Figure 1-6  A section of Pipe Bridge No. 2 (900m-1500m)

Figure 1-7  Example of risk to pipeline from slips above stream, some of which dislodge trees (pipeline is out of view)
Figure 1-8  View of Karori Stream showing braided channel formation (pipeline out of view)

The image above was taken just after a diversion in Area B of the Stream (2009) to protect the pipeline, showing diverted overland flows – refer location on Figure 1-12 aerial photo. The pipeline (out of view) runs down the right hand side of the picture and then turns left along the bottom of the image. The images below show examples of pipe bridge scouring.

Figure 1-9  Views of Pipe Bridge No. 2 Scouring Examples (900-1500m)
Figure 1-10 View of Karori Stream showing diversion works to protect pipeline

The image above (taken 2009) shows some diversion works near Pipe Bridge Number 2. The works involved forming a gravel bank to constrain the flows and protect the pipeline by moving flows away from its foundations. The work location is shown as Area B on the annotated aerial image (Figure 1-12) at Section 4.5.2.

2.4 Access

Access to parts of the pipeline is summarised on Figure 1-3 and described at Section 2.3.

The main access to the pipeline is essentially a forestry track constructed over the alignment of the unformed extension of legal road (paper road component of South Makara Road). It runs parallel with the Karori Stream and crosses it several times, via fords. The track provides easy access to the majority of the pipeline from the bank areas without the need to access the streambed with machinery when pipeline repairs are required.

Public access is not available without prior permission of the landowners.

The applicant has permission to access the pipeline over private land as part of the existing consent maintenance regime, and as outlined later there is an agreed consultation process undertaken prior to access being undertaken.

Other farm tracks that extend from the paper road provide access to parts of the pipeline or stream that are not adjacent to the paper road. These are mainly on Erin Go Bragh and Terawhiti Farming Company owned land. The Erin Go Bragh farm track is used to get vehicles as close as possible to the upper reaches of the pipeline, of which the northern 600 metres of stream (approximately) are accessed by walking only. Wellington Water has advised that sometimes vehicle access is possible in this upper section of the stream.
3. Background

3.1 Overview of WCC’s Western Wastewater Treatment Plant Operations

The following information is provided as background context to this application for global consents.

The WWTP receives predominantly residential wastewater inflows from Karori’s approximately 400 hectare catchment network.

The WWTP provides tertiary (three levels of) treatment. During primary treatment, all influent is screened to remove floating and particulate material. Flows then proceed through the full treatment process, which comprises biological treatment through a Moving Bed Biological Reactor and secondary clarification (removal of sewage sludge) followed by Ultra Violet disinfection.

Solid material removed from flows (waste activated sludge and scum) is treated with blending and centrifuging. Screenings are disposed of to landfill, and sludge is dewatered on-site and trucked for disposal at the Southern Landfill.

The MOP, constructed in 1934, carried untreated wastewater until 1997 when the WWTP was constructed. It now carries fully treated wastewater from the WWTP to a near shore ocean outfall structure close to the mouth of the Karori Stream on Wellington’s South Coast.

The discharge of treated effluent from the MOP to the Coastal Outfall Structure as well as overflows to the coast and the Karori Stream in significant and extreme rainfall events are permitted by existing resource consents (as outlined in Section 3.2).
3.1.1 Historic Maintenance of the MOP

The MOP structure is prone to leakage due to its age (80 years) and construction materials. Leaks on the pipeline have been repaired as they arise. Significant repairs undertaken on the pipeline between 1993 and 2007 include:

- 1993 – 450mm flush jointed stressed pipe bridges were installed following inspections which had revealed numerous pipe blockages, particularly at pipe bridges;
- 2001 – repairs followed inspections that revealed numerous (mainly minor) leaks;
- 2007 – repairs followed inspections that revealed numerous (mainly minor) leaks, undermining of foundations, encasement defects, pipeline backfall and root intrusion; and
- 2013 – repairs followed pipeline failure due to damage from a tree blown over in a storm.

All parts of the MOP and associated overflow structures continue to require regular inspection and maintenance to ensure their integrity is maintained and protected until the pipeline is replaced (by December 2023).

3.2 Existing Consents

The normal operational discharges of treated effluent and the emergency overflow discharges of treated and partially treated wastewater to the Karori Stream and the South Coast of Wellington coastal discharge and emergency overflows are permitted by GWRC consents referenced WGN060283 [25226], [25227], [25228], and [25229]. These are all valid until 31 December 2023.

A further consent Discharge Permit WGN060283 [25230] - provides for odour discharges from the WWTP.

The coastal outfall structure has a Coastal Permit valid until 2037 and access to this part of the pipeline is not part of this application.

3.2.1 Requirements for Regular Maintenance of Main Outfall Pipeline do not “Permit” Repair Works

One of the Resource Consents referenced above (WGN 060283 [25226]) requires regular inspections and maintenance of the MOP with a view to full replacement of the pipeline by December 2023.

The same consent requires the preparation of a Management & Monitoring Plan (MMP).

However, the existing suite of consents for the treatment plant discharges does not adequately cover (or provide approval for) the required work. New consents therefore need to be sought on a case-by-case basis whenever the need for repairs or maintenance is identified during regular inspections. This is inefficient.

3.2.2 Responsibilities

Wellington Water acts on behalf of Wellington City Council (WCC, the applicant, the owner of the WWTP and MOP infrastructure, and consent holder of [25226]). Wellington Water is responsible for the ongoing management and maintenance of the wastewater pipeline infrastructure.

The consent holder (via Wellington Water) has complied with the requirements of [25226] to date including the preparation of the MMP and submission to GWRC for approval.
4. Proposal

4.1 Reasons for Seeking Global Resource Consents for Repairs & Maintenance

The suite of consents for Wellington City Council’s Western Wastewater Treatment Plant operations and discharges require the consent holder to inspect, maintain and repair the existing MOP until it is replaced.

This necessitates access and maintenance activities at regular intervals and following storm events or other natural hazard events to repair or protect the MOP. Some of the pipeline repairs and maintenance will involve works and structures in the bed of the Karori Stream not permitted under the Regional Freshwater Plan for Wellington Region. Unfortunately, the existing WWTP consents do not provide for the required works to be undertaken.

The current practice of applying on a case-by-case basis to undertake the necessary works is an inefficient and costly way to address the existing consent requirements.

4.2 Overview of Proposed Maintenance & Repairs Works

This application seeks approval via a global resource consent for all in-stream activities and structures required to gain access to all parts of the pipeline and undertake planned and unplanned repairs and maintenance.

It is proposed that all works would be undertaken in accordance with an approved Management & Monitoring Plan (MMP) – a draft is attached at Appendix A for approval as part of this application. The MMP has been prepared to also meet the reporting requirements of Consent [25226]. Refer comments at Section 3.6.

Depending on what is observed during routine investigations of the pipeline, typical maintenance and repairs to be taken in and around the bed of the Karori Stream will include:

- Clearance of slip or flood debris (including fallen trees that have come down with slips);
- Repairing scoured sections of streambed and banks affecting the pipeline stability;
- Repairs to fords/river crossings;
- Disturbance and redistribution of bed material (including deposition of redistributed material) on the bed of the stream to
  - (iii) Create stable access and works areas for machinery to safely access the pipeline; or
  - (iv) Divert scouring flows away from the pipeline or works areas (i.e. temporary and/or permanent diversions).

It is expected that this work will only be required 2-3 times a year (on average). The short term, temporary work can also be timed and managed through good practices to ensure negligible adverse effects on the stream environment (in particular water quality and freshwater aquatic habitat). Most of the repair works will only affect a relatively short section of the stream in each instance (typically less than 50 metres), and, unless it is unavoidable, take place in the dry bed as far as practicable. Measures are proposed to address works areas exceeding 50 metres.

The following sections set out details of typical maintenance works requirements, methodologies and mitigation measures to address the relevant effects on the environment. The actual and potential effects of the proposed works are limited to disturbance of the bed and banks of the stream and potential release of sediment and effects on freshwater aquatic habitat. The benefits of the proposed work are the reduced risk of leaks of treated wastewater to the stream and the related impacts on the stream environment. Replacement of existing structures may be required.
4.3 Clearance of Flood or Slip Debris

Flood debris, slip debris or fallen trees will be removed from the channel of the Karori Stream whenever required to ensure there is no risk of damage to the MOP.

Areas where clearance may be required include, but are not limited to:

- Sections of the channel that have become blocked (e.g. in narrow, incised areas of watercourse). These tend to be more in the upper reaches of the stream;
- Where debris has built up against the pipeline structure and presents a risk to the integrity of the pipeline. These areas tend to be in the lower reaches of the stream; and
- Where flood waters diverted by debris present a risk to the pipeline structure and its integrity.

Gravels may be able to be redistributed within the streambed (refer Section 4.4). Other removed material will be disposed of at an appropriate land based disposal area.

For areas where the debris is accessible from the stream banks (and subject to suitable access to the bank from roads) a long reach hydraulic excavator will be used and the cleared material will be loaded on to a truck (suitably sized for the volume involved), which will be parked on the side of the watercourse.

Where the vehicle access is not suitable for the excavator, or the reach of the excavator is not sufficient to remove material from the bank, it will be necessary to use a tracked vehicle. The vehicle will access the streambed from the closest safe position on the stream bank and travel up the streambed to the works area.

4.4 Deposition of Gravel to Address / Repair Scour

Flow, velocity, and channel geometry in the stream environment, and the design of existing pipeline support structures in the streambed, all have the potential to create scour holes in the streambed. This application relates only to scour holes that can threaten the integrity of the MOP structure.

Scouring observed during routine inspections will be assessed in terms of the:

- Severity and extent of the undercutting;
- Likely risk of exposing the support foundation of the pipeline; and
- Availability of riverbed material in the immediate vicinity of the scour hole.

The subsequent course of action and the timing of the repair works to address the scour hole will vary depending on what is observed in the dynamic streambed environment. The most pragmatic approach involves either infilling or replacement of scoured gravel material.

This is consistent with other consented works of a similar scale and nature.

4.5 Diversions

Diversions are proposed when it is necessary to separate works areas from stream flows or to protect the pipeline structure from erosion and scour or the impacts of material carried downstream in stream flows. In most instances, the majority of the physical works for diversion (e.g. a gravel bund or an excavated channel or a combination of both) will initially be undertaken in the dry streambed in a location that is isolated from the pipeline, without breaking into the area of active stream flow. This will avoid sediment release and disturbance of aquatic habitat in the active streambed. Fish passage will be maintained at all times and works will be planned to occur at times when they are less likely to impact on fish migration and spawning (refer Section 4.8 for more details of ecological considerations, and Section 4.9 for Erosion and Sediment Controls).
4.5.1 Minor Diversions

A minor diversion would normally be required to enable the construction of a small level platform in the streambed to provide access to the pipeline for maintenance (refer comments on platforms at 4.6.1). A new channel will be prepared “in the dry” and be aligned where the stream flows can break through at the upstream end during high flow events. Alternatively a flexible plastic pipe will be employed to divert the flows (refer fish passage methodology at 4.8.2).

