



Te Awarua-o-Porirua Harbour and Catchment Strategy and Action Plan

Annual Report 2016/17



Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

poriruacity

From the Chair

I am pleased as the Chair of Te Awarua-o-Porirua Harbour and Catchment Joint Committee to introduce the 2016/17 Annual Report.

This report outlines *Te Awarua-o-Porirua Harbour and Catchment Strategy and Action Plan* activities that have taken place over the past year. The strategy aims to reduce erosion, sedimentation and pollutants, and to restore the ecology of our harbour.

This year has seen progress in a number of areas: in the Porirua City Council's District Plan with the protection and improvement of the harbour a key element; the Whaitua Committee understanding catchment issues and considering policy packages to protect streams and the harbour; ongoing successful environmental education programmes in our schools; and increasing numbers of community groups getting involved in education or restoration activities.

However, further flood events, sedimentation rates and no improvement in water quality indicators are a challenge to intended outcomes and community aspirations. The Greater Wellington Regional Council (GWRC) Science Team Leader, Dr Megan Oliver, has given a frank assessment: "At current levels of activity, Harbour Strategy targets and timeframes will not be met".

This assessment and the upcoming Long-term Plan provide an appropriate opportunity for the Councils and community to consider the existing funding levels for Harbour Strategy activities and ways to increase these to speed up improvement to harbour outcomes. Recent calls for "harbour dredging" have highlighted the concern and frustration of some residents that not enough is being done to deal with a shallowing of the harbour. The Harbour



Committee has asked for a report on the process that would be involved in establishing a case for dredging of the harbour. This report is due at the Committee's November 2017 meeting.

Managing a catchment and harbour, such as Te Awarua-o-Porirua, is complex. There are many factors involved and not all are necessarily fully understood. This Annual Report highlights the breadth of activities and level of engagement involved in implementing the Harbour Strategy in the past year.

While some activities are necessarily long-term investments in producing a healthy harbour, the commitment demonstrates not only a significant financial, but also emotional and intellectual investment towards that ultimate goal. Any meaningful change in harbour health will take time.

The Harbour Committee, Councils, Ngāti Toa Rangitira, supporting officers and members of the community are committed to best outcomes for the harbour. Questions about the effectiveness of the existing programme have only spurred us on to work harder, or smarter, to achieve those outcomes.

Ngā manaakitanga

Anita Baker

Chair
Te Awarua-o-Porirua Harbour
and Catchment Strategy Joint Committee

Highlights

Significant progress in implementing the Harbour Strategy over the 2016/17 year has included the following:

- completion of Stages 1 and 2 of the jointly-funded Porirua Stream Mouth Estuary Enhancement Plan, including construction of an innovative dune/wetland system
- increased school participation in the 'Drains to Harbour' street drain labelling and education programme
- ongoing success of the Porirua Harbour Trust, Enviroschools and 'Healthy Harbour Porirua' school environmental education programmes
- progress of the Greater Wellington Regional Council Te Awarua-o-Porirua Whaitua Committee towards policy and rules governing freshwater quality and quantity in the harbour catchment
- the review of the Porirua City Council District Plan that seeks to elevate the

centrality of the harbour and better reflect the significance of the harbour to the community and the objectives of the harbour strategy and the harbour as a strategic priority to the Council.

Harbour Strategy review change

At its March 2016 meeting, the Joint Harbour Committee decided to defer the scheduled three-yearly review due in 2018.

There are a series of statutory changes and processes over the next 18 months that are likely to significantly impact on the Harbour Strategy. The Committee agreed that it would be important to reflect these in a review of the strategy as soon as practicable. Rather than proceeding with the scheduled review of the strategy document - which is still working well and considered fit-for-purpose - it was decided to review the document once the anticipated statutory changes have occurred.





