GREATER TĀMAKI CRE STORMWATER NETWORK CONSENT: FEEDBACK FORM

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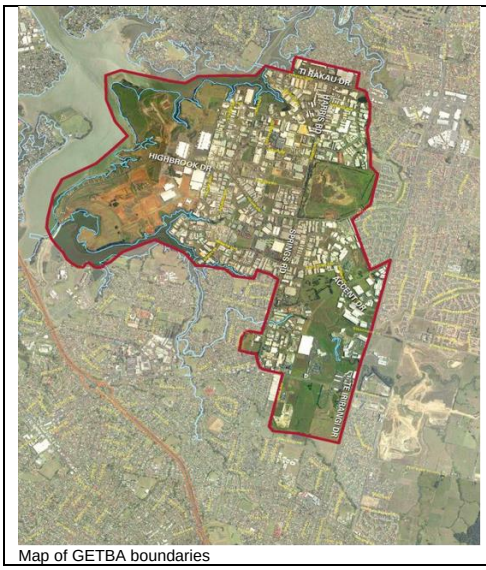
Introduction:

The Greater East Tamaki Business Association Inc ('GETBA') is a business improvement district for the East Tamaki Industrial Area, advocating for business and property owners in the economic development of the area.

East Tamaki is a manufacturing and distribution hub of some 2,000 businesses located close to the southern motorway, airport and port in the Manukau/Howick wards of Auckland. The area generates $3 billion to the New Zealand economy each year, $19 million in rates, and 30,000 jobs (with projected jobs of 45,000 on completion of the Highbrook Business Park.



Map of GETBA boundaries


Stormwater Catchment (in action) (5.12.13; Neales Road; Richard Poole; MiTek)

You have invited GETBA to provide feedback on the Greater East Tamaki Consolidated Receiving Environment (CRE) stormwater network discharge consent process. We have attended several meetings with Council officials and read the Consultation Documents: *'Protecting our Waters';* and *'Consultation Summary Document'*.

<u>Stormwater</u>

Stormwater drainage is a natural process in which rainwater flows by gravity across or through the ground to groundwater, streams, lakes, wetlands and ultimately to the coast.

Urbanisation has modified this natural process. Areas covered by impervious surfaces increase the quantity of water that runs off as surface flows. To cope with these increased flows, many of the natural urban 'streams' are then piped or modified to convey stormwater runoff and minimise erosion.

Contaminants and sediment become entrained in stormwater as it flows from the land, and through natural and artificial drainage systems. The type and amount of chemical contaminants present in stormwater runoff varies in relation to the activities occurring in the catchment and contaminant management practices.

Stormwater control is essentially about managing the quantity and quality of stormwater as it flows through urban areas to the coastal environment.

The East Tamaki Industrial Area – Stormwater Issues

As can be seen from the Map above, the East Tamaki Industrial Area mainly comprises commercial and industrial land-uses, with associated roading. However, there are large areas of open space remaining, some urban streams and the area adjoins the Tamaki Estuary coastal environment to the north-west. Of some significance for groundwater quality is Greenmount Landfill on the eastern boundary. While we have not been able to locate any specific studies of stormwater flows in the area, it appears that the East Tamaki Industrial Area (particularly the northern portion), forms its own sub-catchment, independent of the stormwater flows from residential areas to the east and south. There appear to be no aquifers beneath this area.

Again, while we have not been able to locate any specific studies, we expect stormwater issues to be as follows:

- the commercial and industrial areas (roofing and yards) and associated roads servicing the area create large impervious surfaces that increase the quantity of stormwater that runs off as surface flows;

- most natural 'streams' (particularly in the central sub-area) have been piped or modified to convey stormwater, although a number do remain (particularly in the northwestern sub-area). The quality of water in these streams is likely to be poor.

- some flooding of buildings does occur. The East Tamaki Industrial Area is in the Pakuranga Creek and Otara/Flat Bush zones which are identified by Council as having 'Very High Flood Risk to Buildings';

- the likely main causes of stormwater contamination from business activities will be run-off from galvanized roofing (zinc) and from yards. Our view is that poor yard practices, accidental spills, and inappropriate storage of products will be very much secondary causes to roofs and yards, with illegal stormwater connections being rarer still. Substances spilled will likely include petroleum products, heavy metals and synthetic organic contaminants.[1]

- highly trafficked roads throughout the area are also, in our view, another major cause of stormwater contamination (petroleum products, heavy metals and synthetic organic contaminants), particularly the major arterials and SH1;

- the Greenmount Landfill is also likely to be a source of contamination. It was the only landfill in the Auckland region where hazardous wastes were accepted. While it has a low permeability liner and a leachate collection system, despite this "there is some evidence that leachate is reaching groundwater below the site". There have been proposals to upgrade the collection system.[2]