The diversion method relies natural processes to redistribute the “work platform” and “diversion” gravels over time on completion of the work. Allowing the stream to find its own path in this manner is considered preferable to diverting the stream back on completion of the repair works (which would create more disturbance to water quality and instream habitat values).

4.5.2 Other Permanent Diversions

Diversion will also be undertaken if it is necessary to move flows away from the MOP and prevent destabilisation of support structures. An example of this type of diversion is shown in Figures 1-12 and 1-13 below. Figure 1-12 shows two areas (A and B) on the Karori Stream where diversion works were undertaken in 2009 (the red line indicates new alignment, blue line is original).

As with minor diversions, the new channel will be prepared “in the dry” and be aligned where the stream flows can break through at the upstream end during high flow events. The approach also relies on the natural changes in the stream channel during and after flood flows as a means to try to manage the outcome and move the flows away from the vulnerable MOP structure.

Figure 1-12 Location of Diversions A and B undertaken in 2009 on the Karori Stream to protect the MOP

Figure 1-13 Diversion Works Completed in 2009 (Area A)

The image above right shows the finished works area A after a permanent diversion was undertaken. To achieve this, a channel was formed in new location away from the pipeline (in the dry). The stream was then diverted into the new channel and additional gravel bunds positioned to divert future flows away from the MOP and protect its integrity. For more photographs of the finished work in areas A and B, refer to Section 2.3. Figure 1-10 in that section shows completed works in Area B.
4.6 Works in the Streambed

There may be some instances where it is not feasible to divert the stream away from works areas due to physical characteristics that constrain options. In these cases, works in the active flowing sections of the stream will be necessary. However, every effort will be made to avoid adverse effects on the downstream environment by minimising the extent of disturbance and working quickly to minimise the time of disturbance.

4.6.1 Temporary Access Platforms

Temporary access platforms may need to be formed in the bed of the stream in locations where it is not possible to work safely from the bank of the stream or clear of flows. For example, where:

- The distance between the bank and the watercourse is too great to use machinery based on the bank (difficulties with reach of excavator);
- The watercourse bank is too steep or does not offer sufficient width from which to safely or practically base the machinery; or
- Access is only available via the bed of the stream and machinery has to be driven up to the works area.

A common example of when a platform needs to be created is shown in Figure 1-4, where there is a hole or deep pool on one side of the stream adjacent to the works area. Following diversion, the deeper sections would be filled to create a level work area for a digger to sit on, and would be achieved by moving sufficient material from nearby areas. The finished platform would mainly comprise locally sourced gravels (estimated particle size 2mm-50mm) and sometimes include a boulder base using larger sized material (>100mm).

Note: Sizes of particles are provided as an estimate only as there is no ability to screen the gravel in situ.

The size of the platform would be kept to the minimum necessary for safe working of the machinery, and will be dictated by the nature and scale of repairs (and hence the type and size of machinery involved). In nearly all cases the platform will be small in size and in a localised position sufficient to allow a digger to operate safely within reach of the pipeline.

Work would typically be undertaken by 10 tonne digger. The expected volume of gravel would be in the order of 50m³ but in exceptional circumstances may involve up to 200m³.

To avoid the environmental effects of sediment release on downstream waters, the platform will not be dismantled after use. The dynamic nature of the stream means that flows will reinstate the streambed relatively quickly and any compaction effects in the vicinity of the platform will therefore also be short term.

The proposal is therefore not expected to have an adverse impact on stream habitat values, particularly for species (such as eel) that rely on interstitial spaces for resting and feeding. This has been confirmed in discussion with Wellington Water’s consultant ecologist Katrina Smith of Cardno.

4.6.2 Re-Grading of Existing Fords

There are several fords that cross the stream on the paper road alignment used to access the pipeline. From time to time these are damaged by storm flows and need to be regraded. Similar methods used for Temporary Access Platforms will be employed in these situations.

Fords need to remain compacted/stable for future use. However, their limited extent is not expected to adversely impact on fish passage/habitat values for the same reasons given for the access platforms.
4.6.3 Structures

Approval for structures in the streambed has been included as a request in this application. This is to enable replacement of existing structures (or part of structures) such as pipe bridge supports, should this be required as part of the on-going pipeline maintenance and repairs programme. No completely new structures are proposed as part of this application.

4.7 Frequency of Inspections and Maintenance/Repair Works

Wellington Water has confirmed that inspections of the MOP to ensure its integrity is protected and maintained are carried out in accordance with existing consent requirements. The existing regime is proposed to continue, with repairs undertaken as soon as practicable depending on the results of inspections, as set out in the table below:

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Monthly Inspection</td>
<td>Vehicle – based inspection of pipeline from South Makara Road end to Coastal Outfall.</td>
</tr>
<tr>
<td>Annual Inspection</td>
<td>Full inspection of pipeline including walkover on walking only access section in January/February when weather conditions are good.</td>
</tr>
<tr>
<td>Events based Inspection</td>
<td>A full inspection of the pipeline is undertaken following major storm/severe weather events or earthquakes that may have caused slips or damage to the pipeline or increased risk to the pipeline. Inspections are also triggered when telemetry information shows a change in flow rate or stops being sent, or in response to notification from landowners of any other relevant event such as tree fall.</td>
</tr>
<tr>
<td>Follow Up Repairs and/or Maintenance</td>
<td>Any maintenance or repair works triggered following inspections would be undertaken as soon as practicable, and take as long as required for the circumstances (typically 2-3 days). Wellington Water has advised that, planned and unplanned follow up work undertaken to date has been required 2-3 times a year on average, and this has only comprised very minor repair works in recent years.</td>
</tr>
</tbody>
</table>

Note: While repairs could take between 2-3 days, the majority of work during this time is undertaken “in the dry bed” of the stream. The time spent working in the flowing water is limited to the minimum practicable, and generally limited to when flows are diverted to newly created channels. This might be 1-2 hours or less. Repair works to date have been required 2-3 times per year. The overall impact on the stream flows is very minor.

4.8 Ecological Considerations

The construction of stable access platforms and fords will alter the surface of the streambed and may include compaction of bed material to achieve a stable platform or access. However, this temporary and short-term work will only affect small sections of streambed at any one time (with an estimated frequency of not more than 2-3 times a year on average). Natural stream flows will reinstate the interstitial spaces in the compacted areas over time and, given that only small sections of streambed are involved, the works are not expected to adversely impact on eel habitat or migration over these areas.

Where possible, most of the other remedial or maintenance works (such as diversions) will be carried out “in the dry”, further minimising potential impacts from sediment release or habitat...
disturbance. However, additional measures are proposed to ensure fish passage is maintained at all times and to recover (where practicable) any stranded fish during diversion activities.

4.8.1 Timing of Works to Avoid Spawning & Migration

The applicant will ensure that planned works that must occur in flowing sections of the stream will avoid the typical indigenous fish upstream migration period (1 August to 31 December inclusive) if required.

These dates are based on consent conditions for similar works in the Wellington Region and represent the Council’s preferred avoidance period, based on advice received from GWRC’s ecologist Alton Perrie (email of 9 April 2015).

It is noted that the stream is not managed by GWRC for aquatic habitat and is not listed in the Regional Freshwater Plan for any other reason (these documents set other specified periods to be avoided based on values to be protected).

Mr Perrie also commented that trout are present in the stream but the stream is not a high value stream, and that if fish passage is maintained (refer Section 4.8.2) then the need for controls on the period of work will be less on an issue. The proposed avoidance period is also preferred by Mr Perrie as it may assist in minimising any adverse effects of potential in-stream disturbance (sediment etc.) when building platforms are used for maintenance works.

4.8.2 Fish Passage / Fish Relocation Methodology

Fish passage will be maintained at all times.

Overview

To ensure protection of aquatic fauna in the Karori Stream during MOP repairs and maintenance works, a fish rescue methodology is proposed. The methodology is based on approved approaches developed in association with Stephen Fuller of Boffa Miskell and Cardno’s Freshwater Ecologist Katrina Smith for similar works in the Wellington Region. It has been further refined following consultation with Mr Perrie of GWRC (email of 18 August 2015) and Rachael Mora of the Department of Conservation (email of 21 August 2015), and their suggestions incorporated.

Two types of piping and diversion are likely to be required to facilitate repairs and maintenance on the MOP. These include:

- Temporary diversion of the stream flow through a flexible pipe which is placed clear of vehicle manoeuvring and works areas, taking flows from upstream of the works area to a safe and convenient location downstream of the works area. Fish passage would be available through the pipe at all times;

- Temporary piping required to facilitate diversion of flows to a new channel and re-connecting stream flows via the new channel to the existing bed downstream. The temporary piping will help to ensure that MOP repairs can occur more efficiently and with minimal risk of contaminating Karori Stream downstream of the work area (due to disturbance of the stream bed or banks during the works), while maintaining fish passage at all times.

On completion of the new diversion channel (and stabilisation of the area, if necessary), the flows in the Karori Stream can be introduced into the new channel.

For sections of stream (individual or combined) involving more than 50 metres of piping/diversion to a new channel an ecologist will need to be involved. This is because, in these instances, it is important to remove any fish and freshwater crayfish from the affected section of the Karori Stream to be temporarily piped/diverted before any works commence. There needs to be a minimum of 5 days’ notice to the Project Ecologist for this work.
Methodology
Where the diversion or temporary piping involves more than 50 metres (total or combined sections of stream) this requires the involvement of an ecologist, and the methodology in the table below shall be employed.

Note: Active transfer of fish and freshwater crayfish into the new channel is not recommended. This is because immediately following the reintroduction of flow there will be little cover and food for the fish and freshwater crayfish. The new channel will in time become naturally colonised.