People movements

Following the local body elections, we started the year with a 'fresh look' Joint Harbour Committee. Welcome to new Chairperson, Clr Anita Baker (Porirua City Council). And new members Clr Kylie Wihapi (Porirua City Council), Sharli-Jo Solomon (Ngāti Toa Rangitira) and Clr Peter Gilberd (Wellington City Council (WCC)) to add to returning Clr Barbara Donaldson from GWRC.

Congratulations to Wanda Tait (pictured above during the 2016 Cockle Count) for receiving the rare 'Old Blue' Award from the Royal Forest and Bird Protection Society for her long and effective service. Of particular note is her work leading the restoration and management of the nationally significant Pūatahanui Wildlife Reserve. Well done Wanda.

Statutory and regulatory activities

A key action in the strategy is to progressively align statutory planning documents as the opportunities arise. Significant progress in this area continued during the year.

Porirua City District Plan Review

The Porirua City Council intends to have a draft Plan ready for public engagement by the end of 2017. Part of the Plan review is focusing on putting the harbour 'front and centre' in the review process and within the eventual draft document. This includes considering a package of policies to reduce contaminants and sediment and to protect and improve the health of the harbour.

The Council have been working closely with the Waitua Committee (see below) to anticipate and reflect tighter limits on stream and harbour water quality provisions likely to be introduced in the Proposed Natural Resources Plan.

Proposed Natural Resources Plan

The Proposed Regional Natural Resources Plan (PNRP) for the Wellington Region was released by GWRC mid-2015. Water quality objectives for the Te Awarua-o-Porirua Harbour catchment and methods to achieve these are being developed by the Te Awarua-o-Porirua Waitua Committee. The policies and methods are likely to support the objectives of the Porirua Harbour Strategy.

Te Awarua-o-Porirua Waitua Committee

The community-led Te Awarua-o-Porirua Waitua Committee has been digesting information collected from the previous year, and working with a modelling team to gain an understanding of current and future water issues and solutions. The Committee is now considering policy options towards maintaining or improving the quality of streams in the

catchment. Critically, the significance of stream water quality on the health of the harbour is also recognised and forms a central part of Committee deliberations. The Waitua Committee will complete a Waitua Implementation Plan early next year for the Regional Council's consideration and, through a plan change, will be adopted into the PNRP.

More information about the Waitua Committee and Waitua process is available from www.gw.govt.nz/te-awarua-o-porirua-waitua-committee.

Stormwater Bylaw

Porirua City Council introduced a Stormwater Bylaw in August 2015 that prohibited the disposal and washing of common chemical products, such as oil, detergent and cement slurry, into stormwater drains.

Finding suitable locations for community carwash pads has proven to be more difficult than originally thought. However, good progress has now been made and a pilot carwash pad should be available for use by late 2017.

Progress has also been made on providing a carwash fundraising facility to avoid generating contaminated run-off. Repco, owners of a popular fundraising site, are keen to host a more eco-friendly facility for carwash fundraisers and is working with Porirua City Council to achieve this.

Earlier in 2017, Wellington Water Limited (WWL) launched its online campaign highlighting stormwater contamination and ways that people and communities can help reduce contaminants entering streams and the harbour. This online campaign, which includes pop-up videos, has been very visible on Facebook.

GWRC has also produced a new-look environmentally-friendly carwash pamphlet and, with Porirua City Council, is looking at ways to get those out to households in Porirua.

Regional park management

GWRC and the CPB-HEB Joint Venture partnership constructing the Transmission

Gully Motorway (TGM) are discussing the project's mitigation planting to including the headwaters of Duck Creek and Cannons Creek in Belmont Regional Park. The Regional Park land around Cannons Creek has also now been completely retired from grazing.

In addition to planting at Battle Hill Forest Farm Park, GWRC has also undertaken remediation work to improve fish passage in a tributary of the Horokiri Stream.

Transmission Gully Motorway

GWRC Compliance Manager, Al Cross, was seconded to the TGM project for six months to help the project team improve their environmental compliance provisions, as required by the Environmental Protection Authority's Board of Inquiry.

