWRC and WCC. Retrospective consent was sought for the existing landfill to occupy its site from 150m AMSL to 230m AMSL, and for a further limited expansion of the landfill up to 240m AMSL. This additional space was to provide for an operational area for the landfill until a decision could be determined for this consent proposal. Consents and permits applied for were granted by GWRC and WCC consent authorities on 1/02/2013 (WGN130070) and 4/03/2013 (SR265761). Those consents expire on 1/08/2013.

2.2 Legal Description

The proposed expansion site is located within land legally described as Part Lot 1 DP29398 held under Title WN21D/612.

The land parcel is also gazetted for sanitary works (disposal of refuse) under the NZGZ on 6 April 1972 p733.

2.3 Zoning

The proposed expansion is on land zoned Open Space B – Natural Environment (Map 2) and is within land designated by WCC for ‘refuse disposal’ (Designation 61) under the District Plan.

Part of the proposed expansion site also passes above the WCC Ridgeline and Hilltop landscape overlay line as shown on Map 2 of the District Plan (

2.4 Approved Resource Consents

The existing landfill operates under the resource consents or permits listed in Table 1.

Table 1: Current approved resource consents or permits for C & D Landfill

Consent Authority	Consent Reference	Description	Granted	Expires
Joint Decision of GWRC & WCC	WGN940057	WCC Land use consent for cleanfill, culverting of stream, and earthworks GWRC (01) Discharge of contaminants to land. GWRC (02) Diversion of water course GWRC (03) Culvert in water course	20/06/1995	14/06/2026
GWRC	WGN130070 (31936)	Land use for soil disturbance and operation of landfill	1/02/2013	14/06/2026

GWRC	WGN130070 (31937)	Discharge permits for material to land, and leachate to land where it may enter water	1/02/2013	1/08/2013
GWRC	WGN130070 (32801)	Discharge permits for contaminants to air, and treated sediment laden water to land where it may enter water.	1/02/2013	1/08/2013
WCC	SR265761 (Land Use 1) (Land Use 2)	1. Operation of a landfill between 150m and 240m AMSL 2. Operation of a landfill from 225m to 240m AMSL on contaminated land	4/03/2013	1/08/2013

3 Applications for Consent

3.1 Types of Consent

- Land use consents pursuant to Section 9 of the RMA 1991
- Land use consent for reclamation pursuant to Section 13 of the RMA 1991
- Water permits pursuant to Section 14 of the RMA 1991
- Discharge permits for contaminants pursuant to Section 15 of the Resource Management Act 1991

3.2 Greater Wellington Regional Council

The proposal for an expansion of the existing landfill has been lodged with GWRC and has been given the reference WGN090036. The activities for consent are described as follows;

- Ground disturbance on erosion prone land;
- Discharge of contaminants (landfill materials, leachate, sediment laden water) to land, air (dust), and in circumstances where they may enter water;
- The reclamation (infilling) of 554 metres of permanently flowing water course and 680 metres of ephemeral or intermittently flowing water courses, and,
- The diversion and culverting of a watercourse (Demolition Gully stream and tributaries).

3.3 Wellington City Council

The proposal for an expansion of the existing landfill has been lodged with WCC and has been given the reference SR215490. The activities for consent are described as follows:

- Storage, use or handling of hazardous substances in the Open Space B activity area;
- Modification, damage, destruction and removal of indigenous vegetation;
- Non recreation activity or building;
- Earthworks which exceed permitted activity standards (height of cut/fill, slope, volume, proximity to water course);
- Use of potentially contaminated land.