FISH RESCUE METHODOLOGY FOR TEMPORARY PIPING OR DIVERSION TO NEW CHANNEL

<table>
<thead>
<tr>
<th>Description</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Biota Transfer Before Temporary Piping/Diversion</td>
<td></td>
</tr>
<tr>
<td>1.1 Alert the necessary authorities and (if needed) obtain permits to allow for the transfer of fish and freshwater crayfish.</td>
<td>Ecologist</td>
</tr>
<tr>
<td>1.2 Install an in-channel sediment control structure above and below the proposed temporary pipe section (or length of stream bed affected by diversion to constructed channel). This will act to filter particles from the water and help to prevent upstream passage of fish and re-colonisation during the fish rescue.</td>
<td>Contractor</td>
</tr>
<tr>
<td>1.4 Commence fish and freshwater crayfish removal strategy. Depending on the location of the works, and hence the size and nature of the stream in these locations, a number of fishing techniques (electrofishing, spotlighting, hand netting, Gee-minnow trapping) may be required to ensure success, and may need to be carried out over two days. Creation of some deeper pool areas within the channel may also be necessary to encourage fish to congregate and in which Gee-minnow traps can be set.</td>
<td>Ecologist</td>
</tr>
<tr>
<td>1.5 Identify and record all captured fish and crayfish before their release to provide population size-class data for comparison with any subsequent studies made of the stream and its tributaries. Release all captured fish and freshwater crayfish into suitable habitat areas along the length of the Karori Stream at least 250m upstream of the works area and within the same catchment. If possible select sections of watercourse that are shaded by vegetation for fish release. • As both banded kokopu and freshwater crayfish are territorial, releasing the fish along the length of vegetated stream will reduce the chance of inducing intraspecific competition. • Releasing them at least 250 m upstream of the works areas will reduce stress on the fish once the sediment traps etc. are removed. • Any pest fish that are captured should not be released back into the stream.</td>
<td>Ecologist</td>
</tr>
<tr>
<td>Description</td>
<td>Responsibility</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>• Any fish that are captured should be identified and recorded in the NZ Freshwater fish database, including general observations (e.g. a range of size classes were present, or only big eels &gt;400mm were found). Measurements of each fish is not required.</td>
<td></td>
</tr>
<tr>
<td>2.0 Temporary Diversion of Stream Flow to Pipe</td>
<td>Contractor, Engineer</td>
</tr>
<tr>
<td>2.1 Immediately following the completion of the biota transfers, install a dam upstream of the section to be temporarily piped and divert the stream flow from here into a 150mm diameter flexible pipe. This pipe will discharge back into the stream downstream of the section to be temporarily piped (thus isolating the section to be piped or realigned). Some form of scour protection (e.g., a geotextile fabric and flow spreader) will need to be installed where the piped flow returns to the stream channel. • The use of a flexible pipe (rather than an open lined channel) will mean it will be easy to move the pipe as needed during the construction works.</td>
<td>Ecologist</td>
</tr>
<tr>
<td>2.2 Fish Relocation Plan: Within the first few hours of the initial flow diversion to the temporary pipe (or diversion to permanent channel), undertake a check of the dewatered stream channel to see if there are any stranded fish or freshwater crayfish, capture any found and release them upstream of the channel works area as per instructions in 1.5 above. • As a section is dewatered an observer equipped with appropriate tools *(nets/buckets etc) needs to be available to capture any stranded fish. • The dewatered section needs to be checked on several occasions. • This checking needs to incorporate a physical search of large (and easily moved) substrate to check for aquatic fauna hiding underneath. • Diversions should also be kept open at the bottom end in the hope that fish may (unlikely for most) swim out on their own as the section is dewatered and if possible this dewatering should be staged slowly.</td>
<td>Contractor / Engineer</td>
</tr>
</tbody>
</table>
| 2.3 Once flow in the dewatered channel has reduced (or within several hours of this), install a dam at the downstream end of the temporary piped section (upstream of silt fence and piped flow outlet).  

*This will isolate the section of channel to be temporarily piped (or diverted to the new constructed channel) from the downstream section, and collect any silt released.* | Contractor / Engineer |
<table>
<thead>
<tr>
<th>Description</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4 Undertake repair/maintenance works in and around dewatered streambed</td>
<td>Contractor / Engineer</td>
</tr>
<tr>
<td>once Project Ecologist has given the go ahead.</td>
<td></td>
</tr>
</tbody>
</table>

### 3.0 Diversion Of Stream Flows To A New Channel

3.1 When the new diversion channel is adequately stabilised (*see note below*), arrange with Ecologist to undertake fish rescue (and follow methodology in items 2.1 to 2.4). Start with the downstream section first. If used to divert flows away from the works area, the temporary pipe will be removed on completion of works.

- Ensure no rain is forecast for the day and the days following the connection of flow to the new channel.
- Obtain GWRC Approval to diversion works in advance.
- * A permanent diversion channel should be created to be as natural as possible – appropriate to existing in-stream environment (e.g. incorporate riffles runs and pools, with a variety of depths/flows in a new channel that replaces this type of in-stream environment) to create an environment similar to the original area.*
- On completion of item 2.4 (maintenance and repair works), proceed as follows:

| 3.2 | Remove the downstream dam from the active stream channel, then remove the diversion pipe and then remove upstream dam and the upstream and downstream silt fences |
| 3.3 | Install plug into channel upstream of diversion. Then follow process for 3.2. Removal of pipe will allow flow to enter the new channel (prevented flowing downstream by plug). |
| 3.4 | Inspection, Modifications and Final Sign off etc. |

### 4.9 Erosion and Sediment Controls

Works to create temporary diversions, construction platforms and fords, and vehicle access in the streambed all have the potential to cause sediment to be released into the watercourse or alter the stability of the streambed or banks. Other aspects of maintenance works, such as gravel re-contouring or stockpiling of debris and aggraded gravels, can also have similar effects.

The degree of sediment release will depend on the extent and duration of works and whether or not they occur in flowing sections of the watercourse.

Erosion and sediment will therefore be managed on a case by case basis as and when works are required to be undertaken in and around the pipeline with a view to minimising sediment generation. The nature of the measures implemented will depend on the specific watercourse setting, the type of works being undertaken in each instance, and the extent to which access or disturbance of the bed and/or banks of the stream is required.
4.9.1 Sediment Controls

Typical sediment controls will include, as far as practicable:

- Limiting planned maintenance works to times of low flows, enabling the majority of streambed disturbance to occur “in the dry” and/or separate from the flowing channel;

- For diversions, works will be undertaken in general accordance with the General Procedures for Temporary Diversions set out in Section 6.1 (pages 87-88) of the GWRC Sediment and Erosion Control Guidelines (September 2002). The Guidelines refer to use of a range of materials (i.e. geotextile cloth or concrete) as well as gravels that can be used. However, no materials other than the in situ gravels and/or rock would be used in diversions to protect the MOP. The steps suggested in the Guidelines in respect of minimising sediment generation and discharge from diversion works within a water body will also be followed; and

- Repairs to the stream bank will be undertaken if any remedial works cause scour or erosion.

Wellington Water has advised it is not practicable to install silt fencing during temporary in-stream works, so it is not proposed as a mitigation measure.

The potential adverse effects of erosion and silt discharges are already significantly minimised due to the duration of the works usually being quite short (2-3 days at most). Most of the time, work can be undertaken in the dry, thereby completely avoiding discharges, with the remainder of likely works only affecting a small area of streambed in each instance. Potential effects are further minimised because the events requiring maintenance (planned or unplanned) are very infrequent, being 2-3 times a year on average.

4.9.2 Other Contaminant Controls

Repairs to the pipeline can, in some cases, involve repair of concrete support structures or casings that protect the pipe. Wellington Water has confirmed that wet concrete is never permitted to enter the stream flows and all works involving concrete repairs are undertaken as planned works “in the dry”. This approach protects the freshwater aquatic life-forms from contamination risks.

4.10 Proposed Management & Monitoring Plan (MMP)

4.10.1 Existing Requirements for an MMP for the Pipeline

The existing resource consent for the MOP Discharge (WGN 060283 [25226]) requires at Condition 22 that the permit holder prepare a Management and Monitoring Plan (MMP) for the outfall pipeline.

The above mentioned consent was issued in 2010. Condition 22 required the MMP to be submitted to GWRC’s Manager, Environmental Regulation for approval within three months of the commencement of the consent, and implemented as soon as it had been approved. The approved MMP is also required by Condition 22 to be reviewed and updated every five years to the satisfaction of the Council.

In accordance with Condition 22, an MMP document was prepared and submitted to the Council for approval, but to date no formal response has been received. In the interim an updated document was drafted and subsequent discussions were entered into about the need for a global resource consent to undertake the maintenance works etc.

It was decided with Council officers (at a meeting in May 2014) that this global consent application should include a new MMP document for approval, and the MMP which would have the dual function of supporting the application and meeting the existing consent compliance requirements of Condition 22.

This application therefore includes a draft MMP for approval attached at Appendix A.
4.10.2 Required Content of MMP under Condition 22 of WGN060283 [25226]

The MMP for this application has been prepared for approval with a view to covering the requirements of this proposal for a global consent while also addressing Condition 22.

In this respect the plan is required to include, but not be limited to, the following matters (quoted from the consent):

```
(a) The procedures for pipeline inspections (including frequency, personnel, access arrangements, vegetation clearance, methodology);
(b) The procedures to be used for identifying faults in the pipeline (such as indicators that the pipeline or part of the pipeline may require repair or replacement);
(c) The procedures to be followed when undertaking repair or replacement work on the pipeline; and
(d) A requirement to undertake an annual review of the condition of the pipeline. The MMP shall specify an approach and the factors to be taken into account in this review (such as how the information will be reviewed in the context of the permit holder’s asset management procedures, taking into account matters such as location of faults, nature of faults, condition of the pipeline, and expenditure); and
(e) Procedures for notifying the landowners and Wellington Regional Council of leaks and the nature and timing of works. The permit holder shall submit the plan to the Manager, Environmental Regulation, Wellington Regional Council for approval within three months of the commencement of this permit for the purposes of ensuring that it contains the information required by this condition, and that it includes the following commitments:
(f) Inspections will be undertaken at least every three months; and
(g) Any leaks detected will be repaired as soon as practicable.

Where the annual review undertaken in accordance with Condition 22(d) above identifies the need for replacement of or significant repair of the pipeline or part of the pipeline then, within 6 months of that identification being made, the consent holder shall submit an action plan to the Manager, Environmental Regulation, Wellington Regional Council outlining the actions to be undertaken and a timeframe in which those actions will occur.
```

The MMP also needs to cover the separate reporting requirements in the conditions of the resource consent for discharge from the WWTP. The requirements are paraphrased as follows (with relevance to pipeline maintenance matters):

(i) Condition 5 – Establishment of a Community Liaison Group (including, among others, the landowners whose land is required to be accessed to inspect and maintain the pipeline)

(ii) Condition 20 – Provide an Annual Monitoring Report for the period 1 July – 30 June each year summarising compliance with the conditions of the permit, including monitoring, compliance, reasons for non-compliance, measures to improve performance (proposed or constructed), and any other issues.