The project team has accepted an invitation to be part of both the Harbour Strategy Management Team and the Strategy Implementation Team. One result of this participation is the discussions to plant some headwater catchments.

With the opening of the Kāpiti Expressway this year and pressure to complete TGM in 2020, the Wellington Gateway Partnership successfully applied to loosen consent conditions limiting the amount of open earthworks at any one time. These restrictions have subsequently been lifted. Earthworks and construction activities are now fully underway along the 28km length of the project.



During the November 2016 rainfall and flooding event, there was no observation or measurable evidence that TGM was a significant contributor to sediment entering the harbour.

TGM have undertaken a more open communications strategy and now provides monthly online updates for the community and other groups through a new public website.

Projects

Projects are physical interventions to meet at least one of the three objectives of the strategy – reduce sediment, reduce pollutants, or provide ecological restoration.

Ngāti Toa Rangitira projects

The iwi continues to be an integral part of implementing the Harbour Strategy and is also involved in the Waitua process.

Restoration of the Mahinawa Stream adjacent to Takapūwāhia has included weed control, planting of stream banks, improving inanga

spawning habitat, and the removal of the 'wa-stop' from the culvert into the harbour, which was a barrier to native fish migration. Ngāti Toa are also developing Marine Cultural Health Indicators to be used to monitor the health of the harbour and surrounding coast.

The Takapūwāhia Village Planning Group has been working with Porirua City Council to improve waka ama and cycleway facilities at the local harbour edge.

Ngāti Toa is currently working with GWRC and planning the first shellfish count of the Onepoto Arm for this November 2017.

Wellington Water Limited

During the year, the Committee was reminded that the sewer and stormwater networks are the most significant contributor to poor water quality in parts of the harbour – particularly in the Onepoto Arm of the harbour. Therefore improving the condition and operation of these networks is critical to public health, ecology and enjoyment of the harbour and streams. WWL manages the network for Porirua and Wellington city councils.

WWL's Draft Regional Service Plan sets out the high-level priorities and directions for the next 30+ years. It is currently being prepared in consultation with the Councils and a draft will be ready for public consultation in late 2017.

An Engagement Strategy providing a framework for community education has been adopted by WWL in the past year. Priorities include water conservation, reducing blockages in the wastewater network (which can lead to overflows), and reducing pollutants entering stormwater drains.

In 2016/17, WWL developed a wastewater network improvement plan. The plan identified four upgrade concept options with a proposal for the Porirua City Council 2018–28 Long-term Plan.

A condition assessment of the wastewater (sewer) network and pumpstations is continuing, and any identified renewals will be included in the long-term renewal programme on a priority basis.

The following works have either been completed in the past year or are currently underway:

- renewal and relining the Kenepuru Stream main pipe (Porirua East)
- renewal of the Plimmerton and Whitehouse Rd systems, which have been completed
- design and consenting for the Thompson Gully system renewal
- starting pumpstation upgrades for Duck Creek, Tangare Drive and other critical pumpstations
- flow monitoring in Cannons Creek, Whitby and Titahi Bay, in preparation for subsequent renewal
- completing an equipment condition assessment of the Wastewater Treatment Plant and an upgrade started
- upgrade of the emergency generator at the Wastewater Treatment Plant was completed.

A plan to address flooding in the Porirua City



CBD has been completed. This includes the concept for development of a wetland feature on a part of Elsdon Park to treat and store stormwater before discharge into the harbour. WWL is working with Ngāti Toa Rangitira to refine the concept and address flooding issues in Takapūwāhia Village. WWL was successful in its application to the Freshwater Improvement Fund for \$2 million towards the \$4 million project.

Pest control

GWRC completed aerial control of willow and pampas in Taupo Swamp this year. However, because of the wet summer, they were unable to undertake a planned blackberry control. The Queen Elizabeth II National Trust also funded extra animal pest traps around Taupō Swamp in partnership with Predator Free Plimmerton.