4 Proposal

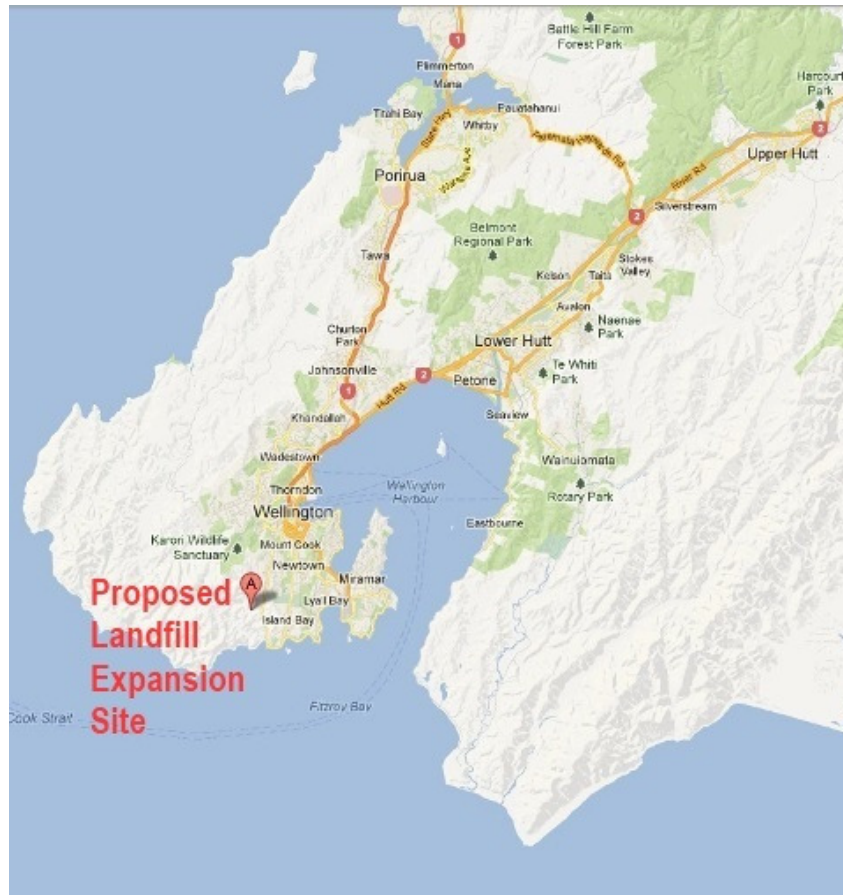


Image courtesy of Google Maps 2013

Figure 1: Location of proposed landfill expansion within Wellington Region.

4.1 Description of Activities

The existing landfill lies across a valley in such a manner as to dam stormwater flow from the higher parts of the catchment. Stormwater is presently carried by a 900mm diameter concrete culvert that passes under the landfill to discharge to the Carey's Gully stream located north of Landfill Road outside the site.

The proposed expansion of the landfill would enable stormwater controls that remove dependence on the existing culvert. Extension of the landfill up the catchment will create an estimated 3.5 million m³ of airspace for landfill materials. The proposed expansion design is shown in thirteen stages which are grouped into upper, middle and lower expansion site work programs, and are indicated on the Drawings Set. The stages are set out in Table 2 below.

The length of time for developing and constructing each stage cannot be accurately determined because it depends on future commercial conditions. However the landfill operator would undertake the construction of the landfill in a sequence for the overall program as shown below:

- 1) Complete the existing operational landfill (Zones 4, 5, 6, and upper surface of Zone 3). Maintain the site access road to the landfill expansion site, final surface, and stormwater drainage. The existing landfill as at April 2013 is estimated to reach capacity by 2018;

- 2) Develop the site access road to upper expansion stages. Undertake landfill development and construction from stage 10 phase 1. The estimated time frame to complete the upper landfill expansion is 10-15 years (2028-2033);
- 3) Develop the site access road from the upper expansion down to the lower expansion stages (1-5). Undertake landfill development and construction. The estimated time frame to complete the lower landfill expansion is 10-15 years (2044-2049);
- 4) Undertake middle landfill expansion development and construction. The estimated time frame to complete the middle expansion is 10 years (2045-2050).

The stages indicated are schematic only, and within the program area the operator may elect to build the landfill stages in a non-consecutive order and/or construct more than one stage at any time to provide continuance of habitat for aquatic species, and as operational conditions on the site become better known.