(iii) Condition 21 – All monitoring and reporting undertaken in accordance with consent conditions to be to the satisfaction of the Regional Council.

(iv) Condition 23 – Provide an annual report for the MOP by 31 July, addressing activities undertaken over previous year, including details of: location, extent and duration of any leakage of faults, and the timing, nature and success or remedied action taken to remedy
leaks or faults; any other works undertaken (including any repairs and replacements), and any work planned within the next 12 months to repair or replace the pipeline.

4.10.3 The Proposed MMP

The proposed MMP attached with this application (refer Appendix A) incorporates the relevant requirements of the existing Discharge Permit WGN060283 [25226] as set out in the previous section. In doing so, it incorporates the information set out earlier as part of this global consent application proposal, to cover methodologies, mitigation measures depending on areas of work, and other procedures to assist with implementation, administration and reporting.

The MMP is proposed as a standalone document that covers all requirements for contractors on site. It is submitted as a draft document for approval as part of this application for global resource consents and would be updated to reflect any additional information required in consent conditions. Use of the proposed MMP for both the existing and proposed consents is an acceptable approach and consistent with the approach taken in the existing consents to make reporting and compliance a more efficient process. This will not require any amendment to existing consent conditions.

4.11 Duration of Consent

The ongoing maintenance of the MOP is required to occur until such time as it is replaced (required to have occurred by December 2023).

This application therefore seeks a consent duration consistent with that date.
5. Regional Plan Assessments

5.1 Operative Regional Freshwater Plan

The relevant Operative plan is the Regional Freshwater Plan for the Wellington Region (RFP). The Karori Stream is listed in any of the RFP’s Appendices (which specify areas of significance, for formal management and/or protection). However, the RFP rules control the extent of activities and structures within the bed and banks of the watercourse, and diversions of its flows.

Rule 9 of the RFP permits minor diversions of water from intermittently flowing streams. Karori Stream is not intermittently flowing, therefore temporary diversions are considered under Rule 16.

Rule 36 of the RFP provides for clearance of flood debris from rivers as a Permitted Activity subject to meeting certain criteria. Some of the proposed works will not achieve these requirements. For example, where excavation and relocation/deposit of gravels within the bed of the stream to protect the MOP and/or where the volume of material to be removed exceeds the permitted activity limits.

The proposal must be assessed as a Discretionary Activity under Rule 49, which provides for all remaining uses of rivers and lake beds not specifically provided for in RFP rules 22-48, including permanent diversions, or which cannot meet the performance conditions specified in those rules.

5.2 Discretionary Activity Status (RFP)

The proposal for a Global Consent requires approvals under the Regional Freshwater Plan (RFP) as follows:

<table>
<thead>
<tr>
<th>Discretionary Activity</th>
<th>To temporarily divert stream flows in the Karori Stream during maintenance works on the MOP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Permit (RFP Rule 16)</td>
<td></td>
</tr>
<tr>
<td>Land Use Consent (RFP Rule 49)</td>
<td>To undertake maintenance and repair works on the MOP in and around the bed and banks of the Karori Stream including:</td>
</tr>
<tr>
<td></td>
<td>• The clearance of slip and flood debris;</td>
</tr>
<tr>
<td></td>
<td>• Diversions not meeting the requirements of Rule 16;</td>
</tr>
<tr>
<td></td>
<td>• The deposition of gravel;</td>
</tr>
<tr>
<td></td>
<td>• River crossings;</td>
</tr>
<tr>
<td></td>
<td>• The construction of access platforms/repair of access fords; and</td>
</tr>
<tr>
<td></td>
<td>• The associated disturbance of bed material or deposition of material (including new support structures for pipe bridges and gabion baskets or large rocks to protect the MOP) on the Karori Stream bed.</td>
</tr>
</tbody>
</table>

5.3 Proposed Natural Resources Plan

GWRC proposed its Natural Resources Plan (PNRP, the Plan) on 31 July 2015, bringing together the five existing regional plans (air, soil, freshwater, discharge to land, and coastal plans) into one integrated document for the Wellington Region. Submissions on the PNRP 25 September 2015.

A range of methods and tools were used to identify the natural resource issues of the region. These included: environmental monitoring and research programmes, scientific research, community engagement, resource consent monitoring, mana whenua perspective, Māori and community consultation and rulings of the Environment Court.
From this integrated process, the key natural resource management issues identified across the region relate to:

- The quality of fresh water in both urban and rural areas;
- The allocation and efficient use of water, including groundwater;
- The state of the coastal environment, particularly the impacts that land-use and degraded fresh water systems have on coastal and estuarine ecosystems; and
- The management of natural hazards, including earthquakes, flooding hazard and coastal erosion.

Other natural resource management considerations such as soil conservation, air quality, heritage protection and managing sites of significance are also addressed in the Plan.

The key issues are addressed in the Objectives and Policies of the Plan and followed through via the Rules of the Plan.

Under section 86B of the Resource Management Act 1991 all rules have immediate legal effect from 31 July 2015. The associated definitions, schedules and maps applicable to those rules also have immediate legal effect.

5.3.1 Assessment under Relevant PNRP Rules

The Karori Stream is specifically identified in the Plan, as follows:

- **Map 13b** – Rivers and lakes with significant indigenous ecosystems: habitat for indigenous threatened / at risk fish species. This map refers to Schedule F1:

  Schedule 1: Rivers and lakes with significant indigenous ecosystems - identifies the Karori Stream and all tributaries as a habitat for indigenous threatened/at risk fish species and a habitat for six or more migratory indigenous fish species. Indigenous fish species recorded in the catchment are banded kokopu, inanga, koaro, lamprey, longfin eel, shortfin eel and upland bully. Of these, all except the upland bully are migratory species within the catchment, the inanga, koaro and longfin eel are considered to be “at risk”, and lamprey are considered to be “nationally vulnerable”.

- **Map 20** – Significant Primary Contact and Recreation Rivers and Lakes. This map refers to Schedule H2:

  Schedule H2: Priorities for improvement of fresh and coastal water quality for contact recreation and Māori customary use – classifies the Karori Stream under the heading First priorities for improvement as follows: Freshwater bodies for secondary contact – Fresh water bodies at or below the NOF compulsory bottom line for the health of people and communities from secondary contact with water.

- **Map 21d** – Modelled River Classes – Wellington, Hutt Valley & Wainuiomata Catchments. This map refers to Table 3.1:

  Table 3.1 – Classifies the Karori Stream as **River Class 2**, which is defined on Page 31 of the Plan as “Mid-gradient, coastal and hard sedimentary”.

Wellington’s Western Wastewater Treatment Plant (WWTP) and pipeline is included in the definition for **Regionally Significant Infrastructure**.

The relevant rules in the PNRP that relate to the proposal are set out at Section 5.5 of the Plan. These cover activities in the beds of lakes and rivers (General conditions, and Rules R112-R125), and damming and diverting water (R130-R135).
Many activities involving maintenance and repairs to existing structures, river crossings and culverts, and minor disturbance for maintenance activities are permitted activities, subject to compliance with performance criteria. Damming and Diversion of surface water are a discretionary activity, except for some cases - which are non-complying activities. Activities in the bed of a watercourse that do not meet the criteria specified in the rules for permitted activities (unless specified otherwise), are a Discretionary Activity under Rule R128 (All other activities in river and lake beds) or Rule R135 (General rule for taking, use, damming and diverting water).

The proposal has been assessed against the relevant rules in the above-mentioned list, and the following is confirmed:

- Compliance with Section 5.5.4 – Beds of lakes and rivers general conditions. In particular it is noted that the proposal specifically excludes works in the active flowing sections of the stream during the fish migration/spawning period 1 March – 31 May (item e in the General Rules). The proposed methodologies and timing of works will also ensure compliance with items (g) and (i) – which requires all reasonable steps will be taken to minimise the generation and release of sediment from the activity, and the duration of the diversion of water. The proposal is also consistent with items (j), (k) and (l) which seek to avoid erosion and scour, and flooding on neighbouring property.

- Compliance with Rule R112: Maintenance and repair, replacement, upgrade or use of existing structures. This activity may be involved for repairs to the pipeline and its support structures.

- Compliance with Rule R114: River crossing structures. This activity may be involved for restoring damaged ford crossings.

- Compliance with Rule R116: Establishing a small dam and existing dams. This activity may be involved as part of a diversion activity.

- Compliance with Rule R119: Clearing flood debris and beach recontouring. This activity may be required when a tree falls into the stream and needs to be removed, or flood debris is washed down, and may include some gravel redistribution to protect the pipeline from scour or damage from gravel build up. This only permitted if recontouring works are limited to the dry bed of the stream and do not exceed a level greater than 0.1 metre above the adjacent water level, or a depth of more than 1 metre, and removal of material is not in excess of the volume permitted by Rule R120 (50m$^3$). In all cases material will be redistributed on site and not removed.

- Compliance with Rule R124: Entry or passage over bed (excluding livestock access). This rule refers to the general conditions above. It would appear to allow access to a works site by driving up the bed of a river.

- It would appear that the proposal can comply with the relevant rules in Section 5.5.5, Section 5.5.6 is not applicable, and therefore Rule R129 in Section 5.5.7 (all other activities in the beds of rivers and lakes) may only be applicable to the construction of stabilized platforms within the bed of the stream and where these are within the active flowing sections of the watercourse – such activities are a Discretionary Activity under Rule 129.

- Damming or diverting water within or from rivers is a Discretionary Activity under Rule R131, subject to compliance with conditions relating to river flows and ensuring the river is not listed as an outstanding river in Schedule A1. The parts of the proposal that require diversion activities comply with these requirements and are therefore a Discretionary Activity under Rule R131.

- No other rules appear to be applicable to the proposal.
Note, no new structures are proposed to be placed in the stream bed. The repairs will be limited to the existing pipeline. Stabilising the existing pipeline structure will be undertaken using rocks and gravels from the immediate environment.

Overall the proposal is treated as a Discretionary Activity under the Proposed Natural Resources Plan.

5.4 Regional Plan Objectives and Policies

5.4.1 Regional Freshwater Plan

The relevant Objectives and Policies in the operative Regional Freshwater Plan in respect of this proposal (which essentially involves works within parts of the Karori Stream bed with the potential to disturb habitat or sediment release into freshwater) relate to protection and enhancement of freshwater quality and aquatic ecosystem biodiversity and health and recognition of Māori cultural values.