[1] http://www.aucklandcity.govt.nz/council/documents/districtplanmanukau/text/pc12amendeddr.pdf
[2] http://www.aucklandcity.govt.nz/council/documents/districtplanmanukau/text/pc12amendeddr.pdf

The East Tamaki Business Precinct Plan

The *East Tamaki Business Precinct Plan* (July 2013) provides general strategic context in terms of our Feedback. The *Precinct Plan*:

- encourages businesses to: "Introduce sustainable approaches to reduce the impact of development on services i.e. stormwater." (page 26 (para 6.2.2))

- notes opportunities for sustainable water solutions – "Low impact design reduces demands for water use and reduces the pressure on the stormwater system protecting the environment. Innovative solutions for water should be encouraged in both the public and private realms." (page 29 (para 6.5.3))

- notes opportunities "for council to offer incentives for sustainable building designs" (page 29 (para 6.5.4))

- notes that - "East Tāmaki is adjacent to a sensitive coastal environment which, if protected, can add significant amenity value to the area. Manufacturing businesses often have toxic waste which if not dealt with correctly could lead to significant adverse effects on the natural environment" (page 32 (para 6.8.3))

- identifies high level actions, including to: "Ensure that business-friendly regulations are introduced to optimise the conditions in which business growth can occur"; "Infrastructure needs are delivered for anticipated business growth and quality. Reliable and continuous services are delivered" (including for stormwater); "sustainable business practices are adopted by all businesses in East Tāmaki … Impacts on the natural environment are reduced"; "ensure any environmental standards, including those relating to … pollution are enforced" (pages 34 – 38)

- sets out an Implementation Plan, including actions to: "Prepare a strategic stormwater plan which will provide the appropriate regulatory and financial mechanisms to achieve improved sustainable outcomes in stormwater management"; and "Undertake stormwater and wastewater management to ensure infrastructure meets business demand" (pages 45 – 46).

Questions:

1. From the stormwater issues already identified, what do you think are the priorities for the Greater Tāmaki CRE and what must be most urgently addressed?

Effects from stormwater discharges are linked closely to land use, both in terms of the type of land use (e.g. residential, industrial or commercial), as well as the amount of impervious area. The purpose of the stormwater network discharge consent is therefore to avoid, remedy or mitigate identified quality and quantity effects from the public stormwater network.

The Greater Tāmaki CRE Consultation documents identify a number of issues and priorities to avoid, remedy or mitigate these effects: managing growth; managing our infrastructure/ assets; managing flooding (or the risk of flooding); managing urban streams; contamination of the Tāmaki Estuary and coastal inlets; managing stormwater discharges to groundwater; and reducing stormwater effects on the wastewater network. You have asked us to rank these issues in terms of priority.

- *Managing growth:* The Auckland Plan seeks to accommodate future population growth through the development of a quality compact urban environment. This has a number of implications for stormwater management. Of some importance is that existing urban areas are already subject to infrastructural constraints. Further development will exacerbate these problems unless network utilities are upgraded.

- *Managing our infrastructure/assets:* Within the Greater Tāmaki CRE catchment, there are numerous stormwater drains (including pipes, ditches and open drains), manholes and catchpits. The extent and age of reticulated stormwater systems varies across the catchment. Asset information (completeness and quality) is highly variable, with limited information on streams, and in some areas coastal structures, and the age and condition of public pipe networks. We expect most of the stormwater infrastructure in the East Tamaki Industrial Area (apart from Highbrook) to be dated and in need of prioritised maintenance.

- *Managing flooding (or the risk of flooding):* Despite a formal designed stormwater system, flooding of buildings does occur, particularly in the Otara Creek/Flat Bush and Pakuranga Creek sub-catchments (including the East Tamaki Industrial Area). According to Auckland Council's Stormwater Asset Management Plan (2011), there are approximately 693 habitable floors at risk of flooding in the Tāmaki Estuary CRE (or 10% of the risk across Auckland). Historically flooding has been much worse, requiring Council to construct significant infrastructure to reduce this flooding (requiring protection and on-going maintenance). Flooding of critical infrastructure (hospitals, power substations, emergency roadways, etc.) needs to be better identified and protected from flooding for up to the 200 year rainfall event.