Table 2: Indicative staging of the proposed expansion of C & D Landfill

Program	Stage	Length of Culvert (m)	Assessed Volume (m3)
Lower	1	49	128200
	2	42	149000
	3	43	148600
	4	40	217300
	5	48	309800
Middle	6	42	342400
	7	73	524600
	8	53	117700
	9	40	189100
Upper	10	40	311900
	11	40	344800
	12	40	160800
	13	212	576900
	Totals	762	3521100

The general program of works in each stage would include:

- Extension of the culvert in stages, generally about 40 to 45 metres in length, with completion of the inlet works before the pipe is bedded, haunched and covered, generally as indicated on the drawings;
- Backfilling over the new length of culvert to achieve a safe cover depth to allow machinery operation over the culvert without damaging the pipe;
- The placement of landfill materials to achieve a final stage level before construction of a further length of culvert;
- The progressive construction of overland flow channels to collect stormwater from the catchment.

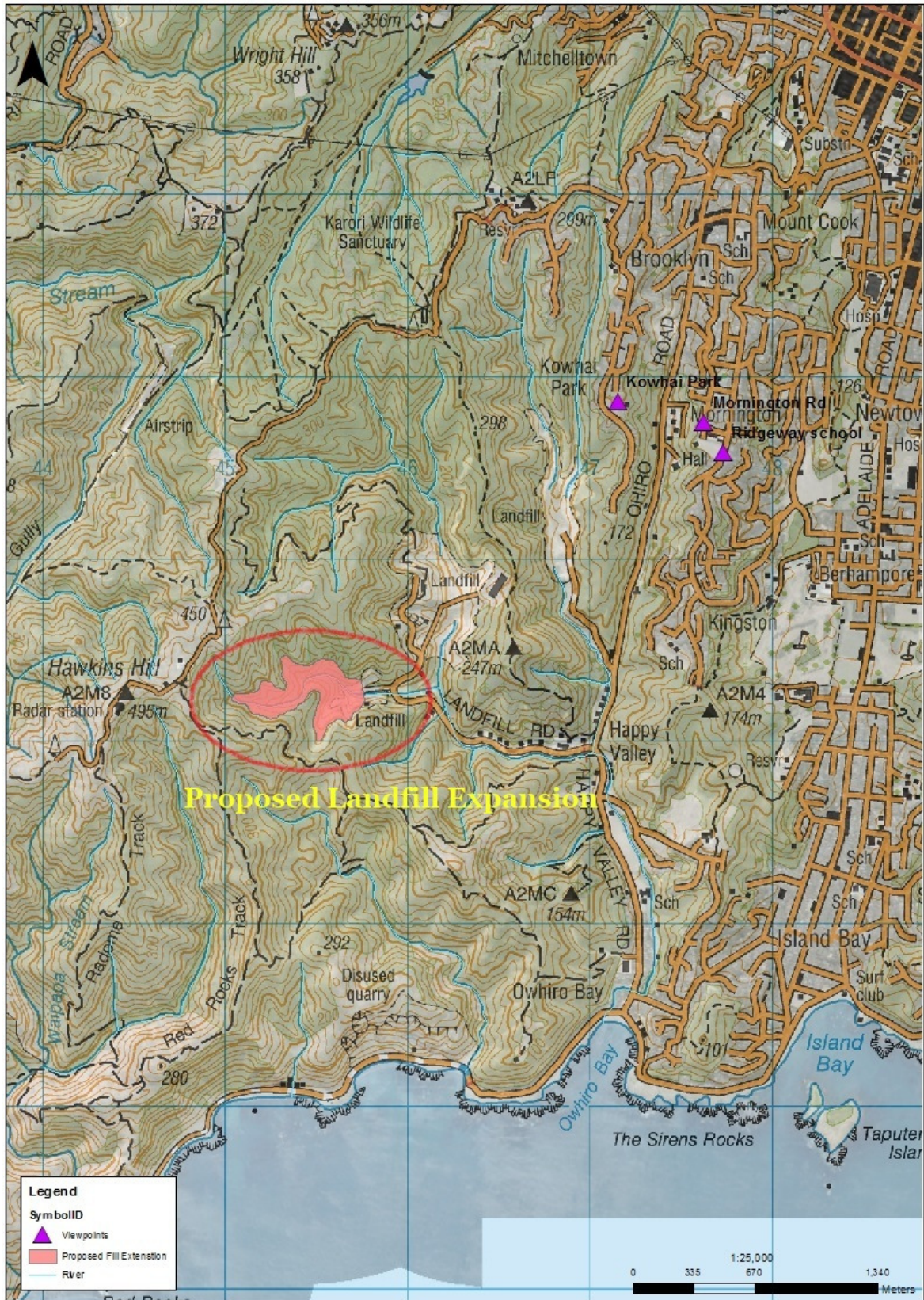


Figure 2: Site context map for the proposed landfill expansion.