These matters are also consistent with the relevant objectives and policies or the PNRP (set out in the section following).

A full assessment of the relevant objectives and policies in the operative plan is not made in this application as the list of relevant matters at Section 6.1 for the Assessment of Environmental Effects (AEE) is guided by the issues addressed by the relevant rules in the RFP, which are based on the relevant objectives and policies for the Wellington Region.

The AEE concludes that the application is consistent with and not contrary to the relevant objectives and policies of the RFP and the PNRP.

5.4.2 Proposed Natural Resources Plan

The relevant Objectives of the PNRP are O9, O10, O11, O12, O13, O14, O23, O24, O25, O35 which (paraphrased and tailored to the proposal) relate to:

- Maintaining and enhancing recreational values along the margins of the steam and the coastal area downstream;
- Recognising, maintaining and improving opportunities for Māori customary use of the stream and downstream coastal area;
- Recognising the social, economic, cultural and environmental benefits of regionally significant infrastructure (such as the WWTP and pipeline) and protecting the use and ongoing operation of that infrastructure in the coastal marine area from new incompatible use and development in the vicinity;
- Maintaining and improving the quality of water in the region’s rivers and the coastal marine area, including methods to ensure current or future suitability for Māori customary use, and secondary contact recreation; and
- Safeguarding and improving aquatic ecosystem health, habitats, biodiversity, and mahinga kai in freshwater bodies and the coastal marine area, and including ensuring use and development provides for and/or restores fish passage.

The relevant Policies of the PNRP are P7, P8, P9, P10, P12, P13, P14, P31, P32, P33, P34, P35, P36, P40, P41, P42, P44, P81, P110 and P129 which (paraphrased and tailored to the proposal) relate to:

- Recognising and protecting the cultural, social and economic benefits of using land and water for treatment dispersion and disposal of wastewater and stormwater, and other activities
including contact recreation and Māori customary use, as well as the positive effects of beneficial activities (including restoring aquatic ecosystem health, and mahinga kai);

- Maintaining and restoring aquatic ecosystem health and mahinga kai by managing the effects of use and development, protecting indigenous fish and bird habitat, protecting and restoring fish passage,

- Protecting and restoring ecosystems with significant indigenous biodiversity values (including those rivers listed in Schedule F1), managing adverse effects on those waterbodies, and protecting and restoring sites with significant mana whenua values;

- Minimising and improving wastewater discharges to freshwater and coastal water;

- Reference to National Policy Statement for Freshwater Management (and requirements for water takes, damming and diversion);

- Damming and diversion of water shall not reduce flows or water levels below specified minima identified in Whaitua chapters, and addressing indigenous fish migration requirements or spawning activities.

The benefits of undertaking the proposed maintenance and repair work to the Karori Main Outfall Pipeline will mean that discharges of wastewater to the environment due to leaks and damage to the pipeline will be avoided and/or minimised. This result ties on with the PNRP objectives for freshwater and coastal water quality and ecosystems and mahinga kai. The methods and low frequency and duration of work in the active flows of the Karori Stream will also help to protect the freshwater quality and the aquatic ecosystem and ensure ongoing fish migration can occur, with benefits downstream in the coastal marine area.

As indicated for the operative plan, the proposal is consistent with and not contrary to the relevant objectives and policies of the Proposed Natural Resources Plan.
6. Assessment of Effects on the Environment

This AEE has been prepared in accordance with Section 88(2)(b) of the Resource Management Act 1991 (the Act) and Clause 1(d) of Schedule 4 to the Act. It provides information at a detail that corresponds with the scale and significance of the effects that the proposal may have on the environment.

The assessment of this application adopts the approach required to be undertaken by the Council under the Act. In accordance with Part 2 of the Act, this involves a broad overall judgement of whether the proposed activity will promote the sustainable management of resources in a manner or at a rate that enables people and communities to provide for their social, economic and cultural wellbeing, health and safety while avoiding, remedying or mitigating any adverse effects on the environment.

6.1 Relevant AEE Assessment Criteria

The following assessment relates to the effects of the proposed maintenance and repair works required to help minimise adverse effects from leaks and pipe failures along the MOP. Other causes of contaminants in the Karori Stream are acknowledged for contextual purposes, but do not form part of this application and cannot be controlled by the applicant as part of this application process. The AEE references existing monitoring and restoration works and assumes the stream’s environmental values will be enhanced by ongoing restoration work.

In our assessment of the above matters, and our experience of this type of proposal, the actual and potential effects of the proposal on the environment are covered under the following headings:

- Water Quality
- Ecological Effects;
- Flooding Effects; and
- Erosion and Scour.

These matters, as well as the positive effects of the proposal, are addressed.

6.1.1 Information Sources

The water quality and ecological status of the Karori Stream, as described in this global consent application, relies to a certain extent on baseline information presented in the MWH 2006 resource consent application AEE for the current MOP discharges, and other desk top research relating to:

- The GWRC “Streams Alive” streamside assistance programme for Karori Stream;
- The Makara Peak Mountain Bike Park/Club (ecological monitoring site and planting);
- LAWA (Land Air Water Aotearoa), ecological and water quality monitoring; and
- FROKS (the Friends and Residents of Karori Stream) - restoration planting alongside parts of the Karori Stream upstream of the WWTP.

All Internet sourced quotes in the following section were accessed 6 August 2014 and updated 15 April 2015. Information has been paraphrased and quoted where appropriate.

6.2 Existing Stream Environmental Values

6.2.1 General Characteristics

The Karori Stream originates in hills around South Karori where the catchment is dominated by steep, hilly terrain and urban land use.
The Stream is not managed under the Regional Freshwater Plan for Contact Recreation, or specifically protected for any aquatic habitat values.

However, the catchment has large areas of vegetative cover and offers a variety of freshwater habitats, and streamside planting has been shown as a successful measure to improve stream quality. The stream was therefore included in GWRC’s Streamside Assistance Programme, “Streams Alive”, which provided support for local groups to undertake planting of streamside areas on parts of the Karori Stream. The quote from the GWRC online document sets out GWRC’s reasons for supporting the Karori Stream:

“…

- Over 56% of the 3,072 ha catchment is in native or exotic vegetation cover;
- Around 20% of the catchment is protected by covenants;
- The variety of habitats in the catchment provide home for a wide variety of native fish, which are likely to include shortfin eel, longfin eel, giant kokopu, koaro, dwarf galaxies, banded kokopu, inanga, shortjaw kokopu, lamprey, non-migratory bullies, common bully, giant bully, bluegill bully, redfin, bully, koura, and smelt;
- Evidence from streamside planting projects around the region indicates that if the few open areas of the stream are planted, there will be measurable improvements to its overall ecological health”.


However the Karori Stream is described in the same document as being in “poor health”, with stormwater runoff from extensive urbanised areas being identified as being the primary cause for this reduced water quality.

This information echoes the findings of the 2006 AEE assessment of water quality, at the time of seeking the current consents for the WWTP operations and MOP discharges (Pages 68-69). The AEE reported level of indicator bacteria (faecal coliform and \textit{E. coli}) was well outside the acceptable range for contact recreation set out at Section E.5 of the Ministry for the Environment’s \textit{Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas, (June 2003)} [https://www.mfe.govt.nz/publications/water/microbiological-quality-jun03/html/part-two-e.html#twoe3].

It was made clear in the original 2006 application that the WWTP operations (or pipeline leaks) were not responsible for the majority of contaminants observed in the stream. It was commented that the elevated levels of the types of contaminants that could have been linked with the WWTP were most likely to have come from upstream of the plant. A range of potential sources of contamination from the stream catchment above the WWTP was identified in the AEE (page 69).

Similar recent comments on water quality are made in the following quotes from the GWRC website article on the Makara Peak Mountain Bike Park supporters group, and information obtained from the LAWA (Land Air Water Aotearoa) website. These comments indicate the stream is under pressure, primarily from stormwater and sewage contamination:

“Unlike most streams in the region that have their upper catchment covered in bush, the 682 hectare catchment upstream of the bike park is Wellington’s largest suburb, Karori. More than half of this suburb is covered in residential housing, shops, schools etc. and the rest is rural or open space. This means that there is a high proportion of hard surfaces – roads and roofs – and the resulting urban stormwater brings the usual problems of high runoff with high contaminant loads and lots of litter”. [Ref http://www.gw.govt.nz/Karori-Stream/].
“The main pressures affecting water quality in the catchment are stormwater and sewage contamination. In times of heavy rainfall or treatment plant malfunctions, treated sewage from the western suburbs is discharged into the stream”. [Ref August 2014: http://www.lawa.org.nz/explore-data/wellington-region/freshwater/karori-stream/karori-stream-at-makara-peak-mountain-bike-park].

LAWA (Land Air Water Aotearoa) provides up to date water quality and ecological health monitoring information from a monitoring site located centrally on the Karori Stream within the Makara Peak Mountain Bike Park. In April 2015, the LAWA website advised:

“Water quality at this site is rated FAIR. Based on assessment of the macro-invertebrate communities, ecological health at this site is rated GOOD. Despite this, the stream and its tributaries support a number of native fish species including banded kokopu, koaro and longfin eels.

Upstream catchment land use has a significant urban component but also retains a moderate amount of indigenous forest”.

In summary, results sourced from the LAWA site report the stream as being among:

- The worst 25% of sites for levels of E. coli, Nitrogen, Total Oxidised Nitrogen, and Phosphorus (Dissolved Reactive & Total), but trend over 9 years indicates there is a meaningful improvement in the Total Phosphorus levels;
- The worst 50% of sites for Ammoniacal Nitrogen,
- The best 50% of sites for Clarity (using Black Disc), Turbidity; and
- The best 25% of sites for pH.

In view of this, there are action plans in place to help improve the stream quality (through the Streams Alive programme):

- Assisted by the GWRC Streams Alive programme, the Friends and Residents of Karori Stream (FROKS) coordinated a planting programme alongside the stream where it runs the length of South Karori Road as well as actively restoring a variety of sites on public land (involving pest control, fencing to keep stock away from the stream, weed management and planting) [Ref: http://www.naturespace.org.nz/groups/friends-and-residents-karori-stream].
- The Makara Mountain Bike Club is also planting the part of the stream that flows through the bike park.

6.2.2 Aquatic Life in 2006

In respect of aquatic life, the information provided in the 2006 application (pages 69-70) included:

(a) Details of a benthic macro-invertebrate community survey undertaken 16 September 2005 upstream and downstream of the WWTP; and

(b) Data extracted and summarised from the NZ Freshwater Fish Database records (at July 2014).

