



Auckland Stormwater NDC Application

Appendix E:

High Level BPO Assessment

March 2017

Healthy Waters

Infrastructure and Environmental Services

Auckland Council

Introduction

This options assessment for the regional management of each of the seven stormwater issues comprises the following:

1. The range of possible management options were initially identified through a series of workshops with personnel from Stormwater Unit, ESU and AT. In addition external stakeholders were then also asked to identify options as part of the CRE consultation on prioritisation.
2. Each management option has then been classified on whether it aims to “prevent” or “minimise” the respective issue, in line with the BPO principles of the RMA.

“Prevent”, for instance, can apply to managing areas new growth or redevelopment by influencing how development can occur though catchment and land use planning. Through such planning, the Stormwater Unit seeks to build on the learnings of the past to avoid the issues, such as flooding and stream erosion, that now affect many areas of existing development throughout Auckland. Other methods that prevent include programmed preventative maintenance.

“Minimise” incorporates Stormwater Unit mechanisms for:

- a) reducing and eliminating existing adverse effects. This represents the fundamental basis of the Network Discharge Consent, and captures both reactive maintenance to alleviate immediate effects, as well as programming of improvements and upgrades to the network to address ongoing problematic areas. Given the varying scale and nature of adverse effects on the environment and community across the region, prioritised programmes are needed to achieve the most effective solutions, and the assessment below includes a review of the criteria used for this prioritisation.
 - b) mitigating effects, recognising that there are some effects that are simply not cost effective to remedy or fix through structural improvements to the network, and so are best mitigated through other mechanisms. Examples include offsetting for piped or otherwise severely degraded streams.
3. The identified options were then assessed against the consent objectives, consultation feedback from key stakeholders and implementation feasibility, to determine the best practicable option. The analysis of stakeholder feedback reflected in the Tables below was based on the 4 CRE consultation exercises on stormwater management priorities and is included in Attachment A of this Appendix.
 4. The recommended options are highlighted in the tables and summarised in Section 9.0 of the Main Report of the NDC Application. The management processes currently in, or to be put in place, for the implementation of the recommended BPO are detailed in Appendix B of the NDC Application.

Regional Options Identification and Assessment for the Management of Effects from Assets

Tables 1 and 2 present an assessment of the range of regional management options available to manage effects from assets, based on the BPO principles of to “prevent” and minimise” respectively.

Table 1: Prevent Adverse effects from Assets

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|--|--|---|--|--|
| Proactively maintain key assets to achieve existing levels of services. | Asset maintenance, including renewal, is a key component of maintaining levels of service. | Efficient Business (efficient operation, maintenance and renewals) | Highest level of support for “addressing critical assets” and “risk based analyses” for all 4 CREs. | <p>For public assets, this is being undertaken through the Stormwater Units Operation and Maintenance Programme, particularly for high risk assets.</p> <p>For private assets, the Stormwater Bylaw is due to come in force as a mechanism for to addressing poor performing assets in private ownership</p> | Recommended. (Preventative maintenance of infrastructure) |

Table 2: Minimise Adverse effects from Assets

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|--|---|--|---|---|
| Reactively maintain assets to address issues as they arise. | Addressing issues as they arise is a management option in particular for those assets that are not critical. | Efficient Business (efficient operation, maintenance and renewals) | High level of support from Hibiscus Coast CRE on “addressing impacts on existing communities” Medium level of support from Waitemata Harbour, Greater Tamaki, and Manukau Harbour CREs. | For public assets, this is being undertaken through the Stormwater Units Operation and Maintenance Programme, particularly for high risk assets. For private assets, the Stormwater Bylaw is due to come in force as a mechanism for to addressing poor performing assets in private ownership | Recommended. (Reactive maintenance and upgrades of infrastructure) |
| Prioritise asset renewal based on asset criticality. | Assets that have the highest likelihood of failure with the largest consequences will be top priority. | Prioritised Investment (regional prioritisation) Efficient Business (best affordable outcomes) | Highest level of support for “addressing critical assets” and “risk based analyses” for all 4 CREs. | Criticality assessments have been completed for pipe infrastructure. To be undertaken of other infrastructure. | Recommended. (Prioritisation criteria for infrastructure investigation and upgrades) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|--|---|--|---|---|
| Prioritise asset renewal based on those not meeting existing levels of service | Focus would be made on underperforming assets. | Prioritised Investment (relevant and affordable LoS) | High level of support from Hibiscus Coast CRE on “addressing impacts on existing communities” Medium level of support from Waitemata Harbour, Greater Tamaki, and Manukau Harbour CREs. | This is being undertaken through the response to customer response. | Recommended. (Reactive maintenance and upgrades of infrastructure) |
| Renew and upgrade of assets as opportunities arise | Focus on retrofits as opportunities arise. | Efficient Business (best affordable outcomes) Collaborative Outcomes (work with other utility providers) | Medium - high level of support for “redevelopment opportunities” from all 4 CREs | Requires co-ordination with other network providers and Council planning teams. | Recommended. (Collaboration with infrastructure providers) |

Regional Options Identification and Assessment for Growth

Table 3 presents an assessment of a range of regional management options available to prevent effects from future growth.

Table 3: Prevent Adverse effects from Growth

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|--|---|--|--|---|
| Council to Identify and prioritise anticipated areas of redevelopment and growth, which are then subject to further detailed and integrated land use and infrastructure planning. | Planning for growth is essential, and prioritisation of anticipated growth areas is needed to focus Stormwater Unit resources. | Support Growth (align planning) Prioritised Investment (regional prioritisation) Collaborative Outcomes (engage within Council and with CCOs) | Medium to high level of support for “Council led ” development from all 4 CREs | SU has the resources to undertake such catchment planning. However, it must be recognised that areas of growth are determined by developer activity, and therefore predicting areas of growth can be difficult. | Recommended (Prioritisation criteria for infrastructure investigation and upgrades) However, measures to respond to market lead development also need to be put in place. |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|--|---|---|--|---|
| Monitor and actively respond to private led land use Structure Planning proposals with proposed stormwater infrastructure. | As indicated above, it recognised that growth areas are driven by developers, and therefore mechanisms to respond to these areas through assistance or advice on catchment planning is essential. | Support Growth (work with developers) Support Growth (clear standards) Collaborative Outcomes (engage within Council and with CCOs) Collaborative Outcomes (engage with industry) Efficient Business (regional harmonisation) | Medium level of support for “partnership led development” from all CREs except Manukau Harbour, which identified as low. | SU has and is developing resources to assist developers and the regulatory team to review and if required, amend proposals. This includes guidance materials and information on matters such as flooding hazards and stream health. SU has control to accept proposed infrastructure that are to be vested by the developer. However it can only provide guidance to that which is to remain in private hands. | Recommended (Guidance to and review and approval processes of developer proposals) |
| Do not participate in land use planning processes. | As an infrastructure provider, working to influence future land use planning may not be seen to be a core responsibility for the Unit. Rather the Unit should be focused purely on infrastructure. | None | Low level of support “developer / market led” development from all CREs except Manukau Harbour, which identified as high. | This would require no resources from the Stormwater Unit. | <i>Not recommended.</i> This will likely result in the Stormwater Unit inheriting poor infrastructure resulting in adverse community and environmental outcomes. |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|---|--|---|---|---|
| Collaborate with Planning teams within Council to identify and assist in implementing Council led development initiatives. | Examples of such initiatives include Special Housing Areas, Master Plans, and Precinct Plans. | Support Growth (align planning) Prioritised Investment (regional prioritisation) Collaborative Outcomes (engage within Council and with CCOs). | Medium to high level of support for “Council led” development from all 4 CREs | Discussions and collaboration are being undertaken with relevant Council teams. | Recommended (Collaboration with other Council teams) |
| Collaborate with WaterCare, NZTA and Auckland Transport on redevelopment and new growth opportunities. | Examples of such initiatives include identification of major infrastructure projects. | Support Growth (align planning) Prioritised Investment (regional prioritisation) Collaborative Outcomes (engage within Council and with CCOs) | Medium to high level of support for “redevelopment opportunities” from all 4 CREs | Discussions and collaboration are being undertaken with infrastructure organisations such as Auckland Transport, NZTA and WaterCare with respect to growth. | Recommended (Collaboration with other network utility providers) |
| SU to construct all infrastructure projects aimed at servicing growth. | Stormwater Unit will build all required major stormwater infrastructure to support growth. | Support Growth (Enable growth) | Medium to high level of support for “Council led” development from all 4 CREs. | Current SU budgets are not sufficient to cater for all of the region’s development in the required timeframe. In addition, raises equity issues as developers would directly benefit from Auckland spending. Requires good cost recovery mechanisms. | <i>Not recommended.</i> Current budgets will not allow the required development to progress. |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|---|---|---|--|--|
| Developers to construct and pay for all infrastructure. | Developers to pay for all stormwater development. | None | Low level of support “developer / market led” development from all CREs except Manukau Harbour, which identified as high. | Will ensure equity as developers pay for all their own infrastructure. However it will also result in fragmented stormwater designs, including multiple devices serving the same catchment and increased operational costs. | <i>Not recommended.</i> Limited budgets for developers will mean that they will aim to serve their own site only, resulting in multiple and redundant devices across any given catchment. |
| Construction and funding of infrastructure to be undertaken by both SU and developers | This approach will use growth management plans as the basis of identifying treatment for the catchment as a whole and to determine allocation of costs. | Support Growth (Enable growth) Support Growth (Clear standards) Collaborative Outcomes (Engage with industry) | Medium level of support for “partnership led development” from all CREs except Manukau Harbour, which identified as low. | The Stormwater Unit has resources and processes in place not only design and build large infrastructure projects to cater for growth, but also to assist developer fund devices that cater for areas larger than their particular sites. Cost recovery mechanisms need to be reviewed to ensure equity as far as practicable. | Recommended (Construction of quality infrastructure) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|--|---|---|--|---|
| <p>Enforce provisions of the land use planning which aim at providing good stormwater outcomes.</p> | <p>Once a planning framework is in place, enforcement is needed to be effective.</p> | <p>Support Growth (clear standards)</p> <p>Collaborative Outcomes (engage within Council and with CCOs)</p> <p>Collaborative Outcomes (engage with industry)</p> <p>Efficient Business (regional harmonisation)</p> | <p>High level of support (general feedback received during stakeholder workshops)</p> | <p>SU is the ultimate owner of vested assets. As such it can promote the development of a Stormwater Management Plans emphasising water sensitive design in land use planning.</p> <p>However it is not the Stormwater Unit's role to decide or enforce land use, as stormwater network proposals are ultimately decided by the planning teams and independent commissioners, and enforced by the consents team.</p> <p>Nonetheless SU will work to ensure that the best outcomes are reached.</p> | <p>Recommended (Collaboration with other Council teams)</p> <p>This is particularly true for assets to be vested to the Stormwater Unit.</p> <p>While the Stormwater Unit is not the ultimate decision maker with respect to land use planning (in particular where the assets are not to be vested), it certainly can direct the design to ensure good environmental and community outcomes.</p> |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|--|--|--|--|--|
| Enforce implementation good design through mechanisms such as the ANDC and Code of Practice | Once the Code of Practice and ANDC are in place, enforcement is needed to be effective. | Support Growth (clear standards) Collaborative Outcomes (engage within Council and with CCOs) Collaborative Outcomes (engage with industry) Efficient Business (regional harmonisation) | High level of support (general feedback received during stakeholder workshops) | SU is the ultimate owner of vested assets. As such it can control the assets it receives through the Code of Practice and ANDC. This role is partly delegated to development engineers, and therefore collaborative mechanisms such as Service Level Agreements, guidance and education are required. For assets not vested, the Code of Practice and ANDC can provide best practice standards and guidance for development. | Recommended (Construction of quality infrastructure) This is particularly true for assets to be vested to the Stormwater Unit. |
| Provide guidance on water sensitive design, and treatment devices for urban stormwater. | For effective implementation (and as a basis of enforcement), guidance documents on the methods of water sensitive design is essential. Clarification and guidance on water sensitive design is needed to influence its implementation and ultimate enforcement. | Support Growth (WSD) Support Growth (clear standards) Collaborative Outcomes (engage within Council and with CCOs) Collaborative Outcomes (engage with industry) Efficient Business (regional harmonisation) | General support for WSD educational initiatives. | Engineering and Technical Services (ETS) Unit issue all guidance documents, therefore Stormwater Unit will need to work with this team. | Recommended (Education) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|---|--|--|---|--------------------------------|
| Set out best practice design in Stormwater Code of Practice | Good quality stormwater infrastructure, designed and constructed to appropriate standards, is essential for preventing environmental effects. Clear guidance on infrastructure design standards is needed to influence its implementation and ultimate enforcement. | Support Growth (clear standards) Collaborative Outcomes (engage within Council and with CCOs) Collaborative Outcomes (engage with industry) Efficient Business (regional harmonisation) | High level of support (general feedback received during stakeholder workshops) | Engineering and Technical Services (ETS) Unit issue all guidance documents, therefore Stormwater Unit will need to work with this team. | Recommended (Education) |
| Advocate provisions in Unitary Plan to avoid buildings in floodplains and reduce flows in flood prone areas | Unitary Plan sets out the foundations for land use planning, which is essential for the prevention of flooding within and as a result of future urban development. | Support Growth (clear standards) Support Growth (WSD) Safe Communities (manage flood risk) | High level of support (general feedback received during stakeholder workshops) | Stormwater Unit does not ultimately decide the Unitary Plan policies and rules. Therefore it cannot guarantee these outcomes. In addition land use requirements can be generic, and more detailed requirements will need to be built through growth catchment planning processes | Recommended (Advocacy) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|---|--|--|----------------|-------------------------------|
| Advocate for land use provisions in Unitary Plan to avoid or minimise the release of contaminants to stormwater, namely metals, temperature and TSS. | Unitary Plan sets out the foundations for the land use planning in terms of contaminant management. | Support Growth (clear standards) Support Growth (WSD) Healthy and Connected Waterways (protect streams) Healthy and Connected Waterways (reduce contaminant load) | Highest level of support received for “protection of sensitive environments” from all 4 CREs | As above | Recommended (Advocacy) |
| Advocate for land use provisions in Unitary Plan to protect streams. | Matters to include: Management of flows Management of contaminants including sediment, metals and temperature Protection of permanent and intermittent streams from piping and channelization Protection of baseflow by minimising impervious areas and requiring infiltration. | Support Growth (clear standards) Support Growth (WSD) Healthy and Connected Waterways (protect streams) | Highest level of support received for “protection of sensitive environments” from all 4 CREs | As above | Recommended (Advocacy) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|--|--|----------------------|---|---|
| Provide and update stormwater models for guidance on the location of flood events (e.g. 100 yr, 50 yr, 10 yr etc) and overland flow paths | Reliable information on the location of floodplains is needed for any growth planning. | Support Growth (clear standards) Support Growth (enable development) Safe Communities (manage flood risk) Efficient Business (regional harmonization) | Not discussed. | Current modelling completed for at regional level. However, while this is completed for the region on the 100 yr flood events and overland flow paths, the more frequent flood events have not been assessed. In addition, not all stream catchments will be able to be completed by the Stormwater Unit, and so other parties may need to undertake modelling. | Recommended (Guidance for development) |
| Provide and update guidance on the stormwater models acceptable by the Unit to enable developers to develop detailed designs for proposed infrastructure | While stormwater models can provide guidance on the location of flood plains and overland flowpaths, drilling down to existing modelling may be required to be carried out by developers for the detailed design of proposed infrastructure. | Support Growth (clear standards) Support Growth (enable development) Safe Communities (manage flood risk) Efficient Business (regional harmonization) | Not discussed. | As discussed above, other parties may need to undertake modelling, as not all stream catchments will be able to be completed by the Stormwater Unit. | Recommended (Guidance for development) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|--|---|----------------------|---|---|
| Allow any stormwater model to be used for the assessment of flooding hazards from new development. | A range of models is available for assessing flooding risks. However, model applications and assumptions have varying degrees of accuracy, and robust applications are needed to assess flooding risks. | - | Not discussed. | This option is anticipated to result in increased workload of the SU and any delegate parties as each model received will need to go under detail review for adequacy. | <i>Not recommended.</i> Rather identify modelling programmes and criteria that are acceptable to the Stormwater Unit |
| Update stormwater asset data ensure developers connect to the correct systems | Poor asset information can result in poor infrastructure design, which in turn can result in increased adverse effects such as flooding, erroneous connections of wastewater to stormwater, stream erosion, etc. | Support Growth (clear standards) Support Growth (enable development) Collaborative Outcomes (engage within Council and with CCOs) Collaborative Outcomes (engage with industry) Efficient Business (regional harmonization) | Not discussed. | The SU asset database currently comprises a conglomerate of legacy systems. As a result of number of information gaps and overlaps are present in the system. A new unified system is current under development. Truthing exercises for assets is also currently underway. Therefore a comprehensive asset system is being developed and should be in place in the coming years. | Recommended (Guidance for development) |