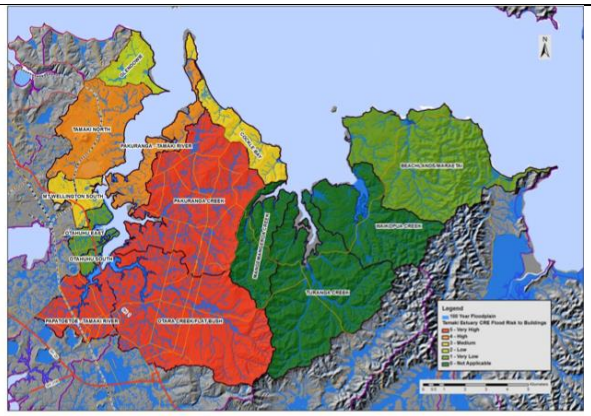
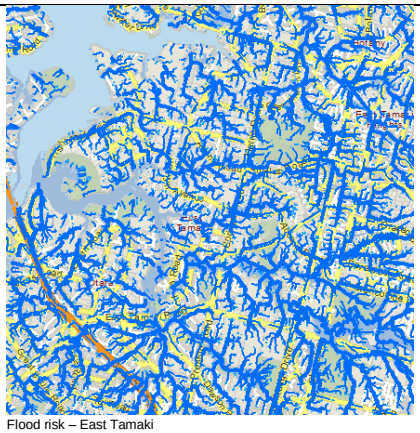


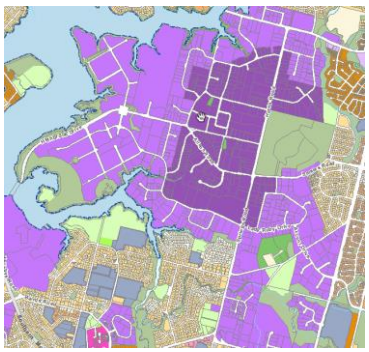
Figure 13 Quantum of flooding within the Tāmaki CRE.



Flood risk – East Tamaki

- *Managing urban streams:* Streams are the natural drainage pathways for stormwater runoff. Many urban streams were piped or modified during the development of Auckland to maximise land use, and manage flooding. Water quality in urban streams, especially those in the Greater

Tāmaki CRE Catchment, is particularly poor. As can be seen in the map below, most natural 'streams' in East Tamaki (particularly in the central sub-area) have been modified to convey stormwater, although a number do remain (particularly in the northwestern sub-area).



- *Contamination of the Tāmaki Estuary and coastal inlets:* The Tāmaki coastal environment consists of a complex shoreline with highly sheltered inlets leading out to the moderately sheltered Tāmaki Strait. The Auckland Council State of Auckland Marine Report Card grades the Tāmaki Estuary as having an 'overall environmental health' of E (with A being good and F bad). The sources of contamination of this environment are manifold, and include: stormwater runoff from urban areas, with high concentrations found in older parts of the city (especially zinc and copper associated with run-off from galvanised roofing. Copper is also associated with traffic, as are polycyclic hydrocarbons ('PAHs'). Lead is from lead based petrol); closed landfills, with many contaminant hotspots found in their vicinity; direct inputs from commercial and industrial areas; and discharges from marinas. As can be seen from the plans below, a number of the 'hotspots' are in the East Tamaki Industrial Area.

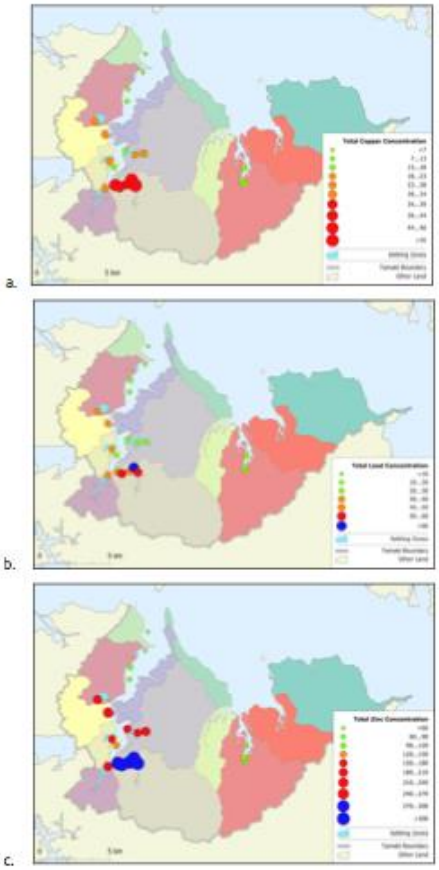


Figure 18 Total concentrations (mg/kg) of copper (a), lead (b) and zinc (c) in coastal sediments from the Auckland Region. Dot colour relates to the red, amber and green environmental response criteria (ERC), contained in Chapter 20 of the ARP: Coastal. Samples with concentrations exceeding the higher level probable effects guideline value (PEL) are shown in blue.

There are a number of highly trafficked roads in the catchment which contribute to contamination of the receiving environment. There are also gaps in the Council's knowledge of the direct contributions that activities such as marinas, landfills and industry make to overall coastal contamination.