The results of the macro-invertebrate study concluded (pages 69 and 74) the fauna observed were of the type that would be expected in a stream of moderately high water quality and was not representative of pollution fauna. Results were similar upstream and downstream of the treatment plant.

A list of aquatic fauna reported to be present in the Karori Stream and its tributaries was provided with comments on whether some of the recorded species (brown trout, long-finned and short-finned eel, koaro (native trout), koura (freshwater crayfish), upland bully, lamprey, banded kokopu, and inanga) were commonly found or not.
The AEE stated there was no evidence of adverse effects from the occasional discharge of treated wastewater to the Karori Stream on its benthic ecology and concluded this was due to the high quality of the treated wastewater, the high level of dilution available, the short duration of overflow events and their infrequent occurrence.

There was no comment on the effects of pipeline failure or repair works on aquatic life in the existing consents, other than to require regular inspections and maintenance to maintain the integrity of the MOP until it was able to be replaced.

### 6.2.3 Aquatic Life in 2014

Rather than undertake further survey work, this application has relied on the same approach as the 2006 application for assessing the likely species of fish present in the Karori Stream and its tributaries (which referenced The NZ Freshwater Fish Database records).

The latest records for the Karori Stream and its tributaries have been checked (July 2014) and these include a further study of the area in 2007. The results are similar to that observed in 2006. The table below also acknowledges species recorded in GWRC’s 2015 Proposed Natural Resources Plan (PNRP) – Schedule F1 (Rivers … with significant indigenous ecosystems).

<table>
<thead>
<tr>
<th>Species Observed (Karori Stream and Tributaries)</th>
<th>Summary of Abundance from NZ Freshwater Database (2015 Update of 2006 MWH AEE Report Observations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short fin eel <em>Anguilla Australis</em></td>
<td>Only identified at 1 or 2 locations and not considered common in Karori Stream. Listed in PNRP as a migratory species in Karori Stream and all tributaries.</td>
</tr>
<tr>
<td>Long fin eel <em>Anguilla dieffenbachia</em></td>
<td>Common and Widespread, identified at most sampling locations. Listed in PNRP as a migratory species in Karori Stream and all tributaries, and “at risk”.</td>
</tr>
<tr>
<td>Lamprey <em>Geotria australis</em></td>
<td><em>As for short fin eel</em>. Listed in PNRP as a migratory species in Karori Stream and all tributaries, and “nationally vulnerable”.</td>
</tr>
<tr>
<td>Inanga <em>Galaxias maculatus</em></td>
<td><em>As for short fin eel</em>. Listed in PNRP as a migratory species in Karori Stream and all tributaries, and “at risk”.</td>
</tr>
<tr>
<td>Banded Kokopu <em>Galaxias fasciatus</em></td>
<td>Listed as being observed but abundance was not commented on in 2006 application document. Observed as rare in 2007 (observed in tributary). Listed in PNRP as a migratory species in Karori Stream and all tributaries.</td>
</tr>
<tr>
<td>Koaro (native trout) <em>Galaxias brevipinnis</em></td>
<td>Moderately widespread, common at some locations. Listed in PNRP as a migratory species and “at risk”. Listed in PNRP as a migratory species in Karori Stream and all tributaries, and “at risk”.</td>
</tr>
<tr>
<td>Upland bully <em>Gobiomorphus breviceps</em></td>
<td>Moderately widespread, common at some locations. Listed in PNRP as being recorded in the Karori Stream and tributaries (not migratory).</td>
</tr>
<tr>
<td>Brown trout <em>Salmo trutta</em></td>
<td>Common and Widespread, identified at most sampling locations</td>
</tr>
<tr>
<td>Freshwater Crayfish / Koura <em>Paranephrops</em></td>
<td><em>As for short fin eel</em></td>
</tr>
</tbody>
</table>
A study of macro-invertebrate populations is not proposed at this time as results from this are only useful as an indication of the quality of the habitat in the Karori Stream and this application has assumed the quality at least as good as it was when assessed in 2007, if not better.

6.2.4 Overall Assumed Environmental Values

Overall, it is acknowledged that the Karori Stream has environmental values worthy of protection and enhancement, and planting and planting and restoration works are ongoing on parts of the stream to help achieve this.

This application “assumes” the desired future state of the stream (water quality and habitat in good condition) applies now, and proposes methods to ensure this is not adversely impacted by the effects of the proposed repair works.

6.3 Water Quality

Stormwater discharges and other runoff enter the Karori Stream upstream of the WWTP. However, in times of heavy rainfall or treatment plant malfunctions, treated sewage from the western suburbs is also discharged “lawfully” into the stream.

The existing consent conditions for the WWTP and MOP discharges aim to protect water quality and aquatic habitat in the Karori Stream environment downstream of the WWTP. Their focus is on the avoidance, remedy and mitigation of adverse effects from wastewater discharges on the stream environment. The conditions seek to achieve this, in part, by requiring regular inspections, maintenance and repairs for the remaining life of the aging MOP.

The potential effects of proposed maintenance and repair activities on water quality in the Karori Stream are a mixture of positive and potentially adverse effects:

- **Positive Effects** - Regular and prompt repairs and maintenance (required by existing consents) will lower the risk of leaks and pipe failures which could result in discharges of treated wastewater effluent to the Karori Stream (reducing potential adverse effects on receiving waters from the contaminants in treated wastewater);

- **Potentially Adverse Effects** – Some of the proposed maintenance and repair activities and access to works areas could result in silt and sediment disturbance and release into the stream (e.g. from disturbance of the bed or banks of the stream or diversion of flows).

The most likely effect in both planned and unplanned maintenance and repair activity situations will be silt release to water due to machinery working in the streambed and disturbance of the streambed. This silt release has the potential to adversely affect water quality (due to changes in colour and clarity) and related ecological values (smothering of freshwater aquatic habitat areas).

The proposed works (described at Section 4) will be undertaken to avoid release of sediment as far as practicable. If any silt is discharged from disturbance of the streambed or banks, this will be temporary and localised, and can be managed to an acceptable level with little or no detrimental effect on the quality of the stream waters and its aquatic habitat values.

To put these potentially adverse siltation effects in context, repairs/maintenance works have only been required on average 2-3 times per year, and this low frequency is expected to continue for the remaining life of the MOP. Furthermore, the leaks detected in past inspections were very minor, and works were programmed in low flow times, so most maintenance work was undertaken clear of the active flows. The previously undertaken improvements to pipe stability and prompt repairs have also prevented further discharges and therefore protected the stream water quality.

Overall, it can be concluded that the potential adverse effects on water quality resulting from the proposed infrequent, temporary, short term, low impact repair and maintenance works will be no
more than minor. However, the benefits to water quality will be high, based on lowered risk of discharges of effluent to the stream.

6.4 Ecological Effects

This application seeks to preserve and maintain the quality of the aquatic habitat referenced in Section 6.2 through ongoing good practice set out in the attached Management & Monitoring Plan (MMP) and as described at Section 4. Focus is placed on the physical and sediment conditions relevant to the proposed maintenance and repair works.

As with water quality comments above, the proposed maintenance works aim to prevent or minimise discharges of treated and partially treated effluent to the stream. The nature of the maintenance and repair works will, however, most likely require disturbance of the bed of the Karori Stream. This has the potential to disturb aquatic habitat within the areas of active stream flow.

The potential effects of this type of disturbance on aquatic habitat include removal of habitat for colonising macro-invertebrates, and damage or loss to spawning and feeding areas for native and other fish species. Focus is on fish species and effects on aquatic habitat rather than land based fauna. There are no known “protected” bird species that rely on the river bed and banks for nesting that would be detrimentally impacted by the proposed works.

It is commonly recognised that macro-invertebrates are able to quickly recolonise disturbed areas, particularly if the disturbance is temporary and short term (as it is in the case of this proposal).

It is more important to ensure that potential risks to freshwater fish habitat, spawning and migration areas are addressed. The simplest way to achieve this is to limit the timing of disturbance to when stream flows are low, enabling most works to occur “in the dry”. A further measure is to avoid undertaking planned works during peak migration/spawning periods when such works cannot avoid activity within flowing stretches of a watercourse. Both approaches are proposed in this application.

Although there is no formal recognition of the Karori Stream in the RFP, the applicant has acknowledged the most recent Freshwater Fish Database results (at July 2014) and confirmed that most planned works would be undertaken over the summer period when the flows in the stream are low. Therefore works can occur in the dry for the most part and this will not impact on fish habitat or migration/spawning patterns. This approach also fits in with advice from the applicant’s consultant ecologist, Katrina Smith, who recommends (if required) that the applicant avoid planned in-stream works in the active channel from 1 August to 31 December (based on known peak spawning and migration periods for the freshwater fish species observed). Given the low frequency the works need to be undertaken, and short term works periods, the likelihood of habitat disturbance is further restricted.

Unplanned works need to be able to occur without any restrictions, as they will be responding to damage to the pipeline that needs urgent repair to avoid discharges of wastewater to the stream.

Additional mitigation measures could include ensuring that: (a) any fish stranded as a result of the proposed works are immediately placed in a clear flowing stretch of the stream, and (b) fish passage is maintained at all times.

By “assuming” the health of the stream’s aquatic habitat is high, the proposed works methodologies and timing are designed to avoid risks of degradation of existing and future habitat values. In doing so the proposal supports and complements the positive results of works being undertaken through the upstream planting and restoration programmes, and will help to achieve the overall aim of the programme to improve the overall ecological health of the stream.
Overall, it can be concluded that any adverse ecological effects of the proposal will be infrequent, short term, temporary and no more than minor.

6.5 Flooding Effects

The Karori Stream has a total catchment area of 30.4km$^2$, an average slope of 3.1% and flows through a narrow spur flanked winding valley. Heavy rainfall in the catchment causes the stream flows to dramatically increase above normal levels. The stream is not managed by GWRC for flood protection risks. The purpose of the proposed works is to maintain structures that have been affected by flooding events (or storm events in the stream which elevate stream flows).

In storm flows, there is increased risk of damage to the banks of the stream that can slip into the stream (often along with trees and scrub) and the debris can divert flows or damage the wastewater pipeline and its support structures. Scouring effects can occur around the foundations that support the pipeline, especially the pipe bridge sections. Following storm events, and in the natural course of time, the Karori Stream can alter its alignment. This means areas of pipeline that were clear of the stream become affected by diverted stream flows, or fords to cross the stream get washed out or become uneven and difficult to traverse.

The existing inspection regime for the pipeline includes post storm inspections of the pipeline to ensure there is no damage or failures (with discharges) or stream movements that present risk to the integrity of the MOP or access to it. Works to clear debris, regrade the streambed, and/or repair the pipeline are undertaken as required following inspections, and to date have occurred 2-3 times a year on average. Examples are shown in the images provided at Section 4.