4.2 Duration of consents

Pursuant to RMA Section 123, the duration sought for the resource consents for water permits, land use, structures and discharges is 35 years. The duration sought for resource consent related to the reclamation of the Demolition Gully Stream and tributaries is unlimited.

5 Summary of Consent Documentation

5.1 Assessment of Effects on Environment

An assessment of the actual or potential effects upon the environment (AEE) as per RMA 1991 section 104(1)(a) has been prepared by MWA Solutions Ltd in January 2012. It is important to note that some aspects of the information provided by MWA have been superseded. Where there may be inconsistencies between information submitted under the MWA documents and latter information, it is the newer information that has precedence.

Further reports in response to requests for further information (RMA s.92) from GWRC and WCC have addressed:

- An assessment of the landfill as an activity under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health;
- A Stream Ecological Valuation for an offsite environmental mitigation strategy;
- A Landscape and visual assessment of the proposed expansion;
- A Review of Slope Stability in terms of increasing the current landfill maximum height to 240m AMSL;

The full reports for these documents are provided, but in this report only the main findings are summarised, in sections 5.2 to 5.9 below.

5.2 Assessment of RMA 1991 Part 2, Statutory Policy and Planning Documents

An assessment of the proposed expansion against Part 2 of the RMA 1991 and relevant national environmental standards, national policy statements, regional policy statements, and regional plans as set out under the RMA section 104(1)(b) is provided as a separate report in support of the applications for consents and permits.

5.3 Landfill Site Management

5.3.1 Operational Management Plan

A landfill Site Management Plan (SMP) as approved by GWRC and WCC under the current resource consents is provided with this application. The SMP explains the operation of the existing landfill in terms of acceptable landfill materials, landfill site development, procedures, responsibilities, stormwater, air quality, traffic management, site rehabilitation and monitoring.

5.3.2 Health & Safety Plan

A Health and safety plan for matters relating to the operation of the landfill is provided under the Site Management Plan.

5.3.3 Culvert Management Plan

GWRC and WCC consenting and engineering staff have requested that the landfill operator develop a management plan in relation to the existing culvert beneath the landfill.

There are 2 potential scenarios relating to the creation of a blockage or impedance of catchment drainage through the existing landfill.

One relates to a failure of the existing culvert within the landfill, while the other relate to the potential for a subsidence of the landfill batter slope below Zone 1, subsequently blocking the culvert inlet.

The existing culvert conveying water from the upper Demolition Gully stream was surveyed in June 2010. An assessment of the CCTV information by MWA Ltd found that the culvert has various defects that are likely to adversely impact upon its structural integrity in the long term.

The proposed expansion of the existing landfill provides an opportunity to both redirect catchment drainage to avoid sections of the existing culvert and to reinforce the Zone 1 batter slope by infilling of the existing gully. If regional and district consents are granted for the proposal as described, these actions to mitigate the risk scenarios are likely to occur in the medium to longer term time frame of the landfill (in the period of years 2028-2033, an estimate of 15-20 years based upon section 4.1 above).

In the short to medium term time frame the landfill operator is to maintain a monitoring program of the existing culvert and of the physical state of the gully below the Zone 1 batter slope upstream of the culvert inlet. The landfill operator actively monitors water flows and site conditions at the inlet during periods of wet weather (on a daily basis during rainfall events). The landfill operator also holds quantities of large diameter pipes, high volume pumps, and heavy excavation machinery that would be employed in the event that water ponding was observed at the inlet (either from an internal blockage or batter slope subsidence). These methods have been used successively in the earlier development of the landfill (circa 2000-2005).