Regional Options Identification and Assessment for Flooding

Table 4 and 5 present an assessment of a range of regional management options available to manage flooding, based on the BPO principles of to “prevent” and “minimise” respectively.

Table 4: Prevent Adverse effects from Flooding

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|--|--|---|---|---|
| Implement operations and maintenance programmes to maintain assets within hotspots areas which area prone to flooding. | All private and public infrastructure needs to be maintained to work effectively. | Safe Communities (manage flood risk) Efficient Business (efficient operation, maintenance and renewals) | Highest level of support for “addressing critical assets” and “risk based analyses” for all 4 CREs. | Public assets to form part of SU operation and maintenance programmes. Private assets to be maintained by their respective owners, though subject to regulation through Stormwater Bylaw. | Recommended (Preventative maintenance of infrastructure) |
| Develop education and community engagement programme on flood hazard issues and approaches to risk minimisation for existing areas | There are practicable steps that property owners can undertake to avoid or minimise damage from flooding, once aware of the issue. | Safe Communities (Resilience) Collaborative Outcomes (engage stakeholders) | Not discussed | There will be instances where the costs of constructing flood reduction infrastructure outweigh the value to the community, eg. low number of houses mitigated. Resilience education is the preferred option in this circumstance. Will require co-ordination with Civil Defence. | Recommended (Education) |

Table 5: Minimise Adverse Effects from Flooding

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|---|--|--|--|--|
| Provide for reactive maintenance to address flooding issues as they arise. | Mechanism for addressing flooding issues as they arise is required as addressing all flooding issues within the catchment by structural means will be long term, and for some areas, may not be cost effective. | Safe Communities (manage flood risk) Efficient Business (efficient operation, maintenance and renewals) | High level of support from Hibiscus Coast CRE on “addressing impacts on existing communities” Medium level of support from Waitemata Harbour, Greater Tamaki, and Manukau Harbour CREs. | Public assets to form part of SU operation and maintenance programmes. Private assets to be maintained by their respective owners, though subject to regulation through Stormwater Bylaw. | Recommended (Reactive maintenance and upgrade of infrastructure) |
| Prioritise flooding mitigation works on areas with highest frequency of flooding. | Works should be focused on those areas that are flooded in more frequent events, such as the 10 and 20 yr events. | Safe Communities (manage flood risk) Safe Communities (protect habitable floors) Efficient Business (regional harmonization) | Medium to high level of support for “addressing frequency” from all CREs. | Currently being undertaken by the Unit for the 100yr event, with models for the smaller events being assessed. | Recommended (Prioritisation criteria for infrastructure investigation and upgrades) Stakeholder feedback suggested that this, along with public safety and critical infrastructure, are the most appropriate criteria for prioritisation of works. |
| Prioritise flooding mitigation works on areas with highest potential financial damage | Works should be focused on those areas that, if flooded, result in the highest financial damage. | Safe Communities (manage flood risk) Prioritised Investment (regional prioritisation) | Medium level of support for addressing’ financial damage” from all CREs. | Feasibility currently being reviewed within the Unit. | <i>Not recommended.</i> Stakeholder feedback suggested flooding frequency, rather than financial costs, should prioritise works. |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|---|--|--|---|---|
| Prioritise flooding mitigation works based on cost to manage flooding issues. | Works should be focused on those areas that are least expensive to remediate. | Safe Communities (manage flood risk) Prioritised Investment (regional prioritisation) Prioritised Investment (best affordable outcomes) | Medium level of support for “cost benefit” from all CREs. | Cost-benefit is a key consideration for the Council under the Local Government Act. | Recommended. (Prioritisation criteria for infrastructure investigation and upgrades) Affordable outcomes are key consideration for the Council. |
| Prioritise flooding mitigation works on redevelopment opportunities. | Works should be focused on those areas that are to be redeveloped through other Council or private initiatives. | Safe Communities (manage flood risk) Collaborative Outcomes (collaboration within Council and with CCOs) Prioritised Investment (regional prioritisation) Prioritised Investment (best affordable outcomes) | Medium to high level of support for “redevelopment opportunities” from all CREs. | Discussions and collaboration are being undertaken with infrastructure organisations such as Auckland Transport, NZTA and WaterCare with respect to growth. | Recommended (Collaboration with other network utility providers) |
| Prioritise flooding mitigation works with projects with multiple benefits | Works should be focused on those projects that have multiple benefits. | Safe Communities (manage flood risk) Collaborative Outcomes (collaboration within Council and with CCOs) Prioritised Investment (regional prioritisation) Prioritised Investment (best affordable outcomes) | Medium to high level of support for multiple benefits” from all CREs. | To be undertaken as part of catchment planning processes. | Recommended (Catchment planning) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|--|--|--|--|--|
| Review, identify, prioritise and remedy frequent hotspot flooding identified through customer complaints and maintenance programmes | Customer complaints provide information on where levels of service are consistently not being met. | Prioritised Investment (regional prioritisation) Efficient Business (efficient response) | High level of support from Hibiscus Coast CRE on “addressing impacts on existing communities” Medium level of support from Waitemata Harbour, Greater Tamaki, and Manukau Harbour CREs. | Customer complaints and response are monitored and therefore can be fed into planning processes. | Recommended (Reactive maintenance and upgrade of infrastructure) |
| Collaborate with Auckland Transport, WaterCare and other organisations that share infrastructure in understanding their levels of services and how stormwater can work with these organisations to achieve their respective services levels. | Stormwater Unit shares infrastructure with other organisations across the region, and co-operation is needed to ensure the levels of service are aligned in these areas. | Collaborative Outcomes (engage within Council and with CCOs) Efficient Business (efficient operation, maintenance and renewals) | Medium to high level of support for “redevelopment opportunities” from all CREs. | Discussions and collaboration are currently undertaken with infrastructure organisations such as Auckland Transport and WaterCare in assessing regional flooding programmes. | Recommended (Collaboration with other network utility providers) |
| Collaborate with Civil Defence in identifying areas of flooding that pose a risk to life, as well as to critical infrastructure | Stormwater Unit shares infrastructure with other organisations across the region, and co-operation is needed to ensure the levels of service are aligned in these areas. | Collaborative Outcomes (engage within Council and with CCOs) | Highest level of support for “risk to life” and “risk based solutions” for all CREs, except for Waitematā Harbour as this was not a criteria. | Discussions and collaboration are currently undertaken with Civil Defence | Recommended (Catchment planning and collaboration with other council teams) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|---|--|--------------------------------------|---|---|
| Implement infrastructure flood mitigation projects. | Flood mitigation projects have been identified in legacy council catchment management plans, as well as continued to be identified through use of stormwater modelling (e.g. overland flows, 10, 20, 100 yr events) | Efficient Business (efficient operation, maintenance and renewals) Safe Communities (LoS) Prioritised Investment (relevant and affordable LoS) | Projects not specifically discussed. | To be implemented through works programme. | Recommended (Infrastructure upgrades) |
| Purchase of properties which are flood prone | The costs of remedying the public network can sometimes be higher than purchasing the affected property (ies). This is particularly the case where frequent flooding events occur at a small number of properties. | Safe Communities (manage flood risk) Safe Communities (protect habitable floors) Prioritised Investment (best affordable outcomes) | Projects not specifically discussed. | To be reviewed as a possible option of mitigation in catchment BPO analysis. | Only to be considered where the assessment at a given catchment level indicates it is best option. Affected parties will need to be engaged with. |
| Develop education and community engagement programme on flood hazard issues and approaches to risk minimisation for existing areas | There are practicable steps that property owners can undertake to avoid or minimise damage from flooding, once aware of the issue. | Safe Communities (Resilience) Collaborative Outcomes (engage stakeholders) | Not discussed | There will be instances where the costs of constructing flood reduction infrastructure outweigh the value to the community, eg. low number of houses mitigated. Resilience education is the preferred option in this circumstance. Will require co-ordination with Civil Defence. | Recommended (Education) |

Regional Options Identification and Assessment for Managing Stream Health

Tables 6 and 7 present an assessment of a range of regional management options available to address the issues for urban streams, based on the BPO principles of to “prevent” and minimise respectively.