WCC are continuing pest plant management in areas of high ecological importance, such as Seton Nossiter Park, targeting mostly climbers such as Old Man's Beard and Honeysuckle.

GWRC installed additional trapping around the Pāuatahanui Wildlife Reserve following confirmation of the presence of the rare Spotless Crake. Most recently, 22 nationally endangered Fernbird were released in the Reserve by the Department of Conservation – a first for the Porirua area, and also the first mainland-to-mainland translocation of Fernbird in New Zealand.

GWRC Land Management

GWRC completed four Soil Conservation Plans for properties in the Pāuatahanui area with three more in draft, providing a total of seven additional properties with soil conservation plans this year.



Catchment work has included the following:

- 1,950 popular/willow poles planted on erosion-prone land
- 3,000 manuka planted on slip scars
- 2,800 seedlings planted in riparian areas
- 570m of riparian and wetland fencing to exclude stock.

GWRC's work supports rural landowners to change their land management practices. This is a key way to reduce the volume of sediment being eroded from rural land.

Anyone interested in this programme can contact Land Management Officer Jamie Peryer for more information at Jamie.Peryer@gw.govt.nz.

This work is part of an overall catchment-wide Sediment Reduction Plan, which is available from the [GWRC website](#).

Porirua Stream Mouth Estuary Enhancement Project

After a number of years of planning, design and consultation, Stage 2 of the Porirua Stream Mouth Estuary Enhancement Project

(PSMEEP) was completed in July 2017.

This is a joint project with Porirua City Council and GWRC, and is the first of its kind in the Wellington Region.

The work on the harbour edge behind Pak'nSave has been very visible to the public and has transformed the look and feel of a long-neglected and mis-used part of Te Awarua-o-Porirua Harbour. The project involved the development of an artificial wetland and dune system for the purpose of providing extra bird habitat and receiving and treating stormwater from parts of the CBD.

Part of the project was to install rock rip rap at either end of the dune. This is to stop ongoing erosion of the reserve area, while also protecting the new dune and wetland. It is anticipated that there will be episodic erosion of the dune from extra high tides and strong northerly winds, but there is an overall pattern of sediment build up at this location.

GWRC officers worked with students from three local schools to plant the first dune area, and a team from Porirua City Council and GWRC officers finished the planting.

Interpretive panels will be designed and installed for this area by GWRC, Porirua City Council and local children. These will explain how the dune and wetland system works and draw attention to the other natural rarities in the nearby sand flats.

Meanwhile, the obvious tidy-up to this part of the harbour has created interest from commercial operators keen to capitalise on the improvements and contribute to the amenity value by introducing businesses, such as a coffee outlet.

It will be very interesting to see this area develop further and become a more treasured part of the city and harbour.

Growth in community groups

Community involvement in environmental restoration projects to improve the health of the harbour and catchment has continued to grow, with two new groups being funded by GWRC this year.

- The Aser-Tatou Development Trust is assisting the local Forest and Bird group with planting in the Pāuatahanui Wildlife Reserve and helping the EnviroSchools programme to enable schools to create lizard gardens and restore wetlands.
- The Growing Places Trust is working with local community groups to restore areas along transport corridors in the catchment.

There are also a number of new predator-free groups that have started trapping pest animals in Plimmerton and in Titahi Bay, adjacent to Whitireia Regional Park.

In addition to these new groups, a number of others are receiving ongoing funding to continue their restoration work in the catchment.

- The Kahotea Stream Restoration Group (Onepoto Park catchment) continued implementing its restoration plan for the stream with planting of the stream banks this winter.

- The Aotea Conservation Volunteers have continued planting around the Kenepuru Stream in the Aotea area of Bothamley Park.

The Woodridge Planters continue to grow large numbers of plants for their work along the Belmont Stream and its tributaries, and the restoration projects of other groups in the Te Awarua-o-Porirua Harbour catchment.