Re-grading of the streambed by relocation of gravels to divert flows away from the pipeline could have the potential to alter stream flows to other areas downstream. Maintenance works therefore need to be undertaken with care to ensure there are no changes to the streambed that could exacerbate flood damage risks either to other parts of the MOP or private property.

The applicant currently advises landowners of any proposed works in advance, and holds keys enabling access to the stream over private land. This provides an opportunity to discuss maintenance works options and address related issues. This approach will be continued under the current proposal, as it is required under the existing consents for the WWTP discharges.

6.6 Erosion & Scour

Erosion of the stream banks can occur in rain conditions, as commented on above. This natural process leads to sediment entering the stream either gradually or suddenly in a slip event. The steep banks of the stream are at risk of this in storm events, with greater risk of trees coming down with slip debris and causing damage to the pipeline or increasing risk of damage to the pipeline. Erosion near part of the pipeline could also destabilise it (for example if it is buried in the stream bank and the bank erodes away). Scour is a form of erosion that can occur when stream flows are concentrated around the base of a pipe-bridge foundation or other related structure.

The proposed works are required to clear slip debris and stabilise banks to protect the pipeline. However, they may also cause erosion and scour to stream banks or sediment to be released from the streambed (e.g. through removal and placement of material in the streambed or when using machinery in or near the watercourse). The proposal therefore also includes repairs to the stream bank if these works cause scour or erosion. Before and after photos can be provided if required.

The proposal provides details (at Section 4) of mitigation measures and good on site practices that are incorporated in the Management & Monitoring Plan (at Appendix A) to ensure potential adverse effects of maintenance and repair activities are negligible.
6.7 Mitigation and Monitoring Measures

Clause 1(g) of Schedule 4 to the Act states that an application should include:

"A description of the mitigation measures (safeguards and contingency plans where relevant) to be undertaken to help prevent the actual and potential effect".

Mitigation measures are addressed in the proposal at Section 4, and further covered in the attached MMP. Comments in the above sections of this assessment of environmental effects indicate that the potential adverse effects of the proposal on the environment (with the mitigation measures proposed) will be less than minor.

6.7.1 Consent Conditions and Monitoring

Standard conditions GWRC normally imposes on consents of the type sought are subject to the normal monitoring and compliance framework set up under the Act. These conditions will be sufficient to ensure that the proposed maintenance works are carried out in an acceptable manner.

It is suggested that a further consent condition referencing the MMP be included with any decision issued, rather than including specific monitoring conditions for the proposal. The MMP has been prepared to incorporate the necessary monitoring regime established in the existing consents for the WWTP pipeline discharges, and the proposed maintenance inspections and repair works. A condition referencing the MMP would keep administration and compliance processes simple.

The MMP is also a requirement of conditions of the existing discharge permits for wastewater discharge, which provide for a five yearly review to ensure the document is relevant and up to date. This review process also allows for changes to monitoring requirements to be considered and approved without the need for a change to the consent conditions under Section 127 of the Act.

Other conditions referenced earlier cover timing of planned works to avoid peak fish spawning and migration periods and responsibility to relocated any fish observed during diversion procedures.

The applicant requests that a draft set of conditions be made available for review prior to finalising any decision on this application.

6.7.2 Suggested Consent Conditions

We have provided a set of suggested conditions at Appendix D to cover the above comments.

6.8 Positive Effects

Approving the proposed maintenance and repair works will ensure the following positive effects:

1. Certainty for the consent holder (WCC) and GWRC concerning the approaches that can be taken to ensure the ongoing integrity of the MOP, with a simpler and more straightforward administration, monitoring and compliance process reliant on a single consent and a Management & Monitoring Plan (MMP). This is preferable to retrospective consent application processes for unplanned emergency works or ad hoc applications as and when planned works are proposed;

2. Efficiency, cost savings and timeliness for the consent holder in undertaking repair or maintenance works. There are no delays waiting for new consents to be processed on a case by case basis, and none of the associated costs. Funding can be focussed on what is important (i.e. ensuring the ongoing integrity of the wastewater pipeline and the future replacement process required by the existing consents). This benefit extends to WCC (the asset owner and consent holder) and ratepayers;

3. The MMP attached with this application can also be used to meet the requirements of conditions in the existing wastewater discharge permits. This is a further saving in terms of
costs and administrative time, while also setting out a clear set of methods and procedures to ensure maintenance and repair works have no more than minor adverse effects on the environment;

4. Ability to maintain the pipeline and undertake repairs involving a range of approved methods means the risks of leaks and failures is diminished, and any failures from unforseen events can be addressed in a timely manner. The potential adverse effects on receiving waters of any treated wastewater discharge from leaks or failure is therefore also reduced to a negligible level. This in turn complements the positive effects of stream side planting and remedial works undertaken on the Karori Stream to enhance the health of its freshwater aquatic environment.

6.9 Overall Effects of Proposal

The assessment of environmental effects presented above is guided by the provisions of Act and the Regional Freshwater Plan and the Proposed Natural Resources Plan. Overall, this assessment shows that the actual and potential effects of the proposal on the environment will be no more than minor.
7. Consultation

Section 36A of the Resource Management Act confirms that an applicant does not have a duty to consult in respect of any resource consent application. However, Clause 1(h) of the Fourth Schedule to the Act states that an AEE should include an:

| Identification of the persons affected by the proposal, the consultation undertaken, if any, and any response to the views of any person consulted: |

In order to avoid doubt over this clause, the 2005 Amendment Act inserted a new section 1AA to the Fourth Schedule, which states that:

| “clause 1(h) obliges an applicant to report as to the persons identified as being affected by the proposal, but does not oblige the applicant to consult with any person; or create any ground for expecting that the applicant will consult any person”. |

The applicant’s representatives from Wellington Water (WW) presented copies of the draft resource consent application and MMP documents as part of consultation group meetings and follow up processes associated with existing consents for WWTP and MOP access.

This provided the consultees with an opportunity to ask questions, and provide feedback on the final version of the application documents, and for any relevant outstanding issues to be addressed.

The Department of Conservation was consulted separately (and provided copies of the draft documents) to obtain feedback on the proposed works in the stream and methodologies. The documents were also prepared in consultation with GWRC staff, some of whom also attended the landowner consultation meetings with the applicant’s representatives.

The following table sets out summary results of consultation undertaken by the applicant prior to preparation of this application and details of any ongoing liaison with the consulted parties:

<table>
<thead>
<tr>
<th>Registered Landowner / Organisation Consulted</th>
<th>Land holding or other interests in vicinity of MOP</th>
<th>Summary of consultee responses and agreements reached (if any)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wellington City Council</td>
<td>Section 1 SO 37211 South Karori Road</td>
<td>N/A – WCC is the applicant, represented by Wellington Water. Their interests are considered at all times.</td>
</tr>
<tr>
<td>Erin Go Bragh Limited (represented by Mr &amp; Mrs Warren)</td>
<td>Lots 2 &amp; 3 DP 422854 509 South Makara Road</td>
<td>Written approval not obtained. Several ongoing issues of concern raised by the landowners are being addressed by WW. However, these are either historic and have already been addressed, not specific to the proposal or not resource management effects. Access over the Warren land is currently permitted by existing agreements. Works will not be undertaken on the stream stretches within their landholding unless approval is given as part of this consent process.</td>
</tr>
<tr>
<td>CS &amp; PA Griffiths</td>
<td>Lot 2 DP 414390, 555, 567 South Makara Rd</td>
<td>No concerns have been raised. Written approval is attached at Appendix E.</td>
</tr>
<tr>
<td>NZ Forestry Group Limited * (Kinnoull Station)</td>
<td>Lot 1 and Pt Lot 20 DP 414390, Lots 17 &amp; 18</td>
<td>No concerns have been raised. Written</td>
</tr>
</tbody>
</table>
A copy of the email from Department of Conservation is included below. Comments have been incorporated into application and were confirmed to the Department, which subsequently provided a letter of approval to the proposal.

On 21/08/2015, at 2:19 pm, Rachael Mora <rmora@doc.govt.nz> wrote:

Hi Jenny

I have forwarded this information on to our local Biodiversity Ranger and Freshwater specialist and they are generally happy with what has been proposed and consider that the standard consent conditions for in stream works will be sufficient to mitigate any issues.

They have made a couple of specific comments in relation to the fish transfer methodology:

- That fish that are captured be transferred *upstream* of the proposed works to reduce the stress on fish once sediment traps etc are removed;
- That any fish that are captured be relocated within the same catchment;
- That any pest fish that are captured are not released back into the stream; and
- That any fish that are captured be recorded in the NZ freshwater fisndata base.

Let me know when you are ready to lodge your application with the GWRC and we will be able provide formal approval.

Kind Regards
Rachael

Rachael Mora
Partnerships Ranger— Kaitiaki Manutātaki
Department of Conservation—Te Papa Atawhai
DDI: +64 4 470 8414 | VPN: 8414
Conservation for prosperity Tiakina te taiao, kia puawai
www.doc.govt.nz
8. Statutory Assessment

8.1 Overview

The following sections set out assessments of the proposal in terms of Part 2 and Section 104 of the Resource Management Act 1991 (the Act) and sections 95 – 95F of the Act (Notification).


The Purpose of the Resource Management Act 1991 is to promote the sustainable management of natural and physical resources.

The purpose and principles of the Act are defined in Sections 5-8 (Part 2) of the Act. They establish a framework for decision making about the effects of activities on the environment, while enabling people and communities to provide for their own social, economic and cultural well-being and for their health and safety. In doing so, the Act does not seek to restrict activities in situations where they are consistent with Regional and District plan provisions and where they do not result in adverse effects that cannot be avoided, remedied or mitigated to an acceptable level.

8.2.1 Section 5

The decision to issue the existing discharge permits confirms that sustainable management of natural and physical resources is being undertaken through the wastewater treatment and disposal operations at Wellington City Council’s Western Wastewater Treatment Plant (WWTP).

The conditions imposed with those consents ensure that the local community, and the individuals who live and work in the surrounding area, will have their social, health and safety needs provided for; the life supporting capacity of the Karori Stream, coastal waters and the air will be safeguarded, and adverse effects on the environment are appropriately avoided, remedied or mitigated. The references in the existing conditions to the need to inspect and repair the MOP are an example of this.

Despite approval of discharges of treated wastewater and overflows, the 2006 council decision report specifically references (at page 24) that at some stage GWRC may be required to take action in respect of un-consented pipeline leaks and advises the applicant should take all reasonable steps to minimise and progressively eliminate such leaks. The success or otherwise will be addressed at the time of review and/or application for renewal of consents.