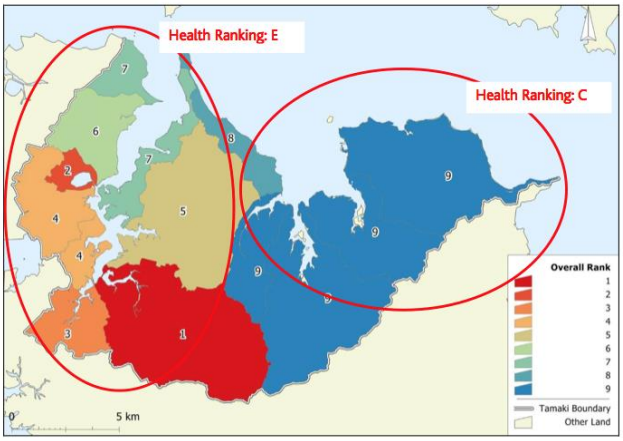


Figure 22 Overall ranking of sub-catchments based on the risk posed by stormwater contamination

- *managing stormwater discharges to groundwater:* Stormwater is discharged to groundwater in basalt sections of the Auckland volcanic field, and in these areas, ground soakage is used as a primary method of stormwater disposal. However, none of these aquifers exist beneath the East Tamaki Industrial Area.

- *reducing stormwater effects on the wastewater network:* In areas of the Greater Tāmaki CRE flood waters are contaminated with wastewater. This contaminated flooding can cause a public health risk, especially in areas with high contact recreation. However, the East Tamaki Industrial Area is identified as being in a low risk zone.

Based on the above analysis and the direct interests of GETBA, our Feedback is that managing stormwater discharges to groundwater should be accorded a low priority. Similarly, reducing stormwater effects on the wastewater network should be accorded a low priority. Of more importance in terms of priority is the management of urban streams and growth. Above that, we would prioritise managing infrastructure/ assets and flooding (or the risk of flooding). Top priority should be given to contamination of the Tāmaki Estuary and coastal inlets (although in this regard, we are concerned that there are gaps in the Council's knowledge of relative contributions from activities such as marinas, landfills and industry and that industry has been targeted before marinas and landfills - when the latter may, in fact, be the cause of most contamination).

ISSUE*	***Your Priority Ranking (please rank 1 – 7, where 1 is the most urgent and 7 the least urgent)***
Managing growth	4
Managing our infrastructure/ assets	3
Managing flooding (or the risk of flooding)	2
Managing urban streams	5
Contamination of the Tāmaki Estuary and coastal inlets	1
Managing stormwater discharges to groundwater	7
Reducing stormwater effects on the wastewater network	6

2. Rank the criteria (High, Medium or Low) to guide the priorities for Council's response to stormwater management within the Greater Tāmaki CRE.

You have also asked us to rank the criteria you have propsoed for managing each of these issues according to specific criteria for each issue, and a number of generic criteria. You have explained the generic criteria below.

Criteria Generic to all Issues:
The Stormwater Unit currently uses a number of "business as usual" criteria to prioritise expenditure within our currently allocated budget, and would be applied when prioritising within and across each of the seven identified issues. However, as seen in the feedback form, the generic criteria should be ranked separated under each issue. The proposed generic criteria include:

1. **Cost Benefit Analyses**
We prioritise our stormwater management solutions using cost-benefit ratios as an indicator. Those stormwater management issues that can be easily remedied, and at a low cost, would be a higher priority than those which are expensive to remedy and have a low cost-benefit ratio.

2. **Risk-Based Analyses**
A risk based approach is taken whereby those stormwater management solutions, which could potentially have the greatest public safety or environmental impact, are prioritised.

3. **Redevelopment Opportunities**
We prioritise our efforts for stormwater management (i.e. remediation of existing identified stormwater quality and quantity issues) in those areas earmarked for growth. We will take opportunities for improvement where they occur.

4. **Multiple Benefits**
We prioritise our stormwater management solutions based on those which also support multiple outcomes in terms of enhancing amenity, cultural and recreational values.

5. **The Mauri of Water and Cultural Significance**
All receiving waters have cultural significance to local iwi due to the mauri of the waters, and many have important historical significance. These values should be prioritised through our stormwater management initiatives.

At this point, we would like to make some overall observations of these criteria. Our Feedback is that 'cost-benefit analyses' should be accorded an overarching priority. Essentially, each of the other four generic criteria are a type of benefit and should be weighed in terms of cost. We would also like to submit that 'business' values should also be accorded priority – where there is a benefit to business or positive business impact (particularly in an industrial area), this should be accorded priority. In other words, the documents should ensure that business-friendly regulation is introduced to optimise the conditions in which business growth can occur, while still addressing stormwater concerns. Opportunities for sustainable water solutions – low impact design to reduce demands for water use – should be reflected in the criteria as well as opportunities for council to offer incentives for sustainable design.