Table 6: Prevent Adverse effects on Urban Streams

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|---|---|--|--|--|
| <p>Establish public education programmes to enhance stream health. This includes:</p> <ul style="list-style-type: none"> discourage of litter Preventing illegal dumping of contaminants (e.g. chemicals, paint, and yard waste) into storm drains discharging to streams. Enhancing riparian planting. | <p>Information and guidance on the best practice is essential for obtaining the best practicable outcomes in the community.</p> | <p>Collaborative Outcomes (engage within Council and with CCOs)</p> <p>Healthy and Connected Waterways (working collaboratively to enhance stream health)</p> | <p>“Holistic management” highest level of support from all CREs.</p> | <p>The Stormwater Unit does not specifically undertake education initiatives for streams. Rather it would need to work with Units such as ESU, Waste team and compliance on these matters.</p> | <p>Recommended</p> <p>(Education)</p> |
| <p>Operate and maintain outfalls and community stormwater treatment devices and catchpits.</p> | <p>Maintenance of treatment devices is a key component of preventing worsening environmental outcomes.</p> | <p>Healthy and Connected Waterways (minimise effects on waterways)</p> <p>Efficient Business (efficient operation, maintenance and renewals)</p> | <p>Highest level of support for “addressing critical assets” and “risk based analyses” for all 4 CREs.</p> | <p>Public assets to form part of SU operation and maintenance programmes.</p> <p>Private assets to be maintained by their respective owners. However the Stormwater Unit can work these owners for problematic streams through the Stormwater Bylaw.</p> | <p>Recommended</p> <p>(Preventative maintenance of infrastructure)</p> |

Table 7: Minimise Adverse effects on Urban Streams

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|---|--|--|---|---|
| Prioritise associated stream works at a regional basis. | <p>Some of the effects on streams from the network are localised in basis and therefore do not need catchment based assessments to identify solutions. Examples include fish passage barriers, temperature increases from channels and some outfall erosion.</p> <p>Mitigation for these effects therefore can be assessed and undertaken on a project type basis across the region, rather than on a specific catchment basis.</p> | <p>Healthy and Connected Waterways (minimise effects on waterways)</p> <p>Prioritised Investment (regional prioritization)</p> | <p>High level of support from all CREs for “greatest ecological benefit/ ecological values” criterion.</p> <p>High level of support for from all CREs on “holistic stream management” (note: this criterion was not included in the Waitemata Harbour consultation process).</p> | <p>This requires data to be collected on regional basis on stream issues.</p> <p>Stormwater Unit is responsible for works involving its assets</p> <p>Matters relating to enhancing through riparian planting are undertaken by ESU. The Stormwater Unit and ESU are working together in this area through the Healthy Waterways Initiative. Works with ESU and other teams is also being reviewed as part of the implementation of the National Policy Standard: Freshwater Management</p> | <p>Recommended</p> <p>(Infrastructure upgrades)</p> |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|---|---|---|---|---|
| Undertaken remediation works on a stream catchment basis. | Streambank erosion and some outfall erosion and channelisation is likely to be caused by the accumulation of discharges from the upper catchment. Any mitigation therefore would therefore require assessment on a catchment basis to address high flows. | Healthy and Connected Waterways (minimise effects on waterways) | High level of support from all CREs for “greatest ecological benefit/ ecological values” criterion. High level of support for from all CREs on “holistic stream management” (note: this criterion was not included in the Waitemata Harbour consultation process). | As above, with additional catchment planning to be completed. | Recommended (Catchment planning) Primarily for assessing mitigation for streambank and outfall erosion. |
| Focus on Public Streams | Streams running through open spaces and Council owned land, as well as designated public streams, provide ease of access for works and are the responsibility of the Council to maintain and enhance. | Healthy and Connected Waterways (enhance waterways) Efficient Business (efficient operation, maintenance and renewals) | Medium support for “ease of intervention” for all CREs except Greater Tamaki which was low. | Works within public streams are relatively straightforward for the Stormwater Unit and Council. | Recommended (Prioritisation criteria for infrastructure investigation and upgrades) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|---|--|--|--|--|
| Focus on Public and Private Streams | <p>Ownership of the stream varies across its length, falling under either private or public ownership.</p> <p>To bring about the greatest environmental benefit to a stream, remediation of effects along private and public streams needs to occur</p> | <p>Healthy and Connected Waterways (working collaboratively to enhance stream health)</p> <p>Efficient Business (efficient operation, maintenance and renewals)</p> <p>Collaborative Outcomes (engage with stakeholders)</p> | <p>High level of support from all CREs for “greatest ecological benefit/ ecological values” criterion.</p> <p>High level of support for from all CREs on “holistic stream management” (note: this criterion was not included in the Waitemata Harbour consultation process).</p> | <p>Responsibility for private watercourses is likely to rest with the owners of the underlying land.</p> <p>However there are issues that affect private streams that could be attributable to the Council. For instance erosion of private land that is present within streams that have a high proportion of flow from public stormwater network.</p> <p>Careful consideration must be taken on the extent that the Council can be involved in remedying such areas.</p> | <p>Recommended</p> <p>(Prioritisation criteria for infrastructure investigation and upgrades)</p> <p>This option received a high level of support from the stakeholder engagement. Opportunities and feasibility of enhancing private streams need to be investigated.</p> |
| Collaboration with WaterCare, Auckland Council Parks, Auckland Transport and other Council entities | <p>The issues relating to streams are the responsibilities of many of the Council organisations, and therefore need to be worked through collaboratively.</p> | <p>Healthy and Connected Waterways (working collaboratively to enhance stream health)</p> <p>Collaborative Outcomes (engage within Council and with CCOs)</p> | <p>High level of support for from all CREs on “holistic stream management” (note: this criterion was not included in the Waitemata Harbour consultation process).</p> | <p>Discussions and collaboration are being undertaken with infrastructure organisations such as Auckland Transport, NZTA and WaterCare. To be included in discussions.</p> | <p>Recommended</p> <p>(Collaboration with Council teams and CCOs)</p> |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|---|--|--|--|--|
| <p>Develop master plans for the management of the most problematic streams.</p> | <p>These plans should take a holistic approach to the management of these areas, while also recognising that it may not be possible to fully remedy legacy stream issues.</p> <p>Such projects will “lead by example” and demonstrate to the community and private land owners what can be achieved.</p> <p>The work should build into the NPSFW.</p> | <p>Healthy and Connected Waterways (working collaboratively to enhance stream health)</p> <p>Collaborative Outcomes (engage within Council and with CCOs)</p> <p>Collaborative Outcomes (engage with iwi)</p> <p>Collaborative Outcomes (engage with stakeholders)</p> | <p>High level of support from all CREs for “greatest ecological benefit/ ecological values” criterion.</p> <p>High level of support for from all CREs on “holistic stream management” (note: this criterion was not included in the Waitemata Harbour consultation process).</p> | <p>The Stormwater Unit focuses on mitigating the effects caused by its assets, such as outfall erosion, fish passage and temperature issues from channels.</p> <p>Matters relating to enhancing through riparian planting are undertaken by ESU. The Stormwater Unit and ESU are working together in this area through the Healthy Waterways Initiative.</p> <p>Works with ESU and other teams is also being reviewed as part of the implementation of the National Policy Standard: Freshwater Management</p> | <p>Recommended</p> <p>(Catchment planning and collaboration with Council teams, CCOS and other stakeholders)</p> |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|---|---|--|--|---|
| Collaboration with iwi, Local Boards and other external stakeholders in the enhancement of streams | Many stakeholders outside of the Council are actively working on the enhancement of streams throughout the region, and collaboration would be beneficial. | <p>Healthy and Connected Waterways (working collaboratively to enhance stream health)</p> <p>Collaborative Outcomes (engage within Council and with CCOs)</p> <p>Collaborative Outcomes (engage with iwi)</p> <p>Collaborative Outcomes (engage with stakeholders)</p> | <p>High level of support from all CREs for “greatest ecological benefit/ ecological values” criterion.</p> <p>High level of support for from all CREs on “holistic stream management” (note: this criterion was not included in the Waitemata Harbour consultation process).</p> | Discussions and collaboration are being undertaken with external stakeholders, with some initiatives already occurring. | <p>Recommended</p> <p>(Collaboration with other stakeholders)</p> |
| Carry out riparian margins, when opportunities arise either through stormwater projects addressing primarily other stormwater issues and/or where the stormwater unit can complement stream enhancement work carried out by other departments of organisations | <p>This approach provides the certainty about local planting outcomes.</p> <p>Benefits greater than those just produced by riparian planting</p> | <p>Healthy and Connected Waterways (working collaboratively to enhance stream health)</p> <p>Collaborative Outcomes (engage within Council and with CCOs)</p> <p>Collaborative Outcomes (engage with stakeholders)</p> <p>Prioritised Investment (best affordable outcomes)</p> | High level of support to “leverage outcomes” and “multiple benefits” from all CREs. | Discussions and collaboration are being undertaken with infrastructure organisations such as Auckland Transport, NZTA, WaterCare and other external stakeholders. To be included in discussions. | <p>Recommended</p> <p>(Collaboration with other stakeholders)</p> |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|---|--|--|--|---|
| Implement region wide programme to remediate online ponds, e.g. conversion of online wetlands. | Online ponds, while beneficial for capturing contaminants, create environmental effects such as heating, algal blooms, fish barriers and low dissolved oxygen. | Healthy and Connected Waterways (minimize effects on streams) Prioritised Investment (best affordable outcomes) | Medium level support for “redevelopment opportunities” from all CREs. | To be implemented through works programmes. | Recommended (Asset renewal programme) |
| Implement stream improvement works. | Options include: remediation of outfall erosion, remediation of bank erosion, removal of fish passage, increase stream capacity by increase bank width and weed clearance, enhancement of Planting, and daylight and dechannelisation | Healthy and Connected Waterways (minimize effects on streams) Healthy and Connected Waterways (working collaboratively to enhance stream health) Collaborative Outcomes (engage within Council and with CCOs) Collaborative Outcomes (engage with stakeholders) | High level of support from all CREs for “greatest ecological benefit/ ecological values” criterion. High level of support for from all CREs on “holistic stream management” (note: this criterion was not included in the Waitemata Harbour consultation process). Feedback from “clean-up” groups (e.g. Waitemata Harbour Clean-Up Trust) indicates a support for source control of litter through waste minimisation and effective litter collection, as well as structural solutions. | As discussed, SU is responsible for mitigation the effects of its assets. This occurs easier on public land. All options to be assessed as part of stream and catchment analysis, in particular daylighting, as part of the options assessment to remediate critical assets. Works to do with riparian planting is undertaken by other Units. In addition, many streams are in private hands. SU will therefore need to collaborate with others to holistically manage streams. | Recommended (Catchment planning and collaboration with Council teams, CCOS and other stakeholders) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|---|--|---|--|---|
| Unit lead riparian planting along all stream reaches on public land | This approach provides the greatest certainty about planting outcomes. It is the most equitable option in terms of spreading effort across the CRE, but it will divert work from the areas that are most likely to benefit. | Healthy and Connected Waterways (minimise effects on stream health) | Not discussed. | Riparian planting lead by ESU. | <i>Not an SU responsibility.</i> To coordinate with ESU through Health Waterways initiatives. |
| Support riparian planting through existing stream community groups | Community groups can produce great outcomes, but the Council has less ability to plan, or rely on, community outcomes. The level of Council support and involvement required varies from group to group. | Healthy and Connected Waterways (working collaboratively to enhance stream health) Collaborative Outcomes (engage within Council and with CCOs) Collaborative Outcomes (engage with stakeholders) Prioritised Investment (best affordable outcomes) | Medium level of support from all CREs for focussing on areas based on the level of active community support | Community riparian planting lead by ESU. | <i>Not an SU responsibility.</i> To coordinate with ESU through Health Waterways initiatives. |
| Establish implement an offset policy where proposed works result in the inevitable loss of streams. | It must be recognised that loss of streams will at times occur due to infrastructure upgrades and development of new stormwater infrastructure. Offsetting is a recognised mitigation for this loss. | Healthy and Connected Waterways (working collaboratively to enhance stream health) Prioritised Investment (best affordable outcomes) | Not discussed. | To be reviewed as a possible option of mitigation in catchment BPO analysis. | Recommended However this is only to be considered where the assessment at a given catchment level indicates it is best option. Affected parties will need to be engaged with. |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|---|---|--|--|--|
| <p>Establish public education programmes to enhance stream health. This includes:</p> <ul style="list-style-type: none"> • discourage of litter • Preventing illegal dumping of contaminants (e.g. chemicals, paint, and yard waste) into storm drains discharging to streams. • Enhancing riparian planting. | <p>Information and guidance on the best practice is essential for obtaining the best practicable outcomes in the community.</p> | <p>Collaborative Outcomes (engage within Council and with CCOs)</p> <p>Healthy and Connected Waterways (working collaboratively to enhance stream health)</p> | <p>“Holistic management” highest level of support from all CREs.</p> | <p>The Stormwater Unit does not specifically undertake education initiatives for streams. Rather it would need to work with Units such as ESU, Waste team and compliance on these matters.</p> | <p>Recommended (Education)</p> |