The consent holder has complied with consent conditions to date in this respect. However, the need for additional consents to comply with the existing conditions has led to this application being prepared.

A global consent will enable improved administrative efficiency for the consent holder and the council and is expected to have cost savings for ratepayers. This application for the global consent addresses the life supporting capacity of the Karori Stream by confirming an on-going commitment by the applicant to address the risk of leakages from the pipeline (and quickly repair actual leaks and failures) as well as offering methods to avoid, remedy or mitigate adverse effects of maintenance activities on the quality of stream flows and aquatic habitat values. The overall approach is consistent with sustainable management.

8.2.2 Sections 6, 7 and 8

Sections 6, 7 and 8 of Part 2 set out the following matters a consent authority shall consider when exercising their functions to achieve this purpose:

- Recognise and provide for Matters of National Importance at Section 6;
- Have particular regard to Other Matters at Section 7; and
• Take into account the Principles of the Treaty of Waitangi at Section 8.

The relevant clauses of Section 6 (Matters of National Importance) are:

(a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:

(c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:

(e) The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:

The relevant clauses of Section 7 (Other Matters) are:

(b) The efficient use and development of natural and physical resources;

(c) The maintenance and enhancement of amenity values;

d) Intrinsic values of ecosystems:

h) The protection of the habitat of trout and salmon: and

(f) Maintenance and enhancement of the quality of the environment.

The purpose of this application is to obtain approval to undertake works in a timely manner to prevent pipeline failure or leaks, or repair leaks and failures so discharges of treated wastewater do not have adverse impacts on the Karori Stream or downstream coastal waters, or have adverse impacts on the values Maori place on the Karori Stream and the immediate environment, or cause offence or distress to individual landowners in the vicinity of the pipeline or the community in general. Ability to undertake repair works in a timely manner is an efficient approach to managing the operations and effects of the existing WWTP and MOP infrastructure. This in turn addresses the relevant matters in Sections 5-8 in terms of avoiding, remediating or mitigating the adverse effects of discharges. The approach described in the application also addresses the potential and actual adverse effects on the stream environment of the maintenance activities themselves by including methods to avoid adverse impacts on water quality or freshwater aquatic habitat.

This application proposes a Management & Monitoring Plan (MMP) that includes reference to key stakeholders, iwi, and neighbours who own land that is used for access to the pipeline. The MMP includes measures to reinforce the relationship with the Community Liaison Group established under the existing consents, and ensure their interests and concerns continue to be met.

The assessment of environmental effects made at Section 6.0 of this application addresses these matters in more detail and confirms that the adverse effects (primarily linked with release of sediment) can be managed so as to be no more than minor.

Overall, it can be concluded that the proposal is consistent with Part 2 of the Act.

8.3 Section 104

Section 104(1)(b) of the Act outlines the following matters a consent authority must have regard to:
In respect of the above, an assessment of the actual and potential effects on the environment is made in Section 6.0 of this report, relevant provisions of the Regional Freshwater Plan and the Proposed Natural Resources plan are discussed at Section 5.0, and further comments on the second generation Regional Policy Statement and National Environmental Standards are included below.

8.3.1 National Environmental Standards or Policy Statements

There are no National Environmental Standards applicable to this proposal.

The National Policy Statement for Freshwater Management 2014 directs Regional Councils to consider specific matters about freshwater when they are developing their regional plans for freshwater. In particular, “Ecosystem health” and “human health for recreation” are compulsory national values and must be provided for everywhere. The NPS now includes nationally-set minimum acceptable states for these two values which are called national bottom lines.

The preparation of the proposed Natural Resources Plan 2015 (PNRP) took these requirements into account when identifying issues relating to freshwater and how these should be addressed and the timeframe for addressing water quality issues. The assessment earlier in this application covers the relevant matters set out in the PNRP in respect of enhancing freshwater quality.

8.3.2 Operative Regional Policy Statement (RPS)

The second generation Regional Policy Statement for the Wellington region (RPS) became operative on 24 April 2013. The RPS identifies the regionally significant issues relating to the management of natural and physical resources, sets out goals (objectives) and how to achieve these (policies and methods). Regional and district plans are required to give effect to or consider specified RPS policies.

The relevant policies of the RPS for this proposal (which relate to freshwater and ecosystems) are:

- Policy 19: Managing amenity, recreational and indigenous biodiversity values of rivers and lakes (Page 102); and
- Policy 43: Protecting aquatic ecological function of water bodies (page 122)

Policy 19 requires Regional Plans to include policies, rules and/or methods that:

(a) Maintain or enhance the amenity and recreational values of rivers and lakes, including those with significant values listed in Table 15 of Appendix 1; and

(b) Protect the significant indigenous ecosystems and habitats with significant indigenous biodiversity values of rivers and lakes, including those listed in Table 16 of Appendix 1.

Policy 43 relates to resource consent applications (and a range of policy document/plan changes) and covers a range of matters relating to protecting the ecological function of water bodies which need to be maintained, protected or discouraged. It also refers to streams listed in Tables 15 and 16 at Appendix 1 of the RPS.

The Karori Stream is not included in RPS Table 15. It is, however, identified along with all its tributaries in Table 16 as being a watercourse with significant indigenous ecosystems based on having habitat for threatened indigenous fish species (specified as short jaw kokopu, giant kokopu and dwarf galaxias), and 6 or more migratory indigenous fish species (as recorded on the New Zealand Freshwater Fish Database, NZFWFD).

As commented earlier (and despite the direction in the RPS Policy 19), the Regional Freshwater Plan in its current form does not formally recognise or provide for any specific values of the Karori Stream. However, information provided earlier partially confirms the status awarded in the RPS to the Stream in Table 16. At least six (6) indigenous species are noted on the current records held
on the NZFWF Database (as at July 2014) although the endangered species referred to are not recorded on the database records we have searched.

This application therefore treats the stream environment as if it has special protection for indigenous habitat values and in doing so supports the intentions of the RPS and ongoing work to improve the stream environment. It is noted that the Proposed Natural Resources Plan covers species present in the stream and its tributaries and these species have been commented on earlier.

There are no known habitats for nesting bird species in the areas likely to be affected by the proposed maintenance works.

8.4 Notification and Affected Persons Assessment

8.4.1 Summary of Statutory Requirements – RMA Sections 95-95F

Sections 95A-F set an assessment framework for the decision maker, and provides that any decision to publicly notify an application is at the consent authority’s discretion.

In making these decisions, a consent authority must decide if there are any persons affected by an application, based on whether the adverse effects of the proposal are minor or more than minor (but not less than minor), or whether there are special circumstances that warrant notification.

A consent authority may disregard adverse effects that are within the “permitted baseline” and any effects on those persons who have given written approval to the proposal.

To avoid any form of notification, an applicant must demonstrate that the effects of the proposal are less than minor, and therefore can be considered “not to affect” any party.

8.4.2 Affected Persons

For the purposes of sections 95A(2)(a) and 95D, the relevant effects of the proposal are assessed in Section 6.0 and it was concluded that the overall effects of the proposal on the environment are less than minor.

However, there are several landowners who provide access to the applicant to inspect and maintain the pipeline and the works in the stream on land owned by one of the parties also potentially has impacts on users of the water downstream (land owned by one of the other parties). The applicant’s representative has consulted with the potentially affected parties, including the Department of Conservation, to ensure they are aware of the details of this proposal, including the Management & Monitoring Plan. Support for the proposal was also sought as part of the consultation process.

Written approvals and other consultation information are attached at Appendix E.

8.4.3 Conclusion on Notification

There is no relevant rule in the Regional Freshwater Plan that requires the application to be notified.

Written approval has been obtained from all parties considered to be adversely affected by the proposal, other than the owners of land registered under the name of Erin Go Bragh Limited.

It is considered that the wider public will not be disadvantaged in any way by non-notification of the proposal. There are no unusual or special circumstances that would warrant the public notification of this application under section 95A(4) of the Act.

The above assessment confirms that the proposal meets the requirements of the Act for Council to determine that public notification is not required. Therefore, the application can be processed on a limited notified basis.
9. Summary & Conclusions

This document describes a proposal for a global resource consent by the “Applicant” (Wellington City Council c/- Wellington Water Limited) to undertake planned and unplanned maintenance and repair works on the main outfall pipeline from WCC’s Western Wastewater Treatment Plant (WWTP MOP), where works will occur in and around the Karori Stream bed. The reasons for the proposal are presented along with details of mitigation offered.

The global consent sought will enable Wellington Water and Wellington Water’s contractors, acting on behalf of Wellington City Council, to more efficiently address planned and unplanned repairs and maintenance issues as and when they occur, subject to the attached Management & Monitoring Plan (MMP) being approved and linked to consent conditions.

The MMP attached with this application sets out the types of works for different parts of the pipeline and the methodologies and environmental protection measures that would be employed in each instance, to ensure adverse effects on the environment were avoided, remedied or mitigated to an acceptable level. It addresses the requirements for a MMP in the existing consents, and provides for consultation with affected landowners as appropriate. Use of a single document to cover all relevant consent reporting requirements for the pipeline and related activities simplifies administration of consent monitoring and compliance, and is consistent with the existing consent regime.

The applicant has consulted with the affected landowners and the Department of Conservation (DOC) and taken their feedback into account in the preparation of this document. Written approvals from DOC and all but one of the affected landowners are attached at Appendix E.

The main findings of the assessments contained within this document are that the proposal:

- Is a Discretionary Activity under both the Operative Regional Freshwater Plan and the Proposed Natural Resources Plan.
- Has addressed the relevant Regional Freshwater Plan and Natural Resources Plan assessment criteria and incorporates adequate mitigation measures to ensure that the actual and potential effects of access and works in the Karori Stream environment will be appropriately avoided, remedied or mitigated so as to be no more than minor.
- Is consistent with and not contrary to the relevant objectives and policies of the operative and proposed regional plans.

It is therefore concluded that the Council can be comfortable issuing a favourable decision on the proposal.

Jenny Grimmett Consultant Planner for Cardno on behalf of the Applicant
MRRP (Credit, 1991), MNZPI (1997), BSc (Zoology, 1986)

Dated: 5 October 2015
APPENDIX A

Management & Monitoring Plan
APPENDIX B

Computer Freehold Registers (Title Documents)
APPENDIX C

Copy of Figures 1-2 and 1-3
(Summary Access Plan & Ownership Plan)
APPENDIX D
Suggested Conditions
APPENDIX E
Consultation Information