5.3.4 Restoration Plan

After the completion of the landfill final surface, a rehabilitation and site restoration process would be undertaken to enable the landfill site to assume an appearance that integrates with the surrounding landscape. The Site Management Plan (SMP) section 9 explains what actions would be undertaken. There is also a landscape planting plan in the Drawing Set (drawing number 9402/01), which provides indicative layout, subject to approval of consent authorities. Additional off site environmental mitigation of aquatic habitat is discussed in summary under section 5.7.

5.4 Drawing Set

A drawing set of the indicative design for the proposed landfill expansion is provided. This was undertaken by MWA Solutions Ltd in October 2010. The drawing set includes plans showing the design of the landfill, site drainage, surface water and sediment collection, and landscape planting.

Also included in the drawing set is a location plan for the current operating landfill, and a diagram indicating the location of the existing landfill zones.

Additional diagrams relating to overland flow drainage are provided in the GeoScience report related to geotechnical slope stability.

5.5 Geotechnical Assessment Information

5.5.1 Aurecon

Aurecon undertook a review of the (then) existing landfill stability in July 2009, specifically in reference to an expansion of the landfill. The Aurecon report is supportive of the type of landfill design and operation as is described in the information provided in the AEEs, Drawing Set, and Site Management Plan.

5.5.2 GeoScience

A further geotechnical review was undertaken in November 2012 which assessed the existing slope stability and an increase in the height of the landfill to 240m AMSL. The GeoScience report is considered to agree with the Aurecon findings in terms of additional landfill capacity and height in both the existing landfill and the proposed expansion.

5.6 Landscape & Visual Assessment

A Landscape and visual assessment (LVA) relating to the proposed expansion has been undertaken by Opus to demonstrate the likely actual or potential effects upon the site's environment. The LVA discusses the site's physical, legal, and planning context, evaluates the likely visibility of the proposal from publicly accessible spaces, and the scale of effects on landscape and visual values. The LVA also provides recommendations as to how the landfill development should be undertaken to minimise its effects upon landscape / visual values, and what quality or type of restoration planting should be considered during landfill operations, or when a final surface level is reached.

5.7 Ecological

5.7.1 Wildlands

Wildlands Consultants prepared an assessment of the proposed expansion site's ecological values in 2011/early 2012. The assessment identified both terrestrial and freshwater aquatic habitats of significance within the site, and the presence of aquatic fauna, some species (koaro, long finned eel) of which are considered 'at risk'. The likely adverse effects of the proposed expansion in terms of loss of stream habitat, loss of aquatic species, and loss of indigenous vegetation and some ecological functions are considered moderate. Proposed onsite mitigation is outlined, including pest plant & animal management, terrestrial and riparian habitat restoration, and the provision of an overland flow channel to promote fish passage on the final fill surface. The assessed opinion of the scale of adverse effect recognises that the final onsite remediation may not be successful in providing for the future recolonisation of the location by aquatic fauna species currently found or likely to be present. Because of this, environmental compensation is discussed in section 5.7.2, below.

5.7.2 Stream Ecological Valuation

A Stream Ecological Valuation (SEV) of the upper Demolition Gully stream, Landfill Road stream, and parts of the lower Owhiro stream was undertaken in October 2012. This was in response to a request from GWRC for further information.

The SEV had 2 purposes. One was to objectively measure and determine a value of the natural habitat qualities of the 3 water courses. In this regard the Demolition Gully stream above the landfill was found to be of a high value, whilst the lower streams were assessed to have significantly lower natural habitat values.

The second purpose was to determine a strategy for offsite restoration based upon an environmental compensation ratio. It is proposed that offsite restoration of the lower streams is offered to mitigate the loss of habitat from expansion of the landfill over Demolition Gully stream. The quantity of compensation is based upon the quantity of natural habitat lost (from Demolition Gully stream) and the assessed difference in quality of the natural habitat being restored or rehabilitated. The SEV has assessed that a total stream length of 1,186m of stream would need to be restored to compensate for the impacts of the proposed landfill extension.

It is still to be determined what sections of the Landfill Road stream or Owhiro stream could be provided with environmental restoration. The total stream length that could be restored would be influenced by the stream's width, and its availability in terms of land access arrangements. The SEV report has made some suggestion as to the types of works that would comprise the restoration (clearance of weeds, rubbish, or willow trees). There may be other types of works that could be equally or more beneficial (i.e. adding or removal of structures in water course, flattening of embankments) but are more complex in terms of physical works and the need for regulatory approvals. The applicant has had some preliminary discussions with WCC officers and is seeking to engage with a community environmental group on this proposal.