Managing Growth

As noted above, the Auckland Plan seeks to accommodate future population growth through the development of a quality compact urban environment. This has a number of implications for stormwater management.

Proposed Criteria for Managing Growth

1. Prevent, mitigate and/ or minimise adverse effects from future development:
Is preventing or minimising adverse effects from future greenfield development important to you? The following criteria relate to different ways in which the Stormwater Unit could focus their effort to avoid, as far as possible, creating adverse effects of stormwater discharges in greenfields areas through integrated land use, stormwater management and water sensitive design.

a. **Council identified priorities:**
We could focus on growth areas identified by Council as high priority.

b. **Sensitivity of the receiving environment:**
We could focus on areas where growth areas have a significant potential to adversely affect sensitive receiving environments or identify opportunities to reduce effects on these environments.

c. **Partnership led:**
We could work closely with developers and/ or infrastructure providers (e.g. Watercare) to plan for future greenfields growth.

d. **Developer led:**
We will let developers take the lead on stormwater planning, with direction and input from Council.

2. Intensification and re-development:
Are issues surrounding re-development and intensification important to you? There are a range of criteria that may affect priorities for stormwater management planning and infrastructure delivery in areas of intensification and redevelopment:

a. **Council identified priorities:**
We could focus on areas identified by Council as high priority. For example, this could be an area intensification is significant and the Stormwater Unit wants to ensure that any redevelopment is aligned with other infrastructure needs.

b. **Sensitivity of the receiving environment:**
We could focus on areas where growth areas have a significant potential to adversely affect sensitive receiving environments or identify opportunities to reduce effects on these environments.

c. **Partnership led :**
We could work closely with developers and/ or infrastructure providers (e.g. Watercare) to plan for future intensification and redevelopment.

d. **Developer led:**
We could let developers take the lead on stormwater planning, with direction and input from Council to ensure that stormwater planning and infrastructure upgrades are still undertaken comprehensively.

e. **Easy wins:**
We could focus our effort in those areas where problems and solutions are well-known and can be fixed at an affordable cost, while still accommodating future development.

We note that the developers of the Highbrook industrial area largely took the lead on stormwater planning, with direction and input from Council. From our experience, developer-led approaches should be prioritised. More generally, we hold some concern that Council's focus on managing growth is prioritising Council activity (including funding) to these largely residential 'growth' areas, at the expense of more established areas, particularly industrial areas (where economic value is added).

MANAGING GROWTH Proposed Criteria for selecting priorities*	Your Ranking (H, M, L)
Prevent/ minimise effects from future development	
(a) Council-identified priorities	M
(b) Sensitivity of the receiving environment	M
(c) Partnership led	H
(d) Development led	H
Intensification and re-development:	
(a) Council-identified priorities	M
(b) Sensitivity of the receiving environment	M
(c) Partnership led	H
(d) Development led	H
(e) Easy wins	
Cost-benefit analyses	H
Risk-based analyses	M
Redevelopment opportunities	M
Multiple benefits	M
The mauri of water and cultural significance	M

Managing our infrastructure/assets

As noted above, within the Greater Tāmaki CRE catchment, there are numerous stormwater drains (including pipes, ditches and open drains), manholes and catchpits. The extent and age of reticulated stormwater systems varies across the catchment.

Proposed Criteria for Managing Our Assets

1. Asset condition and criticality:

We could prioritise asset management on the basis of the age, condition and type of material of the stormwater network. Areas where the network has the potential to collapse or fail could be prioritised where this failure could pose a potentially high risk. Under this criterion, risk includes risks to the community and the environment. The criteria relates to three types of stormwater assets:

(a) Below ground built assets (such as pipes)

(b) Above ground built natural assets (treatment devices such as constructed wetlands, swales, rain gardens, overland flow paths, etc.)

(c) Stream assets (streams require maintenance such as weeding and planting, debris removal, etc., though opportunities are constrained by the private ownership of these streams in the CRE).

2. Impacts on existing communities where levels of service are not being met:

We could focus on those areas where levels of service are not being met and there are impacts (e.g. public health and safety or erosion effects) on existing communities.

We note that the Council holds concerns that asset information (completeness and quality) is highly variable, with limited information on the condition of public drainage networks. The lack of asset information, particularly asset material and condition, as well as the accuracy of asset information affects critical asset management and renewals decisions. Lack of asset information also limits Council's ability to demonstrate resource consent and permitted activity compliance. Our Feedback is that obtaining this asset information needs to be prioritised in advance of asset management. "You cannot manage what you don't measure".

Nonetheless, our general understanding is that most stormwater assets needing maintenance within the East Tamaki Industrial Area are below ground built assets, which should be prioritised.