Regional Options Identification and Assessment for Managing Contaminants to Harbour and Estuaries

Tables 8 and 9 present an assessment of a range of regional options available to manage contaminants to harbours and estuaries, based on the BPO principles of to "prevent" and "minimise" respectively.

Table 8: Prevent Adverse effects of Contaminants to Harbours and Estuaries

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|--|---|--|---|---|
| Work with national government to remove sources of contamination. | <p>Source of many contaminants is from diffuse sources such as car brake pads and tyres, roofing and building materials, antifouling paints, etc.</p> <p>Improving standards for these materials to reduce or remove these contaminants is a potential option, but it is likely to require legislative change. International regulation and market responses may produce a gradual shift toward low yielding products without the need for further action.</p> | <p>Healthy and Connected Waterways (reduce contaminant load)</p> <p>Collaborative Outcomes (engage with stakeholders)</p> | Highest level of support for "reduction of contaminant load" from all CREs.. | <p>Restrictions on building materials in place under the Proposes Auckland Unitary Plan.</p> <p>Other potential mechanisms include working at a strategic level with national agencies to review current standard for car parts to determine if sources of contaminants can be removed and minimised.</p> | Recommended (Advocacy) |
| Work with AT to reduce volumes of traffic | <p>Source of many contaminants is from diffuse sources such as car brake pads and tyres. Reducing vehicle movements will therefore reduce contaminants to stormwater.</p> | <p>Healthy and Connected Waterways (reduce contaminant load)</p> <p>Collaborative Outcomes (engage with stakeholders)</p> | Highest level of support for "reduction of contaminant load" from all CREs.. | <p>In line with Auckland Plan. This is an AT responsibility.</p> | <p><i>Not an SU responsibility.</i></p> <p>To coordinate with AT.</p> |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|--|---|---|--|---|
| Establish public education and engagement programmes to discourage illegal dumping of contaminants (e.g. chemicals, paint, yard waste) into storm drains discharging to harbour | Information and guidance on the best practice is essential for obtaining the best practicable outcomes in the community. Education initiatives however are managed by other Council Units | Healthy and Connected Waterways (reduce contaminant load) Collaborative Outcomes (engage with stakeholders) Collaborative Outcomes (engage within Council land with CCOs) | Highest level of support for “reduction of contaminant load” from all CREs. | The Stormwater Unit does not specifically undertake education initiatives for streams. Rather it would need to work with Units such as ESU, Waste team and compliance on these matters. | Recommended (Education) |
| Operate and maintain community stormwater treatment devices and catchpits. | Asset maintenance is a key component of maintaining positive environmental outcomes. All private and public infrastructure needs to be maintained to work effectively. | Healthy and Connected Waterways (maintain assets) | Highest level of support for “addressing critical assets” and “risk based analyses” for all 4 CREs. | Pond desilting and upgrade programme already underway. Implement and periodically review operation and maintenance contracts. Private assets to be maintained by their respective owners, though subject to regulation through Stormwater Bylaw. | Recommended. (Preventative maintenance for infrastructure) |

Table 9: Minimise Adverse effects of Contaminants to Harbour and Estuaries

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|--|---|---|--|--|
| Prioritise areas by total contaminant load from a catchment | This prioritises catchment by the total load from a particular catchment, and therefore emphasises on larger catchments and on residential areas as these comprises the larger urban land use in the region. | Healthy and Connected Waterways (reduce contaminant load) | Highest level of support for “reduction of contaminant load” from all CREs. | This is achieved best through general land use requirements such as restrictions on building materials and onsite treatment (see Growth). Therefore prioritisation using this method is not required. | Recommended (Prioritisation criteria for infrastructure investigation and upgrades) |
| Prioritise areas by contaminant yield from a catchment | This prioritises catchment load by area, and therefore will emphasis areas that generate the highest contaminant sources, such as industrial areas. | Healthy and Connected Waterways (reduce contaminant load) | Highest level of support for “reduction of contaminant load” from all CREs. | It is anticipated that opportunities for structural mitigation will be more prevalent in these areas as the contamination will be more concentrated. | Recommended (Prioritisation criteria for infrastructure investigation and upgrades) |
| Prioritise catchments by existing land use rather than maximum probable development. | This will focus on redressing contamination from existing areas. | Healthy and Connected Waterways (reduce contaminant load) | Higher level of support for “reduction of contaminant load” than for “trends” for all CREs except Hibiscus Coast. | Growth undertaken to achieve maximum probable development will be treated through the measures outlined in the Managing Growth above. Therefore emphasis should be focused on reducing existing effects. | Recommended (Prioritisation criteria for infrastructure investigation and upgrades) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|--|---|--|---|---|
| Prioritise areas by “degraded areas” classification under the Unitary Plan. | Emphasis could be focused on areas that are degraded, to reduce contamination to these areas. | Healthy and Connected Waterways (reduce contaminant load) Collaborative Outcomes (engage within Council and with CCOs) | Highest support for “marine benthic health” for all CREs. Medium to high support for “existing contaminant levels” from all CREs | Degraded areas classification are the most current identification of sensitive and contaminants areas. The analysis has been completed at a regional level and therefore can be applied to all catchments. However the classification is based on a number of contaminants, including many that are not stormwater related such as overflows and sediment. | Recommended (Prioritisation criteria for infrastructure investigation and upgrades) However to be used with caution given that it is not solely based on stormwater related contaminants. |
| Prioritise areas by level of zinc contamination in sediment. | Zinc is an indicator contaminant for urban contamination, and therefore a good indicator of effects through stormwater. Emphasis could be focused on areas that have high levels of contamination, to reduce contamination to these areas. Alternatively areas with low areas of contamination and high contaminant load could also be prioritised to protect receiving environment. | Healthy and Connected Waterways (reduce contaminant load) Collaborative Outcomes (engage within Council and with CCOs) | Medium to high level of support for reducing existing contaminant levels, and for preventing the dispersal of these contaminants to high value receiving environments. | Monitoring for zinc is not undertaken for all catchments, therefore assessments based on this criteria may not provide a consistent region-wide assessment. Nonetheless it could be used to supplement the assessment by degraded areas above. | Recommended (Prioritisation criteria for infrastructure investigation and upgrades) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|--|---|---|--|--|
| Prioritise areas by benthic health. | <p>Emphasis could be focused on areas that have low benthic health, to reduce contamination to these areas.</p> <p>Alternatively areas with low areas of contamination and high contaminant load could also be prioritised to protect receiving environment.</p> | Healthy and Connected Waterways (reduce contaminant load) | Highest level of support for “marine benthic health” from all CREs. It is noted that prioritising areas for treatment on the basis of loads, jointly with effects on marine ecology, received the highest level of support from stakeholders. | <p>Benthic health is an indicator of the degradation of the environment. Is it noted though it may be a limited indicator of urban contamination as sediment, predominantly generated from rural areas, is a key contaminant.</p> <p>Monitoring for benthic health is also not undertaken at all catchments, therefore assessments based on this criteria may not provide a consistent region-wide assessment.</p> | <p>Recommended</p> <p>(Prioritisation criteria for infrastructure investigation and upgrades)</p> <p>However to be used with caution given that it is not solely based on stormwater related contaminants.</p> |
| Prioritise areas by contaminant trends | Areas with increasing contaminant trends could be the focus for further assessments. | Healthy and Connected Waterways (reduce contaminant load) | Medium to high level of support for “trends” from all CREs. | Monitoring for contaminant trends is very limited, therefore assessments based on this criteria may not provide a consistent region-wide assessment. | <i>Not recommended due to limited data.</i> |
| Prioritise areas by amenity use. | High use recreational coastal areas can be seen as areas of priority | Healthy and Connected Waterways (reduce contaminant load) | Medium level of support for “amenity” from all CREs. | Effects on amenity are result of wastewater discharges and visual pollution from litter and suspended solids. Stormwater will need to work with other Council teams and CCOs on these matters). | <p>Recommended</p> <p>(Collaboration with other Council teams and CCOs)</p> |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|---|---|--|--|---|
| Collaboration with WaterCare, closed landfills, Pollution Control, Auckland Waterfront Auckland Transport and other Council entities | Contaminants to harbour come from a range of sources, and not only urban stormwater. Collaboration with Council entities is therefore required. | <p>Healthy and Connected Waterways (working together to enhance waterways)</p> <p>Collaborative Outcomes (engage within Council and with CCOs)</p> | “Holistic management” high level of support from all CREs. | <p>Discussions and collaboration are being undertaken with infrastructure organisations such as Auckland Transport, NZTA and WaterCare with respect to growth.</p> <p>Implementation of the NPSFM will be a key driver for this.</p> | <p>Recommended</p> <p>(Collaboration with other Council teams and CCOs)</p> |
| Collaboration with iwi, Local Boards and other external stakeholders in the enhancement of coastal areas. | Many stakeholders outside of the Council are actively working on the enhancement of coastal areas throughout the region, and collaboration would be beneficial. | <p>Healthy and Connected Waterways (working together to enhance waterways)</p> <p>Collaborative Outcomes (engage within Council and with CCOs)</p> <p>Collaborative Outcomes (engage with iwi)</p> <p>Collaborative Outcomes (engage with stakeholders)</p> | “Holistic management” high level of support from all CREs. | <p>Discussions and collaboration are being undertaken with external stakeholders, with some initiatives already occurring.</p> <p>Implementation of the NPSFM will be a key driver for this.</p> | <p>Recommended</p> <p>(Collaboration with stakeholders)</p> |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|--|---|---|--|--|
| Develop master plans for the management of the highest priority catchments, involving a range of stakeholders. | These plans should take a holistic approach to the management of these areas, while also recognising that it may not be possible to fully remedy legacy contaminant issues. There should therefore be an emphasis on contaminant minimisation and containment. | <p>Healthy and Connected Waterways (working together to enhance waterways)</p> <p>Collaborative Outcomes (engage within Council and with CCOs)</p> <p>Collaborative Outcomes (engage with iwi)</p> <p>Collaborative Outcomes (engage with stakeholders)</p> | “Holistic management” high level of support from all CREs. | <p>The Stormwater Unit focuses on mitigating the effects through structural assets. However other mitigation may be found to be more effective using other mechanism, including through education and enforcement. A holistic assessment should therefore be undertaken.</p> <p>This should also being reviewed as part of the implementation of the National Policy Standard: Freshwater Management</p> | <p>Recommended</p> <p>(Catchment planning and collaboration with Council teams, CCOS and other stakeholders)</p> |
| Establish public education and engagement programmes to discourage illegal dumping of contaminants (e.g. chemicals, paint, yard waste) into storm drains discharging to harbour | <p>Information and guidance on the best practice is essential for obtaining the best practicable outcomes in the community.</p> <p>Education initiatives however are managed by other Council Units</p> | <p>Healthy and Connected Waterways (reduce contaminant load)</p> <p>Collaborative Outcomes (engage with stakeholders)</p> <p>Collaborative Outcomes (engage within Council land with CCOs)</p> | Highest level of support for “reduction of contaminant load” from all CREs. | The Stormwater Unit does not specifically undertake education initiatives for streams. Rather it would need to work with Units such as ESU, Waste team and compliance on these matters. | <p>Recommended</p> <p>(Education)</p> |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|--|---|--|---|---|
| Work with national government to remove sources of contamination. | <p>Source of many contaminants is from diffuse sources such as car brake pads and tyres, roofing and building materials, antifouling paints, etc.</p> <p>Improving standards for these materials to reduce or remove these contaminants is a potential option, but it is likely to require legislative change. International regulation and market responses may produce a gradual shift toward low yielding products without the need for further action.</p> | <p>Healthy and Connected Waterways (reduce contaminant load)</p> <p>Collaborative Outcomes (engage with stakeholders)</p> | Highest level of support for “reduction of contaminant load” from all CREs.. | <p>Restrictions on building materials in place under the Proposes Auckland Unitary Plan.</p> <p>Other potential mechanisms include working at a strategic level with national agencies to review current standard for car parts to determine if sources of contaminants can be removed and minimised.</p> | Recommended (Advocacy) |
| Work with AT to reduce volumes of traffic | <p>Source of many contaminants is from diffuse sources such as car brake pads and tyres. Reducing vehicle movements will therefore reduce contaminants to stormwater.</p> | <p>Healthy and Connected Waterways (reduce contaminant load)</p> <p>Collaborative Outcomes (engage with stakeholders)</p> | Highest level of support for “reduction of contaminant load” from all CREs.. | <p>In line with Auckland Plan. This is an AT responsibility.</p> | <p><i>Not an SU responsibility.</i></p> <p>To coordinate with AT.</p> |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|---|--|-----------------------|---|---|
| <p>If feasible options for arresting contaminant accumulation cannot be identified, then alternative approaches to contaminant management should be considered (such as environmental offsets).</p> | <p>It must be recognised that it may not be possible to fully remedy legacy contaminant issues. There could therefore be the need to investigate offsetting of contaminant value by enhancing other coastal values.</p> | <p>Healthy and Connected Waterways (reduce contaminant load)</p> <p>Prioritised Investment (best affordable outcomes)</p> <p>Collaborative Outcomes (engage within Council and with CCOs)</p> <p>Collaborative Outcomes (engage with iwi)</p> <p>Collaborative Outcomes (engage with stakeholders)</p> | <p>Not discussed.</p> | <p>To be assessed as part of the master planning programmes identified above.</p> | <p>To be assessed at specific locations</p> <p>(Catchment planning and collaboration with Council teams, CCOS and other stakeholders)</p> |