5.8 Contaminated Site Assessment

An assessment in respect of the existing landfill against the requirements of the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health has been prepared by Opus. Operation of the landfill creates a potential risk to human health through four major exposure pathways:

- 1 Personnel working on the site directly contacting fill material, e.g. walking on soil, breathing dusts, and handling waste materials;
- 2 Soil tracking off site with vehicles;
- 3 Material blowing off site, and;
- 4 Material washing or leaching into waterways.

The NES is triggered for the proposed landfill expansion in terms of changes to the site footprint and height of an identified contaminated site. Existing use rights under current consent approvals cannot be relied upon. A land use resource consent is required as a discretionary activity.

The pathways by which a risk to human health could arise should there be contaminated material deposited at the site, are all recognised and addressed in the proposed SMP, and can be regulated (if required) through conditions of a resource consent.

5.9 Noise Assessment

An assessment in terms of the actual or potential noise effects of the proposed landfill expansion was undertaken by Hegley Acoustic Consultants in March 2012. The assessment considered relevant RMA (s.16 and s.17) and WCC District Plan noise standards 17.1.1.1 in relation to the Landfill lease boundary, or exceeding limits under the District Plan Chapter 17 Appendix for land / premises within the rural or residential zones. The assessment then considers surrounding properties and modelled noise scenarios. The assessment considers averaged noise, special audible characteristics and cumulative noise effects, and the likely L_{10} and L_{max} noise levels produced from the site. The assessment concludes that:

“Noise from the plant associated with the proposed landfill extension has been assessed by predicting noise to the surrounding properties based on measurements of similar plant. This analysis has shown that restricting the locations where the front end loaders and excavator (but not the trucks) can deposit material during night time and on Sundays, noise from the operation, when combined with the noise from the nearby Happy Valley Landfill,

will comply with the noise rules of the District Plan. Based on this, it can be concluded that the noise levels will be reasonable and that the effects of noise from the proposal will be no more than minor”.

Any actual or potential adverse noise effects from the proposed landfill expansion can be considered as no more than minor.

6 Consultation

The consent application for the proposed landfill expansion will be publicly notified. The applicant has not (up to this time) undertaken direct consultation with persons or organisations outside of GWRC or WCC. Some information relating to the proposed expansion design, ecological impacts and environmental mitigation has been provided to Friends of the Owhiro Stream (FOOS).

Further work on identifying the appropriate type of environmental compensation is required for the mitigation of effects upon aquatic habitat values. The provision of environmental compensation is likely to be a process and an outcome that will be of interest to many parties beyond those identified in the consent application.

7 Mitigation Measures

7.1 Mitigation

Given the scale of the proposed expansion, in space and time, and the sensitivity of the site and downstream receiving environments, there is a requirement for comprehensive mitigation to address landscape, water quality, natural habitat, landfill on-site management, noise, dust, and contaminated land issues.

Mitigation measures and / or strategies for mitigation on these issues are discussed and outlined in the application and supporting documentation.

For more detail please refer to the table below for the appropriate specialist report.

<i>Issue for Mitigation</i>	<i>Information Source for Mitigation</i>
Aquatic ecology & habitat	Opus 2012 Wildlands 2012
Geotechnical	Aurecon 2009 Geo Science 2012
Landfill operations	Landfill Site Management Plan (CDLL) Landfill Health and Safety Plan (CDLL)
Landscape and visual effects	Opus 2013 Section 9 Landfill Site Management Plan
Noise	Hegley Acoustic 2012
Site ecology	Wildlands 2012

Terrestrial habitat restoration	Section 9 Landfill Site Management Plan Wildlands 2012
Water quality	Landfill Site Management Plan (CDLL)

7.2 Suggested Conditions of Consent

No suggested or draft conditions of consent have been presented.

If consents as applied for are granted, the conditions imposed would be likely to reflect the matters set out under current consents as referenced in Table 1 above.