With the help of 11 community restoration groups, WCC planted over 10,000 plants in the Porirua Stream catchment between Johnsonville and Porirua City. All these plants were grown by WCC's Berhampore Nursery. Five hundred were planted as part of the Million Metres Stream Project by local community groups in Seton Nossiter Park.

Dredging of Te Awarua-o-Porirua Harbour

A group interested in dredging the harbour made presentations to the Joint Harbour Committee and GWRC during the latter part of the year.

This gave the Committee and Councils an opportunity to re-familiarise themselves with the science around dredging and the focus on harbour sedimentation patterns and sediment source reduction.

Excessive sedimentation rates continue to prematurely fill both arms of the harbour. The priority has been to increase work to stop catchment erosion and better control sediment-laden run-off from development earthworks.

Statutory decision-making on any dredging rests with GWRC. However, the Joint Harbour Committee has asked for a report on what the process will be around any consideration of dredging for Porirua Harbour. That report is being prepared for the Committee's November 2017 meeting.



Community education

Community environmental education efforts continue to grow and evolve within the Porirua Harbour catchment.

School environmental education

Agencies who support school environmental education meet regularly to collaborate on projects and ensure they are collectively delivering an effective, joined-up service to schools around the catchment. There are 19 different organisations involved in this group.

School environmental education programmes delivered by this group are a particular highlight of the harbour strategy activities. This year they have focused on stormwater water quality improvement as a significant contribution to raising awareness and increasing participation in reducing household pollutants being tipped, flushed or poured down drains.

Between them, the Porirua Harbour Trust (PHT) (funded by the Phillips Family Foundation), Enviroschools and the 'Healthy Harbours Porirua' (HHP) environmental education programmes have successfully resourced and supported 37 schools over the past three years, with 24 still actively engaged this year. These programmes are now seeking to focus on engaging the remaining 14 schools in the catchment, mostly in the upper Porirua Stream area from Linden through to Newlands.

The programme has seen schools not only learning in the classroom, but also getting involved in litter clean-ups, tree planting, drain art and drain labelling events. HHP is also delivering a whitebait spawning project at Takapūwāhia streams and a number of Whitebait Connection programmes around the catchment.

A number of the participating schools also made written submissions to the Porirua City Council Annual Plan and followed these with oral presentations at Council hearings. The

quality and content of these submissions was excellent and much appreciated by the Council and the community.

The PHT educator (together with Enviroschools and other partners) have continued to provide professional development for teachers this financial year. The most recent programme, funded by GWRC, focused on experiential learning enabling teachers to lead more effective student fieldtrips and associated classroom learning about harbour-related issues.

Participating schools, the Councils and community continue to be impressed by the quality of the programme.

Mountains to Sea Wellington (MTSW) began trialling a freshwater monitoring protocol with school groups who wanted to extend their programmes, and to track progress alongside restoration efforts. Over the past year MTSW has introduced the protocols to five schools in the Greater Wellington region.

WCC have engaged with MTSW, NIWA and GWRC, along with a variety of freshwater organisations, to develop a free and open online resource where schools (and community groups) can capture this monitoring data.

Business education – Take Charge

The GWRC 'Take Charge' business education and monitoring programme works with businesses to reduce contaminants entering drains and streams. This year the programme visited 26 sites in the Raiha Street and Broken Hill area. Each of these businesses is now working towards completing the requirements of the Take Charge programme, with one business opting to roll out the programme to all of their sites across the region.

Snorkelling events

Two public snorkelling events in Whitireia Park were run by GWRC in February and March as part of Seaweed 2017 and the GWRC Great Outdoors Summer Events Programme. Both events promoted harbour health and good practices around stormwater.

Annual Porirua Harbour Trust Scorecard

The annual Porirua Harbour Trust 'Scorecard' was released in April. Apart from understandable concerns about increased sedimentation rates in the harbour over 2015 and a resultant decrease in cockle numbers, other indicators and the overall commitment of the Councils were seen not to be significantly different from previous years.