Regional Options Identification and Assessment for Managing Stormwater Effects on Groundwater

Tables 10 and 11 present an assessment of a range of regional options available to manage effects on groundwater, based on the BPO principles of to “prevent” and “minimise”.

Table 10: Prevent Adverse effects to Groundwater

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|--|--|---|--|---|
| Implement maintenance programmes for soakholes to maintain hotspot/problematic areas. | All private and public infrastructure needs to be maintained to work effectively | Efficient Business (efficient operation, maintenance and renewals) | Highest level of support for “addressing critical assets” and medium level of support for “risk based analyses” for all 4 CREs. | Public assets to form part of SU operation and maintenance programmes. Private assets to be maintained by their respective owners, though subject to regulation through Stormwater Bylaw. | Recommended (Preventative maintenance of infrastructure) |
| Establish public education and engagement programmes to: <ul style="list-style-type: none"> maintaining soakages. discourage illegal dumping of contaminants (e.g. chemicals, paint, yard waste) into storm drains discharging to soakholes. | Information and guidance on the best practice is essential for obtaining the best practicable outcomes in the community. | Healthy and Connected Waterways (working together to enhance waterways) Healthy and Connected Waterways (enhance waterways) Healthy and Connected Waterways (reduce contaminant load) Collaborative Outcomes (engage within Council and with CCOs) Collaborative Outcomes (engage with stakeholders) | Highest level of support for “treatment of stormwater to ground” from all CREs. | The Stormwater Unit does not specifically undertake education initiatives for streams. Rather it would need to work with Units such as ESU, Waste team and compliance on these matters. | Recommended (Education) |

Table 11: Minimise Adverse effects to Groundwater

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|--|--|---|---|--|
| Identify regional priority areas based on of high use aquifers at risk from high contaminant loads from land use as well as risks to baseflow. | This would identify high risk areas based on sensitivity and contaminant load. | Healthy and Connected Waterways (reduce contaminant load) Prioritised Investment (regional prioritisation) | Highest level of support for “treatment of stormwater to ground” from all CREs.. High level of support for “risk based analyses” from all CREs | Treatment devices relying on infiltration will perform better in more permeable areas to protect baseflow. However their use is restricted by geology type and topography. Research in this area will provide better understanding of the feasibility of such devices across Auckland, enabling such devices to be fit for purpose. The key contaminants of concern within stormwater, namely copper, zinc and lead, can also be found naturally in volcanic geology and hydrogeology. There is also some evidence to indicate that basalt geology can in itself clean these contaminants as they enter the groundwater. | Recommended (Prioritisation criteria for infrastructure investigation and upgrades) |
| Retrofit existing soakholes with pre-treatment devices as opportunities arise | Focus on retrofits as opportunities arise. | Safe Communities (protect habitable floors) Healthy and Connected Waterways (reduce contaminant load) Collaborative Outcomes (engage within Council and with CCOs) | Highest level of support for “treatment of stormwater to ground” from all CREs. | Discussions and collaboration are being undertaken with infrastructure organisations such as Auckland Transport, NZTA and WaterCare, as well as Council Planning teams. | Recommended (Collaboration with CCOs) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|--|--|--|--|---|
| Provide for reactive maintenance to address soakage issues as they arise. | Addressing issues as they arise is a management option in particular for soakage areas that are not identified as critical. | Efficient Business (efficient operation, maintenance and renewals) Efficient Business (efficient response) | Medium to high level of support for “redevelopment opportunities” from all CREs. | For public assets, this is being undertaken through the Stormwater Units Operation and Maintenance Programme, particularly for high risk assets. For private assets, the Stormwater Bylaw will put in place mechanism to address any poor performing assets in private ownership | Recommended. (Reactive maintenance and upgrades infrastructure) |
| Develop master plans for the management for identified priority catchments | These plans should take a holistic approach to the management of these areas, while also recognising that it may not be possible to fully remedy legacy issues. Such projects will “lead by example” and demonstrate to the community and private land owners what can be achieved. | Collaborative Outcomes (engage within Council and with CCOs) Collaborative Outcomes (engage with iwi) Collaborative Outcomes (engage with stakeholders) Healthy and Connected Waterways (working together to enhance waterways) | Highest level of support for “treatment of stormwater to ground” from all CREs. | The Stormwater Unit focuses on mitigating the effects caused by its assets. It also works with ESU and other teams as part of the implementation Healthy Waterways Initiative This should also being reviewed as part of the implementation of the National Policy Standard: Freshwater Management. | Recommended (Catchment planning and collaboration with Council teams, CCOS and other stakeholders) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|---|---|--|--|--|
| <p>Establish public education and engagement programmes to:</p> <ul style="list-style-type: none"> • maintaining soakages. • discourage illegal dumping of contaminants (e.g. chemicals, paint, yard waste) into storm drains discharging to soakholes. | <p>Information and guidance on the best practice is essential for obtaining the best practicable outcomes in the community.</p> | <p>Healthy and Connected Waterways (working together to enhance waterways)</p> <p>Healthy and Connected Waterways (enhance waterways)</p> <p>Healthy and Connected Waterways (reduce contaminant load)</p> <p>Collaborative Outcomes (engage within Council and with CCOs)</p> <p>Collaborative Outcomes (engage with stakeholders)</p> | <p>Highest level of support for “treatment of stormwater to ground” from all CREs.</p> | <p>The Stormwater Unit does not specifically undertake education initiatives for streams. Rather it would need to work with Units such as ESU, Waste team and compliance on these matters.</p> | <p>Recommended (Education)</p> |

Regional Options Identification and Assessment for Managing Stormwater Effects on Wastewater

Tables 12 and 13 present an assessment of the range of regional options available to manage effects of stormwater on the wastewater network, based on the BPO principles of “prevent” and “minimise” respectively.

Table 12: Prevent effects of Stormwater into the Wastewater Network

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|--|--|--|--|---|
| Implement operations and maintenance programmes to maintain assets within hotspots areas which area prone to flooding or blocking in combined sewer areas. | All private and public infrastructure needs to be maintained to work effectively | Efficient Business (efficient operation, maintenance and renewals) | High level of support (general feedback received during stakeholder workshops) | Managing combined sewers is a WaterCare responsibility | <i>Not a SU responsibility</i> |
| Increase public awareness around the potential health risks associated with flood all waters. | There are practicable steps that the community can undertake to avoid or minimise exposure to stormwater or waterways contaminated by wastewater overflows, once aware of the issue. | Collaborative Outcomes (engage within Council and with CCOs) Collaborative Outcomes (engage with stakeholders) Healthy and Connected Waterways (working together to enhance waterways) | High level of support for “public health risk” from all CREs | The Stormwater Unit does not specifically undertake education initiatives for streams. Rather it would need to work with Units such as ESU, Civil Defence WaterCare. Could be incorporated into Resilience Education cited in flooding above. | Recommended (Collaboration with WaterCare and other Council teams) |