MANAGING OUR INFRASTRUCTURE / ASSETS	
Proposed Criteria for Selecting Priorities*	**Your Ranking (H, M, L)**
Asset condition, age and criticality (i.e. a potential for asset failure)	
(a) Below ground built assets (such as pipes)	H
(b) Above ground built natural assets (such as treatment devices & overland flow paths)	M
(c) Stream assets	M
Impacts on existing communities (not meeting expected levels of service)	
Cost-benefit analyses	H
Risk-based analyses	M
Redevelopment opportunities	M
Multiple benefits	M
The mauri of water and cultural significance	M

Managing flooding (or the risk of flooding)

As noted above, despite a formal designed stormwater system, flooding of buildings does occur.

Proposed Criteria for Managing Flooding
1. Flooding occurrence: We could prioritise our works to fix existing flooding by placing an emphasis on areas with recurrent flood problem areas. For example, flooding of buildings and critical infrastructure which occurs on a frequent basis could be prioritised over infrequent flooding (such as the 100 year storm event). This would have to form part of a risk based approach to resolving flooding issues. **2. Existing flooding and damage:** We could identify priorities for flooding solutions based on the potential level of damage to buildings and infrastructure. **3. Public safety and protecting critical infrastructure:** A risk based approach would be taken whereby public safety, potential loss of life, critical infrastructure and emergency facilities would have the highest priority.

Our Feedback is to emphasise, as noted by the Council, that flooding of industrial and commercial buildings needs to be better identified and quantified to provide greater protection of these assets from flooding for up to the 100 year rainfall event.

In addition, flooding of critical infrastructure (hospitals, power substations, emergency roadways, etc.) needs to be better identified and quantified to provide greater protection of these assets from flooding for up to the 200 year rainfall event. We would include telecommunications sites as critical infrastructure.

MANAGING FLOODING AND THE RISK OF FLOODING	
Proposed Criteria for Selecting Priorities*	**Your Ranking (H, M, L)**
Frequency of flooding (a risk based approach to managing flooding occurrence)	M
Existing flooding and damage	M
Public safety and protecting critical infrastructure	H
Cost-benefit analyses	H
Redevelopment opportunities	M
Multiple benefits	M
The mauri of water and cultural significance	M

Managing urban streams

As noted above, streams are the natural drainage pathways for stormwater runoff, but many urban streams have been modified. Water quality in urban streams, especially those in the Greater Tāmaki CRE Catchment, is particularly poor.

Proposed Criteria for Managing Streams

1. **Ease of Intervention:**

We could prioritise our works based on our factors such as zoning, ownership and access. Those streams which are zoned as open space and are within public ownership can be more easily managed by the Stormwater Unit than those under private ownership. Those streams in private ownership would be of secondary concern.

2. **Greatest ecological benefit:**

We could prioritise our works by focussing on those areas where we can make the most difference (i.e. those streams which have the biggest potential for enhancement). All urban streams are impacted to some degree, but remaining ecological values still vary from stream to stream. Urban streams in the Tamaki catchment have been particularly affected. Few, if any, are likely to retain reasonable macro-invertebrate values. Fish values are also likely to be severely impacted. Existing ecological values should be protected, and ecological outcomes can potentially be improved, but legacy actions will severely restrict what can be achieved in the future.

3. **The level of active community support:**

Community involvement in stream management is important. We could focus on those areas where there is a high level of community support to assist in ensuring the long term success of stream management initiatives.

4. **Opportunities to leverage outcomes through linkages to urban development, urban enhancement or infrastructure projects:**

We could tie into existing projects in order to improve stream management outcomes. For example, the benefits of remediating stormwater issues are much greater if done in association with park upgrades, the installation of cycleways and other public facilities, wastewater upgrades or other projects.

5. **Landscape integration and enhancement:**

Stream corridors link communities and bring nature to the city. We could focus on improving linkages in those streams which provide a focal point for community interaction as natural pathways for commuters, exercise and passive recreation. Making stream corridors and parks a safe and secure place for communities to enjoy and a forum for education. Connecting with nature and cultural wellbeing would be a priority.

6. **Holistic stream management:**

Many aspects of stream management are outside the direct control of the Stormwater Unit (e.g. management of parks and streams under private ownership). We could take an advocacy role within the Council to motivate for better stream management through the regulatory process and to take down barriers to stream enhancement.

Our Feedback is that it is difficult to prioritise between each of these criteria. While the Council notes that industrial and commercial activities can lead to point-source discharges into streams causing localised effects from contaminants (such as metals and sediments), our Feedback on this matter is that these point-source discharges from industrial activities have become steadily more rare and are now almost always due to an accidental rather than deliberate discharges.