Drain labelling

Thanks to ongoing funding from WWL, the city-wide 'Drains to Harbour' stormwater drain labelling programme continued with involvement of Pukerua Bay, Paremata, Papakowhai and Windley schools starting work in their own suburbs. Tawa College labelled the drains in the Kenepuru/Wall Place/Raiha Street and Broken Hill Road industrial areas, while Porirua School completed labelling of the Elsdon residential area.



Restoration Day 2017

Restoration Day was held in Porirua this year, at the Whitireia Polytechnic on Sunday 21 May. This is a free, annual conference for community groups doing environmental restoration projects. This year's event, one of the most popular ever, was booked out. The location allowed an opportunity to showcase the work of community groups along the Kahotea Stream and in Whitireia Park. It also included a bus tour led by Ngāti Toa Rangitira and discussions about areas around the catchment of historical and cultural value, and a workshop focused on the traditional use of native plants.

GWRC Restoration Day partners have also hosted workshops throughout the year aimed at upskilling restoration groups, one of which was in the harbour catchment.

Stream Health Assessment Kits

Another four kits have been added to the nine existing ones in response to their popularity with schools. The kits are designed for years 5–8 and come with guidance that teachers can use in the field with students.

GWRC produced a Te Reo version of its Stream Health Assessment Kit this year. This has been a welcome addition to school resources, facilitating further uptake and participation in the environmental education programmes.

Research and monitoring

The full long-term monitoring programme of the harbour and catchment biophysical conditions continued.

Monitoring

Floods and sedimentation

Following a very wet winter and summer, sediment monitoring in the streams of the three largest catchments recorded significant quantities of sediment entering the harbour from the surrounding land. Measurements of



sediment deposition in the harbour have shown high rates of sedimentation in the subtidal (below low tide) areas.

Faecal contaminant monitoring

A joint NIWA/GWRC project briefly trialled a real-time faecal contamination monitor in the lower Porirua Stream from March to May. This provided information on patterns of contamination timing. More information will be available later this year.

Recreational water quality monitoring

Water quality monitoring continued throughout summer (weekly) and winter (fortnightly) within the harbour and on the coast. The safe water quality standard was breached on numerous occasions, particularly at Plimmerton Beach and the new Wineera Drive waka ama ramp sampling locations.

GWRC has recently produced a recreational water quality report card, "Is it safe to swim in Porirua?" providing information and guidance for harbour users. Copies are available from the Porirua City Council office and libraries or online at gw.govt.nz.

Research

Several discrete research projects were either started or completed during the year. These are outlined below.

2016 Cockle Count

The three-yearly study led by the Guardians of the Pūatāhanui Inlet (GOPI) took place in November, following flooding and despite prevailing poor harbour conditions.

Unsurprisingly, the results showed the first decrease in cockle numbers since the survey started 24 years ago in 1991. The reversal in the upward trend is attributed to four major floods in the past two years, including one just before the 2016 Cockle Count started.

Seagrass transplant trials

Monthly seagrass transplant monitoring was carried out by GOPI volunteers for the whole year. Monthly water quality monitoring and continuous light measurements were also taken. The transplants did not survive and all monitoring ceased in June 2017.

Water quality forecasting

GWRC continue to trial a water quality forecast for the harbour, that they hope to have available for public use in the 2017/18 summer. Users will be able to access the tool online to get an idea of the likely risk of illness from swimming or shellfish gathering at high-use locations around the harbour on any given day. It is hoped the public and event organisers will use the online tool to plan harbour activities.

Whaitua research

Part of the Whaitua Committee work described earlier, involves modelling of aspects of the biophysical, economic, social and cultural impacts of various water and land-use management options for the Porirua Harbour catchment. The results will inform policy decisions of the Whaitua Committee. But the results will also help review the current objectives, actions and resourcing of the Harbour Strategy. Final results are scheduled for early 2018.