Table 13: Minimise Adverse effects of Stormwater into the Wastewater Network

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|---|--|---|--|---|
| Provide for reactive maintenance to address asset issues as they arise. | Mechanism for addressing flooding and blocking issues as they arise is required to minimise risk from wastewater contamination. | Efficient Business (efficient operation, maintenance and renewals) | High level of support (general feedback received during stakeholder workshops) | Operating and maintaining the combined sewers is a WaterCare responsibility | <i>Not a SU responsibility</i> |
| Information of stormwater and wastewater networks as well as stormwater overland flow paths to be regularly updated between WaterCare and Stormwater Unit | Updated network information is essential for assessing new development and identifying remedial works. | Collaborative Outcomes (engage within Council and with CCOs) Collaborative Outcomes (engage with stakeholders) Support Growth (clear standards) | Not specifically discussed, but there was a general support for closer working relationships between WaterCare and the Stormwater Unit. | SU is actively updating its asset database, and will continue to collaborate with WaterCare on the exchange of updated network information. | Recommended (Asset information) |
| Progressively remedy instances of uncontrolled wastewater spilling in combined or separate wastewater networks by working with WaterCare Services. | Stormwater ingress reduces the capacity of the wastewater system. | Collaborative Outcomes (engage within Council and with CCOs) Healthy and Connected Waterways (reduce contaminant load) Healthy and Connected Waterways (working together to enhance waterways) | High level of support for “public health risk” from all CREs | WaterCare has the main responsibility in operating the wastewater network. However opportunities for collaboration are available for upgrade. | Recommended (Collaboration with WaterCare and other Council teams) |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|--|---|---|--|--|
| Work with WaterCare and Auckland Council Building Compliance to address existing inflow and infiltration issues within existing separated systems. | The identification and management of wastewater contamination to stormwater under existing separated network systems is a complex issue involving the Stormwater Unit, WaterCare and Auckland Council Building Compliance. | <p>Collaborative Outcomes (engage within Council and with CCOs)</p> <p>Healthy and Connected Waterways (reduce contaminant load)</p> <p>Healthy and Connected Waterways (working together to enhance waterways)</p> | High level of support for “public health risk” from all CREs | <p>Requires a programme between WaterCare, Stormwater Unit and Building Council to identify priority areas for the management of inflow and infiltration, and works programme to address these areas, focusing on public and health risk.</p> <p>WaterCare has begun to scope such a programme.</p> <p>This needs to include review and update of Code of Practice and ByLaw and subsequent enforcement.</p> | <p>Recommended</p> <p>(Collaboration with WaterCare and other Council teams)</p> |
| Work with other Auckland Council teams to address existing wastewater discharges from septic tanks. | The identification and management of wastewater contamination to stormwater from septic tanks is a complex issue involving various Council teams. | <p>Collaborative Outcomes (engage within Council and with CCOs)</p> <p>Healthy and Connected Waterways (reduce contaminant load)</p> <p>Healthy and Connected Waterways (working together to enhance waterways)</p> | High level of support for “public health risk” from all CREs. | <p>Requires a programme to identify priority areas for the management of septic tanks, and works programme to address these areas, focusing on public health risk.</p> <p>This needs to include review and update of Code of Practice and ByLaw and subsequent enforcement.</p> | <p>Recommended</p> <p>(Collaboration with other Council teams)</p> |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|---|---|--|--|--|---|
| Increase public awareness around the potential health risks associated with flood all waters. | There are practicable steps that the community can undertake to avoid or minimise exposure to stormwater or waterways contaminated by wastewater overflows, once aware of the issue. | Collaborative Outcomes (engage within Council and with CCOs) Healthy and Connected Waterways (reduce contaminant load) Healthy and Connected Waterways (working together to enhance waterways) | High level of support for “public health risk” from all CREs | The Stormwater Unit does not specifically undertake education initiatives for streams. Rather it would need to work with Units such as ESU, Civil Defence WaterCare. Could be incorporated into Resilience Education cited in flooding above. | Recommended (Collaboration with WaterCare and other Council teams) |
| Maintain an ongoing beach monitoring and health alert programme. | Having adequate and available data is essential to advise the public of human health risks associated with wastewater overflows. This is the responsibility of WaterCare and RIMU. | Collaborative Outcomes (engage within Council and with CCOs) | High level of support for “public health risk” from all CREs | Operating and monitoring the effects from the wastewater network is a WaterCare responsibility | <i>Not a SU responsibility</i> |

| Management Option | Description | Assessment against Consent Objectives | Stakeholder Feedback | Implementation | Assessment |
|--|---|--|--|--|--------------------------------|
| Improve the monitoring and reporting of wastewater discharges. | <p>Having reliable monitoring data is needed to identify hotspots and trends.</p> <p>This is the responsibility of WaterCare and Compliance Team.</p> | Collaborative Outcomes (engage within Council and with CCOs) | High level of support for “public health risk” from all CREs | Operating and monitoring the effects from the wastewater network is a WaterCare responsibility | <i>Not a SU responsibility</i> |
| Close beaches and recreation areas after wastewater overflow events. | This measure is required for the protection of human health. However this is the responsibility of WaterCare. | Collaborative Outcomes (engage within Council and with CCOs) | High level of support for “public health risk” from all CREs | Operating and monitoring the effects from the wastewater network is a WaterCare responsibility | <i>Not a SU responsibility</i> |

Summary of Key Criteria to be used for the NDC BPO assessment

| KEY CRITERIA WITH A HIGH LEVEL OF SUPPORT | Waitematā Harbour | Greater Tāmaki | Manukau Harbour | Hibiscus Coast |
|--|-------------------|----------------|-----------------|----------------|
| Growth | | | | |
| <i>Future Development -prevent/ minimise effects</i> | W SGRa | | | |
| - Sensitivity of the Receiving Environment | W SGRb | T SGRb | M SGRb | H SGRd |
| - Development led | | | M SGRd | |
| <i>Intensification/ Infill</i> | | | | |
| - Council identified priorities | W SGRc | | M SGRe | |
| - Sensitivity of the Receiving Environment | W SGRb | T SGRf | M SGRf | H SGRh |
| - Development led | | | M SGRh | |
| Cost benefit analyses | | T SGRj | | H SGRj |
| Risk-based analyses | | T SGRk | M SGRk | H SGRk |
| Multiple benefits | | | M SGRm | |
| | | | | |
| Asset Management | | | | |
| Condition and criticality (all) | W SAMa | T SAMa; b; c | M SAMa; b; c | H SAMb; c |
| Impacts on Existing Communities | | | | H SAMd |
| Risk-based analyses | | T SAMf | M SAMf | H SAMf |
| | | | | |
| Flooding | | | | |
| Flooding occurrence / frequency | W SFLa | | M SFLa | |
| Public safety and protecting critical infrastructure | | T SFLc | M SFLc | H SFLc |
| Risk-based analyses | | | | H SFLe |
| | | | | |
| Urban Streams | | | | |
| Greatest ecological benefit | W SSMb | T SSTb | M SSMb | H SSMb |
| Opportunities to leverage outcomes | W SSMd | T SSTd | M SSMd | |
| Holistic stream management | | T SSTf | M SSMf | H SSMf |
| Cost-benefit analyses | | T SSTg | | |
| Risk-based analyses | | T SSTh | | H SSMh |
| Multiple Benefits | | | | H SSMj |
| | | | | |
| Harbour, Estuary and Coastal Inlets | | | | |
| Existing contaminant levels | W SECa | | | H SECa |
| Trends in contamination | | T SECb | M SECb | H SECb |
| Contaminant loads and dispersal | W SECc | T SECc | M SECc | |
| Marine ecology | W SECd | T SECd | M SECd | H SECd |
| Holistic contaminant management | | T SE Cf | M SE Cf | H SE Cf |
| Risk-based analyses | | T SECh | M SECh | H SECh |
| Redevelopment opportunities | | T SECi | | |
| Multiple Benefits | | | | H SEcj |
| | | | | |
| Groundwater | | | | |
| Treatment of stormwater into ground | W SGWb | T SGWb | M SGWb | H SGWb |
| Risk-based analyses | | T SGWd | | |
| | | | | |
| Stormwater Effects on the Wastewater Network | | | | |
| Public health risk | W SWWa | T SWWa | M SWWa | H SWWa |
| Environmental health risk | W SWWb | T SWWb | M SWWb | H SWWb |

| KEY | |
|-----|---------------------------|
| | High across all four CREs |
| | High in at least 3 CREs |
| | High in 2 CREs |
| | High in 1 CRE |

Criteria Summary Table - Waitematā Harbour CRE

| CRITERIA FOR PRIORITISATION | ABBREVIATION | AVERAGE RATING | | | OVERALL RATING* |
|---|--------------|----------------|-----|-----|-----------------|
| | | High | Med | Low | |
| GROWTH | | | | | |
| Prevent/ Minimise effects from future Development | W SGRa | 91% | 3% | 6% | 91% - High |
| Sensitivity of the Receiving Environment | W SGRb | 70% | 24% | 6% | 70% - High |
| Redev - Council identified priorities | W SGRc | 78% | 22% | 0% | 78% - High |
| Redev - Opportunity driven network upgrades | W SGRd | 48% | 45% | 7% | 48% - High |
| Redev - Easy wins | W SGRe | 50% | 33% | 17% | 50% - High |
| Redev - Market led | W SGRf | 23% | 27% | 50% | 50% - Low |
| Redev - Development led | W SGRg | 35% | 32% | 32% | 35% - High |
| ASSET MANAGEMENT/ RENEWALS | | | | | |
| Asset condition and criticality | W SAMa | 94% | 3% | 3% | 94% - High |
| Growth opportunities | W SAMb | 63% | 22% | 16% | 63% - High |
| Asset information | W SAMc | 39% | 55% | 6% | 55% - Medium |
| Impacts on existing communities | W SAMd | 47% | 50% | 3% | 50% - Medium |
| FLOODING | | | | | |
| Flooding occurrence | W SFLa | 69% | 22% | 9% | 69% - High |
| Existing flooding and damage | W SFLb | 45% | 52% | 3% | 52% - Medium |
| Cost to manage flooding issues | W SFLc | 28% | 50% | 22% | 50% - Medium |
| Redevelopment opportunities | W SFLd | 53% | 33% | 13% | 53% - High |
| Multiple benefits | W SFLe | 48% | 35% | 16% | 48% - High |
| URBAN STREAMS | | | | | |
| Ease of intervention | W SSMa | 50% | 28% | 22% | 50% - High |
| Existing ecological values | W SSMb | 65% | 29% | 6% | 65% - High |
| The level of active community support | W SSMc | 42% | 52% | 6% | 42% - Medium |
| Opportunities to leverage outcomes | W SSMd | 71% | 26% | 3% | 71% - High |
| Cultural significance | W SSMe | 39% | 30% | 24% | 39% - High |
| Landscape integration and enhancement | W SSMf | 41% | 38% | 22% | 41% - High |
| WAITEMATA HARBOUR | | | | | |
| Existing contaminant levels | W SECa | 66% | 28% | 6% | 66% - High |
| Trends in contamination | W SECb | 58% | 35% | 6% | 58% - High |
| Contaminant loads and dispersal | W SECc | 71% | 26% | 3% | 71% - High |
| Marine ecology | W SECd | 72% | 22% | 6% | 72% - High |
| Amenity, aesthetics and use | W SECe | 40% | 43% | 17% | 43% - Medium |
| Cultural significance | W SE Cf | 39% | 42% | 19% | 42% - Medium |
| Holistic contaminant management | W SE Cg | 55% | 32% | 13% | 55% - High |
| GROUNDWATER | | | | | |
| Groundwater Takes | W SGWa | 43% | 40% | 17% | 43% - High |
| Disposal of stormwater into ground | W SGWb | 61% | 36% | 3% | 61% - High |
| Opportunity driven | W SGWc | 39% | 45% | 16% | 45% - Medium |
| STORMWATER IMPACTS ON THE WASTEWATER NETWORK | | | | | |
| Public health risk | W SWWa | 91% | 6% | 3% | 91% - High |
| Environmental risk | W SWWb | 76% | 21% | 3% | 76% - High |
| Watercare opportunities taken as they arise | W SWWc | 39% | 58% | 3% | 58% - Medium |
| The Mauri of water | W SWWd | 39% | 29% | 32% | 39% - High |

| SUMMARY OF KEY CRITERIA WITH A HIGH LEVEL OF SUPPORT | |
|--|--------|
| Growth | |
| Prevent/ Minimise effects from future Development | W SGRa |
| Sensitivity of the Receiving Environment | W SGRb |
| Redev - Council identified priorities | W SGRc |
| Asset Management | |
| Asset condition and criticality | W SAMa |
| Flooding | |
| Flooding occurrence | W SFLa |
| Urban Streams | |
| Existing ecological values | W SSMb |
| Opportunities to leverage outcomes | W SSMd |
| Waitematā Harbour | |
| Existing contaminant levels | W SECa |
| Contaminant loads and dispersal | W SECc |
| Marine ecology | W SECd |
| Groundwater | |
| Disposal of stormwater into ground | W SGWb |
| Stormwater Effects on the Wastewater Network | |
| Public health risk | W SWWa |
| Environmental risk | W SWWb |

* Overall ranking is used for the BPO assessment - those criteria scoring greater than 65% are used. Note: if a < 65% "low" priority is shown then it shows a general lack of support for the criteria and is inversely implemented for the BPO assessment.