As we noted in the map from the previous question above, most natural 'streams' in East Tamaki (particularly in the central sub-area) have been modified to convey stormwater, although a number do remain (particularly in the northwestern sub-area).

MANAGING URBAN STREAMS Proposed Criteria for Selecting Priorities*	Your Ranking (H, M, L)
Ease of intervention (zoning, ownership and access)	M
Greatest ecological benefit (potential for enhancement)	M
Level of active community support	M
Opportunities to leverage outcomes (linkages with other projects)	M
Landscape integration and enhancement (create a community focal point)	M
Holistic stream management (within Council as well as other organisations and agencies)	M
Cost-benefit analyses	H
Risk-based analyses	M
Redevelopment opportunities	M
Multiple benefits	M
The mauri of water and cultural significance	M

Contamination of the Tāmaki Estuary and coastal inlets

As noted above, the Auckland Council State of Auckland Marine Report Card grades the Tāmaki Estuary as having an 'overall environmental health' of E.

Proposed Criteria for managing contamination of the Tāmaki Estuary and Coastal Inlets

1. Existing contaminant levels

We could place a priority to ensure that already highly contaminated areas are not further degraded. Available data shows that existing levels of contamination vary widely around Tamaki Estuary. In general, the sheltered inlets in the upper estuary are more contaminated than the central and outer parts of the estuary.

2. Trends in contamination:

We could prioritise those areas which have the highest predicted change in contamination in the future. Predicted and measured trends in metal concentrations vary from location to location. Models predict that zinc concentrations will slowly increase in central and outer parts of Tamaki Estuary, increase at moderate rates in the Mount Wellington area, Pakuranga Creek and west of the Southern Motorway, and rapidly increase in Panmure Basin and Otara Creek. However, actual trends have been more variable.

3. Contaminant loads:

Our prioritisation could be based on those catchments that have the most widespread influence on the water quality of the estuaries. The environmental "footprint" of individual catchments varies widely because of differences in their contaminant loads and dispersal patterns in the coastal environment.

4. Marine ecology:

We could prioritise our efforts based on the health of the marine ecology. The health of benthic communities is monitored by Council and used to assess the ecological response to contaminant effects. Benthic health in the estuary ranges from fair to highly degraded. As an example, a priority could be given to either fixing degraded areas or protecting high value receiving environments such as the Whitford embayment.

5. Amenity, aesthetics and recreational use

Amenity, aesthetic and use values vary around the Tamaki coast. Stormwater contaminants can degrade those values, especially litter and sediment. Build-up of metals in shellfish can pose a risk to human health. Note that the effects of wastewater pollution are not covered by this consent application. Areas of contact and recreational could be prioritised jointly with Watercare Services Ltd.

6. Holistic contaminant management

Hotspots from sources outside the direct control of the AC Stormwater Unit (for example landfills, marinas and wastewater overflows) can have significant effects on the health of the estuaries and the harbour. We could make it a priority to influence efforts by other parts of the Council or external institutions, including product stewardship by central government.

The Council notes that sources of the contamination of this environment are manifold. The Council also acknowledges that there are a number of highly trafficked roads in the catchment - which contribute to contamination of the receiving environment and that there are gaps in Council's knowledge of the direct contributions that activities such as marinas, landfills and industry make to coastal contamination. Our Feedback is that Council should prioritise research of the various contributions to contamination of this environment before prioritising solutions, especially those that impose regulation or cost on industrial activities that may not be the main source of contamination.

CONTAMINATION OF THE TĀMAKI ESTUARY AND COASTAL INLETS	
Proposed Criteria for Selecting Priorities*	**Your Ranking (H, M, L)**
Existing contaminant levels (to limit further degradation)	L
Actual trends in contamination (where the highest level of change is predicted)	L
Contaminant loads	L
Marine ecology (using benthic/seabed animals as an indicator of priority)	L
Focus on areas of amenity, aesthetics and use	L
Holistic contaminant management (within Council as well as other organisations and agencies)	L
Cost-benefit analyses	H
Risk-based analyses	M
Redevelopment opportunities	M
Multiple benefits	M
The mauri of water and cultural significance	M

Managing stormwater discharges to groundwater:

As noted above, there are no major aquifers exist beneath the East Tamaki Industrial Area.

Proposed Criteria for managing stormwater discharge to Groundwater
1. Groundwater Takes: We could progressively prioritise implementing improved soakage performance (i.e. water quantity recharge) in areas where there are groundwater takes (as a raw water source for drinking water), and target this implementation to those areas of highest use. **2. Disposal of stormwater into ground:** We could progressively prioritise improved treatment of stormwater prior to disposal into soakage systems in areas of highest potential for sedimentation and clogging. Stormwater contaminants can potentially migrate into groundwater aquifers and influence groundwater quality. In addition, soakage can result in localised sediment accumulation in the rock matrix.