Conclusions

Although it is still too early in the Harbour Strategy Programme to expect any significant long-term changes in the health of the harbour, a number of observations can be reported:

- While there was further sediment input to the harbour during the November 2016 flooding (which added to that of May 2015 and 2016), this is consistent with high-variability over time and at different locations within the harbour. The overall trend in sedimentation rates is not showing any meaningful trend at this stage – either better or worse.
- The muddiness of deposits, and the areas of mud, is increasing, while the area of sea grass habitat continues to decline.
- There has been a significant increase in inanga spawning habitat since the last survey in 2001.
- The monitoring and research results will continue to feed in to future research, planning and catchment management decisions.

In conclusion, most pieces of the *Te Awarua-o-Porirua Harbour and Catchment Strategy and Action Plan* are now in place. An increase in, or reprioritising of, resources for the progressive and ongoing implementation will increase the likelihood of improvement to the health and enjoyment of the harbour.

The **Work Plan** for the 2016/17 year follows and is available on the Porirua City Council website on the "healthy harbour" web page.

Thank you again to all who have contributed to the realisation of the vision – "*A healthy catchment, waterways and harbour, enjoyed and valued by the community*".

Ngā mihi o te ra
September 2017



Te Awarua-o-Porirua Harbour and Catchment Strategy and Action Plan

Workplan 2017/18

Highlights for the coming year include:

- Completion or commencement of statutory plans that will:
 - strengthen controls over earthworks
 - reduce contaminants entering streams and the harbour
 - protect or increase catchment vegetation
 - protect and improve stream and harbour water quality
- ongoing programme of stormwater and wastewater network upgrades, including design work for the Awarua Wetland and stormwater diversion
- ongoing upgrade in Wastewater Treatment Plant and waste treatment capacity
- Porirua Harbour exhibition at Pātaka Art + Museum youth gallery
- first shellfish count in the Onepoto Arm of the Harbour
- launch of the public swimming water quality online forecasting tool.
- ongoing community and Council restoration programmes

Activity	Agency	Budget 17/18 (\$)
Planning		
Proposed Regional Resource Plan	• policy & rules impacting coast, harbour & catchment	GWRC -
Te Awarua-o-Porirua Whaitua Implementation Plan	• specific policy & rules to maintain or improve stream water quality & quantity in the catchment	GWRC -
Porirua City District Plan Review	• policy & rules for I& uses to improve protection of stream & harbour water quality for next 10 years	PCC -
Porirua City Council Long-term Plan	• priorities & funding provisions for Council activities for next 20 years	PCC -
Review of Conservation Sites		WCC -
Outer Green Belt Management Plan		WCC -
Asset Management Plans	• work priorities & plans for water supply, wastewater & stormwater network maintenance & upgrade for 2017/18	WWL/PCC&WCC -
30 year Strategic Asset Plan	• strategic long-term plan for maintaining & upgrading water supply, wastewater & stormwater network	WWL/PCC&WCC -

Projects		
Community environmental restoration	• contestable community restoration fund • Restoration Day 2018 • produce & deliver a restoration workshop calendar of volunteer training opportunities	GWRC 51,000
	• plant materials for community restoration projects	WCC 30,000
Pest animal & plant control	• maintain & enhance biodiversity values at key sites	GWRC 55,000
Biodiversity management	• catchment works	GWRC 25,000
Pest animal & plant control	• pest control materials & working with community restoration groups	WCC 39,000
Porirua Stream Mouth Estuary Enhancement Project	• physical works • consultants & project management • dune maintenance	PCC 210,000
	• waka ramp construction	PCC 109,000
Land management	• erosion reduction through Land Management Officer working with private rural landowners	GWRC 25,000
Riparian fund	• riparian margin restoration through Land Management Officer working with semi-rural landowners	GWRC 20,000
Operations & professional advice	• specialist catchment & coastal technical advice • programme support	PCC 9,000
Restoration planting	• plant, materials & contractors	WCC 40,000
		Subtotal 613,000