Criteria Summary Table - Greater Tāmaki CRE

| CRITERIA FOR PRIORITISATION | ABBREVIATION | AVERAGE RATING | | | OVERALL RATING* |
|---|---------------|----------------|------------|------------|---------------------|
| | | High | Med | Low | |
| GROWTH | | | | | |
| Prevent/ Minimise effects from future Development | | | | | |
| - Council identified priorities | T SGRa | 45% | 48% | 6% | 48% - Medium |
| - Sensitivity of the Receiving Environment | T SGRb | 91% | 6% | 3% | 91% - High |
| - Partnership led | T SGRc | 48% | 39% | 13% | 48% - High |
| - Development led | T SGRd | 13% | 33% | 53% | 53% - Low |
| Intensification and re-development: | | | | | |
| - Council identified priorities | T SGRe | 55% | 45% | 0% | 55% - High |
| - Sensitivity of the Receiving Environment | T SGRf | 89% | 7% | 4% | 89% - High |
| - Partnership led | T SGRg | 59% | 28% | 14% | 59% - High |
| - Development led | T SGRh | 17% | 34% | 48% | 48% - Low |
| - Easy wins | T SGRi | 36% | 36% | 27% | 36% - Med/ High |
| Cost-benefit analyses | T SGRj | 23% | 69% | 8% | 69% - Medium |
| Risk-based analyses | T SGRk | 88% | 8% | 4% | 88% - High |
| Redevelopment opportunities | T SGRl | 52% | 36% | 12% | 52% - High |
| Multiple benefits | T SGRm | 52% | 37% | 11% | 52% - High |
| The mauri of water and cultural significance | T SGRn | 56% | 33% | 11% | 56% - High |
| ASSET MANAGEMENT/ RENEWALS | | | | | |
| Asset condition and criticality | | | | | |
| - Below ground built assets | T SAMa | 75% | 25% | 0% | 75% - High |
| - Above ground built natural assets | T SAMb | 69% | 28% | 3% | 69% - High |
| - Stream Assets | T SAMc | 78% | 19% | 3% | 78% - High |
| Impacts on existing communities | T SAMd | 57% | 30% | 13% | 57% - High |
| Cost-benefit analyses | T SAMe | 33% | 63% | 4% | 63% - Medium |
| Risk-based analyses | T SAMf | 73% | 23% | 4% | 73% - High |
| Redevelopment opportunities | T SAMg | 46% | 39% | 14% | 46% - High |
| Multiple benefits | T SAMh | 46% | 39% | 14% | 46% - High |
| The mauri of water and cultural significance | T SAMi | 46% | 39% | 14% | 46% - High |
| FLOODING | | | | | |
| Flooding occurrence/ Frequency | T SFLa | 57% | 39% | 4% | 57% - High |
| Existing flooding and damage | T SFLb | 63% | 33% | 4% | 63% - High |
| Public safety & protecting critical infrastructure | T SFLc | 85% | 15% | 0% | 85% - High |
| Cost-benefit analyses | T SFLd | 33% | 54% | 13% | 54% - Medium |
| Redevelopment opportunities | T SFLe | 32% | 56% | 12% | 56% - Medium |
| Multiple benefits | T SFLf | 39% | 43% | 17% | 43% - Medium |
| The mauri of water and cultural significance | T SFLg | 46% | 38% | 15% | 46% - High |
| URBAN STREAMS | | | | | |
| Ease of intervention | T SStA | 30% | 33% | 37% | 37% - Low |
| Greatest ecological benefit | T SStB | 84% | 16% | 0% | 84% - High |
| The level of active community support | T SStC | 38% | 63% | 0% | 63% - Medium |
| Opportunities to leverage outcomes | T SStD | 65% | 35% | 0% | 65% - High |
| Landscape integration and enhancement | T SStE | 50% | 40% | 10% | 50% - High |
| Holistic stream management | T SStF | 79% | 13% | 8% | 79% - High |
| Cost-benefit analyses | T SStG | 19% | 69% | 12% | 69% - Medium |
| Risk-based analyses | T SStH | 69% | 23% | 8% | 69% - High |
| Redevelopment opportunities | T SStI | 31% | 54% | 15% | 54% - Medium |
| Multiple benefits | T SStJ | 46% | 46% | 8% | 46% - Med/ High |
| The mauri of water and cultural significance | T SStK | 45% | 41% | 14% | 45% - High |
| TAMAKI ESTUARY & COASTAL INLETS | | | | | |
| Existing contaminant levels | T SECa | 63% | 26% | 11% | 63% - High |
| Trends in contamination | T SECb | 77% | 20% | 3% | 77% - High |
| Contaminant loads and dispersal | T SECc | 81% | 16% | 3% | 81% - High |
| Marine ecology | T SECd | 84% | 13% | 3% | 84% - High |
| Amenity, aesthetics and use | T SECe | 32% | 55% | 13% | 55% - Medium |
| Holistic contaminant management | T SECF | 70% | 22% | 7% | 70% - High |
| Cost-benefit analyses | T SECG | 19% | 56% | 26% | 56% - Medium |
| Risk-based analyses | T SECh | 74% | 22% | 4% | 74% - High |
| Redevelopment opportunities | T SECI | 15% | 67% | 19% | 67% - Medium |
| Multiple benefits | T SEcJ | 33% | 56% | 11% | 56% - Medium |
| The mauri of water and cultural significance | T SEcK | 50% | 37% | 13% | 50% - High |
| GROUNDWATER | | | | | |
| Groundwater Takes (improved performance) | T SGWa | 59% | 38% | 3% | 59% - High |
| Treatment of stormwater into ground | T SGWb | 72% | 24% | 3% | 72% - High |
| Cost-benefit analyses | T SGWc | 22% | 59% | 19% | 59% - Medium |
| Risk-based analyses | T SGWd | 77% | 19% | 4% | 77% - High |
| Redevelopment opportunities | T SGWe | 26% | 63% | 11% | 63% - Medium |
| Multiple benefits | T SGWf | 37% | 52% | 11% | 52% - Medium |
| The mauri of water and cultural significance | T SGWg | 46% | 36% | 18% | 46% - High |
| STORMWATER IMPACTS ON THE WASTEWATER NETWORK | | | | | |
| Public health risk | T SWWa | 87% | 13% | 0% | 87% - High |
| Environmental risk | T SWWb | 90% | 10% | 0% | 90% - High |
| Watercare opportunities taken as they arise | T SWWc | 52% | 48% | 0% | 52% - High |
| Redevelopment opportunities | T SWWd | 26% | 56% | 19% | 56% - Medium |
| Multiple benefits | T SWWe | 37% | 52% | 11% | 52% - Medium |
| The mauri of water and cultural significance | T SWWf | 48% | 34% | 17% | 48% - High |

SUMMARY OF KEY CRITERIA WITH A HIGH LEVEL OF SUPPORT

| | |
|--|--------------|
| Growth | |
| Sensitivity of the receiving environment | T SGRb; f |
| Cost benefit analyses | T SGRj |
| Risk-based analyses | T SGRk |
| Asset Management | |
| Condition and criticality (all) | T SAMa; b; c |
| Risk-based analyses | T SAMf |
| Flooding | |
| Public safety and protecting critical infrastructure | T SFLc |
| Urban Streams | |
| Greatest ecological benefit | T SStB |
| Opportunities to leverage outcomes | T SStD |
| Holistic stream management | T SStF |
| Cost-benefit analyses | T SStG |
| Risk-based analyses | T SStH |
| Tāmaki Estuary and Coastal Inlets | |
| Trends in contamination | T SECb |
| Contaminant loads and dispersal | T SECc |
| Marine ecology | T SECd |
| Holistic contaminant management | T SEcF |
| Risk-based analyses | T SEcH |
| Redevelopment opportunities | T SEcI |
| Groundwater | |
| Treatment of stormwater into ground | T SGWb |
| Risk-based analyses | T SGWd |
| Stormwater Effects on the Wastewater Network | |
| Public health risk | T SWWa |
| Environmental health risk | T SWWb |

* Overall ranking is used for the BPO assessment - those criteria scoring greater than 65% are used. Note: if a < 65% "low" priority is shown then it shows a general lack of support for the criteria and is inversely implemented for the BPO assessment.

Criteria Summary Table - Manukau Harbour CRE

| CRITERIA FOR PRIORITISATION | ABBREVIATION | AVERAGE RATING | | | OVERALL RATING* |
|---|---------------|----------------|------------|------------|---------------------|
| | | High | Med | Low | |
| GROWTH | | | | | |
| Prevent/ Minimise effects from Future Development | | | | | |
| - Council identified priorities | M SGRa | 61% | 22% | 17% | 61% - High |
| - Sensitivity of the Receiving Environment | M SGRb | 67% | 22% | 11% | 67% - High |
| - Partnership led | M SGRc | 12% | 12% | 76% | 76% - Low |
| - Development led | M SGRd | 71% | 14% | 14% | 71% - High |
| Intensification and re-development: | | | | | |
| - Council identified priorities | M SGRe | 76% | 12% | 12% | 76% - High |
| - Sensitivity of the Receiving Environment | M SGRf | 72% | 17% | 11% | 72% - High |
| - Partnership led | M SGRg | 19% | 19% | 63% | 63% - Low |
| - Development led | M SGRh | 70% | 15% | 15% | 70% - High |
| - Easy wins | M SGRi | 41% | 47% | 12% | 47% - Medium |
| Cost-benefit analyses | M SGRj | 36% | 36% | 27% | 36% - Med/ High |
| Risk-based analyses | M SGRk | 77% | 23% | 0% | 77% - High |
| Redevelopment opportunities | M SGRl | 64% | 18% | 18% | 64% - High |
| Multiple benefits | M SGRm | 67% | 25% | 8% | 67% - High |
| ASSET MANAGEMENT/ RENEWALS | | | | | |
| Asset condition and criticality | | | | | |
| - Below ground built assets | M SAMa | 75% | 25% | 0% | 75% - High |
| - Above ground built natural assets | M SAMb | 85% | 15% | 0% | 85% - High |
| - Stream Assets | M SAMc | 81% | 14% | 5% | 81% - High |
| Impacts on existing communities | M SAMd | 53% | 37% | 11% | 53% - High |
| Cost-benefit analyses | M SAMe | 36% | 36% | 27% | 36% - Med/ High |
| Risk-based analyses | M SAMf | 86% | 14% | 0% | 86% - High |
| Redevelopment opportunities | M SAMg | 42% | 42% | 17% | 42% - Med/ High |
| Multiple benefits | M SAMh | 46% | 38% | 15% | 46% - High |
| FLOODING | | | | | |
| Flooding occurrence/ Frequency | M SFLa | 70% | 25% | 5% | 70% - High |
| Existing flooding and damage | M SFLb | 37% | 47% | 16% | 47% - Medium |
| Public safety & protecting critical infrastructure | M SFLc | 78% | 22% | 0% | 78% - High |
| Cost-benefit analyses | M SFLd | 33% | 33% | 33% | 33% - H/ M/ L |
| Risk-based analyses | M SFLe | 64% | 36% | 0% | 64% - High |
| Redevelopment opportunities | M SFLf | 33% | 50% | 17% | 50% - Medium |
| Multiple benefits | M SFLg | 38% | 46% | 15% | 46% - Medium |
| URBAN STREAMS | | | | | |
| Ease of intervention | M SSMa | 18% | 71% | 12% | 71% - Medium |
| Greatest ecological benefit | M SSMb | 81% | 19% | 0% | 81% - High |
| The level of active community support | M SSMc | 35% | 57% | 9% | 57% - Medium |
| Opportunities to leverage outcomes | M SSMd | 79% | 21% | 0% | 79% - High |
| Landscape integration and enhancement | M SSMe | 47% | 41% | 12% | 47% - High |
| Holistic stream management | M SSMf | 74% | 21% | 5% | 74% - High |
| Cost-benefit analyses | M SSMg | 42% | 25% | 33% | 42% - High |
| Risk-based analyses | M SSMh | 62% | 38% | 0% | 62% - High |
| Redevelopment opportunities | M SSMi | 55% | 27% | 18% | 55% - High |
| Multiple benefits | M SSMj | 60% | 40% | 0% | 60% - High |
| MANUKAU HARBOUR | | | | | |
| Existing contaminant levels | M SECa | 58% | 21% | 21% | 58% - High |
| Trends in contamination | M SECb | 67% | 24% | 10% | 67% - High |
| Contaminant loads and dispersal | M SECc | 76% | 24% | 0% | 76% - High |
| Marine ecology | M SECd | 70% | 25% | 5% | 70% - High |
| Amenity, aesthetics and use | M SECe | 48% | 33% | 19% | 48% - High |
| Holistic contaminant management | M SECF | 78% | 17% | 4% | 78% - High |
| Cost-benefit analyses | M SECG | 25% | 33% | 42% | 42% - Low |
| Risk-based analyses | M SECh | 77% | 23% | 0% | 77% - High |
| Redevelopment opportunities | M SECI | 36% | 45% | 18% | 45% - Medium |
| Multiple benefits | M SEcj | 50% | 43% | 7% | 50% - High |
| GROUNDWATER | | | | | |
| Groundwater takes (improved performance) | M SGWa | 56% | 33% | 11% | 56% - High |
| Treatment of stormwater into ground | M SGWb | 67% | 28% | 6% | 67% - High |
| Cost-benefit analyses | M SGWc | 27% | 36% | 36% | 36% - Med/ Low |
| Risk-based analyses | M SGWd | 54% | 38% | 8% | 54% - High |
| Redevelopment opportunities | M SGWe | 42% | 42% | 17% | 42% - Med/ High |
| Multiple benefits | M SGWf | 43% | 50% | 7% | 50% - Medium |
| STORMWATER IMPACTS ON THE WASTEWATER NETWORK | | | | | |
| Public health risk | M SWWa | 78% | 17% | 4% | 78% - High |
| Environmental risk | M SWWb | 70% | 30% | 0% | 70% - High |
| Watercare opportunities taken as they arise | M SWWc | 48% | 38% | 14% | 48% - High |
| Cost-benefit analyses | M SWWd | 10% | 50% | 40% | 50% - Medium |
| Risk-based analyses | M SWWe | 55% | 45% | 0% | 55% - High |
| Redevelopment opportunities | M SWWf | 45% | 36% | 18% | 45% - High |
| Multiple benefits | M SWWg | 46% | 38% | 15% | 46% - High |