While GETBA does not have a direct interest in this issue, our Feedback follows:

GROUNDWATER MANAGEMENT Proposed Criteria for Selecting Priorities*	Your Ranking (H, M, L)
Improved soakage performance in groundwater take areas	M
Treatment of stormwater into ground in targeted areas	M
Cost-benefit analyses	H
Risk-based analyses	M
Redevelopment opportunities	M
Multiple benefits	M
The mauri of water and cultural significance	M

Reducing stormwater effects on the wastewater network:

As noted above, in areas of the Greater Tāmaki CRE flood waters are contaminated with wastewater. However, the East Tamaki Industrial Area is identified as being in a low risk zone.

Proposed Criteria for managing stormwater effects on the wastewater network
1. Public health risk: We could prioritise our efforts based on risks of contaminated flooding and wet weather overflows to human health. This would need alignment with Watercare Services Ltd. **2. Environmental risk:** We could prioritise our efforts based on risks of contaminated flooding and wet weather overflows to the health of the receiving environment. This would need alignment with Watercare Services Ltd. **3. Watercare opportunities taken as they arise:** Under this criterion it is proposed that opportunities to implement solutions be identified in coordination with Watercare Services Ltd as they arise.

While GETBA does not have a strong interest in this issue, our Feedback follows:

REDUCING STORMWATER EFFECTS ON THE WASTEWATER NETWORK	
Proposed Criteria for Selecting Priorities*	**Your Ranking (H, M, L)**
Public health risk (needs alignment with Watercare Services)	M
Environmental risk (needs alignment with Watercare Services)	M
Watercare opportunities taken as they arise (to work with council's CCO)	M
Redevelopment opportunities	M
Multiple benefits	M
The mauri of water and cultural significance	M

Are there any additional criteria which you feel should be considered as part of the selection process?

Our Feedback is that 'business' values should be accorded more priority – where there is a benefit to business or positive business impact (particularly in an industrial area), the selection of priorities with this criteria should be accorded more weight.

In other words, the Greater Tāmaki CRE should ensure that business-friendly regulations are introduced to optimise the conditions in which business growth can occur, while still achieving appropriate resource management outcomes for stormwater management.

Do you have any additional comments?

There are only nine small areas of heavy industry zoned land in the entire Auckland region, including that in East Tamaki. As noted in the legacy Manukau City District Plan, "[t]hese areas are a scarce resource of major importance" (Manukau City District Plan, 14.9.6). Directive 6.3 of the Auckland Plan directs us to *"protect, enhance and improve business-zoned areas and business improvement districts".*

In our view, the issues and priorities of business need to be emphasised a lot more strongly in the Greater Tāmaki CRE. It is critical that that the use of the heavy industry land resource (in particular), but also light industry land, be maximised for use by these kinds of industrial activities and not over-regulated or made to be too expensive.

Nonetheless, as can be seen from the *East Tamaki Business Precinct Plan* (July 2013), our business community is dedicated to:

- encouraging businesses to: "Introduce sustainable approaches to reduce the impact of development on services i.e. stormwater." (page 26 (para 6.2.2))
- encouraging sustainable water solutions – "Low impact design reduces demands for water use and reduces the pressure on the stormwater system protecting the environment. Innovative solutions for water should be encouraged in both the public and private realms." (page 29 (para 6.5.3))
- advocating for Council "to offer incentives for sustainable building designs" (page 29 (para 6.5.4))
- advocating that "Infrastructure needs are delivered for anticipated business growth and quality". Reliable and continuous services must be delivered to businesses (including for stormwater).

In particular, an important implementation action of the Precinct Plan is to: *"Prepare a strategic stormwater plan which will provide the appropriate regulatory and financial mechanisms to achieve improved sustainable outcomes in stormwater management"* (page 45).

In that regard, we propose we discuss with Council the steps that need to be taken to prepare a strategic stormwater plan for the East Tamaki Industrial Area.

First, we suggest a specific 'high level' study be undertaken of the stormwater issues and opportunities for the East Tamaki Industrial Area to fill some of the gaps in the Council's and our knowledge.

Would you like to be kept informed of the outcome of this consultation process?

[If yes, please list contact details on first page of this form]

√ YES √
√ NO

Would you like to be involved in future stormwater network consent applications for the following areas? Please tick in either the '*yes*' or '*no*' column.

[If yes, please list contact details on first page of this form]

CRE Area	Yes	No
Manukau Harbour		√
Hauraki Gulf Islands		√
Mahurangi Harbour		√
Hibiscus Coast		√
Wairoa		√
West Coast		√
South Kaipara Head		√
North East		√

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