Stormwater projects		
Stormwater investigations & upgrades	• public carwash facility (Prosser Street) • stormwater upgrade master planning • improvements (Rawhiti Road, Maraeroa School, Wall Place, Mohuia Crescent) • flood-prone areas – investigations & design (Titahi Bay, Windley School) • stormwater model update • reactive renewals	WWL/PCC 1,278,000
CBD stormwater diversion & Awarua Wetland (design)		WWL/PCC 200,000
		Subtotal 1,478,000

Wastewater projects		
Renewals & relining	• Kenepuru Stream, Mana Esplanade, Thompson Gully • reactive renewals	WWL/PCC 2,100,000
Pumpstation upgrades	• Duck Creek, Rawhiti Road • condition assessments • reactive renewals • consents	WWL/PCC 669,000
Investigations	• Kenepuru Stream maintenance • hydraulic model update • seismic resilience • pipeline condition assessments • telemetry/flow monitoring system	WWL/PCC 459,000
		Subtotal 3,228,000

Joint venture wastewater projects		
Pumpstation renewals	• Tangare Drive • consents • reactive renewals	WWL/PCC&WCC 686,250
Wastewater Treatment Plant	• building & component renewals • discharge consents • sludge handling	WWL/PCC&WCC 1,329,850
Investigations	• trunk network upgrade feasibility • long-term flow & overflow monitoring • water quality sampling for Network Improvement Plan • rain gauge programme • pipe condition assessment (CCTV) • inflow & infiltration investigations	WWL/PCC&WCC 645,000
		Subtotal 2,661,100

Education & awareness		
School education	• fund 'Healthy Harbours Porirua' programme • support Porirua Harbour Trust coordinator • coordinate school educator meetings • provide restoration opportunities for schools • maintain Stream Health Assessment Kits & teacher training	GWRC 53,000
Promotional events	• harbour biodiversity promotion	GWRC 35,000
Administration grant to Porirua Harbour Trust	• trust advocacy & education work	PCC 5,000
Harbour promotions & education	• printing & materials • exhibitions	PCC 10,000
Street drain labelling	• 'Drains to Harbour' plates • equipment & materials	PCC (WWL) 7,000 PCC 3,500
Pātaka Porirua Harbour exhibition	• permanent exhibition in youth gallery	PCC 70,000
		Subtotal 183,500

Research & monitoring		
Shellfish count (Nov 2017)	• Te Rūnanga O Toa Rangatira	TROTR/GWRC 20,000
Cultural Health Indicators	• Development of indicators for identifying water health (wai ora)	TROTR/DOC TBA
River ecology & water quality monitoring	• monthly freshwater monitoring – in Pāuatahanui, Horokiri & Porirua streams	GWRC 6,100
Recreational water quality monitoring	• sampling programme at Titahi Bay, Porirua Rowing Club, Plimmerton, Paramata, Water-ski club & Whitireia Waka Ama sites	GWRC 5,967
TAOPH strategy programme	• research towards the strategy programme	GWRC 17,500
Intertidal habitat mapping	• five-yearly habitat survey	GWRC 16,000
Turbidity monitoring	• monitoring suspended sediments entering harbour	GWRC 22,550
Sediment plate monitoring	• monitoring sediment plate network in harbour	GWRC 9,050
Swimming water quality forecasting	• public online tool	GWRC 25,000
WCC monitoring	• stream water quality	WCC 4,000
		Subtotal 126,167
		Total 8,289,767

Agency contributions	Porirua City Council	PCC	344,500
	Te Rūnanga O Toa Rangatira	TROTR	20,000
	Wellington Water Limited/Porirua City Council	WWL/PCC	4,752,800
	Wellington City Council	WCC	113,000
	Joint Venture Wastewater	WWL/PCC & WCC	2,661,100
	Greater Wellington Regional Council	GWRC	366,167

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