SUMMARY OF KEY CRITERIA WITH A HIGH LEVEL OF SUPPORT

| | |
|---|--------------|
| Growth | |
| <i>Future Development</i> | |
| - Sensitivity of the Receiving Environment | M SGRb |
| - Development led | M SGRd |
| <i>Intensification/ Infill</i> | |
| - Council identified priorities | M SGRe |
| - Sensitivity of the Receiving Environment | M SGRf |
| - Development led | M SGRh |
| Risk-based analyses | M SGRk |
| Multiple benefits | M SGRm |
| Asset Management | |
| Condition and criticality (all) | M SAMa; b; c |
| Risk-based analyses | M SAMf |
| Flooding | |
| Flooding occurrence/ Frequency | M SFLa |
| Public safety & protecting critical infrastructure | M SFLc |
| Urban Streams | |
| Greatest ecological benefit | M SSMb |
| Opportunities to leverage outcomes | M SSMd |
| Holistic stream management | M SSMf |
| Manukau Harbour | |
| Trends in contamination | M SECb |
| Contaminant loads and dispersal | M SECc |
| Marine ecology | M SECd |
| Holistic contaminant management | M SECF |
| Risk-based analyses | M SECh |
| Groundwater | |
| Treatment of stormwater into ground | M SGWb |
| Stormwater Effects on the Wastewater Network | |
| Public health risk | M SWWa |
| Environmental risk | M SWWb |

* Overall ranking is used for the BPO assessment - those criteria scoring greater than 65% are used. Note: if a <65% "low" priority is shown then it shows a general lack of support for the criteria and is inversely implemented for the BPO assessment.

Criteria Summary Table - Hibiscus / East Coast Bays CRE

| CRITERIA FOR PRIORITISATION | ABBREVIATION | AVERAGE RATING | | | OVERALL RATING* |
|---|---------------|----------------|------------|------------|---------------------|
| | | High | Med | Low | |
| GROWTH | | | | | |
| Prevent/ Minimise effects from Future Development | | | | | |
| - Council identified priorities | H SGRa | 47% | 47% | 7% | 47% - H /M |
| - Partnership led | H SGRb | 64% | 29% | 7% | 64% - High |
| - Developer led | H SGRc | 8% | 17% | 75% | 75% - Low |
| - Sensitivity of the Receiving Environment | H SGRd | 69% | 19% | 13% | 69% - High |
| Intensification and re-development: | | | | | |
| - Council identified priorities | H SGRe | 60% | 40% | 0% | 60% - High |
| - Partnership led | H SGRf | 64% | 36% | 0% | 64% - High |
| - Developer led | H SGRg | 15% | 15% | 69% | 69% - Low |
| - Sensitivity of the Receiving Environment | H SGRh | 81% | 13% | 6% | 81% - High |
| - Easy wins | H SGRi | 46% | 54% | 0% | 54% - Medium |
| Cost-benefit analyses | H SGRj | 67% | 22% | 11% | 67% - High |
| Risk-based analyses | H SGRk | 82% | 9% | 9% | 82% - High |
| Redevelopment opportunities | H SGRl | 40% | 50% | 10% | 50% - Medium |
| Multiple benefits | H SGRm | 50% | 40% | 10% | 50% - High |
| ASSET MANAGEMENT/ RENEWALS | | | | | |
| Asset condition and criticality | | | | | |
| - Below ground built assets | H SAMa | 50% | 50% | 0% | 50% - H /M |
| - Above ground built natural assets | H SAMb | 72% | 22% | 6% | 72% - High |
| - Stream Assets | H SAMc | 94% | 6% | 0% | 94% - High |
| Impacts on existing communities | H SAMd | 76% | 24% | 0% | 76% - High |
| Cost-benefit analyses | H SAMe | 45% | 36% | 18% | 45% - High |
| Risk-based analyses | H SAMf | 73% | 27% | 0% | 73% - High |
| Redevelopment opportunities | H SAMg | 45% | 36% | 18% | 45% - High |
| Multiple benefits | H SAMh | 30% | 60% | 10% | 60% - Medium |
| FLOODING | | | | | |
| Flooding occurrence/ Frequency | H SFLa | 39% | 50% | 11% | 50% - Medium |
| Existing flooding and damage | H SFLb | 35% | 47% | 18% | 47% - Medium |
| Public safety & protecting critical infrastructure | H SFLc | 93% | 7% | 0% | 93% - High |
| Cost-benefit analyses | H SFLd | 25% | 50% | 25% | 50% - Medium |
| Risk-based analyses | H SFLe | 70% | 30% | 0% | 70% - High |
| Redevelopment opportunities | H SFLf | 45% | 36% | 18% | 45% - High |
| Multiple benefits | H SFLg | 25% | 58% | 17% | 58% - High |
| FRESHWATER MANAGEMENT | | | | | |
| Ease of intervention | H SSMa | 24% | 41% | 35% | 42% - Medium |
| Greatest ecological benefit | H SSMb | 82% | 18% | 0% | 82% - High |
| The level of active community support | H SSMc | 28% | 67% | 6% | 67% - Medium |
| Opportunities to leverage outcomes | H SSMd | 61% | 39% | 0% | 61% - High |
| Landscape integration and enhancement | H SSMe | 47% | 35% | 18% | 47% - High |
| Holistic stream management | H SSMf | 79% | 14% | 7% | 79% - High |
| Cost-benefit analyses | H SSMg | 44% | 33% | 22% | 44% - High |
| Risk-based analyses | H SSMh | 100% | 0% | 0% | 100% - High |
| Redevelopment opportunities | H SSMi | 44% | 33% | 22% | 44% - High |
| Multiple benefits | H SSMj | 70% | 30% | 0% | 70% - High |
| ESTUARIES AND COASTAL AREA CONTAMINATION | | | | | |
| Existing contaminant levels | H SECa | 88% | 6% | 6% | 88% - High |
| Trends in contamination | H SECb | 65% | 29% | 6% | 65% - High |
| Contaminant loads and dispersal | H SECc | 59% | 35% | 6% | 59% - High |
| Marine ecology | H SECd | 76% | 24% | 0% | 76% - High |
| Amenity, aesthetics and use | H SECe | 47% | 35% | 18% | 47% - High |
| Holistic contaminant management | H SECF | 72% | 17% | 11% | 72% - High |
| Cost-benefit analyses | H SECG | 50% | 25% | 25% | 50% - High |
| Risk-based analyses | H SECh | 91% | 9% | 0% | 91% - High |
| Redevelopment opportunities | H SECi | 44% | 44% | 11% | 44% - H /M |
| Multiple benefits | H SEcj | 70% | 20% | 10% | 70% - High |
| GROUNDWATER | | | | | |
| Groundwater takes (improved performance) | H SGWa | 53% | 33% | 13% | 53% - High |
| Treatment of stormwater into ground | H SGWb | 60% | 40% | 0% | 60% - High |
| Cost-benefit analyses | H SGWc | 22% | 44% | 33% | 44% - High |
| Risk-based analyses | H SGWd | 55% | 36% | 9% | 55% - High |
| Redevelopment opportunities | H SGWe | 18% | 64% | 18% | 64% - Medium |
| Multiple benefits | H SGWf | 30% | 50% | 20% | 50% - High |
| STORMWATER IMPACTS ON THE WASTEWATER NETWORK | | | | | |
| Public health risk | H SWWa | 71% | 18% | 12% | 71% - High |
| Environmental risk | H SWWb | 75% | 25% | 0% | 75% - High |
| Watercare opportunities taken as they arise | H SWWc | 44% | 50% | 6% | 50% - Medium |
| Cost-benefit analyses | H SWWd | 25% | 38% | 38% | 38% - M/ L |
| Risk-based analyses | H SWWe | 60% | 30% | 10% | 60% - High |
| Redevelopment opportunities | H SWWf | 20% | 70% | 10% | 70% - Medium |
| Multiple benefits | H SWWg | 50% | 40% | 10% | 50% - High |

| SUMMARY OF KEY CRITERIA WITH A HIGH LEVEL OF SUPPORT | |
|--|-----------|
| Growth* | |
| <i>Future Development</i> | |
| - Sensitivity of the Receiving Environment | H SGRd |
| <i>Intensification/ Infill</i> | |
| - Sensitivity of the Receiving Environment | H SGRh |
| Cost-benefit analyses | H SGRj |
| Risk-based analyses | H SGRk |
| Asset Management | |
| Condition and criticality (above ground, streams) | H SAMb; c |
| Impacts on existing communities | H SAMd |
| Risk-based analyses | H SAMf |
| Flooding | |
| Public safety & protecting critical infrastructure | H SFLc |
| Risk-based analyses | H SFLe |
| Freshwater Management | |
| Greatest ecological benefit | H SSMb |
| Holistic stream management | H SSMf |
| Risk-based analyses | H SSMh |
| Multiple benefits | H SSMj |
| Contamination of the Estuaries and Coastal Area | |
| Existing contaminant levels | H SECa |
| Trends in contamination | H SECb |
| Marine ecology | H SECd |
| Holistic contaminant management | H SECF |
| Risk-based analyses | H SECh |
| Multiple benefits | H SEcj |
| Groundwater** | |
| Treatment of stormwater into ground | H SGWb |
| Stormwater Effects on the Wastewater Network** | |
| Public health risk | H SWWa |
| Environmental risk | H SWWb |

*Note: Development Led Growth - High level of support for it as a Low
**Note: Groundwater and Stormwater effects on the WW network - High level of support for redevelopment opportunities as a Medium Priority

* Overall ranking is used for the BPO assessment - those criteria scoring greater than 65% are used. Note: if a < 65% "low" priority is shown then it shows a general lack of support for the criteria and is inversely implemented for the BPO assessment.